



MOTOROLA

MSF 5000

DIGITAL CAPABLE AND ANALOG PLUS
STATIONS



FCC INTERFERENCE WARNING

The FCC requires that manuals pertaining to Class A computing devices must contain warnings about possible interference with local residential radio and TV reception. This warning reads as follows:

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

COMMERCIAL WARRANTY (STANDARD)

Motorola radio communications products (the "Product") is warranted to be free from defects in material and workmanship for a period of ONE (1) YEAR (except for crystals and channel elements which are warranted for a period of ten (10) years) from the date of shipment. Parts including crystals and channel elements, will be replaced free of charge for the full warranty period but the labor to replace defective parts will only be provided for One Hundred-Twenty (120) days from the date of shipment. Thereafter purchaser must pay for the labor involved in repairing the Product or replacing the parts at the prevailing rates together with any transportation charges to or from the place where warranty service is provided. This express warranty is extended by Motorola, 1301 E. Algonquin Road, Schaumburg, Illinois 60196 to the original end use purchaser only, and only to those purchasing for purpose of leasing or solely for commercial, industrial, or governmental use.

THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER WARRANTIES EXPRESS OR IMPLIED WHICH ARE SPECIFICALLY EXCLUDED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. IN NO EVENT SHALL MOTOROLA BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES TO THE FULL EXTENT SUCH MAY BE DISCLAIMED BY LAW.

In the event of a defect, malfunction or failure to conform to specifications established by Motorola, or if appropriate to specifications accepted by Motorola in writing, during the period shown, Motorola, at its option, will either repair or replace the product or refund the purchase price thereof. Repair at Motorola's option, may include the replacement of parts or boards with functionally equivalent reconditioned or new parts or boards. Replaced parts or boards are warranted for the balance of the original applicable warranty period. All replaced parts or product shall become the property of Motorola.

This express commercial warranty is extended by Motorola to the original end user purchaser or lessee only and is not assignable or transferable to any other party. This is the complete warranty for the Product manufactured by Motorola. Motorola assume no obligations or liability for additions or modifications to this warranty unless made in writing and signed by an officer of Motorola. Unless made in a separate agreement between Motorola and the original end user purchaser, Motorola does not warrant the installation, maintenance or service of the Products.

Motorola cannot be responsible in any way for any ancillary equipment not furnished by Motorola which is attached to or used in connection with the Product, or for operation of the Product with any ancillary equipment, and all such equipment is expressly excluded from this warranty. Because each system which may use Product is unique, Motorola disclaims liability for range, coverage, or operation of the system as a whole under this warranty.

This warranty does not cover:

- a) Defects or damage resulting from use of the Product in other than its normal and customary manner.
- b) Defects or damage from misuse, accident, water or neglect.
- c) Defects or damage from improper testing, operation, maintenance installation, alteration, modification, or adjusting.
- d) Breakage or damage to antennas unless caused directly by defects in material workmanship.
- e) A Product subjected to unauthorized Product modifications, disassembly or repairs (including without limitation, the addition to the Product of non-Motorola supplied equipment) which adversely affect performance of the Product or interfere with Motorola's normal warranty inspection and testing of the Product to verify any warranty claim.
- f) Product which has had the serial number removed or made illegible.
- g) A Product which, due to illegal to unauthorized alteration of the software/firmware in the Product, does not function in accordance with Motorola's published specifications or the FCC type acceptance labeling in effect for the Product at the time the Product was initially distributed from Motorola.

This warranty sets forth the full extent of Motorola's responsibilities regarding the Product. Repair, replacement or refund of the purchase price, at Motorola's option is the exclusive remedy. IN NO EVENT SHALL MOTOROLA BE LIABLE FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT, FOR ANY LOSS OF USE, LOSS OR TIME, INCONVENIENCE, COMMERCIAL LOSS, LOST PROFITS OR SAVINGS OR OTHER INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGE ARISING OUT OF THE USE OR INABILITY TO USE SUCH PRODUCT, TO THE FULL EXTENT SUCH MAY BE DISCLAIMED BY LAW.

SOFTWARE NOTICE/WARRANTY

Laws in the United States and other countries preserve for Motorola certain exclusive rights for copyrighted Motorola software such as the exclusive rights to reproduce in copies and distribute copies of such Motorola software. Motorola software may be used in only the Product in which the software was originally embodied and such software in such Product may not be replaced, copied, distributed, modified in any way, or used to produce any derivative thereof. No other use including without limitation alteration, modification, reproduction, distribution, or reverse engineering of such Motorola software or exercise of rights in such Motorola software is permitted. No license is granted by implication, estoppel or otherwise under Motorola patent rights or copyrights.

This warranty extends only to individual products: batteries are excluded, but carry their own separate limited warranty.

In order to obtain performance of this warranty, purchaser must contact its Motorola salesperson or Motorola at the address first above shown, attention Quality Assurance Department.

This warranty applies only within the fifty (50) United States and the District of Columbia.



MOTOROLA

instruction manual revision

GENERAL:

This revision outlines changes that have occurred since the printing of your instruction manual. Use this information to correct your manual.

INSTRUCTION MANUAL AFFECTED:

68P81092E05-O	MSF 5000 Instruction Manual
68P81092E75-O	MSF 5000 VHF Service Manual
68P81092E80-O	MSF 5000 UHF Service Manual
68P81092E85-O	MSF 5000 800 MHz Service Manual
68P81092E90-O	MSF 5000 900 MHz Service Manual

REVISION DETAILS:

1. Refer to page 1-45 of the **ALIGNMENT** Section of your manual (Chapter 1, 68P81092E76-O) and make the following change. Under the heading "**High/Low End Adjustment**" on page 1-45, change step 2 to read as follows:
 - 2. "With an audio generator, inject a 1 kHz tone at 100 mV into the MIC AUDIO input (J812-4) on the control connector or into TP8 on the SSCB."

NOTE

The same change above applies also to instruction manual 68P81092E05-O except, the **ALIGNMENT** section for this manual is Chapter 4 (68P81092E04-O). Make the change for step 2 (above) on page 4-45 of instruction manual 68P81092E05-O.

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Foreword

Maintenance Philosophy

The *MSF 5000* is comprised of many boards and assemblies. These boards and assemblies should be replaced with known good boards and assemblies whenever they are determined to be faulty. This Service Manual, in conjunction with the *MSF 5000* Instruction Manual, is used to return the station to normal operation as quickly as possible.

Due to the high percentage of surface mount components and multi-layer circuit boards, field repair of station boards and assemblies is discouraged.

Scope of Manual

This manual contains schematics, parts lists, and other detailed information for each board and assembly.

The information in this manual is accurate as of the printing date. Changes occurring after the printing date are temporarily incorporated into the manual through Standard Manual Revisions (SMRs). This manual will be revised on a periodic basis as SMRs and other engineering changes are made to the *MSF 5000* equipment.

General Safety Information

General Safety Information

The United States Department of Labor, through the provisions of the Occupational Safety and Health Act of 1970 (OSHA), has established an electromagnetic energy safety standard which applies to the use of this equipment. Proper use of this radio results in exposure below the OSHA limit.

The following precautions are always recommended:

- ☐ DO NOT operate the transmitter of a fixed radio (base station, microwave and rural telephone RF equipment) or marine radio when someone is within two feet (0.6 meter) of the antenna.
- ☐ DO NOT operate the transmitter of any radio unless all RF connectors are secure and any open connectors are properly terminated.
- ☐ DO NOT operate this equipment near electrical caps or in an explosive atmosphere.
- ☐ All equipment must be properly grounded according to Motorola installation instructions for safe operation. Refer to the R56 Quality Standards FNE Installation manual.
- ☐ All equipment should be serviced only by a qualified technician.

Refer to the appropriate section of the installation manual for additional pertinent safety information.

WARNING

Possible electrical shock hazard. Before attempting removal or installation, make sure the primary power and batteries are disconnected.

CAUTION

This station contains CMOS devices. Proper troubleshooting and installation techniques require grounding precautions by personnel prior to handling equipment.

Service and Repairs

Motorola Service

Motorola's National Service Organization offers one of the finest nationwide installation and maintenance programs available. This organization includes approximately 900 authorized Motorola Service Stations (MSS) located throughout the United States. Each service station is manned by one or more trained FCC licensed technicians.

Each MSS is independently owned and operated. An MSS is selected by Motorola to service its customers. Motorola maintenance is available on a time and material basis or a periodic fixed fee arrangement.

The administrative staff of this organization consists of national, area and district service managers and district representatives, all of whom are Motorola employees. Their objective is to improve the service to our customers.

For additional information about purchasing a service contract for Motorola equipment, contact your Motorola Service Representative, or write to:

National Service Manager

Motorola Communications and Electronics, Inc.

1301 E. Algonquin Road SH4

Schaumburg, Illinois 60196

Replacement Parts

When ordering replacement parts or equipment information, include the station model number, option numbers (if applicable), and the replacement part number. This applies to all components, kits, and chassis. If the component part number is not known, include its chassis or kit number and a description of the component on the order.

Crystal and channel element orders should specify the crystal or channel element type number, crystal and carrier frequency, and the model number using the part.

Orders for active filters should specify type number and frequency, identify the owner/operator of the communications system to use these items, and any serial number stamped on the components being replaced.

Refer to the addresses and phone numbers listed on the following pages when ordering replacement parts.

Service and Repairs**Mail Orders**

Send all written orders to the following addresses listed below:

Replacement Parts/Test Equipment/Crystal Service Items:

Motorola

Worldwide System and Aftermarket Products Division

Attention: Order Processing

1313 E. Algonquin Road

Schaumburg, Illinois 60196

International Orders:

Motorola

Worldwide System and Aftermarket Products Division

Attention: International Order Processing

1313 E. Algonquin Road

Schaumburg, Illinois 60196

Federal Government Orders:

Motorola

Worldwide System and Aftermarket Products Division

Attention: Order Processing

7230 Parkway Drive

Hanover, Maryland 21076

Fax Orders

Fax orders to the following numbers listed below:

Replacement Parts/Test Equipment/Crystal Service Items:

Domestic Fax - (708) 538-8198

International Fax - (708) 576-3023

Federal Government Orders:

Fax - (301) 925-2690

Trunked & 900 MHz Customer Response Center:

Fax - (800) 526-8644

Telephone Orders/Customer Service

Telephone customer service or place phone orders to the following numbers listed below:

Replacement Parts/Test Equipment/Crystal Service Items:

National Parts - (800) 422-4210

Federal Government Orders - (800) 826-1913

International Orders - (708) 538-8023

Product Services:

Telephone - (708) 576-0180

Trunked & 900 MHz Customer Response Center:

Telephone - (800) 247-2346

National Service Training Video Tapes:

Telephone - (708) 576-8012

System Support Center:

Telephone - (800) 448-3245

Upload Center:

Telephone - (800) 874-5574

Parts Identification:

Telephone - (708) 538-0021

Indirect Distribution Dealer Support Group:

Telephone - (800) 356-9058

Direct Product Services:

Telephone - (800) 523-4007

Radio Service Software (RSS) Support:

See Direct Product Services

Training

Contact training at the number listed below:

National Service Training (NST):

Telephone - (708) 576-8012

Performance Specifications

Performance Specifications

About the Performance Specifications

This section contains performance specifications for the 900 MHz MSF 5000 station. It contains General specifications, Transmit specifications, and Receive specifications.

900 MHz General

Description	Value or Range	
Number of Channels	4 standard up to 15 frequencies optional on conventional stations. 1 standard on trunked stations	
Input Voltage (AC)	96 - 132 Vac @ 60 Hz Optional 50 Hz, 110/220 Vac †	
Operating Temperature	-30° C to +60° C	
Dimensions (H x W x D): 75 Watts 150 Watts ††	37.25" x 22" x 10" (95.0 x 56.0 x 25.4 cm) 46" x 21.75" x 10" (117 x 56 x 25.4 cm)	
Weight: 75 Watts 150 Watts	175 lbs. (80 kg) 340 lbs. (155 kg)	
Input Power: (varies w/options) 75 Watts 150 Watts	<u>Standby</u> 95 Watts 115 Watts	<u>Transmit</u> 440 Watts 765 Watts
Metering	Optional interactive DMP provides 5 Watts audio, analog metering and status display of control signals Optional interactive RMP provides 5 Watts audio and analog metering	
† Reduces power output on 150 Watt stations to 125 Watts		
†† Measurement does not include tip feet		

900 MHz Transmit

Description	Value or Range	
Frequency	935 - 941 MHz	
Transmit Bandwidth	6 MHz	
RF Power Output Range: 75 Watts 150 Watts	35 - 75 Watts 75 - 150 Watts	
Output Impedance	50 Ω	
Frequency Stability	± 2 ppb from -30°C to +60°C	
Isolation	-20 dBc @ ± 25 kHz	
Deviation Clear	± 2.5 MHz for 100% @ 1 kHz	
Audio Sensitivity: Conventional Trunked	-35 dBm to +11 dBm variable -20 dBm to +11 dBm variable	
Conducted Spurious & Harmonic Emissions	-90 dBc	
FM Hum and Noise	-45 dB nominal for 300 to 3 kHz bandwidth (with 750 μ sec. pre-emphasis referenced to 1 kHz tone @ 1.5 kHz deviation)	
Audio Response	+1, -3 dB from 6 dB per octave pre-emphasis 300 - 3 kHz referenced to 1 kHz at line input	
Audio Distortion	Less than 2% @ 1 kHz (@ 3 kHz deviation)	
FCC Designation:	<u>Internal Reference</u>	<u>External Reference</u>
75 Watts	ABZ89FZ5655	ABZ89FZ5656
150 Watts	ABZ89FZ5658	ABZ89FZ5659

Performance Specifications**900 MHz Receive**

Description	Value or Range
Frequency	896 - 902 MHz
Channel Spacing	12.5 kHz
Selectivity EIA SINAD	-80 dB
Receiver Bandwidth	5.0 MHz
Receiver Sensitivity	0.25 μ V 12 dB SINAD
Off Channel Acceptance	$\pm$ 2 kHz minimum
Frequency Stability	$\pm$ 2 ppb from -30°C to +60°C
Intermodulation EIA SINAD	-80 dB
Spurious & Image Rejection	-100 dB
Audio Response	+1, -3 dB from 6 dB per octave de-emphasis from 400 Hz to 3 kHz bandwidth at line output
Audio Distortion	Less than 3% distortion at 1 kHz
FM Hum and Noise	-45 dB nominal for 300 to 3 kHz bandwidth (with 750 μ sec. pre-emphasis referenced to 1 kHz tone @ 1.5 kHz deviation)
RF Input Impedance	50 Ω
FCC Designation: Internal Reference External Reference	ABZ89FR5655 ABZ89FR5656

MODEL COMPLEMENT
CHART FOR
MSF 5000 ANALOG PLUS
BASE STATIONS
900 MHz

LEGEND:
1, 2 = Items Supplied
* = Refer to 1st Item Breakdown Chart

DESCRIPTION		MODEL		ITEM	DESCRIPTION
75W Data Base Station		C65GFB2206A		TFF6072B	Lowpass Filter
75W Analog Plus Trunked Repeater		C65GFB5203AT		TKN8487A	Watt Meter Cable
75W Analog Plus Conventional Repeater		C65GFB7206AT		TKN8492A	Wire Line Interface Cable
150W Data Base Station		C85GFB2206A		TKN8496A	Reference Synthesizer Power Supply Cable
150W Analog Plus Trunked Repeater		C85GFB5203AT		TKN8497A	HSD Synthesizer to Power Supply Cable
150W Analog Plus Conventional Repeater		C85GFB7206AT		TKN8498B	25' Trunking Central Controller Cable
				TKN8499A	Station Receiver Cable
				TKN8500C	Secure Smartnet System Cable
				TKN8543A	Trunked Tone Remote Control/J-box Trunking Cable
				TKN8573A	Power Supply to Fan Cable
				TKN8579A	Lo Power Power Supply to PA Interconnect Cable
				TKN8580A	HI Power Power Supply to PA Interconnect Cable
				TKN8710A	RX Loopback Cables
				TKN8713A	26 Pin Ribbon Cables for SAM to Base Station Control
				TKN8720A	SAM to RLC Board Cable Kit
				TKN8741A	Driver Power Monitor Cable
				TKN8993A	Expansion Cables
				TLF6890A	Watt Meter
				TLN2490A*	110V 15A 60Hz Low Power Junction Box
				TLN3022B*	110V 20A 60Hz HI Power Junction Box
				TLN3024B*	Reference Synthesizer
				TLN3025C*	HSD Synthesizer
				TLN3112E*	Trunked Tone Remote Control Audio Board
				TLN3205A*	Analog Plus Station Control Board
				TLN3221B*	Station Access Module (SAM)
				TLN3342A*	900 MHz Data Station Control Board
				TPN1186B*	500W 60Hz Power Supply
				TRN5177A	Expansion Tray Hardware
				TRN5178B	Expansion Tray Power Supply Board
				TRN5200A	Blank Bezel
				TRN5352A	RF Connector Plug
				TRN5353A	Auxiliary Connector Plug
				TRN5355A	Battery Connector Plug
				TRN5427A	110V Power Cord
				TRN5954A	Blank Bezel
				TRN7039A	Control Hardware
				TRN7040A	Trunked Tone Remote Control Bezel
				TRN7200A	Universal 9" Slides Tray Hardware
				TRN7201A	Universal PA/PS Hardware
				TRN7224A	Synthesizer Tray Panel Hardware
				TRN7225A	RF Tray Panel Hardware
				TRN7249A	Universal Rails Label
				TRN7252B	UHF/800/900 Station Peripheral Hardware
				TRN7385A	RF Interconnect Hardware
				TRN7551A	Station Access Module Bezel
				TRN7586A	21.4 MHz IF RSSI/Loopback Div Board
				TRN7717A	FCC Label
				TRN7754A*	Trunked Tone Remote Control Logic Board
				TRN7794A	Tuning Tool Kit
				TRN9512A	Straight Coax N-Type Adaptor
				TRN9871B	2 Fan Kit
				TRN9892B	3 Fan Kit
				TTF1212C*	Final Power Amplifier, 928-944 MHz
				TTF1242D*	70W Power Amplifier Driver, 928-944 MHz
				TTF1480A*	Single Circulator w/ Load, 928-960 MHz
				TUF1790A*	RF Tray Chassis w/ High Stability Oscillator
				TUF1920A*	900MHz EXT REF RF Tray W/RSSI/Loopback

900 MHz Model Charts

1st ITEM BREAKDOWN
CHART FOR
MSF 5000 ANALOG PLUS
BASE STATIONS
900 MHz

LEGEND:
1, 2, 4 = Items Supplied
* = Refer to 2nd Item Breakdown Chart

DESCRIPTION	MODEL	ITEM		DESCRIPTION	
110V 15A 60Hz Lo Power Junction Box	TLN2490A	TFF6202A		Preselector Filter	
110V 20A 60Hz Hi Power Junction Box	TLN3022B	TFF6203A		Image Injection Filter	
Reference Synthesizer	TLN3024B	TFN6056A		2175 Hz Notch Hybrid Filter	
HSO Synthesizer	TLN3025C	TFN6061A		2175 Hz Bandpass Hybrid Filter	
Trunked Toned Remote Control Audio Board	TLN3112E	TKN8342C		Driver PA Deck Cabling	
Analog Plus Station Control Board	TLN3205A	TKN8525A	1	Reference Synthesizer Cables	
Station Access Module (SAM)	TLN3221B	TKN8562A		IPA Cable	
900 MHz Data Station Control Board	TLN3342A	TKN8565A	1	20A Hi Power Junction Box Hardware	
500W 60Hz Power Supply	TPN1186B	TKN8599B		SSCB Power Cable	
Trunked Toned Remote Control Logic Board	TRN7754A	TKN8655A	1	Synthesizer Cable	
Transmitter Final Power Amp, 928-944 MHz	TTF1212C	TKN8842A		IPA Feedthru Cable	
70W Driver Power Amp, 928-944 MHz	TTF1242D	TKN8975C		PA Cabling Kit	
Single Circulator w/ Load	TTF1480A	TLF1521B*	1	Intermediate Power Amplifier	
RF Tray Chassis w/ High Stability Osc, 896-944 MHz	TUF1790A	TLF6633A	6	PA Final Mode Hybrid, 928-944 MHz	
900 MHz EXT REF RF Tray W/RSSI/Loopback	TUF1920A	TLF6692A	1	Predriver Mode Hybrid	
		TRE1322B*		Receiver VCO: 435-490 MHz	
		TRF6512B		PA RF Mixer Hybrid, 896-915 MHz	
		TRF6513A		Injection Double Amplifier Board	
		TRN5159B		Line Interface Board	
		TRN7008A		Display Board	
		TRN7110B	1	60Hz Hi Power Junction Box Hardware	
		TRN7117A		Miscellaneous Hardware	
		TRN7142B		RF Tray Interconnect Board	
		TRN7144A	1	RF Tray w/ EXT REF Hardware	
		TRN7173A		PA Final Hardware	
		TRN7197B		Uniboard	
		TRN7213B	1	500W 60Hz Power Supply Hardware	
		TRN7242A	1	14V Distribution Board	
		TRN7273D		Trunked Tone Remote Control Audio Board	
		TRN7304A	1	Synthesizer Hardware	
		TRN7423A	1	900 MHz Analog Plus Station Control Board	
		TRN7497A		110V 60Hz Label	
		TRN7537B	1	Station Access Board	
		TRN7564A		110V 60Hz Lo Power Junction Box Hardware	
		TRN7580A		Universal Power Supply Hardware	
		TRN7587A		RF Tray Hardware for Data Station	
		TRN7606A	1	Socketed Display Board	
		TRN7671A		15A Line Cord Hardware	
		TRN7827A		Standoff Hardware	
		TRN7857A	1	10V 60 Hz 14V Labels	
		TRN7881A		900 MHz EXT REF Uniboard W/RSSI/Loopback	
		TRN7913A	1	Hybrid Flutter Attenuator	
		TRN9060A		Balancing Resistor Hardware	
		TRN9062B		Final PA Distribution Board	
		TRN9064A		Balancing Resistor Hybrid	
		TRN9191A		70W Driver PA Deck Feedthru Plate	
		TRN9256A		External Reference Connector	
		TRN9386A		Thermistor Board	
		TRN9458B		RF Board Hardware	
		TRN9812B	1	HSO Power Supply	
		TRN9837A		Hybrid Flutter Attenuator	
		TRN9840B		Driver PA Deck Hardware	
		TRN9867B		RF Circulator Hybrid	
		TRN9910B	1	Reference Synthesizer Board	
		TRN9932A	1	Reference Synthesizer Hardware	
		TTE1472B*		Transmit VCO: 435-475 MHz	
		TTF1362B*		Transmitter Circulator w/ Load	
		TTF6203A	1	6-way Power Combiner Board	
		TTF6273B		Hybrid 3-way Combiner/Directional Coupler Board	
		TTF6470A		Single Circulator	
		TVN6055A	1	Station Control Board Firmware	
		TVN6056A		TTRC Module Firmware	
		TVN6118A		Secure Module Firmware	

MSFX011
052494JNM

2nd ITEM BREAKDOWN CHART FOR MSF 5000 ANALOG PLUS BASE STATIONS 900 MHz

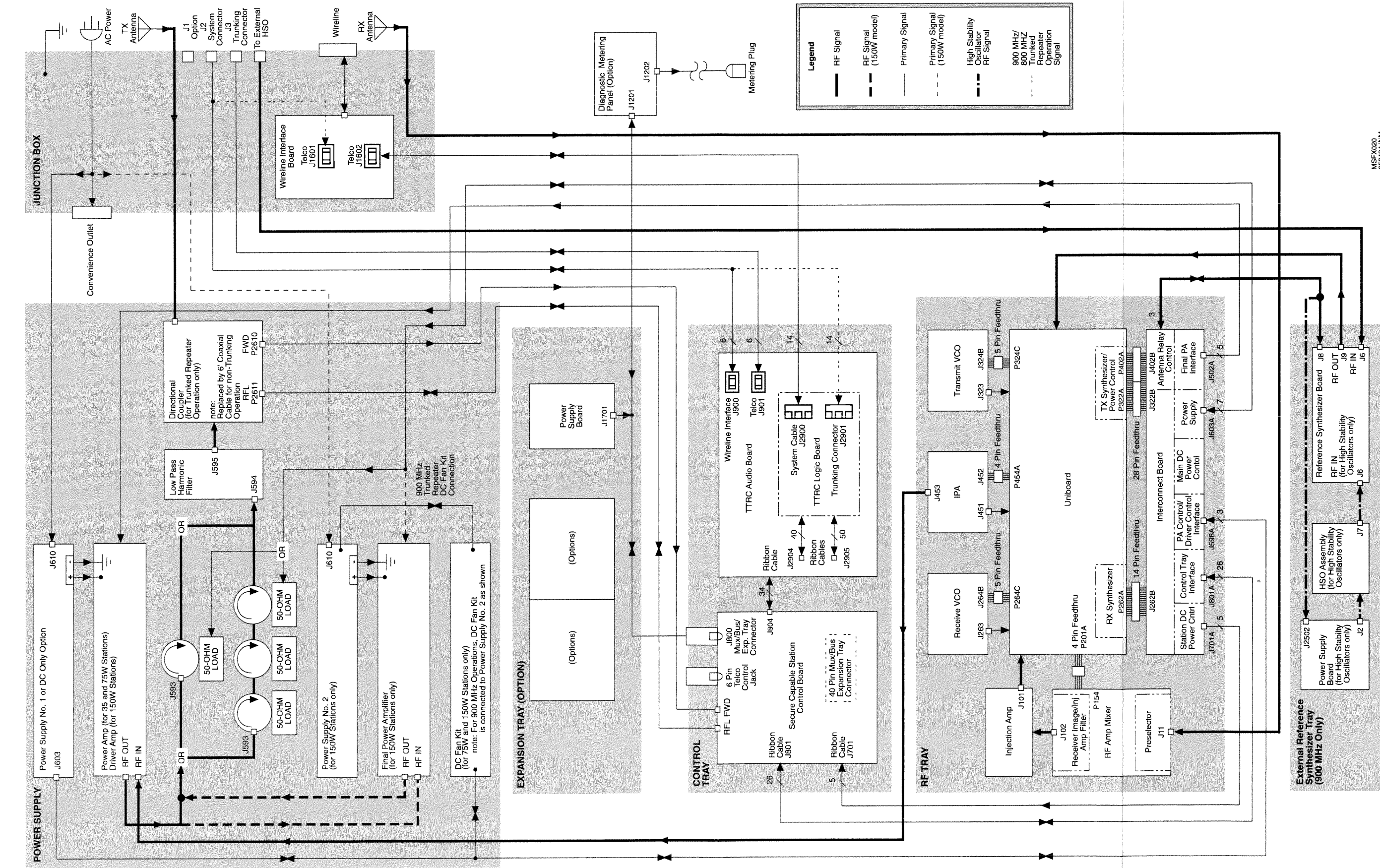
LEGEND:

1 = Items Supplied

		DESCRIPTION							ITEM
		Transmit VCO Hardware							TLE5372B
		Receiver VCO Hardware							TLE5382B
		Intermediate Power Amplifier Hybrid							TLF6840C
		Intermediate Power Amplifier Hybrid Module							TLF6850A
		RF Load Hardware							TRN9458B
		RF Circulator Hybrid							TRN9867B
		Intermediate Power Amplifier Hardware							TRN9930A
DESCRIPTION	MODEL								
Intermediate Power Amplifier	TLF1521B			1	1				1
Receiver VCO	TRE1322B		1						
Transmit VCO	TTE1472B	1							
Transmitter Circulator w/ Load	TTF1362B					1	1		

MSFX012
052494JNM

MSF 5000 Intercabling Diagram
Base, Repeater and Trunking Stations

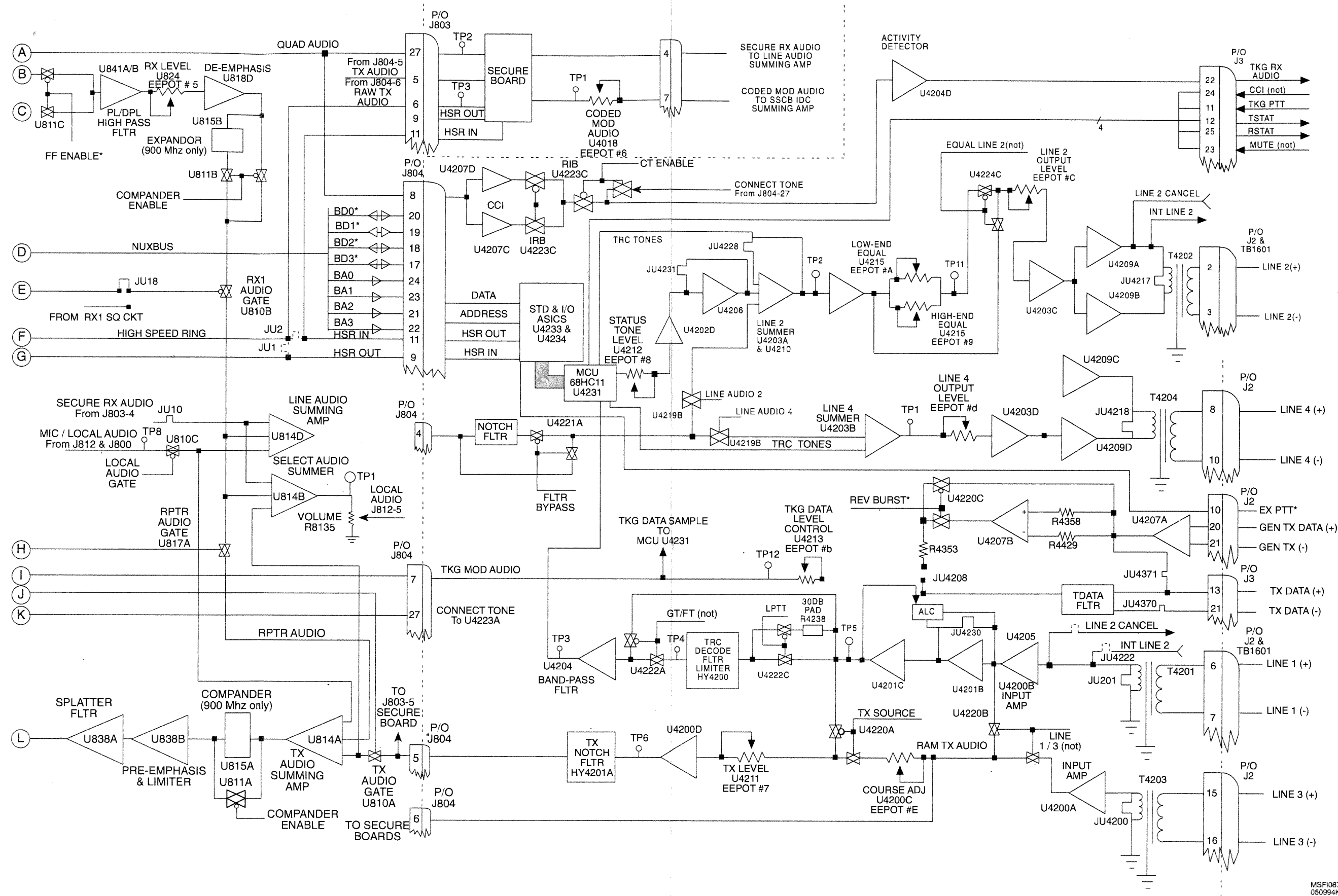


MSF5000
052494UM





MSF 5000 Block Diagrams



MSF1087
050994KOM

Alignment

Chapter Overview

This chapter describes how to align an *MSF 5000* base station. The chapter contents are listed in Table 1-1.

Table 1-1 **Chapter contents**

Section	Page	Description
Recommended Test Equipment	1-1	A list of recommended tools and test equipment needed to properly align an <i>MSF 5000</i> station.
General Guidelines	1-2	Things to consider before aligning a station.
Alignment Procedures	1-4	Detailed procedures for aligning a station.
Simulcast Receiver Adjustment	1-49	Procedures for aligning a simulcast station receiver.
Simulcast Deviation Adjustment	1-51	Procedures for aligning a simulcast station transmitter.

Recommended Test Equipment

The following test equipment is required to align the *MSF 5000* station:

- ☐ R2000 Service Monitor (or equivalent)
- ☐ Diagnostic Metering Panel or Radio Metering Panel (both are referred to as *metering panel*)
- ☐ HP3552A Transmission Test Set (or equivalent)
- ☐ 50 Ω RF terminating load (two times the rated power; dependent on transmitter output)
- ☐ Wattmeter (two times the rated power; dependent on transmitter output)
- ☐ Voltmeter
- ☐ Frequency measuring device
- ☐ Tuning tool kit (supplied with station)
- ☐ Torx driver

The following test equipment is optional:

- ☐ Radio Service Software (RSS)
- ☐ Service computer

General Guidelines

General Guidelines

The following procedures require the service technician or installer to have a basic knowledge of the *MSF 5000* operation. Refer to the *MSF 5000* Instruction manual for additional information.

NOTE

Most of the following procedures apply to stations containing the *Simulcast Option (C777)*, however, Simulcast procedures are included at the end of this chapter. Refer to the trunked station dual path and digital path simulcast manual (68P81081E60) for system setup information using this option.

MSF 5000 Alignment Requirements

- ☐ Check all deviation levels by measuring the highest positive or negative peak deviation.
- ☐ Terminate all 600 Ω /900 Ω wireline inputs and outputs with a 600 Ω /900 Ω terminating load before taking measurements.
- ☐ For trunking stations, if the *MSF 5000* is connected to an operational Trunked Radio Central Controller, disable the station from the system only through the central controller.
- ☐ To activate/deactivate Muxbus bits, either use the DMP and RSS or the equivalent jumper settings provided throughout the procedure.
- ☐ Most adjustments in the alignment procedure are made from the tuning channel (channel 0/mode 0).

Channel 0 is the tuning channel. This is the average of the highest and lowest programmed frequencies. The channel is displayed in the **Chan** digit (i.e., last digit on the left-hand side) of the **Status** display.

Mode 0 disables PL/DPL and opens squelch. The mode is displayed in the **Mode** digit (center) of the **Status** display.

- ☐ If available, use RSS to determine the programmed receive and transmit frequencies for each channel.
- ☐ While tuning filters for a maximum or minimum reading, adjust the tuning screw an additional 1\2 turn to ensure a true maximum or minimum level.
- ☐ When using a frequency measuring device, ensure the accuracy rating is equal to at least 10 times that of the station stability.
- ☐ The typical maximum phone line input level is from 0 dBm to -10 dBm.
- ☐ The *MSF 5000* EEPOTs provide the functions listed in Table 1-2. Refer to the *MSF 5000* Instruction manual for additional information on adjusting EEPOTs.

Table 1-2 **EEPOT Definitions**

EEPOT #	Function	EEPOT Location
0	coded RX level †	Secure board
1	<i>Flutter Fighter</i> level (900 MHz only)	SSCB
2	repeater squelch level	SSCB
3	receiver squelch level	SSCB
4	maximum deviation level	SSCB
5	RX level (for repeater deviation)	SSCB
6	coded deviation level	SSCB
7	TX audio level	TTRC board
8	status tone level	TTRC board
9	high-end equalization level	TTRC board
A	low-end equalization level	TTRC board
b	trunking data level	TTRC board
C	line 2 output level	TTRC board
d	line 4 output level	TTRC board
E	coarse line level adjust	TTRC board
F	SAM encoder level ‡	SAM
† Only with optional Secure board. ‡ Only with optional SAM board.		

Alignment Procedures

Motorola recommends performing alignment procedures after installing the *MSF 5000*, six months after installation, and every twelve months thereafter. If the *MSF 5000* is equipped with the *Battery Revert Option (C28)*, verify its performance as well.

Always perform the procedures in the order presented. Some of the adjustments are presented for stations containing specific options. Perform only those procedures applying to the specific *MSF 5000* configuration.

Power Supply Voltage

The following procedure is only performed when a station is equipped with the *Battery Revert Option (C28)*. This procedure adjusts the voltage set potentiometer which sets the battery charge voltage at the Junction Box battery connection.

1. Verify the station is dekeyed.
2. On the Junction Box, disconnect the battery cable from the station.
3. Set the FL ↓/EQ ↑ switch (S650) to FL ↓ (Float).

The FL ↓/EQ ↑ switch is located on the Power Supply board. Refer to Figure 1-1 for the location of this switch.

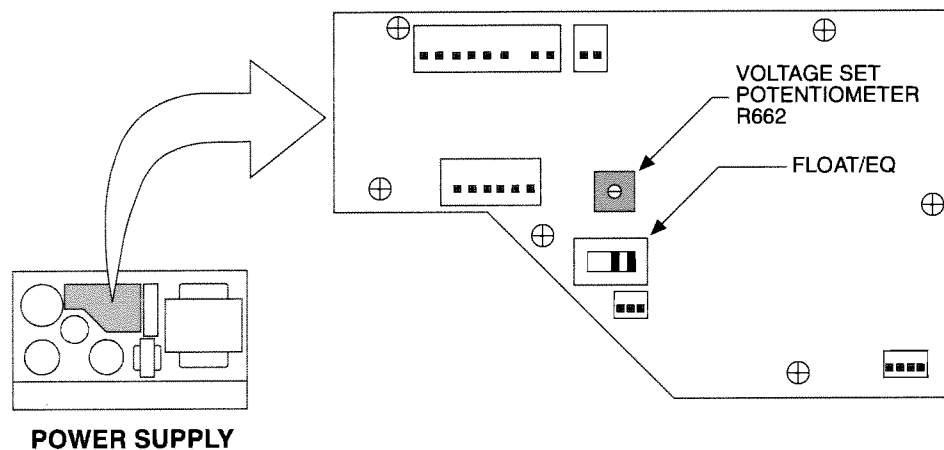


Figure 1-1 Power Supply Board (top View)

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4. Adjust the **VOLTAGE SET** potentiometer (R662) to set the battery charge voltage at the battery connector on the Junction Box.

For optimum performance, set R662 to the manufacturer's recommended battery charging voltage listed in Table 1-3.

Table 1-3 **Recommended Battery Charging Voltages**

Battery Type	Voltage
Lead Acid	13.25 Vdc (26.5 Vdc)
NI-CAD™	14.25 Vdc (28.5 Vdc)
GEL-CELL™	13.5 Vdc (27 Vdc)
No Batteries	14.25 Vdc (28.5 Vdc)
Note: Voltages represented in parenthesis () are for VHF stations using the 24 Vdc output post. All voltages represented are at room temperature conditions.	

NOTE

Only connect fully charged batteries to the station. Allow discharged batteries to charge for at least three hours before connecting them to the station. Keying the station without fully charged batteries reduces station performance.

NOTE

Motorola recommends periodically setting the FL ↓/ EQ ↑ switch to EQ ↑ (i.e., every 3 - 4 months or after heavy usage). Leave this switch in the EQ ↑ (equalize) position until the batteries' cells are fully equalized.

5. Connect the batteries to the Junction Box. Observe polarity of the connector.

VCO Adjustments

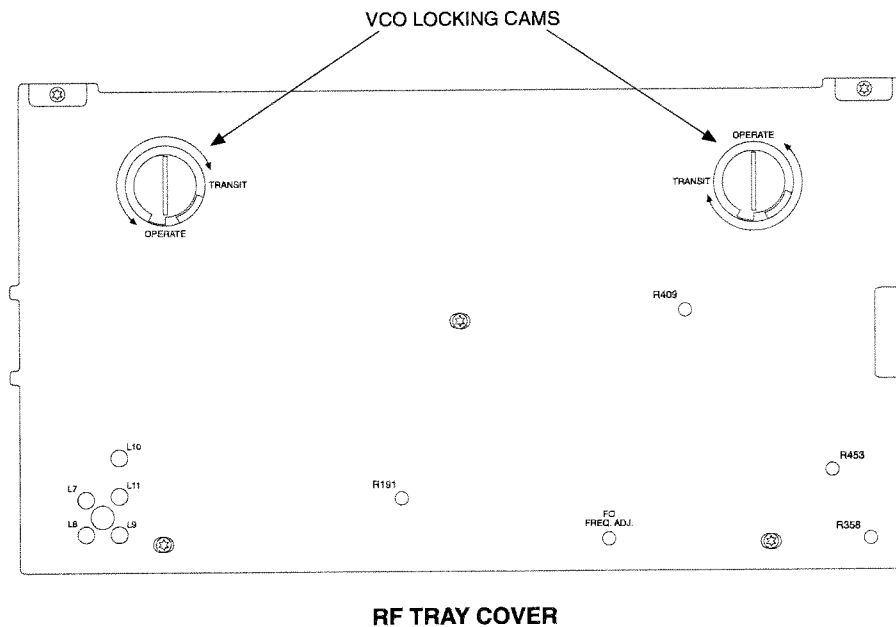
The following procedure adjusts the Transmit and Receive Voltage Controlled Oscillators (VCOs). The VCOs are adjusted through the use of the **Rx Lock** and **Tx Lock** LEDs, the VCO locking cams, and a metering panel. This procedure does not apply to VHF stations since they do not require fine tuning for proper operation.

Alignment Procedures

NOTE

The Transmit and Receive VCO adjustment should only be performed for *UHF, 800 MHz, and 900 MHz Analog Plus stations*. This procedure does not apply to *VHF stations*.

1. On the top of the RF Tray, rotate both VCO locking cams to **Transit**. The **Transit** position secures the VCOs in place while adjusting or moving the station. Refer to Figure 1-2 for the location and rotation of the VCO locking cams.



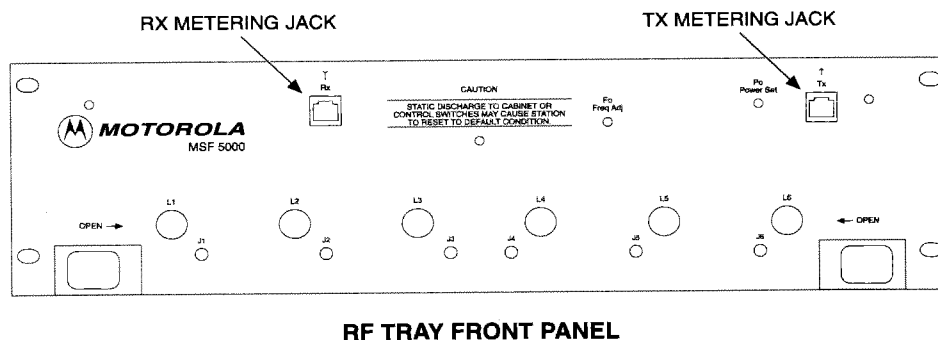
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Figure 1-2 VCO Locking Cams

2. On the control tray, set the station to the channel with the highest programmed operating frequency.
The channel is displayed in the **Chan** digit (i.e., last digit on the left-hand side) of the **Status** display.

Transmit VCO Adjustment

3. Connect a metering panel to the Tx metering jack located on the front right-hand side of the RF Tray using the metering cable.
Refer to Figure 1-3 for the location of the RF Tray metering jacks.



RF TRAY FRONT PANEL

NOTE: L1 - L6, J1 - J6 and Fo Freq Adj are not found on VHF models.
Access requires the removal of the front panel.

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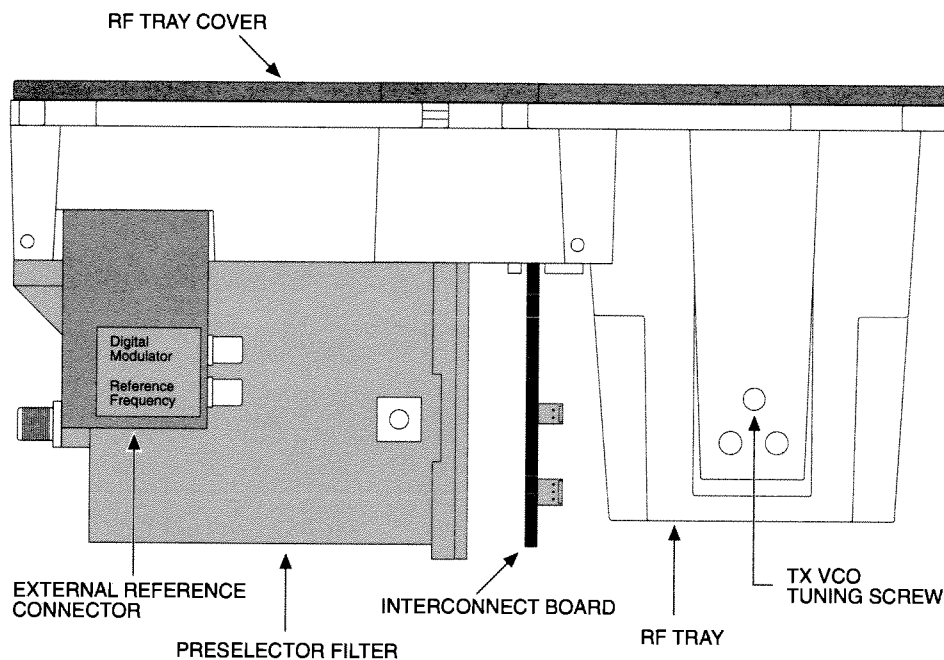
Figure 1-3 Metering Jacks

4. On the metering panel, set the Meter switch to 5 and set the reversing switch ($\pm$) to + (positive).
Meter 5 should read $38 \pm 2 \mu\text{A}$. If the meter indicates this value, proceed to the Receive VCO Adjustment.
5. Adjust the TX VCO tuning screw until the **Tx Lock** indicator on the control tray illuminates.
Access the TX VCO tuning screw from the upper hole on the right-hand side of the RF Tray. Turning the TX VCO clockwise (CW) increases the level; turning it counter-clockwise (CCW) decreases the level. Refer to Figure 1-4 for the location and rotation of the VCOs.
6. Adjust the TX VCO tuning screw until Meter 5 on the metering panel indicates $38 \pm 2 \mu\text{A}$.

Receive VCO Adjustment

7. Connect a metering panel to the **Rx** metering jack on the front left-hand side of the RF Tray using the metering cable.
Refer to Figure 1-3 for the location of the RF Tray metering jacks.
8. On the metering panel, verify Meter 5 is selected and the reversing switch ($\pm$) is set to + (positive).
Meter 5 should read $38 \pm 2 \mu\text{A}$. If the meter indicates this value, proceed to step 11.
9. Adjust the RX VCO tuning screw until the **Rx Lock** indicator on the control tray illuminates.
Access the RX VCO tuning screw from the upper hole on the left-hand side of the RF Tray. Turning the RX VCO clockwise (CW) increases the level; turning it counter-clockwise (CCW) decreases the level. Refer to Figure 1-5.

Alignment Procedures



NOTE: External Reference Connector is included only on External Reference Base Stations.

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Figure 1-4 TX VCO Tuning Screw

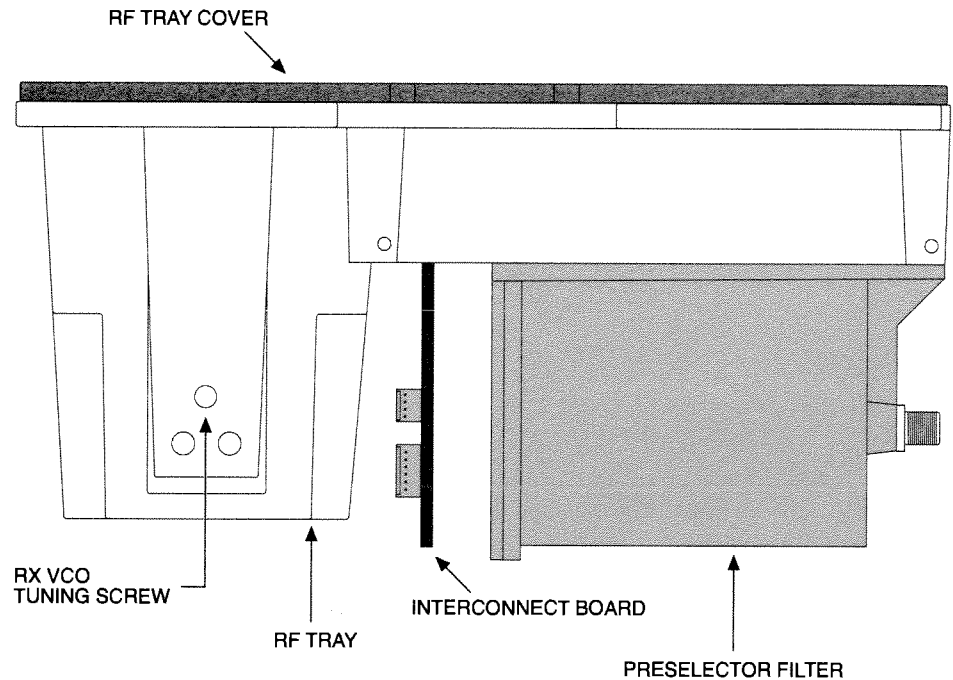
10. Adjust the RX VCO tuning screw until Meter 5 on the metering panel indicates $38 \pm 2 \mu\text{A}$.
11. Rotate both VCO locking cams to **Operate**.

Injection Filter Adjustment

The following procedure aligns the Injection Filter for the tuning channel frequency (channel 0/mode 0). By adjusting the Injection Filter to the tuning channel, the station is tuned for all programmed frequencies.

The Injection Filter tuning screws are accessed through the RF Tray cover. The tuning screws are adjusted until a maximum reading is obtained on the metering panel.

1. Connect a metering panel to the Rx metering jack on the front left-hand side of the RF Tray using the metering cable.
2. On the metering panel, set the Meter switch to 3 and verify the reversing switch ($\pm$) is set to the + (positive).

MSF1022
022884JNMFigure 1-5 ***RX VCO Tuning Screw***

3. On the control tray, set the **Acc Dis/Reset** switch to **Acc Dis**.
4. Using the **Select/Set** switch, set the station to tuning channel.
5. Using a tuning screwdriver, adjust L7 until Meter 3 on the metering panel indicates a maximum level.
Refer to Figure 1-6 for the location of the Injection Filter tuning screws.
6. Using a tuning screwdriver, adjust L8 until Meter 3 on the metering panel indicates a maximum level.
7. Using a tuning screwdriver, adjust L9 until Meter 3 on the metering panel indicates a maximum level.
8. Repeat steps 5 through 7 until a maximum level is obtained.

Preselector / Image Filter Adjustment

The following procedure aligns the Preselector and Image Filters for the tuning channel frequency (channel 0/mode 0). By adjusting the Preselector and Image Filters to the tuning channel, the station is tuned for all programmed frequencies.

Alignment Procedures

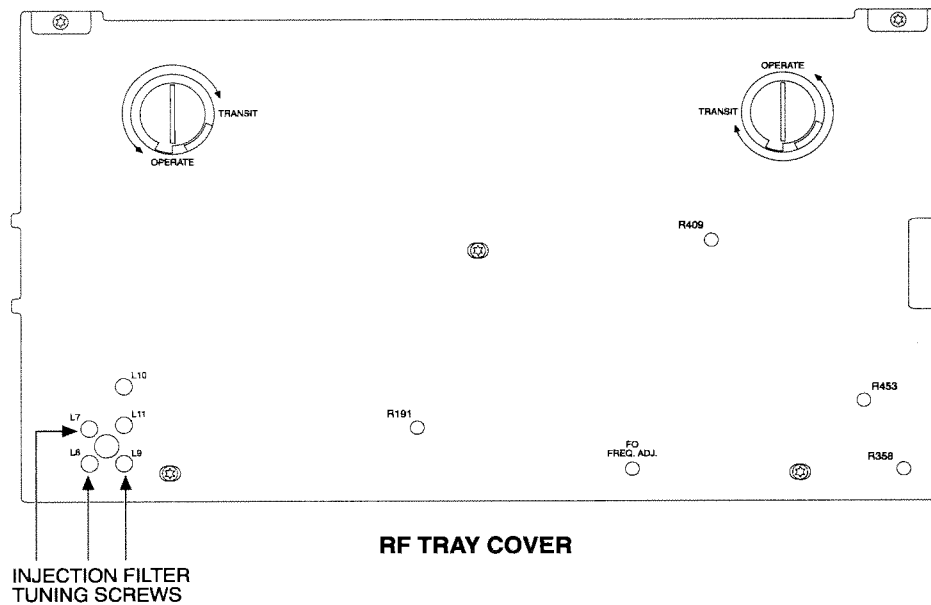
MSF1018
021894JNM

Figure 1-6 Injection Filter Tuning Screws (RF Tray Cover)

The Preselector Filter tuning screws are accessed through the RF Tray front panel. There are a total of six Preselector tuning screws, except for VHF stations which contain only five tuning screws. For VHF stations, the RF Tray front panel must be removed. The Preselector Filter tuning screws are adjusted until the proper reading is obtained on the metering panel.

The Image Filter tuning screws are accessed from the top of the RF Tray cover. The Image Filter tuning screws are adjusted until the proper reading is obtained on the metering panel.

Typically, the Preselector and Image Filter require only a fine adjustment. However, if the station requires a major tuning adjustment, the coarse adjustment must be performed initially. Coarse adjustments are usually required after frequency changes, filter replacements, and servicing.

Coarse Adjustment

1. If adjusting a *VHF station*, remove the RF Tray front panel. Otherwise, proceed to step 2.
2. Using the **Select/Set** switch, set the station to the tuning channel.
3. Terminate the Preselector by connecting a 50 Ω load to the Preselector input. For non-duplex repeaters and base stations, connect the load to the receive antenna connection on the Junction Box.

NOTE

When tuning for a minimum or maximum reading on the meter, adjust the tuning screws an additional half-turn. This ensures that the true minimum or maximum level.

4. On the front of the RF Tray, adjust all the Preselector tuning screws CCW as indicated below. Refer to Figure 1-7.

On 800 MHz stations, adjust the tuning screws until they extend approximately 1/8" from the front panel.

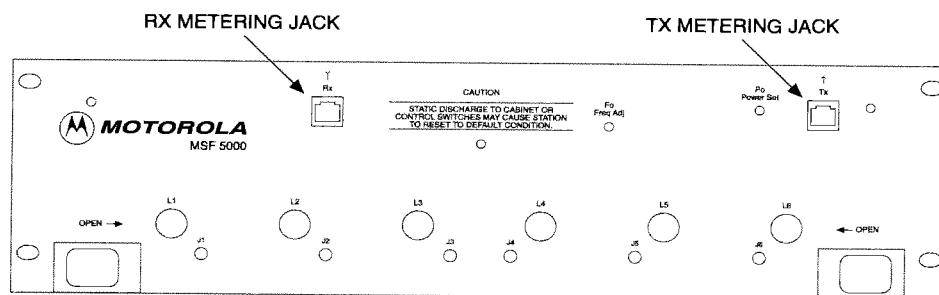
On UHF and 900 MHz Analog Plus stations, adjust the tuning screws until they extend approximately 1/4" from the front panel.

On VHF stations using VHF Range 1 Option (C367), adjust the tuning screws until they extend approximately 3/4" from the tension nut.

On VHF stations using VHF Range 2, adjust the tuning screws until they extend approximately 1/8" from the tension nut.

NOTE

On VHF stations at frequencies near 158 MHz (Range 1) or near 174 MHz (Range 2), the meter indication may not decrease after tuning for a maximum level. If this happens, stop adjusting the tuning screw.

**RF TRAY FRONT PANEL**

NOTE: L1 - L6, J1 - J6 and Fo Freq Adj are not found on VHF models. Access requires the removal of the front panel.

Figure 1-7 **Preselector Filter Tuning Screws**MSF1013
021894JNM

5. Connect the Preselector probe from the output of a signal generator to J1 of the Preselector located on the front panel of the RF Tray.

Alignment Procedures

6. Set the signal generator to output a 1 mV on-channel signal.
7. On the metering panel, set the Meter switch to 2 and verify the reversing switch ($\pm$) is set to the + (positive).
Verify a level between 25 and 35 μ A on the metering panel. Adjust the signal generator output, as necessary, to meet the required level.
8. On the top of the RF Tray, adjust the Image Filter (L10 and L11) until Meter 2 indicates a maximum level.
Refer to Figure 1-8 for the location of the Image Filter tuning screws.

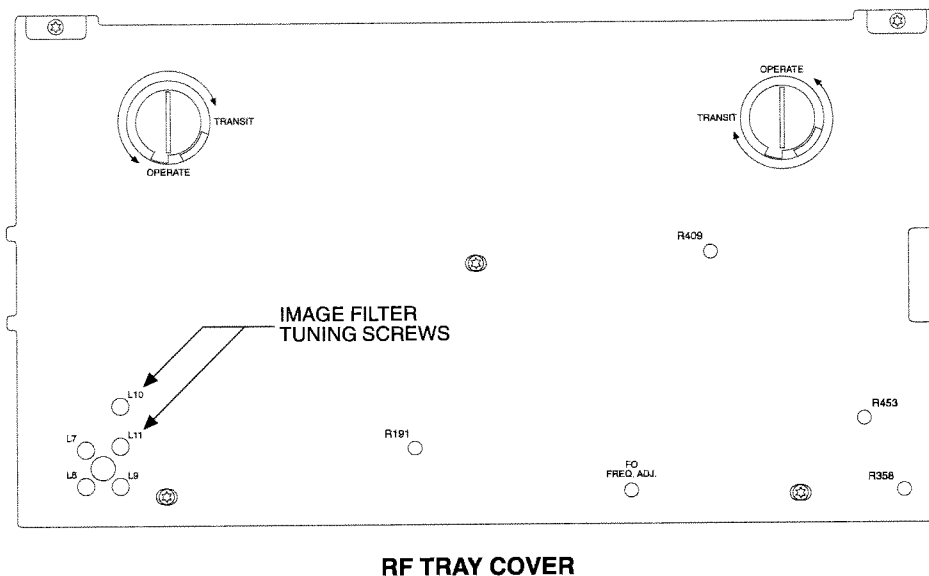
MSF1019
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Figure 1-8 Image Filter Tuning Screws (top View of RF Tray)

9. On the front of the RF Tray, adjust L1 on the Preselector until Meter 2 indicates a maximum level.
10. Adjust L2 on the Preselector until Meter 2 indicates a minimum level.
11. Move the probe to J2 and adjust L3 on the Preselector until Meter 2 indicates a minimum level.
12. Move the probe to J3 and adjust L4 on the Preselector until Meter 2 indicates a minimum level.
13. Move the probe to J4 and adjust L5 on the Preselector until Meter 2 indicates a minimum level.

NOTE

Perform step 14 only if aligning *UHF, 800 MHz, and 900 MHz Analog Plus stations*. Otherwise, proceed to Fine Adjustment.

14. For *UHF, 800 MHz, and 900 MHz Analog Plus stations*, move the probe to J5 and adjust L6 on the Preselector until Meter 2 indicates a minimum level.

Fine Adjustment

15. Using the **Select/Set** switch, set the station to the tuning channel.
16. Use a signal generator to inject a 1 mV on-channel signal into the receiver antenna connector on the Junction Box.
17. Alternately adjust L10 and L11 on the Image Filter until Meter 2 indicates a maximum level.
18. Alternately adjust L1 on the Preselector and L11 on the Image Filter until Meter 2 indicates a maximum level.
19. Adjust L6 on the Preselector (L5 for *VHF stations*) until Meter 2 indicates a maximum level.

NOTE

Perform step 20 only if aligning a *VHF station*. Otherwise, proceed to Adjusting the Transmit Filter (Duplexer).

20. On *VHF stations* only, reinstall the RF Tray front panel.

Adjusting the Transmit Filter (Duplexer)

The following procedure is only performed for *UHF stations* equipped with the *Duplex Filter Option (C597, C675, or C677)*. This procedure aligns the prefilter and postfilter of the Duplex Filter.

The prefilter and postfilter are aligned for the tuning channel frequency (channel 0 / mode 0). By adjusting the prefilter and postfilter to the tuning channel, the station is tuned for all programmed frequencies.

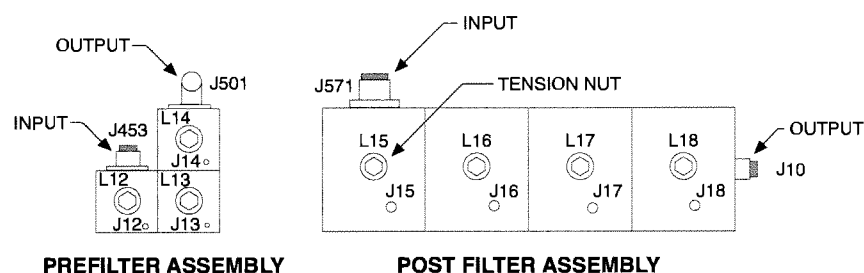
The prefilter and postfilter tuning screws are easily accessed within the station cabinet. The tuning screws are adjusted until the proper reading is obtained on the metering panel.

Alignment Procedures

CAUTION

Never attempt to adjust the Prefilter or Postfilter for the purpose of obtaining maximum station output power. Misalignment of other specifications may occur.

1. On the control tray, set the **Acc Dis/Reset** switch to **Acc Dis**.
2. Disconnect the PA input cable from the output of the Prefilter (J501). Refer to Figure 1-9 for the location of J501.



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Figure 1-9 **Duplexer Tuning Screws**

3. Connect a 50 Ω load to J501.
4. Set the signal generator to the transmitter tuning channel frequency.
5. Adjust the signal generator output to 0 dBm (225 mV).
If the Preselector is properly aligned, connect the signal generator to the transmit antenna connector on the Junction Box. Otherwise, connect the signal generator to the Postfilter output (J10).
6. Detune the Postfilter by turning L15 through L17 CCW until they extend approximately 1/2" from the tension nut.
7. Connect the tuning probe to J18 on the Postfilter.
8. Adjust L18 for maximum indication on the millivoltmeter.
9. Adjust L17 for minimum indication on the millivoltmeter.
10. Move the tuning probe to J17 on the Postfilter.
11. Adjust L16 for minimum indication on the millivoltmeter.
12. Move the tuning probe to J16 on the Postfilter.
13. Adjust L15 for minimum indication on the millivoltmeter.

14. Remove the IPA output cable from the Prefilter input (J453).
15. Connect a signal generator to the Prefilter input (J453).
16. Detune the Prefilter by turning L13 and L14 CCW until they extend approximately 1/2" from the tension nut.
17. Move the tuning probe to J12 on the Prefilter.
18. Adjust L12 for maximum indication on the millivoltmeter.
19. Adjust L13 for minimum indication on the millivoltmeter.
20. Move the tuning probe to J13 on the Prefilter.
21. Adjust L14 for minimum indication on the millivoltmeter.
22. Disconnect all test equipment.
23. Connect the PA input cable to the Prefilter (J501).
24. Connect the IPA cable to the IPA (J453).
25. Set the **Acc Dis/Reset** switch to the center (normal) position.

Forward/Reflected Power Trip Point Set

The following procedure is only performed for *trunked stations* or *data stations*. This procedure adjusts the forward and reflected power trip points to a user specified level.

This procedure requires adjustment of the station output power level, setting the trip point, and then readjusting the station for the appropriate output power level. The trip point value appearing in the **Status** display is a relative value. This value cannot be converted to the actual power level adjustment.

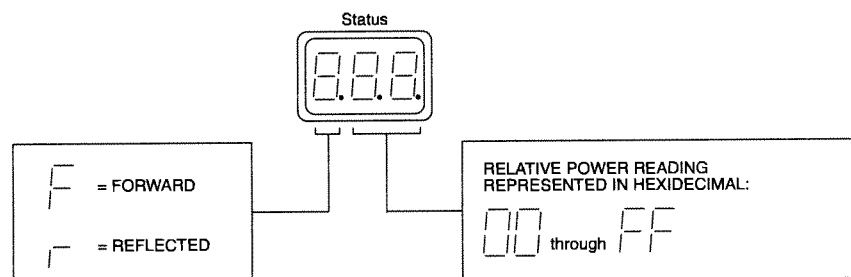
CAUTION

Do not attempt to enter or adjust the forward and reflected power trip set mode if a wattmeter is not present in the station (i.e., it is a conventional station). The codeplug may be corrupted which causes constant alarms.

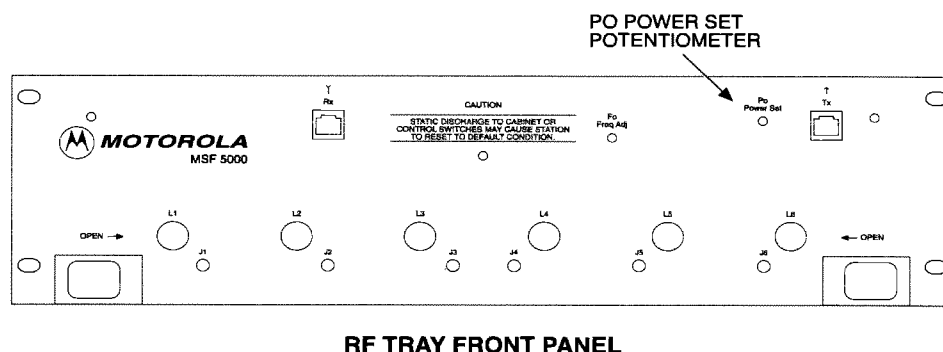
1. Connect the station transmit antenna connector on the Junction Box to a wattmeter terminated with a 50 Ω load.
Use a wattmeter capable of handling the full-rated station power.
2. Key the station by setting the LOC PTT MUXbus bit (A1/D1).
This may also be accomplished by grounding TP9 (or J812-4) on the SSCB.

Alignment Procedures

3. Set and hold the **Select/Set** switch to **Set**.
Be sure to hold this switch during step 4 and step 8.
4. Set the **PL Dis/Xmit** switch to **PL Dis**.
5. Set the **Acc Dis/Reset** switch to **Acc Dis**.
The **Status** display indicates "trP".
6. Release the **Select/Set** switch.
7. Set the **PL Dis/Xmit** and **Acc Dis/Reset** switches to the center (normal) position.
The first character of the **Status** display toggles between "F" (forward power) and "r" (reflected power), as shown in Figure 1-10.

MSF1088
022894JNMFigure 1-10 **Forward/Reflected Power Status Display Definitions****Forward Power Level Adjustment**

8. Use the tuning tool to set the power output to the desired forward power level trip point by adjusting **Po Power Set** potentiometer (R426).
This is typically set to 35% of the rated station power level. Refer to Table 1-4 through Table 1-6.
The **Po Power Set** potentiometer is part of the Uniboard and is accessed through the opening in the RF Tray front panel, refer to Figure 1-11. Turn the **Po Power Set** potentiometer CW to increase power out; turn it CCW to decrease power out.
9. With the transmitter keyed, set the **Select/Set** switch to **Select** when the first character of the **Status** display shows "F".
The second and third digits indicate the forward power level trip point. This value is represented in hexadecimal.



RF TRAY FRONT PANEL

NOTE: L1 - L6, J1 - J6 and Fo Freq Adj are not found on VHF models.
Access to these requires the removal of the front panel.

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Figure 1-11 **Po Power Adjustment**

Reflected Power Level Adjustment

10. Use the tuning tool to set the power output to the desired reflected power level trip point by adjusting the **Po Power Set** potentiometer.
The reflected power level trip point is typically set to 20% of the rated station power level. Refer to Table 1-4 through Table 1-7.
11. Toggle the **Select/Set** switch to **Select** when the first character of the **Status** display shows "r".
The second and third digits indicate the reflected power level trip point. This value is represented in hexadecimal.
12. Set the **Select/Set** switch to **Set** to exit the power trip point mode.
13. Deactivate all activated MUXbus bits.

RF Power Output Adjustment

The following procedure is divided into three parts:

- ☐ Overdrive Control
- ☐ Power Set Control
- ☐ Battery Cutback Control

The Overdrive Control is only performed on high power stations (i.e., containing two Power Amplifiers). This procedure adjusts the power cut-back if the output power level exceeds a predetermined level set by the user. The Overdrive Control (R453) adjustment is located on the Uniboard, and is accessed from the top of the RF Tray cover.

Alignment Procedures

Table 1-4 VHF Station Rated RF Power Levels

Model	with Duplexer (C182)	with Single Circulator (C265)	with Duplexer & Single Circulator (C182/C265)	Standard
C23CXB	3.5	4.5	3.0	6
C43CXB	15	20	12	25
C63CXB	45	60	35	75
C73CXB	75	100	60	125
C93CXB	n/a	300 (360)	n/a	350 (390)
C93CXB with 220 Vac 50 Hz	n/a	260 (340)	n/a	300 (380)

Notes: 1. All RF power levels are listed in Watts.
 2. All power levels are for 110 Vac/60 Hz stations, except where noted.
 3. RF power levels in parenthesis are Overdrive Power Levels.

Table 1-5 UHF Station Rated RF Power Levels

Model	with Option C675 or C182	with Option C597	with Option C676	with Option C677	Standard
C24CXB	4	3	3	3	6
C34CXB	10	8	9	8	15
C44CXB	30	22	25	20	40
C64CXB	55	40	45	40	75
C74CXB	85	60	70	55	110
C84CXB	140	n/a	n/a	n/a	225(285)
C84CXB with 220 Vac 50 Hz	125 (160)	n/a	n/a	n/a	200 (260)

Notes: 1. All RF power levels are listed in Watts.
 2. All power levels are for 110 Vac/60 Hz stations, except where noted.
 3. RF power levels in parenthesis are Overdrive Power Levels.

The Power Set Control (R426) adjusts the RF output power level of the station to the site specified level. The Power Set Control adjustment is located on the Uniboard, and is accessed from the RF Tray front panel.

The Battery Cutback Control (R409) adjusts the RF output power level of the station to 50% of the rated station output power level. This adjustment reduces the station output power level when the station reverts to battery back-up. The Battery Cutback Control adjustment is located on the Uniboard, and is accessed from the top of the RF Tray cover.

Table 1-6 800 MHz Station Rated RF Power Levels

Model	with Duplexer (TDF9680A)	with Triple Circulator (C676)	with Duplexer & Triple Circulator (C676/TDF9680A)	Standard
C45CXB	23	30	21	35
C65CXB	50	60	45	75
C85CXB	100 (150)	125 (180)	90 (130)	150 (220)
C85CXB with 220 Vac 50 Hz	85 (125)	110 (160)	75 (120)	125 (180)
Notes: 1. All RF power levels are listed in Watts. 2. All power levels are for 110 Vac/60 Hz, stations except where noted. 3. RF power levels in parenthesis are Overdrive Power Levels.				

Table 1-7 900 MHz Analog Plus Station Rated RF Power Levels

Model	with Duplexer (TDF6542A)	with Triple Circulator (C676)	with Duplexer & Triple Circulator (C676/TDF6542A)	Standard
C65GFB	50	60	45	75
C85GFB	100 (150)	125 (180)	90 (130)	150 (220)
C85GFB with 220 Vac 50 Hz	80 (125)	110 (160)	75 (120)	125 (180)
Notes: 1. All RF power levels are listed in Watts. 2. All power levels are for 110 Vac/60 Hz, stations except where noted. 3. RF power levels in parenthesis are Overdrive Power Levels.				

1. Connect the station transmit antenna connector on the Junction Box to a wattmeter terminated with a 50 Ω load.
Use a load capable of handling two times the rated station power.
2. Using tuning tool, rotate the **Po Power Set** potentiometer (R426) fully CCW, then CW 1/8 turn.
The **Po Power Set** potentiometer is accessed through the opening in the RF Tray front panel.

Alignment Procedures

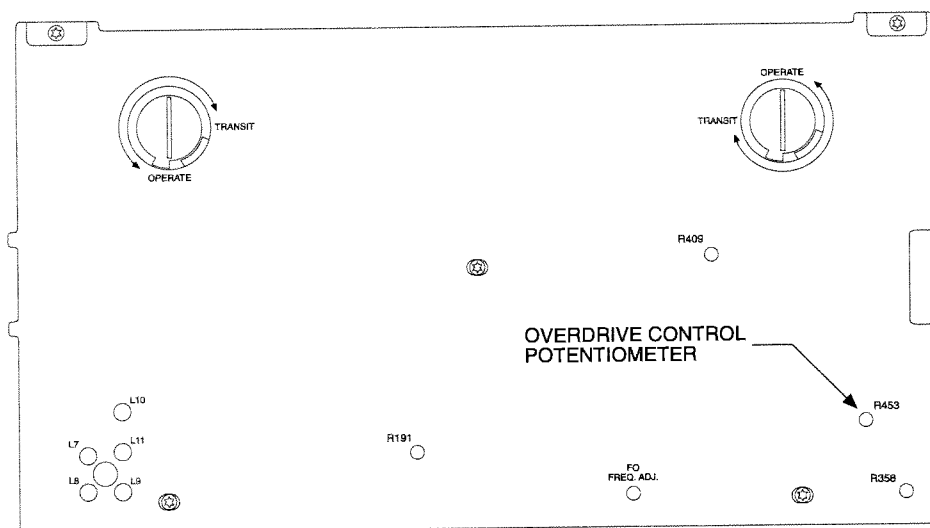
Overdrive Control

NOTE

Step 3 through step 8 only apply to *high power stations*, which contain two Power Amplifiers. Otherwise, proceed to Power Set Control.

3. Using the tuning tool, rotate the **Overdrive Control** potentiometer (R453) fully CW.

R453 is part of the Uniboard. Refer to Figure 1-12 for the location of the Overdrive control.



RF TRAY COVER

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Figure 1-12 **Overdrive Control Adjustment**

4. Key the station by setting the LOC PTT MUXbus bit (A1/D1) or by setting the **PL Dis/Xmit** switch to **Xmit**.
5. Using the tuning tool, adjust the **Po Power Set** control to obtain the overdrive power level.
The overdrive power level is shown in Table 1-4 through Table 1-7.
6. Using the tuning tool, adjust the **Overdrive Control** slowly CCW until the **PA Full** LED just turns off.
7. Dekey the station by clearing the LOC PTT MUXbus bit (A1/D1).
8. Using the tuning tool, adjust the **Po Power Set** potentiometer fully CCW, then CW 1/8 turn.

Power Set Control

9. Key the station by setting the LOC PTT MUXbus bit (A1/D1) or by setting the **PL Dis/Xmit** switch to **Xmit**.
10. Using the tuning tool, adjust the **Po Power Set** control to obtain the lowest of either the rated RF Station Power Level, the maximum level allowed by the FCC license, or the site specific power level. Refer to Figure 1-12.

NOTE

The rated RF station power level may not be the recommended site output power level.

11. Dekey the station by clearing the LOC PTT MUXbus bit.

Battery Cutback Control

NOTE

If the station is not equipped with a *Battery Revert Option (C28)*, proceed to step 19. Also, cutback must be programmed to happen while in battery revert mode. Refer to the RSS manual for additional information.

12. Disconnect the AC power cord from the Junction Box.
The station should continue to operate on battery backup.
13. Key the station by setting the LOC PTT MUXbus bit (A1/D1) or by setting the **PL Dis/Xmit** switch to **Xmit**.
14. Using the tuning tool, adjust the **CUTBACK** control to obtain 50% of the rated station power level.
The **CUTBACK** control (R409) is part of the Uniboard. Refer to Figure 1-13 for the location of the cutback control. Table 1-4 through Table 1-7 lists the rated station power level for each band.
15. Deactivate all activated MUXbus bits and disconnect all test equipment.
16. Apply AC power by connecting the AC power cord to the Junction Box.

Transmit Frequency Adjustment

The following procedure adjusts the Fo Freq Adj to fine tune the transmit frequency. It is assumed the station is programmed with the correct frequencies and hardware. Allow sufficient time for the external reference to warm-up prior to performing this procedure.

Alignment Procedures

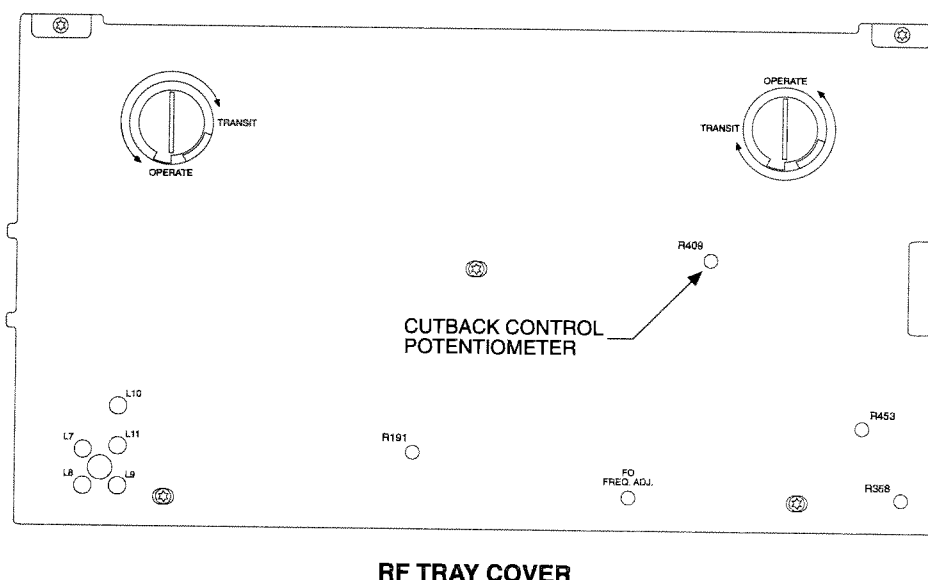


Figure 1-13 Cutback Control Adjustment

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For 900 MHz Analog Plus stations, an High Stability Oscillator (HSO) or an external reference is required. For all other bands, an HSO or an external reference is not required, but optional.

The Fo Freq Adj potentiometer is located on the Uniboard. For VHF stations, the Fo Freq Adj is accessed from the top of the RF Tray cover. For all other bands, the Fo Freq Adj is accessed from the RF Tray front panel.

NOTE

A minimum warmup time of 60 minutes is required if the station is a 900 MHz Analog Plus station or if it is equipped with a High Stability Oscillator Option (C573). Otherwise, ensure that the frequency reference device is fully warmed up.

1. On 900 MHz Trunking stations or stations equipped with the External Reference Option (C574), apply the site high stability 5 MHz reference signal to the external reference connector on the Junction Box.
2. Adjust U1 on the reference synthesizer board for 1.5 +/- 0.1 Volts at TP1.
3. Set the **Acc Dis/Reset** switch to **Acc Dis**.
4. If necessary, attenuate the transmitted RF signal from the station to the frequency measuring device.

5. Key the station by setting the LOC PTT MUXbus bit (A1/D1) or by setting the **PL Dis/Xmit** switch to **Xmit**.
6. Measure the transmitter carrier frequency.

NOTE

If the station contains an *External Reference Option* (C574) or a *High Stability Oscillator Option* (C573), and the frequency is out of alignment, refer to the appropriate alignment procedure. Otherwise proceed to step 8.

7. If necessary, adjust the **Fo Freq Adj** warp control to set the measured transmit frequency to the nominal station transmit frequency.
*For UHF, 800 MHz, and 900 MHz Analog Plus stations, the **Fo Freq Adj** warp control is located on the RF Tray front panel. For VHF stations, the **Fo Freq Adj** warp control is accessed through the top cover of the RF Tray. Refer to Figure 1-14 for the location of the **Fo Freq Adj**.*
8. Dekey the station by clearing the LOC PTT MUXbus bit (A1/D1).
9. Set the **Acc Dis/Reset** switch to the center (normal) position.

I-F AGC Threshold Adjustment

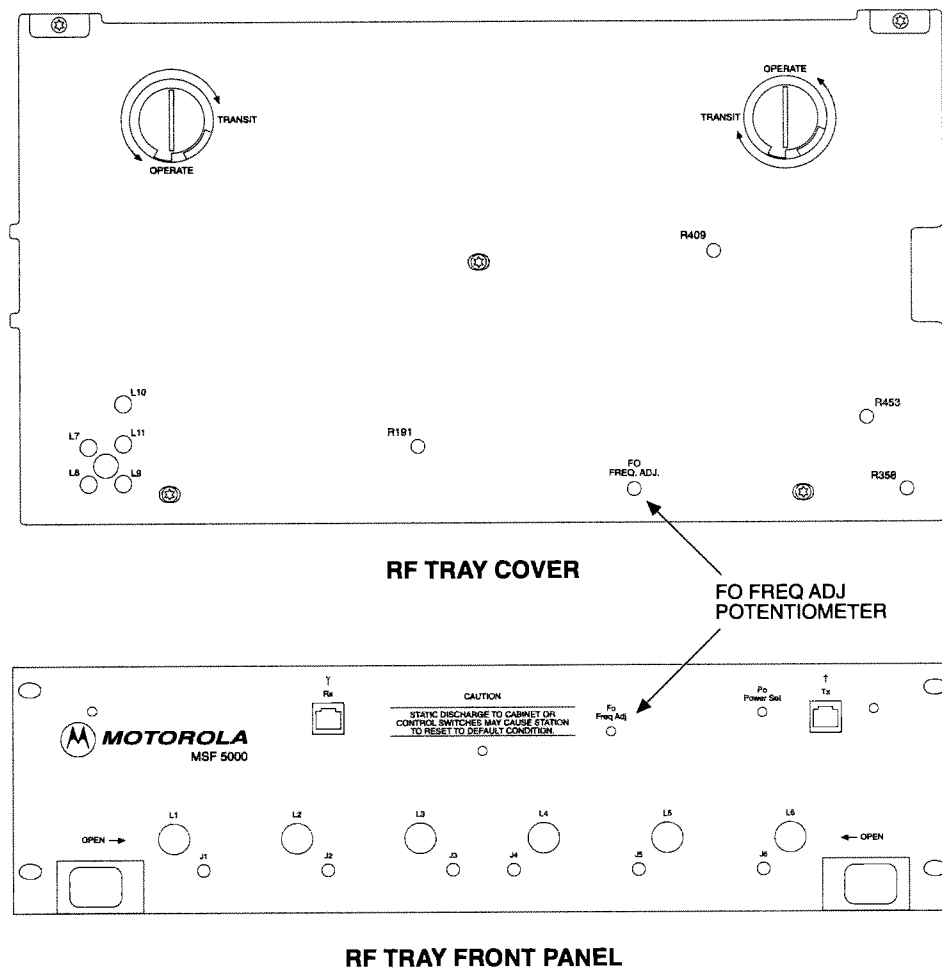
The following procedure is only performed on *800 MHz and 900 MHz Analog Plus stations*. This procedure adjusts the I-F AGC Threshold.

This adjustment is performed by the tuning channel frequency (channel 0/ mode 0). This allows the station to be tuned for all programmed frequencies.

The I-F AGC Threshold adjustment (**R191**) is located on the Uniboard, and is accessed from the top of the RF Tray cover.

1. Set the **Acc Dis/Reset** switch to **Acc Dis**.
2. Using the **Select/Set** switch, set the station to the tuning channel.

Alignment Procedures



NOTE: L1 - L6, J1 - J6 and Fo Freq Adj are not found on VHF models.
Access to these requires the removal of the front panel.

NOTE: For UHF, 800 MHz and 900 MHz models, the Fo Freq Adj is accessed at the RF Tray Front Panel. For VHF models, the Fo Freq Adj is accessed at the RF Tray Cover.

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Figure 1-14 Fo Freq Adj Control

3. Inject an on-channel 1000 μ V signal, modulated with a 1 kHz tone at 60% of full station deviation into the receiver connector on the Junction Box.

Station deviation settings are listed in Table 1-8.

Table 1-8 Deviation Settings

Deviation Adjustment	Frequency Range		
	VHF,UHF, and 800 MHz (kHz)	866-869 MHz (kHz)	900 MHz Analog Plus (kHz)
100% Full Station Deviation	5	4	2.5
Maximum Station Deviation	4.6	3.7	2.3
60% Full Station Deviation	3	2.4	1.5
40% Full Station Deviation	2	1.6	1.0
Simulcast Data Deviation	0.85	0.7	0.5
Trunked Data Deviation	0.85	0.7	0.5
Failsoft Data Deviation	1	0.8	0.7
Coded Deviation (+/-) 200 Hz, using a 1 kHz square wave	3.9	2.3	N/A
Note: All deviation measurements and settings must be within +/- 100 Hz except where noted.			

4. Using a digital voltmeter, adjust **R191** for 0.60 Vdc between NORM ENV (TP13 or HY804-13 on the SSCB) and AGC REF (TP12 or HY804-10 on the SSCB).

Refer to Figure 1-15 for the location of R191 on the Uniboard and Figure 1-16 for the location of NORM ENV and AGC REF on the SSCB.

5. Remove the injected signal from the receiver connector on the Junction Box.
6. Set the **Acc Dis/Reset** switch to the center (normal) position.

Modulation Compensation Adjustment

The following procedure adjusts the modulation compensation circuit on the Uniboard. This adjustment is performed by using the tuning channel frequency (channel 0 / mode 0). This allows the station to be tuned for all programmed frequencies.

While in the tuning channel, a 10 Hz waveform should appear whenever the station is keyed via a local push-to-talk (LOC PTT). This gives the technician a

Alignment Procedures

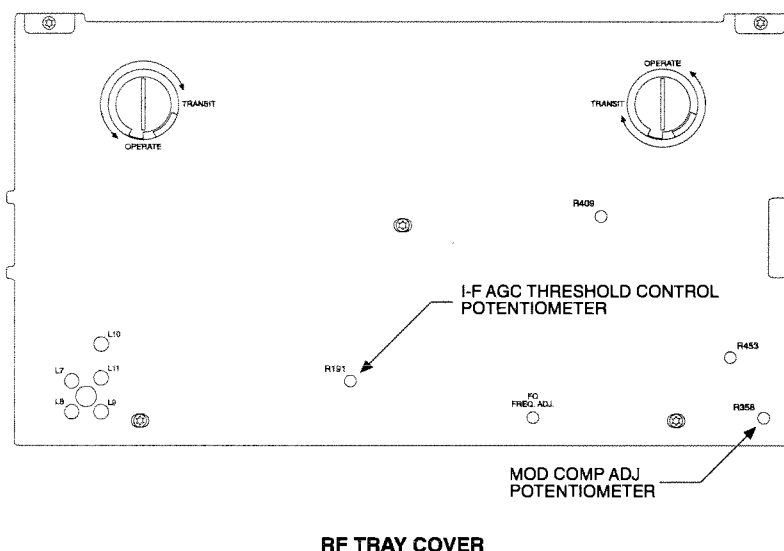
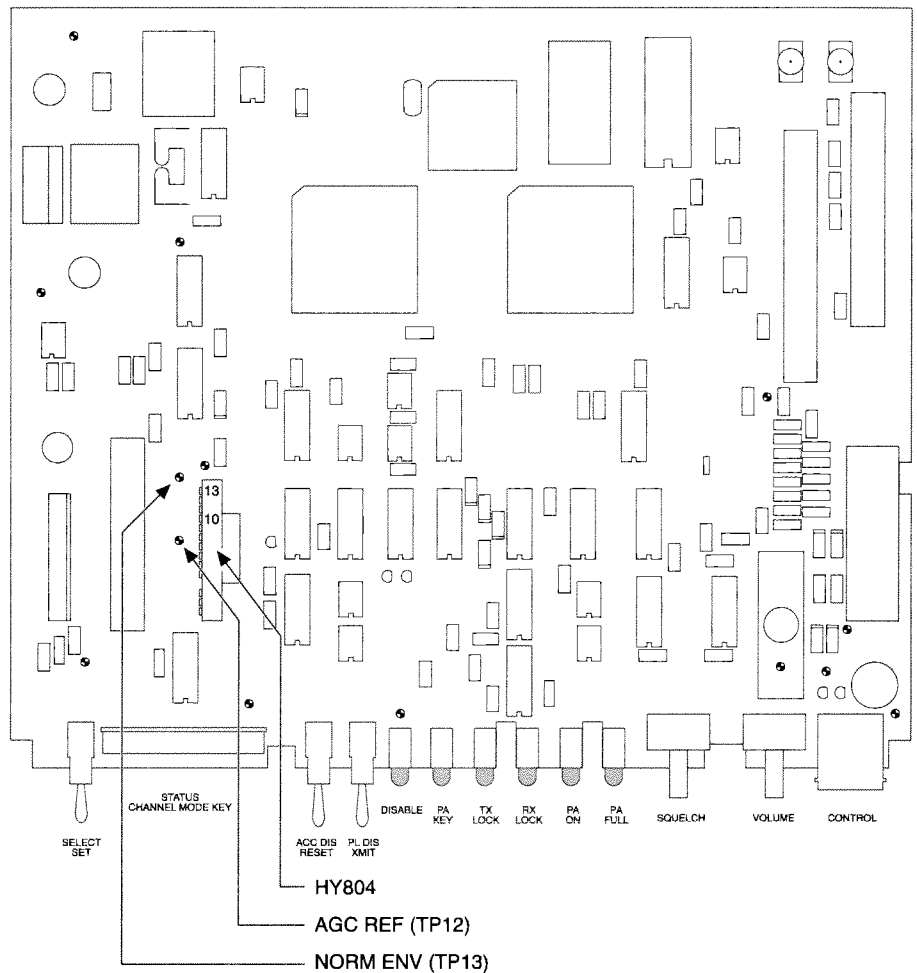
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Figure 1-15 I-F AGC Threshold Control

good reference waveform to use to tune and verify proper modulation compensation operation.

The modulation compensation adjustment (**R358**) is located on the Uniboard, and is accessed from the top of the RF Tray cover.

1. Set the **Acc Dis/Reset** switch to **Acc Dis**.
2. Using the **Select/Set** switch, set the station to the tuning channel.
3. Key the station by setting the LOC PTT MUXbus bit (A1/D1).
4. Monitor the transmitter waveform. The waveform should consist of a 10 Hz square wave, as shown in Figure 1-17.
5. Examine the waveform for straight long transitions, however, a slight slant is acceptable.
If adjustment is required continue with step 6, otherwise, proceed to step 8.
6. Adjust **R358** for the best 10 Hz square wave.
R358 is part of the Uniboard and is accessed through the RF Tray cover, as shown in Figure 1-15.
7. Dekey the station by clearing the LOC PTT MUXbus bit (A1/D1).
8. Set the **Acc Dis/Xmit** switch to the center (normal) position.

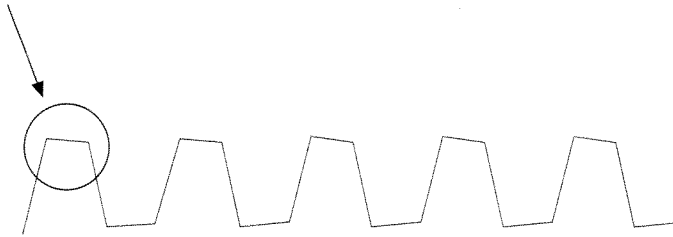
MSF1023
021594J/NMFigure 1-16 ***NORM ENV and AGC REF Measurement Points***

Trunked Data Deviation Adjustment

The following procedure is only performed for *trunked stations*. For optimum performance, perform this procedure with the Central Controller to allow the adjustment to be made with the disconnect word. The disconnect word is equal in deviation to TDATA. The station should not enter failsoft mode during this adjustment.

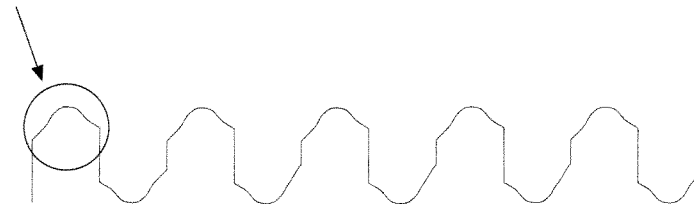
Alignment Procedures

NOTE SHARPNESS
OF EDGES OF LONG
TRANSITIONS



CORRECT WAVEFORM

NOTE ROUNDED
EDGES OF LONG
TRANSITIONS



INCORRECT WAVEFORM

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Figure 1-17 Modulation Compensation Waveform

NOTE

Proceed to Transmitter Maximum Deviation
Adjustment if this is not a *trunked station*.

1. If a Trunked Radio Central Controller is available proceed to step 3.

NOTE

Perform step 2 only when a Central Controller is not available (i.e., lab or depot). Once the station is installed back into the system, perform the entire procedure again for optimum performance.

2. Inject a 150 Hz tone at 0.9 Vrms (closed circuit level) with 600 Ω termination across pins 4 (-) and 12 (+) of the trunking connector J2901 on the TTRC board. Proceed to step 5.

This simulates a trunking data (TDATA) signal to perform this alignment procedure. Refer to Figure 1-18 for the location of the trunking connector J2901.

The **Fail Soft** LED should not be illuminated.

3. Connect an operational Trunked Radio Central Controller to the station.

This allows the station that is being aligned to receive trunked data (TDATA) from the Trunked Radio Central Controller.

The **Fail Soft** LED should not be illuminated.

4. Verify the station being aligned is disabled from the Trunked Radio Central Controller.

This is accomplished by pressing the Transmit Interface Board (TIB) disable switch on the Trunked Radio Central Controller for the channel being adjusted.

5. Key the station by setting the LOC PTT MUXbus bit (A1/D1).

6. Monitor the transmitted deviation level.

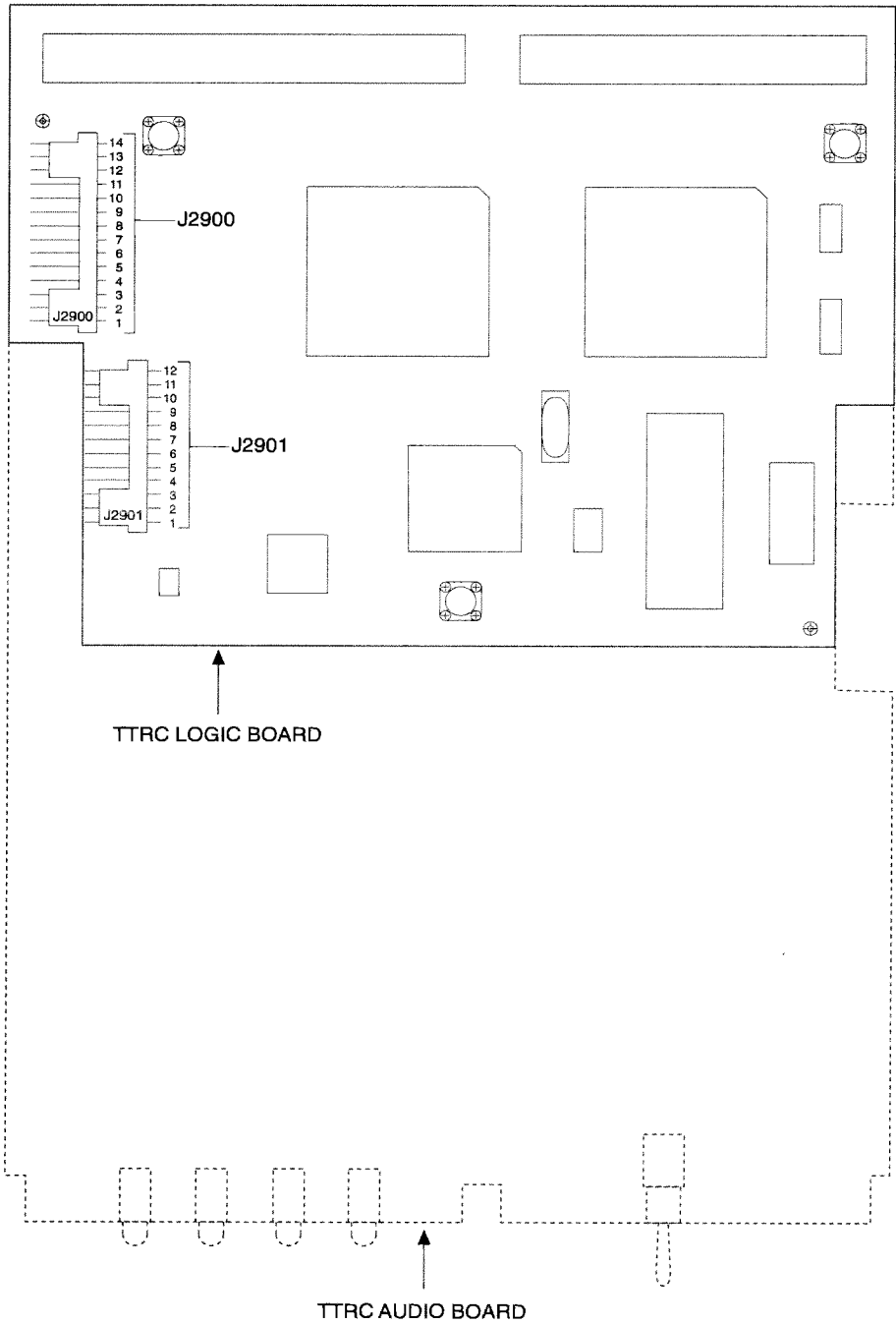
7. Measure the Trunked Data Deviation level and compare it to the requirements of Table 1-8.

If the level is out of adjustment, set it by adjusting EEPOT b. Refer to the Instruction manual for additional information on adjusting EEPOTs.

If the station contains the *Simulcast Operation Option (C777)*, measure the simulcast data deviation. EEPOT b is used to adjust the simulcast deviation. Refer to the Simulcast procedure at the end of this chapter for additional information.

8. Dekey the station by clearing the LOC PTT MUXbus bit (A1/D1).

Alignment Procedures



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Figure 1-18 TTRC Logic Board Showing J2901

NOTE

If the adjustments cannot be made within ± 100 Hz, refer to the Troubleshooting chapter of the Instruction manual.

Transmitter Maximum Deviation Adjustment

The following procedure adjusts the maximum deviation for the transmitter. This adjustment is required to keep the station within local regulatory agency standards by preventing interference with adjacent channels.

To accurately perform this procedure, make sure all transmitted data is present (e.g., PL, DPL, Connect Tone, TDATA, etc.). Do not use the **Xmit** switch because it strips the PL and other transmitted data from the transmitted signal.

NOTE

Each channel must have the Maximum Deviation measured and set individually, since this level is channel slaved. It is not necessary to check the tuning channel deviation levels.

1. Inject a 1 kHz tone, at 1 Vrms closed circuit level, into the **MIC AUDIO** connector on the front panel or into TP8 on the SSCB. This is a 600 Ω input. Refer to Figure 1-19 for the location of TP8.
2. Set the **Acc Dis/Xmit** switch in **Acc Dis** to prevent the station from keying during this procedure.
3. Set the station to channel 1 if the station has multiple channels.
4. Key the station by setting the LOC PTT MUXbus bit (A1/D1).

NOTE

If this is a *trunked station* or if the station is equipped with PL or DPL coded squelch, the transmit signal consists of Mic Audio summed in with TDATA or the coded squelch signal. DO NOT use the **PL Dis/Xmit** switch to key the station; doing so strips the TDATA and coded squelch signals from the transmitted signal and gives a false deviation reading.

5. Measure the Maximum Station Deviation level and compare it to the requirements in Table 1-8.

Alignment Procedures

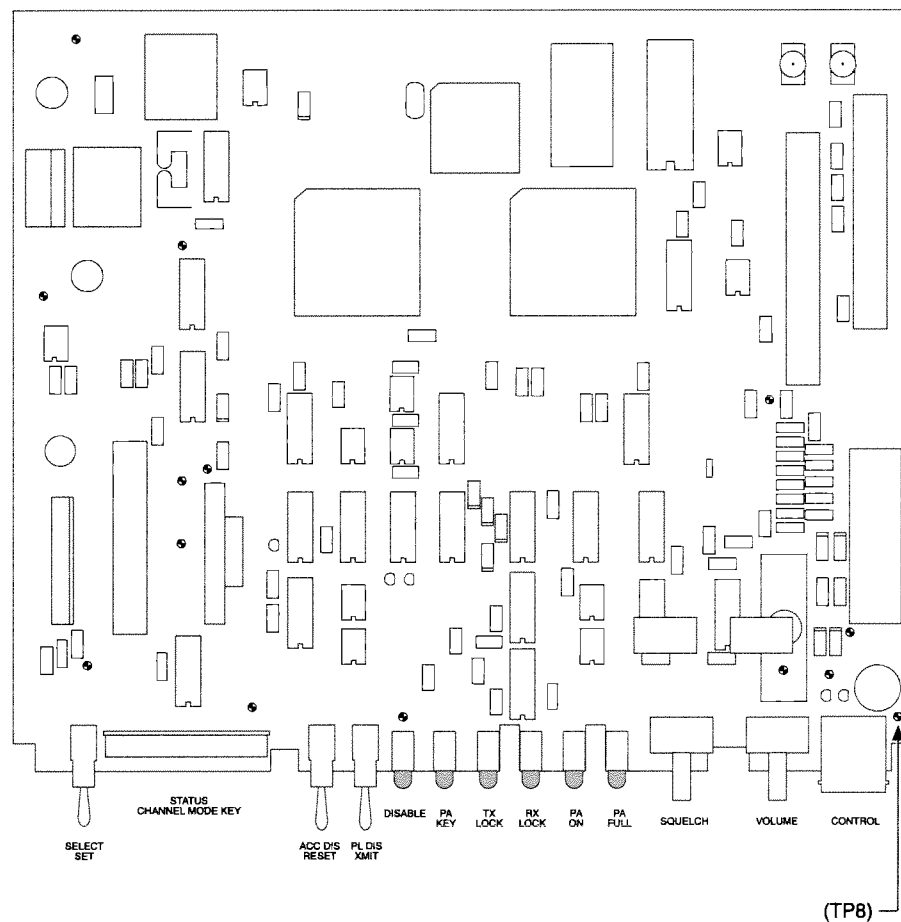
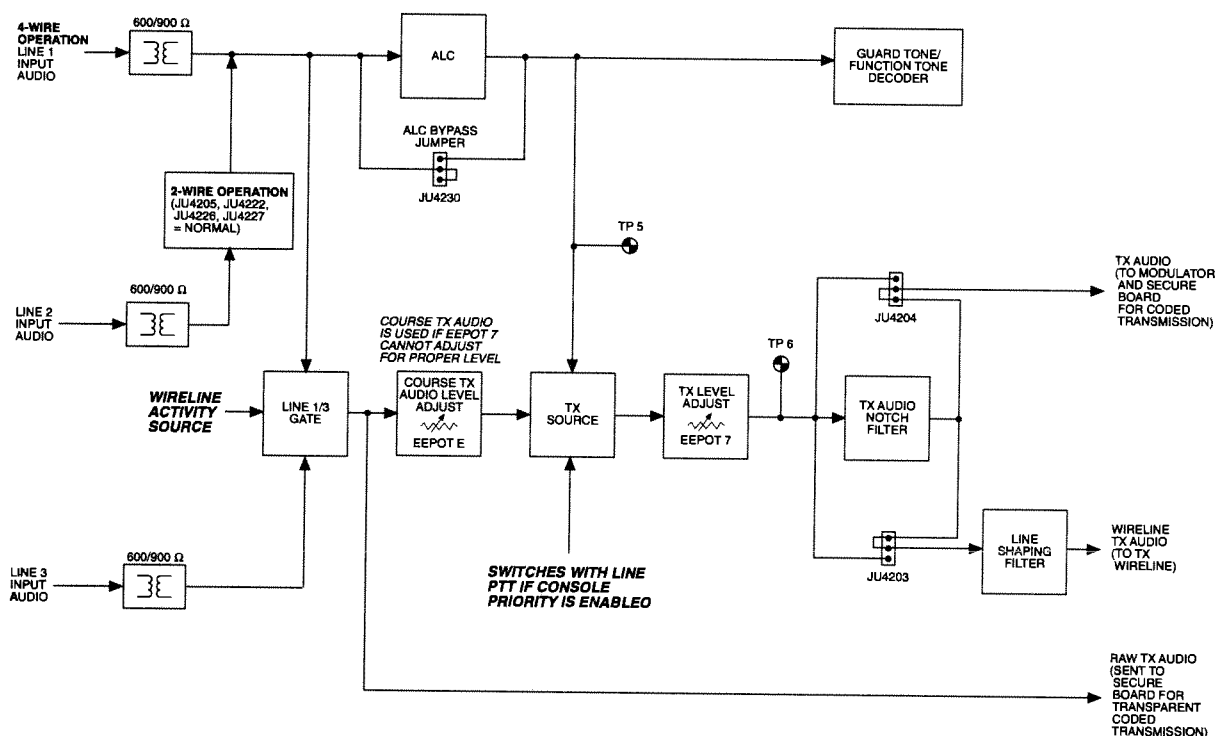
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Figure 1-19 SSCB Showing TP8

6. If the level is out of adjustment, set it by adjusting EEPOT 4.
Refer to the Operation chapter of the Instruction manual for additional information on adjusting EEPOTs.
7. If the station has multiple channels (excluding channel 0) perform steps 4 through 6 for each one.
8. Dekey the station by clearing the LOC PTT MUXbus bit (A1/D1).
9. Set the Acc Dis/Xmit switch to the center (normal) position.

Transmitter Wireline Audio Adjustment

This procedure adjusts the transmitter wireline audio level. When performing this procedure for Tone Remote Control, there are two different paths the transmit audio can take via Line 1 (ALC path) or Line 3 (non-ALC path). For conventional stations, the default is Line 1. For *trunked stations*, the default is Line 3. The only path the audio can take via Line 3 is the non-ALC path. Refer to Figure 1-20 for a block diagram of the ALC circuitry.



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Figure 1-20 ALC Circuitry Block Diagram

For adjusting transmit audio via the ALC path, the standard HLG/FT/LLGT sequence should be followed for the ALC circuitry to adjust accordingly.

For adjusting transmit audio via the non-ALC path, a 1 kHz tone should be used. There is also a course level adjustment via EEPOT E which compensates for a higher or lower levels of audio. There are four different settings for this EEPOT. EEPOT E should only be used if the level for EEPOT 7 could not be met for audio through the non-ALC path.

For Console Priority Option (C115), the console is connected to Line 1 or Line 2 depending on the wireline setting. The trunking phone interconnect audio is connected to Line 3 and Line 4. The value of EEPOT 7 has two values, one for interconnect audio and one for console audio. EEPOT 7 must be aligned twice in this configuration.

Alignment Procedures

For DC remote control, the audio is always routed through the non-ALC path.

When the TTRC Audio board is jumpered for a four-wire system, the transmit wireline interface is across Line 1 (+) and Line 1 (-) on the Junction Box screw terminal strip. The receive wireline interface is across Line2 (+) and Line2 (-).

When the TTRC Audio board is jumpered for a two-wire system, the transmit/receive wireline interface is across Line 2 (+) and Line 2 (-) on the Junction Box screw terminal strip.

For two and four-wire systems, these connections are 600 Ω balanced inputs, unless otherwise jumpered for 900 Ω balanced inputs.

NOTE

If the station is a *trunked station without the Console Priority Option (C115)* or is configured for *DC remote control*, proceed to the DC Remote Control/Trunking Adjustment.

If this is a *trunked station with the Console Priority Option (C115)*, proceed to the Trunking/Console Priority Adjustment.

Tone Remote Control Adjustment

1. Using RSS, determine if the transmit audio is being routed to the modulator via the ALC circuit.
 - ☐ **Transmit source = ALC** - Key the station using a High Level Guard Tone (HLGT)/Function Tone (FT) sequence. This allows the ALC circuit to be properly set. Proceed to step 2.
 - ☐ **Transmit source = non-ALC** - Key the station via a LIN PTT (A1/D2). Proceed to step 4.
2. Set HLGT, FT, LLGT, and the 1 kHz tone to the levels expected from the console, in the following relative relationship:
 - ☐ HLGT to 0 dBm
 - ☐ FT to -10 dBm
 - ☐ LLGT to -30 dBm
 - ☐ Average audio (1 kHz tone @ -6 dBm)

NOTE

These recommended levels are intended for co-located consoles which do not have phone line loss. If other levels are required due to phone line loss, the same relative relationship of signal levels should be maintained.

CAUTION

Do not key the station via RSS or by setting the LIN PTT MUXbus bit since these methods do no set ALC correctly.

3. Inject an HLGT/FT sequence followed by a 1 kHz tone with LLGT across the appropriate transmit wireline terminals, using a console or service monitor.
Line 1 +/- for four-wire systems or Line 2 +/- for two-wire systems.
The station should be keyed. Proceed to step 6.
4. Inject a 1 kHz tone across the appropriate transmit wireline terminals at a level matching average audio (-6 dBm), or other levels relative to peak input level.

NOTE

The recommended level is intended for co-located consoles which do not have phone line loss. If other levels are required due to phone line loss, the same relative relationship of signal levels should be maintained.

5. Key the station by setting the LIN PTT MUXbus bit (A1/D2).
6. Set and hold the **PL Dis/Xmit** switch to **Xmit** during step 7.
This strips any data from being summed with the transmit audio.
7. Adjust transmit audio level via EEPOT 7 until the transmitted deviation level reaches 60% full station deviation, as indicated in Table 1-8.
8. Adjust EEPOT E if the level cannot be set via EEPOT 7 alone.
9. Exit the EEPOT adjust mode.
Refer to Operation chapter of the Instruction manual for additional information relating to the EEPOT adjust mode.

Alignment Procedures

10. Remove the test tones.

DC Remote Control/Trunking Adjustment**NOTE**

The following procedure applies only if the station is configured for *DC remote control* or is configured as a *trunked station*. Otherwise, proceed to the Receiver Level Adjustment.

1. Inject a 1 kHz tone at the average audio (6 dB below peak audio) phone line level into the transmit wireline interface on the Junction Box.
Line 1 +/- for four-wire systems or Line 2 +/- for 2-wire systems.
2. If this is *not a trunked station*, gate the wireline audio to the transmitter by setting the LIN PTT MUXbus bit (A1/D2).
For trunked stations, key the transmitter with a trunked PTT by disconnecting the trunking cable from connector J3 on the Junction Box.
Key the transmitter by connecting a jumper wire jumper from J2901-8 (TKG PTT) to J2901-1 (LOGIC GND) on the TTRC logic board.
3. Enter the EEPOT adjust mode.
Refer to the Operation chapter of the Instruction manual for additional information relating to the EEPOT adjust mode.
4. Set and hold the **PL Dis/Xmit** switch to **Xmit** for step 5.
This strips any data from being summed with the transmit audio.
5. Adjust the TX Audio Level (EEPOT 7) until the transmitted deviation level reaches 60% full station deviation as indicated in Table 1-8.
6. Release the **PL Dis/Xmit** switch and remove all tones from the wireline.
7. Clear the LIN PTT MUXbus bit (A1/D2) or the trunked PTT jumper.

Trunking/Console Priority Adjustment**NOTE**

The following procedure applies only to a *trunked station with the Console Priority Option (C115)*. Otherwise, proceed to the Receiver Level Adjustment.

1. Set HLGT, FT, LLGT, and the 1 kHz tone to the expected input levels:
 - HLGT to 0 dBm.
 - FT to -10 dBm

- LLGT to -30 dBm
- 1 kHz tone to -6 dBm (average audio)

NOTE

These recommended levels are intended for co-located consoles which do not have phone line loss. If other levels are required due to phone line loss, the same relative relationship of signal levels should be maintained.

CAUTION

Do not key the station via RSS or by setting the PTT MUXbus bit since these methods do not set ALC correctly.

2. Inject an HLGT/FT sequence followed by a 1 kHz tone with LLGT across the appropriate transmit wireline terminals, using a console or service monitor.
Line 1 +/- for four-wire systems or Line 2 +/- for two-wire systems.
3. Set and hold the **PL Dis/Xmit** switch to **Xmit** during step 4.
This strips any data from being summed with the transmit audio.
4. Adjust transmit audio level via EEPOT 7 until the transmitted deviation level reaches 60% full system deviation, as indicated in Table 1-8.
Refer to Operation chapter of the Instruction manual for additional information relating to the EEPOT adjust mode.
5. Remove the LLGT and 1 kHz test tone.
6. Inject a 1 kHz tone at the average audio phone line level (i.e., 6 dB below peak audio) through the wireline into the Line 3 input on the system connector of the Junction Box.
7. If this is a *trunked station*, disconnect the trunking cable from Junction Box connector (J3).
8. Key the transmitter by connecting a jumper wire jumper from J2901-8 (TKG PTT) to J2901-1 (LOGIC GND) on the TTRC logic board.
9. Set and hold the **PL Dis/Xmit** switch to **Xmit** during step 11.
This strips any data from being summed with the transmit audio.
10. Scroll completely through the EEPOT numbers once, and then back to EEPOT 7.

Alignment Procedures

11. Adjust EEPOT 7 until the transmitted deviation level reaches 60% full system deviation as indicated in Table 1-8.
If the deviation level could not be set, adjust EEPOT E to select the appropriate range (0 through 3) of EEPOT 7. Repeat step 11.
12. Remove the test tone.
13. Release the **PL Dis/Xmit** switch.

Receiver Level Adjustment

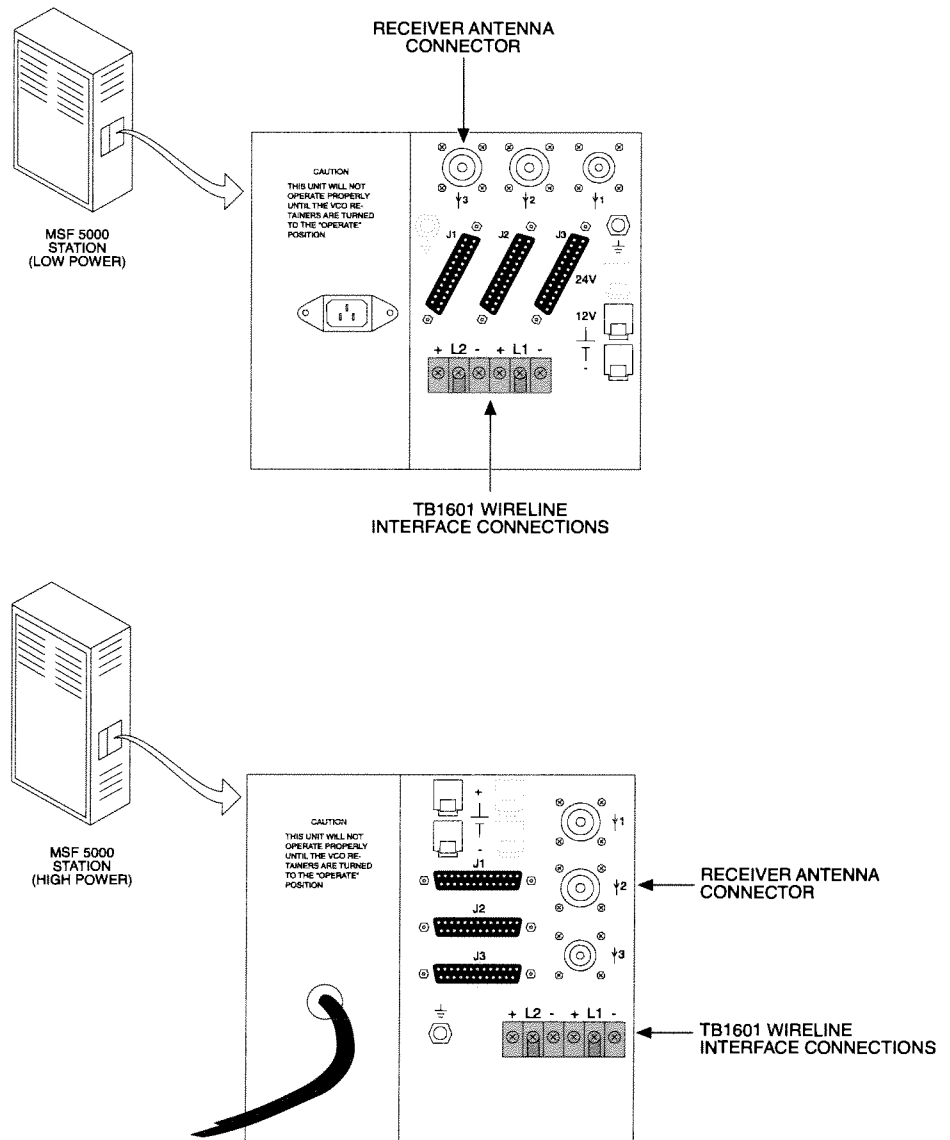
The following procedure adjusts the receiver level deviation for the repeater mode of operation. For stations configured as base stations, a relative level can be measured on the SSCB which is equivalent to the repeater deviation level. For stations containing the *Spectra-TAC/DIGITAC Encoder Option (C269)*, the receiver level should be adjusted during in-cabinet repeat operation.

1. Inject a 1mV RF receive signal, modulated with a 1 kHz tone at 40% full station deviation, as indicated in Table 1-8, into the receiver antenna connector on the Junction Box.
Refer to Figure 1-21 for the antenna connector locations.
2. Set the R1 PL DT MUXbus bit (A3/D2).

NOTE

Steps 3 through step 9 apply only to stations configured as repeaters. If the station is configured as a base station (half-duplex with antenna relay or full-duplex base station) or is a *trunked station* with a *Spectra-TAC/DIGITAC Encoder Option (C269)*, proceed to step 10.

3. If this is a *trunked station*, disconnect the trunking cable from Junction Box connector (J3).
4. Key the transmitter by connecting a jumper wire jumper from J2901-8 (TKG PTT) to J2901-1 (LOGIC GND) on the TTRC logic board.
Refer to Figure 1-22 for the connection locations.
5. Set and hold the **PL Dis/Xmit** switch to **Xmit** to strip off any TDATA or PL/DPL.
6. Verify the transmitted deviation level is at 60% full station deviation as indicated in Table 1-5.
This setting provides +3.5 dB of repeater gain. If this level is out of adjustment, set it by adjusting EEPOT 5.
If unity gain is desired, set for 40% full system deviation.



NOTE: Dashed components (24V connection and ground) are used on VHF models only.

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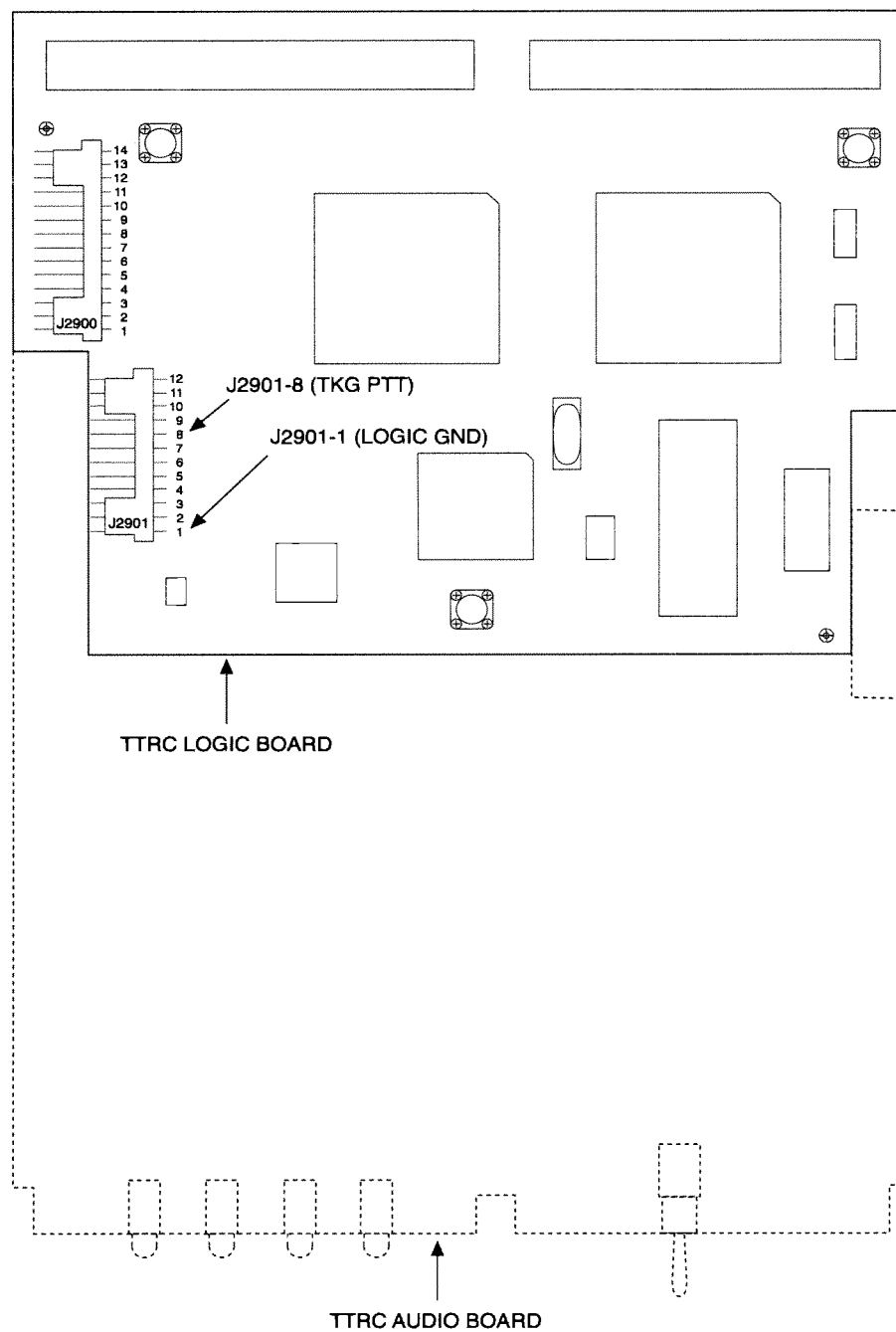
Figure 1-21 Junction Box Antenna Connections

NOTE

Step 7 through step 9 only apply to 900 MHz Analog Plus stations.

7. Select EEPOT 1 to enable *Flutter Fighter*.
8. Set and hold the PL Dis/Xmit switch to *Xmit*.

Alignment Procedures

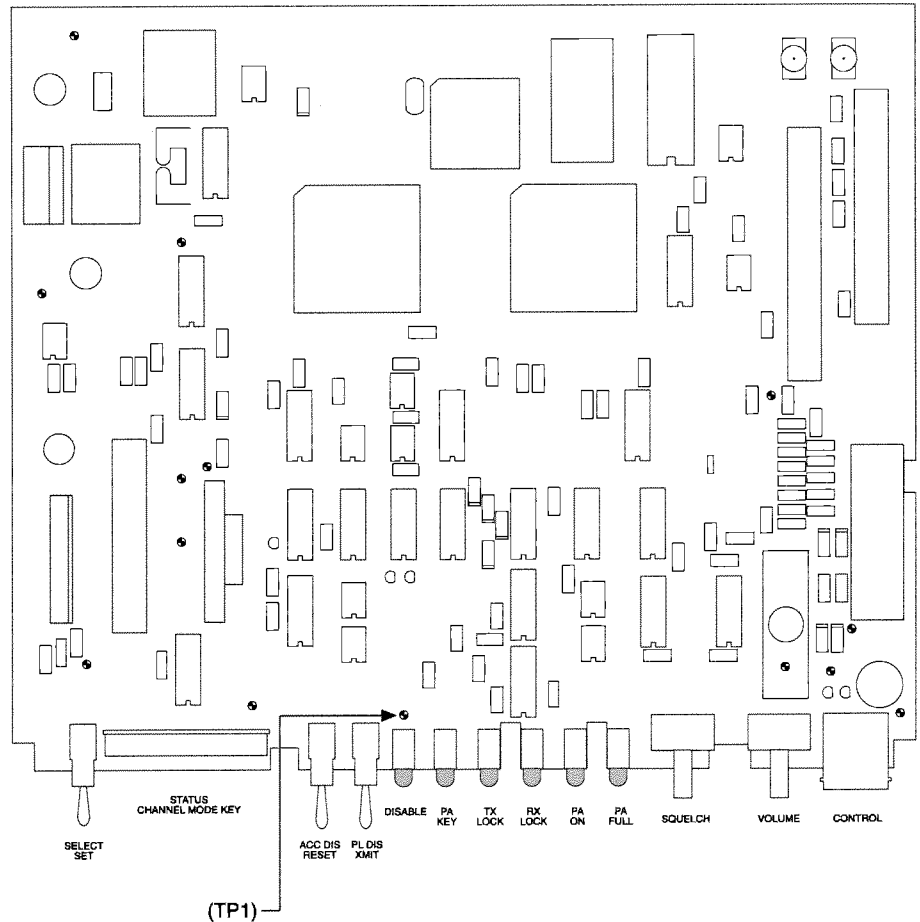
MSF1042
022494JNMFigure 1-22 *TTRC Logic Board*

9. Verify the transmit deviation level is at 60% full system deviation as indicated in Table 1-8. If not, adjust EEPOT 1.

NOTE

Perform step 10 only if the station is configured as a base station.

10. For base stations, verify 350 ± 50 mVac is measured at TP1 on the SSCB, as shown in Figure 1-23. If not, adjust EEPOT 5.



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Figure 1-23 SSCB Showing TP1

Alignment Procedures**NOTE**

Step 11 and step 12 only apply to 900 MHz *Analog Plus* stations with the *Spectra-TAC/DIGITAC Encoder Option (C269)* or an antenna relay.

11. For *Analog Plus* stations equipped with a *Spectra-TAC/DIGITAC Encoder Option (C269)* or an antenna relay, select EEPOT 1 to enable the *Flutter Fighter*.
12. Verify the AC voltage at TP1, on the SSCB is 350 ± 50 mVac as shown in Figure 1-23. If not, adjust EEPOT 1.
13. Dekey the station, deactivate any activated MUXbus bits, connect any disconnected cables, and remove any jumper wires that were installed.

Receiver Wireline Audio Adjustment

The following procedure adjusts the receiver wireline audio level for Line 2 and Line 4. The desired audio level is dependent upon the system configuration. If the station is configured for *Spectra-TAC/DIGITAC Encoder Option (C269)*. Proceed directly to the High/Low End Adjustment to compensate for line loss.

NOTE

Perform this procedure only if the station is NOT equipped with a *Spectra-TAC/DIGITAC Encoder Option (C269)* to be used in a voting system. If voting will be used, proceed to the High/Low End Adjustment.

1. Inject a 1mV RF receive signal, modulated with a 1 kHz tone at 60% full station deviation into the receiver antenna connector on the Junction Box. Refer to Table 1-8.
2. Set the **PL Dis/Xmit** switch to **PL Dis**.
3. Verify the receive audio between Line 2 (+) and Line 2 (-) on the Junction Box screw terminal strip is at the desired phone line level.
The typical phone line level is from 0 dBm to -10 dBm.
If not, set it by adjusting EEPOT C.

NOTE

If the station is a *trunked station* with a *Console Priority Option (C115)* installed, continue with step 4. Otherwise, proceed to step 5.

4. Verify the receive audio at Line 4 on the system connector is at the desired phone line level.
The typical phone line level is from 0 dBm to -10 dBm.
If not, set the desired level by adjusting EEPOT d.
5. Deactivate all activated MUXbus bits.
6. Set the **PL Dis/Xmit** switch to the center (normal) position.

Decoded Receive Audio Adjustment

The following procedure adjusts the decoded receive audio level for stations containing the *Secure Encryption Option (C331, C388, C794, C795, or C797)*. Before performing this procedure, make sure the level of Line 2 is adjusted to the same relative level (0 dB) as the clear receive audio level.

NOTE

The Line 2 level must be adjusted before performing this procedure.

1. Inject a 1mV RF receive signal, modulated with a secure (digitally encrypted) 1 kHz tone at 3.9 kHz deviation into the receiver antenna connector on the Junction Box.

NOTE

The encryption source must be programmed with the same encryption key as the station. Refer to the Operation chapter of the Installation manual for additional information.

2. Verify the outbound receiver audio between Line 2 (+) and Line 2 (-) is 0 dB relative to the clear wireline audio level.
The clear wireline audio level setting was set up in the Receive Wireline Audio Adjustment procedure or the maximum allowable phone line level, whichever is less. If not, adjust EEPOT 0.
3. Remove the RF signal from the antenna connector on the Junction Box.

Alignment Procedures

Squelch Adjustment

The following procedure adjusts the repeater and receiver squelch levels. If the station is configured for *Spectra-TAC/DIGITAC Option (269)* or to generate status tone, proceed directly to the High/Low End Adjustment.

The repeater squelch level is typically set for an RF level corresponding to 15 dB SINAD. The receiver squelch level is typically set for an RF level corresponding to 12 dB SINAD (15 dB SINAD for *trunked stations*). The RF level is measured at the SPEAKER AUDIO on the front panel connector. Both squelch levels can be set to the levels corresponding to system requirements.

For *trunked stations*, the repeater squelch potentiometer (EEPOT 2) is set to 00.

NOTE

If the station is configured to generate status tone and is not used for voting purposes, proceed to Status Tone Adjustment.

If the station is used for voting purposes, proceed to High/Low End Adjustment.

1. Set the PL Dis/Xmit switch to PL Dis.

NOTE

EEPOT 2 and EEPOT 3 are set at the factory to the maximum level (99). This fully closes the squelch.

2. Set EEPOT 2 and EEPOT 3 to the minimum level (00) to fully open the squelch.
3. Inject an on channel RF signal, without modulation at the desired repeater squelch threshold level, into the receiver antenna connector on the Junction Box.

NOTE

If this is a *trunked station*, proceed to step 5.

4. Adjust the Repeater Squelch Level (EEPOT 2) to the desired level.
5. Adjust the Receive Squelch Level (EEPOT 3) to the desired level.
6. Set the PL Dis/Xmit switch to the center (normal) position.

High/Low End Adjustment

The following procedure is only performed when a station is configured voting purposes. This adjustment provides an increase in level at the high and low end frequency response of the receiver audio to compensate for phone line loss. All voting receivers must be equalized to provide proper voting.

This procedure requires a technician at the comparator end of the phone line and the station being aligned.

NOTE

Perform this procedure only if the station is equipped with a *Spectra-TAC/DIGITAC Encoder Option (C269)* and will be used for voting. Otherwise, proceed to the Status Tone Adjustment.

1. Adjust the STAC Encoder Level (EEPOT 8) to the minimum level (00) to cause a minimum wireline status tone output.
2. With an audio generator, inject a 1 kHz tone at 1 mV into the MIC AUDIO input (J812-4) on the control connector or into TP8 on the SSCB.

NOTE

The generator must remain at a constant output level from 400 Hz to 4 kHz.

3. Set the **Intercom** switch to **On**.
4. Monitor across Line 2 (+) and Line 2 (-) and adjust the Line 2 Output Level (EEPOT C) for -10 dB.
5. Measure and record the level at the input to the comparator (DIGITAC input).
The difference between the -10 dBm input and measurement at the comparator is the phone line loss at 1 kHz.
6. Set the audio generator frequency to 3 kHz.
7. Adjust the STAC High End Equalization Level (EEPOT 9) so that the level measured at the comparator is the same level recorded in step 5.
8. Repeat steps 5 through 7 until the level difference between 1 kHz and 3 kHz is within +/- 1 dB. The 1 kHz reference level must remain at -10 dB.
9. Set the generator frequency to 400 Hz.

Alignment Procedures

10. Adjust the STAC Low End Equalization Level (EEPOT A) so that the level measured at the comparator is the same level recorded in step 5. Do not readjust EEPOTS C or 9.
11. Adjust the STAC Low End Equalization Level (EEPOT A) to the same level recorded in step 5.
12. Deactivate all activated MUXbus bits.
13. Set the **Intercom** switch to **Off**.
14. Disconnect the audio generator from the MIC AUDIO input.

Status Tone Adjustment

The following procedure is performed when a station is configured to have status tone sent from the station. This adjustment also sets the receiver and repeater squelch EEPOTs.

When completed, the status tone EEPOT is set to provide the required status tone level to be sent down the wireline Line 2. If the station is configured to operate with *Spectra-TAC/DIGITAC Encoder Option (C269)*, the receiver and repeater squelch levels are also adjusted to provide the proper unsquelching level.

NOTE

Only perform this procedure if the station being aligned is configured to generate status tone.

1. Inject an on channel 1mV RF signal, modulated with a 1 kHz tone at 100% full station deviation (60% full station deviation for *trunked stations*), into the receiver antenna connector on the Junction Box.
Refer to Table 1-8 for values of full station deviation.
2. Set the **PL Dis/Xmit** to **PL Dis**.
3. Monitor the receive audio across Line 2 (+) and Line 2 (-) and adjust the Line 2 Output Level (EEPOT C) for the maximum desired phone line level.
This is typically in the range of 0 dBm through -10 dBm.
4. Measure and record the level at the input to the comparator or other equipment expecting status tone from the station.
5. Set the **PL Dis/Xmit** to the center (normal) position.
6. Remove the RF signal generator from the receiver and verify the receiver is squelched.
7. Monitor the TAC comparator input and adjust the status tone Level (EEPOT 8) for a 2175 Hz status tone level 13 dB (9 dB for *trunked stations*) below the level recorded in step 4.

NOTE

Perform this procedure only if the station is equipped with a *Spectra-TAC/DIGITAC Encoder Option (C269)*. Otherwise, proceed to the Coded Transmit Deviation Adjustment procedure.

8. Set EEPOT 2 and EEPOT 3 to the minimum level (00) to fully open the squelch.
9. Set the **PL Dis/Xmit** switch to **PL Dis**.
10. Measure and record the rms noise voltage level at the Line 2 output.
11. Inject an on channel 0.1 μ V RF signal, without modulation into the receiver antenna connector on the Junction Box.
12. Increase the RF level until the Line 2 output level decreases 20 dB from the level recorded in step 10.

NOTE

The 20 dBQ level correlates to a 17 dB SINAD measurement.

13. Adjust the Receiver Squelch Level (EEPOT 3) until the R1 UN SQ MUXbus bit (A5/D0) is disabled.
14. Adjust the Repeater Squelch Level (EEPOT 2) until the RPT USQ MUXbus bit (A3/D0) is disabled.
15. Disconnect all test equipment and set the **PL Dis/Xmit** switch to the center (normal) position.

Coded Transmit Deviation Adjustment

The following procedure is only performed when a station is configured for the *Transparent Operation Option (C514)*. This procedure does not apply to any 900 MHz Analog Plus stations, due to its incompatibility with secure operation.

When performing this procedure, the EEPOT mode (EEPOT 6) is entered to generate a 1 kHz tone. The station is then keyed via the Xmit switch and the deviation is adjusted.

Alignment Procedures**NOTE**

Perform this procedure only if the station is equipped with a *Transparent Operation Option (C514)* for secure operation. This option is not available on *900 MHz Analog Plus stations*.

1. Select EEPOT 6 on the **Status** display.
After 5 seconds, an internal 1 kHz square wave generator is enabled in the station.
2. Key the station by holding the **PL Dis/Xmit** switch to **Xmit**.
3. With a modulation analyzer, measure the transmitter deviation level and compare it to the settings shown in Table 1-8.
Adjust EEPOT 6 if required to reach the desired level.
4. Set the **PL Dis/Xmit** switch to the center (normal) position.
5. Reset the station by toggling the **Acc Dis/Reset** switch to **Reset**.

NOTE

If aligning a station that contains the *Simulcast Option (C777)*, perform the *Simulcast* procedures at the end of this chapter.

6. This concludes the *MSF 5000* Alignment procedure.

Simulcast Receiver Adjustment

1. Adjust EEPOTs 6, 8, 9, A, and C to 00.

NOTE

Step 2 through step 8 require the audio generator to remain at a constant output level of 100 mV from 400 to 3000 Hz.

2. Use an audio generator and inject a 1 kHz tone at 100 mV, measured with and AC voltmeter, into the MIC AUDIO (J812-4) input on the front panel control jack; or via TP8 on the SSCB.
3. Set the front panel **Intercom** switch to **On** and activate the LOC PTT MUXbus bit.
4. Adjust EEPOT C to -10 dBm at Line 2 +/- on the Junction Box.
This is a 600 Ω balanced output.
5. Set the generator frequency to 3 kHz and adjust EEPOT 9 to -10 dBm.
6. Repeat step 2 through step 5 until the difference is within +/- 1 dB.
The 1 kHz level reference must remain at -10 dBm.
7. Set the generator frequency to 400 Hz.
8. Adjust EEPOT A to -10 dBm.
Do not readjust EEPOT 9 or EEPOT C.
9. Deactivate the MUXbus bits.
10. Set the **Intercom** switch to **Off**.
11. Disconnect the audio generator from the MIC AUDIO input.
12. Set the **PL Dis/Xmit** switch to **PL Dis**.
13. Inject an on-channel 1 mV RF signal modulated with a 1 kHz tone at 100% full system deviation into the receiver port.
14. Adjust EEPOT 5 for -6 dBm at Line 2 +/-.

NOTE

Perform step 15 and step 16 if the station is equipped with the Secure Option C514, otherwise proceed to step 17.

Simulcast Receiver Adjustment

15. Without changing the RF input level, inject a coded eye pattern (using the proper encryption algorithm) and adjust EEPOT C for -6 dBm at Line 2 +/-.
16. Repeat step 13 and step 14.
17. Set the **PL Dis/Xmit** switch to the center (off) position.
Remove the RF signal from the receiver
18. Adjust EEPOT 8 for a status tone (2175 Hz) level of -19 dBm at line 2 +/-.
19. Adjust EEPOTs 2 and 3 to 00.
20. Set the **PL Dis/Xmit** switch to **PL Dis**.
Measure and record the rms noise voltage level at Line 2.
21. Inject an on-channel 0.1 uV signal without modulation at the receive antenna port.
22. Increase the RF level until the Line 2 output level decreases by 20 dB from the level recorded in step 20 (20 dbQ).
This correlates to 17 dB SINAD.
23. Adjust EEPOT 3 until the R1 UN SQ MUXbus bit turns off.

NOTE

Perform step 24 if the station is equipped with Secure Option C514 and codeplug option X20AZ_SP, otherwise proceed to step 25.

24. Without changing the RF input level, inject a coded eye pattern and adjust EEPOT 2 until the RPT UN SQ MUXbus bit turns off.
25. Disconnect all test equipment.
Alignment is complete.

Simulcast Deviation Adjustment

1. Set EEPOTs 4 and 7 to 00.
EEPOTs 4 and 7 have no effect in simulcast.
2. Inject a 1 kHz signal at -10 dBm into the Gen TX Data input to the station.
3. Key the station by activating the Loc PTT MUXbus bit.
4. Measure the transmit deviation level and use EEPOT B to set for 60% full system deviation.
5. Dekey the station and remove the test tone.
The transmit alignment is complete.

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RF Tray

Chapter Overview

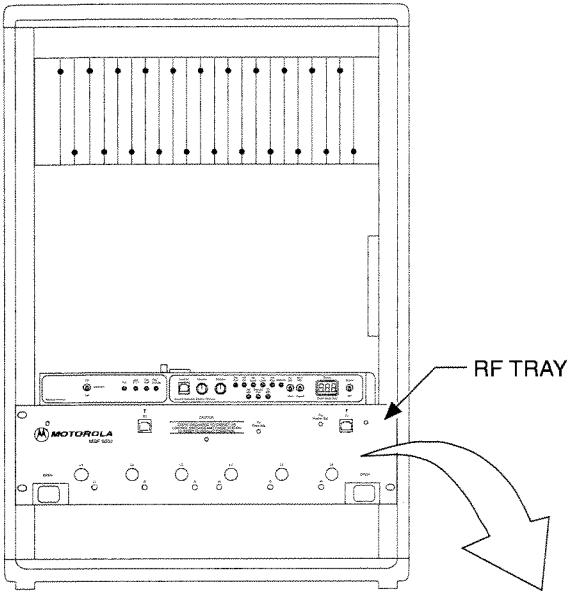
This chapter contains module and component locators, block diagrams, interconnect diagrams, schematics, and parts lists for the RF Tray.

Table 2-1 Chapter Contents

Section	Page	Description
RF Tray	2-2	Component locations and RF Tray hardware parts list
Receive VCO	2-3	Interconnect and parts list
Transmit VCO	2-4	Interconnect and parts list
IPA	2-5	Interconnect and parts list
Uniboard	2-7	Component locations, schematics, and parts lists
Interconnect Board	2-29	Component location, schematics, and parts lists
Receiver Front End	2-37	Interconnect

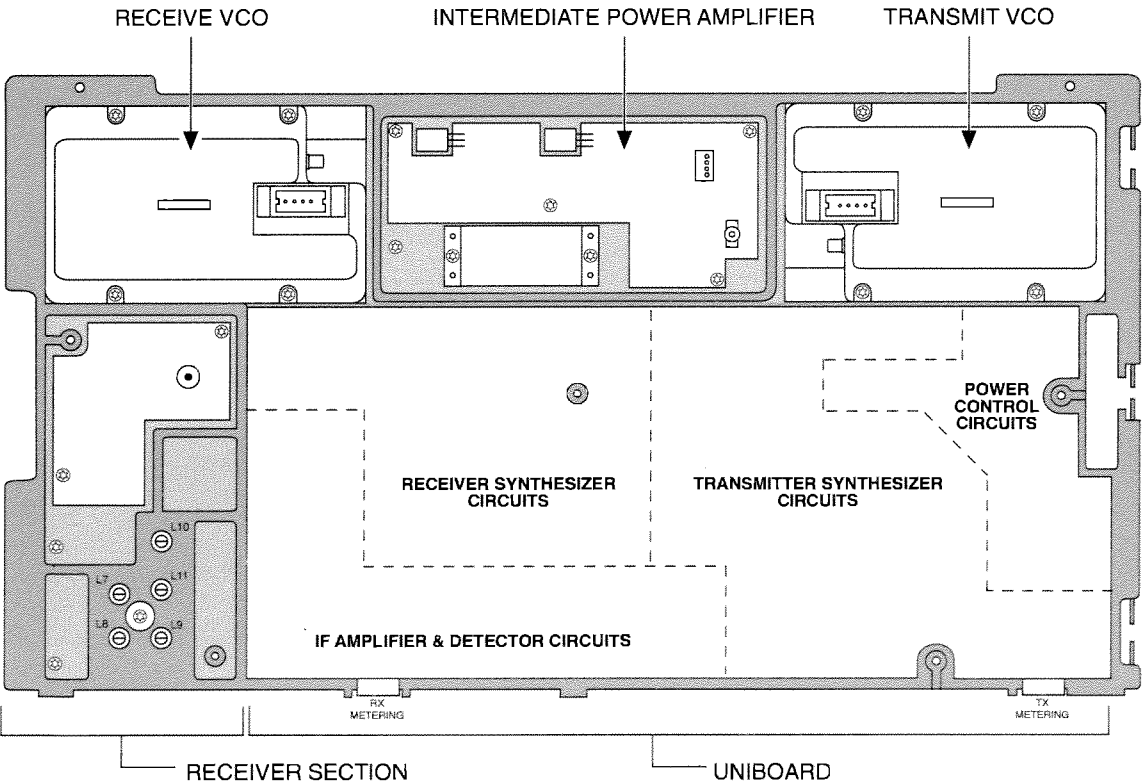
RF Tray

The MSF 5000 900 MHz RF Tray information includes models TUF1790 and TUF1920.



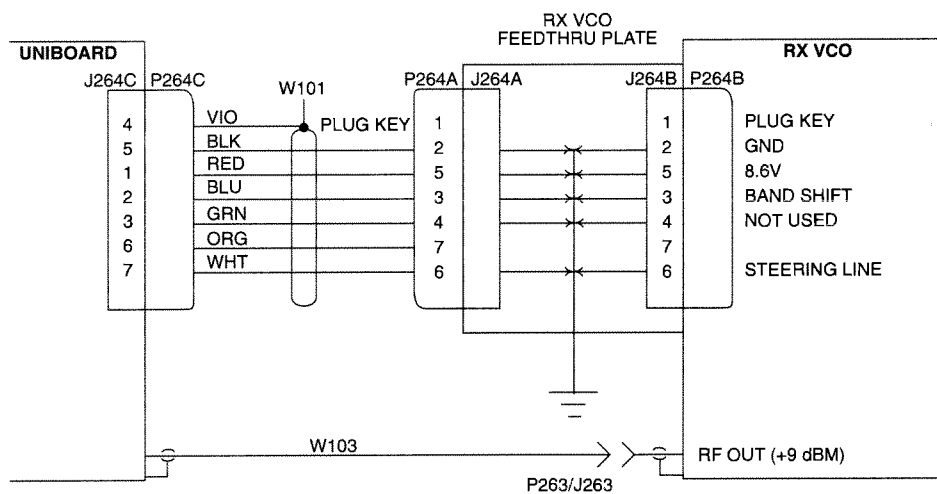
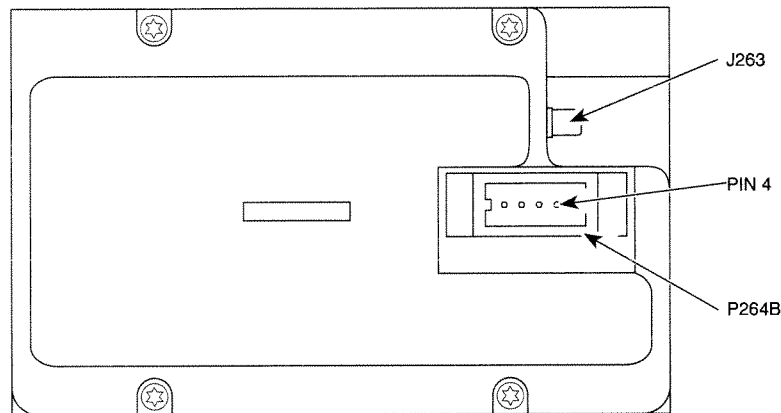
TRN7144 RF Tray Hardware
non-referenced items:

- | | |
|------------|--|
| 0184237T01 | FILTER, feedthru |
| 0184238T01 | FILTER, feedthru |
| 0184241T01 | FILTER, feedthru assembly: 4-filter |
| 0184243T01 | FILTER, feedthru assembly: 28-filter |
| 0310907A27 | SCREW, machine: M3.5 x 0.6 x 8 (4 used) |
| 0310943J15 | Screw, tapping: TT3.5x0.6x8 (6 used) |
| 0310943J17 | SCREW, tapping: TT3.5 x 0.6x13 (17 used) |
| 0384833P01 | SCREW, captive: M4 x 0.7 x 5 (5 used) |
| 0783104N01 | BRACKET, pc board mtg (2 used) |
| 1583176N01 | COVER, LL amplifier core |
| 1585526U02 | HOUSING RADIO TRAY |
| 1585527U01 | COVER RADIO TRAY HOUSING |
| 3282170V01 | GASKET RF (93.5 used) |
| 3282170V02 | GASKET RF (3.63 used) |
| 3282796H02 | GASKET, radio frequency interference: .125 x .062" (25.2 used) |
| 3282796H03 | GASKET, rfi: .125 x .125" (21.25 used) |
| 4283501N03 | RETAINING, E ring (2 used) |
| 4583153N01 | CAM, 1/4 turn lock (2 used) |



MSFS039
042894JNM

TRE1322 Receive VCO

MSFS104
052494KOM

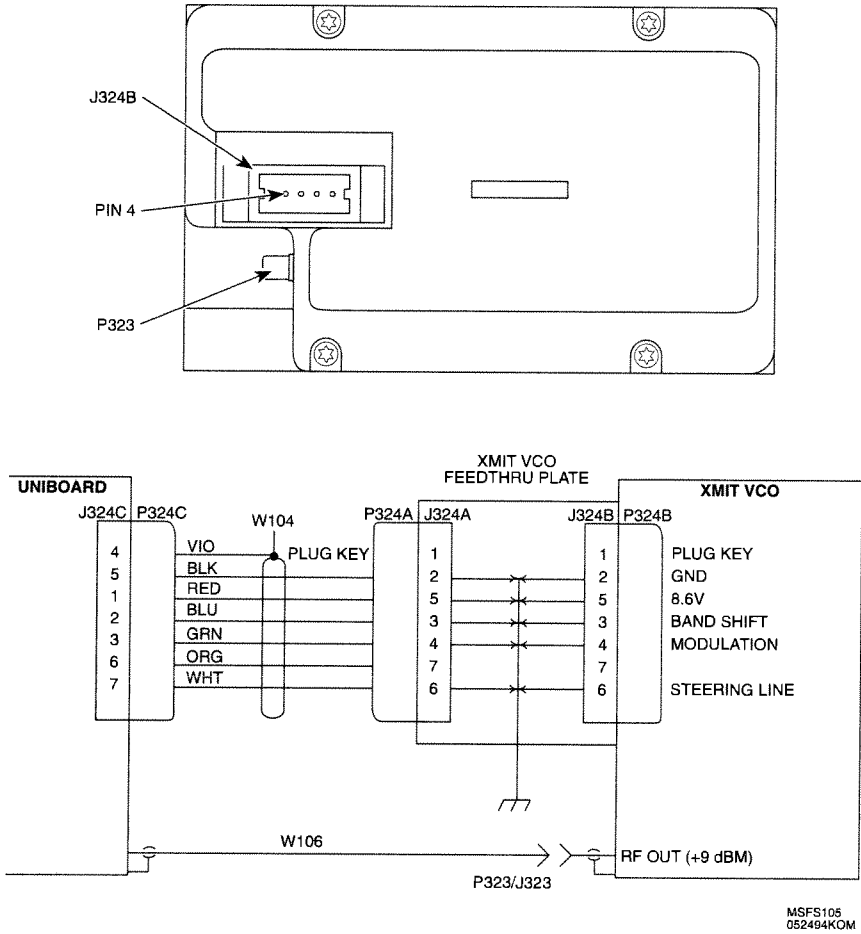
TLE5382 VCO Hardware

non-referenced items:

0184239T01	FILTER ASSEMBLY, feedthru: 4-filter
0283718N01	NUT, tension
0310943J10	SCREW, tapping: TT3 x 0.5 x 8 (7 used)
0310943J16	SCREW, tapping: TT3.5 x 0.6 x 10 (4 used)
0383100N04	SETSCREW, M11x0.75x17.2
0383677N02	SCREW, captive: M3.5 x 0.6 x 18 (4 used)
0484081N01	WASHER, shoulder (3 used)
0784888R01	BRACKET
0984135B02	CONNECTOR, receptacle, phono
1583182N01	COVER
1583190N02	HOUSING
1583191N02	CSTG VCO RESONATOR
2483375N01	COIL, RF probe (red)
2483692N02	COIL, probe (red)
3282796H02	GASKET, radio frequency interference: .125 x .062" (12.56 used)
3283142N01	GASKET: 30.8x14.0MM
4183147N02	SPRING (4 used)
4283517N01	RETAINER, spring (4 used)

TTE1472 Transmit VCO

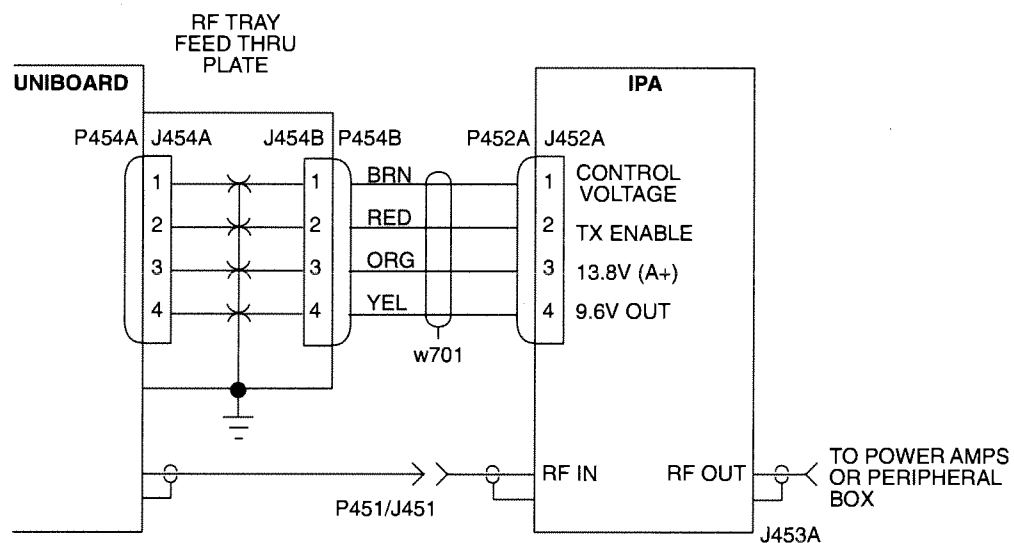
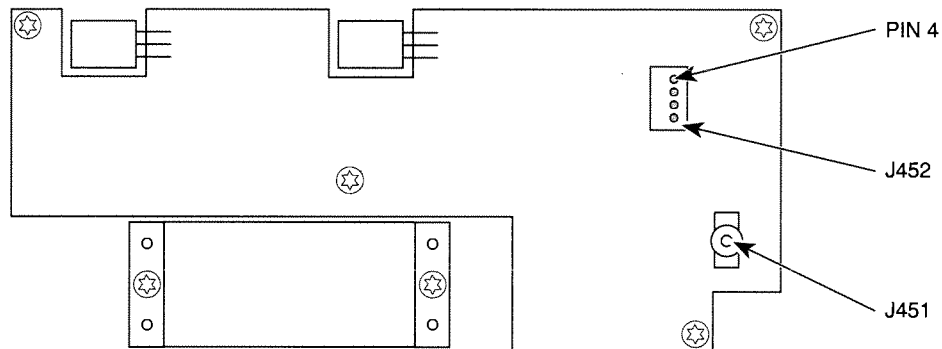
TTE1472 Transmit VCO



TLE5372 VCO Hardware

non-referenced items:	
0184239T01	FILTER ASSEMBLY, feedthru: 4-filter
0283718N01	NUT, tension
0310943J10	SCREW, tapping: TT3 x 0.5 x 8 (7 used)
0310943J16	SCREW, tapping: TT3.5 x 0.6 x 10 (4 used)
0383100N05	SETSCREW: M11x0.75x17.2
0383677N02	SCREW, captive: M3.5 x 0.6 x 18 (4 used)
0484081N01	WASHER, shoulder (3 used)
0784888R01	BRACKET
0984135B02	CONNECTOR, receptacle, phono
1583182N01	COVER
1583190N02	HOUSING
1583191N02	CSTG VCO RESONATOR
2483375N02	COIL, rf probe (blue)
2483692N01	COIL, probe (black)
2483692N03	COIL, probe (blue)
3282796H02	GASKET, radio frequency interference: .125 x .062" (12.56 used)
3283142N01	GASKET: 30.8x14.0MM
4183147N02	SPRING (4 used)
4283517N01	RETAINER, spring (4 used)

TLF1521 IPA

MSF003
052494KOM

TRN9930 IPA Hardware

S1,2 0310943J11
S3 thru 5 0310943J16

switch:

SCREW, tapping: TT3 x 0.5 x 10
SCREW, tapping: TT3.5 x 0.6 x 10

non-referenced items:

0310943M04 SCREW, tapping: TT2.5 X 0.45 X 8 (2 used)
0383677N02 SCREW, captive: M3.5 x 0.6 x 18 (4 used)
0987318C06 CONNECTOR, female, 1-contact
0987439C02 CONNECTOR, female, 1-contact
2684873R01 Heat sink

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Uniboard

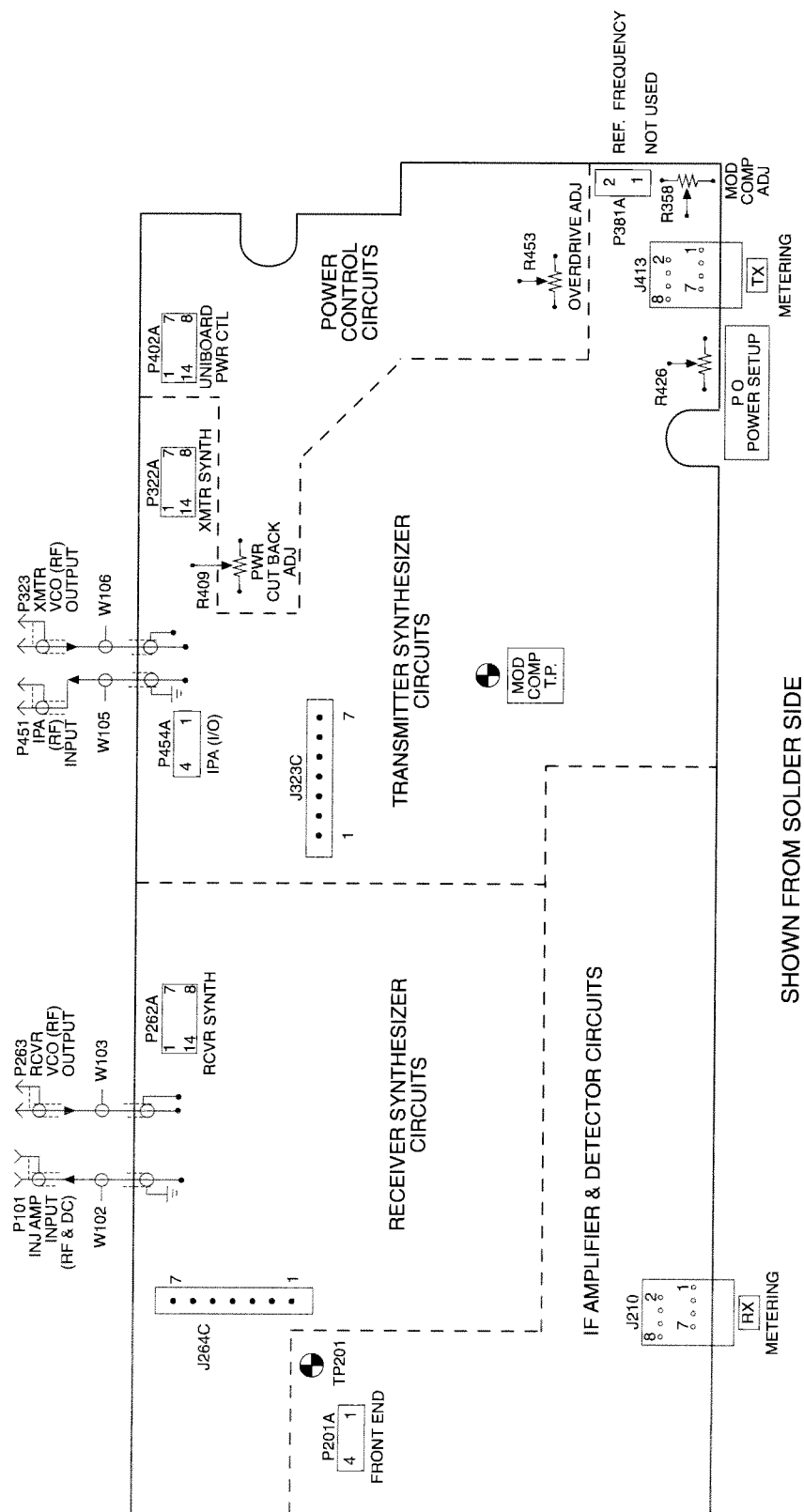
This section contains overlays, schematics, and parts lists for components of the Uniboard. Some parts may not be placed on all Uniboards.

If a single asterisk (*) is shown beside a reference designator on the schematic, refer to the applicable parts list for the proper value. If a double asterisk (**) is shown, the component is not placed.

Table 2-2 **Section Contents**

Uniboard	Overlay Page	Schematic Page	Connector Page	Parts List Page
TRN7197	2-11	2-13	2-9	2-21
TRN7881	2-11	2-13	2-9	2-25

Uniboard



SHOWN FROM SOLDER SIDE

MSFS005
050694KOM

Uniboard Connectors

P201A

1	TEST POINT TP151
2	MIXER OUT 8 MTR 3
3	+9.6V
4	GND

P454A

1	CONTROL VOLTAGE
2	TX ENABLE
3	MAIN +13.8V (A+)
4	+9.6V

P262A

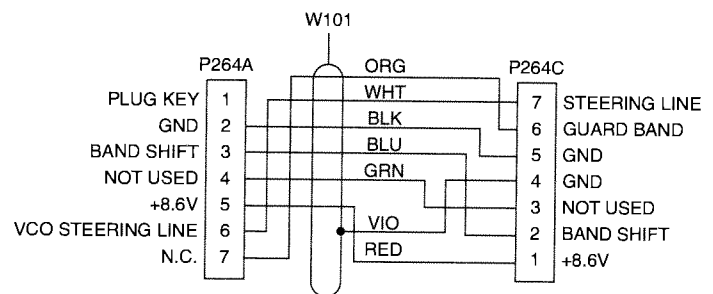
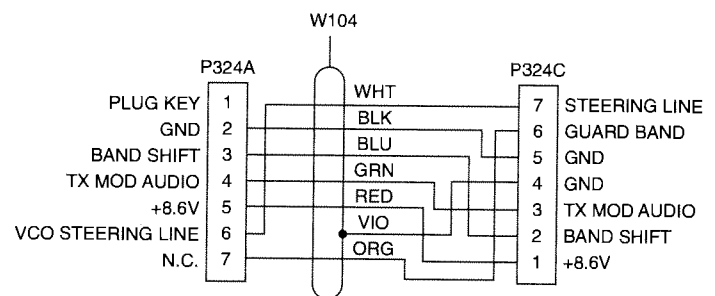
+5V	1	14	MAIN +13.8V (A++)
RX STROBE	2	13	N.C.
SA2	3	12	RAW RX AUDIO
SA1	4	11	RX LOOP
SA0	5	10	SD0
SD1	6	9	SD3
SD2	7	8	RX LOOP

P322A

SA1	1	14	TX STROBE
MOD ENABLE	2	13	SA2
TX LOCK	3	12	SA0
SD2	4	11	TX LOOP
SD1	5	10	SD3
AUDIO (GND A)	6	9	SD0
+9.6V	7	8	TX MOD AUDIO

P402A

PA ON	1	14	PA POWER CUTBACK
FINAL FORWARD VOLTAGE	2	13	N.C.
METERING FINAL FORWARD VOLTAGE	3	12	MAIN +13.8V (A++)
AUDIO GND	4	11	+5V
THERMAL SUM POINT	5	10	METERING FILANL REFLECTED VOLTAGE
CIRCULATOR LOAD TEMP	6	9	PA FULL POWER
PA KEY	7	8	DRIVER FORWARD VOLTAGE

J413
TX MTR

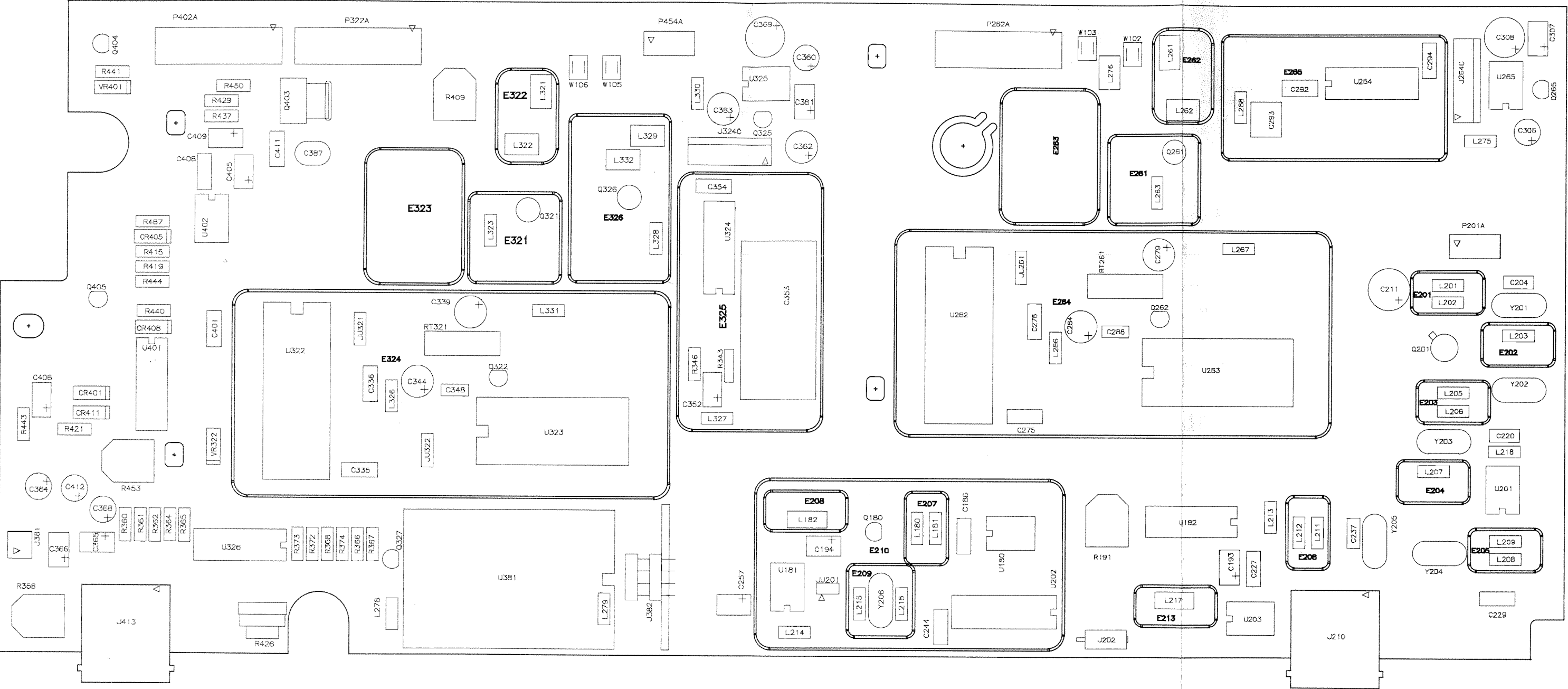
GND	7	8	GND
TX STEERING LINE VOLTAGE	5	6	GND
CONTROL VOLTAGE	3	4	DRIVER FORWARD VOLTAGE
FINAL FORWARD VOLTAGE	1	2	FINAL REFLECTED VOLTAGE

J210
RX MTR

GND	7	8	GND
RX STEERING LINE VOLTAGE	5	6	GND
MIXER L.O. LEVEL	3	4	INTERNAL REF. OSC. LEVEL
QUADRATURE DETECTOR	1	2	I-F LEVEL

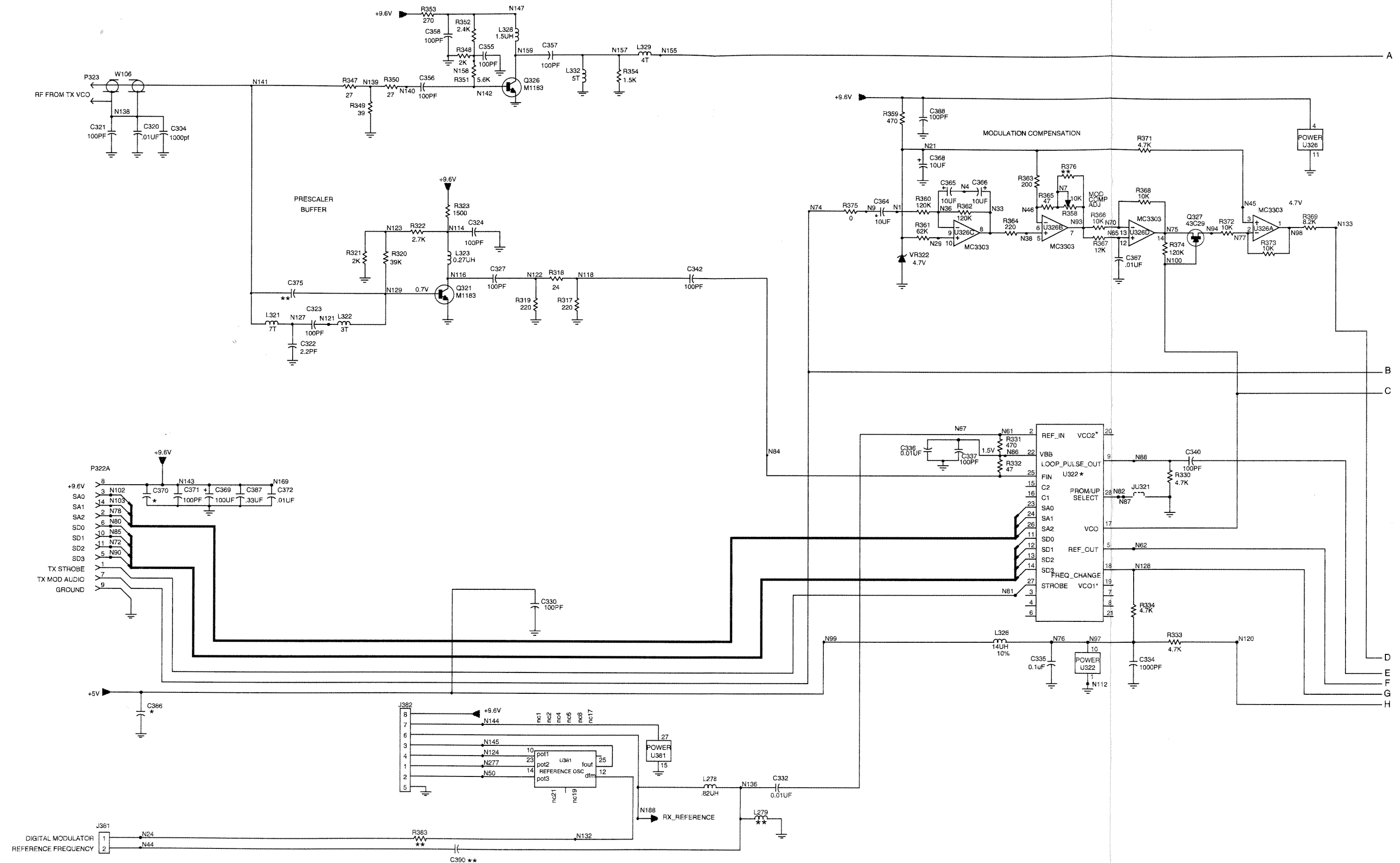
MSFS099
042194JNM

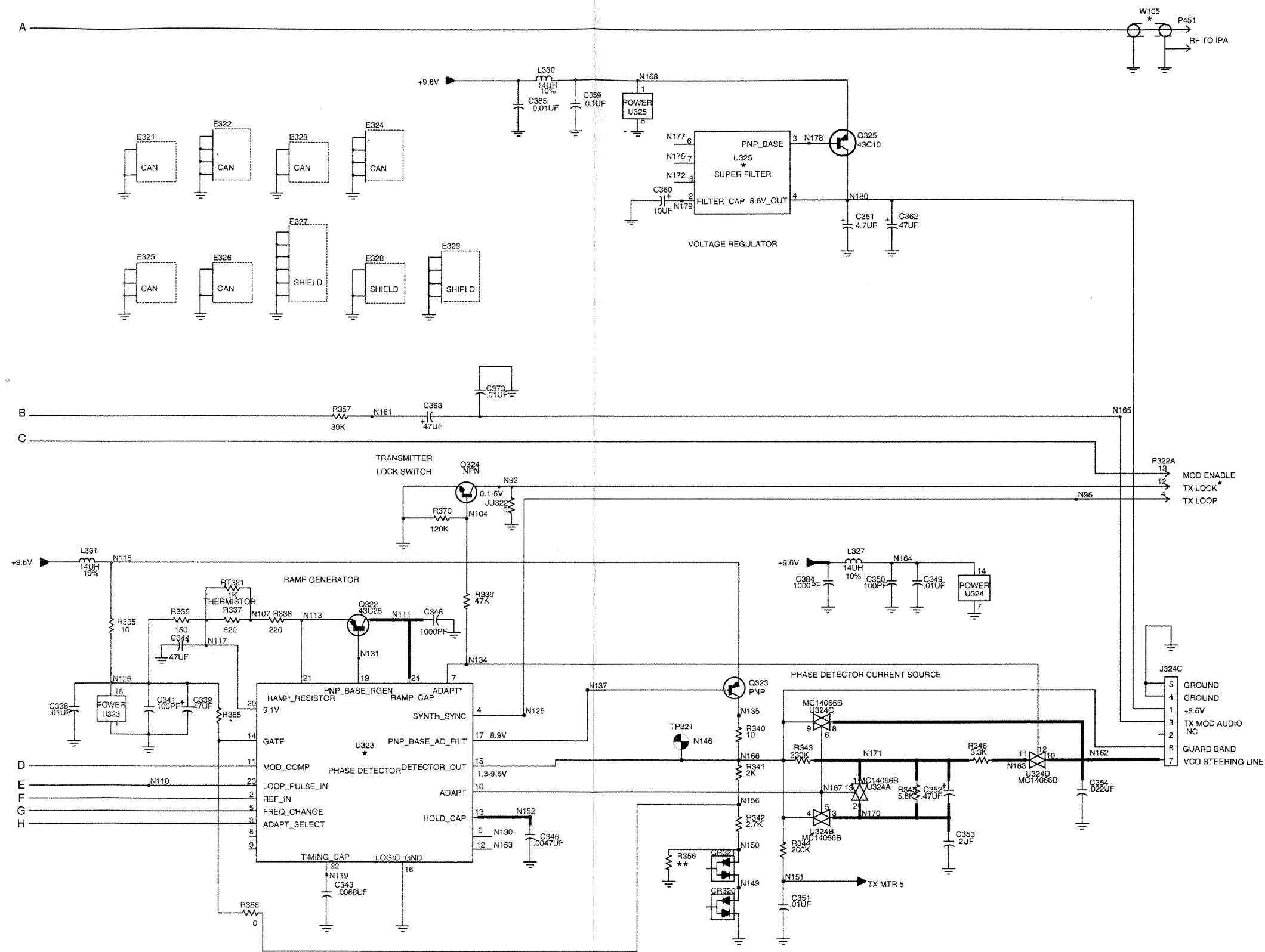
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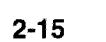


COMPONENT SIDE

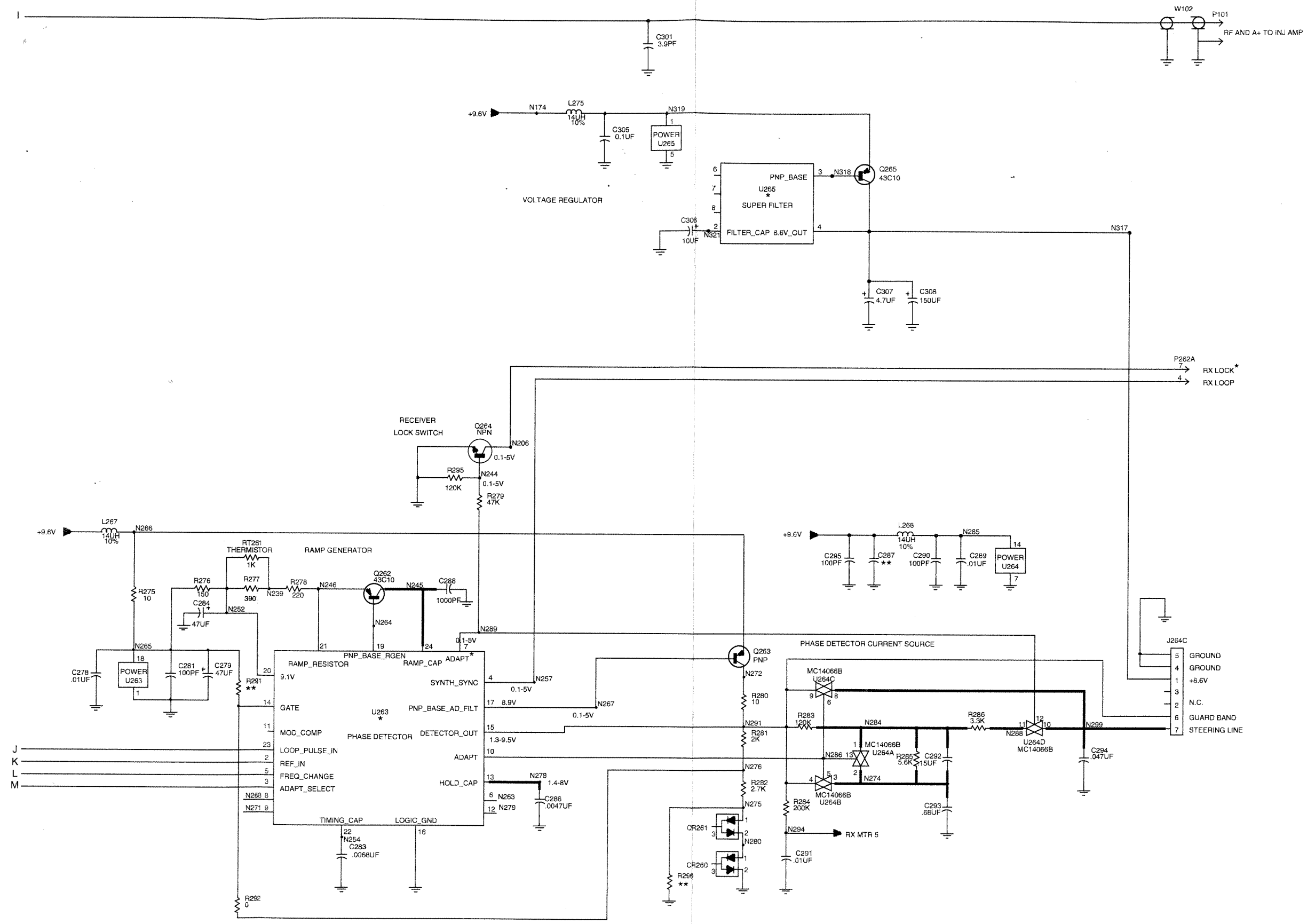


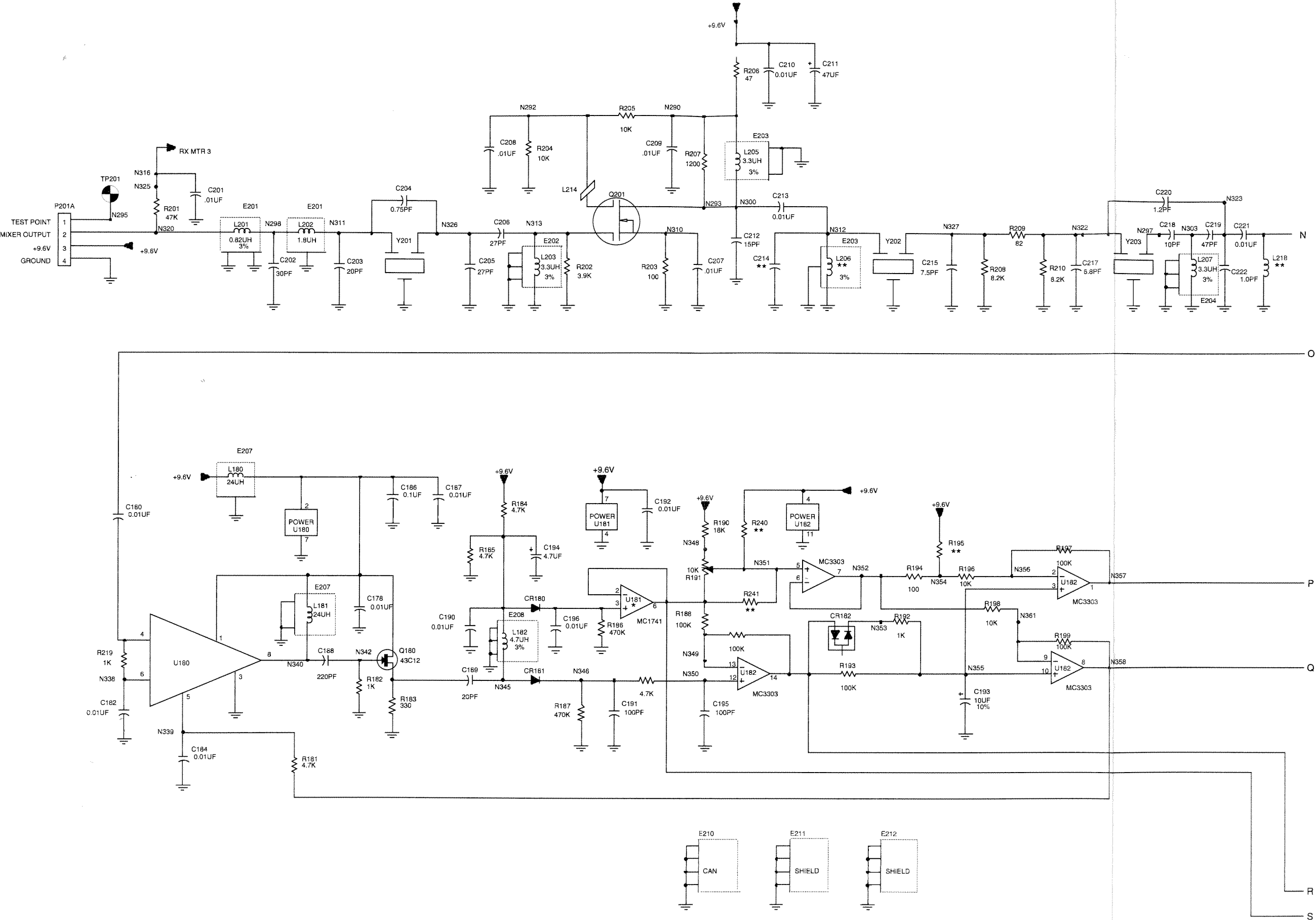




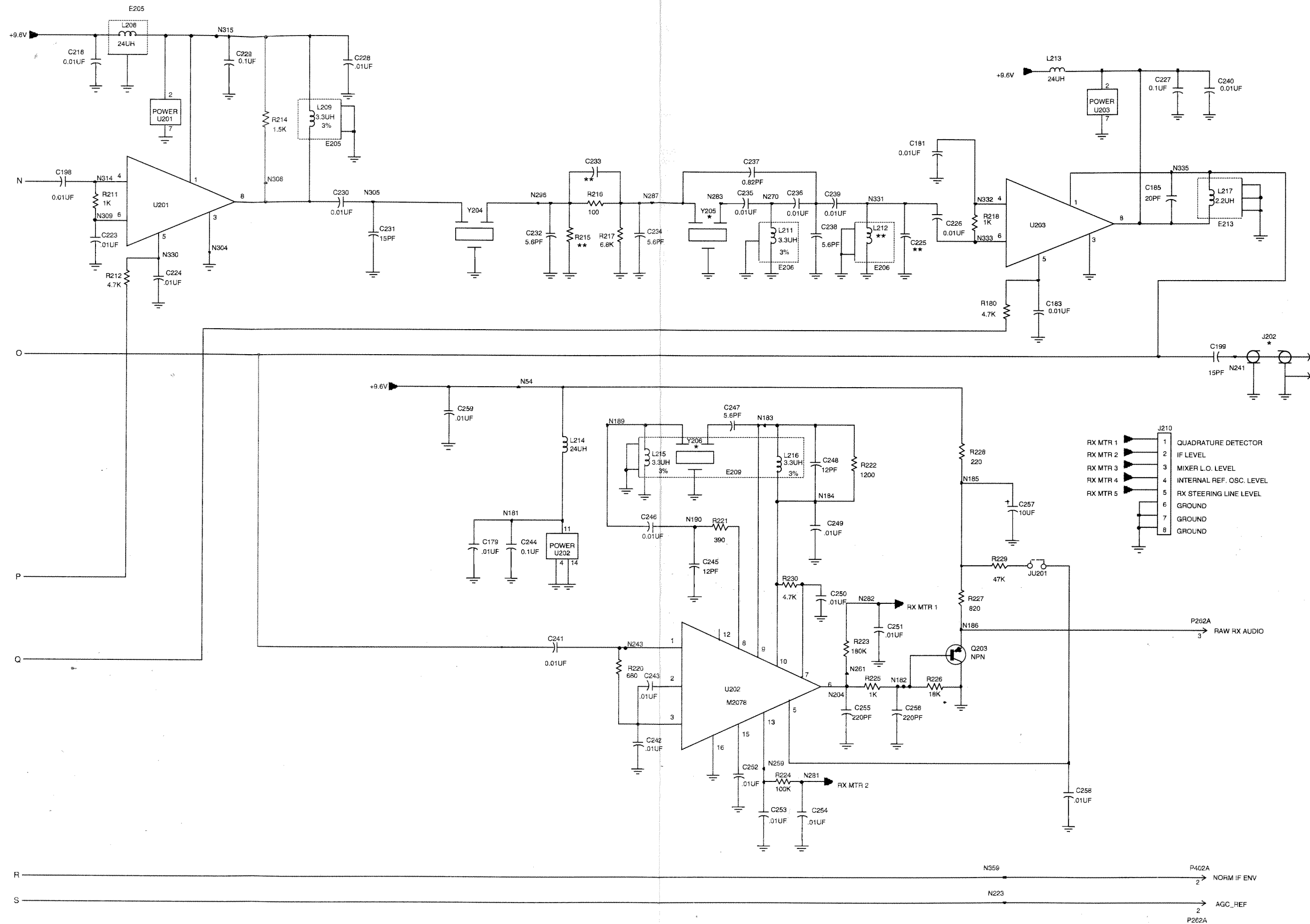


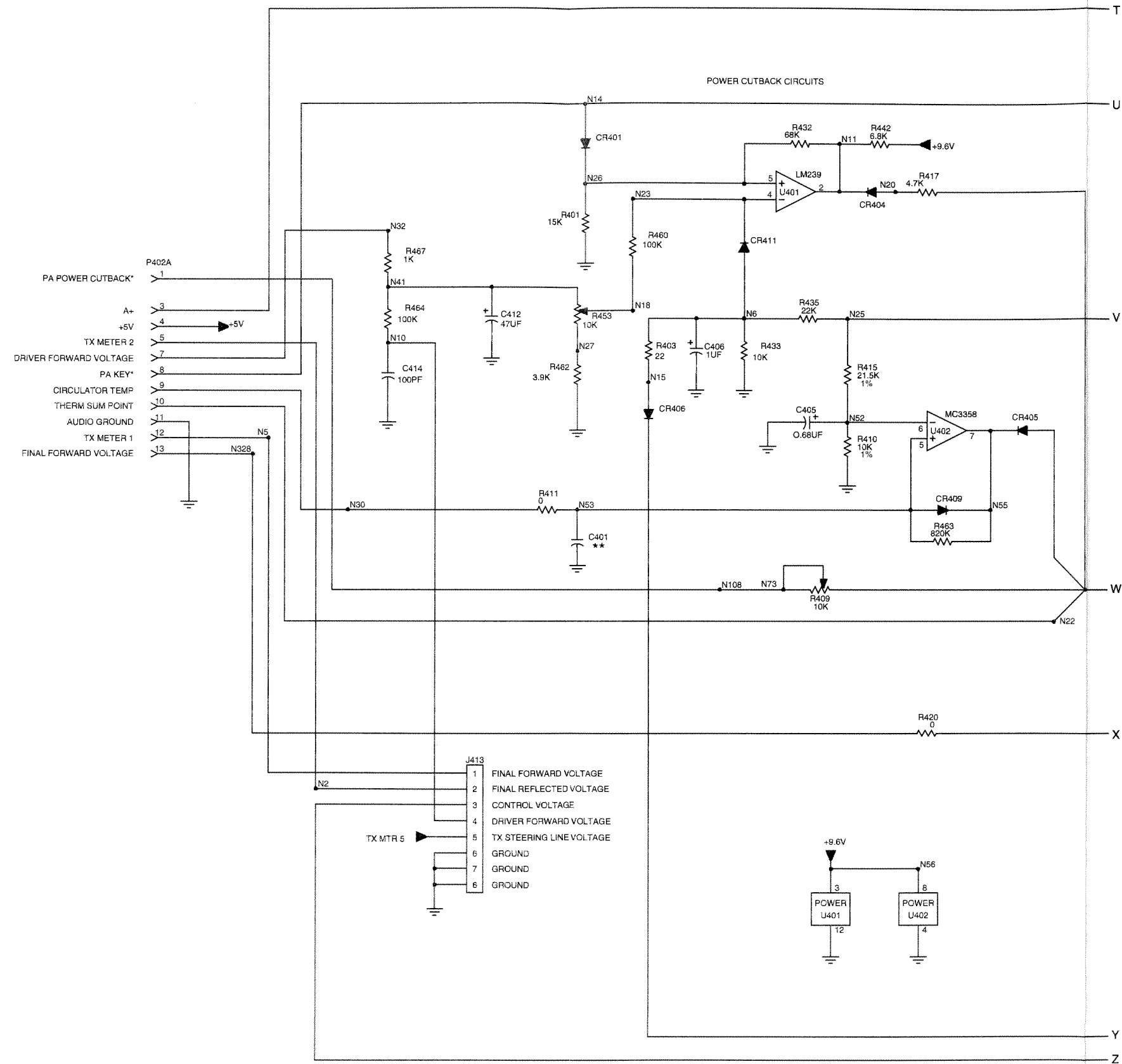
TRN7197/TRN7881 Uniboards

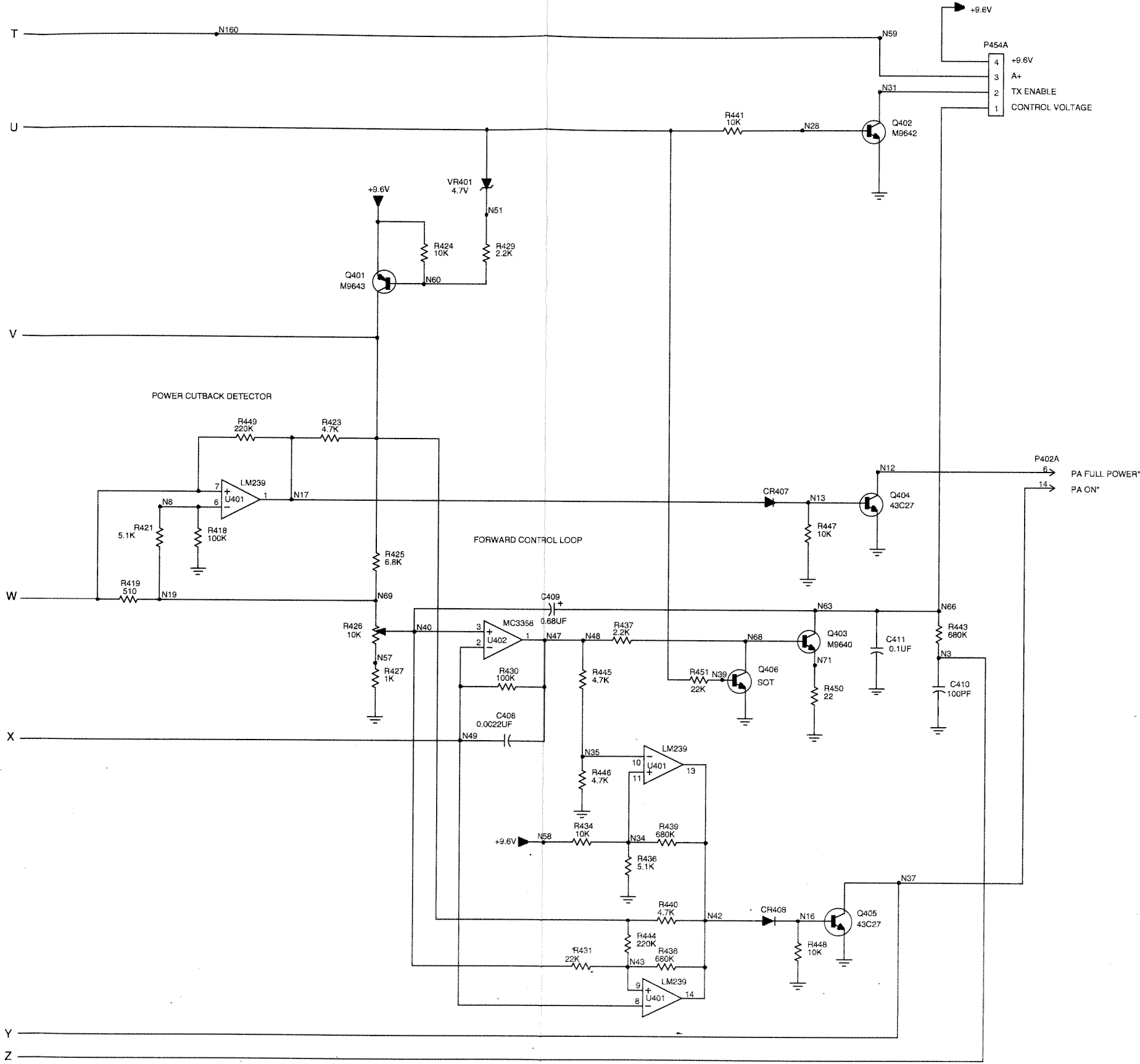




TRN7197/TRN7881 Uniboards







TRN7197 Uniboard Parts List

TRN7197 Uniboard Parts List

Reference Symbol	Motorola Part No.	Description	Reference Symbol	Motorola Part No.	Description
		capacitor, fixed:			
C178 thru 184	2113741B45	0.01 uF, +/-5%; 50 V	C289	2113741B45	0.01 uF, +/-5%; 50 V
C185	2113740B32	20 pF, +/-5%; 50 V	C290	2113740B49	100 pF, +/-5%; 50 V
C186	0811051A13	0.1 uF, +/-5%; 63 V	C291	2113741B45	0.01 uF, +/-5%; 50 V
C187	2113741B45	0.01 uF, +/-5%; 50 V	C292	0811051A14	0.15 uF, +/-5%; 63V
C188	2113740B57	220 pF, +/-5%; 50 V	C293	0811051A18	0.68 uF, +/-5%; 63V
C189	2113740B32	20 pF, +/-5%; 50 V	C294	0811051A11	0.047 uF, +/-5%; 63V
C190	2113741B45	0.01 uF, +/-5%; 50 V	C295,296	2113740B49	100 pF, +/-5%; 50 V
C191	2113740B49	100 pF, +/-5%; 50 V	C299	2113740B25	10 pF, +/-5%; 50 V
C192	2113741B45	0.01 uF, +/-5%; 50 V	C300	2113740B49	100 pF, +/-5%; 50 V
C193	2311054H08	10 uF, +/-10%; 25V	C301	2113740B15	3.9 pF, +/-0.25 pF; 50 V
C194	2311054L14	4.7 uF, +/-10%; 50 V	C302	2113740B11	2.7 pF, +/-0.25 pF; 50V
C195	2113740B49	100 pF, +/-5%; 50 V	C304	2113740B73	1000 pF, +/-5%; 50 V
C196	2113741B45	0.01 uF, +/-5%; 50 V	C305	2113741B69	0.1 uF, +/-5%; 50 V
C198	2113740B57	220 pF, +/-5%; 50 V	C306	2313748G08	10 uF, +/-20%; 16 V
C199	2113740B29	15 pF, +/-5%; 50 V	C307	2311054L14	4.7 uF, +/-10%; 50 V
C201	2113741B45	0.01 uF, +/-5%; 50 V	C308	2313748G27	150 uF, +/-20%; 16V
C202	2113740B36	30 pF, +/-5%; 50V	C311	2113740B49	100 pF, +/-5%; 50 V
C203	2113740B32	20 pF, +/-5%; 50 V	C313	2113740B49	100 pF, +/-5%; 50 V
C204	2182450B61	1 pF, +/-5%; 500V	C320	2113741B45	0.01 uF, +/-5%; 50 V
C205	2113740B36	30 pF, +/-5%; 50V	C321	2113740B49	100 pF, +/-5%; 50 V
C206	2113740B35	27 pF, +/-5%; 50 V	C322	2113740B09	2.2 pF, +/-0.25 pF; 50 V
C207 thru 210	2113741B45	0.01 uF, +/-5%; 50 V	C323,324	2113740B49	100 pF, +/-5%; 50 V
C212	2113740B29	15 pF, +/-5%; 50 V	C327	2113740B49	100 pF, +/-5%; 50 V
C213	2113741B45	0.01 uF, +/-5%; 50 V	C330	2113740B49	100 pF, +/-5%; 50 V
C215	2113740B23	8.2 pF, +/-0.25 pF; 50V	C332	2113741B45	0.01 uF, +/-5%; 50 V
C216	2113741B45	0.01 uF, +/-5%; 50 V	C334	2113740B73	1000 pF, +/-5%; 50 V
C217	2113740B21	6.8 pF, +/-0.25 pF; 50 V	C335	0811051A13	0.1 uF, +/-5%; 63 V
C218	2113740B23	8.2 pF, +/-0.25 pF; 50V	C336	0811017A08	0.01 uF, +/-5%; 50 V
C219	2113740B47	82 pF, +/-5%; 50V	C337	2113740B49	100 pF, +/-5%; 50 V
C220	2182450B08	1.2 pF, +/-5%; 500V	C338	2113741B45	0.01 uF, +/-5%; 50 V
C221	2113740B28	13 pF, +/-5%; 50V	C339	2313748G18	47 uF, +/-20%; 25 V
C222	2113740B32	20 pF, +/-5%; 50 V	C340 thru 342	2113740B49	100 pF, +/-5%; 50 V
C223,224	2113741B45	0.01 uF, +/-5%; 50 V	C343	2113741B41	6800 pF, +/-5%; 50 V
C225	2113740B35	27 pF, +/-5%; 50 V	C344	2313748G18	47 uF, +/-20%; 25 V
C226	2113741B45	0.01 uF, +/-5%; 50 V	C346	2113741B37	4700 pF, +/-5%; 50 V
C227	0811051A13	0.1 uF, +/-5%; 63 V	C348	2183162H09	1000 pF, +/-5%; 25V
C228	2113741B45	0.01 uF, +/-5%; 50 V	C349	2113741B45	0.01 uF, +/-5%; 50 V
C229	0811051A13	0.1 uF, +/-5%; 63 V	C350	2113740B49	100 pF, +/-5%; 50 V
C230	2113741B45	0.01 uF, +/-5%; 50 V	C351	2113741B45	0.01 uF, +/-5%; 50 V
C231	2113740B36	30 pF, +/-5%; 50V	C352	2311054L02	0.47 uF, +/-10%; 50 V
C232	2113740B23	8.2 pF, +/-0.25 pF; 50V	C353	0883862M02	2 uF, +/-10%; 100 V
C234,235	2113740B22	7.5 pF, +/-0.25 pF; 50V	C354	0811051A09	0.022 uF, +/-5%; 63 V
C236	2113740B47	82 pF, +/-5%; 50V	C355 thru 358	2113740B49	100 pF, +/-5%; 50 V
C237	2182450B32	2.7 pF, +/-5%; 500V	C359	2113741B69	0.1 uF, +/-5%; 50 V
C239 thru 243	2113741B45	0.01 uF, +/-5%; 50 V	C360	2313748G08	10 uF, +/-20%; 16 V
C244	0811051A13	0.1 uF, +/-5%; 63 V	C361	2311054L14	4.7 uF, +/-10%; 50 V
C245	2113740B37	33 pF, +/-5%; 50V	C362,363	2313748G18	47 uF, +/-20%; 25 V
C246	2113741B45	0.01 uF, +/-5%; 50 V	C364	2313748G08	10 uF, +/-20%; 16 V
C247	2113740B21	6.8 pF, +/-0.25 pF; 50 V	C365,366	2311054H08	10 uF, +/-10%; 25V
C248	2113740B34	24 pF, +/-5%; 50V	C367	2113741B45	0.01 uF, +/-5%; 50 V
C249 thru 254	2113741B45	0.01 uF, +/-5%; 50 V	C368	2313748G08	10 uF, +/-20%; 16 V
C255,256	2113740B57	220 pF, +/-5%; 50 V	C369	2313748G22	100 uF, +/-20%; 25 V
C257	2311054H08	10 uF, +/-10%; 25V	C371	2113740B49	100 pF, +/-5%; 50 V
C258,259	2113741B45	0.01 uF, +/-5%; 50 V	C372	2113741B45	0.01 uF, +/-5%; 50 V
C261	2113740B49	100 pF, +/-5%; 50 V	C373	2113740B69	680 pF, +/-5%; 50V
C262	2113740B09	2.2 pF, +/-0.25 pF; 50 V	C384	2113740B73	1000 pF, +/-5%; 50 V
C263,264	2113740B49	100 pF, +/-5%; 50 V	C385	2113741B45	0.01 uF, +/-5%; 50 V
C267	2113740B49	100 pF, +/-5%; 50 V	C387	0811051A16	0.33 uF, +/-5%; 63V
C270	2113740B49	100 pF, +/-5%; 50 V	C388	2113740B49	100 pF, +/-5%; 50 V
C272	2113741B45	0.01 uF, +/-5%; 50 V	C390	2113741B45	0.01 uF, +/-5%; 50 V
C274	2113740B73	1000 pF, +/-5%; 50 V	C405	2311054L04	0.68 uF, +/-10%; 50 V
C275	0811051A13	0.1 uF, +/-5%; 63 V	C406	2311054L06	1 uF, +/-10%; 50 V
C276	0811017A08	0.01 uF, +/-5%; 50 V	C408	0811017A03	2200 pF, +/-5%; 50 V
C277	2113740B49	100 pF, +/-5%; 50 V	C409	2311054L04	0.68 uF, +/-10%; 50 V
C278	2113741B45	0.01 uF, +/-5%; 50 V	C410	2113740B49	100 pF, +/-5%; 50 V
C279	2313748G18	47 uF, +/-20%; 25 V	C411	0811051A13	0.1 uF, +/-5%; 63 V
C280 thru 282	2113740B49	100 pF, +/-5%; 50 V	C412	2313748G16	47 uF, +/-20%; 10 V
C283	2113741B41	6800 pF, +/-5%; 50 V	C414	2113740B49	100 pF, +/-5%; 50 V
C284	2313748G18	47 uF, +/-20%; 25 V			diode: (see note)
C286	2113741B37	4700 pF, +/-5%; 50 V	CR180,181	4805129M41	Rectifier
C288	2183162H09	1000 pF, +/-5%; 25V	CR182	4813833C07	Diode, dual 100 W

TRN7197 Uniboard Parts List

Reference Symbol	Motorola Part No.	Description
CR401	4883654H01	silicon
CR404	4813833C10	0.1A, 70V
CR405	4883654H01	silicon
CR406,407	4813833C10	0.1A, 70V
CR408	4883654H01	silicon
CR409	4813833C10	0.1A, 70V
CR411	4883654H01	silicon
shield:		
E201 thru 207	2683696R01	SHIELD, coil
E208	2684971R01	SHIELD CAN
E209	2683697R01	SHIELD, crystal
E210	2683121N03	SHIELD, can: transmitter
E213	2684971R01	SHIELD CAN
E265	2683120N01	SHIELD, can: 18.42x47.63x26.67MM
E322	2683122N04	Shield, can: 12.45 x 13.34 x 20.32MM
E326	2683120N02	SHLD CKT BD TOP
E328	2684397N01	SHLD SLDR SIDE XMTR
connector:		
J210	0983112N02	receptacle: 8-contact
J264C	0180730E03	receiver VCO steering
J324C	0180730E02	transmitter VCO steering
J381	0983109N06	receptacle: 2-contact
J413	0983112N02	receptacle: 8-contact
inductor:		
L180,181	2411047B58	24 uH
L182	2484250D03	CHK RF 2.2UH
L201	2411047B23	0.82 uH
L202	2411047C31	CHK RF MLD A/I 1.8UH 3
L203	2411047C37	CHK RF MLD A/I 3.3UH 3
L205	2411047C37	CHK RF MLD A/I 3.3UH 3
L207	2411047C31	CHK RF MLD A/I 1.8UH 3
L208	2411047B58	24 uH
L209	2411047C31	CHK RF MLD A/I 1.8UH 3
L211	2411047C31	CHK RF MLD A/I 1.8UH 3
L213,214	2411047B58	24 uH
L215,216	2411047C31	CHK RF MLD A/I 1.8UH 3
L217	2484250D03	CHK RF 2.2UH
L218	2411047C31	CHK RF MLD A/I 1.8UH 3
L261	2411030A06	7 turns
L262	2411030A02	3 turns
L263	2411047B11	0.27 uH
L266 thru 268	2411047A26	12 uH
L275	2411047A26	12 uH
L276	2411030A06	7 turns
L278,279	2411047B23	0.82 uH
L321	2411030A06	7 turns
L322	2411030A02	3 turns
L323	2411047B11	0.27 uH
L326,327	2411047A26	12 uH
L328	2411047B11	0.27 uH
L329	2411030A03	4 turns
L330,331	2411047A26	12 uH
L332	2411030A04	Coil, rf 5 turns GRN
connector:		
P101	3084158N01	CABLE ASSEMBLY, injection amplifier
P201A	0983109N07	input: includes single contact receptacle co
P262A	0983110N01	receptacle: 4-contact
P322A	0983110N01	receptacle: 14-contact
P402A	0983110N01	receptacle: 14-contact
P454A	0983109N07	receptacle: 4-contact
transistor: (see note)		
Q180	4800869839	N-C Type
Q201	4883865T01	Field Effect N-Channel Dual Gate
Q203	4811056A08	PNP
Q261	4884411L83	NPN
Q262	4813824D10	PNP
Q263	4811056A08	PNP
Q264	4811056B04	NPN 4811056A04
Q265	4800869681	PNP
Q321	4884411L83	NPN

Reference Symbol	Motorola Part No.	Description
Q322	4813824D10	PNP
Q323	4811056A08	PNP
Q324	4811056B04	NPN 4811056A04
Q325	4800869681	PNP
Q326	4884411L83	NPN
Q327	4813823D01	TSTR N-CH RF JFET 2N5484RLRP
Q401	4811056A08	PNP
Q402	4813824A10	NPN
Q403	4800869640	NPN
Q404,405	4800869528	NPN
Q406	4813824A10	NPN
resistor, fixed:		
R180,181	0611077A90	4.7K, +/-5%; 1/8 W
R182	0611077A74	1K, +/-5%; 1/8 W
R183	0611077A62	330 ohms, +/-5%; 1/8W
R184,185	0611077A90	4.7K, +/-5%; 1/8 W
R186,187	0611077B39	470K, +/-5%; 1/8 W
R188,189	0611077B23	100K, +/-5%; 1/8 W
R190	0611077B05	18K, +/-5%; 1/8 W
R191	1882281V01	POT 9MM ROUND SNGL TURN 3319P
R192	0611077A74	1K, +/-5%; 1/8 W
R193	0611077B23	100K, +/-5%; 1/8 W
R194	0611077A50	100 ohms, +/-5%; 1/8 W
R196	0611077A98	10K, +/-5%; 1/8 W
R197	0611077B23	100K, +/-5%; 1/8 W
R198	0611077A98	10K, +/-5%; 1/8 W
R199	0611077B23	100K, +/-5%; 1/8 W
R200	0611077A90	4.7K, +/-5%; 1/8 W
R201	0611077B15	47K, +/-5%; 1/8 W
R202	0611077A88	3.9K, +/-5%; 1/8 W
R203	0611077A50	100 ohms, +/-5%; 1/8 W
R204,205	0611077A98	10K, +/-5%; 1/8 W
R206	0611077A42	47 ohms, +/-5%; 1/8 W
R207	0611077A73	910 ohms, +/-5%; 1/8W
R208	0611077A96	8.2K, +/-5%; 1/8 W
R209	0611077A48	82 ohms, +/-5%; 1/8W
R210	0611077A96	8.2K, +/-5%; 1/8 W
R211	0611077A74	1K, +/-5%; 1/8 W
R212	0611077A90	4.7K, +/-5%; 1/8 W
R214	0611077A74	1K, +/-5%; 1/8 W
R215	0611077A94	6.8K, +/-5%; 1/8W
R216	0611077A50	100 ohms, +/-5%; 1/8 W
R217	0611077A94	6.8K, +/-5%; 1/8W
R218,219	0611077A74	1K, +/-5%; 1/8 W
R220	0611077A70	680 ohms, +/-5%; 1/8 W
R221	0611077A60	270 ohms, +/-5%; 1/8 W
R222	0611077A72	820 ohms, +/-5%; 1/8 W
R223	0611077B29	180K, +/-5%; 1/8 W
R224	0611077B23	100K, +/-5%; 1/8 W
R225	0611077A74	1K, +/-5%; 1/8 W
R226	0611077B05	18K, +/-5%; 1/8 W
R227	0611077A72	820 ohms, +/-5%; 1/8 W
R228	0611077A58	220 ohms, +/-5%; 1/8 W
R229	0611077B15	47K, +/-5%; 1/8 W
R230	0611077A90	4.7K, +/-5%; 1/8 W
R257	0611077A58	220 ohms, +/-5%; 1/8 W
R258	0611077A35	24 ohms, +/-5%; 1/8 W
R259	0611077A58	220 ohms, +/-5%; 1/8 W
R260	0611077B13	39K, +/-5%; 1/8 W
R261	0611077A81	2K, +/-5%; 1/8 W
R262	0611077A84	2.7K, +/-5%; 1/8 W
R263	0611077A78	1.5K, +/-5%; 1/8 W
R270	0611077A90	4.7K, +/-5%; 1/8 W
R271	0611077A66	470 ohms, +/-5%; 1/8 W
R272	0611077A42	47 ohms, +/-5%; 1/8 W
R273	0611077A92	5.6K, +/-5%; 1/8 W
R274	0611077A90	4.7K, +/-5%; 1/8 W
R275	0611077A26	10 ohms, +/-5%; 1/8 W
R276	0611077A54	150 ohms, +/-5%; 1/8 W
R277	0611077A64	390 ohms, +/-5%; 1/8 W
R278	0611077A58	220 ohms, +/-5%; 1/8 W
R279	0611077B15	47K, +/-5%; 1/8 W
R280	0611077A26	10 ohms, +/-5%; 1/8 W
R283	0611077B25	120K, +/-5%; 1/8 W
R284	0611077B30	200K, +/-5%; 1/8 W
R285	0611077A92	5.6K, +/-5%; 1/8 W

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Reference Symbol	Motorola Part No.	Description
R286	0611077A86	3.3K, +/-5%; 1/8 W
R292	0611077A01	0 ohm, +/-5%; 0 W
R295	0611077B25	120K, +/-5%; 1/8 W
R317	0611077A58	220 ohms, +/-5%; 1/8 W
R318	0611077A35	24 ohms, +/-5%; 1/8 W
R319	0611077A58	220 ohms, +/-5%; 1/8 W
R320	0611077B13	39K, +/-5%; 1/8 W
R321	0611077A81	2K, +/-5%; 1/8 W
R322	0611077A84	2.7K, +/-5%; 1/8 W
R323	0611077A78	1.5K, +/-5%; 1/8 W
R330	0611077A90	4.7K, +/-5%; 1/8 W
R331	0611077A66	470 ohms, +/-5%; 1/8 W
R332	0611077A42	47 ohms, +/-5%; 1/8 W
R333,334	0611077A90	4.7K, +/-5%; 1/8 W
R335	0611077A26	10 ohms, +/-5%; 1/8 W
R336	0611077A54	150 ohms, +/-5%; 1/8 W
R337	0611077A72	820 ohms, +/-5%; 1/8 W
R338	0611077A58	220 ohms, +/-5%; 1/8 W
R339	0611077B15	47K, +/-5%; 1/8 W
R340	0611077A26	10 ohms, +/-5%; 1/8 W
R343	0611009B10	330K, +/-5%; 1/4 W
R344	0611077B30	200K, +/-5%; 1/8 W
R345	0611077A92	5.6K, +/-5%; 1/8 W
R346	0611009A61	3.3K, +/-5%; 1/4 W
R347	0611077A36	27 ohms, +/-5%; 1/8 W
R348	0611077A81	2K, +/-5%; 1/8 W
R349	0611077A40	39 ohms, +/-5%; 1/8 W
R350	0611077A36	27 ohms, +/-5%; 1/8 W
R351	0611077A92	5.6K, +/-5%; 1/8 W
R352	0611077A83	2.4K, +/-5%; 1/8 W
R353	0611077A60	270 ohms, +/-5%; 1/8 W
R354	0611077A78	1.5K, +/-5%; 1/8 W
R357	0611077B18	62K, +/-5%; 1/8 W
R358	1882281V01	POT 9MM ROUND SNGL TURN 3319P
R359	0611077A66	470 ohms, +/-5%; 1/8 W
R360	0611009A99	120K, +/-5%; 1/4W
R361	0611009A92	62K, +/-5%; 1/4W
R362	0611009A99	120K, +/-5%; 1/4W
R363	0611077A57	200 ohms, +/-5%; 1/8 W
R364	0611009A33	220 ohms, +/-5%; 1/4 W
R365	0611009A17	47 ohms, +/-5%; 1/4W
R366	0611009A73	10K, +/-5%; 1/4 W
R367	0611009A75	12K, +/-5%; 1/4W
R368	0611009A73	10K, +/-5%; 1/4 W
R369	0611077A96	8.2K, +/-5%; 1/8 W
R370	0611077B25	120K, +/-5%; 1/8 W
R371	0611077A90	4.7K, +/-5%; 1/8 W
R372,373	0611009A73	10K, +/-5%; 1/4 W
R374	0611009A99	120K, +/-5%; 1/4W
R375	0611077A01	0 ohm, +/-5%; 0 W
R386	0611077A01	0 ohm, +/-5%; 0 W
R401	0611077B03	15K, +/-5%; 1/8 W
R403	0611077A34	22 ohms, +/-5%; 1/8 W
R409	1882281V01	POT 9MM ROUND SNGL TURN 3319P
R410	0611077F91	10K, +/-1%; 1/8 W
R411	0611077A01	0 ohm, +/-5%; 0 W
R415	0611049D24	21.5K, +/-1%; 1/4 W
R417	0611077A90	4.7K, +/-5%; 1/8 W
R418	0611077B23	100K, +/-5%; 1/8 W
R419	0611009A42	510 ohms, +/-5%; 1/4 W
R420	0611077A01	0 ohm, +/-5%; 0 W
R421	0611009A66	5.1K, +/-5%; 1/4 W
R423	0611077A90	4.7K, +/-5%; 1/8 W
R424	0611077A98	10K, +/-5%; 1/8 W
R425	0611077A94	6.8K, +/-5%; 1/8W
R426	1882281V02	POT 9MM ROUND SNGL TURN 3319W
R427	0611077A74	1K, +/-5%; 1/8 W
R429	0611009A57	2.2K, +/-5%; 1/4 W
R430	0611077B23	100K, +/-5%; 1/8 W
R431	0611077B07	22K, +/-5%; 1/8 W
R432	0611077B19	68K, +/-5%; 1/8W
R433,434	0611077A98	10K, +/-5%; 1/8 W
R435	0611077B07	22K, +/-5%; 1/8 W
R436	0611077A91	5.1K, +/-5%; 1/8 W
R437	0611009A57	2.2K, +/-5%; 1/4 W

Reference Symbol	Motorola Part No.	Description
R438,439	0611077B43	680K, +/-5%; 1/8 W
R440	0611009A65	4.7K, +/-5%; 1/4 W
R441	0611009A73	10K, +/-5%; 1/4 W
R442	0611077A94	6.8K, +/-5%; 1/8W
R443	0611009B18	680K, +/-5%; 1/4 W
R444	0611009B06	220K, +/-5%; 1/4 W
R445,446	0611077A90	4.7K, +/-5%; 1/8 W
R447,448	0611077A98	10K, +/-5%; 1/8 W
R449	0611077B31	220K, +/-5%; 1/8 W
R450	0611009A09	22 ohms, +/-5%; 1/4 W
R451	0611077B07	22K, +/-5%; 1/8 W
R453	1882281V01	POT 9MM ROUND SNGL TURN 3319P
R460	0611077B23	100K, +/-5%; 1/8 W
R462	0611077A88	3.9K, +/-5%; 1/8 W
R463	0611077B45	820K, +/-5%; 1/8 W
R464	0611077B23	100K, +/-5%; 1/8 W
R467	0611009A49	1K, +/-5%; 1/4 W

thermistor:

RT261	0600858402	1K, +/-10%; 0 W
RT321	0600858402	1K, +/-10%; 0 W

integrated circuit: (see note)

U180	5113815D23	IC AGC/RF VIDEO AMP DL SUP
U181	5184320A13	Operational Amplifier
U182	5113819D04	General Purpose Differential Operational Amplifier
U201	5113815D23	IC AGC/RF VIDEO AMP DL SUP
U202	5184320A78	IF Amplifier/Quadrature Phase Detector
U203	5113815D23	IC AGC/RF VIDEO AMP DL SUP
U262	5183977M37	Programmable Reference Divider
U263	5183977M36	Sample and Hold Phase Detector
U264	5113806D21	analog switching multiplexer
U265	5184768F65	Low Noise Filter
U322	5183977M37	Programmable Reference Divider
U323	5183977M36	Sample and Hold Phase Detector
U324	5113806D21	analog switching multiplexer
U325	5184768F65	Low Noise Filter
U326	5113819D04	General Purpose Differential Operational Amplifier
U401	5184621K74	Comparator
U402	5184621K89	Dual Operational Amplifier

cable assembly:

W102	0180751D84	injection input
W103	0180721E56	VCO Out
W105	0180798D03	IPA Input
W106	0180721E56	VCO Out

crystal: (see note)

Y201	9182673N05	FLTR XTAL
Y202	9182673N06	FLTR XTAL
Y204	9182673N07	FLTR XTAL

non-referenced items:

0500136977	Eye .121 x .093
1485334U01	INSULATOR RUBBER (SILICON) (6 used)
1583142M01	HOUSING, connector: 7-contact (2 used)
1584301K03	HOUSING, connector: 5-contact (2 used)
2682172T01	SHIELD SLDR SIDE (used with E212)
2683681R01	SHIELD, solder side:
	9.65x57.10x38.10MM (used with E211)
2813922A07	HDR 7 POS STR .1 CTR GLD PLTD (used with J264C)
2813922A07	HDR 7 POS STR .1 CTR GLD PLTD (used with J324C)
2882365D02	plug: phono (2 used)
2884302K01	Plug Key, polarized
2980014A01	CLIP, coaxial (terminal) (used with W102)
2980014A01	CLIP, coaxial (terminal) (used with W103)
2980014A01	CLIP, coaxial (terminal) (used with W105)
2980014A01	CLIP, coaxial (terminal) (used with W106)

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Reference Symbol	Motorola Part No.	Description
	3000859004	CABLE, coaxial: type RG316/U (15.38 used)
	3010286B09	24STIVVI (2.76 used)
	3084204N01	CABLE, 4-conductor (11 used)
	3700132049	TBG HS POLYOL 1/4 CLR
	3700132251	tubing polyol. 3/16" (blk) (0.75 used)
	3700132562	TBG HS POLYOL 1/8 CLR (0.38 used)
	3782603D60	SLVG HS POLYOL .125 BLK BLANK (2 used)
	3982717M01	CONTACT, receptacle (18 used)
	4284011N01	CLIP, coaxial cable restraint (2 used)
	5483865R01	Label, bar code: 1/4" wide, white
	5484960T01	Label, bar code: 6.3 x 12.7MM, white
	5584300B01	HANDLE: 3.52" lg (2 used)
	5584300B05	HANDLE: 1.37" lg (used with E211)
	5584300B05	HANDLE: 1.37" lg (used with E212)

Note: For optimum performance, diodes, transistors, integrated circuits, and crystals must be ordered by Motorola part number.

TRN7881 Uniboard Parts List

TRN7881 Uniboard Parts List

Reference Symbol	Motorola Part No.	Description
capacitor, fixed:		
C178 thru 184	2113741B45	0.01 uF, +/-5%; 50 V
C185	2113740B32	20 pF, +/-5%; 50 V
C186	0811051A13	0.1 uF, +/-5%; 63 V
C187	2113741B45	0.01 uF, +/-5%; 50 V
C188	2113740B57	220 pF, +/-5%; 50 V
C189	2113740B32	20 pF, +/-5%; 50 V
C190	2113741B45	0.01 uF, +/-5%; 50 V
C191	2113740B49	100 pF, +/-5%; 50 V
C192	2113741B45	0.01 uF, +/-5%; 50 V
C193	2311054H08	10 uF, +/-10%; 25V
C194	2311054L14	4.7 uF, +/-10%; 50 V
C195	2113740B49	100 pF, +/-5%; 50 V
C196	2113741B45	0.01 uF, +/-5%; 50 V
C198	2113740B57	220 pF, +/-5%; 50 V
C199	2113740B29	15 pF, +/-5%; 50 V
C201	2113741B45	0.01 uF, +/-5%; 50 V
C202	2113740B36	30 pF, +/-5%; 50V
C203	2113740B32	20 pF, +/-5%; 50 V
C204	2182450B61	1 pF, +/-5%; 500V
C205	2113740B36	30 pF, +/-5%; 50V
C206	2113740B35	27 pF, +/-5%; 50 V
C207 thru 210	2113741B45	0.01 uF, +/-5%; 50 V
C212	2113740B29	15 pF, +/-5%; 50 V
C213	2113741B45	0.01 uF, +/-5%; 50 V
C215	2113740B23	8.2 pF, +/-0.25 pF; 50V
C216	2113741B45	0.01 uF, +/-5%; 50 V
C217	2113740B21	6.8 pF, +/-0.25 pF; 50 V
C218	2113740B23	8.2 pF, +/-0.25 pF; 50V
C219	2113740B47	82 pF, +/-5%; 50V
C220	2182450B08	1.2 pF, +/-5%; 500V
C221	2113740B28	13 pF, +/-5%; 50V
C222	2113740B32	20 pF, +/-5%; 50 V
C223,224	2113741B45	0.01 uF, +/-5%; 50 V
C225	2113740B35	27 pF, +/-5%; 50 V
C226	2113741B45	0.01 uF, +/-5%; 50 V
C227	0811051A13	0.1 uF, +/-5%; 63 V
C228	2113741B45	0.01 uF, +/-5%; 50 V
C229	0811051A13	0.1 uF, +/-5%; 63 V
C230	2113741B45	0.01 uF, +/-5%; 50 V
C231	2113740B36	30 pF, +/-5%; 50V
C232	2113740B23	8.2 pF, +/-0.25 pF; 50V
C234,235	2113740B22	7.5 pF, +/-0.25 pF; 50V
C236	2113740B47	82 pF, +/-5%; 50V
C237	2182450B32	2.7 pF, +/-5%; 500V
C239 thru 243	2113741B45	0.01 uF, +/-5%; 50 V
C244	0811051A13	0.1 uF, +/-5%; 63 V
C245	2113740B37	33 pF, +/-5%; 50V
C246	2113741B45	0.01 uF, +/-5%; 50 V
C247	2113740B21	6.8 pF, +/-0.25 pF; 50 V
C248	2113740B34	24 pF, +/-5%; 50V
C249 thru 254	2113741B45	0.01 uF, +/-5%; 50 V
C255,256	2113740B57	220 pF, +/-5%; 50 V
C257	2311054H08	10 uF, +/-10%; 25V
C258,259	2113741B45	0.01 uF, +/-5%; 50 V
C261	2113740B49	100 pF, +/-5%; 50 V
C262	2113740B09	2.2 pF, +/-0.25 pF; 50 V
C263,264	2113740B49	100 pF, +/-5%; 50 V
C267	2113740B49	100 pF, +/-5%; 50 V
C270	2113740B49	100 pF, +/-5%; 50 V
C272	2113741B45	0.01 uF, +/-5%; 50 V
C274	2113740B73	1000 pF, +/-5%; 50 V
C275	0811051A13	0.1 uF, +/-5%; 63 V
C276	0811017A08	0.01 uF, +/-5%; 50 V
C277	2113740B49	100 pF, +/-5%; 50 V
C278	2113741B45	0.01 uF, +/-5%; 50 V
C279	2313748G18	47 uF, +/-20%; 25 V
C280 thru 282	2113740B49	100 pF, +/-5%; 50 V
C283	2113741B41	6800 pF, +/-5%; 50 V
C284	2313748G18	47 uF, +/-20%; 25 V
C286	2113741B37	4700 pF, +/-5%; 50 V
C288	2183162H09	1000 pF, +/-5%; 25V

Reference Symbol	Motorola Part No.	Description
C289	2113741B45	0.01 uF, +/-5%; 50 V
C290	2113740B49	100 pF, +/-5%; 50 V
C291	2113741B45	0.01 uF, +/-5%; 50 V
C292	0811051A14	0.15 uF, +/-5%; 63V
C293	0811051A18	0.68 uF, +/-5%; 63V
C294	0811051A11	0.047 uF, +/-5%; 63V
C295,296	2113740B49	100 pF, +/-5%; 50 V
C299	2113740B25	10 pF, +/-5%; 50 V
C300	2113740B49	100 pF, +/-5%; 50 V
C301	2113740B15	3.9 pF, +/-0.25 pF; 50 V
C302	2113740B11	2.7 pF, +/-0.25 pF; 50V
C304	2113740B73	1000 pF, +/-5%; 50 V
C305	2113741B69	0.1 uF, +/-5%; 50 V
C306	2313748G08	10 uF, +/-20%; 16 V
C307	2311054L14	4.7 uF, +/-10%; 50 V
C308	2313748G27	150 uF, +/-20%; 16V
C311	2113740B49	100 pF, +/-5%; 50 V
C313	2113740B49	100 pF, +/-5%; 50 V
C320	2113741B45	0.01 uF, +/-5%; 50 V
C321	2113740B49	100 pF, +/-5%; 50 V
C322	2113740B09	2.2 pF, +/-0.25 pF; 50 V
C323,324	2113740B49	100 pF, +/-5%; 50 V
C327	2113740B49	100 pF, +/-5%; 50 V
C330	2113740B49	100 pF, +/-5%; 50 V
C332	2113741B45	0.01 uF, +/-5%; 50 V
C334	2113740B73	1000 pF, +/-5%; 50 V
C335	0811051A13	0.1 uF, +/-5%; 63 V
C336	0811017A08	0.01 uF, +/-5%; 50 V
C337	2113740B49	100 pF, +/-5%; 50 V
C338	2113741B45	0.01 uF, +/-5%; 50 V
C339	2313748G18	47 uF, +/-20%; 25 V
C340 thru 342	2113740B49	100 pF, +/-5%; 50 V
C343	2113741B41	6800 pF, +/-5%; 50 V
C344	2313748G18	47 uF, +/-20%; 25 V
C346	2113741B37	4700 pF, +/-5%; 50 V
C348	2183162H09	1000 pF, +/-5%; 25V
C349	2113741B45	0.01 uF, +/-5%; 50 V
C350	2113740B49	100 pF, +/-5%; 50 V
C351	2113741B45	0.01 uF, +/-5%; 50 V
C352	2311054L02	0.47 uF, +/-10%; 50 V
C353	0883862M02	2 uF, +/-10%; 100 V
C354	0811051A09	0.022 uF, +/-5%; 63 V
C355 thru 358	2113740B49	100 pF, +/-5%; 50 V
C359	2113741B69	0.1 uF, +/-5%; 50 V
C360	2313748G08	10 uF, +/-20%; 16 V
C361	2311054L14	4.7 uF, +/-10%; 50 V
C362,363	2313748G18	47 uF, +/-20%; 25 V
C364	2313748G08	10 uF, +/-20%; 16 V
C365,366	2311054H08	10 uF, +/-10%; 25V
C367	2113741B45	0.01 uF, +/-5%; 50 V
C368	2313748G08	10 uF, +/-20%; 16 V
C369	2313748G22	100 uF, +/-20%; 25 V
C371	2113740B49	100 pF, +/-5%; 50 V
C372	2113741B45	0.01 uF, +/-5%; 50 V
C373	2113740B69	680 pF, +/-5%; 50V
C384	2113740B73	1000 pF, +/-5%; 50 V
C385	2113741B45	0.01 uF, +/-5%; 50 V
C387	0811051A16	0.33 uF, +/-5%; 63V
C388	2113740B49	100 pF, +/-5%; 50 V
C390	2113741B45	0.01 uF, +/-5%; 50 V
C405	2311054L04	0.68 uF, +/-10%; 50 V
C406	2311054L06	1 uF, +/-10%; 50 V
C408	0811017A03	2200 pF, +/-5%; 50 V
C409	2311054L04	0.68 uF, +/-10%; 50 V
C410	2113740B49	100 pF, +/-5%; 50 V
C411	0811051A13	0.1 uF, +/-5%; 63 V
C412	2313748G16	47 uF, +/-20%; 10 V
C414	2113740B49	100 pF, +/-5%; 50 V

diode: (see note)

CR180,181	4805129M41	Rectifier
CR182	4813833C07	Diode, dual 100 W

TRN7881 Uniboard Parts List

Reference Symbol	Motorola Part No.	Description
CR401	4883654H01	silicon
CR404	4813833C10	0.1A, 70V
CR405	4883654H01	silicon
CR406,407	4813833C10	0.1A, 70V
CR408	4883654H01	silicon
CR409	4813833C10	0.1A, 70V
CR411	4883654H01	silicon
shield:		
E201 thru 207	2683696R01	SHIELD, coil
E208	2684971R01	SHIELD CAN
E209	2683697R01	SHIELD, crystal
E210	2683121N03	SHIELD, can: transmitter
E213	2684971R01	SHIELD CAN
E265	2683120N01	SHIELD, can: 18.42x47.63x26.67MM
E322	2683122N04	Shield, can: 12.45 x 13.34 x 20.32MM
E326	2683120N02	SHLD CKT BD TOP
E328	2684397N01	SHLD SLDR SIDE XMTR
connector:		
J202	3084897T01	COAX ASSEM RSSI
J210	0983112N02	receptacle: 8-contact
J264C	0180730E03	receiver VCO steering
J324C	0180730E02	transmitter VCO steering
J381	0983109N06	receptacle: 2-contact
J413	0983112N02	receptacle: 8-contact
inductor:		
L180,181	2411047B58	24 UH
L182	2484250D03	CHK RF 2.2UH
L201	2411047B23	0.82 uH
L202	2411047C31	CHK RF MLD A/I 1.8UH 3
L203	2411047C37	CHK RF MLD A/I 3.3UH 3
L205	2411047C37	CHK RF MLD A/I 3.3UH 3
L207	2411047C31	CHK RF MLD A/I 1.8UH 3
L208	2411047B58	24 UH
L209	2411047C31	CHK RF MLD A/I 1.8UH 3
L211	2411047C31	CHK RF MLD A/I 1.8UH 3
L213,214	2411047B58	24 UH
L215,216	2411047C31	CHK RF MLD A/I 1.8UH 3
L217	2484250D03	CHK RF 2.2UH
L218	2411047C31	CHK RF MLD A/I 1.8UH 3
L261	2411030A06	7 turns
L262	2411030A02	3 turns
L263	2411047B11	0.27 UH
L266 thru 268	2411047A26	12 uH
L275	2411047A26	12 uH
L276	2411030A06	7 turns
L278,279	2411047B23	0.82 uH
L321	2411030A06	7 turns
L322	2411030A02	3 turns
L323	2411047B11	0.27 UH
L326,327	2411047A26	12 uH
L328	2411047B11	0.27 UH
L329	2411030A03	4 turns
L330,331	2411047A26	12 uH
L332	2411030A04	Coil, rf 5turns GRN
connector:		
P101	3084158N01	CABLE ASSEMBLY, injection amplifier
P201A	0983109N07	input: includes single contact receptacle co
P262A	0983110N01	receptacle: 4-contact
P322A	0983110N01	receptacle: 14-contact
P402A	0983110N01	receptacle: 14-contact
P454A	0983109N07	receptacle: 4-contact
transistor: (see note)		
Q180	4800869839	N-C Type
Q201	4883865T01	Field Effect N-Channel Dual Gate
Q203	4811056A08	PNP
Q261	4884411L83	NPN
Q262	4813824D10	PNP
Q263	4811056A08	PNP
Q264	4811056B04	NPN 4811056A04
Q265	4800869681	PNP

Reference Symbol	Motorola Part No.	Description
Q321	4884411L83	NPN
Q322	4813824D10	PNP
Q323	4811056A08	PNP
Q324	4811056B04	NPN 4811056A04
Q325	4800869681	PNP
Q326	4884411L83	NPN
Q327	4813823D01	TSTR N-CH RF JFET 2N5484RLRP
Q401	4811056A08	PNP
Q402	4813824A10	NPN
Q403	4800869640	NPN
Q404,405	4800869528	NPN
Q406	4813824A10	NPN
resistor, fixed:		
R180,181	0611077A90	4.7K, +/-5%; 1/8 W
R182	0611077A74	1K, +/-5%; 1/8 W
R183	0611077A62	330 ohms, +/-5%; 1/8W
R184,185	0611077A90	4.7K, +/-5%; 1/8 W
R186,187	0611077B39	470K, +/-5%; 1/8 W
R188,189	0611077B23	100K, +/-5%; 1/8 W
R190	0611077B05	18K, +/-5%; 1/8 W
R191	1882281V01	POT 9MM ROUND SNGL TURN 3319P
R192	0611077A74	1K, +/-5%; 1/8 W
R193	0611077B23	100K, +/-5%; 1/8 W
R194	0611077A50	100 ohms, +/-5%; 1/8 W
R196	0611077A98	10K, +/-5%; 1/8 W
R197	0611077B23	100K, +/-5%; 1/8 W
R198	0611077A98	10K, +/-5%; 1/8 W
R199	0611077B23	100K, +/-5%; 1/8 W
R200	0611077A90	4.7K, +/-5%; 1/8 W
R201	0611077B15	47K, +/-5%; 1/8 W
R202	0611077A88	3.9K, +/-5%; 1/8 W
R203	0611077A50	100 ohms, +/-5%; 1/8 W
R204,205	0611077A98	10K, +/-5%; 1/8 W
R206	0611077A42	47 ohms, +/-5%; 1/8 W
R207	0611077A73	910 ohms, +/-5%; 1/8W
R208	0611077A96	8.2K, +/-5%; 1/8 W
R209	0611077A48	82 ohms, +/-5%; 1/8W
R210	0611077A96	8.2K, +/-5%; 1/8 W
R211	0611077A74	1K, +/-5%; 1/8 W
R212	0611077A90	4.7K, +/-5%; 1/8 W
R214	0611077A74	1K, +/-5%; 1/8 W
R215	0611077A94	6.8K, +/-5%; 1/8W
R216	0611077A50	100 ohms, +/-5%; 1/8 W
R217	0611077A94	6.8K, +/-5%; 1/8W
R218,219	0611077A74	1K, +/-5%; 1/8 W
R220	0611077A70	680 ohms, +/-5%; 1/8 W
R221	0611077A60	270 ohms, +/-5%; 1/8 W
R222	0611077A72	820 ohms, +/-5%; 1/8 W
R223	0611077B29	180K, +/-5%; 1/8 W
R224	0611077B23	100K, +/-5%; 1/8 W
R225	0611077A74	1K, +/-5%; 1/8 W
R226	0611077B05	18K, +/-5%; 1/8 W
R227	0611077A72	820 ohms, +/-5%; 1/8 W
R228	0611077A58	220 ohms, +/-5%; 1/8 W
R229	0611077B15	47K, +/-5%; 1/8 W
R230	0611077A90	4.7K, +/-5%; 1/8 W
R257	0611077A58	220 ohms, +/-5%; 1/8 W
R258	0611077A35	24 ohms, +/-5%; 1/8 W
R259	0611077A58	220 ohms, +/-5%; 1/8 W
R260	0611077B13	39K, +/-5%; 1/8 W
R261	0611077A81	2K, +/-5%; 1/8 W
R262	0611077A84	2.7K, +/-5%; 1/8 W
R263	0611077A78	1.5K, +/-5%; 1/8 W
R270	0611077A90	4.7K, +/-5%; 1/8 W
R271	0611077A66	470 ohms, +/-5%; 1/8 W
R272	0611077A42	47 ohms, +/-5%; 1/8 W
R273	0611077A92	5.6K, +/-5%; 1/8 W
R274	0611077A90	4.7K, +/-5%; 1/8 W
R275	0611077A26	10 ohms, +/-5%; 1/8 W
R276	0611077A54	150 ohms, +/-5%; 1/8 W
R277	0611077A64	390 ohms, +/-5%; 1/8 W
R278	0611077A58	220 ohms, +/-5%; 1/8 W
R279	0611077B15	47K, +/-5%; 1/8 W
R280	0611077A26	10 ohms, +/-5%; 1/8 W
R283	0611077B25	120K, +/-5%; 1/8 W
R284	0611077B30	200K, +/-5%; 1/8 W

TRN7881 Uniboard Parts List

Reference Symbol	Motorola Part No.	Description
	2813922A07	HDR 7 POS STR .1 CTR GLD PLTD (used with J324C)
	2882365D02	plug: phono
	2884302K01	Plug Key, polarized
	2980014A01	CLIP, coaxial (terminal) (used with J202)
	2980014A01	CLIP, coaxial (terminal) (used with W102)
	2980014A01	CLIP, coaxial (terminal) (used with W103)
	2980014A01	CLIP, coaxial (terminal) (used with W105)
	2980014A01	CLIP, coaxial (terminal) (used with W106)
	3000659004	CABLE, coaxial: type RG316/U (7.5 used)
	3010286B09	24STIVVI (2.76 used)
	3084204N01	CABLE, 4-conductor (11 used)
	3700132049	TBG HS POLYOL 1/4 CLR
	3700132251	tubing polyol. 3/16" (blk) (0.75 used)
	3700132562	TBG HS POLYOL 1/8 CLR (0.38 used)
	3782603D60	SLVG HS POLYOL .125 BLK BLANK (2 used)
	3982717M01	CONTACT, receptacle (18 used)
	4284011N01	CLIP, coaxial cable restraint
	5483865R01	Label, bar code: 1/4" wide, white
	5484960T01	Label, bar code: 6.3 x 12.7MM, white
	5584300B01	HANDLE: 3.52" lg (2 used)
	5584300B05	HANDLE: 1.37" lg (used with E211)
	5584300B05	HANDLE: 1.37" lg (used with E212)

Note: For optimum performance, diodes, transistors, integrated circuits, and crystals must be ordered by Motorola part number.

Reference Symbol	Motorola Part No.	Description
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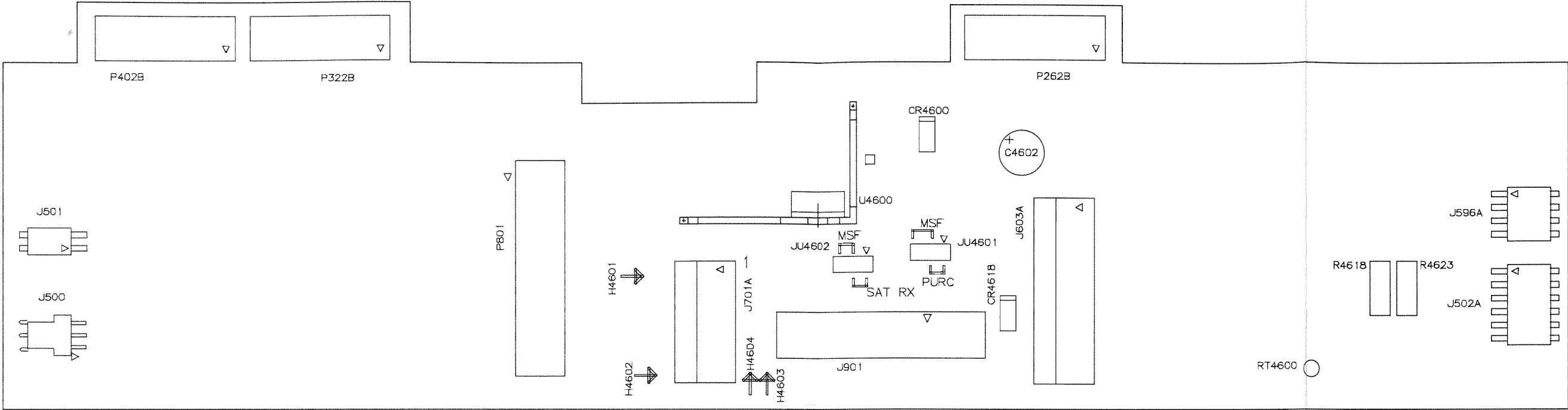
TRN7142 Interconnect Board

Table 2-3 lists parts that are not placed on this Interconnect Board.

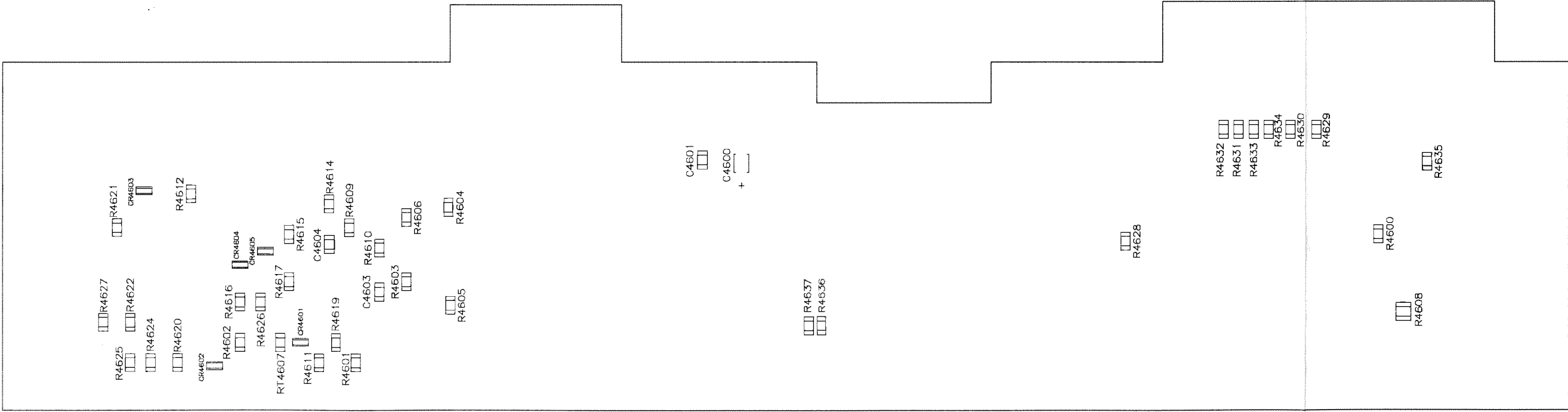
Table 2-3 *Interconnect Board Kit Component Values*

REFERENCE DESIGNATOR	TRN7142
C4604	100p
CR4601	.1A
CR4602	.1A
JU4601	--
JU4602	--
R4609	4.7k
R4611	--
R4612	150
R4614	33k
R4615	1.2k
R4620	100k
R4621	1.2k
R4622	7.5k
R4623	10k
R4624	13k
R4625	1k
R4627	4.02k
R4628	10k
R4629	8.2
R4630	0
R4631	0
R4632	0
R4633	0
R4634	0
R4635	0
RT4600	--
Note: Unless otherwise noted, all resistors are in ohms and all capacitors are in microfarads.	

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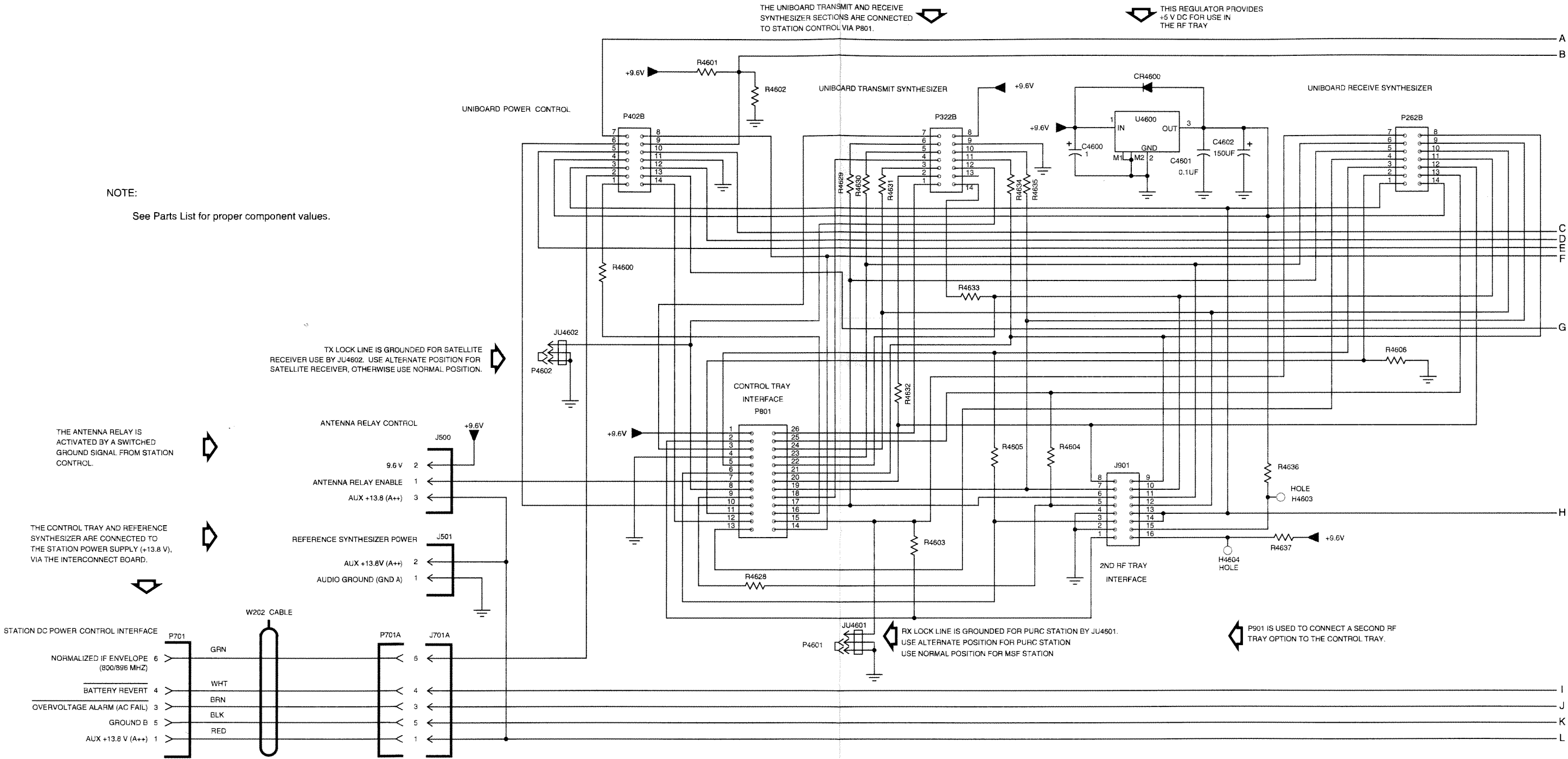


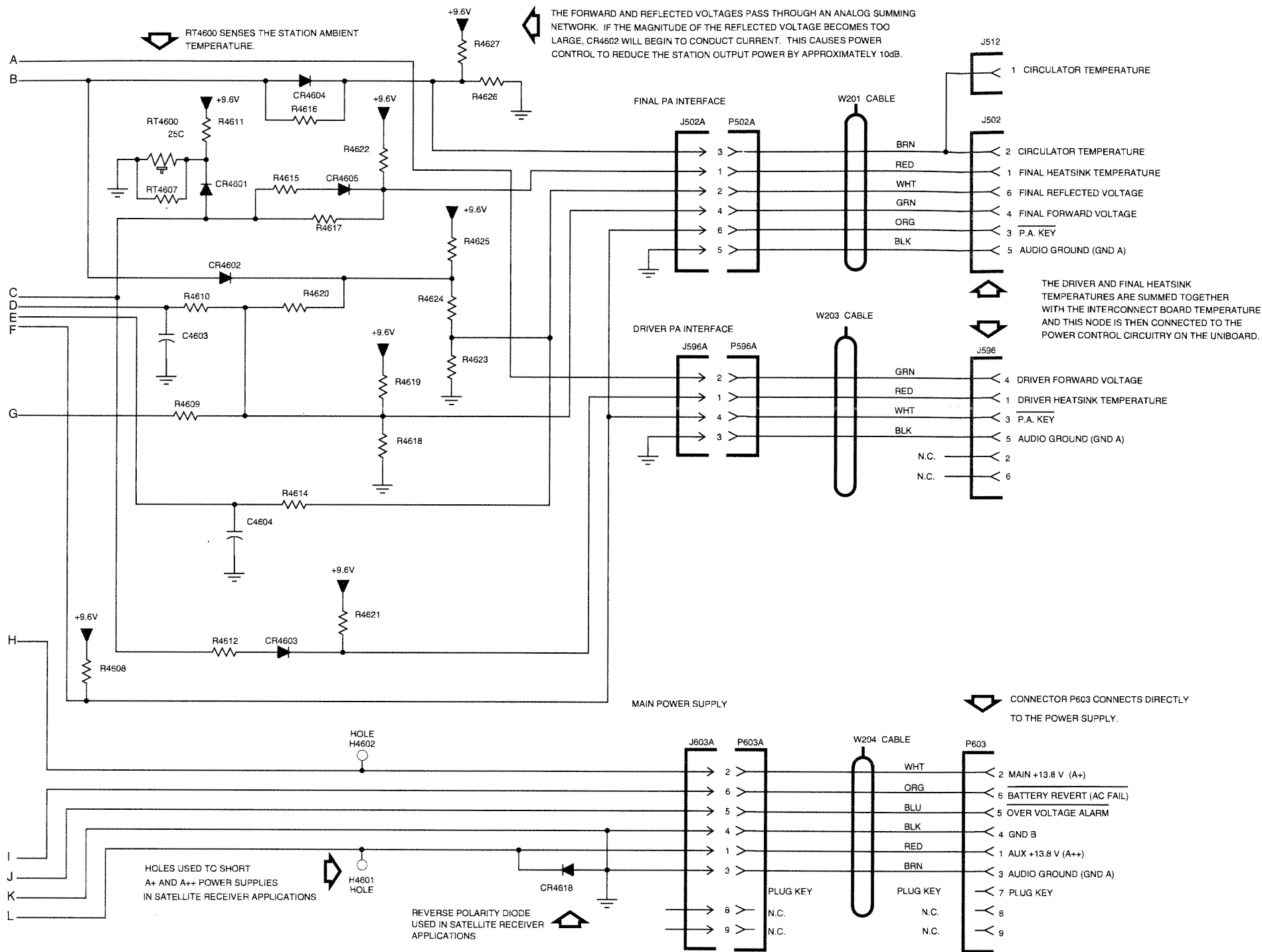
COMPONENT SIDE



SOLDER SIDE

TRN7142 Interconnect Board





TRN7142 Interconnect Board Parts List

TRN7142 Interconnect Board Parts List

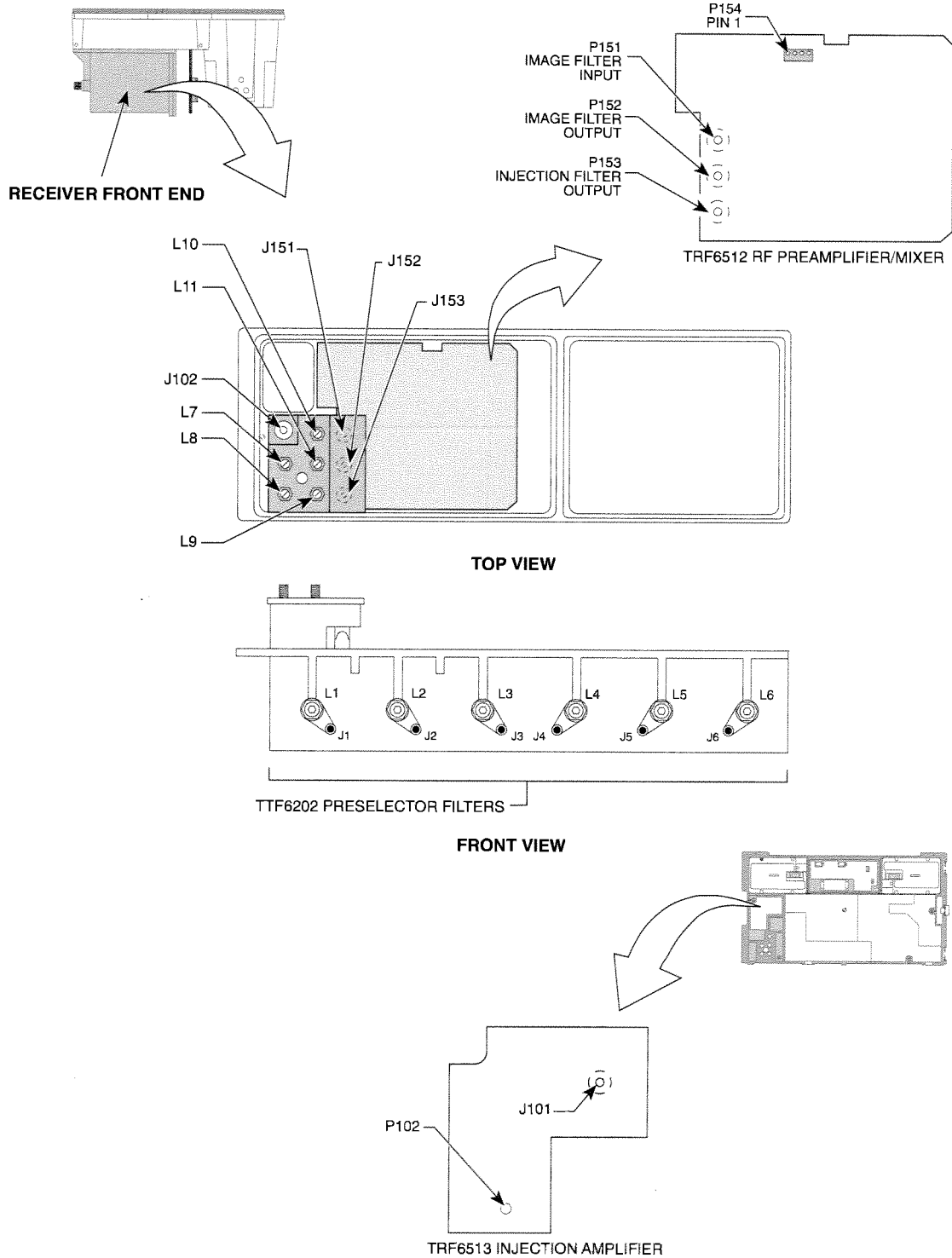
Reference Symbol	Motorola Part No.	Description
capacitor, fixed:		
C4600	2311049A08	1 uF, +/-10%; 35 V
C4601	2113741B69	0.1 uF, +/-5%; 50 V
C4602	2313748G27	150 uF, +/-20%; 16V
C4603,4604	2113740B49	100 pF, +/-5%; 50 V
diode: (see note)		
CR4600	4813833D08	1A, 600V
CR4601 thru 4605	4813833C10	0.1A, 70V
connector:		
J500	2813922B03	HDR 3 POS RT .1 CTR GLD PLTD
J501	2813922B02	HDR 2 POS RT .1 CTR GLD PLTD
J502A	2813922B06	HDR 6 POS RT .1 CTR GLD PLTD
J596A	2813922B04	HDR 4 POS RT .1 CTR GLD PLTD
J603A	2882984N14	plug: 9-contact
J701A	2882984N13	plug: 6-contact
J901	2882505T02	plug: 16-contact
connector:		
P262B	0983111N02	receptacle: 14-contact
P322B	0983111N02	receptacle: 14-contact
P402B	0983111N02	receptacle: 14-contact
P801	2883290P13	plug: 26-contact
resistor, fixed:		
R4600	0611077A74	1K, +/-5%; 1/8 W
R4601	0611077G09	15K, +/-1%; 1/8 W
R4602	0611077F91	10K, +/-1%; 1/8 W
R4608	0611072A49	1K, +/-5%, 1/4W
R4609	0611077A90	4.7K, +/-5%; 1/8 W
R4610	0611077B23	100K, +/-5%; 1/8 W
R4611	0611077B11	33K, +/-5%; 1/8 W
R4612	0611077A76	1.2K, +/-5%; 1/8 W
R4614	0611077B23	100K, +/-5%; 1/8 W
R4615	0611077A76	1.2K, +/-5%; 1/8 W
R4618	0611045A49	1K, +/-5%; 1/2W
R4619	0611077B23	100K, +/-5%; 1/8 W
R4620	0611077A95	7.5K, +/-5%; 1/8W
R4621	0611077A98	10K, +/-5%; 1/8 W
R4622	0611077B02	13K, +/-5%; 1/8W
R4623	0611045A49	1K, +/-5%; 1/2W
R4624	0611077F53	4.02K, +/-1%; 1/8W
R4625	0611077F91	10K, +/-1%; 1/8 W
R4626	0611077A98	10K, +/-5%; 1/8 W
R4627	0611077A96	8.2K, +/-5%; 1/8 W
R4628 thru 4635	0611077A01	0 ohm, +/-5%; 0 W
thermistor:		
RT4600	0683600K05	100K, +/-10%; 2 MW
integrated circuit: (see note)		
U4600	5113816D01	5 V Positive Regulator
non-referenced items:		
	0210971A16	NUT, hex: 3 x0.5mm
	0310907A19	SCREW, machine: M3x0.5x8
	0484152B01	WASHER, shoulder
	0984728L01	Shorting Jumper: 2-contact (used with JU4601)
	0984728L01	Shorting Jumper: 2-contact (used with JU4602)
	1483820M02	INSULATOR, heat conductive
	2684012N01	HEAT SINK
	2880001R03	plug: 3-contact (used with JU4601)
	2880001R03	plug: 3-contact (used with JU4602)
	5483865R01	Label, bar code: 1/4" wide, white

Reference Symbol	Motorola Part No.	Description
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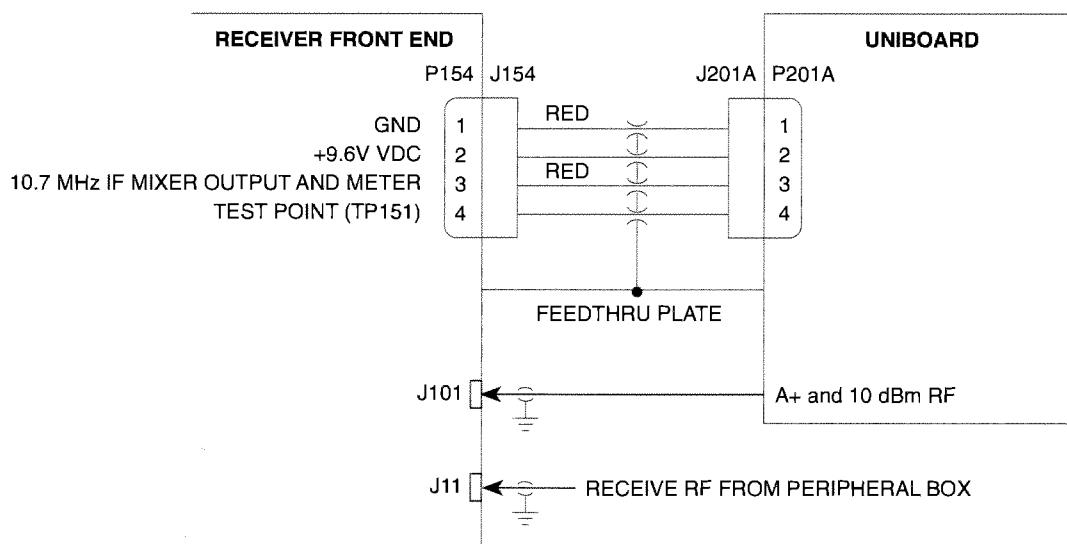
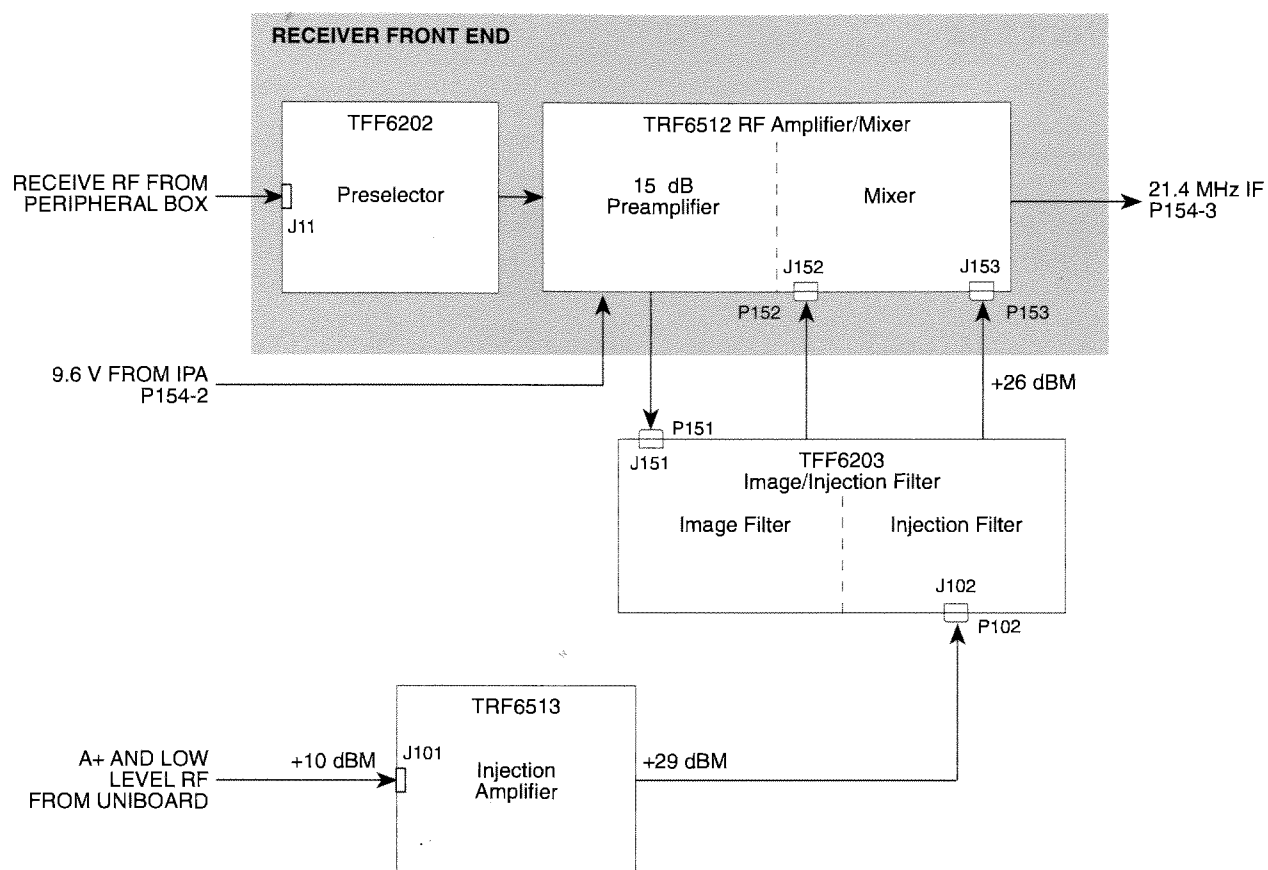
5484960T01 Label, bar code: 6.3 x 12.7MM, white

Note: For optimum performance, diodes and integrated circuits must be ordered by Motorola part number.

Receiver Front End



MSFS119
050694JNM

Receiver Front EndMSFS120
053194KOM

Control Tray

Chapter Overview

This chapter contains overlays, schematics, and parts lists for components of the Control Tray.

Table 3-1 Chapter Contents

Section	Overlay Page	Schematic Page	Connector Page	Parts List Page
TLN3384 SSCB (VHF/UHF)	3-5	3-6	3-4	3-15
TLN3385 SSCB (VHF/UHF)	3-5	3-6	3-4	3-20
TLN3386 SSCB (800 MHz)	3-5	3-6	3-4	3-25
TLN3387 SSCB (900 MHz)	3-5	3-6	3-4	3-30
TLN3112 TTRC Audio Board	3-37	3-38	3-35	3-45
TLN7754 TTRC Logic Board	3-49	3-50	3-35	3-53
TLN3045 Secure Board	3-57	3-58	3-56	3-63
TLN3267 Secure Board	3-57	3-58	3-56	3-65

Secure Capable Station Control Board (SSCB)

The following information covers models TLN3384, TLN3385, TLN3386 and TLN3387 SSCBs. The TLN3182 and TLN3318 SSCBs have been replaced by TLN3384. The TLN3189 and TLN3319 SSCBs have been replaced by TLN3385. The TLN3204 and TLN33320 SSCBs have been replaced by TLN3386. The TLN3205 and TLN3342 SSCBs have been replaced by TLN3387.

Table 3-2 lists parts that may or may not be placed on all SSCB boards. Some boards may also use different values for the same component.

Table 3-2 *SSCB Kit Component Values*

REFERENCE DESIGNATOR	TLN3384	TLN3385	TLN3386	TLN3387
C1554	.001uF	.01uF	.001uF	.001uF
C1556	.001uF	.01uF	.001uF	.001uF
C1564	1000PF	4700PF	4700PF	--
R1523	47k	47k	56k	47k
R1525	100k	56k	33k	39k
R1527	330k	56k	33k	39k
R1532	22k	150k	150k	22k
R1535	120k	100k	47k	120k
R1536	220k	470k	220k	220k
R1557	22k	150k	150k	22k
R1561	120k	100k	47k	120k
R1562	220k	470k	220k	220k
R1571	10k	82k	10k	10k
R1572	--	0	0	0
R1573	5.1k	43k	5.1k	5.1k
R1574	5.1k	43k	5.1k	5.1k
R8119	510	510	510	1.5k
R8120	560	560	560	1.8k
R8132	5.6k	6.8k	6.8k	5.6k
R8177	33k	33k	33k	27k
R8180	33k	33k	33k	27k
R8186	3.6k	30k	3.6k	--
R8196	1.2k	1.2k	1.2k	680
VR1532	2.7V	3.3V	3.3V	3.3V
VR1533	2.7V	3.3V	3.3V	3.3V
Note: Unless otherwise noted, all resistors are in ohms and all capacitors are in microfarads.				

SSCB Connectors

J800

PIN OUT DETAIL

Quad 1 Audio	39	40	Audio Gnd
Audio Gnd	37	38	Rx1 Audio
Rx2 Audio	35	36	Tx Audio
Local Audio	33	34	Tx Data Audio
GCC/RAC Data Audio	31	32	Select Audio
Quad 2 Audio	29	30	Diversity Audio
Audio Spare	27	28	Gen Tx Data
Logic Spare	25	26	Audio Spare
Shut Down	23	24	Logic Spare
Logic Gnd	21	22	DS *
BD2 *	19	20	BD3 *
BD0 *	17	18	BD1 *
BA2	15	16	BA3
BA0	13	14	BA1
IPBC	11	12	Expansion Reset *
Audio Gnd	9	10	Audio Gnd
Audio Gnd	7	8	Audio Gnd
A++	5	6	Audio Gnd
A++	3	4	A++
A++	1	2	A++

J801

PIN OUT DETAIL

Tx Strobe	26	25	Rx1 Strobe
SA0	24	23	SD3
SA1	22	21	SD2
SA2	20	19	SD1
Tx Loop	18	17	SD0
PA Power Cutback *	16	15	Rx1 Lock *
PA Key *	14	13	Rx1 Loop
PA On *	12	11	AGC Ref (800/896)
PA Full Power *	10	9	Rx2 Strobe
Tx Lock *	8	7	Antenna Relay Enable *
Row Rx2 Audio	6	5	Row Rx1 Audio
Audio Gnd (Gnd A)	4	3	Tx Mod Audio
Rx2 Lock *	2	1	+9.6V

J802

PIN OUT DETAIL

1	Logic Gnd
2	MRTI PL Strip *
3	Logic Gnd
4	MRTI Monitor *
5	MRTI PTT *
6	Logic Gnd
7	Audio Gnd
8	IN MRTI Audio
9	Logic Gnd
10	Out MRTI Audio
11	MRTI Rx Carrier
12	MRTI Inhibit
13	N.C.
14	MRTI Aux Indicate
15	N.C.
16	A++
17	A++
18	Audio Gnd
19	N.C.
20	N.C.

ASIC SOCKET DETAIL

11	9	7	5	3	1	83	81	79	77	75
12	13	10	8	6	4	2	84	82	80	78
14	15									73
16	17									72
18	19									71
20	21									70
22	23									69
24	25									68
26	27									67
28	29									66
30	31									65
32	34	36	38	40	42	44	46	48	50	52
33	35	37	39	41	43	45	47	49	51	53
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J803

PIN OUT DETAIL

Audio Gnd	40	39	+5V
N.C.	38	37	Key Battery Gnd
N.C.	36	35	Coded Rx Level *
Secure Alert Tones	34	33	Expansion Reset *
Coded Mod Level *	32	31	Level Inc
Level U/D *	30	29	IPCB
In MRTI Audio	28	27	Quad Audio
N.C.	26	25	DS *
BA0	24	23	BA1 *
BA2	22	21	BA3 *
BD0 *	20	19	BD1 *
BD2 *	18	17	BD3 *
Logic Gnd	16	15	HSR Syn
Logic Gnd	14	13	HSR Clock
Logic Gnd	12	11	HSR to Secure
Logic Gnd	10	9	HSR In
Local Audio	8	7	Coded Mod Audio
Row Tx Audio	6	5	Tx Audio
Secure Rx Audio	4	3	+9.6V
Audio Gnd	2	1	Audio Gnd

J804

PIN OUT DETAIL

Audio Gnd	34	33	+5V
A++	32	31	+5V
Gen Tx Data	30	29	Mute
Expansion Reset *	28	27	Connect Tone Audio
IPCB	26	25	DS *
BA0	24	23	BA1
BA2	22	21	BA3
BD0 *	20	19	BD1 *
BD2 *	18	17	BD3 *
Logic Gnd	16	15	HSR Syn
Logic Gnd	14	13	HSR Clock
Logic Gnd	12	11	HSR from TTRC
Logic Gnd	10	9	HSR Out
Quad Audio	8	7	TKG Mod Audio
Row Tx Audio	6	5	Tx Audio
Line Audio	4	3	9.6V
Audio Gnd	2	1	A++

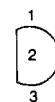
J812

PIN OUT DETAIL

IPCB	6	5	Spkr Audio
MIC PTT *	4	3	MIC Audio
Audio Ground	2	1	Logic Ground

TRANSISTOR DETAILS (TOP VIEW)

4800869642
4800889328
4800869643
4811043C05
4811043C26
4811043C06



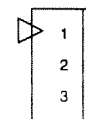
1 - EMITTER
2 - BASE
3 - COLLECTOR

4811043C37
4800869653



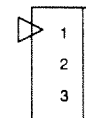
1 - DRAIN
2 - SOURCE
3 - COLLECTOR

4800869828

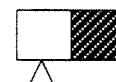


1 - EMITTER
2 - BASE
3 - COLLECTOR

4883875D05



1 - CATHODE
2 - ANODE
3 - GATE

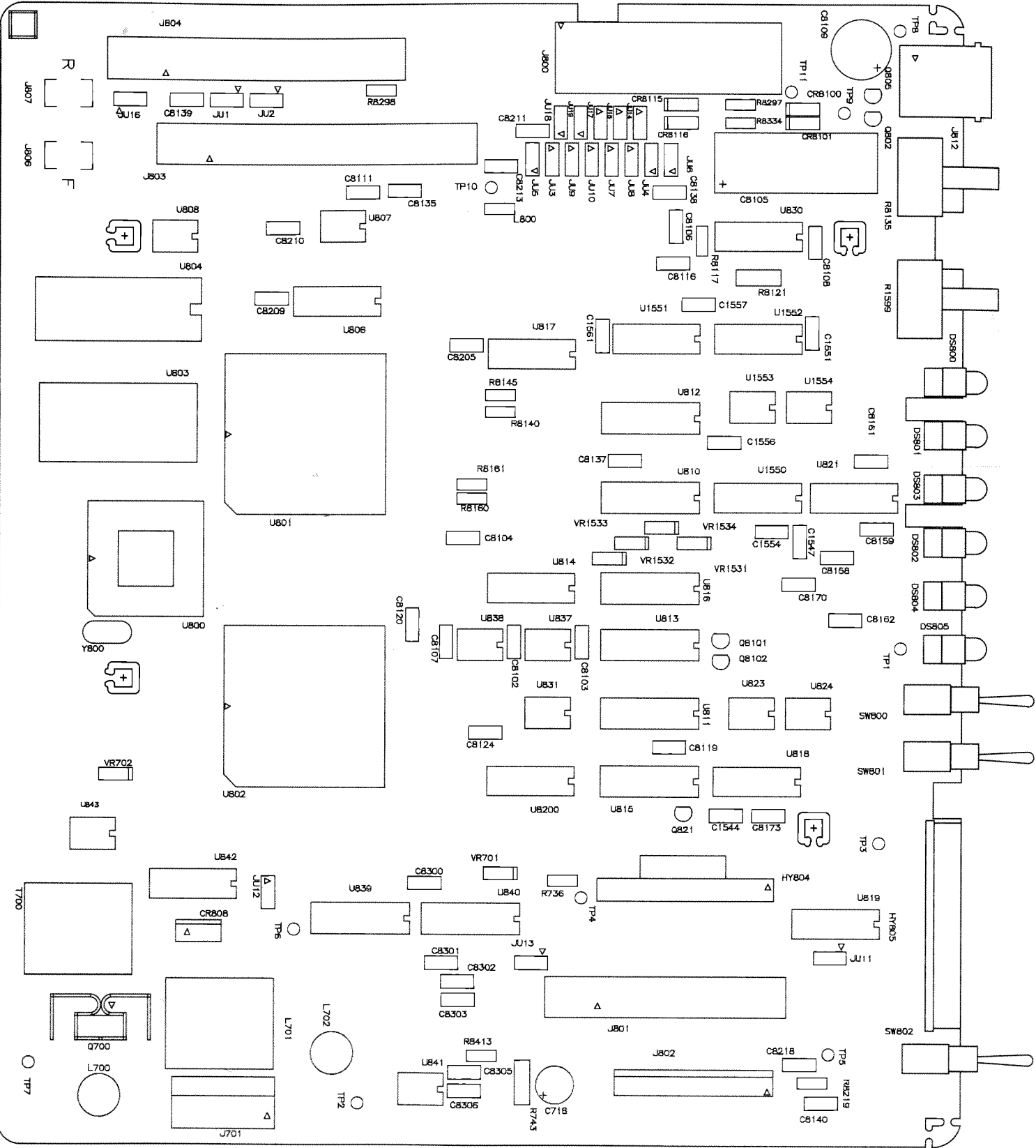


NOTE: SHADED AREA INDICATES
DEFAULT JUMPER POSITION

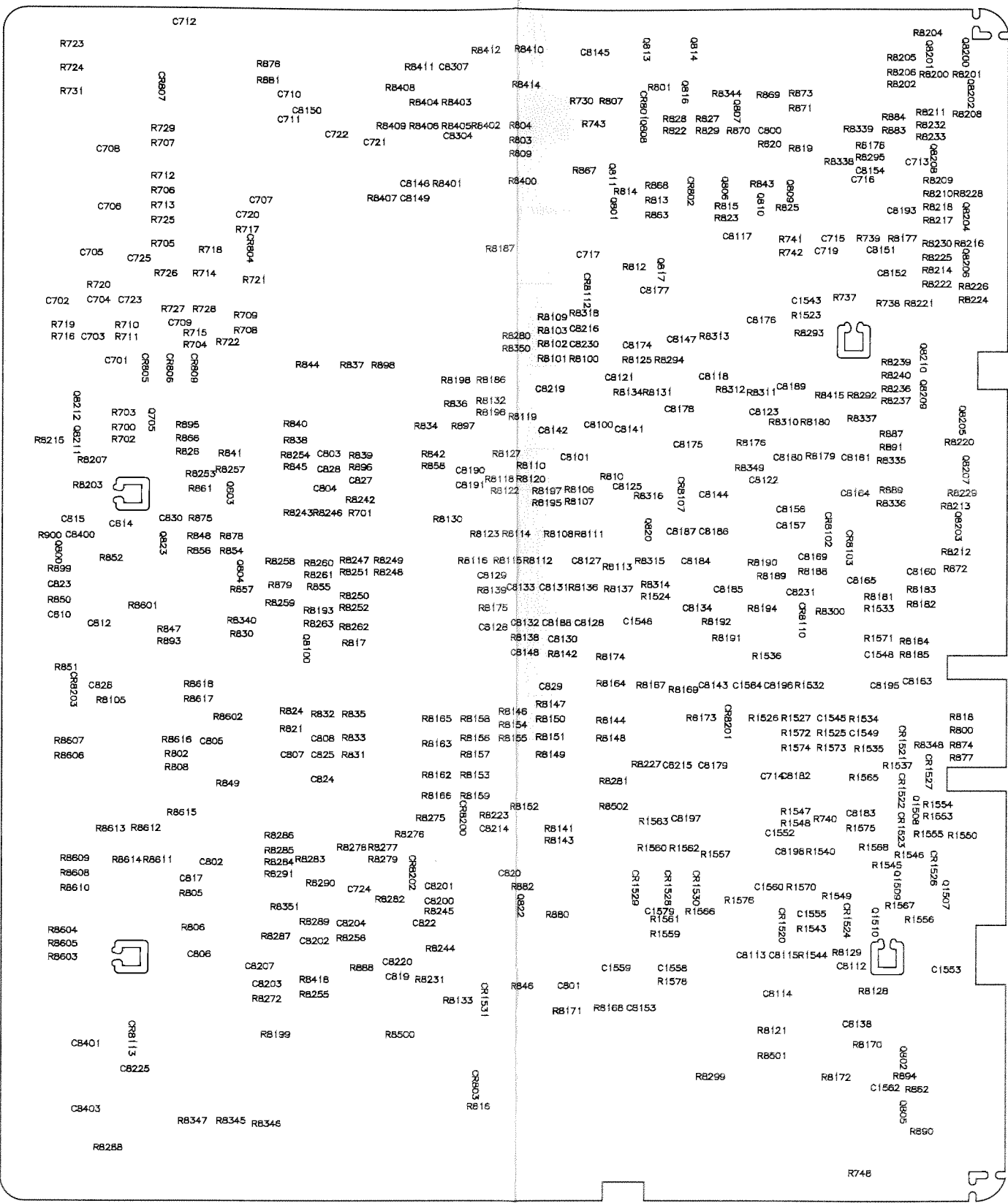
μP SOCKET DETAIL

7	5	3	1	51	49	47
8	9	6	4	2	52	50
10	11					48
12	13					45
14	15					44
16	17					43
18	19					42
20	22	24	26	28	30	32
21	23	25	27	29	31	33
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MSFS018
040794KOM

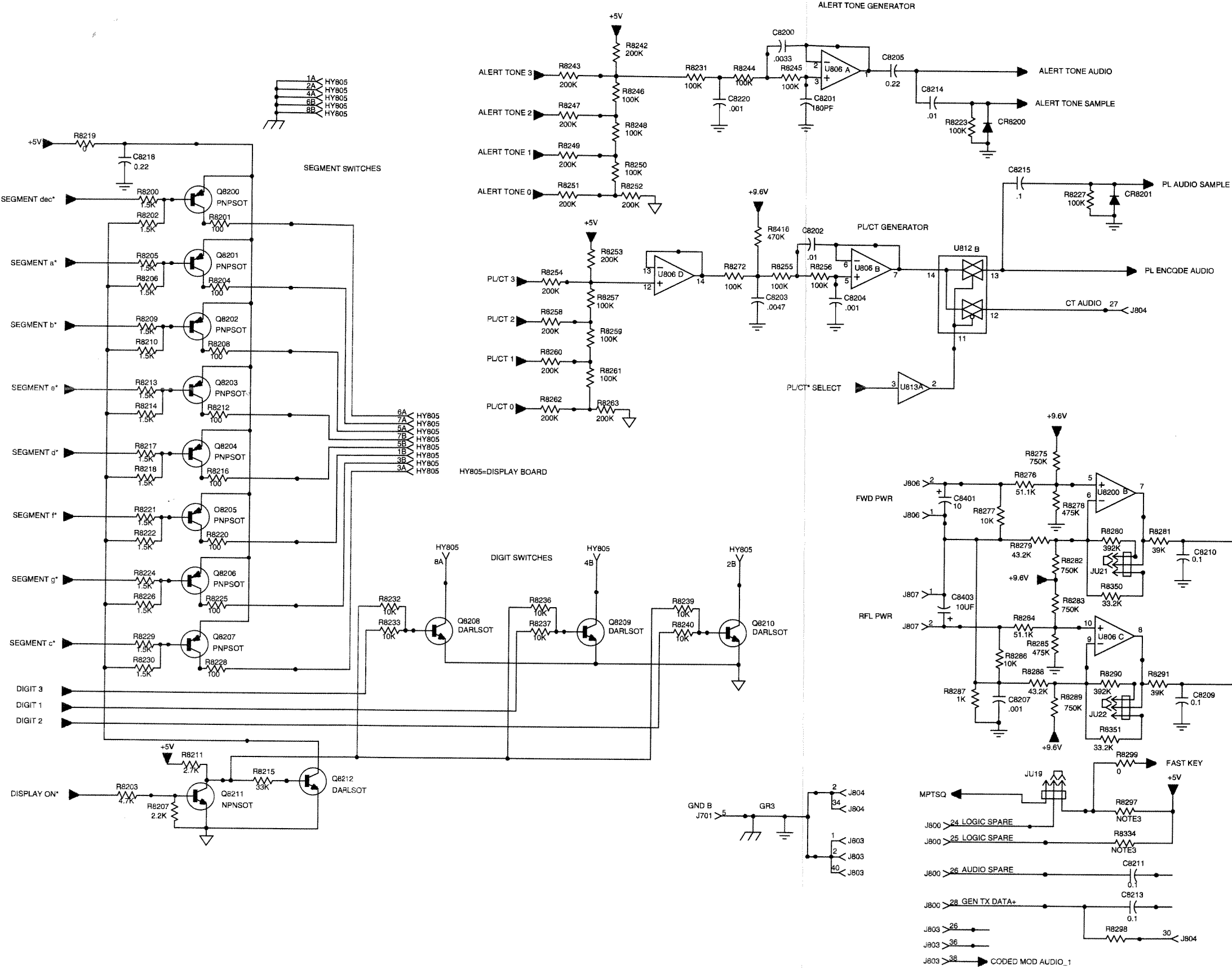


COMPONENT SIDE

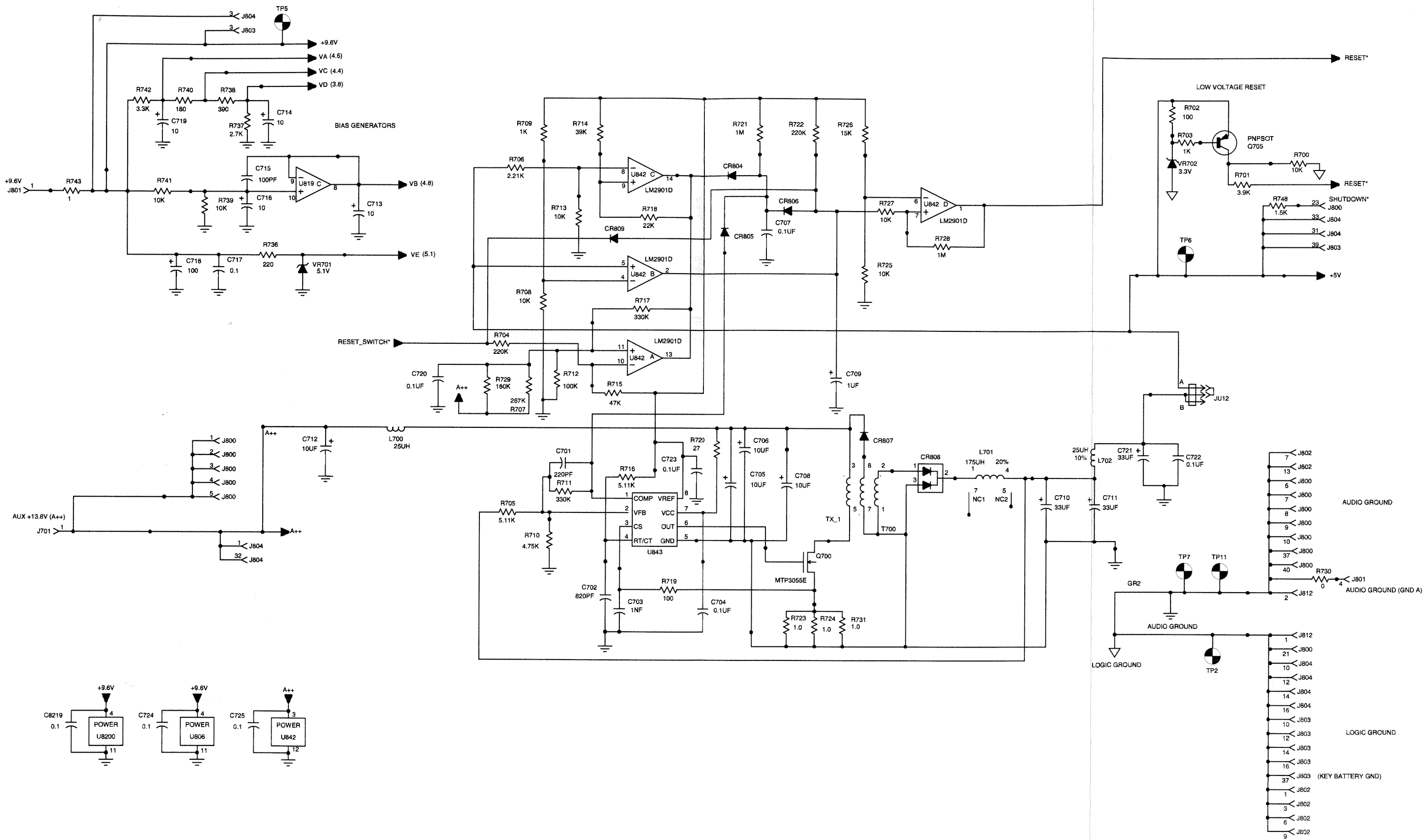


SOLDER SIDE

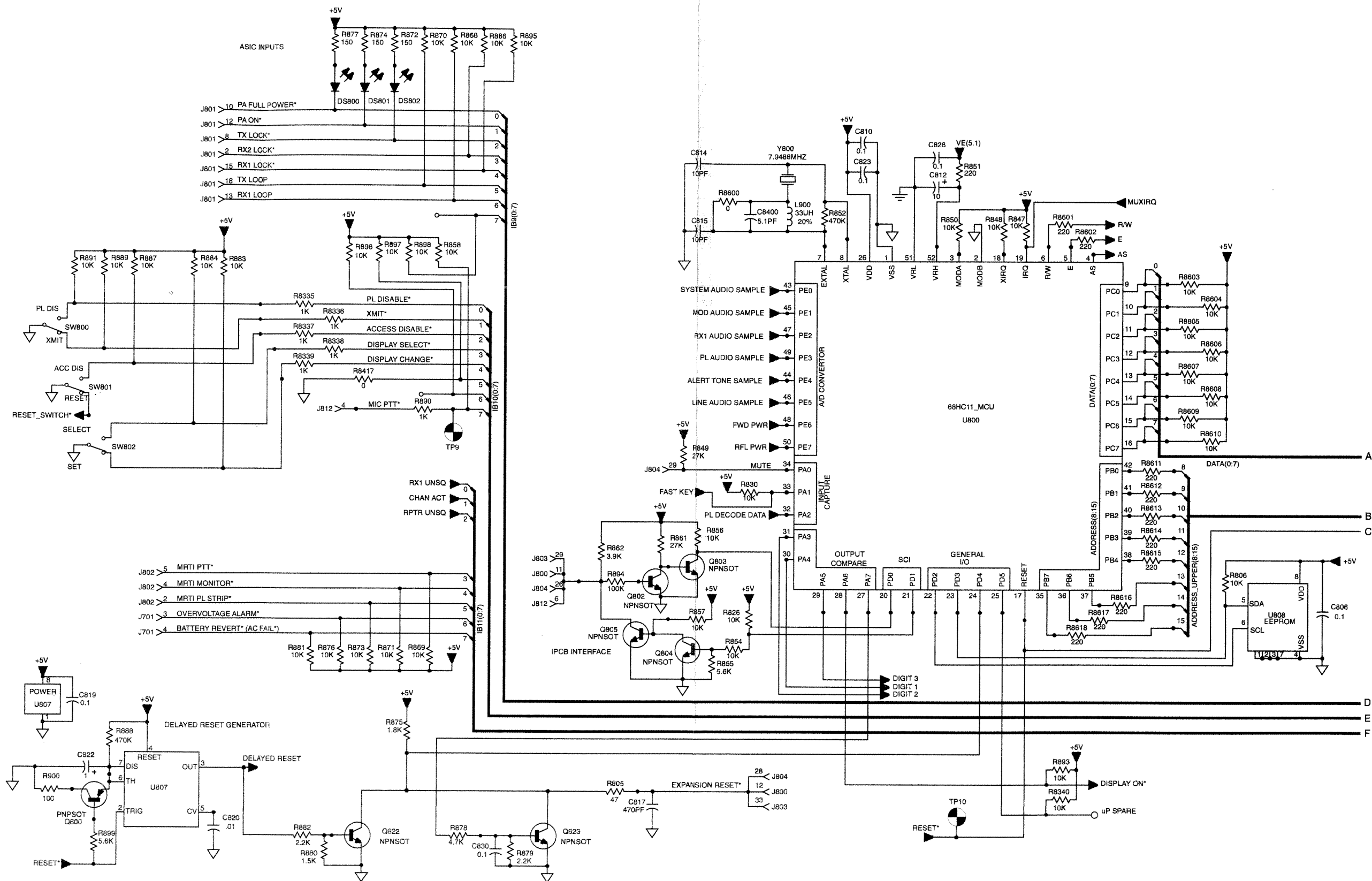
TLN3384/TLN3385/TLN3386/TLN3387 SSCB

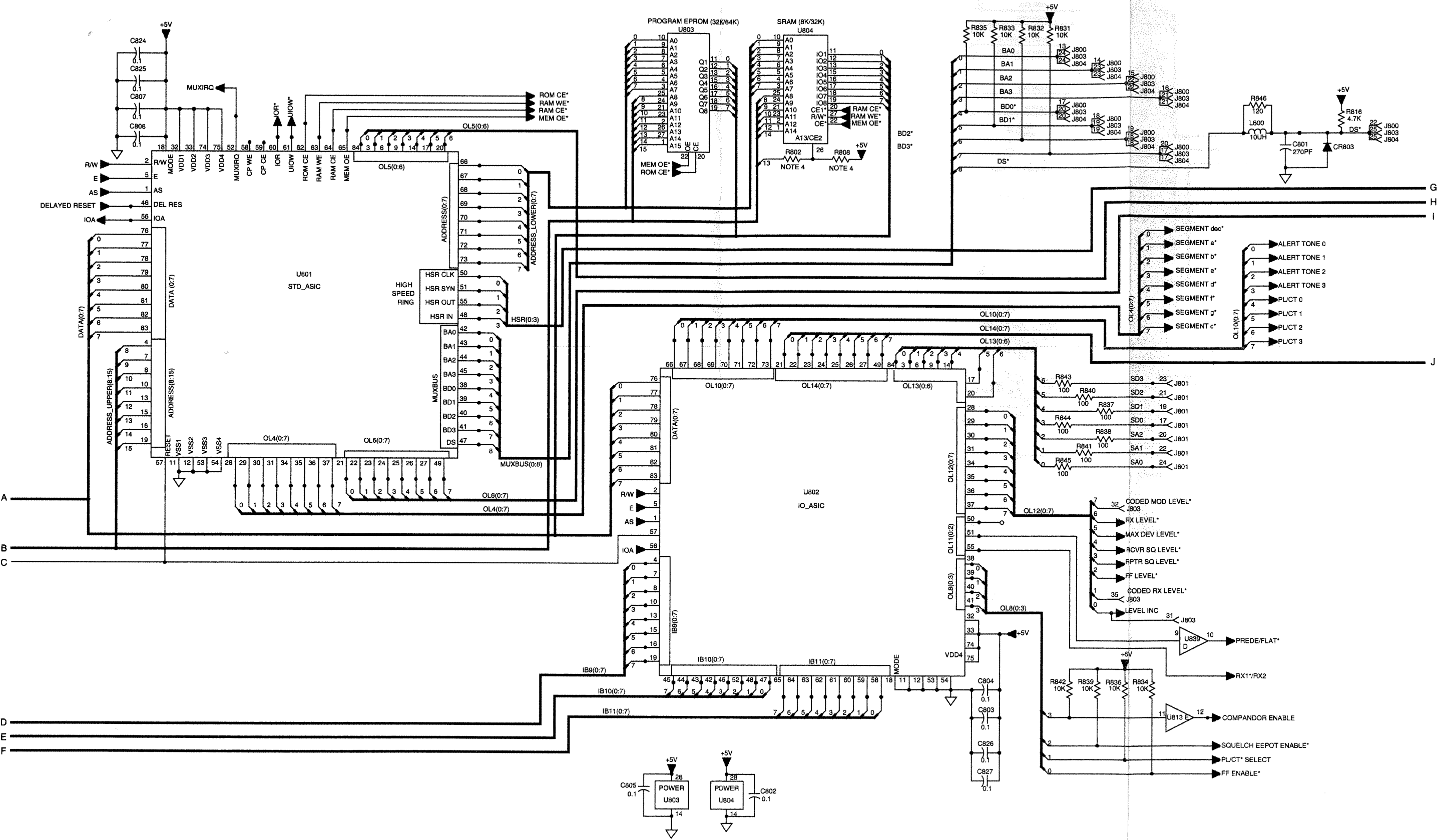


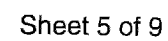
- NOTES:
- 1. Unless otherwise specified, all resistor values are in ohms and capacitor values in microfarads.
 - 2. An asterisk (*) after or a line over a signal name indicates an active low level signal.
 - 3. R8902/R808 [0 ohm chip resistors] are populated according to SRAM type:
8K SRAM: R802 out, R808 in
32K SRAM: R802 in, R808 out
 - 4. These part values change depending on kit used. Please refer to Table 3-2 for correct part value:

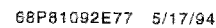


TLN3384/TLN3385/TLN3386/TLN3387 SSCB

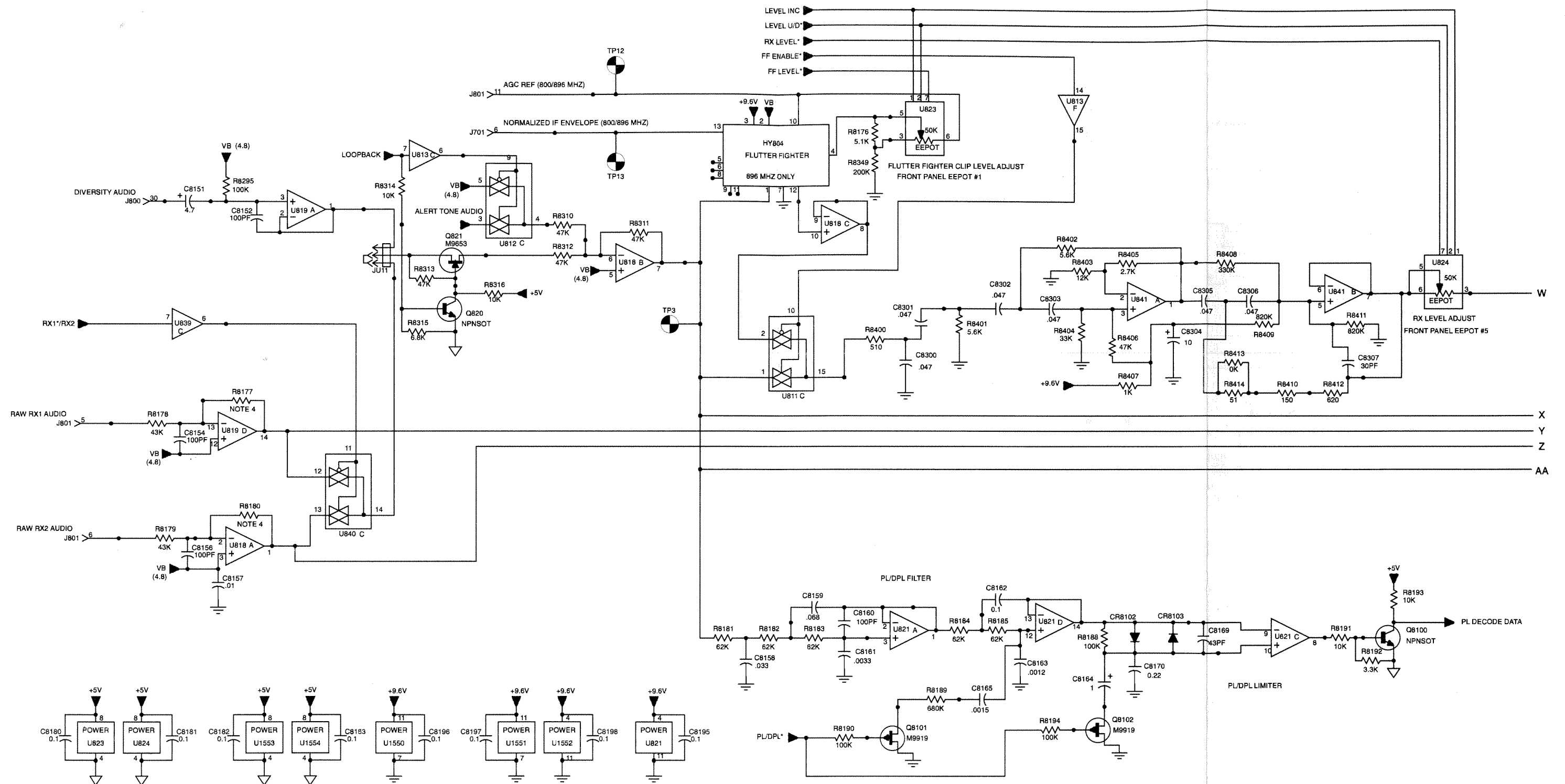




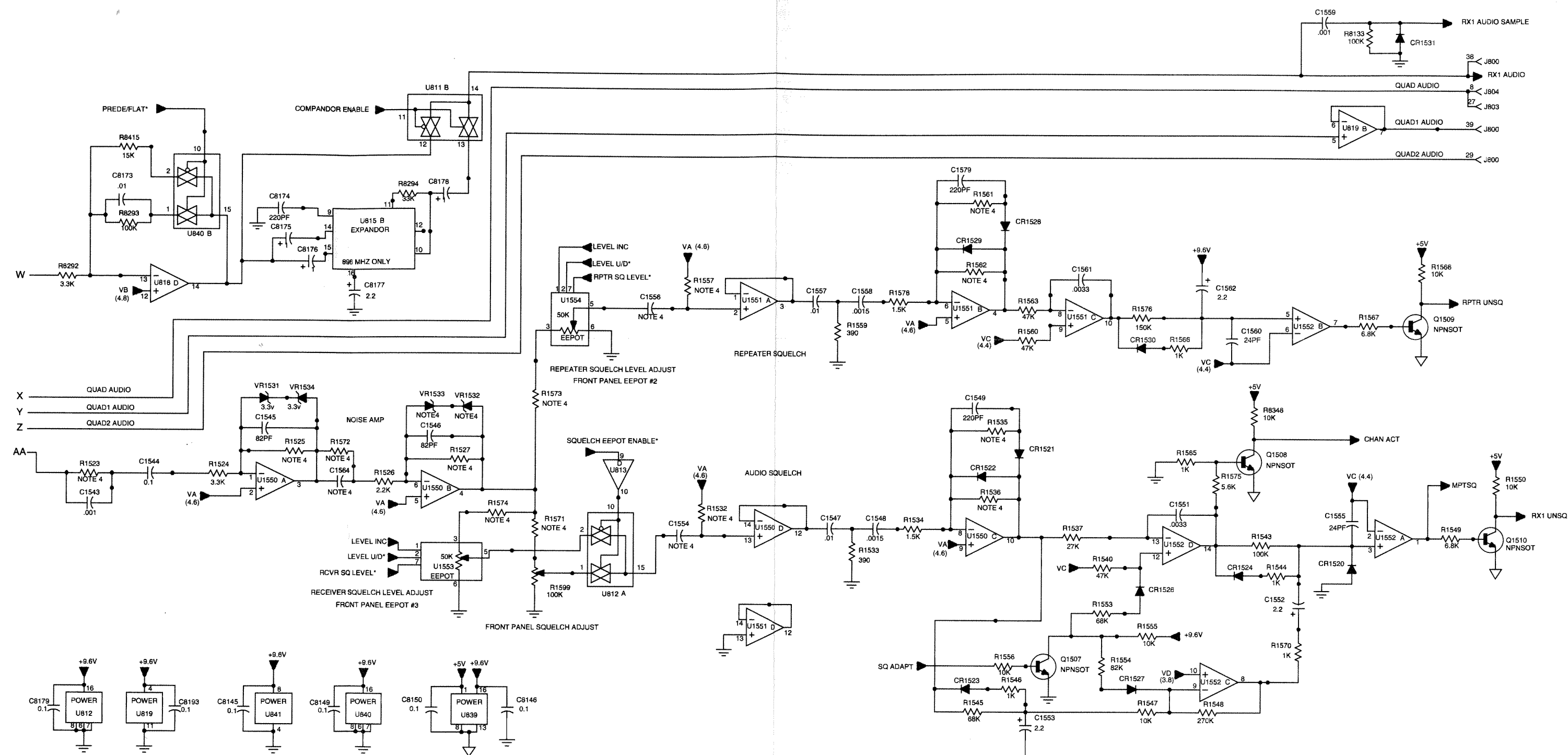








TLN3384/TLN3385/TLN3386/TLN3387 SSCB



TLN3384 SSCB Parts List

Reference Symbol	Motorola Part No.	Description
capacitor, fixed:		
C701	2113740B57	220 pF, +/-5%; 50 V
C702	2113740B71	820 pF, +/-5%; 50 V
C703	2113740B73	1000 pF, +/-5%; 50 V
C704	2113741B69	0.1 uF, +/-5%; 50 V
C705,706	2311049A19	10 uF, +/-10%; 25 V
C707	2113741B69	0.1 uF, +/-5%; 50 V
C708	2311049A19	10 uF, +/-10%; 25 V
C709	2311049A08	1 uF, +/-10%; 35 V
C710,711	2311049A22	33 uF, +/-10%; 16 V
C712 thru 714	2311049A19	10 uF, +/-10%; 25 V
C715	2113740B49	100 pF, +/-5%; 50 V
C716	2311049A19	10 uF, +/-10%; 25 V
C717	2113741B69	0.1 uF, +/-5%; 50 V
C718	2313748G21	100 uF, +/-20%; 16V
C719	2311049A19	10 uF, +/-10%; 25 V
C720	2113741B69	0.1 uF, +/-5%; 50 V
C721	2311049A22	33 uF, +/-10%; 16 V
C722 thru 725	2113741B69	0.1 uF, +/-5%; 50 V
C800	2113741B45	0.01 uF, +/-5%; 50 V
C801	2113740B59	270 pF, +/-5%; 50V
C802 thru 808	2113741B69	0.1 uF, +/-5%; 50 V
C810	2113741B69	0.1 uF, +/-5%; 50 V
C812	2311049A19	10 uF, +/-10%; 25 V
C814,815	2113740B25	10 pF, +/-5%; 50 V
C817	2113740B65	470 pF, +/-5%; 50 V
C819	2113741B69	0.1 uF, +/-5%; 50 V
C820	2113741B45	0.01 uF, +/-5%; 50 V
C822	2311049A08	1 uF, +/-10%; 35 V
C823 thru 828	2113741B69	0.1 uF, +/-5%; 50 V
C829	2113740B49	100 pF, +/-5%; 50 V
C830	2113741B69	0.1 uF, +/-5%; 50 V
C1543	2113740B73	1000 pF, +/-5%; 50 V
C1544	0811051A13	0.1 uF, +/-5%; 63 V
C1545,1546	2113740B47	82 pF, +/-5%; 50V
C1547	0811017A08	0.01 uF, +/-5%; 50 V
C1548	2113740B76	1500 pF, +/-5 pF; 50V
C1549	2113740B57	220 pF, +/-5%; 50 V
C1551	0811017A05	3300 pF, +/-5%; 50V
C1552,1553	2311049A10	2.2 uF, +/-10%; 35V
C1554	0811017A01	1000 pF, +/-5%; 50 V
C1555	2113740B34	24 pF, +/-5%; 50V
C1556	0811017A01	1000 pF, +/-5%; 50 V
C1557	0811017A08	0.01 uF, +/-5%; 50 V
C1558	2113740B76	1500 pF, +/-5 pF; 50V
C1559	2113740B73	1000 pF, +/-5%; 50 V
C1560	2113740B34	24 pF, +/-5%; 50V
C1561	0811017A05	3300 pF, +/-5%; 50V
C1562	2311049A10	2.2 uF, +/-10%; 35V
C1564	2113741B21	1000 pF, +/-5%; 50 V
C1579	2113740B57	220 pF, +/-5%; 50 V
C8100,8101	2113740B49	100 pF, +/-5%; 50 V
C8102	0811017A08	0.01 uF, +/-5%; 50 V
C8103	0811051A09	0.022 uF, +/-5%; 63 V
C8104	0811017A08	0.01 uF, +/-5%; 50 V
C8105	2313748G25	333 uF, +/-20%; 35V
C8106	0811051A13	0.1 uF, +/-5%; 63 V
C8107	0811051A09	0.022 uF, +/-5%; 63 V
C8108	0811017A08	0.01 uF, +/-5%; 50 V
C8109	2313748G25	333 uF, +/-20%; 35V
C8112	2311049A15	4.7 uF, +/-10%; 35V
C8113	2113740B49	100 pF, +/-5%; 50 V
C8114,8115	2113740B57	220 pF, +/-5%; 50 V
C8116	0811051A15	0.22 uF, +/-5%; 63 V
C8117	2311049A10	2.2 uF, +/-10%; 35V
C8118	2311049A08	1 uF, +/-10%; 35 V
C8119	0811017A05	3300 pF, +/-5%; 50V
C8120	0811017A08	0.01 uF, +/-5%; 50 V
C8121	2113740B57	220 pF, +/-5%; 50 V
C8122,8123	2311049A08	1 uF, +/-10%; 35 V
C8124	0811051A13	0.1 uF, +/-5%; 63 V
C8125	2311049A08	1 uF, +/-10%; 35 V

Reference Symbol	Motorola Part No.	Description
C8126,8127	2113740B49	100 pF, +/-5%; 50 V
C8128	2113740B76	1500 pF, +/-5 pF; 50V
C8129,8130	2113740B49	100 pF, +/-5%; 50 V
C8131 thru 8133	2113740B40	43 pF, +/-5%; 50V
C8134	2311049A08	1 uF, +/-10%; 35 V
C8135	0811051A15	0.22 uF, +/-5%; 63 V
C8136	2311049A19	10 uF, +/-10%; 25 V
C8137 thru 8140	0811051A15	0.22 uF, +/-5%; 63 V
C8141	2113741B45	0.01 uF, +/-5%; 50 V
C8142 thru 8150	2113741B69	0.1 uF, +/-5%; 50 V
C8151	2311049A15	4.7 uF, +/-10%; 35V
C8152	2113740B49	100 pF, +/-5%; 50 V
C8153	2113741B45	0.01 uF, +/-5%; 50 V
C8154	2113740B49	100 pF, +/-5%; 50 V
C8156	2113740B49	100 pF, +/-5%; 50 V
C8157	2113741B45	0.01 uF, +/-5%; 50 V
C8158	0811051A10	0.033 uF, +/-5%; 63V
C8159	0811051A12	0.068 uF, +/-5%; 63 V
C8160	2113740B49	100 pF, +/-5%; 50 V
C8161	0811017A05	3300 pF, +/-5%; 50V
C8162	0811051A13	0.1 uF, +/-5%; 63 V
C8163	2113740B74	1200 pF, +/-5%; 50V
C8164	2311049A08	1 uF, +/-10%; 35 V
C8165	2113740B76	1500 pF, +/-5 pF; 50V
C8169	2113740B40	43 pF, +/-5%; 50V
C8170	0811051A15	0.22 uF, +/-5%; 63 V
C8173	0811017A08	0.01 uF, +/-5%; 50 V
C8174	2113740B57	220 pF, +/-5%; 50 V
C8175,8176	2311049A08	1 uF, +/-10%; 35 V
C8177	2311049A10	2.2 uF, +/-10%; 35V
C8178	2311049A08	1 uF, +/-10%; 35 V
C8179 thru 8191	2113741B69	0.1 uF, +/-5%; 50 V
C8193	2113741B69	0.1 uF, +/-5%; 50 V
C8195 thru 8198	2113741B69	0.1 uF, +/-5%; 50 V
C8200	2113741B33	3300 pF, +/-5%; 50V
C8201	2113740B55	180 pF, +/-5%; 50V
C8202	2113741B45	0.01 uF, +/-5%; 50 V
C8203	2113741B37	4700 pF, +/-5%; 50 V
C8204	2113740B73	1000 pF, +/-5%; 50 V
C8205	0811051A15	0.22 uF, +/-5%; 63 V
C8207	2113740B73	1000 pF, +/-5%; 50 V
C8209 thru 8211	0811051A13	0.1 uF, +/-5%; 63 V
C8213	0811051A13	0.1 uF, +/-5%; 63 V
C8214	2113741B45	0.01 uF, +/-5%; 50 V
C8215,8216	2113741B69	0.1 uF, +/-5%; 50 V
C8218	0811051A15	0.22 uF, +/-5%; 63 V
C8219	2113741B69	0.1 uF, +/-5%; 50 V
C8220	2113740B73	1000 pF, +/-5%; 50 V
C8225	2113741B69	0.1 uF, +/-5%; 50 V
C8230	2113740B57	220 pF, +/-5%; 50 V
C8231	2113741B69	0.1 uF, +/-5%; 50 V
C8300 thru 8303	0811051A11	0.047 uF, +/-5%; 63V
C8304	2311049A19	10 uF, +/-10%; 25 V
C8305,8306	0811051A11	0.047 uF, +/-5%; 63V
C8307	2113740B36	30 pF, +/-5%; 50V
C8400	2113740B18	5.1 pF, +/-0.25 pF; 50V
C8401	2311049A19	10 uF, +/-10%; 25 V
C8402	0811051A15	0.22 uF, +/-5%; 63 V
C8403	2311049A19	10 uF, +/-10%; 25 V
diode: (see note)		
CR801,802	4813833C10	0.1A, 70V
CR803	4805129M41	Rectifier
CR804 thru 807	4813833C10	0.1A, 70V
CR808	4884349P01	Dual Rectifier
CR809	4813833C10	0.1A, 70V
CR1520 thru 1522	4805129M41	Rectifier
CR1523,1524	4813833C10	0.1A, 70V
CR1526,1527	4813833C10	0.1A, 70V
CR1528,1529	4805129M41	Rectifier
CR1530	4813833C10	0.1A, 70V
CR1531	4805129M41	Rectifier

TLN3384 SSCB Parts List

Reference Symbol	Motorola Part No.	Description
CR8100,8101	4883654H01	silicon
CR8102,8103	4813833C10	0.1A, 70V
CR8107	4813833C10	0.1A, 70V
CR8110	4805129M41	Rectifier
CR8112,8113	4805129M41	Rectifier
CR8115,8116	4883654H01	silicon
CR8200 thru 8203	4805129M41	Rectifierlight emitting diode: (see note)
DS800 thru 803	4888245C22	GRN
DS804	4888245C23	YEL
DS805	4888245C24	RED
DS8200 thru 8202	4882771L03	7-segment display (red)
hybrid:		
HY805	TRN7008A	Display Board
connector:		
J701	2882984N13	plug: 6-contact
J801	2882505T03	plug: 26-contact
J802	2813922A14	HDR 14 POS STR .1 CTR GLD PLTD
J803	2882505T05	plug: 40-contact
J804	2882505T04	plug: 34-contact
J805A	2883547T01	receptacle: 8-contact, right anle
J805B	2883547T01	receptacle: 8-contact, right anle
J806,807	0984231B03	receptacle: phono jack
J812	0983112N01	receptacle: 6-contact
inductor:		
L700	2484386T01	25 UH
L701	2484266T01	150 UH
L702	2484386T01	25 UH
L800	2411047A25	10 UH
L900	2411047A31	CHK RF MLD A/1 33UH
transistor: (see note)		
Q700	4884233T01	type MOSFET
Q705	4813824A17	PNP
Q800	4813824A17	PNP
Q801 thru 807	4813824A10	NPN
Q808	4813824A06	NPN
Q809 thru 811	4813824A10	NPN
Q813,814	4813824A10	NPN
Q816,817	4813824A10	NPN
Q820	4813824A10	NPN
Q821	4800869653	type JFET
Q822,823	4813824A10	NPN
Q1507 thru 1510	4813824A10	NPN
Q8100	4813824A10	NPN
Q8101,8102	4811043B42	TSTR 48R00869919 A/1
Q8200 thru 8207	4813824A17	PNP
Q8208 thru 8210	4813824A06	NPN
Q8211	4813824A10	NPN
Q8212	4813824A06	NPN
resistor, fixed:		
R700	0611077A98	10K, +/-5%; 1/8 W
R701	0611077A88	3.9K, +/-5%; 1/8 W
R702	0611077A50	100 ohms, +/-5%; 1/8 W
R703	0611077A74	1K, +/-5%; 1/8 W
R704	0611077B31	220K, +/-5%; 1/8 W
R705	0611077F63	5.11K, +/-1%; 1/8 W
R706	0611077F28	2.21K, +/-1%; 1/8 W
R707	0611077H30	267K, +/-1%; 1/8 W
R708	0611077F91	10K, +/-1%; 1/8 W
R709	0611077E94	1K, +/-1%; 1/8 W
R710	0611077F60	4.75K, +/-1%; 1/8 W
R711	0611077B35	330K, +/-5%; 1/8 W
R712	0611077B23	100K, +/-5%; 1/8 W
R713	0611077F91	10K, +/-1%; 1/8 W
R714	0611077B13	39K, +/-5%; 1/8 W
R715	0611077B15	47K, +/-5%; 1/8 W
R716	0611077F63	5.11K, +/-1%; 1/8 W
R717	0611077B35	330K, +/-5%; 1/8 W
R718	0611077B07	22K, +/-5%; 1/8 W
R719	0611077A50	100 ohms, +/-5%; 1/8 W
R720	0611077A36	27 ohms, +/-5%; 1/8 W
R721	0611077B47	1 meg, +/-5%; 1/8 W

Reference Symbol	Motorola Part No.	Description
R722	0611077B31	220K, +/-5%; 1/8 W
R723,724	0683962T01	1 ohm, +/-5%; 1 W
R725	0611077F91	10K, +/-1%; 1/8 W
R726	0611077G09	15K, +/-1%; 1/8 W
R727	0611077A98	10K, +/-5%; 1/8 W
R728	0611077H85	1 meg, +/-1%; 1/8 W
R729	0611077B29	180K, +/-5%; 1/8 W
R730	0611077A01	0 ohm, +/-5%; 0 W
R731	0683962T01	1 ohm, +/-5%; 1 W
R736	0611009A33	220 ohms, +/-5%; 1/4 W
R737	0611077A84	2.7K, +/-5%; 1/8 W
R738	0611077A64	390 ohms, +/-5%; 1/8 W
R739	0611077A98	10K, +/-5%; 1/8 W
R740	0611077A56	180 ohms, +/-5%; 1/8W
R741	0611077A98	10K, +/-5%; 1/8 W
R742	0611077A86	3.3K, +/-5%; 1/8 W
R743	0683962T01	1 ohm, +/-5%; 1 W
R748	0611077A78	1.5K, +/-5%; 1/8 W
R800	0611077A54	150 ohms, +/-5%; 1/8 W
R801	0611077A88	3.9K, +/-5%; 1/8 W
R802	0611077A01	0 ohm, +/-5%; 0 W
R803,804	0611077A88	3.9K, +/-5%; 1/8 W
R805	0611077A42	47 ohms, +/-5%; 1/8 W
R806	0611077A98	10K, +/-5%; 1/8 W
R807	0611077A94	6.8K, +/-5%; 1/8W
R809,810	0611077A94	6.8K, +/-5%; 1/8W
R812	0611077A78	1.5K, +/-5%; 1/8 W
R813	0611077A32	18 ohms, +/-5%; 1/8 W
R814	0611077A56	180 ohms, +/-5%; 1/8W
R815	0611077A32	18 ohms, +/-5%; 1/8 W
R816	0611077A90	4.7K, +/-5%; 1/8 W
R817	0611077A82	2.2K, +/-5%; 1/8 W
R818	0611077A52	120 ohms, +/-5%; 1/8 W
R819	0611077A32	18 ohms, +/-5%; 1/8 W
R820	0611077A56	180 ohms, +/-5%; 1/8W
R821	0611077A78	1.5K, +/-5%; 1/8 W
R822	0611077A56	180 ohms, +/-5%; 1/8W
R823	0611077A82	2.2K, +/-5%; 1/8 W
R824	0611077A80	1.8K, +/-5%; 1/8 W
R825	0611077A82	2.2K, +/-5%; 1/8 W
R826	0611077A98	10K, +/-5%; 1/8 W
R827	0611077A88	3.9K, +/-5%; 1/8 W
R828	0611077B07	22K, +/-5%; 1/8 W
R829	0611077A94	6.8K, +/-5%; 1/8W
R830 thru 836	0611077A98	10K, +/-5%; 1/8 W
R837,838	0611077A50	100 ohms, +/-5%; 1/8 W
R839	0611077A98	10K, +/-5%; 1/8 W
R840,841	0611077A50	100 ohms, +/-5%; 1/8 W
R842	0611077A98	10K, +/-5%; 1/8 W
R843 thru 845	0611077A50	100 ohms, +/-5%; 1/8 W
R846	0611077A52	120 ohms, +/-5%; 1/8 W
R847,848	0611077A98	10K, +/-5%; 1/8 W
R849	0611077B09	27K, +/-5%; 1/8 W
R850	0611077A98	10K, +/-5%; 1/8 W
R851	0611077A58	220 ohms, +/-5%; 1/8 W
R852	0611077B39	470K, +/-5%; 1/8 W
R854	0611077A98	10K, +/-5%; 1/8 W
R855	0611077A92	5.6K, +/-5%; 1/8 W
R856 thru 858	0611077A98	10K, +/-5%; 1/8 W
R861	0611077B09	27K, +/-5%; 1/8 W
R862	0611077A88	3.9K, +/-5%; 1/8 W
R863	0611077A54	150 ohms, +/-5%; 1/8 W
R866	0611077A98	10K, +/-5%; 1/8 W
R867	0611077A78	1.5K, +/-5%; 1/8 W
R868 thru 871	0611077A98	10K, +/-5%; 1/8 W
R872	0611077A54	150 ohms, +/-5%; 1/8 W
R873	0611077A98	10K, +/-5%; 1/8 W
R874	0611077A54	150 ohms, +/-5%; 1/8 W
R875	0611077A80	1.8K, +/-5%; 1/8 W
R876	0611077A98	10K, +/-5%; 1/8 W
R877	0611077A54	150 ohms, +/-5%; 1/8 W
R878	0611077A90	4.7K, +/-5%; 1/8 W
R879	0611077A82	2.2K, +/-5%; 1/8 W
R880	0611077A78	1.5K, +/-5%; 1/8 W
R881	0611077A98	10K, +/-5%; 1/8 W
R882	0611077A82	2.2K, +/-5%; 1/8 W
R883,884	0611077A98	10K, +/-5%; 1/8 W

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Reference Symbol	Motorola Part No.	Description
R887	0611077A98	10K, +/-5%; 1/8 W
R888	0611077B39	470K, +/-5%; 1/8 W
R889	0611077A98	10K, +/-5%; 1/8 W
R890	0611077A74	1K, +/-5%; 1/8 W
R891	0611077A98	10K, +/-5%; 1/8 W
R893	0611077A98	10K, +/-5%; 1/8 W
R894	0611077B23	100K, +/-5%; 1/8 W
R895 thru 898	0611077A98	10K, +/-5%; 1/8 W
R899	0611077A92	5.6K, +/-5%; 1/8 W
R900	0611077A50	100 ohms, +/-5%; 1/8 W
R1523	0611077B15	47K, +/-5%; 1/8 W
R1524	0611077A86	3.3K, +/-5%; 1/8 W
R1525	0611077B23	100K, +/-5%; 1/8 W
R1526	0611077A82	2.2K, +/-5%; 1/8 W
R1527	0611077B35	330K, +/-5%; 1/8 W
R1532	0611077B07	22K, +/-5%; 1/8 W
R1533	0611077A64	390 ohms, +/-5%; 1/8 W
R1534	0611077A78	1.5K, +/-5%; 1/8 W
R1535	0611077B25	120K, +/-5%; 1/8 W
R1536	0611077B31	220K, +/-5%; 1/8 W
R1537	0611077B15	47K, +/-5%; 1/8 W
R1540	0611077B15	47K, +/-5%; 1/8 W
R1543	0611077B23	100K, +/-5%; 1/8 W
R1544	0611077A74	1K, +/-5%; 1/8 W
R1545	0611077B19	88K, +/-5%; 1/8W
R1546	0611077A74	1K, +/-5%; 1/8 W
R1547	0611077A98	10K, +/-5%; 1/8 W
R1548	0611077B33	270K, +/-5%; 1/8W
R1549	0611077A94	6.8K, +/-5%; 1/8W
R1550	0611077A98	10K, +/-5%; 1/8 W
R1553	0611077B19	88K, +/-5%; 1/8W
R1554	0611077B21	82K, +/-5%; 1/8W
R1555, 1556	0611077A98	10K, +/-5%; 1/8 W
R1557	0611077B07	22K, +/-5%; 1/8 W
R1559	0611077A64	390 ohms, +/-5%; 1/8 W
R1560	0611077B15	47K, +/-5%; 1/8 W
R1561	0611077B25	120K, +/-5%; 1/8 W
R1562	0611077B31	220K, +/-5%; 1/8 W
R1563	0611077B15	47K, +/-5%; 1/8 W
R1565, 1566	0611077A74	1K, +/-5%; 1/8 W
R1567	0611077A94	6.8K, +/-5%; 1/8W
R1568	0611077A98	10K, +/-5%; 1/8 W
R1570	0611077A74	1K, +/-5%; 1/8 W
R1571	0611077A98	10K, +/-5%; 1/8 W
R1573, 1574	0611077A91	5.1K, +/-5%; 1/8 W
R1575	0611077A92	5.6K, +/-5%; 1/8 W
R1576	0611077B27	150K, +/-5%; 1/8W
R1578	0611077A78	1.5K, +/-5%; 1/8 W
R1599	1882787K08	variable: 100K +/-20%; 1/4W
R8100 thru 8103	0611077B01	12K, +/-5%; 1/8 W
R8105	0611077B23	100K, +/-5%; 1/8 W
R8106	0611077A98	10K, +/-5%; 1/8 W
R8107	0611077B07	22K, +/-5%; 1/8 W
R8108	0611077B03	15K, +/-5%; 1/8 W
R8109	0611077B01	12K, +/-5%; 1/8 W
R8110	0611077B11	33K, +/-5%; 1/8 W
R8111	0611077B07	22K, +/-5%; 1/8 W
R8112	0611077A94	6.8K, +/-5%; 1/8W
R8113, 8114	0611077A86	3.3K, +/-5%; 1/8 W
R8115	0611077A94	6.8K, +/-5%; 1/8W
R8116	0611077A88	3.9K, +/-5%; 1/8 W
R8117	0611009B26	2.7 ohms, +/-5%; 1/4W
R8118	0611077A88	3.9K, +/-5%; 1/8 W
R8119	0611077A67	510 ohms, +/-5%; 1/8 W
R8120	0611077A68	560 ohms, +/-5%; 1/8 W
R8121	0683962T24	9.1 ohms, +/-5%; 1W
R8122	0611077A26	10 ohms, +/-5%; 1/8 W
R8123	0611077B37	390K, +/-5%; 1/8W
R8125	0611077A98	10K, +/-5%; 1/8 W
R8127	0611077A94	6.8K, +/-5%; 1/8W
R8128	0611077A86	3.3K, +/-5%; 1/8 W
R8129	0611077A78	1.5K, +/-5%; 1/8 W
R8130	0611077H43	365K, +/-1%; 1/8W
R8131	0611077A98	10K, +/-5%; 1/8 W
R8132	0611077A92	5.6K, +/-5%; 1/8 W

Reference Symbol	Motorola Part No.	Description
R8133	0611077B23	100K, +/-5%; 1/8 W
R8134	0611077B17	56K, +/-5%; 1/8 W
R8135	1882787K09	variable: 5K +/-10%; 1/4W
R8136	0611077B05	18K, +/-5%; 1/8 W
R8137	0611077B09	27K, +/-5%; 1/8 W
R8138, 8139	0611077B11	33K, +/-5%; 1/8 W
R8141	0611077B03	15K, +/-5%; 1/8 W
R8142, 8143	0611077B07	22K, +/-5%; 1/8 W
R8144	0611077A98	10K, +/-5%; 1/8 W
R8146	0611077B03	15K, +/-5%; 1/8 W
R8147	0611077B09	27K, +/-5%; 1/8 W
R8148	0611077A98	10K, +/-5%; 1/8 W
R8149	0611077B09	27K, +/-5%; 1/8 W
R8150	0611077B23	100K, +/-5%; 1/8 W
R8151, 8152	0611077B09	27K, +/-5%; 1/8 W
R8153, 8154	0611077B07	22K, +/-5%; 1/8 W
R8155	0611077B09	27K, +/-5%; 1/8 W
R8156	0611077B23	100K, +/-5%; 1/8 W
R8157 thru 8159	0611077B09	27K, +/-5%; 1/8 W
R8162	0611077B07	22K, +/-5%; 1/8 W
R8163	0611077B09	27K, +/-5%; 1/8 W
R8164	0611077A98	10K, +/-5%; 1/8 W
R8165, 8166	0611077B09	27K, +/-5%; 1/8 W
R8167	0611077B23	100K, +/-5%; 1/8 W
R8168	0611077B30	200K, +/-5%; 1/8 W
R8169	0611077B23	100K, +/-5%; 1/8 W
R8170	0611077A68	560 ohms, +/-5%; 1/8 W
R8171	0611077B30	200K, +/-5%; 1/8 W
R8172	0611077A50	100 ohms, +/-5%; 1/8 W
R8173, 8174	0611077B23	100K, +/-5%; 1/8 W
R8175	0611077B03	15K, +/-5%; 1/8 W
R8176	0611077A91	5.1K, +/-5%; 1/8 W
R8177	0611077B11	33K, +/-5%; 1/8 W
R8178, 8179	0611077B14	43K, +/-5%; 1/8 W
R8180	0611077B11	33K, +/-5%; 1/8 W
R8181 thru 8185	0611077B18	62K, +/-5%; 1/8 W
R8186	0611077A87	3.6K, +/-5%; 1/8W
R8187	0611077B14	43K, +/-5%; 1/8 W
R8188	0611077B23	100K, +/-5%; 1/8 W
R8189	0611077B43	680K, +/-5%; 1/8 W
R8190	0611077B23	100K, +/-5%; 1/8 W
R8191	0611077A98	10K, +/-5%; 1/8 W
R8192	0611077A86	3.3K, +/-5%; 1/8 W
R8193	0611077A98	10K, +/-5%; 1/8 W
R8194	0611077B23	100K, +/-5%; 1/8 W
R8195	0611077A88	3.9K, +/-5%; 1/8 W
R8196, 8197	0611077A76	1.2K, +/-5%; 1/8 W
R8198	0611077B15	47K, +/-5%; 1/8 W
R8199	0611077A01	0 ohm, +/-5%; 0 W
R8200	0611077A78	1.5K, +/-5%; 1/8 W
R8201	0611077A50	100 ohms, +/-5%; 1/8 W
R8202	0611077A78	1.5K, +/-5%; 1/8 W
R8203	0611077A90	4.7K, +/-5%; 1/8 W
R8204	0611077A50	100 ohms, +/-5%; 1/8 W
R8205, 8206	0611077A78	1.5K, +/-5%; 1/8 W
R8207	0611077A82	2.2K, +/-5%; 1/8 W
R8208	0611077A50	100 ohms, +/-5%; 1/8 W
R8209, 8210	0611077A78	1.5K, +/-5%; 1/8 W
R8211	0611077A84	2.7K, +/-5%; 1/8 W
R8212	0611077A50	100 ohms, +/-5%; 1/8 W
R8213, 8214	0611077A78	1.5K, +/-5%; 1/8 W
R8215	0611077B11	33K, +/-5%; 1/8 W
R8216	0611077A50	100 ohms, +/-5%; 1/8 W
R8217, 8218	0611077A78	1.5K, +/-5%; 1/8 W
R8219	0611009B23	0 ohm, +/-5%; 1/4 W
R8220	0611077A50	100 ohms, +/-5%; 1/8 W
R8221, 8222	0611077A78	1.5K, +/-5%; 1/8 W
R8223	0611077B23	100K, +/-5%; 1/8 W
R8224	0611077A78	1.5K, +/-5%; 1/8 W
R8225	0611077A50	100 ohms, +/-5%; 1/8 W
R8226	0611077A78	1.5K, +/-5%; 1/8 W
R8227	0611077B23	100K, +/-5%; 1/8 W
R8228	0611077A50	100 ohms, +/-5%; 1/8 W
R8229, 8230	0611077A78	1.5K, +/-5%; 1/8 W

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Reference Symbol	Motorola Part No.	Description
R8231	0611077G88	100K, +/-1%; 1/8 W
R8232,8233	0611077A98	10K, +/-5%; 1/8 W
R8236,8237	0611077A98	10K, +/-5%; 1/8 W
R8239,8240	0611077A98	10K, +/-5%; 1/8 W
R8242,8243	0611077H18	200K, +/-1%; 1/8 W
R8244	0611077G88	100K, +/-1%; 1/8 W
R8245	0611077B23	100K, +/-5%; 1/8 W
R8246	0611077G88	100K, +/-1%; 1/8 W
R8247	0611077H18	200K, +/-1%; 1/8 W
R8248	0611077G88	100K, +/-1%; 1/8 W
R8249	0611077H18	200K, +/-1%; 1/8 W
R8250	0611077G88	100K, +/-1%; 1/8 W
R8251 thru 8254	0611077H18	200K, +/-1%; 1/8 W
R8255,8256	0611077B23	100K, +/-5%; 1/8 W
R8257	0611077G88	100K, +/-1%; 1/8 W
R8258	0611077H18	200K, +/-1%; 1/8 W
R8259	0611077G88	100K, +/-1%; 1/8 W
R8260	0611077H18	200K, +/-1%; 1/8 W
R8261	0611077G88	100K, +/-1%; 1/8 W
R8262,8263	0611077H18	200K, +/-1%; 1/8 W
R8272	0611077B25	120K, +/-5%; 1/8 W
R8275	0611077H73	750K, +/-1%; 1/8W
R8276	0611077G60	51.1K, +/-1%; 1/8 W
R8277	0611077A98	10K, +/-5%; 1/8 W
R8278	0611077H54	475K, +/-1%; 1/8W
R8279	0611077G53	43.2K, +/-1%; 1/8 W
R8280	0611077H46	392K, +/-1%; 1/8W
R8281	0611077B13	39K, +/-5%; 1/8 W
R8282,8283	0611077H73	750K, +/-1%; 1/8W
R8284	0611077G60	51.1K, +/-1%; 1/8 W
R8285	0611077H54	475K, +/-1%; 1/8W
R8286	0611077A98	10K, +/-5%; 1/8 W
R8287	0611077A74	1K, +/-5%; 1/8 W
R8288	0611077G53	43.2K, +/-1%; 1/8 W
R8289	0611077H73	750K, +/-1%; 1/8W
R8290	0611077H46	392K, +/-1%; 1/8W
R8291	0611077B13	39K, +/-5%; 1/8 W
R8292	0611077A86	3.3K, +/-5%; 1/8 W
R8293	0611077B23	100K, +/-5%; 1/8 W
R8294	0611077B11	33K, +/-5%; 1/8 W
R8295	0611077B23	100K, +/-5%; 1/8 W
R8298	0611009B23	0 ohm, +/-5%; 1/4 W
R8299	0611077A01	0 ohm, +/-5%; 0 W
R8300	0611077B23	100K, +/-5%; 1/8 W
R8310 thru 8313	0611077B15	47K, +/-5%; 1/8 W
R8314	0611077A98	10K, +/-5%; 1/8 W
R8315	0611077A94	6.8K, +/-5%; 1/8W
R8316	0611077A98	10K, +/-5%; 1/8 W
R8318	0611077B23	100K, +/-5%; 1/8 W
R8335 thru 8339	0611077A74	1K, +/-5%; 1/8 W
R8340	0611077A98	10K, +/-5%; 1/8 W
R8344	0611077A68	560 ohms, +/-5%; 1/8 W
R8345 thru 8347	0611077A50	100 ohms, +/-5%; 1/8 W
R8348	0611077A98	10K, +/-5%; 1/8 W
R8349	0611077B30	200K, +/-5%; 1/8 W
R8350,8351	0611077G42	33.2K, +/-1%; 1/8W
R8400	0611077A67	510 ohms, +/-5%; 1/8 W
R8401,8402	0611077A92	5.6K, +/-5%; 1/8 W
R8403	0611077B01	12K, +/-5%; 1/8 W
R8404	0611077B11	33K, +/-5%; 1/8 W
R8405	0611077A84	2.7K, +/-5%; 1/8 W
R8406	0611077B15	47K, +/-5%; 1/8 W
R8407	0611077A74	1K, +/-5%; 1/8 W
R8408	0611077B35	330K, +/-5%; 1/8 W
R8409	0611077B45	820K, +/-5%; 1/8 W
R8410	0611077E15	150 ohms, +/-1%; 1/8W
R8411	0611077B45	820K, +/-5%; 1/8 W
R8412	0611077E73	604 ohms, +/-1%; 1/8W
R8413	0611009B23	0 ohm, +/-5%; 1/4 W
R8414	0611077A43	51 ohms, +/-5%; 1/8 W
R8415	0611077B03	15K, +/-5%; 1/8 W
R8416	0611077B39	470K, +/-5%; 1/8 W
R8417	0611009B23	0 ohm, +/-5%; 1/4 W
R8501	0683962T24	9.1 ohms, +/-5%; 1W
R8502	0611077B05	18K, +/-5%; 1/8 W
R8600	0611009B23	0 ohm, +/-5%; 1/4 W
R8601,8602	0611077A58	220 ohms, +/-5%; 1/8 W

Reference Symbol	Motorola Part No.	Description
R8603 thru 8610	0611077A98	10K, +/-5%; 1/8 W
R8611 thru 8618	0611077A58	220 ohms, +/-5%; 1/8 W
switch:		
SW800,801	4083980R12	toggle: sp3t (on-off-mom)
SW802	4083980R11	toggle: sp3t (mom-off-mom)
transformer:		
T700	2584265T01	power
test point:		
TP1 thru 13	2962998D01	terminal pin
integrated circuit: (see note)		
U800	5113802A01	Micro Computere Unit w/Switch Control Interface
U801,802	5184494R03	ASIC Station Control
U803	TVN6055A	Software SSCB
U803	5191012H75	IC PRGMD EPROM 12H75
U804	5184064F76	Static 32Kx8 Bit RAM
U806	5113819D02	LO COST LO PWR 14 DIP
U807	5113815J04	555 Timer
U808	0982808R02	SOCKET, IC: 8-contact
U810 thru 812	5184887K60	Triple 2-Channel Analog Mux/Demux
U813	5184704M19	Hex Level Shifter/Logic Level Converter
U814	5113819D04	General Purpose Differential Operational Amplifier
U816	5184704M19	Hex Level Shifter/Logic Level Converter
U817	5113806D21	analog switching multiplexer
U818,819	5113819D04	General Purpose Differential Operational Amplifier
U821	5113819D04	General Purpose Differential Operational Amplifier
U823,824	5182335V01	IC EEPOT 50K 10% _9312_
U830	5184621K33	Operational Amplifier
U831	5182335V01	IC EEPOT 50K 10% _9312_
U837,838	5184621K85	Dual Operational Amplifier
U839	5184704M19	Hex Level Shifter/Logic Level Converter
U840	5184887K60	Triple 2-Channel Analog Mux/Demux
U841	5184621K85	Dual Operational Amplifier
U842	5113820D02	type LM2901N
U843	5184371T01	Single Current Mode Controller
U1550,1551	5183222M03	Quad Operational Amplifier
U1552	5113819D02	LO COST LO PWR 14 DIP
U1553,1554	5182335V01	IC EEPOT 50K 10% _9312_
U8200	5113819D04	General Purpose Differential Operational Amplifier
voltage regulator: (see note)		
VR701	4883461E40	Zener 5.1V
VR702	4882479V02	DIODE ZENER 3.3V
VR1531	4882479V02	DIODE ZENER 3.3V
VR1532,1533	4882479V01	DIODE ZENER 2.7V
VR1534	4882479V02	DIODE ZENER 3.3V

Y800	4880113K04	7.948 MHZ
crystal: (see note)		
non-referenced items:		
TTN4042A		
0300140230		
0982449T01		
0982449T03		
0982449T03		
0982808R10		
0983729M17		
0984728L01		
0984728L01		

TLN3384 SSCB Parts List

Reference Symbol	Motorola Part No.	Description
	0984728L01	Shorting Jumper: 2-contact (used with JU3)
	0984728L01	Shorting Jumper: 2-contact (used with JU4)
	0984728L01	Shorting Jumper: 2-contact (used with JU5)
	0984728L01	Shorting Jumper: 2-contact (used with JU6)
	0984728L01	Shorting Jumper: 2-contact (used with JU7)
	0984728L01	Shorting Jumper: 2-contact (used with JU8)
	0984728L01	Shorting Jumper: 2-contact (used with JU9)
	0984728L01	Shorting Jumper: 2-contact (used with JU10)
	0984728L01	Shorting Jumper: 2-contact (used with JU11)
	0984728L01	Shorting Jumper: 2-contact (used with JU12)
	0984728L01	Shorting Jumper: 2-contact (used with JU13)
	0984728L01	Shorting Jumper: 2-contact (used with JU14)
	0984728L01	Shorting Jumper: 2-contact (used with JU15)
	0984728L01	Shorting Jumper: 2-contact (used with JU16)
	0984728L01	Shorting Jumper: 2-contact (used with JU17)
	0984728L01	Shorting Jumper: 2-contact (used with JU18)
	0984728L01	Shorting Jumper: 2-contact (used with JU19)
	0984728L01	Shorting Jumper: 2-contact (used with JU20)
	0984728L01	Shorting Jumper: 2-contact (used with JU21)
	0984728L01	Shorting Jumper: 2-contact (used with JU22)
	1485334U01	Insulator (used w/ Y800)
	2683373P02	HEAT SINK, transistor
	2880001R03	plug: 3-contact (used with JU1)
	2880001R03	plug: 3-contact (used with JU2)
	2880001R03	plug: 3-contact (used with JU3)
	2880001R03	plug: 3-contact (used with JU4)
	2880001R03	plug: 3-contact (used with JU5)
	2880001R03	plug: 3-contact (used with JU6)
	2880001R03	plug: 3-contact (used with JU7)
	2880001R03	plug: 3-contact (used with JU8)
	2880001R03	plug: 3-contact (used with JU9)
	2880001R03	plug: 3-contact (used with JU10)
	2880001R03	plug: 3-contact (used with JU11)
	2880001R03	plug: 3-contact (used with JU12)
	2880001R03	plug: 3-contact (used with JU13)
	2880001R03	plug: 3-contact (used with JU14)
	2880001R03	plug: 3-contact (used with JU15)
	2880001R03	plug: 3-contact (used with JU16)
	2880001R03	plug: 3-contact (used with JU17)
	2880001R03	plug: 3-contact (used with JU18)
	2880001R03	plug: 3-contact (used with JU19)
	2880001R03	plug: 3-contact (used with JU20)
	2880001R03	plug: 3-contact (used with JU21)
	2880001R03	plug: 3-contact (used with JU22)
	2882296R34	plug: 40-contact (used with J600)
	4380054K02	SPACER, support (4 used)
	4884349P01	silicon
	5483865R01	Label, bar code: 1/4" wide, white (2 used)
	5484960T01	Label, bar code: 6.3 x 12.7MM, white (2 used)

Note: For optimum performance, diodes, transistors, integrated circuits, and crystals must be ordered by Motorola part number.

Reference Symbol	Motorola Part No.	Description
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TLN3385 SSCB Parts List

TLN3385 SSCB Parts List

Reference Symbol	Motorola Part No.	Description
capacitor, fixed:		
C701	2113740B57	220 pF, +/-5%; 50 V
C702	2113740B71	820 pF, +/-5%; 50 V
C703	2113740B73	1000 pF, +/-5%; 50 V
C704	2113741B69	0.1 uF, +/-5%; 50 V
C705,706	2311049A19	10 uF, +/-10%; 25 V
C707	2113741B69	0.1 uF, +/-5%; 50 V
C708	2311049A19	10 uF, +/-10%; 25 V
C709	2311049A08	1 uF, +/-10%; 35 V
C710,711	2311049A22	33 uF, +/-10%; 16 V
C712	2311049A19	10 uF, +/-10%; 25 V
C713	2311049A08	1 uF, +/-10%; 35 V
C714	2311049A19	10 uF, +/-10%; 25 V
C715	2113740B49	100 pF, +/-5%; 50 V
C716	2311049A19	10 uF, +/-10%; 25 V
C717	2113741B69	0.1 uF, +/-5%; 50 V
C718	2313748G21	100 uF, +/-20%; 16V
C719	2311049A19	10 uF, +/-10%; 25 V
C720	2113741B69	0.1 uF, +/-5%; 50 V
C721	2311049A22	33 uF, +/-10%; 16 V
C722 thru 725	2113741B69	0.1 uF, +/-5%; 50 V
C800	2113741B45	0.01 uF, +/-5%; 50 V
C801	2113740B59	270 pF, +/-5%; 50V
C802 thru 808	2113741B69	0.1 uF, +/-5%; 50 V
C810	2113741B69	0.1 uF, +/-5%; 50 V
C812	2311049A19	10 uF, +/-10%; 25 V
C814,815	2113740B25	10 pF, +/-5%; 50 V
C817	2113740B65	470 pF, +/-5%; 50 V
C819	2113741B69	0.1 uF, +/-5%; 50 V
C820	2113741B45	0.01 uF, +/-5%; 50 V
C822	2311049A08	1 uF, +/-10%; 35 V
C823 thru 828	2113741B69	0.1 uF, +/-5%; 50 V
C829	2113740B49	100 pF, +/-5%; 50 V
C830	2113741B69	0.1 uF, +/-5%; 50 V
C1543	2113740B73	1000 pF, +/-5%; 50 V
C1544	0811051A13	0.1 uF, +/-5%; 63 V
C1545,1546	2113740B47	82 pF, +/-5%; 50V
C1547	0811017A08	0.01 uF, +/-5%; 50 V
C1548	2113740B76	1500 pF, +/-5 pF; 50V
C1549	2113740B57	220 pF, +/-5%; 50 V
C1551	0811017A05	3300 pF, +/-5%; 50V
C1552,1553	2311049A10	2.2 uF, +/-10%; 35V
C1554	0811017A08	0.01 uF, +/-5%; 50 V
C1555	2113740B34	24 pF, +/-5%; 50V
C1556,1557	0811017A08	0.01 uF, +/-5%; 50 V
C1558	2113740B76	1500 pF, +/-5 pF; 50V
C1559	2113740B73	1000 pF, +/-5%; 50 V
C1560	2113740B34	24 pF, +/-5%; 50V
C1561	0811017A05	3300 pF, +/-5%; 50V
C1562	2311049A10	2.2 uF, +/-10%; 35V
C1564	2113741B37	4700 pF, +/-5%; 50 V
C1579	2113740B57	220 pF, +/-5%; 50 V
C8100,8101	2113740B49	100 pF, +/-5%; 50 V
C8102	0811017A08	0.01 uF, +/-5%; 50 V
C8103	0811051A09	0.022 uF, +/-5%; 63 V
C8104	0811017A08	0.01 uF, +/-5%; 50 V
C8105	2313748G25	333 uF, +/-20%; 35V
C8106	0811051A13	0.1 uF, +/-5%; 63 V
C8107	0811051A09	0.022 uF, +/-5%; 63 V
C8108	0811017A08	0.01 uF, +/-5%; 50 V
C8109	2313748G25	333 uF, +/-20%; 35V
C8112	2311049A15	4.7 uF, +/-10%; 35V
C8113	2113740B49	100 pF, +/-5%; 50 V
C8114,8115	2113740B57	220 pF, +/-5%; 50 V
C8116	0811051A15	0.22 uF, +/-5%; 63 V
C8117	2311049A10	2.2 uF, +/-10%; 35V
C8118	2311049A08	1 uF, +/-10%; 35 V
C8119	0811017A05	3300 pF, +/-5%; 50V
C8120	0811017A08	0.01 uF, +/-5%; 50 V
C8121	2113740B57	220 pF, +/-5%; 50 V
C8122,8123	2311049A08	1 uF, +/-10%; 35 V
C8124	0811051A13	0.1 uF, +/-5%; 63 V

Reference Symbol	Motorola Part No.	Description
C8125	2311049A08	1 uF, +/-10%; 35 V
C8126,8127	2113740B49	100 pF, +/-5%; 50 V
C8128	2113740B76	1500 pF, +/-5 pF; 50V
C8129,8130	2113740B49	100 pF, +/-5%; 50 V
C8131 thru 8133	2113740B40	43 pF, +/-5%; 50V
C8134	2311049A08	1 uF, +/-10%; 35 V
C8135	0811051A15	0.22 uF, +/-5%; 63 V
C8136	2311049A19	10 uF, +/-10%; 25 V
C8137 thru 8140	0811051A15	0.22 uF, +/-5%; 63 V
C8141	2113741B45	0.01 uF, +/-5%; 50 V
C8142 thru 8150	2113741B69	0.1 uF, +/-5%; 50 V
C8151	2311049A15	4.7 uF, +/-10%; 35V
C8152	2113740B49	100 pF, +/-5%; 50 V
C8153	2113741B45	0.01 uF, +/-5%; 50 V
C8154	2113740B49	100 pF, +/-5%; 50 V
C8156	2113740B49	100 pF, +/-5%; 50 V
C8157	2113741B45	0.01 uF, +/-5%; 50 V
C8158	0811051A10	0.033 uF, +/-5%; 63V
C8159	0811051A12	0.068 uF, +/-5%; 63 V
C8160	2113740B49	100 pF, +/-5%; 50 V
C8161	0811017A05	3300 pF, +/-5%; 50V
C8162	0811051A13	0.1 uF, +/-5%; 63 V
C8163	2113740B74	1200 pF, +/-5%; 50V
C8164	2311049A08	1 uF, +/-10%; 35 V
C8165	2113740B76	1500 pF, +/-5 pF; 50V
C8169	2113740B40	43 pF, +/-5%; 50V
C8170	0811051A15	0.22 uF, +/-5%; 63 V
C8173	0811017A08	0.01 uF, +/-5%; 50 V
C8174	2113740B57	220 pF, +/-5%; 50 V
C8175,8176	2311049A08	1 uF, +/-10%; 35 V
C8177	2311049A10	2.2 uF, +/-10%; 35V
C8178	2311049A08	1 uF, +/-10%; 35 V
C8179 thru 8191	2113741B69	0.1 uF, +/-5%; 50 V
C8193	2113741B69	0.1 uF, +/-5%; 50 V
C8195 thru 8198	2113741B69	0.1 uF, +/-5%; 50 V
C8200	2113741B33	3300 pF, +/-5%; 50V
C8201	2113740B55	180 pF, +/-5%; 50V
C8202	2113741B45	0.01 uF, +/-5%; 50 V
C8203	2113741B37	4700 pF, +/-5%; 50 V
C8204	2113740B73	1000 pF, +/-5%; 50 V
C8205	0811051A15	0.22 uF, +/-5%; 63 V
C8207	2113740B73	1000 pF, +/-5%; 50 V
C8209 thru 8211	0811051A13	0.1 uF, +/-5%; 63 V
C8213	0811051A13	0.1 uF, +/-5%; 63 V
C8214	2113741B45	0.01 uF, +/-5%; 50 V
C8215,8216	2113741B69	0.1 uF, +/-5%; 50 V
C8218	0811051A15	0.22 uF, +/-5%; 63 V
C8219	2113741B69	0.1 uF, +/-5%; 50 V
C8220	2113740B73	1000 pF, +/-5%; 50 V
C8225	2113741B69	0.1 uF, +/-5%; 50 V
C8230	2113740B57	220 pF, +/-5%; 50 V
C8231	2113741B69	0.1 uF, +/-5%; 50 V
C8300 thru 8303	0811051A11	0.047 uF, +/-5%; 63V
C8304	2311049A19	10 uF, +/-10%; 25 V
C8305,8306	0811051A11	0.047 uF, +/-5%; 63V
C8307	2113740B36	30 pF, +/-5%; 50V
C8400	2113740B18	5.1 pF, +/-0.25 pF; 50V
C8401	2311049A19	10 uF, +/-10%; 25 V
C8402	0811051A15	0.22 uF, +/-5%; 63 V
C8403	2311049A19	10 uF, +/-10%; 25 V
diode: (see note)		
CR801,802	4813833C10	0.1A, 70V
CR803	4805129M41	Rectifier
CR804 thru 807	4813833C10	0.1A, 70V
CR808	4884349P01	Dual Rectifier
CR809	4813833C10	0.1A, 70V
CR1520 thru 1522	4805129M41	Rectifier
CR1523,1524	4813833C10	0.1A, 70V
CR1526,1527	4813833C10	0.1A, 70V
CR1528,1529	4805129M41	Rectifier
CR1530	4813833C10	0.1A, 70V

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Reference Symbol	Motorola Part No.	Description
CR1531	4805129M41	Rectifier
CR8100,8101	4883654H01	silicon
CR8102,8103	4813833C10	0.1A, 70V
CR8107	4813833C10	0.1A, 70V
CR8110	4805129M41	Rectifier
CR8112,8113	4805129M41	Rectifier
CR8115,8116	4883654H01	silicon
CR8200 thru 8203	4805129M41	Rectifier
light emitting diode: (see note)		
DS800 thru 803	4888245C22	GRN
DS804	4888245C23	YEL
DS805	4888245C24	RED
DS8200 thru 8202	4882771L03	7-segment display (red)
hybrid:		
HY805	TRN7008A	Display Board
connector:		
J701	2882984N13	plug: 6-contact
J801	2882505T03	plug: 26-contact
J802	2813922A14	HDR 14 POS STR .1 CTR GLPLTD
J803	2882505T05	plug: 40-contact
J804	2882505T04	plug: 34-contact
J805A	2883547T01	receptacle: 8-contact, right anle
J805B	2883547T01	receptacle: 8-contact, right anle
J806,807	0984231B03	receptacle: phono jack
J812	0983112N01	receptacle: 6-contact
inductor:		
L700	2484386T01	25 UH
L701	2484266T01	150 UH
L702	2484386T01	25 UH
L800	2411047A25	10 UH
L900	2411047A31	CHK RF MLD A/I 33UH
transistor: (see note)		
Q700	4884233T01	type MOSFET
Q705	4813824A17	PNP
Q800	4813824A17	PNP
Q801 thru 807	4813824A10	NPN
Q808	4813824A06	NPN
Q809 thru 811	4813824A10	NPN
Q813,814	4813824A10	NPN
Q816,817	4813824A10	NPN
Q820	4813824A10	NPN
Q821	4800869653	type JFET
Q822,823	4813824A10	NPN
Q1507 thru 1510	4813824A10	NPN
Q8100	4813824A10	NPN
Q8101,8102	4811043B42	TSTR 48R00869919 A/I
Q8200 thru 8207	4813824A17	PNP
Q8208 thru 8210	4813824A06	NPN
Q8211	4813824A10	NPN
Q8212	4813824A06	NPN
resistor, fixed:		
R700	0611077A98	10K, +/-5%; 1/8 W
R701	0611077A88	3.9K, +/-5%; 1/8 W
R702	0611077A50	100 ohms, +/-5%; 1/8 W
R703	0611077A74	1K, +/-5%; 1/8 W
R704	0611077B31	220K, +/-5%; 1/8 W
R705	0611077F63	5.11K, +/-1%; 1/8 W
R706	0611077F28	2.21K, +/-1%; 1/8 W
R707	0611077H30	267K, +/-1%; 1/8 W
R708	0611077F91	10K, +/-1%; 1/8 W
R709	0611077E94	1K, +/-1%; 1/8 W
R710	0611077F60	4.75K, +/-1%; 1/8 W
R711	0611077B35	330K, +/-5%; 1/8 W
R712	0611077B23	100K, +/-5%; 1/8 W
R713	0611077F91	10K, +/-1%; 1/8 W
R714	0611077B13	39K, +/-5%; 1/8 W

Reference Symbol	Motorola Part No.	Description
R715	0611077B15	47K, +/-5%; 1/8 W
R716	0611077F63	5.11K, +/-1%; 1/8 W
R717	0611077B35	330K, +/-5%; 1/8 W
R718	0611077B07	22K, +/-5%; 1/8 W
R719	0611077A50	100 ohms, +/-5%; 1/8 W
R720	0611077A36	27 ohms, +/-5%; 1/8 W
R721	0611077B47	1 meg, +/-5%; 1/8 W
R722	0611077B31	220K, +/-5%; 1/8 W
R723,724	0683962T01	1 ohm, +/-5%; 1 W
R725	0611077F91	10K, +/-1%; 1/8 W
R726	0611077G09	15K, +/-1%; 1/8 W
R727	0611077A98	10K, +/-5%; 1/8 W
R728	0611077H85	1 meg, +/-1%; 1/8 W
R729	0611077B29	180K, +/-5%; 1/8 W
R730	0611077A01	0 ohm, +/-5%; 0 W
R731	0683962T01	1 ohm, +/-5%; 1 W
R736	0611009A33	220 ohms, +/-5%; 1/4 W
R737	0611077A84	2.7K, +/-5%; 1/8 W
R738	0611077A64	390 ohms, +/-5%; 1/8 W
R739	0611077A98	10K, +/-5%; 1/8 W
R740	0611077A56	180 ohms, +/-5%; 1/8W
R741	0611077A98	10K, +/-5%; 1/8 W
R742	0611077A86	3.3K, +/-5%; 1/8 W
R743	0683962T01	1 ohm, +/-5%; 1 W
R748	0611077A78	1.5K, +/-5%; 1/8 W
R800	0611077A54	150 ohms, +/-5%; 1/8 W
R801	0611077A88	3.9K, +/-5%; 1/8 W
R802	0611077A01	0 ohm, +/-5%; 0 W
R803,804	0611077A88	3.9K, +/-5%; 1/8 W
R805	0611077A42	47 ohms, +/-5%; 1/8 W
R806	0611077A98	10K, +/-5%; 1/8 W
R807	0611077A94	6.8K, +/-5%; 1/8W
R809,810	0611077A94	6.8K, +/-5%; 1/8W
R812	0611077A78	1.5K, +/-5%; 1/8 W
R813	0611077A32	18 ohms, +/-5%; 1/8 W
R814	0611077A56	180 ohms, +/-5%; 1/8W
R815	0611077A32	18 ohms, +/-5%; 1/8 W
R816	0611077A90	4.7K, +/-5%; 1/8 W
R817	0611077A82	2.2K, +/-5%; 1/8 W
R818	0611077A52	120 ohms, +/-5%; 1/8 W
R819	0611077A32	18 ohms, +/-5%; 1/8 W
R820	0611077A56	180 ohms, +/-5%; 1/8W
R821	0611077A78	1.5K, +/-5%; 1/8 W
R822	0611077A56	180 ohms, +/-5%; 1/8W
R823	0611077A82	2.2K, +/-5%; 1/8 W
R824	0611077A80	1.8K, +/-5%; 1/8 W
R825	0611077A82	2.2K, +/-5%; 1/8 W
R826	0611077A98	10K, +/-5%; 1/8 W
R827	0611077A88	3.9K, +/-5%; 1/8 W
R828	0611077B07	22K, +/-5%; 1/8 W
R829	0611077A94	6.8K, +/-5%; 1/8W
R830 thru 836	0611077A98	10K, +/-5%; 1/8 W
R837,838	0611077A50	100 ohms, +/-5%; 1/8 W
R839	0611077A98	10K, +/-5%; 1/8 W
R840,841	0611077A50	100 ohms, +/-5%; 1/8 W
R842	0611077A98	10K, +/-5%; 1/8 W
R843 thru 845	0611077A50	100 ohms, +/-5%; 1/8 W
R846	0611077A52	120 ohms, +/-5%; 1/8 W
R847,848	0611077A98	10K, +/-5%; 1/8 W
R849	0611077B09	27K, +/-5%; 1/8 W
R850	0611077A98	10K, +/-5%; 1/8 W
R851	0611077A58	220 ohms, +/-5%; 1/8 W
R852	0611077B47	1 meg, +/-5%; 1/8 W
R854	0611077A98	10K, +/-5%; 1/8 W
R855	0611077A92	5.6K, +/-5%; 1/8 W
R856 thru 858	0611077A98	10K, +/-5%; 1/8 W
R861	0611077B09	27K, +/-5%; 1/8 W
R862	0611077A88	3.9K, +/-5%; 1/8 W
R863	0611077A54	150 ohms, +/-5%; 1/8 W
R866	0611077A98	10K, +/-5%; 1/8 W
R867	0611077A78	1.5K, +/-5%; 1/8 W
R868 thru 871	0611077A98	10K, +/-5%; 1/8 W
R872	0611077A54	150 ohms, +/-5%; 1/8 W
R873	0611077A98	10K, +/-5%; 1/8 W

TLN3385 SSCB Parts List

Reference Symbol	Motorola Part No.	Description
R874	0611077A54	150 ohms, $\pm 5\%$; 1/8 W
R875	0611077A80	1.8K, $\pm 5\%$; 1/8 W
R876	0611077A98	10K, $\pm 5\%$; 1/8 W
R877	0611077A54	150 ohms, $\pm 5\%$; 1/8 W
R878	0611077A90	4.7K, $\pm 5\%$; 1/8 W
R879	0611077A82	2.2K, $\pm 5\%$; 1/8 W
R880	0611077A78	1.5K, $\pm 5\%$; 1/8 W
R881	0611077A98	10K, $\pm 5\%$; 1/8 W
R882	0611077A82	2.2K, $\pm 5\%$; 1/8 W
R883,884	0611077A98	10K, $\pm 5\%$; 1/8 W
R887	0611077A98	10K, $\pm 5\%$; 1/8 W
R888	0611077B39	470K, $\pm 5\%$; 1/8 W
R889	0611077A98	10K, $\pm 5\%$; 1/8 W
R890	0611077A74	1K, $\pm 5\%$; 1/8 W
R891	0611077A98	10K, $\pm 5\%$; 1/8 W
R893	0611077A98	10K, $\pm 5\%$; 1/8 W
R894	0611077B23	100K, $\pm 5\%$; 1/8 W
R895 thru 898	0611077A98	10K, $\pm 5\%$; 1/8 W
R899	0611077A92	5.6K, $\pm 5\%$; 1/8 W
R900	0611077A50	100 ohms, $\pm 5\%$; 1/8 W
R1523	0611077B15	47K, $\pm 5\%$; 1/8 W
R1524	0611077A86	3.3K, $\pm 5\%$; 1/8 W
R1525	0611077B17	56K, $\pm 5\%$; 1/8 W
R1526	0611077A82	2.2K, $\pm 5\%$; 1/8 W
R1527	0611077B17	56K, $\pm 5\%$; 1/8 W
R1532	0611077B27	150K, $\pm 5\%$; 1/8W
R1533	0611077A64	390 ohms, $\pm 5\%$; 1/8 W
R1534	0611077A78	1.5K, $\pm 5\%$; 1/8 W
R1535	0611077B23	100K, $\pm 5\%$; 1/8 W
R1536	0611077B39	470K, $\pm 5\%$; 1/8 W
R1537	0611077B15	47K, $\pm 5\%$; 1/8 W
R1540	0611077B15	47K, $\pm 5\%$; 1/8 W
R1543	0611077B23	100K, $\pm 5\%$; 1/8 W
R1544	0611077A74	1K, $\pm 5\%$; 1/8 W
R1545	0611077B19	68K, $\pm 5\%$; 1/8W
R1546	0611077A74	1K, $\pm 5\%$; 1/8 W
R1547	0611077A98	10K, $\pm 5\%$; 1/8 W
R1548	0611077B33	270K, $\pm 5\%$; 1/8W
R1549	0611077A94	6.8K, $\pm 5\%$; 1/8W
R1550	0611077A98	10K, $\pm 5\%$; 1/8 W
R1553	0611077B19	68K, $\pm 5\%$; 1/8W
R1554	0611077B21	82K, $\pm 5\%$; 1/8W
R1555,1556	0611077A98	10K, $\pm 5\%$; 1/8 W
R1557	0611077B27	150K, $\pm 5\%$; 1/8W
R1559	0611077A64	390 ohms, $\pm 5\%$; 1/8 W
R1560	0611077B15	47K, $\pm 5\%$; 1/8 W
R1561	0611077B23	100K, $\pm 5\%$; 1/8 W
R1562	0611077B39	470K, $\pm 5\%$; 1/8 W
R1563	0611077B15	47K, $\pm 5\%$; 1/8 W
R1565,1566	0611077A74	1K, $\pm 5\%$; 1/8 W
R1567	0611077A94	6.8K, $\pm 5\%$; 1/8W
R1568	0611077A98	10K, $\pm 5\%$; 1/8 W
R1570	0611077A74	1K, $\pm 5\%$; 1/8 W
R1571	0611077B21	82K, $\pm 5\%$; 1/8W
R1572	0611077A01	0 ohm, $\pm 5\%$; 0 W
R1573,1574	0611077B14	43K, $\pm 5\%$; 1/8 W
R1575	0611077A92	5.6K, $\pm 5\%$; 1/8 W
R1576	0611077B27	150K, $\pm 5\%$; 1/8W
R1578	0611077A78	1.5K, $\pm 5\%$; 1/8 W
R1599	1882787K08	variable: 100K $\pm 20\%$; 1/4W
R8100 thru 8103	0611077B01	12K, $\pm 5\%$; 1/8 W
R8105	0611077B23	100K, $\pm 5\%$; 1/8 W
R8106	0611077A98	10K, $\pm 5\%$; 1/8 W
R8107	0611077B07	22K, $\pm 5\%$; 1/8 W
R8108	0611077B03	15K, $\pm 5\%$; 1/8 W
R8109	0611077B01	12K, $\pm 5\%$; 1/8 W
R8110	0611077B16	51K, $\pm 5\%$; 1/8W
R8111	0611077B07	22K, $\pm 5\%$; 1/8 W
R8112	0611077A94	6.8K, $\pm 5\%$; 1/8W
R8113,8114	0611077A86	3.3K, $\pm 5\%$; 1/8 W
R8115	0611077A94	6.8K, $\pm 5\%$; 1/8W
R8116	0611077A88	3.9K, $\pm 5\%$; 1/8 W
R8117	0611009B26	2.7 ohms, $\pm 5\%$; 1/4W
R8118	0611077A88	3.9K, $\pm 5\%$; 1/8 W
R8119	0611077A67	510 ohms, $\pm 5\%$; 1/8 W
R8120	0611077A68	560 ohms, $\pm 5\%$; 1/8 W
R8121	0683962T24	9.1 ohms, $\pm 5\%$; 1W

Reference Symbol	Motorola Part No.	Description
R8122	0611077A26	10 ohms, $\pm 5\%$; 1/8 W
R8123	0611077B37	390K, $\pm 5\%$; 1/8W
R8125	0611077A98	10K, $\pm 5\%$; 1/8 W
R8127	0611077A94	6.8K, $\pm 5\%$; 1/8W
R8128	0611077A86	3.3K, $\pm 5\%$; 1/8 W
R8129	0611077A78	1.5K, $\pm 5\%$; 1/8 W
R8130	0611077H43	365K, $\pm 1\%$; 1/8W
R8131	0611077A98	10K, $\pm 5\%$; 1/8 W
R8132	0611077A94	6.8K, $\pm 5\%$; 1/8W
R8133	0611077B23	100K, $\pm 5\%$; 1/8 W
R8134	0611077B17	56K, $\pm 5\%$; 1/8 W
R8135	1882787K09	variable: 5K $\pm 10\%$; 1/4W
R8136	0611077B05	18K, $\pm 5\%$; 1/8 W
R8137	0611077B09	27K, $\pm 5\%$; 1/8 W
R8138,8139	0611077B11	33K, $\pm 5\%$; 1/8 W
R8141	0611077B03	15K, $\pm 5\%$; 1/8 W
R8142,8143	0611077B07	22K, $\pm 5\%$; 1/8 W
R8144	0611077A98	10K, $\pm 5\%$; 1/8 W
R8146	0611077B03	15K, $\pm 5\%$; 1/8 W
R8147	0611077B09	27K, $\pm 5\%$; 1/8 W
R8148	0611077A98	10K, $\pm 5\%$; 1/8 W
R8149	0611077B09	27K, $\pm 5\%$; 1/8 W
R8150	0611077B23	100K, $\pm 5\%$; 1/8 W
R8151,8152	0611077B09	27K, $\pm 5\%$; 1/8 W
R8153,8154	0611077B07	22K, $\pm 5\%$; 1/8 W
R8155	0611077B09	27K, $\pm 5\%$; 1/8 W
R8156	0611077B23	100K, $\pm 5\%$; 1/8 W
R8157 thru 8159	0611077B09	27K, $\pm 5\%$; 1/8 W
R8162	0611077B07	22K, $\pm 5\%$; 1/8 W
R8163	0611077B09	27K, $\pm 5\%$; 1/8 W
R8164	0611077A98	10K, $\pm 5\%$; 1/8 W
R8165,8166	0611077B09	27K, $\pm 5\%$; 1/8 W
R8167	0611077B23	100K, $\pm 5\%$; 1/8 W
R8168	0611077B30	200K, $\pm 5\%$; 1/8 W
R8169	0611077B23	100K, $\pm 5\%$; 1/8 W
R8170	0611077A68	560 ohms, $\pm 5\%$; 1/8 W
R8171	0611077B30	200K, $\pm 5\%$; 1/8 W
R8172	0611077A50	100 ohms, $\pm 5\%$; 1/8 W
R8173,8174	0611077B23	100K, $\pm 5\%$; 1/8 W
R8175	0611077B03	15K, $\pm 5\%$; 1/8 W
R8176	0611077A91	5.1K, $\pm 5\%$; 1/8 W
R8177	0611077B11	33K, $\pm 5\%$; 1/8 W
R8178,8179	0611077B14	43K, $\pm 5\%$; 1/8 W
R8180	0611077B11	33K, $\pm 5\%$; 1/8 W
R8181 thru 8185	0611077B18	62K, $\pm 5\%$; 1/8 W
R8186	0611077B10	30K, $\pm 5\%$; 1/8W
R8187	0611077B14	43K, $\pm 5\%$; 1/8 W
R8188	0611077B23	100K, $\pm 5\%$; 1/8 W
R8189	0611077B43	680K, $\pm 5\%$; 1/8 W
R8190	0611077B23	100K, $\pm 5\%$; 1/8 W
R8191	0611077A98	10K, $\pm 5\%$; 1/8 W
R8192	0611077A86	3.3K, $\pm 5\%$; 1/8 W
R8193	0611077A98	10K, $\pm 5\%$; 1/8 W
R8194	0611077B23	100K, $\pm 5\%$; 1/8 W
R8195	0611077A88	3.9K, $\pm 5\%$; 1/8 W
R8196,8197	0611077A76	1.2K, $\pm 5\%$; 1/8 W
R8198	0611077B15	47K, $\pm 5\%$; 1/8 W
R8199	0611077A01	0 ohm, $\pm 5\%$; 0 W
R8200	0611077A78	1.5K, $\pm 5\%$; 1/8 W
R8201	0611077A50	100 ohms, $\pm 5\%$; 1/8 W
R8202	0611077A78	1.5K, $\pm 5\%$; 1/8 W
R8203	0611077A90	4.7K, $\pm 5\%$; 1/8 W
R8204	0611077A50	100 ohms, $\pm 5\%$; 1/8 W
R8205,8206	0611077A78	1.5K, $\pm 5\%$; 1/8 W
R8207	0611077A82	2.2K, $\pm 5\%$; 1/8 W
R8208	0611077A50	100 ohms, $\pm 5\%$; 1/8 W
R8209,8210	0611077A78	1.5K, $\pm 5\%$; 1/8 W
R8211	0611077A84	2.7K, $\pm 5\%$; 1/8 W
R8212	0611077A50	100 ohms, $\pm 5\%$; 1/8 W
R8213,8214	0611077A78	1.5K, $\pm 5\%$; 1/8 W
R8215	0611077B11	33K, $\pm 5\%$; 1/8 W
R8218	0611077A50	100 ohms, $\pm 5\%$; 1/8 W
R8217,8218	0611077A78	1.5K, $\pm 5\%$; 1/8 W
R8219	0611009B23	0 ohm, $\pm 5\%$; 1/4 W
R8220	0611077A50	100 ohms, $\pm 5\%$; 1/8 W
R8221,8222	0611077A78	1.5K, $\pm 5\%$; 1/8 W
R8223	0611077B23	100K, $\pm 5\%$; 1/8 W

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Reference Symbol	Motorola Part No.	Description
R8224	0611077A78	1.5K, +/-5%; 1/8 W
R8225	0611077A50	100 ohms, +/-5%; 1/8 W
R8226	0611077A78	1.5K, +/-5%; 1/8 W
R8227	0611077B23	100K, +/-5%; 1/8 W
R8228	0611077A50	100 ohms, +/-5%; 1/8 W
R8229,8230	0611077A78	1.5K, +/-5%; 1/8 W
R8231	0611077G88	100K, +/-1%; 1/8 W
R8232,8233	0611077A98	10K, +/-5%; 1/8 W
R8236,8237	0611077A98	10K, +/-5%; 1/8 W
R8239,8240	0611077A98	10K, +/-5%; 1/8 W
R8242,8243	0611077H18	200K, +/-1%; 1/8 W
R8244	0611077G88	100K, +/-1%; 1/8 W
R8245	0611077B23	100K, +/-5%; 1/8 W
R8246	0611077G88	100K, +/-1%; 1/8 W
R8247	0611077H18	200K, +/-1%; 1/8 W
R8248	0611077G88	100K, +/-1%; 1/8 W
R8249	0611077H18	200K, +/-1%; 1/8 W
R8250	0611077G88	100K, +/-1%; 1/8 W
R8251 thru 8254	0611077H18	200K, +/-1%; 1/8 W
R8255,8256	0611077B23	100K, +/-5%; 1/8 W
R8257	0611077G88	100K, +/-1%; 1/8 W
R8258	0611077H18	200K, +/-1%; 1/8 W
R8259	0611077G88	100K, +/-1%; 1/8 W
R8260	0611077H18	200K, +/-1%; 1/8 W
R8261	0611077G88	100K, +/-1%; 1/8 W
R8262,8263	0611077H18	200K, +/-1%; 1/8 W
R8272	0611077B25	120K, +/-5%; 1/8 W
R8275	0611077H73	750K, +/-1%; 1/8W
R8276	0611077G60	51.1K, +/-1%; 1/8 W
R8277	0611077A98	10K, +/-5%; 1/8 W
R8278	0611077H54	475K, +/-1%; 1/8W
R8279	0611077G53	43.2K, +/-1%; 1/8 W
R8280	0611077H46	392K, +/-1%; 1/8W
R8281	0611077B13	39K, +/-5%; 1/8 W
R8282,8283	0611077H73	750K, +/-1%; 1/8W
R8284	0611077G60	51.1K, +/-1%; 1/8 W
R8285	0611077H54	475K, +/-1%; 1/8W
R8286	0611077A98	10K, +/-5%; 1/8 W
R8287	0611077A74	1K, +/-5%; 1/8 W
R8288	0611077G53	43.2K, +/-1%; 1/8 W
R8289	0611077H73	750K, +/-1%; 1/8W
R8290	0611077H46	392K, +/-1%; 1/8W
R8291	0611077B13	39K, +/-5%; 1/8 W
R8292	0611077A86	3.3K, +/-5%; 1/8 W
R8293	0611077B23	100K, +/-5%; 1/8 W
R8294	0611077B11	33K, +/-5%; 1/8 W
R8295	0611077B23	100K, +/-5%; 1/8 W
R8298	0611009B23	0 ohm, +/-5%; 1/4 W
R8299	0611077A01	0 ohm, +/-5%; 0 W
R8300	0611077B23	100K, +/-5%; 1/8 W
R8310 thru 8313	0611077B15	47K, +/-5%; 1/8 W
R8314	0611077A98	10K, +/-5%; 1/8 W
R8315	0611077A94	6.8K, +/-5%; 1/8W
R8316	0611077A98	10K, +/-5%; 1/8 W
R8318	0611077B23	100K, +/-5%; 1/8 W
R8335 thru 8339	0611077A74	1K, +/-5%; 1/8 W
R8340	0611077A98	10K, +/-5%; 1/8 W
R8344	0611077A68	560 ohms, +/-5%; 1/8 W
R8345 thru 8347	0611077A50	100 ohms, +/-5%; 1/8 W
R8348	0611077A98	10K, +/-5%; 1/8 W
R8349	0611077B30	200K, +/-5%; 1/8 W
R8350,8351	0611077G42	33.2K, +/-1%; 1/8W
R8400	0611077A67	510 ohms, +/-5%; 1/8 W
R8401,8402	0611077A92	5.6K, +/-5%; 1/8 W
R8403	0611077B01	12K, +/-5%; 1/8 W
R8404	0611077B11	33K, +/-5%; 1/8 W
R8405	0611077A84	2.7K, +/-5%; 1/8 W
R8406	0611077B15	47K, +/-5%; 1/8 W
R8407	0611077A74	1K, +/-5%; 1/8 W
R8408	0611077B35	330K, +/-5%; 1/8 W
R8409	0611077B45	820K, +/-5%; 1/8 W
R8410	0611077E15	150 ohms, +/-1%; 1/8W
R8411	0611077B45	820K, +/-5%; 1/8 W
R8412	0611077E73	604 ohms, +/-1%; 1/8W
R8413	0611009B23	0 ohm, +/-5%; 1/4 W

Reference Symbol	Motorola Part No.	Description
R8414	0611077A43	51 ohms, +/-5%; 1/8 W
R8415	0611077B03	15K, +/-5%; 1/8 W
R8416	0611077B39	470K, +/-5%; 1/8 W
R8417	0611009B23	0 ohm, +/-5%; 1/4 W
R8501	0683962T24	9.1 ohms, +/-5%; 1W
R8502	0611077B05	18K, +/-5%; 1/8 W
R8600	0611009B23	0 ohm, +/-5%; 1/4 W
R8601,8602	0611077A58	220 ohms, +/-5%; 1/8 W
R8603 thru 8610	0611077A98	10K, +/-5%; 1/8 W
R8611 thru 8618	0611077A58	220 ohms, +/-5%; 1/8 W
switch:		
SW800,801	4083980R12	toggle: sp3t (on-off-mom)
SW802	4083980R11	toggle: sp3t (mom-off-mom)
transformer:		
T700	2584265T01	power
test point:		
TP1 thru 13	2962998D01	terminal pin
integrated circuit: (see note)		
U800	5113802A01	Micro Computere Unit w/Switch Control Interface
U801,802	5184494R03	ASIC Station Control
U803	TVN6055A	Software SSCB
U803	5191012H75	IC PRGMD EPROM 12H75
U804	5184064F76	Static 32Kx8 Bit RAM
U806	5113819D02	LO COST LO PWR 14 DIP
U807	5113815J04	555 Timer
U808	0982808R02	SOCKET, IC: 8-contact
U810 thru 812	5184887K60	Triple 2-Channel Analog Mux/Demux
U813	5184704M19	Hex Level Shifter/Logic Level Converter
U814	5113819D04	General Purpose Differential Operational Amplifier
U816	5184704M19	Hex Level Shifter/Logic Level Converter
U817	5113806D21	analog switching multiplexer
U818,819	5113819D04	General Purpose Differential Operational Amplifier
U821	5113819D04	General Purpose Differential Operational Amplifier
U823,824	5182335V01	IC EEPOT 50K 10% _9312_
U830	5184621K33	Operational Amplifier
U831	5182335V01	IC EEPOT 50K 10% _9312_
U837,838	5184621K85	Dual Operational Amplifier
U839	5184704M19	Hex Level Shifter/Logic Level Converter
U840	5184887K60	Triple 2-Channel Analog Mux/Demux
U841	5184621K85	Dual Operational Amplifier
U842	5113820D02	type LM2901N
U843	5184371T01	Single Current Mode Controller
U1550,1551	5183222M03	Quad Operational Amplifier
U1552	5113819D02	LO COST LO PWR 14 DIP
U1553,1554	5182335V01	IC EEPOT 50K 10% _9312_
U8200	5113819D04	General Purpose Differential Operational Amplifier
voltage regulator: (see note)		
VR701	4883461E40	Zener 5.1V
VR702	4882479V02	DIODE ZENER 3.3V
VR1531 thru 1534	4882479V02	DIODE ZENER 3.3V
crystal: (see note)		
Y800	4880113K04	7.948 MHZ
non-referenced items:		
TTN4043A		UHF/VHF CNTRL BD
0300140230		SCR TPG 4-40X5/16 STARPAN CHS (2 used with J800)
0982449T01		SOCKET, IC: 52-contact (used with U800)
0982449T03		SOCKET, IC: 84-contact (used with U801)

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Reference Symbol	Motorola Part No.	Description
	0982449T03	SOCKET, IC: 84-contact (used with U802)
	0982808R10	Socket, IC: 28-contact (used with U803)
	0983729M17	receptacle: 20-contact (2 used with J800)
	0984728L01	Shorting Jumper: 2-contact (used with JU1)
	0984728L01	Shorting Jumper: 2-contact (used with JU2)
	0984728L01	Shorting Jumper: 2-contact (used with JU3)
	0984728L01	Shorting Jumper: 2-contact (used with JU4)
	0984728L01	Shorting Jumper: 2-contact (used with JU5)
	0984728L01	Shorting Jumper: 2-contact (used with JU6)
	0984728L01	Shorting Jumper: 2-contact (used with JU7)
	0984728L01	Shorting Jumper: 2-contact (used with JU8)
	0984728L01	Shorting Jumper: 2-contact (used with JU9)
	0984728L01	Shorting Jumper: 2-contact (used with JU10)
	0984728L01	Shorting Jumper: 2-contact (used with JU11)
	0984728L01	Shorting Jumper: 2-contact (used with JU12)
	0984728L01	Shorting Jumper: 2-contact (used with JU13)
	0984728L01	Shorting Jumper: 2-contact (used with JU14)
	0984728L01	Shorting Jumper: 2-contact (used with JU15)
	0984728L01	Shorting Jumper: 2-contact (used with JU16)
	0984728L01	Shorting Jumper: 2-contact (used with JU17)
	0984728L01	Shorting Jumper: 2-contact (used with JU18)
	0984728L01	Shorting Jumper: 2-contact (used with JU19)
	0984728L01	Shorting Jumper: 2-contact (used with JU20)
	0984728L01	Shorting Jumper: 2-contact (used with JU21)
	0984728L01	Shorting Jumper: 2-contact (used with JU22)
	1485334U01	Insulator (used w/ Y800)
	2683373P02	HEAT SINK, transistor
	2880001R03	plug: 3-contact (used with JU1)
	2880001R03	plug: 3-contact (used with JU2)
	2880001R03	plug: 3-contact (used with JU3)
	2880001R03	plug: 3-contact (used with JU4)
	2880001R03	plug: 3-contact (used with JU5)
	2880001R03	plug: 3-contact (used with JU6)
	2880001R03	plug: 3-contact (used with JU7)
	2880001R03	plug: 3-contact (used with JU8)
	2880001R03	plug: 3-contact (used with JU9)
	2880001R03	plug: 3-contact (used with JU10)
	2880001R03	plug: 3-contact (used with JU11)
	2880001R03	plug: 3-contact (used with JU12)
	2880001R03	plug: 3-contact (used with JU13)
	2880001R03	plug: 3-contact (used with JU14)
	2880001R03	plug: 3-contact (used with JU15)
	2880001R03	plug: 3-contact (used with JU16)
	2880001R03	plug: 3-contact (used with JU17)
	2880001R03	plug: 3-contact (used with JU18)
	2880001R03	plug: 3-contact (used with JU19)
	2880001R03	plug: 3-contact (used with JU20)
	2880001R03	plug: 3-contact (used with JU21)
	2880001R03	plug: 3-contact (used with JU22)
	2882296R34	plug: 40-contact (used with J800)
	4380054K02	SPACER, support (4 used)
	4884349P01	silicon
	5483865R01	Label, bar code: 1/4" wide, white (2 used)
	5484960T01	Label, bar code: 6.3 x 12.7MM, white (2 used)

Note: For optimum performance, diodes, transistors, integrated circuits, and crystals must be ordered by Motorola part number.

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TLN3386 SSCB Parts List

Reference Symbol	Motorola Part No.	Description
capacitor, fixed:		
C701	2113740B57	220 pF, +/-5%; 50 V
C702	2113740B71	820 pF, +/-5%; 50 V
C703	2113740B73	1000 pF, +/-5%; 50 V
C704	2113741B69	0.1 uF, +/-5%; 50 V
C705,706	2311049A19	10 uF, +/-10%; 25 V
C707	2113741B69	0.1 uF, +/-5%; 50 V
C708	2311049A19	10 uF, +/-10%; 25 V
C709	2311049A08	1 uF, +/-10%; 35 V
C710,711	2311049A22	33 uF, +/-10%; 16 V
C712	2311049A19	10 uF, +/-10%; 25 V
C713	2311049A08	1 uF, +/-10%; 35 V
C714	2311049A19	10 uF, +/-10%; 25 V
C715	2113740B49	100 pF, +/-5%; 50 V
C716	2311049A19	10 uF, +/-10%; 25 V
C717	2113741B69	0.1 uF, +/-5%; 50 V
C718	2313748G21	100 uF, +/-20%; 16V
C719	2311049A19	10 uF, +/-10%; 25 V
C720	2113741B69	0.1 uF, +/-5%; 50 V
C721	2311049A22	33 uF, +/-10%; 16 V
C722 thru 725	2113741B69	0.1 uF, +/-5%; 50 V
C800	2113741B45	0.01 uF, +/-5%; 50 V
C801	2113740B59	270 pF, +/-5%; 50V
C802 thru 808	2113741B69	0.1 uF, +/-5%; 50 V
C810	2113741B69	0.1 uF, +/-5%; 50 V
C812	2311049A19	10 uF, +/-10%; 25 V
C814,815	2113740B25	10 pF, +/-5%; 50 V
C817	2113740B65	470 pF, +/-5%; 50 V
C819	2113741B69	0.1 uF, +/-5%; 50 V
C820	2113741B45	0.01 uF, +/-5%; 50 V
C822	2311049A08	1 uF, +/-10%; 35 V
C823 thru 828	2113741B69	0.1 uF, +/-5%; 50 V
C829	2113740B49	100 pF, +/-5%; 50 V
C830	2113741B69	0.1 uF, +/-5%; 50 V
C1543	2113740B73	1000 pF, +/-5%; 50 V
C1544	0811051A13	0.1 uF, +/-5%; 63 V
C1545,1546	2113740B47	82 pF, +/-5%; 50V
C1547	0811017A08	0.01 uF, +/-5%; 50 V
C1548	2113740B76	1500 pF, +/-5 pF; 50V
C1549	2113740B57	220 pF, +/-5%; 50 V
C1551	0811017A05	3300 pF, +/-5%; 50V
C1552,1553	2311049A10	2.2 uF, +/-10%; 35V
C1554	0811017A08	0.01 uF, +/-5%; 50 V
C1555	2113740B34	24 pF, +/-5%; 50V
C1556,1557	0811017A08	0.01 uF, +/-5%; 50 V
C1558	2113740B76	1500 pF, +/-5 pF; 50V
C1559	2113740B73	1000 pF, +/-5%; 50 V
C1560	2113740B34	24 pF, +/-5%; 50V
C1561	0811017A05	3300 pF, +/-5%; 50V
C1562	2311049A10	2.2 uF, +/-10%; 35V
C1564	2113741B37	4700 pF, +/-5%; 50 V
C1579	2113740B57	220 pF, +/-5%; 50 V
C8100,8101	2113740B49	100 pF, +/-5%; 50 V
C8102	0811017A08	0.01 uF, +/-5%; 50 V
C8103	0811051A09	0.022 uF, +/-5%; 63 V
C8104	0811017A08	0.01 uF, +/-5%; 50 V
C8105	2313748G25	333 uF, +/-20%; 35V
C8106	0811051A13	0.1 uF, +/-5%; 63 V
C8107	0811051A09	0.022 uF, +/-5%; 63 V
C8108	0811017A08	0.01 uF, +/-5%; 50 V
C8109	2313748G25	333 uF, +/-20%; 35V
C8112	2311049A15	4.7 uF, +/-10%; 35V
C8113	2113740B49	100 pF, +/-5%; 50 V
C8114,8115	2113740B57	220 pF, +/-5%; 50 V
C8116	0811051A15	0.22 uF, +/-5%; 63 V
C8117	2311049A10	2.2 uF, +/-10%; 35V
C8118	2311049A08	1 uF, +/-10%; 35 V
C8119	0811017A05	3300 pF, +/-5%; 50V
C8120	0811017A08	0.01 uF, +/-5%; 50 V
C8121	2113740B57	220 pF, +/-5%; 50 V
C8122,8123	2311049A08	1 uF, +/-10%; 35 V
C8124	0811051A13	0.1 uF, +/-5%; 63 V

Reference Symbol	Motorola Part No.	Description
C8125	2311049A08	1 uF, +/-10%; 35 V
C8126,8127	2113740B49	100 pF, +/-5%; 50 V
C8128	2113740B76	1500 pF, +/-5 pF; 50V
C8129,8130	2113740B49	100 pF, +/-5%; 50 V
C8131 thru 8133	2113740B40	43 pF, +/-5%; 50V
C8134	2311049A08	1 uF, +/-10%; 35 V
C8135	0811051A15	0.22 uF, +/-5%; 63 V
C8136	2311049A19	10 uF, +/-10%; 25 V
C8137 thru 8140	0811051A15	0.22 uF, +/-5%; 63 V
C8141	2113741B45	0.01 uF, +/-5%; 50 V
C8142 thru 8150	2113741B69	0.1 uF, +/-5%; 50 V
C8151	2311049A15	4.7 uF, +/-10%; 35V
C8152	2113740B49	100 pF, +/-5%; 50 V
C8153	2113741B45	0.01 uF, +/-5%; 50 V
C8154	2113740B49	100 pF, +/-5%; 50 V
C8156	2113740B49	100 pF, +/-5%; 50 V
C8157	2113741B45	0.01 uF, +/-5%; 50 V
C8158	0811051A10	0.033 uF, +/-5%; 63V
C8159	0811051A12	0.068 uF, +/-5%; 83 V
C8160	2113740B49	100 pF, +/-5%; 50 V
C8161	0811017A05	3300 pF, +/-5%; 50V
C8162	0811051A13	0.1 uF, +/-5%; 63 V
C8163	2113740B74	1200 pF, +/-5%; 50V
C8164	2311049A08	1 uF, +/-10%; 35 V
C8165	2113740B76	1500 pF, +/-5 pF; 50V
C8169	2113740B40	43 pF, +/-5%; 50V
C8170	0811051A15	0.22 uF, +/-5%; 63 V
C8173	0811017A08	0.01 uF, +/-5%; 50 V
C8174	2113740B57	220 pF, +/-5%; 50 V
C8175,8176	2311049A08	1 uF, +/-10%; 35 V
C8177	2311049A10	2.2 uF, +/-10%; 35V
C8178	2311049A08	1 uF, +/-10%; 35 V
C8179 thru 8191	2113741B69	0.1 uF, +/-5%; 50 V
C8193	2113741B69	0.1 uF, +/-5%; 50 V
C8195 thru 8198	2113741B69	0.1 uF, +/-5%; 50 V
C8200	2113741B33	3300 pF, +/-5%; 50V
C8201	2113740B55	180 pF, +/-5%; 50V
C8202	2113741B45	0.01 uF, +/-5%; 50 V
C8203	2113741B37	4700 pF, +/-5%; 50 V
C8204	2113740B73	1000 pF, +/-5%; 50 V
C8205	0811051A15	0.22 uF, +/-5%; 63 V
C8207	2113740B73	1000 pF, +/-5%; 50 V
C8209 thru 8211	0811051A13	0.1 uF, +/-5%; 63 V
C8213	0811051A13	0.1 uF, +/-5%; 63 V
C8214	2113741B45	0.01 uF, +/-5%; 50 V
C8215,8216	2113741B69	0.1 uF, +/-5%; 50 V
C8218	0811051A15	0.22 uF, +/-5%; 63 V
C8219	2113741B69	0.1 uF, +/-5%; 50 V
C8220	2113740B73	1000 pF, +/-5%; 50 V
C8225	2113741B69	0.1 uF, +/-5%; 50 V
C8230	2113740B57	220 pF, +/-5%; 50 V
C8231	2113741B69	0.1 uF, +/-5%; 50 V
C8300 thru 8303	0811051A11	0.047 uF, +/-5%; 63V
C8304	2311049A19	10 uF, +/-10%; 25 V
C8305,8306	0811051A11	0.047 uF, +/-5%; 63V
C8307	2113740B36	30 pF, +/-5%; 50V
C8400	2113740B18	5.1 pF, +/-0.25 pF; 50V
C8401	2311049A19	10 uF, +/-10%; 25 V
C8402	0811051A15	0.22 uF, +/-5%; 63 V
C8403	2311049A19	10 uF, +/-10%; 25 V
diode: (see note)		
CR801,802	4813833C10	0.1A, 70V
CR803	4805129M41	Rectifier
CR804 thru 807	4813833C10	0.1A, 70V
CR808	4884349P01	Dual Rectifier
CR809	4813833C10	0.1A, 70V
CR1520 thru 1522	4805129M41	Rectifier
CR1523,1524	4813833C10	0.1A, 70V
CR1526,1527	4813833C10	0.1A, 70V
CR1528,1529	4805129M41	Rectifier
CR1530	4813833C10	0.1A, 70V

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Reference Symbol	Motorola Part No.	Description
CR1531	4805129M41	Rectifier
CR8100,8101	4883654H01	silicon
CR8102,8103	4813833C10	0.1A, 70V
CR8107	4813833C10	0.1A, 70V
CR8110	4805129M41	Rectifier
CR8112,8113	4805129M41	Rectifier
CR8115,8116	4883654H01	silicon
CR8200 thru 8203	4805129M41	Rectifier
light emitting diode: (see note)		
DS800 thru 803	4888245C22	GRN
DS804	4888245C23	YEL
DS805	4888245C24	RED
DS8200 thru 8202	4882771L03	7-segment display (red)
hybrid:		
HY805	TRN7008A	Display Board connector:
J701	2882984N13	plug: 6-contact
J801	2882505T03	plug: 26-contact
J802	2813922A14	HDR 14 POS STR .1 CTR GLD PLTD
J803	2882505T05	plug: 40-contact
J804	2882505T04	plug: 34-contact
J805A	2883547T01	receptacle: 8-contact, right anle
J805B	2883547T01	receptacle: 8-contact, right anle
J806,807	0984231B03	receptacle: phono jack
J812	0983112N01	receptacle: 6-contact
inductor:		
L700	2484386T01	25 UH
L701	2484266T01	150 UH
L702	2484386T01	25 UH
L800	2411047A25	10 UH
L900	2411047A31	CHK RF MLD A/I 33UH
transistor: (see note)		
Q700	4884233T01	type MOSFET
Q705	4813824A17	PNP
Q800	4813824A17	PNP
Q801 thru 807	4813824A10	NPN
Q808	4813824A06	NPN
Q809 thru 811	4813824A10	NPN
Q813,814	4813824A10	NPN
Q816,817	4813824A10	NPN
Q820	4813824A10	NPN
Q821	4800869653	type JFET
Q822,823	4813824A10	NPN
Q1507 thru 1510	4813824A10	NPN
Q8100	4813824A10	NPN
Q8101,8102	4811043B42	TSTR 48R00869919 A/I
Q8200 thru 8207	4813824A17	PNP
Q8208 thru 8210	4813824A06	NPN
Q8211	4813824A10	NPN
Q8212	4813824A06	NPN
resistor, fixed:		
R700	0611077A98	10K, +/-5%; 1/8 W
R701	0611077A88	3.9K, +/-5%; 1/8 W
R702	0611077A50	100 ohms, +/-5%; 1/8 W
R703	0611077A74	1K, +/-5%; 1/8 W
R704	0611077B31	220K, +/-5%; 1/8 W
R705	0611077F63	5.11K, +/-1%; 1/8 W
R706	0611077F28	2.21K, +/-1%; 1/8 W
R707	0611077H30	267K, +/-1%; 1/8 W
R708	0611077F91	10K, +/-5%; 1/8 W
R709	0611077E94	1K, +/-1%; 1/8 W
R710	0611077F60	4.75K, +/-1%; 1/8 W
R711	0611077B35	330K, +/-5%; 1/8 W
R712	0611077B23	100K, +/-5%; 1/8 W
R713	0611077F91	10K, +/-5%; 1/8 W
R714	0611077B13	39K, +/-5%; 1/8 W
R715	0611077B15	47K, +/-5%; 1/8 W
R716	0611077F63	5.11K, +/-1%; 1/8 W
R717	0611077B35	330K, +/-5%; 1/8 W
R718	0611077B07	22K, +/-5%; 1/8 W

Reference Symbol	Motorola Part No.	Description
R719	0611077A50	100 ohms, +/-5%; 1/8 W
R720	0611077A36	27 ohms, +/-5%; 1/8 W
R721	0611077B47	1 meg, +/-5%; 1/8 W
R722	0611077B31	220K, +/-5%; 1/8 W
R723,724	0683962T01	1 ohm, +/-5%; 1 W
R725	0611077F91	10K, +/-1%; 1/8 W
R726	0611077G09	15K, +/-1%; 1/8 W
R727	0611077A98	10K, +/-5%; 1/8 W
R728	0611077H85	1 meg, +/-1%; 1/8 W
R729	0611077B29	180K, +/-5%; 1/8 W
R730	0611077A01	0 ohm, +/-5%; 0 W
R731	0683962T01	1 ohm, +/-5%; 1 W
R736	0611009A33	220 ohms, +/-5%; 1/4 W
R737	0611077A84	2.7K, +/-5%; 1/8 W
R738	0611077A64	390 ohms, +/-5%; 1/8 W
R739	0611077A98	10K, +/-5%; 1/8 W
R740	0611077A56	180 ohms, +/-5%; 1/8W
R741	0611077A98	10K, +/-5%; 1/8 W
R742	0611077A86	3.3K, +/-5%; 1/8 W
R743	0683962T01	1 ohm, +/-5%; 1 W
R748	0611077A78	1.5K, +/-5%; 1/8 W
R800	0611077A54	150 ohms, +/-5%; 1/8 W
R801	0611077A88	3.9K, +/-5%; 1/8 W
R802	0611077A01	0 ohm, +/-5%; 0 W
R803,804	0611077A88	3.9K, +/-5%; 1/8 W
R805	0611077A42	47 ohms, +/-5%; 1/8 W
R806	0611077A98	10K, +/-5%; 1/8 W
R807	0611077A94	6.8K, +/-5%; 1/8W
R809,810	0611077A94	6.8K, +/-5%; 1/8W
R812	0611077A78	1.5K, +/-5%; 1/8 W
R813	0611077A32	18 ohms, +/-5%; 1/8 W
R814	0611077A56	180 ohms, +/-5%; 1/8W
R815	0611077A32	18 ohms, +/-5%; 1/8 W
R816	0611077A90	4.7K, +/-5%; 1/8 W
R817	0611077A82	2.2K, +/-5%; 1/8 W
R818	0611077A52	120 ohms, +/-5%; 1/8 W
R819	0611077A32	18 ohms, +/-5%; 1/8 W
R820	0611077A56	180 ohms, +/-5%; 1/8W
R821	0611077A78	1.5K, +/-5%; 1/8 W
R822	0611077A56	180 ohms, +/-5%; 1/8W
R823	0611077A82	2.2K, +/-5%; 1/8 W
R824	0611077A80	1.8K, +/-5%; 1/8 W
R825	0611077A82	2.2K, +/-5%; 1/8 W
R826	0611077A98	10K, +/-5%; 1/8 W
R827	0611077A88	3.9K, +/-5%; 1/8 W
R828	0611077B07	22K, +/-5%; 1/8 W
R829	0611077A94	6.8K, +/-5%; 1/8W
R830 thru 836	0611077A98	10K, +/-5%; 1/8 W
R837,838	0611077A50	100 ohms, +/-5%; 1/8 W
R839	0611077A98	10K, +/-5%; 1/8 W
R840,841	0611077A50	100 ohms, +/-5%; 1/8 W
R842	0611077A98	10K, +/-5%; 1/8 W
R843 thru 845	0611077A50	100 ohms, +/-5%; 1/8 W
R846	0611077A52	120 ohms, +/-5%; 1/8 W
R847,848	0611077A98	10K, +/-5%; 1/8 W
R849	0611077B09	27K, +/-5%; 1/8 W
R850	0611077A98	10K, +/-5%; 1/8 W
R851	0611077A58	220 ohms, +/-5%; 1/8 W
R852	0611077B47	1 meg, +/-5%; 1/8 W
R854	0611077A98	10K, +/-5%; 1/8 W
R855	0611077A92	5.6K, +/-5%; 1/8 W
R856 thru 858	0611077A98	10K, +/-5%; 1/8 W
R861	0611077B09	27K, +/-5%; 1/8 W
R862	0611077A88	3.9K, +/-5%; 1/8 W
R863	0611077A54	150 ohms, +/-5%; 1/8 W
R866	0611077A98	10K, +/-5%; 1/8 W
R867	0611077A78	1.5K, +/-5%; 1/8 W
R868 thru 871	0611077A98	10K, +/-5%; 1/8 W
R872	0611077A54	150 ohms, +/-5%; 1/8 W
R873	0611077A98	10K, +/-5%; 1/8 W
R874	0611077A54	150 ohms, +/-5%; 1/8 W
R875	0611077A80	1.8K, +/-5%; 1/8 W
R876	0611077A98	10K, +/-5%; 1/8 W
R877	0611077A54	150 ohms, +/-5%; 1/8 W
R878	0611077A90	4.7K, +/-5%; 1/8 W
R879	0611077A82	2.2K, +/-5%; 1/8 W
R880	0611077A78	1.5K, +/-5%; 1/8 W

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Reference Symbol	Motorola Part No.	Description
R881	0611077A98	10K, +/-5%; 1/8 W
R882	0611077A82	2.2K, +/-5%; 1/8 W
R883,884	0611077A98	10K, +/-5%; 1/8 W
R887	0611077A98	10K, +/-5%; 1/8 W
R888	0611077B39	470K, +/-5%; 1/8 W
R889	0611077A98	10K, +/-5%; 1/8 W
R890	0611077A74	1K, +/-5%; 1/8 W
R891	0611077A98	10K, +/-5%; 1/8 W
R893	0611077A98	10K, +/-5%; 1/8 W
R894	0611077B23	100K, +/-5%; 1/8 W
R895 thru 898	0611077A98	10K, +/-5%; 1/8 W
R899	0611077A92	5.6K, +/-5%; 1/8 W
R900	0611077A50	100 ohms, +/-5%; 1/8 W
R1523	0611077B17	56K, +/-5%; 1/8 W
R1524	0611077A86	3.3K, +/-5%; 1/8 W
R1525	0611077B11	33K, +/-5%; 1/8 W
R1526	0611077A82	2.2K, +/-5%; 1/8 W
R1527	0611077B11	33K, +/-5%; 1/8 W
R1532	0611077B27	150K, +/-5%; 1/8W
R1533	0611077A64	390 ohms, +/-5%; 1/8 W
R1534	0611077A78	1.5K, +/-5%; 1/8 W
R1535	0611077B15	47K, +/-5%; 1/8 W
R1536	0611077B31	220K, +/-5%; 1/8 W
R1537	0611077B15	47K, +/-5%; 1/8 W
R1540	0611077B15	47K, +/-5%; 1/8 W
R1543	0611077B23	100K, +/-5%; 1/8 W
R1544	0611077A74	1K, +/-5%; 1/8 W
R1545	0611077B19	68K, +/-5%; 1/8W
R1546	0611077A74	1K, +/-5%; 1/8 W
R1547	0611077A98	10K, +/-5%; 1/8 W
R1548	0611077B33	270K, +/-5%; 1/8W
R1549	0611077A94	6.8K, +/-5%; 1/8W
R1550	0611077A98	10K, +/-5%; 1/8 W
R1553	0611077B19	68K, +/-5%; 1/8W
R1554	0611077B21	82K, +/-5%; 1/8W
R1555,1556	0611077A98	10K, +/-5%; 1/8 W
R1557	0611077B27	150K, +/-5%; 1/8W
R1559	0611077A64	390 ohms, +/-5%; 1/8 W
R1560,1561	0611077B15	47K, +/-5%; 1/8 W
R1562	0611077B31	220K, +/-5%; 1/8 W
R1563	0611077B15	47K, +/-5%; 1/8 W
R1565,1566	0611077A74	1K, +/-5%; 1/8 W
R1567	0611077A94	6.8K, +/-5%; 1/8W
R1568	0611077A98	10K, +/-5%; 1/8 W
R1570	0611077A74	1K, +/-5%; 1/8 W
R1571	0611077A98	10K, +/-5%; 1/8 W
R1572	0611077A01	0 ohm, +/-5%; 0 W
R1573,1574	0611077A91	5.1K, +/-5%; 1/8 W
R1575	0611077A92	5.6K, +/-5%; 1/8 W
R1576	0611077B27	150K, +/-5%; 1/8W
R1578	0611077A78	1.5K, +/-5%; 1/8 W
R1599	1882787K08	variable: 100K +/-20%; 1/4W
R8100 thru 8103	0611077B01	12K, +/-5%; 1/8 W
R8105	0611077B23	100K, +/-5%; 1/8 W
R8106	0611077A98	10K, +/-5%; 1/8 W
R8107	0611077B07	22K, +/-5%; 1/8 W
R8108	0611077B03	15K, +/-5%; 1/8 W
R8109	0611077B01	12K, +/-5%; 1/8 W
R8110	0611077B16	51K, +/-5%; 1/8W
R8111	0611077B07	22K, +/-5%; 1/8 W
R8112	0611077A94	6.8K, +/-5%; 1/8W
R8113,8114	0611077A86	3.3K, +/-5%; 1/8 W
R8115	0611077A94	6.8K, +/-5%; 1/8W
R8116	0611077A88	3.9K, +/-5%; 1/8 W
R8117	0611009B26	2.7 ohms, +/-5%; 1/4W
R8118	0611077A88	3.9K, +/-5%; 1/8 W
R8119	0611077A67	510 ohms, +/-5%; 1/8 W
R8120	0611077A68	560 ohms, +/-5%; 1/8 W
R8121	0683962T24	9.1 ohms, +/-5%; 1W
R8122	0611077A26	10 ohms, +/-5%; 1/8 W
R8123	0611077B37	390K, +/-5%; 1/8W
R8125	0611077A98	10K, +/-5%; 1/8 W
R8127	0611077A94	6.8K, +/-5%; 1/8W
R8128	0611077A86	3.3K, +/-5%; 1/8 W
R8129	0611077A78	1.5K, +/-5%; 1/8 W

Reference Symbol	Motorola Part No.	Description
R8130	0611077H43	365K, +/-1%; 1/8W
R8131	0611077A98	10K, +/-5%; 1/8 W
R8132	0611077A94	6.8K, +/-5%; 1/8W
R8133	0611077B23	100K, +/-5%; 1/8 W
R8134	0611077B17	56K, +/-5%; 1/8 W
R8135	1882787K09	variable: 5K +/-10%; 1/4W
R8136	0611077B05	18K, +/-5%; 1/8 W
R8137	0611077B09	27K, +/-5%; 1/8 W
R8138,8139	0611077B11	33K, +/-5%; 1/8 W
R8141	0611077B03	15K, +/-5%; 1/8 W
R8142,8143	0611077B07	22K, +/-5%; 1/8 W
R8144	0611077A98	10K, +/-5%; 1/8 W
R8146	0611077B03	15K, +/-5%; 1/8 W
R8147	0611077B09	27K, +/-5%; 1/8 W
R8148	0611077A98	10K, +/-5%; 1/8 W
R8149	0611077B09	27K, +/-5%; 1/8 W
R8150	0611077B23	100K, +/-5%; 1/8 W
R8151,8152	0611077B09	27K, +/-5%; 1/8 W
R8153,8154	0611077B07	22K, +/-5%; 1/8 W
R8155	0611077B09	27K, +/-5%; 1/8 W
R8156	0611077B23	100K, +/-5%; 1/8 W
R8157 thru 8159	0611077B09	27K, +/-5%; 1/8 W
R8162	0611077B07	22K, +/-5%; 1/8 W
R8163	0611077B09	27K, +/-5%; 1/8 W
R8164	0611077A98	10K, +/-5%; 1/8 W
R8165,8166	0611077B09	27K, +/-5%; 1/8 W
R8167	0611077B23	100K, +/-5%; 1/8 W
R8168	0611077B30	200K, +/-5%; 1/8 W
R8169	0611077B23	100K, +/-5%; 1/8 W
R8170	0611077A68	560 ohms, +/-5%; 1/8 W
R8171	0611077B30	200K, +/-5%; 1/8 W
R8172	0611077A50	100 ohms, +/-5%; 1/8 W
R8173,8174	0611077B23	100K, +/-5%; 1/8 W
R8175	0611077B03	15K, +/-5%; 1/8 W
R8176	0611077A91	5.1K, +/-5%; 1/8 W
R8177	0611077B11	33K, +/-5%; 1/8 W
R8178,8179	0611077B14	43K, +/-5%; 1/8 W
R8180	0611077B11	33K, +/-5%; 1/8 W
R8181 thru 8185	0611077B18	62K, +/-5%; 1/8 W
R8186	0611077A87	3.6K, +/-5%; 1/8W
R8187	0611077B14	43K, +/-5%; 1/8 W
R8188	0611077B23	100K, +/-5%; 1/8 W
R8189	0611077B43	680K, +/-5%; 1/8 W
R8190	0611077B23	100K, +/-5%; 1/8 W
R8191	0611077A98	10K, +/-5%; 1/8 W
R8192	0611077A86	3.3K, +/-5%; 1/8 W
R8193	0611077A98	10K, +/-5%; 1/8 W
R8194	0611077B23	100K, +/-5%; 1/8 W
R8195	0611077A88	3.9K, +/-5%; 1/8 W
R8196,8197	0611077A76	1.2K, +/-5%; 1/8 W
R8198	0611077B15	47K, +/-5%; 1/8 W
R8199	0611077A01	0 ohm, +/-5%; 0 W
R8200	0611077A78	1.5K, +/-5%; 1/8 W
R8201	0611077A50	100 ohms, +/-5%; 1/8 W
R8202	0611077A78	1.5K, +/-5%; 1/8 W
R8203	0611077A90	4.7K, +/-5%; 1/8 W
R8204	0611077A50	100 ohms, +/-5%; 1/8 W
R8205,8206	0611077A78	1.5K, +/-5%; 1/8 W
R8207	0611077A82	2.2K, +/-5%; 1/8 W
R8208	0611077A50	100 ohms, +/-5%; 1/8 W
R8209,8210	0611077A78	1.5K, +/-5%; 1/8 W
R8211	0611077A84	2.7K, +/-5%; 1/8 W
R8212	0611077A50	100 ohms, +/-5%; 1/8 W
R8213,8214	0611077A78	1.5K, +/-5%; 1/8 W
R8215	0611077B11	33K, +/-5%; 1/8 W
R8216	0611077A50	100 ohms, +/-5%; 1/8 W
R8217,8218	0611077A78	1.5K, +/-5%; 1/8 W
R8219	0611009B23	0 ohm, +/-5%; 1/4 W
R8220	0611077A50	100 ohms, +/-5%; 1/8 W
R8221,8222	0611077A78	1.5K, +/-5%; 1/8 W
R8223	0611077B23	100K, +/-5%; 1/8 W
R8224	0611077A78	1.5K, +/-5%; 1/8 W
R8225	0611077A50	100 ohms, +/-5%; 1/8 W
R8226	0611077A78	1.5K, +/-5%; 1/8 W

TLN3386 SSCB Parts List

Reference Symbol	Motorola Part No.	Description	Reference Symbol	Motorola Part No.	Description
R8227	0611077B23	100K, +/-5%; 1/8 W	R8502	0611077B05	18K, +/-5%; 1/8 W
R8228	0611077A50	100 ohms, +/-5%; 1/8 W	R8600	0611009B23	0 ohm, +/-5%; 1/4 W
R8229,8230	0611077A78	1.5K, +/-5%; 1/8 W	R8601,8602	0611077A58	220 ohms, +/-5%; 1/8 W
R8231	0611077G88	100K, +/-1%; 1/8 W	R8603 thru 8610	0611077A98	10K, +/-5%; 1/8 W
R8232,8233	0611077A98	10K, +/-5%; 1/8 W	R8611 thru 8618	0611077A58	220 ohms, +/-5%; 1/8 W
R8236,8237	0611077A98	10K, +/-5%; 1/8 W			
R8239,8240	0611077A98	10K, +/-5%; 1/8 W			switch:
R8242,8243	0611077H18	200K, +/-1%; 1/8 W	SW800,801	4083980R12	toggle: sp3t (on-off-mom)
R8244	0611077G88	100K, +/-1%; 1/8 W	SW802	4083980R11	toggle: sp3t (mom-off-mom)
R8245	0611077B23	100K, +/-5%; 1/8 W			transformer:
R8246	0611077G88	100K, +/-1%; 1/8 W			power
R8247	0611077H18	200K, +/-1%; 1/8 W	T700	2584265T01	
R8248	0611077G88	100K, +/-1%; 1/8 W			test point:
R8249	0611077H18	200K, +/-1%; 1/8 W			terminal pin
R8250	0611077G88	100K, +/-1%; 1/8 W			integrated circuit: (see note)
R8251 thru 8254	0611077H18	200K, +/-1%; 1/8 W	TP1 thru 13	2962998D01	
R8255,8256	0611077B23	100K, +/-5%; 1/8 W			
R8257	0611077G88	100K, +/-1%; 1/8 W			
R8258	0611077H18	200K, +/-1%; 1/8 W			
R8259	0611077G88	100K, +/-1%; 1/8 W	U800	5113802A01	Micro Computere Unit w/Switch Control Interface
R8260	0611077H18	200K, +/-1%; 1/8 W	U801,802	5184494R03	ASIC Station Control
R8261	0611077G88	100K, +/-1%; 1/8 W	U803	TVN6055A	Software SSCB
R8262,8263	0611077H18	200K, +/-1%; 1/8 W	U803	5191012H75	IC PRGMD EPROM 12H75
R8272	0611077B25	120K, +/-5%; 1/8 W	U804	5184064F76	Static 32Kx8 Bit RAM
R8275	0611077H73	750K, +/-1%; 1/8W	U806	5113819D02	LO COST LO PWR 14 DIP
R8276	0611077G60	51.1K, +/-1%; 1/8 W	U807	5113815J04	555 Timer
R8277	0611077A98	10K, +/-5%; 1/8 W	U808	0982808R02	SOCKET, IC: 8-contact
R8278	0611077H54	475K, +/-1%; 1/8W	U810 thru 812	5184887K60	Triple 2-Channel Analog Mux/Demux
R8279	0611077G53	43.2K, +/-1%; 1/8 W	U813	5184704M19	Hex Level Shifter/Logic Level Converter
R8280	0611077H46	392K, +/-1%; 1/8W	U814	5113819D04	General Purpose Differential Operational Amplifier
R8281	0611077B13	39K, +/-5%; 1/8 W			
R8282,8283	0611077H73	750K, +/-1%; 1/8W	U816	5184704M19	Hex Level Shifter/Logic Level Converter
R8284	0611077G60	51.1K, +/-1%; 1/8 W	U817	5113806D21	analog switching multiplexer
R8285	0611077H54	475K, +/-1%; 1/8W	U818,819	5113819D04	General Purpose Differential Operational Amplifier
R8286	0611077A98	10K, +/-5%; 1/8 W			
R8287	0611077A74	1K, +/-5%; 1/8 W	U821	5113819D04	General Purpose Differential Operational Amplifier
R8288	0611077G53	43.2K, +/-1%; 1/8 W			
R8289	0611077H73	750K, +/-1%; 1/8W	U823,824	5182335V01	IC EEPOT 50K 10% _9312_
R8290	0611077H46	392K, +/-1%; 1/8W	U830	5184621K33	Operational Amplifier
R8291	0611077B13	39K, +/-5%; 1/8 W	U831	5182335V01	IC EEPOT 50K 10% _9312_
R8292	0611077A86	3.3K, +/-5%; 1/8 W	U837,838	5184621K85	Dual Operational Amplifier
R8293	0611077B23	100K, +/-5%; 1/8 W	U839	5184704M19	Hex Level Shifter/Logic Level Converter
R8294	0611077B11	33K, +/-5%; 1/8 W	U840	5184887K60	Triple 2-Channel Analog Mux/Demux
R8295	0611077B23	100K, +/-5%; 1/8 W	U841	5184621K85	Dual Operational Amplifier
R8298	0611009B23	0 ohm, +/-5%; 1/4 W	U842	5113820D02	type LM2901N
R8299	0611077A01	0 ohm, +/-5%; 0 W	U843	5184371T01	Single Current Mode Controller
R8300	0611077B23	100K, +/-5%; 1/8 W	U1550,1551	5183222M03	Quad Operational Amplifier
R8310 thru 8313	0611077B15	47K, +/-5%; 1/8 W	U1552	5113819D02	LO COST LO PWR 14 DIP
R8314	0611077A98	10K, +/-5%; 1/8 W	U1553,1554	5182335V01	IC EEPOT 50K 10% _9312_
R8315	0611077A94	6.8K, +/-5%; 1/8W	U8200	5113819D04	General Purpose Differential Operational Amplifier
R8316	0611077A98	10K, +/-5%; 1/8 W			
R8318	0611077B23	100K, +/-5%; 1/8 W			voltage regulator: (see note)
R8335 thru 8339	0611077A74	1K, +/-5%; 1/8 W			Zener 5.1V
R8340	0611077A98	10K, +/-5%; 1/8 W	VR701	4883461E40	DIODE ZENER 3.3V
R8344	0611077A68	560 ohms, +/-5%; 1/8 W	VR702	4882479V02	DIODE ZENER 3.3V
R8345 thru 8347	0611077A50	100 ohms, +/-5%; 1/8 W	VR1531 thru 1534	4882479V02	
R8348	0611077A98	10K, +/-5%; 1/8 W			crystal: (see note)
R8349	0611077B30	200K, +/-5%; 1/8 W			7.948 MHZ
R8350,8351	0611077G42	33.2K, +/-1%; 1/8W			
R8400	0611077A67	510 ohms, +/-5%; 1/8 W			non-referenced items:
R8401,8402	0611077A92	5.6K, +/-5%; 1/8 W			800MHZ CNTRL BD
R8403	0611077B01	12K, +/-5%; 1/8 W	Y800	4880113K04	SCR TPG 4-40X5/16 STARPAN CHS (2 used with J800)
R8404	0611077B11	33K, +/-5%; 1/8 W			SOCKET, IC: 52-contact (used with U800)
R8405	0611077A84	2.7K, +/-5%; 1/8 W			SOCKET, IC: 84-contact (used with U801)
R8406	0611077B15	47K, +/-5%; 1/8 W			SOCKET, IC: 84-contact (used with U802)
R8407	0611077A74	1K, +/-5%; 1/8 W			Socket, IC: 28-contact (used with U803)
R8408	0611077B35	330K, +/-5%; 1/8 W			receptacle: 20-contact (2 used with J800)
R8409	0611077B45	820K, +/-5%; 1/8 W			Shorting Jumper: 2-contact (used with JU1)
R8410	0611077E15	150 ohms, +/-1%; 1/8W			Shorting Jumper: 2-contact (used with JU2)
R8411	0611077B45	820K, +/-5%; 1/8 W			
R8412	0611077E73	604 ohms, +/-1%; 1/8W			
R8413	0611009B23	0 ohm, +/-5%; 1/4 W			
R8414	0611077A43	51 ohms, +/-5%; 1/8 W			
R8415	0611077B03	15K, +/-5%; 1/8 W			
R8416	0611077B39	470K, +/-5%; 1/8 W			
R8417	0611009B23	0 ohm, +/-5%; 1/4 W			
R8501	0683962T24	9.1 ohms, +/-5%; 1W			

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Reference Symbol	Motorola Part No.	Description
	0984728L01	Shorting Jumper: 2-contact (used with JU3)
	0984728L01	Shorting Jumper: 2-contact (used with JU4)
	0984728L01	Shorting Jumper: 2-contact (used with JU5)
	0984728L01	Shorting Jumper: 2-contact (used with JU6)
	0984728L01	Shorting Jumper: 2-contact (used with JU7)
	0984728L01	Shorting Jumper: 2-contact (used with JU8)
	0984728L01	Shorting Jumper: 2-contact (used with JU9)
	0984728L01	Shorting Jumper: 2-contact (used with JU10)
	0984728L01	Shorting Jumper: 2-contact (used with JU11)
	0984728L01	Shorting Jumper: 2-contact (used with JU12)
	0984728L01	Shorting Jumper: 2-contact (used with JU13)
	0984728L01	Shorting Jumper: 2-contact (used with JU14)
	0984728L01	Shorting Jumper: 2-contact (used with JU15)
	0984728L01	Shorting Jumper: 2-contact (used with JU16)
	0984728L01	Shorting Jumper: 2-contact (used with JU17)
	0984728L01	Shorting Jumper: 2-contact (used with JU18)
	0984728L01	Shorting Jumper: 2-contact (used with JU19)
	0984728L01	Shorting Jumper: 2-contact (used with JU20)
	0984728L01	Shorting Jumper: 2-contact (used with JU21)
	0984728L01	Shorting Jumper: 2-contact (used with JU22)
	1485334U01	Insulator (used w/ Y800)
	2683373P02	HEAT SINK, transistor
	2880001R03	plug: 3-contact (used with JU1)
	2880001R03	plug: 3-contact (used with JU2)
	2880001R03	plug: 3-contact (used with JU3)
	2880001R03	plug: 3-contact (used with JU4)
	2880001R03	plug: 3-contact (used with JU5)
	2880001R03	plug: 3-contact (used with JU6)
	2880001R03	plug: 3-contact (used with JU7)
	2880001R03	plug: 3-contact (used with JU8)
	2880001R03	plug: 3-contact (used with JU9)
	2880001R03	plug: 3-contact (used with JU10)
	2880001R03	plug: 3-contact (used with JU11)
	2880001R03	plug: 3-contact (used with JU12)
	2880001R03	plug: 3-contact (used with JU13)
	2880001R03	plug: 3-contact (used with JU14)
	2880001R03	plug: 3-contact (used with JU15)
	2880001R03	plug: 3-contact (used with JU16)
	2880001R03	plug: 3-contact (used with JU17)
	2880001R03	plug: 3-contact (used with JU18)
	2880001R03	plug: 3-contact (used with JU19)
	2880001R03	plug: 3-contact (used with JU20)
	2880001R03	plug: 3-contact (used with JU21)
	2880001R03	plug: 3-contact (used with JU22)
	2882296R34	plug: 40-contact (used with J800)
	4380054K02	SPACER, support (4 used)
	4884349P01	silicon
	5483865R01	Label, bar code: 1/4" wide, white (2 used)
	5484960T01	Label, bar code: 6.3 x 12.7MM, white (2 used)

Note: For optimum performance, diodes, transistors, integrated circuits, and crystals must be ordered by Motorola part number.

Reference Symbol	Motorola Part No.	Description
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TLN3387 SSCB Parts List

TLN3387 SSCB Parts List

Reference Symbol	Motorola Part No.	Description
capacitor, fixed:		
C701	2113740B57	220 pF, +/-5%; 50 V
C702	2113740B71	820 pF, +/-5%; 50 V
C703	2113740B73	1000 pF, +/-5%; 50 V
C704	2113741B69	0.1 uF, +/-5%; 50 V
C705,706	2311049A19	10 uF, +/-10%; 25 V
C707	2113741B69	0.1 uF, +/-5%; 50 V
C708	2311049A19	10 uF, +/-10%; 25 V
C709	2311049A08	1 uF, +/-10%; 35 V
C710,711	2311049A22	33 uF, +/-10%; 16 V
C712	2311049A19	10 uF, +/-10%; 25 V
C713	2311049A08	1 uF, +/-10%; 35 V
C714	2311049A19	10 uF, +/-10%; 25 V
C715	2113740B49	100 pF, +/-5%; 50 V
C716	2311049A19	10 uF, +/-10%; 25 V
C717	2113741B69	0.1 uF, +/-5%; 50 V
C718	2313748G21	100 uF, +/-20%; 16V
C719	2311049A19	10 uF, +/-10%; 25 V
C720	2113741B69	0.1 uF, +/-5%; 50 V
C721	2311049A22	33 uF, +/-10%; 16 V
C722 thru 725	2113741B69	0.1 uF, +/-5%; 50 V
C800	2113741B45	0.01 uF, +/-5%; 50 V
C801	2113740B59	270 pF, +/-5%; 50V
C802 thru 808	2113741B69	0.1 uF, +/-5%; 50 V
C810	2113741B69	0.1 uF, +/-5%; 50 V
C812	2311049A19	10 uF, +/-10%; 25 V
C814,815	2113740B25	10 pF, +/-5%; 50 V
C817	2113740B65	470 pF, +/-5%; 50 V
C819	2113741B69	0.1 uF, +/-5%; 50 V
C820	2113741B45	0.01 uF, +/-5%; 50 V
C822	2311049A08	1 uF, +/-10%; 35 V
C823 thru 828	2113741B69	0.1 uF, +/-5%; 50 V
C829	2113740B49	100 pF, +/-5%; 50 V
C830	2113741B69	0.1 uF, +/-5%; 50 V
C1543	2113740B73	1000 pF, +/-5%; 50 V
C1544	0811051A13	0.1 uF, +/-5%; 63 V
C1545,1546	2113740B47	82 pF, +/-5%; 50V
C1547	0811017A08	0.01 uF, +/-5%; 50 V
C1548	2113740B76	1500 pF, +/-5 pF; 50V
C1549	2113740B57	220 pF, +/-5%; 50 V
C1551	0811017A05	3300 pF, +/-5%; 50V
C1552,1553	2311049A10	2.2 uF, +/-10%; 35V
C1554	0811017A01	1000 pF, +/-5%; 50 V
C1555	2113740B34	24 pF, +/-5%; 50V
C1556	0811017A01	1000 pF, +/-5%; 50 V
C1557	0811017A08	0.01 uF, +/-5%; 50 V
C1558	2113740B76	1500 pF, +/-5 pF; 50V
C1559	2113740B73	1000 pF, +/-5%; 50 V
C1560	2113740B34	24 pF, +/-5%; 50V
C1561	0811017A05	3300 pF, +/-5%; 50V
C1562	2311049A10	2.2 uF, +/-10%; 35V
C1579	2113740B57	220 pF, +/-5%; 50 V
C8100,8101	2113740B49	100 pF, +/-5%; 50 V
C8102	0811017A08	0.01 uF, +/-5%; 50 V
C8103	0811051A09	0.022 uF, +/-5%; 63 V
C8104	0811017A08	0.01 uF, +/-5%; 50 V
C8105	2313748G25	333 uF, +/-20%; 35V
C8106	0811051A13	0.1 uF, +/-5%; 63 V
C8107	0811051A09	0.022 uF, +/-5%; 63 V
C8108	0811017A08	0.01 uF, +/-5%; 50 V
C8109	2313748G25	333 uF, +/-20%; 35V
C8112	2311049A15	4.7 uF, +/-10%; 35V
C8113	2113740B49	100 pF, +/-5%; 50 V
C8114,8115	2113740B57	220 pF, +/-5%; 50 V
C8116	0811051A15	0.22 uF, +/-5%; 63 V
C8117	2311049A10	2.2 uF, +/-10%; 35V
C8118	2311049A08	1 uF, +/-10%; 35 V
C8119	0811017A05	3300 pF, +/-5%; 50V
C8120	0811017A08	0.01 uF, +/-5%; 50 V
C8121	2113740B57	220 pF, +/-5%; 50 V
C8122,8123	2311049A08	1 uF, +/-10%; 35 V
C8124	0811051A13	0.1 uF, +/-5%; 63 V

Reference Symbol	Motorola Part No.	Description
C8125	2311049A08	1 uF, +/-10%; 35 V
C8126 thru 8130	2113740B49	100 pF, +/-5%; 50 V
C8131 thru 8133	2113740B40	43 pF, +/-5%; 50V
C8134	2311049A08	1 uF, +/-10%; 35 V
C8135	0811051A15	0.22 uF, +/-5%; 63 V
C8136	2311049A19	10 uF, +/-10%; 25 V
C8137 thru 8140	0811051A15	0.22 uF, +/-5%; 63 V
C8141	2113741B45	0.01 uF, +/-5%; 50 V
C8142 thru 8150	2113741B69	0.1 uF, +/-5%; 50 V
C8151	2311049A15	4.7 uF, +/-10%; 35V
C8152	2113740B49	100 pF, +/-5%; 50 V
C8153	2113741B45	0.01 uF, +/-5%; 50 V
C8154	2113740B49	100 pF, +/-5%; 50 V
C8156	2113740B49	100 pF, +/-5%; 50 V
C8157	2113741B45	0.01 uF, +/-5%; 50 V
C8158	0811051A10	0.033 uF, +/-5%; 63V
C8159	0811051A12	0.068 uF, +/-5%; 63 V
C8160	2113740B49	100 pF, +/-5%; 50 V
C8161	0811017A05	3300 pF, +/-5%; 50V
C8162	0811051A13	0.1 uF, +/-5%; 63 V
C8163	2113740B74	1200 pF, +/-5%; 50V
C8164	2311049A08	1 uF, +/-10%; 35 V
C8165	2113740B76	1500 pF, +/-5 pF; 50V
C8169	2113740B40	43 pF, +/-5%; 50V
C8170	0811051A15	0.22 uF, +/-5%; 63 V
C8173	0811017A08	0.01 uF, +/-5%; 50 V
C8174	2113740B57	220 pF, +/-5%; 50 V
C8175,8176	2311049A08	1 uF, +/-10%; 35 V
C8177	2311049A10	2.2 uF, +/-10%; 35V
C8178	2311049A08	1 uF, +/-10%; 35 V
C8179 thru 8191	2113741B69	0.1 uF, +/-5%; 50 V
C8193	2113741B69	0.1 uF, +/-5%; 50 V
C8195 thru 8198	2113741B69	0.1 uF, +/-5%; 50 V
C8200	2113741B33	3300 pF, +/-5%; 50V
C8201	2113740B55	180 pF, +/-5%; 50V
C8202	2113741B45	0.01 uF, +/-5%; 50 V
C8203	2113741B37	4700 pF, +/-5%; 50 V
C8204	2113740B73	1000 pF, +/-5%; 50 V
C8205	0811051A15	0.22 uF, +/-5%; 63 V
C8207	2113740B73	1000 pF, +/-5%; 50 V
C8209 thru 8211	0811051A13	0.1 uF, +/-5%; 63 V
C8213	0811051A13	0.1 uF, +/-5%; 63 V
C8214	2113741B45	0.01 uF, +/-5%; 50 V
C8215,8216	2113741B69	0.1 uF, +/-5%; 50 V
C8218	0811051A15	0.22 uF, +/-5%; 63 V
C8219	2113741B69	0.1 uF, +/-5%; 50 V
C8220	2113740B73	1000 pF, +/-5%; 50 V
C8225	2113741B69	0.1 uF, +/-5%; 50 V
C8230	2113740B57	220 pF, +/-5%; 50 V
C8231	2113741B69	0.1 uF, +/-5%; 50 V
C8300 thru 8303	0811051A11	0.047 uF, +/-5%; 63V
C8304	2311049A19	10 uF, +/-10%; 25 V
C8305,8306	0811051A11	0.047 uF, +/-5%; 63V
C8307	2113740B36	30 pF, +/-5%; 50V
C8400	2113740B18	5.1 pF, +/-0.25 pF; 50V
C8401	2311049A19	10 uF, +/-10%; 25 V
C8402	0811051A15	0.22 uF, +/-5%; 63 V
C8403	2311049A19	10 uF, +/-10%; 25 V
diode: (see note)		
CR801,802	4813833C10	0.1A, 70V
CR803	4805129M41	Rectifier
CR804 thru 807	4813833C10	0.1A, 70V
CR808	4884349P01	Diode Rectifier
CR809	4813833C10	0.1A, 70V
CR1520 thru 1522	4805129M41	Rectifier
CR1523,1524	4813833C10	0.1A, 70V
CR1526,1527	4813833C10	0.1A, 70V
CR1528,1529	4805129M41	Rectifier
CR1530	4813833C10	0.1A, 70V
CR1531	4805129M41	Rectifier
CR8100,8101	4883654H01	silicon

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Reference Symbol	Motorola Part No.	Description
CR8102,8103	4813833C10	0.1A, 70V
CR8107	4813833C10	0.1A, 70V
CR8110	4805129M41	Rectifier
CR8112,8113	4805129M41	Rectifier
CR8115,8116	4883654H01	silicon
CR8200 thru 8203	4805129M41	Rectifier
light emitting diode: (see note)		
DS800 thru 803	4888245C22	GRN
DS804	4888245C23	YEL
DS805	4888245C24	RED
DS8200 thru 8202	4882771L03	7-segment display (red)
hybrid:		
HY804	TRN9837A	Hybrid Flutter Attenuator
HY805	TRN7008A	Display Board
connector:		
J701	2882984N13	plug: 6-contact
J801	2882505T03	plug: 26-contact
J802	2813922A14	HDR 14 POS STR .1 CTR GLD PLTD
J804	2882505T04	plug: 34-contact
J805A	2883547T01	receptacle: 8-contact, right anle
J805B	2883547T01	receptacle: 8-contact, right anle
J806,807	0984231B03	receptacle: phono jack
J812	0983112N01	receptacle: 6-contact
inductor:		
L700	2484386T01	25 UH
L701	2484266T01	150 UH
L702	2484386T01	25 UH
L800	2411047A25	10 UH
L900	2411047A31	CHK RF MLD A/I 33UH
transistor: (see note)		
Q700	4884233T01	type MOSFET
Q705	4813824A17	PNP
Q800	4813824A17	PNP
Q801 thru 807	4813824A10	NPN
Q808	4813824A06	NPN
Q809 thru 811	4813824A10	NPN
Q813,814	4813824A10	NPN
Q816,817	4813824A10	NPN
Q820	4813824A10	NPN
Q821	4800869653	type JFET
Q822,823	4813824A10	NPN
Q1507 thru 1510	4813824A10	NPN
Q8100	4813824A10	NPN
Q8101,8102	4811043B42	TSTR 48R00869919 A/I
Q8200 thru 8207	4813824A17	PNP
Q8208 thru 8210	4813824A06	NPN
Q8211	4813824A10	NPN
Q8212	4813824A06	NPN
resistor, fixed:		
R700	0611077A98	10K, +/-5%; 1/8 W
R701	0611077A88	3.9K, +/-5%; 1/8 W
R702	0611077A50	100 ohms, +/-5%; 1/8 W
R703	0611077A74	1K, +/-5%; 1/8 W
R704	0611077B31	220K, +/-5%; 1/8 W
R705	0611077F63	5.11K, +/-1%; 1/8 W
R706	0611077F28	2.21K, +/-1%; 1/8 W
R707	0611077H30	267K, +/-1%; 1/8 W
R708	0611077F91	10K, +/-1%; 1/8 W
R709	0611077E94	1K, +/-1%; 1/8 W
R710	0611077F60	4.75K, +/-1%; 1/8 W
R711	0611077B35	330K, +/-5%; 1/8 W
R712	0611077B23	100K, +/-5%; 1/8 W
R713	0611077F91	10K, +/-1%; 1/8 W
R714	0611077B13	39K, +/-5%; 1/8 W
R715	0611077B15	47K, +/-5%; 1/8 W
R716	0611077F63	5.11K, +/-1%; 1/8 W

Reference Symbol	Motorola Part No.	Description
R717	0611077B35	330K, +/-5%; 1/8 W
R718	0611077B07	22K, +/-5%; 1/8 W
R719	0611077A50	100 ohms, +/-5%; 1/8 W
R720	0611077A36	27 ohms, +/-5%; 1/8 W
R721	0611077B47	1 meg, +/-5%; 1/8 W
R722	0611077B31	220K, +/-5%; 1/8 W
R723,724	0683962T01	1 ohm, +/-5%; 1 W
R725	0611077F91	10K, +/-1%; 1/8 W
R726	0611077G09	15K, +/-1%; 1/8 W
R727	0611077A98	10K, +/-5%; 1/8 W
R728	0611077H85	1 meg, +/-1%; 1/8 W
R729	0611077B29	180K, +/-5%; 1/8 W
R730	0611077A01	0 ohm, +/-5%; 0 W
R731	0683962T01	1 ohm, +/-5%; 1 W
R736	0611009A33	220 ohms, +/-5%; 1/4 W
R737	0611077A84	2.7K, +/-5%; 1/8 W
R738	0611077A64	390 ohms, +/-5%; 1/8 W
R739	0611077A98	10K, +/-5%; 1/8 W
R740	0611077A56	180 ohms, +/-5%; 1/8W
R741	0611077A98	10K, +/-5%; 1/8 W
R742	0611077A86	3.3K, +/-5%; 1/8 W
R743	0683962T01	1 ohm, +/-5%; 1 W
R748	0611077A78	1.5K, +/-5%; 1/8 W
R800	0611077A54	150 ohms, +/-5%; 1/8 W
R801	0611077A88	3.9K, +/-5%; 1/8 W
R802	0611077A01	0 ohm, +/-5%; 0 W
R803,804	0611077A88	3.9K, +/-5%; 1/8 W
R805	0611077A42	47 ohms, +/-5%; 1/8 W
R806	0611077A98	10K, +/-5%; 1/8 W
R807	0611077A94	6.8K, +/-5%; 1/8W
R809,810	0611077A94	6.8K, +/-5%; 1/8W
R812	0611077A78	1.5K, +/-5%; 1/8 W
R813	0611077A32	18 ohms, +/-5%; 1/8 W
R814	0611077A56	180 ohms, +/-5%; 1/8W
R815	0611077A32	18 ohms, +/-5%; 1/8 W
R816	0611077A90	4.7K, +/-5%; 1/8 W
R817	0611077A82	2.2K, +/-5%; 1/8 W
R818	0611077A52	120 ohms, +/-5%; 1/8 W
R819	0611077A32	18 ohms, +/-5%; 1/8 W
R820	0611077A56	180 ohms, +/-5%; 1/8W
R821	0611077A78	1.5K, +/-5%; 1/8 W
R822	0611077A56	180 ohms, +/-5%; 1/8W
R823	0611077A82	2.2K, +/-5%; 1/8 W
R824	0611077A80	1.8K, +/-5%; 1/8 W
R825	0611077A82	2.2K, +/-5%; 1/8 W
R826	0611077A98	10K, +/-5%; 1/8 W
R827	0611077A88	3.9K, +/-5%; 1/8 W
R828	0611077B07	22K, +/-5%; 1/8 W
R829	0611077A94	6.8K, +/-5%; 1/8W
R830 thru 836	0611077A98	10K, +/-5%; 1/8 W
R837,838	0611077A50	100 ohms, +/-5%; 1/8 W
R839	0611077A98	10K, +/-5%; 1/8 W
R840,841	0611077A50	100 ohms, +/-5%; 1/8 W
R842	0611077A98	10K, +/-5%; 1/8 W
R843 thru 845	0611077A50	100 ohms, +/-5%; 1/8 W
R846	0611077A52	120 ohms, +/-5%; 1/8 W
R847,848	0611077A98	10K, +/-5%; 1/8 W
R849	0611077B09	27K, +/-5%; 1/8 W
R850	0611077A98	10K, +/-5%; 1/8 W
R851	0611077A58	220 ohms, +/-5%; 1/8 W
R852	0611077B47	1 meg, +/-5%; 1/8 W
R854	0611077A98	10K, +/-5%; 1/8 W
R855	0611077A92	5.6K, +/-5%; 1/8 W
R856 thru 858	0611077A98	10K, +/-5%; 1/8 W
R861	0611077B09	27K, +/-5%; 1/8 W
R862	0611077A88	3.9K, +/-5%; 1/8 W
R863	0611077A54	150 ohms, +/-5%; 1/8 W
R866	0611077A98	10K, +/-5%; 1/8 W
R867	0611077A78	1.5K, +/-5%; 1/8 W
R868 thru 871	0611077A98	10K, +/-5%; 1/8 W
R872	0611077A54	150 ohms, +/-5%; 1/8 W
R873	0611077A98	10K, +/-5%; 1/8 W
R874	0611077A54	150 ohms, +/-5%; 1/8 W
R875	0611077A80	1.8K, +/-5%; 1/8 W

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Reference Symbol	Motorola Part No.	Description
R876	0611077A98	10K, +/-5%; 1/8 W
R877	0611077A54	150 ohms, +/-5%; 1/8 W
R878	0611077A90	4.7K, +/-5%; 1/8 W
R879	0611077A82	2.2K, +/-5%; 1/8 W
R880	0611077A78	1.5K, +/-5%; 1/8 W
R881	0611077A98	10K, +/-5%; 1/8 W
R882	0611077A82	2.2K, +/-5%; 1/8 W
R883,884	0611077A98	10K, +/-5%; 1/8 W
R887	0611077A98	10K, +/-5%; 1/8 W
R888	0611077B39	470K, +/-5%; 1/8 W
R889	0611077A98	10K, +/-5%; 1/8 W
R890	0611077A74	1K, +/-5%; 1/8 W
R891	0611077A98	10K, +/-5%; 1/8 W
R893	0611077A98	10K, +/-5%; 1/8 W
R894	0611077B23	100K, +/-5%; 1/8 W
R895 thru 898	0611077A98	10K, +/-5%; 1/8 W
R899	0611077A92	5.6K, +/-5%; 1/8 W
R900	0611077A50	100 ohms, +/-5%; 1/8 W
R1523	0611077B15	47K, +/-5%; 1/8 W
R1524	0611077A86	3.3K, +/-5%; 1/8 W
R1525	0611077B13	39K, +/-5%; 1/8 W
R1526	0611077A82	2.2K, +/-5%; 1/8 W
R1527	0611077B13	39K, +/-5%; 1/8 W
R1532	0611077B07	22K, +/-5%; 1/8 W
R1533	0611077A64	390 ohms, +/-5%; 1/8 W
R1534	0611077A78	1.5K, +/-5%; 1/8 W
R1535	0611077B25	120K, +/-5%; 1/8 W
R1536	0611077B31	220K, +/-5%; 1/8 W
R1537	0611077B15	47K, +/-5%; 1/8 W
R1540	0611077B15	47K, +/-5%; 1/8 W
R1543	0611077B23	100K, +/-5%; 1/8 W
R1544	0611077A74	1K, +/-5%; 1/8 W
R1545	0611077B19	68K, +/-5%; 1/8W
R1546	0611077A74	1K, +/-5%; 1/8 W
R1547	0611077A98	10K, +/-5%; 1/8 W
R1548	0611077B33	270K, +/-5%; 1/8W
R1549	0611077A94	6.8K, +/-5%; 1/8W
R1550	0611077A98	10K, +/-5%; 1/8 W
R1553	0611077B19	68K, +/-5%; 1/8W
R1554	0611077B21	82K, +/-5%; 1/8W
R1555,1556	0611077A98	10K, +/-5%; 1/8 W
R1557	0611077B07	22K, +/-5%; 1/8 W
R1559	0611077A64	390 ohms, +/-5%; 1/8 W
R1560	0611077B15	47K, +/-5%; 1/8 W
R1561	0611077B25	120K, +/-5%; 1/8 W
R1562	0611077B31	220K, +/-5%; 1/8 W
R1563	0611077B15	47K, +/-5%; 1/8 W
R1565,1566	0611077A74	1K, +/-5%; 1/8 W
R1567	0611077A94	6.8K, +/-5%; 1/8W
R1568	0611077A98	10K, +/-5%; 1/8 W
R1570	0611077A74	1K, +/-5%; 1/8 W
R1571	0611077A98	10K, +/-5%; 1/8 W
R1572	0611077A01	0 ohm, +/-5%; 0 W
R1573,1574	0611077A91	5.1K, +/-5%; 1/8 W
R1575	0611077A92	5.6K, +/-5%; 1/8 W
R1576	0611077B27	150K, +/-5%; 1/8W
R1578	0611077A78	1.5K, +/-5%; 1/8 W
R1589	1882787K08	variable: 100K +/-20%; 1/4W
R8100 thru 8103	0611077B01	12K, +/-5%; 1/8 W
R8105	0611077B23	100K, +/-5%; 1/8 W
R8106	0611077A98	10K, +/-5%; 1/8 W
R8107	0611077B07	22K, +/-5%; 1/8 W
R8108	0611077B03	15K, +/-5%; 1/8 W
R8109	0611077B01	12K, +/-5%; 1/8 W
R8110	0611077B11	33K, +/-5%; 1/8 W
R8111	0611077B07	22K, +/-5%; 1/8 W
R8112	0611077A94	6.8K, +/-5%; 1/8W
R8113,8114	0611077A86	3.3K, +/-5%; 1/8 W
R8115	0611077A94	6.8K, +/-5%; 1/8W
R8116	0611077A88	3.9K, +/-5%; 1/8 W
R8117	0611009B26	2.7 ohms, +/-5%; 1/4W
R8118	0611077A88	3.9K, +/-5%; 1/8 W
R8119	0611077A78	1.5K, +/-5%; 1/8 W
R8120	0611077A80	1.8K, +/-5%; 1/8 W
R8121	0683962T24	9.1 ohms, +/-5%; 1W
R8122	0611077A26	10 ohms, +/-5%; 1/8 W
R8123	0611077B37	390K, +/-5%; 1/8W

Reference Symbol	Motorola Part No.	Description
R8125	0611077A98	10K, +/-5%; 1/8 W
R8127	0611077A94	6.8K, +/-5%; 1/8W
R8128	0611077A86	3.3K, +/-5%; 1/8 W
R8129	0611077A78	1.5K, +/-5%; 1/8 W
R8130	0611077H43	365K, +/-1%; 1/8W
R8131	0611077A98	10K, +/-5%; 1/8 W
R8132	0611077A92	5.6K, +/-5%; 1/8 W
R8133	0611077B23	100K, +/-5%; 1/8 W
R8134	0611077B17	56K, +/-5%; 1/8 W
R8135	1882787K09	variable: 5K +/-10%; 1/4W
R8136	0611077B05	18K, +/-5%; 1/8 W
R8137	0611077B09	27K, +/-5%; 1/8 W
R8138,8139	0611077B11	33K, +/-5%; 1/8 W
R8141	0611077B03	15K, +/-5%; 1/8 W
R8142,8143	0611077B07	22K, +/-5%; 1/8 W
R8144	0611077A98	10K, +/-5%; 1/8 W
R8146	0611077B03	15K, +/-5%; 1/8 W
R8147	0611077B09	27K, +/-5%; 1/8 W
R8148	0611077A98	10K, +/-5%; 1/8 W
R8149	0611077B09	27K, +/-5%; 1/8 W
R8150	0611077B23	100K, +/-5%; 1/8 W
R8151,8152	0611077B09	27K, +/-5%; 1/8 W
R8153,8154	0611077B07	22K, +/-5%; 1/8 W
R8155	0611077B09	27K, +/-5%; 1/8 W
R8156	0611077B23	100K, +/-5%; 1/8 W
R8157 thru 8159	0611077B09	27K, +/-5%; 1/8 W
R8162	0611077B07	22K, +/-5%; 1/8 W
R8163	0611077B09	27K, +/-5%; 1/8 W
R8164	0611077A98	10K, +/-5%; 1/8 W
R8165,8166	0611077B09	27K, +/-5%; 1/8 W
R8167	0611077B23	100K, +/-5%; 1/8 W
R8168	0611077B30	200K, +/-5%; 1/8 W
R8169	0611077B23	100K, +/-5%; 1/8 W
R8170	0611077A68	560 ohms, +/-5%; 1/8 W
R8171	0611077B30	200K, +/-5%; 1/8 W
R8172	0611077A50	100 ohms, +/-5%; 1/8 W
R8173,8174	0611077B23	100K, +/-5%; 1/8 W
R8175	0611077B09	27K, +/-5%; 1/8 W
R8176	0611077A91	5.1K, +/-5%; 1/8 W
R8177	0611077B09	27K, +/-5%; 1/8 W
R8178,8179	0611077B14	43K, +/-5%; 1/8 W
R8180	0611077B09	27K, +/-5%; 1/8 W
R8181 thru 8185	0611077B18	62K, +/-5%; 1/8 W
R8187	0611077B14	43K, +/-5%; 1/8 W
R8188	0611077B23	100K, +/-5%; 1/8 W
R8189	0611077B43	680K, +/-5%; 1/8 W
R8190	0611077B23	100K, +/-5%; 1/8 W
R8191	0611077A98	10K, +/-5%; 1/8 W
R8192	0611077A86	3.3K, +/-5%; 1/8 W
R8193	0611077A98	10K, +/-5%; 1/8 W
R8194	0611077B23	100K, +/-5%; 1/8 W
R8195	0611077A88	3.9K, +/-5%; 1/8 W
R8196	0611077A70	680 ohms, +/-5%; 1/8 W
R8197	0611077A76	1.2K, +/-5%; 1/8 W
R8198	0611077B15	47K, +/-5%; 1/8 W
R8199	0611077A01	0 ohm, +/-5%; 0 W
R8200	0611077A78	1.5K, +/-5%; 1/8 W
R8201	0611077A50	100 ohms, +/-5%; 1/8 W
R8202	0611077A78	1.5K, +/-5%; 1/8 W
R8203	0611077A90	4.7K, +/-5%; 1/8 W
R8204	0611077A50	100 ohms, +/-5%; 1/8 W
R8205,8206	0611077A78	1.5K, +/-5%; 1/8 W
R8207	0611077A82	2.2K, +/-5%; 1/8 W
R8208	0611077A50	100 ohms, +/-5%; 1/8 W
R8209,8210	0611077A78	1.5K, +/-5%; 1/8 W
R8211	0611077A84	2.7K, +/-5%; 1/8 W
R8212	0611077A50	100 ohms, +/-5%; 1/8 W
R8213,8214	0611077A78	1.5K, +/-5%; 1/8 W
R8215	0611077B11	33K, +/-5%; 1/8 W
R8216	0611077A50	100 ohms, +/-5%; 1/8 W
R8217,8218	0611077A78	1.5K, +/-5%; 1/8 W
R8219	0611009B23	0 ohm, +/-5%; 1/4 W
R8220	0611077A50	100 ohms, +/-5%; 1/8 W
R8221,8222	0611077A78	1.5K, +/-5%; 1/8 W
R8223	0611077B23	100K, +/-5%; 1/8 W
R8224	0611077A78	1.5K, +/-5%; 1/8 W
R8225	0611077A50	100 ohms, +/-5%; 1/8 W

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Reference Symbol	Motorola Part No.	Description
R8226	0611077A78	1.5K, +/-5%; 1/8 W
R8227	0611077B23	100K, +/-5%; 1/8 W
R8228	0611077A50	100 ohms, +/-5%; 1/8 W
R8229,8230	0611077A78	1.5K, +/-5%; 1/8 W
R8231	0611077G88	100K, +/-1%; 1/8 W
R8232,8233	0611077A98	10K, +/-5%; 1/8 W
R8236,8237	0611077A98	10K, +/-5%; 1/8 W
R8239,8240	0611077A98	10K, +/-5%; 1/8 W
R8242,8243	0611077H18	200K, +/-1%; 1/8 W
R8244	0611077G88	100K, +/-1%; 1/8 W
R8245	0611077B23	100K, +/-5%; 1/8 W
R8246	0611077G88	100K, +/-1%; 1/8 W
R8247	0611077H18	200K, +/-1%; 1/8 W
R8248	0611077G88	100K, +/-1%; 1/8 W
R8249	0611077H18	200K, +/-1%; 1/8 W
R8250	0611077G88	100K, +/-1%; 1/8 W
R8251 thru 8254	0611077H18	200K, +/-1%; 1/8 W
R8255,8256	0611077B23	100K, +/-5%; 1/8 W
R8257	0611077G88	100K, +/-1%; 1/8 W
R8258	0611077H18	200K, +/-1%; 1/8 W
R8259	0611077G88	100K, +/-1%; 1/8 W
R8260	0611077H18	200K, +/-1%; 1/8 W
R8261	0611077G88	100K, +/-1%; 1/8 W
R8262,8263	0611077H18	200K, +/-1%; 1/8 W
R8272	0611077B25	120K, +/-5%; 1/8 W
R8275	0611077H73	750K, +/-1%; 1/8W
R8276	0611077G60	51.1K, +/-1%; 1/8 W
R8277	0611077A98	10K, +/-5%; 1/8 W
R8278	0611077H54	475K, +/-1%; 1/8W
R8279	0611077G53	43.2K, +/-1%; 1/8 W
R8280	0611077H46	392K, +/-1%; 1/8W
R8281	0611077B13	39K, +/-5%; 1/8 W
R8282,8283	0611077H73	750K, +/-1%; 1/8W
R8284	0611077G60	51.1K, +/-1%; 1/8 W
R8285	0611077H54	475K, +/-1%; 1/8W
R8286	0611077A98	10K, +/-5%; 1/8 W
R8287	0611077A74	1K, +/-5%; 1/8 W
R8288	0611077G53	43.2K, +/-1%; 1/8 W
R8289	0611077H73	750K, +/-1%; 1/8W
R8290	0611077H46	392K, +/-1%; 1/8W
R8291	0611077B13	39K, +/-5%; 1/8 W
R8292	0611077A86	3.3K, +/-5%; 1/8 W
R8293	0611077B23	100K, +/-5%; 1/8 W
R8294	0611077B11	33K, +/-5%; 1/8 W
R8295	0611077B23	100K, +/-5%; 1/8 W
R8298	0611009B23	0 ohm, +/-5%; 1/4 W
R8299	0611077A01	0 ohm, +/-5%; 0 W
R8300	0611077B23	100K, +/-5%; 1/8 W
R8310 thru 8313	0611077B15	47K, +/-5%; 1/8 W
R8314	0611077A98	10K, +/-5%; 1/8 W
R8315	0611077A94	6.8K, +/-5%; 1/8W
R8316	0611077A98	10K, +/-5%; 1/8 W
R8318	0611077B23	100K, +/-5%; 1/8 W
R8335 thru 8339	0611077A74	1K, +/-5%; 1/8 W
R8340	0611077A98	10K, +/-5%; 1/8 W
R8344	0611077A68	560 ohms, +/-5%; 1/8 W
R8345 thru 8347	0611077A50	100 ohms, +/-5%; 1/8 W
R8348	0611077A98	10K, +/-5%; 1/8 W
R8349	0611077B30	200K, +/-5%; 1/8 W
R8350,8351	0611077G42	33.2K, +/-1%; 1/8W
R8400	0611077A67	510 ohms, +/-5%; 1/8 W
R8401,8402	0611077A92	5.6K, +/-5%; 1/8 W
R8403	0611077B01	12K, +/-5%; 1/8 W
R8404	0611077B11	33K, +/-5%; 1/8 W
R8405	0611077A84	2.7K, +/-5%; 1/8 W
R8406	0611077B15	47K, +/-5%; 1/8 W
R8407	0611077A74	1K, +/-5%; 1/8 W
R8408	0611077B35	330K, +/-5%; 1/8 W
R8409	0611077B45	820K, +/-5%; 1/8 W
R8410	0611077E15	150 ohms, +/-1%; 1/8W
R8411	0611077B45	820K, +/-5%; 1/8 W
R8412	0611077E73	604 ohms, +/-1%; 1/8W
R8413	0611009B23	0 ohm, +/-5%; 1/4 W
R8414	0611077A43	51 ohms, +/-5%; 1/8 W
R8415	0611077B03	15K, +/-5%; 1/8 W

Reference Symbol	Motorola Part No.	Description
R8416	0611077B39	470K, +/-5%; 1/8 W
R8417	0611009B23	0 ohm, +/-5%; 1/4 W
R8501	0683962T24	9.1 ohms, +/-5%; 1W
R8502	0611077B05	18K, +/-5%; 1/8 W
R8600	0611009B23	0 ohm, +/-5%; 1/4 W
R8601,8602	0611077A58	220 ohms, +/-5%; 1/8 W
R8603 thru 8610	0611077A98	10K, +/-5%; 1/8 W
R8611 thru 8618	0611077A58	220 ohms, +/-5%; 1/8 W
		switch:
SW800,801	4083980R12	toggle: sp3t (on-off-mom)
SW802	4083980R11	toggle: sp3t (mom-off-mom)
		transformer:
T700	2584265T01	power
		test point:
TP1 thru 13	2962998D01	terminal pin
		integrated circuit: (see note)
U800	5113802A01	Micro Computere Unit w/Switch Control Interface
U801,802	5184494R03	ASIC Station Control
U803	TVN6055A	Software SSCB
U803	5191012H75	IC PRGMD EPROM 12H75
U804	5184064F76	Static 32Kx8 Bit RAM
U806	5113819D02	LO COST LO PWR 14 DIP
U807	5113815J04	555 Timer
U808	0982808R02	SOCKET, IC: 8-contact
U810 thru 812	5184887K60	Triple 2-Channel Analog Mux/Demux
U813	5184704M19	Hex Level Shifter/Logic Level Converter
U814	5113819D04	General Purpose Differential Operational Amplifier
U815	5184621K86	Dual Gain Control
U816	5184704M19	Hex Level Shifter/Logic Level Converter
U817	5113806D21	analog switching multiplexer
U818,819	5113819D04	General Purpose Differential Operational Amplifier
U821	5113819D04	General Purpose Differential Operational Amplifier
U823,824	5182335V01	IC EEPOT 50K 10% _9312_
U830	5184621K33	Operational Amplifier
U831	5182335V01	IC EEPOT 50K 10% _9312_
U837,838	5184621K85	Dual Operational Amplifier
U839	5184704M19	Hex Level Shifter/Logic Level Converter
U840	5184887K60	Triple 2-Channel Analog Mux/Demux
U841	5184621K85	Dual Operational Amplifier
U842	5113820D02	type LM2901N
U843	5184371T01	Single Current Mode Controller
U1550,1551	5183222M03	Quad Operational Amplifier
U1552	5113819D02	LO COST LO PWR 14 DIP
U1553,1554	5182335V01	IC EEPOT 50K 10% _9312_
U8200	5113819D04	General Purpose Differential Operational Amplifier
		voltage regulator: (see note)
VR701	4883461E40	Zener 5.1V
VR702	4882479V02	DIODE ZENER 3.3V
VR1531 thru 1534	4882479V02	DIODE ZENER 3.3V
		crystal: (see note)
Y800	4880113K04	7.948 MHZ
		non-referenced items:
		TTN4045A 900MHZ CNTRL BD
		0300140230 SCR TPG 4-40X5/16 STARPAN CHS (2 used with J800)
		0982449T01 SOCKET, IC: 52-contact (used with U800)
		0982449T03 SOCKET, IC: 84-contact (used with U801)
		0982449T03 SOCKET, IC: 84-contact (used with U802)

TLN3387 SSCB Parts List

Reference Symbol	Motorola Part No.	Description
	0982808R10	Socket, IC: 28-contact (used with U803)
	0983729M17	receptacle: 20-contact (2 used with J800)
	0984728L01	Shorting Jumper: 2-contact (used with JU1)
	0984728L01	Shorting Jumper: 2-contact (used with JU2)
	0984728L01	Shorting Jumper: 2-contact (used with JU3)
	0984728L01	Shorting Jumper: 2-contact (used with JU4)
	0984728L01	Shorting Jumper: 2-contact (used with JU5)
	0984728L01	Shorting Jumper: 2-contact (used with JU6)
	0984728L01	Shorting Jumper: 2-contact (used with JU7)
	0984728L01	Shorting Jumper: 2-contact (used with JU8)
	0984728L01	Shorting Jumper: 2-contact (used with JU9)
	0984728L01	Shorting Jumper: 2-contact (used with JU10)
	0984728L01	Shorting Jumper: 2-contact (used with JU11)
	0984728L01	Shorting Jumper: 2-contact (used with JU12)
	0984728L01	Shorting Jumper: 2-contact (used with JU13)
	0984728L01	Shorting Jumper: 2-contact (used with JU14)
	0984728L01	Shorting Jumper: 2-contact (used with JU15)
	0984728L01	Shorting Jumper: 2-contact (used with JU16)
	0984728L01	Shorting Jumper: 2-contact (used with JU17)
	0984728L01	Shorting Jumper: 2-contact (used with JU18)
	0984728L01	Shorting Jumper: 2-contact (used with JU19)
	0984728L01	Shorting Jumper: 2-contact (used with JU20)
	0984728L01	Shorting Jumper: 2-contact (used with JU21)
	0984728L01	Shorting Jumper: 2-contact (used with JU22)
	1485334U01	Insulator (used w/ Y800)
	2683373P02	HEAT SINK, transistor
	2880001R03	plug: 3-contact (used with JU1)
	2880001R03	plug: 3-contact (used with JU2)
	2880001R03	plug: 3-contact (used with JU3)
	2880001R03	plug: 3-contact (used with JU4)
	2880001R03	plug: 3-contact (used with JU5)
	2880001R03	plug: 3-contact (used with JU6)
	2880001R03	plug: 3-contact (used with JU7)
	2880001R03	plug: 3-contact (used with JU8)
	2880001R03	plug: 3-contact (used with JU9)
	2880001R03	plug: 3-contact (used with JU10)
	2880001R03	plug: 3-contact (used with JU11)
	2880001R03	plug: 3-contact (used with JU12)
	2880001R03	plug: 3-contact (used with JU13)
	2880001R03	plug: 3-contact (used with JU14)
	2880001R03	plug: 3-contact (used with JU15)
	2880001R03	plug: 3-contact (used with JU16)
	2880001R03	plug: 3-contact (used with JU17)
	2880001R03	plug: 3-contact (used with JU18)
	2880001R03	plug: 3-contact (used with JU19)
	2880001R03	plug: 3-contact (used with JU20)
	2880001R03	plug: 3-contact (used with JU21)
	2880001R03	plug: 3-contact (used with JU22)
	2882296R34	plug: 40-contact (used with J800)
	4884349P01	silicon
	5483865R01	Label, bar code: 1/4" wide, white (2 used)
	5484960T01	Label, bar code: 6.3 x 12.7MM, white (2 used)

Notes: For optimum performance, diodes, transistors, integrated circuits, and crystals must be ordered by Motorola part number.

TTRC Connectors

P804			P2905			P2904		
5V	33	34	STATIC & AUDIO GND	PIN OUT FOR 40 PIN CABLE		PIN OUT FOR 50 PIN CABLE		
5V	31	32	A+	1	TX AUDIO 2	1	A+	
MUTE	29	30	GEN TX DATA +	2	LINE AUDIO 4	2	BOARD GND [STATIC/AUDIO]	
CONNECT TONE	27	28	EXP RESET*	3	LINE AUDIO 2	3	+9.6V	
DATA STROBE	25	26	IPCB	4	LINE 1/3*	4	TKG RX AUDIO	
BA1	23	24	BA0	5	LIMIT GAIN*	5	LOGIC GND	
BA3	21	22	BA2	6	FAILSOFT LT	6	HSR DATA IN	
BD1*	19	20	BD0*	7	TRC ENCODE LT	7	LOGIC GND	
BD3*	17	18	BD2*	8	LINE PTT LT	8	HSR DATA OUT	
HSR SYNCH	15	16	LOGIC GND	9	FAIL LT	9	LOGIC GND	
HSR CLK	13	14	LOGIC GND	10		10	HSR CLOCK	
HSR DATA OUT	11	12	LOGIC GND	11		11	LOGIC GND	
HSR DATA IN	9	10	LOGIC GND	12	INTERCOM	12	HSR SYNCH	
TKG MOD AUDIO	7	8	QUAD AUDIO	13	DECODE AUDIO	13	BD3*	
TX AUDIO	5	6	RAW TX AUDIO	14	LOOP BACK	14	BD2*	
9.6V	3	4	LINE AUDIO	15	TX SOURCE	15	BD1*	
A+	1	2	STATIC & AUDIO GND	16	TXG AUDIO MUTE	16	BD0*	
				17	LINE MUTE 4	17	BA3	
				18	LINE MUTE 2	18	BA2	
				19	TRC TONE	19	BA1	
				20	STAC TONE	20	BA0	
				21	TRC LVL C1	21	DATA STROBE	
				22	TRC LVL C0	22	IPCB	
				23	TX AUDIO 4	23	MUTE	
				24	LPTT	24	A+	
				25	TX LVL C1	25	+5V	
				26	TX LVL C0	26	+5V	
				27	LVL U/D*	27	GEN TX DATA +	
				28	GT/FT*	28	GEN TX DATA -	
				29	CCI ENABLE	29	TX DATA +	
				30	CT ENABLE	30	TX DATA -	
				31	FILTER BYPASS	31	LVL INC*	
				32	GT LINE 2/4	32	LINE 4 LVL CS*	
				33	ALC IDLE	33	LINE 2 LVL CS*	
				34	DATA/FLSFT*	34	DATA DEV CS*	
				35	EQUAL LINE 2	35	LOW EQUAL CS*	
				36	FILTER CLK	36	HIGH EQUAL CS*	
				37	GAIN UP HOLD	37	STATIC LVL CS*	
				38	TONE DETECT	38	TX LVL ADJ CS*	
				39	REVBURST	39	DLYD RESET	
				40	ACTIVITY*	40	RESET*	
						41	SPARE [HI]	
						42	TKG DATA SAMPLE	
						43	LINE 4 SAMPLE	
						44	LINE 2 SAMPLE	
						45	STAC TONE SAMPLE	
						46	TRC TONE SAMPLE	
						47	CURRENT -	
						48	CURRENT +	
						49	ALC SAMPLE	
						50	BOARD GND [STATIC/AUDIO]	

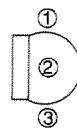
J2904			J900			J901		
STATIC & AUDIO GND	50	49	ALC SAMPLE	5	6	LINE 4 +	5	6
CURRENT +	48	47	CURRENT -	3	4	LINE 4 -	3	4
TRC TONE SAMPLE	46	45	STAC TONE SAMPLE	1	2		1	2
LINE 2 SAMPLE	44	43	LINE 4 SAMPLE					
TKG DATA SAMPLE	42	41	SPARE [HI]					
RESET*	40	39	DLYD RESET					
TX LVL ADJ CS*	38	37	STAC LVL CS*					
HIGH EQUAL CS*	36	35	LOW EQUAL CS*					
DATA DEV CS*	34	33	LINE 2 LVL CS*					
LINE 4 LEVEL CS*	32	31	LVL INC*					
TX DATA -	30	29	TX DATA +					
GEN TX DATA -	28	27	GEN TX DATA +					
5V	26	25	5V					
A+	24	23	MUTE					
IPCB	22	21	DATA STROBE					
BA0	20	19	BA1					
BA2	18	17	BA3					
BD0*	16	15	BD1*					
BD2*	14	13	BD3*					
HSR SYNCH	12	11	LOGIC GND					
HSR CLK	10	9	LOGIC GND					
HSR DATA OUT	8	7	LOGIC GND					
HSR DATA IN	6	5	LOGIC GND					
TKG RX AUDIO	4	3	9.6V					
STATIC & AUDIO GND	2	1	A+					

J2905			J901		
ACTIVITY*	40	39	REVBURST	5	6
TONE DETECT	38	37	GAIN UP HOLD	3	4
FILTER CLK	36	35	EQUAL LINE 2*	1	2
DATA/FLSFT*	34	33	ALC IDLE		
GT LINE 2/4	32	31	FILTER BYPASS		
CT ENABLE	30	29	CCI ENABLE		
GT/FT*	28	27	LVL U/D*		
TX LVL CO	26	25	TX LVL C1		
LPTT	24	23	TX AUDIO 4		
TRC LVL CO	22	21	TRC LVL C1		
STAC TONE	20	19	TRC TONE		
LINE MUTE 2	18	17	LINE MUTE 4		
TKG AUDIO MUTE	16	15	TX SOURCE		
LOOP BACK	14	13	DECODE AUDIO		
INTERCOM	12	11			
LINE PTT LT	10	9	FAIL LT		
FAILSOFT LT	8	7	TRC ENCODE LT		
LINE 1/3*	6	5	LIMIT GAIN*		
LINE AUDIO 4	4	3	LINE AUDIO 2		
	2	1	TX AUDIO 2		

NOTE:
AN ASTERISK (*) AFTER OR A LINE
OVER A SIGNAL NAME INDICATES AN
ACTIVE LOW LEVEL SIGNAL.

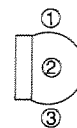
TRANSISTOR DETAILS

4813824D17



1 = EMITTER
2 = BASE
3 = COLLECTOR

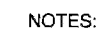
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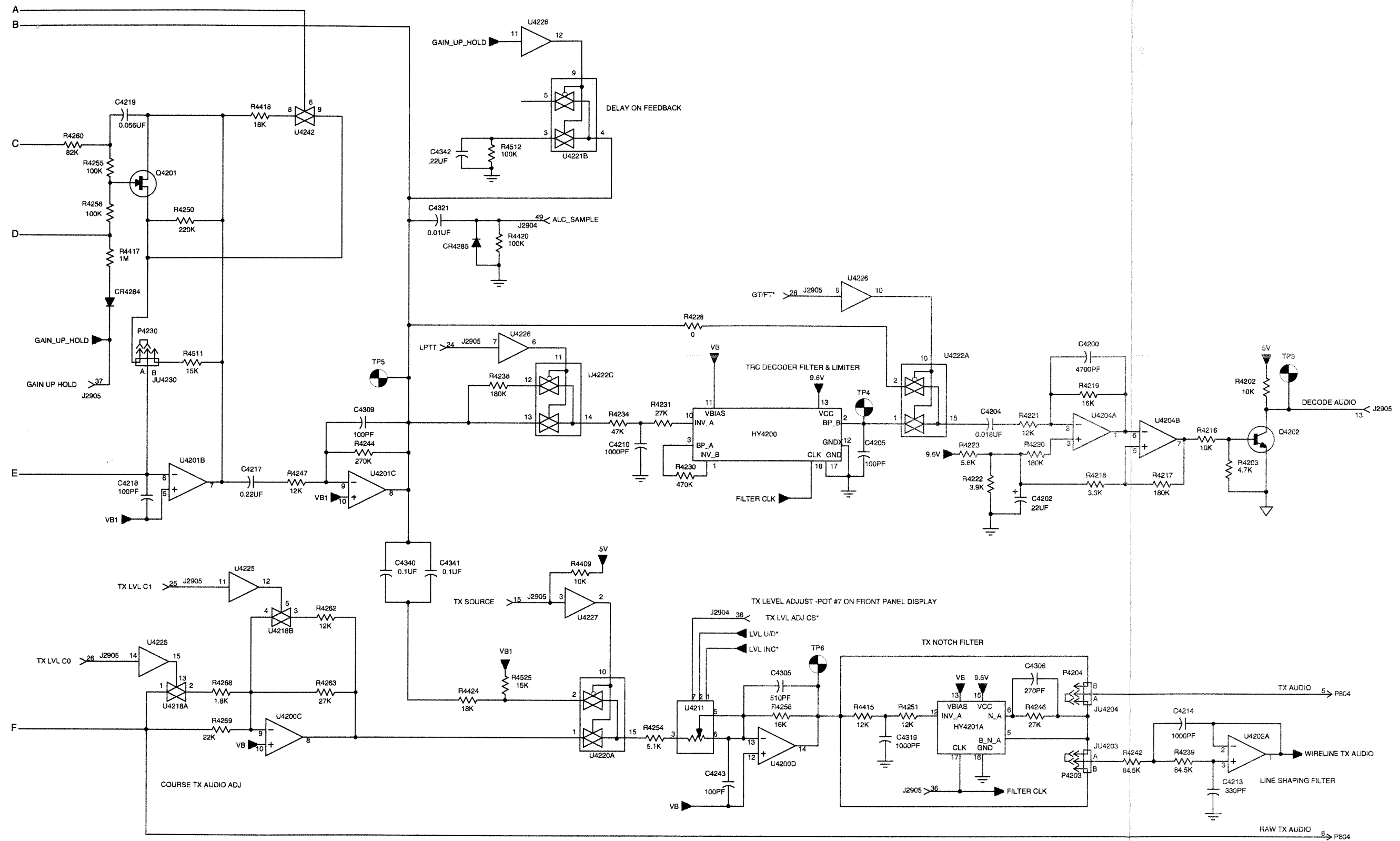
1 = DRAIN
2 = SOURCE
3 = GATE

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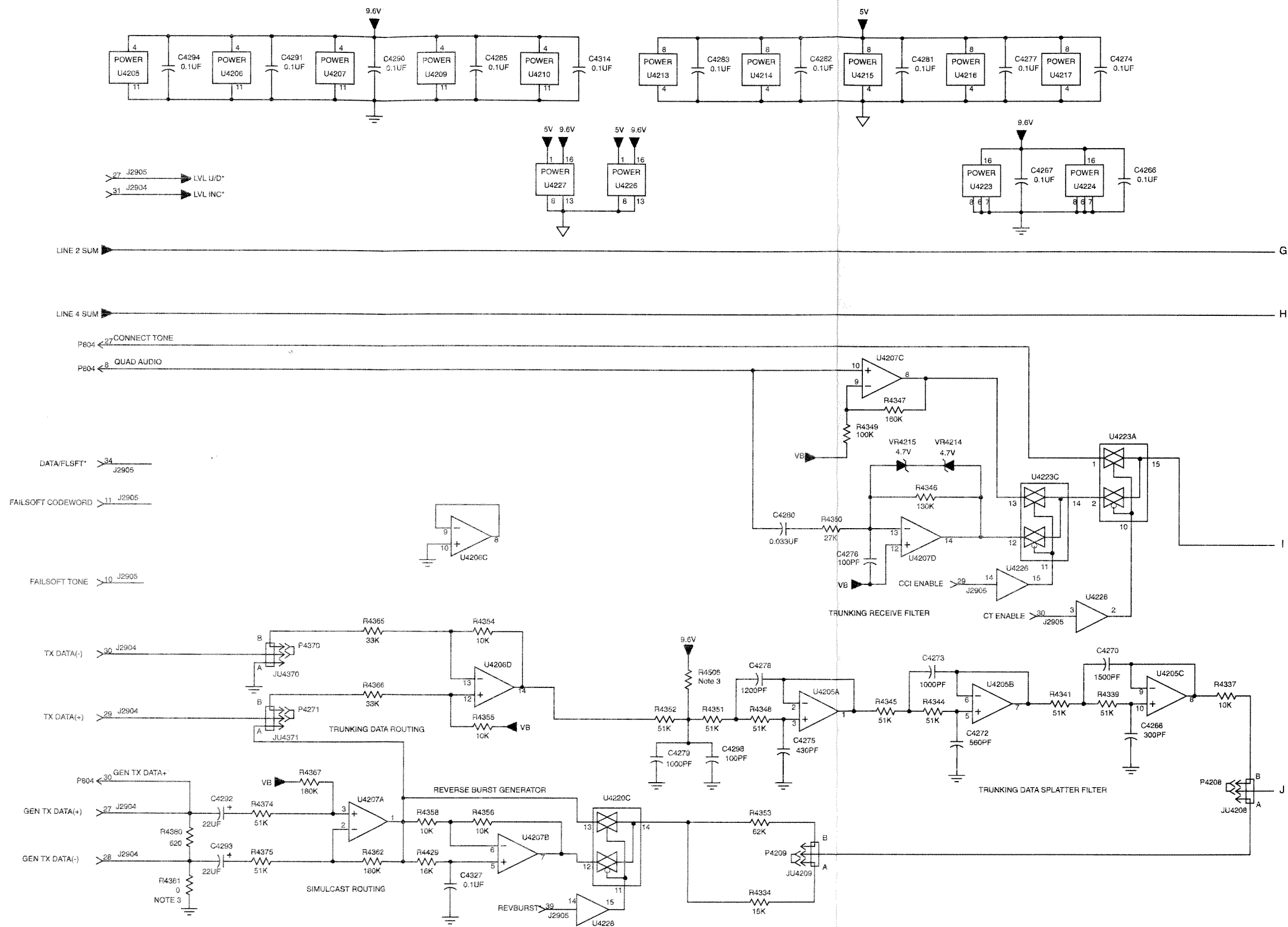




1. Unless otherwise specified, all resistor values are in ohms and capacitor values in microfarads.
2. An asterisk (*) after or a line over a signal name indicates an active low level signal.
3. Parts not included on standard kits, but it may be added for special applications.

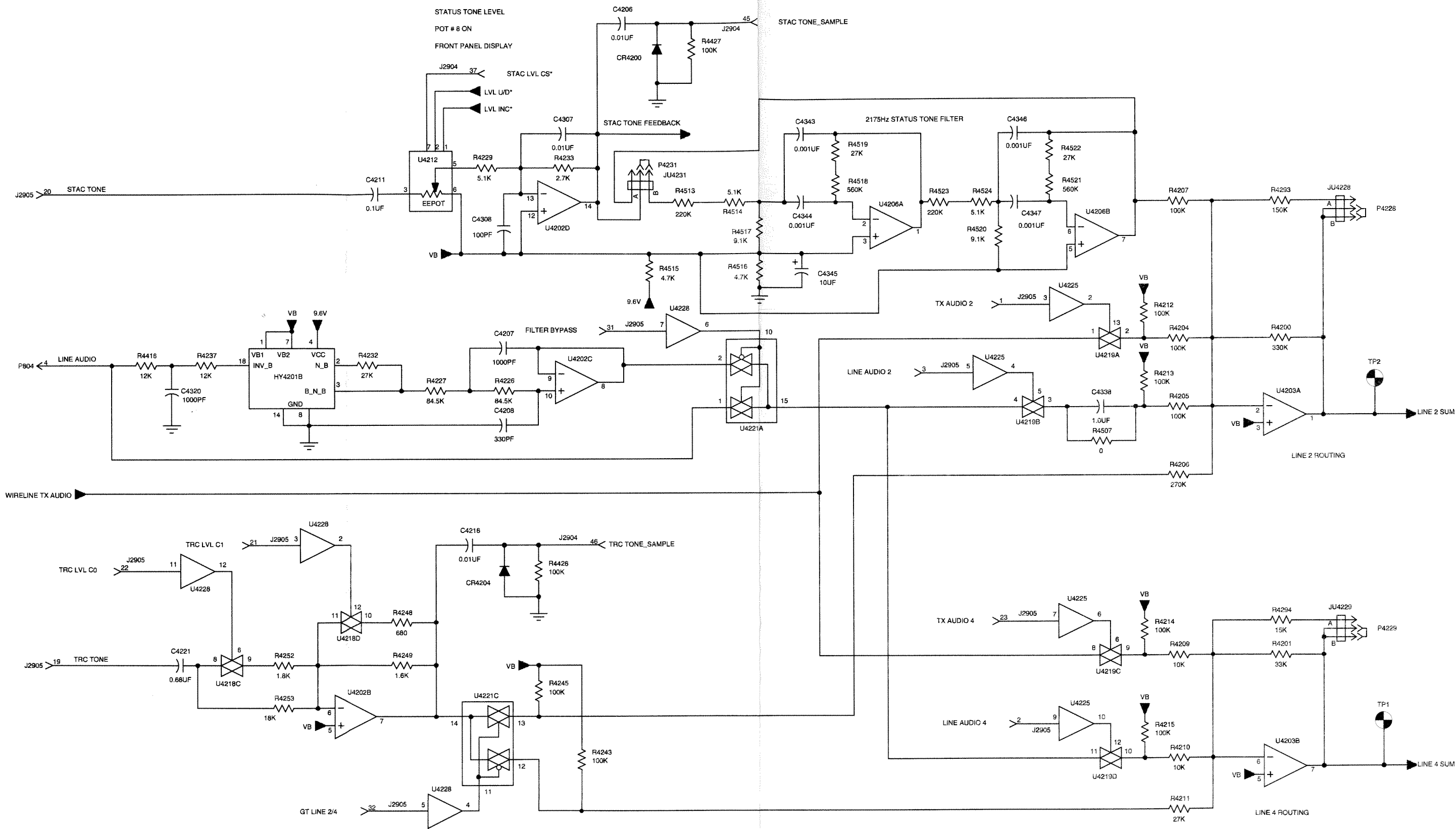


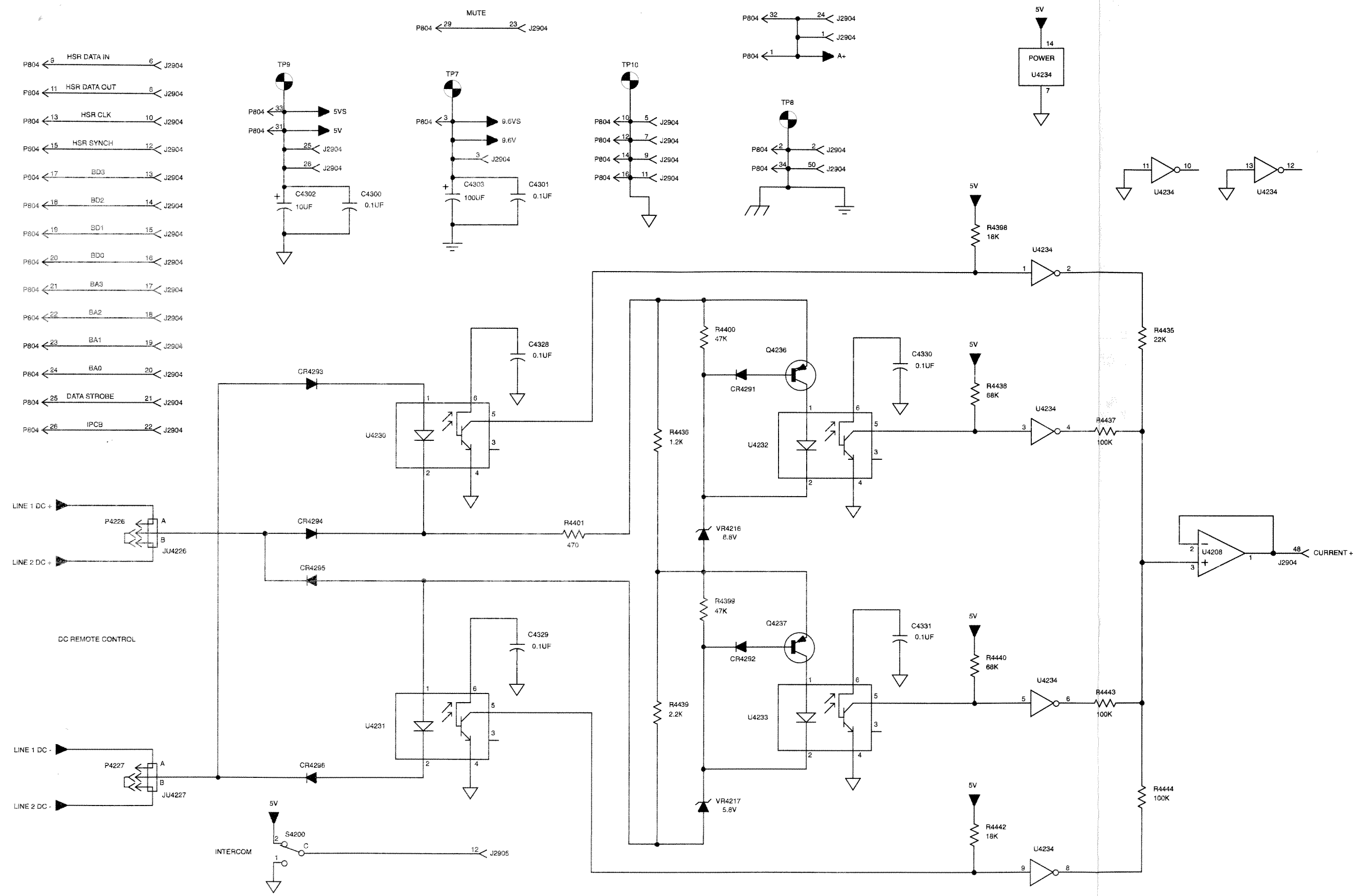
TLN3112 TTRC Audio Board



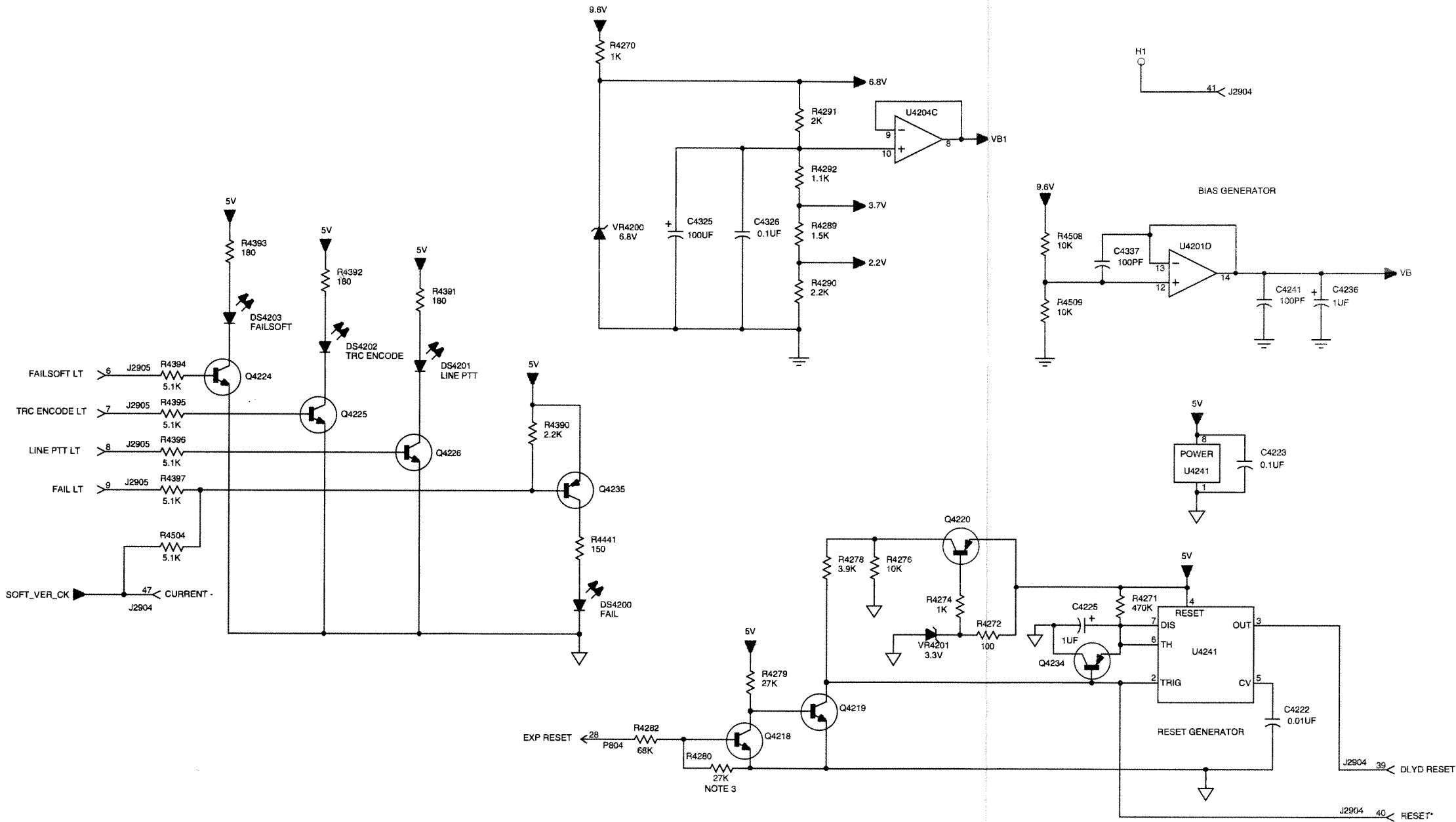


TLN3112 TTRC Audio Board





TLN3112 TTRC Audio Board



TLN3112 TTRC Audio Board Parts List

Reference Symbol	Motorola Part No.	Description	Reference Symbol	Motorola Part No.	Description
capacitor, fixed:					
C4200	2113741B37	4700 pF, +/-5%; 50 V	C4310	2113740B61	330 pF, +/-5%; 50V
C4201	2113741B69	0.1 uF, +/-5%; 50 V	C4311	2113741B57	0.033 uF, +/-5%; 50 V
C4202	2311049A21	22 uF, +/-10%; 20 V	C4312,4313	2113740B73	1000 pF, +/-5%; 50 V
C4203	2113741B69	0.1 uF, +/-5%; 50 V	C4314	2113741B69	0.1 uF, +/-5%; 50 V
C4204	0811051A20	0.018 uF, +/-5%; 1V	C4315	2113740B49	100 pF, +/-5%; 50 V
C4205	2113740B49	100 pF, +/-5%; 50 V	C4316	2113740B69	680 pF, +/-5%; 50V
C4206	2113741B45	0.01 uF, +/-5%; 50 V	C4317	2113740B49	100 pF, +/-5%; 50 V
C4207	2113740B73	1000 pF, +/-5%; 50 V	C4318	2113740B69	680 pF, +/-5%; 50V
C4208	2113740B61	330 pF, +/-5%; 50V	C4319,4320	2113740B73	1000 pF, +/-5%; 50 V
C4210	2113740B73	1000 pF, +/-5%; 50 V	C4321	2113741B45	0.01 uF, +/-5%; 50 V
C4211	2113741B69	0.1 uF, +/-5%; 50 V	C4325	2313748G22	100 uF, +/-20%; 25 V
C4213	2113740B61	330 pF, +/-5%; 50V	C4326 thru 4331	2113741B69	0.1 uF, +/-5%; 50 V
C4214	2113740B73	1000 pF, +/-5%; 50 V	C4332	2311054A09	47 uF, +/-20%; 6 V
C4216	2113741B45	0.01 uF, +/-5%; 50 V	C4333	2113741B69	0.1 uF, +/-5%; 50 V
C4217	0811051A15	0.22 uF, +/-5%; 63 V	C4335,4336	2311049A08	1 uF, +/-10%; 35 V
C4218	2113740B49	100 pF, +/-5%; 50 V	C4337	2113740B49	100 pF, +/-5%; 50 V
C4219	0811051A23	0.056 uF, +/-5%; 1V	C4338	0811051A19	1 uF, +/-5%/-0.5%; 63V
C4220	2311054H04	4.7 uF, +/-10%; 25V	C4339 thru 4341	2113741B69	0.1 uF, +/-5%; 50 V
C4221	0811051A18	0.68 uF, +/-5%; 63V	C4342	0811051A15	0.22 uF, +/-5%; 63 V
C4222	2113741B45	0.01 uF, +/-5%; 50 V	C4343,4344	0811017A01	1000 pF, +/-5%; 50 V
C4223,4224	2113741B69	0.1 uF, +/-5%; 50 V	C4345	2313748G10	10 uF, +/-20%; 50V
C4225	2311049A08	1 uF, +/-10%; 35 V	C4346,4347	0811017A01	1000 pF, +/-5%; 50 V
C4226	2113741B69	0.1 uF, +/-5%; 50 V	diode: (see note)		
C4228 thru 4230	2113741B69	0.1 uF, +/-5%; 50 V	CR4200	4805129M41	Rectifier
C4231	0811051A18	0.68 uF, +/-5%; 63V	CR4204,4205	4805129M41	Rectifier
C4232	2113740B49	100 pF, +/-5%; 50 V	CR4256,4257	4805129M41	Rectifier
C4233	0811051A18	0.68 uF, +/-5%; 63V	CR4262	4805129M41	Rectifier
C4235	2113741B69	0.1 uF, +/-5%; 50 V	CR4284,4285	4805129M41	Rectifier
C4236	2311049A08	1 uF, +/-10%; 35 V	CR4291,4292	4813833C10	0.1A, 70V
C4237	2113741B69	0.1 uF, +/-5%; 50 V	CR4293 thru 4296	4813833D08	1A, 600V
C4238,4239	2382174V01	4.7 uF, +/-20%; 200 V	CR4297,4298	4805129M41	Rectifier
C4240	2113741B69	0.1 uF, +/-5%; 50 V	light emitting diode: (see note)		
C4241	2113740B49	100 pF, +/-5%; 50 V	DS4200	4888245C24	RED
C4243	2113740B49	100 pF, +/-5%; 50 V	DS4201 thru 4203	4888245C23	YEL
C4250,4251	2382174V01	4.7 uF, +/-20%; 200 V	hybrid:		
C4252	2113740B73	1000 pF, +/-5%; 50 V	HY4200	TFN6061A	2175 Hz Bandpass Filter
C4253	0811051A15	0.22 uF, +/-5%; 63 V	HY4201	TFN6056A	2175 Hz Notch Filter
C4254 thru 4257	2113740B49	100 pF, +/-5%; 50 V	connector:		
C4258,4259	2113741B45	0.01 uF, +/-5%; 50 V	J900,901	0984206N01	receptacle: 6-contact
C4260,4261	2311049A08	1 uF, +/-10%; 35 V	J2904	2885155U07	PLUG, Header; 50 contacts
C4262	2113741B69	0.1 uF, +/-5%; 50 V	J2905	2885155U06	PLUG, Header; 40 contacts
C4263 thru 4265	2113741B45	0.01 uF, +/-5%; 50 V	connector:		
C4266,4267	2113741B69	0.1 uF, +/-5%; 50 V	P804	3083139N22	CABLE ASSEMBLY, flat, 34-conductor: includes connector P804
C4268	2113740B60	300 pF, +/-5%; 50V	transistor: (see note)		
C4269	2113741B45	0.01 uF, +/-5%; 50 V	Q4200	4811056A08	PNP
C4270	2113740B78	1500 pF, +/-5 pF; 50V	Q4201	4800869653	type JFET
C4272	2113740B67	560 pF, +/-5%; 50V	Q4202	4813824A10	NPN
C4273	2113740B73	1000 pF, +/-5%; 50 V	Q4205 thru 4208	4813824D17	NPN; 300 V
C4274	2113741B69	0.1 uF, +/-5%; 50 V	Q4218,4219	4813824A10	NPN
C4275	2113740B64	430 pF, +/-5%; 50V	Q4220	4811056A08	PNP
C4276	2113740B49	100 pF, +/-5%; 50 V	Q4224 thru 4226	4813824A10	NPN
C4277	2113741B69	0.1 uF, +/-5%; 50 V	Q4230	4800869653	type JFET
C4278	2113740B74	1200 pF, +/-5%; 50V	Q4231	4813824A10	NPN
C4279	2113740B73	1000 pF, +/-5%; 50 V	Q4234 thru 4237	4811056A08	PNP
C4280	2113741B57	0.033 uF, +/-5%; 50 V	Q4238,4239	4813824A10	NPN
C4281 thru 4283	2113741B69	0.1 uF, +/-5%; 50 V	resistor, fixed:		
C4285	2113741B69	0.1 uF, +/-5%; 50 V	R4200	0611077B35	330K, +/-5%; 1/8 W
C4287	2113741B69	0.1 uF, +/-5%; 50 V	R4201	0611077B11	33K, +/-5%; 1/8 W
C4290,4291	2113741B69	0.1 uF, +/-5%; 50 V	R4202	0611077A98	10K, +/-5%; 1/8 W
C4292,4293	2313748G13	22 uF, +/-20%; 25V			
C4294	2113741B69	0.1 uF, +/-5%; 50 V			
C4298	2113740B49	100 pF, +/-5%; 50 V			
C4300,4301	2113741B69	0.1 uF, +/-5%; 50 V			
C4302	2311049A19	10 uF, +/-10%; 25 V			
C4303	2313748G22	100 uF, +/-20%; 25 V			
C4305	2113740B66	510 pF, +/-5%; 50V			
C4306	2113740B59	270 pF, +/-5%; 50V			
C4307	2113741B45	0.01 uF, +/-5%; 50 V			
C4308,4309	2113740B49	100 pF, +/-5%; 50 V			

TLN3112 TTRC Audio Board Parts List

Reference Symbol	Motorola Part No.	Description
R4203	0611077A90	4.7K, +/-5%; 1/8 W
R4204,4205	0611077B23	100K, +/-5%; 1/8 W
R4206	0611077B33	270K, +/-5%; 1/8W
R4207	0611077B23	100K, +/-5%; 1/8 W
R4209,4210	0611077A98	10K, +/-5%; 1/8 W
R4211	0611077B09	27K, +/-5%; 1/8 W
R4212 thru 4215	0611077B23	100K, +/-5%; 1/8 W
R4216	0611077A98	10K, +/-5%; 1/8 W
R4217	0611077B29	180K, +/-5%; 1/8 W
R4218	0611077A86	3.3K, +/-5%; 1/8 W
R4219	0611077B04	16K, +/-5%; 1/8W
R4220	0611077B29	180K, +/-5%; 1/8 W
R4221	0611077B01	12K, +/-5%; 1/8 W
R4222	0611077A88	3.9K, +/-5%; 1/8 W
R4223	0611077A92	5.6K, +/-5%; 1/8 W
R4226,4227	0611077G81	84.5K, +/-1%; 1/8 W
R4228	0611077A01	0 ohm, +/-5%; 0 W
R4229	0611077A91	5.1K, +/-5%; 1/8 W
R4230	0611077B39	470K, +/-5%; 1/8 W
R4231,4232	0611077B09	27K, +/-5%; 1/8 W
R4233	0611077A84	2.7K, +/-5%; 1/8 W
R4234	0611077B15	47K, +/-5%; 1/8 W
R4237	0611077B01	12K, +/-5%; 1/8 W
R4238	0611077B29	180K, +/-5%; 1/8 W
R4239	0611077G81	84.5K, +/-1%; 1/8 W
R4242	0611077G81	84.5K, +/-1%; 1/8 W
R4243	0611077B23	100K, +/-5%; 1/8 W
R4244	0611077B33	270K, +/-5%; 1/8W
R4245	0611077B23	100K, +/-5%; 1/8 W
R4246	0611077B09	27K, +/-5%; 1/8 W
R4247	0611077B01	12K, +/-5%; 1/8 W
R4248	0611077A70	680 ohms, +/-5%; 1/8 W
R4249	0611077A79	1.6K, +/-5%; 1/8W
R4250	0611077B31	220K, +/-5%; 1/8 W
R4251	0611077B01	12K, +/-5%; 1/8 W
R4252	0611077A80	1.8K, +/-5%; 1/8 W
R4253	0611077B05	18K, +/-5%; 1/8 W
R4254	0611077A91	5.1K, +/-5%; 1/8 W
R4255,4256	0611077B23	100K, +/-5%; 1/8 W
R4257	0611077A98	10K, +/-5%; 1/8 W
R4258	0611077B04	16K, +/-5%; 1/8W
R4260	0611077B21	82K, +/-5%; 1/8W
R4261	0611077A79	1.6K, +/-5%; 1/8W
R4262	0611077B01	12K, +/-5%; 1/8 W
R4263	0611077B09	27K, +/-5%; 1/8 W
R4264	0611077B15	47K, +/-5%; 1/8 W
R4265	0611077A88	3.9K, +/-5%; 1/8 W
R4266	0611077A56	180 ohms, +/-5%; 1/8W
R4267	0611077A74	1K, +/-5%; 1/8 W
R4268	0611077A80	1.8K, +/-5%; 1/8 W
R4269	0611077B07	22K, +/-5%; 1/8 W
R4270	0611077A74	1K, +/-5%; 1/8 W
R4271	0611077B39	470K, +/-5%; 1/8 W
R4272	0611077A50	100 ohms, +/-5%; 1/8 W
R4273	0611077B15	47K, +/-5%; 1/8 W
R4274	0611077A74	1K, +/-5%; 1/8 W
R4275	0611077B15	47K, +/-5%; 1/8 W
R4276	0611077A98	10K, +/-5%; 1/8 W
R4277	0611077B09	27K, +/-5%; 1/8 W
R4278	0611077A88	3.9K, +/-5%; 1/8 W
R4279,4280	0611077B09	27K, +/-5%; 1/8 W
R4281	0611077B15	47K, +/-5%; 1/8 W
R4282	0611077B19	68K, +/-5%; 1/8W
R4283	0611077B15	47K, +/-5%; 1/8 W
R4285,4286	0611077A80	1.8K, +/-5%; 1/8 W
R4287,4288	0611077A76	1.2K, +/-5%; 1/8 W
R4289	0611077A78	1.5K, +/-5%; 1/8 W
R4290	0611077A82	2.2K, +/-5%; 1/8 W
R4291	0611077A81	2K, +/-5%; 1/8 W
R4292	0611077A75	1.1K, +/-5%; 1/8W
R4293	0611077B27	150K, +/-5%; 1/8W
R4294	0611077B03	15K, +/-5%; 1/8 W
R4300	0611077A90	4.7K, +/-5%; 1/8 W
R4301,4302	0611077A80	1.8K, +/-5%; 1/8 W
R4303	0611077A88	3.9K, +/-5%; 1/8 W
R4304,4305	0611077A76	1.2K, +/-5%; 1/8 W
R4306	0611077A86	3.3K, +/-5%; 1/8 W

Reference Symbol	Motorola Part No.	Description
R4307 thru 4310	0611077A50	100 ohms, +/-5%; 1/8 W
R4311 thru 4314	0611077A90	4.7K, +/-5%; 1/8 W
R4315 thru 4320	0611077B29	180K, +/-5%; 1/8 W
R4321,4322	0611077A98	10K, +/-5%; 1/8 W
R4324,4325	0611077A98	10K, +/-5%; 1/8 W
R4327,4328	0611077A98	10K, +/-5%; 1/8 W
R4329	0611077B04	16K, +/-5%; 1/8W
R4330	0611077A98	10K, +/-5%; 1/8 W
R4332	0611077A76	1.2K, +/-5%; 1/8 W
R4333	0611077B05	18K, +/-5%; 1/8 W
R4334	0611077B03	15K, +/-5%; 1/8 W
R4335	0611077A88	3.9K, +/-5%; 1/8 W
R4336	0611077B11	33K, +/-5%; 1/8 W
R4337	0611077A98	10K, +/-5%; 1/8 W
R4338	0611077B03	15K, +/-5%; 1/8 W
R4339	0611077B16	51K, +/-5%; 1/8W
R4340	0611077B18	62K, +/-5%; 1/8 W
R4341	0611077B16	51K, +/-5%; 1/8W
R4342	0611077A95	7.5K, +/-5%; 1/8W
R4343	0611077B31	220K, +/-5%; 1/8 W
R4344,4345	0611077B16	51K, +/-5%; 1/8W
R4346	0611077B26	130K, +/-5%; 1/8W
R4347	0611077B28	160K, +/-5%; 1/8W
R4348	0611077B16	51K, +/-5%; 1/8W
R4349	0611077B23	100K, +/-5%; 1/8 W
R4350	0611077B09	27K, +/-5%; 1/8 W
R4351,4352	0611077B16	51K, +/-5%; 1/8W
R4353	0611077B18	62K, +/-5%; 1/8 W
R4354 thru 4356	0611077A98	10K, +/-5%; 1/8 W
R4358	0611077A98	10K, +/-5%; 1/8 W
R4362	0611077B29	180K, +/-5%; 1/8 W
R4365,4366	0611077B11	33K, +/-5%; 1/8 W
R4367	0611077B29	180K, +/-5%; 1/8 W
R4374,4375	0611077B16	51K, +/-5%; 1/8W
R4380	0611077A69	620 ohms, +/-5%; 1/8 W
R4390	0611077A82	2.2K, +/-5%; 1/8 W
R4391 thru 4393	0611077A56	180 ohms, +/-5%; 1/8W
R4394 thru 4397	0611077A91	5.1K, +/-5%; 1/8 W
R4398	0611077B05	18K, +/-5%; 1/8 W
R4399,4400	0611077B15	47K, +/-5%; 1/8 W
R4401	0611009A41	470 ohms, +/-5%; 1/4W
R4405	0611077B15	47K, +/-5%; 1/8 W
R4406 thru 4409	0611077A98	10K, +/-5%; 1/8 W
R4411	0611077A86	3.3K, +/-5%; 1/8 W
R4412	0611077B01	12K, +/-5%; 1/8 W
R4413	0611077A86	3.3K, +/-5%; 1/8 W
R4414	0611077A92	5.6K, +/-5%; 1/8 W
R4415,4416	0611077B01	12K, +/-5%; 1/8 W
R4417	0611077B47	1 meg, +/-5%; 1/8 W
R4418	0611077B05	18K, +/-5%; 1/8 W
R4420	0611077B23	100K, +/-5%; 1/8 W
R4424	0611077B05	18K, +/-5%; 1/8 W
R4427,4428	0611077B23	100K, +/-5%; 1/8 W
R4429	0611077B04	16K, +/-5%; 1/8W
R4432 thru 4434	0611077B23	100K, +/-5%; 1/8 W
R4435	0611077B07	22K, +/-5%; 1/8 W
R4436	0611077A76	1.2K, +/-5%; 1/8 W
R4437	0611077B23	100K, +/-5%; 1/8 W
R4438	0611077B19	68K, +/-5%; 1/8W
R4439	0611077A82	2.2K, +/-5%; 1/8 W
R4440	0611077B19	68K, +/-5%; 1/8W
R4441	0611077A54	150 ohms, +/-5%; 1/8 W
R4442	0611077B05	18K, +/-5%; 1/8 W
R4443,4444	0611077B23	100K, +/-5%; 1/8 W
R4446	0611077B09	27K, +/-5%; 1/8 W
R4447,4448	0611077A98	10K, +/-5%; 1/8 W
R4449	0611077B15	47K, +/-5%; 1/8 W
R4450	0611077A78	1.5K, +/-5%; 1/8 W
R4451	0611077A70	680 ohms, +/-5%; 1/8 W
R4452,4453	0611077A98	10K, +/-5%; 1/8 W
R4454	0611077A78	1.5K, +/-5%; 1/8 W
R4495	0611077B07	22K, +/-5%; 1/8 W
R4500	0611077B23	100K, +/-5%; 1/8 W
R4502	0611077B23	100K, +/-5%; 1/8 W
R4504	0611077A91	5.1K, +/-5%; 1/8 W
R4505	0611077A68	580 ohms, +/-5%; 1/8 W
R4507	0611077A01	0 ohm, +/-5%; 0 W

TLN3112 TTRC Audio Board Parts List

Reference Symbol	Motorola Part No.	Description
R4508,4509	0611077A98	10K, +/-5%; 1/8 W
R4511	0611077B03	15K, +/-5%; 1/8 W
R4512	0611077B23	100K, +/-5%; 1/8 W
R4513	0611077B31	220K, +/-5%; 1/8 W
R4514	0611077A91	5.1K, +/-5%; 1/8 W
R4515,4516	0611077A90	4.7K, +/-5%; 1/8 W
R4517	0611077A97	9.1K, +/-5%; 1/8 W
R4518	0611077B41	560K, +/-5%; 1/8W
R4519	0611077B09	27K, +/-5%; 1/8 W
R4520	0611077A97	9.1K, +/-5%; 1/8 W
R4521	0611077B41	560K, +/-5%; 1/8W
R4522	0611077B09	27K, +/-5%; 1/8 W
R4523	0611077B31	220K, +/-5%; 1/8 W
R4524	0611077A91	5.1K, +/-5%; 1/8 W
R4525	0611077B03	15K, +/-5%; 1/8 W
switch:		
S4200	4083980R08	toggle: spdt
transformer:		
T4201	2584202A02	Audio Frequency
T4202	2583036L01	Audio Frequency
T4203	2584202A02	Audio Frequency
T4204	2583036L01	Audio Frequency
integrated circuit: (see note)		
U4200 thru 4207	5113819D04	General Purpose Differential Operational Amplifier
U4208	5184621K89	Dual Operational Amplifier
U4209,4210	5113819D04	General Purpose Differential Operational Amplifier
U4211 thru 4217	5182802R24	Digitally Controlled 50K Potentiometer
U4218,4219	5113806D21	analog switching multiplexer
U4220 thru 4224	5184887K60	Triple 2-Channel Analog Mux/Demux
U4225 thru 4228	5184704M19	Hex Level Shifter/Logic Level Converter
U4230 thru 4233	5184621K34	Optical Isolator
U4234	5184887K52	Hex Schmitt Trigger
U4241	5113815J04	555 Timer
U4242	5113806D21	analog switching multiplexer
voltage regulator: (see note)		
VR4200	4883461E25	Zener 6.8V
VR4201	4882479V02	DIODE ZENER 3.3V
VR4214,4215	4882256C03	Zener 4.7V
VR4216	4882256C56	Zener 8.8V
VR4217	4882256C61	Zener 5.8V

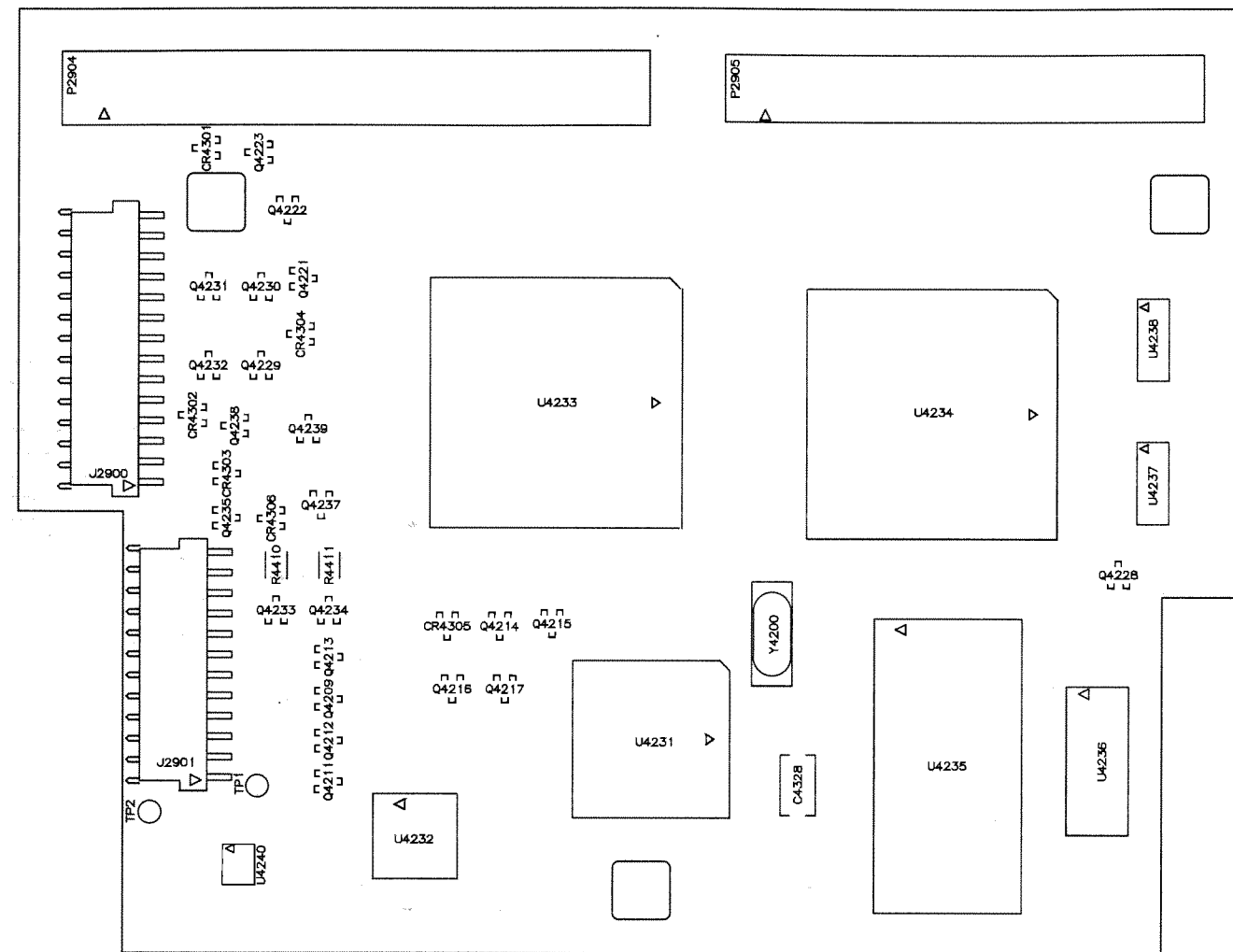
non-referenced items:

TRN7273D	TTRC Audio Board
0984728L01	Shorting Jumper: 2-contact (used with JU4200)
0984728L01	Shorting Jumper: 2-contact (used with JU4201)
0984728L01	Shorting Jumper: 2-contact (used with JU4203)
0984728L01	Shorting Jumper: 2-contact (used with JU4204)
0984728L01	Shorting Jumper: 2-contact (used with JU4205)
0984728L01	Shorting Jumper: 2-contact (used with JU4208)
0984728L01	Shorting Jumper: 2-contact (used with JU4209)
0984728L01	Shorting Jumper: 2-contact (used with JU4211)
0984728L01	Shorting Jumper: 2-contact (used with JU4212)
0984728L01	Shorting Jumper: 2-contact (used with JU4213)
0984728L01	Shorting Jumper: 2-contact (used with JU4214)

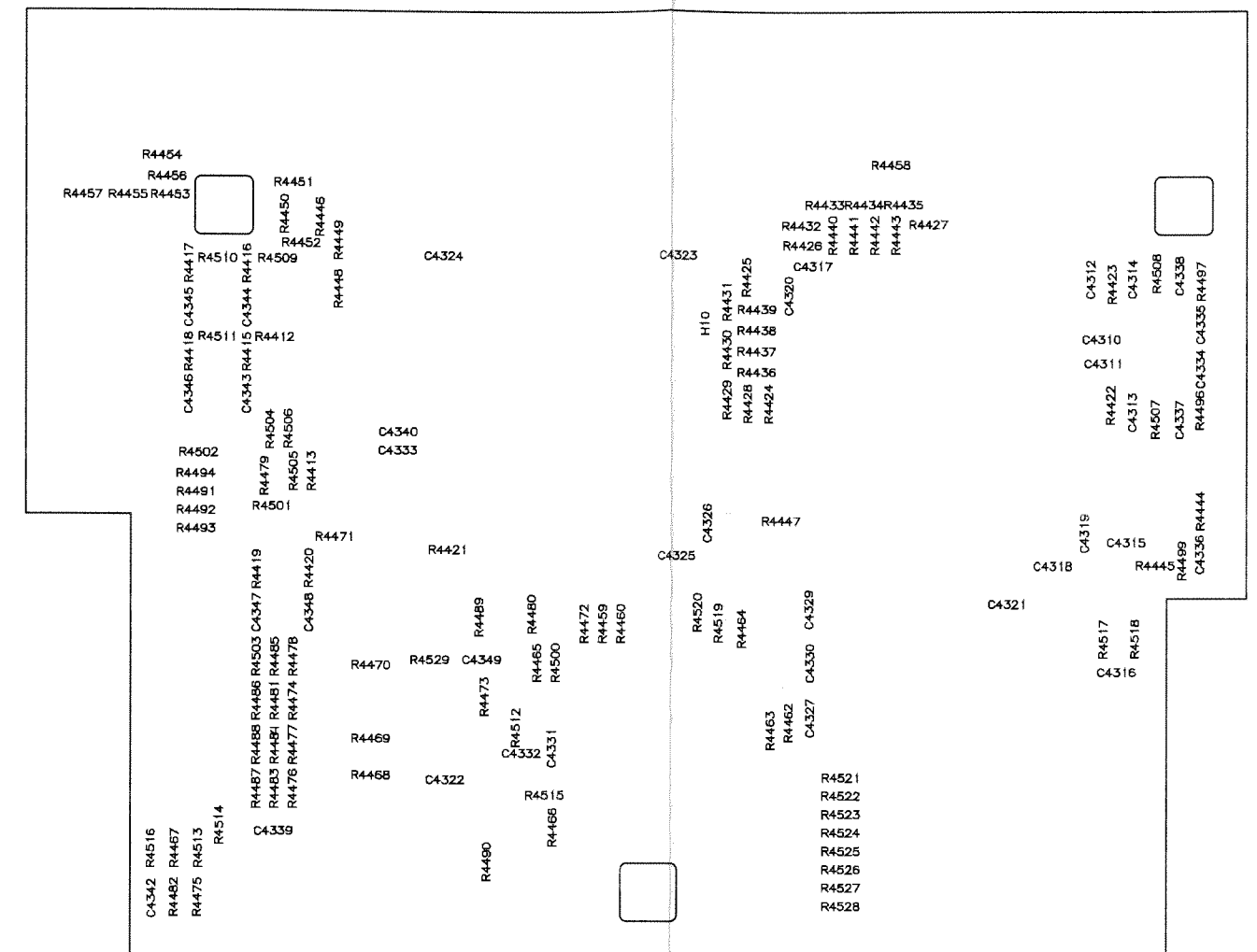
Reference Symbol	Motorola Part No.	Description
	0984728L01	Shorting Jumper: 2-contact (used with JU4217)
	0984728L01	Shorting Jumper: 2-contact (used with JU4218)
	0984728L01	Shorting Jumper: 2-contact (used with JU4222)
	0984728L01	Shorting Jumper: 2-contact (used with JU4226)
	0984728L01	Shorting Jumper: 2-contact (used with JU4227)
	0984728L01	Shorting Jumper: 2-contact (used with JU4228)
	0984728L01	Shorting Jumper: 2-contact (used with JU4229)
	0984728L01	Shorting Jumper: 2-contact (used with JU4230)
	0984728L01	Shorting Jumper: 2-contact (used with JU4231)
	0984728L01	Shorting Jumper: 2-contact (used with JU4370)
	0984728L01	Shorting Jumper: 2-contact (used with JU4371)
	2880001R03	plug: 3-contact (used with JU4200)
	2880001R03	plug: 3-contact (used with JU4201)
	2880001R03	plug: 3-contact (used with JU4203)
	2880001R03	plug: 3-contact (used with JU4204)
	2880001R03	plug: 3-contact (used with JU4205)
	2880001R03	plug: 3-contact (used with JU4208)
	2880001R03	plug: 3-contact (used with JU4209)
	2880001R03	plug: 3-contact (used with JU4211)
	2880001R03	plug: 3-contact (used with JU4212)
	2880001R03	plug: 3-contact (used with JU4213)
	2880001R03	plug: 3-contact (used with JU4214)
	2880001R03	plug: 3-contact (used with JU4217)
	2880001R03	plug: 3-contact (used with JU4218)
	2880001R03	plug: 3-contact (used with JU4222)
	2880001R03	plug: 3-contact (used with JU4226)
	2880001R03	plug: 3-contact (used with JU4227)
	2880001R03	plug: 3-contact (used with JU4228)
	2880001R03	plug: 3-contact (used with JU4229)
	2880001R03	plug: 3-contact (used with JU4230)
	2880001R03	plug: 3-contact (used with JU4231)
	2880001R03	plug: 3-contact (used with JU4370)
	2880001R03	plug: 3-contact (used with JU4371)
	4380054K02	SPACER, support (3 used)
	5483865R01	Label, bar code: 1/4" wide, white
	5484960T01	Label, bar code: 6.3 x 12.7MM, white

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part number.

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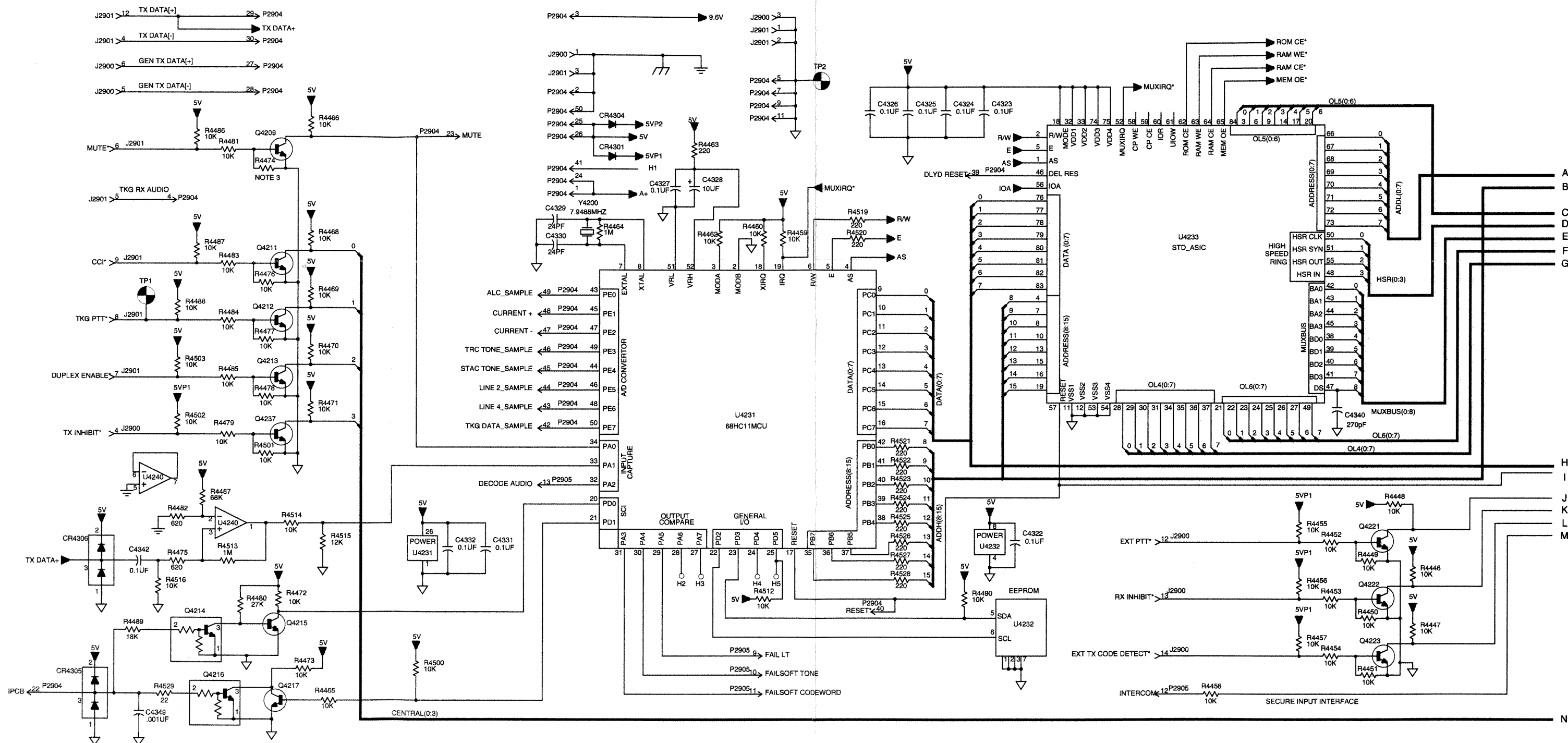


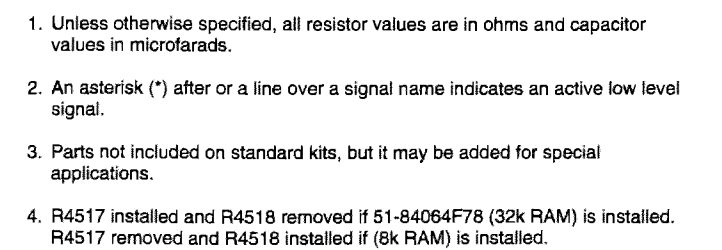
COMPONENT SIDE



SOLDER SIDE

3-50





TLN7754 TTRC Logic Board Parts List

TLN7754 TTRC Logic Board Parts List

Reference Symbol	Motorola Part No.	Description	Reference Symbol	Motorola Part No.	Description
capacitor, fixed:			R4465,4466	0611079A98	10K, +/-5%; 1/10W
C4310	2113741B69	0.1 uF, +/-5%; 50 V	R4467	0611079B19	68K, +/-5%; 1/10W
C4311,4312	2113740A61	180 pF, +/-5%; 50V	R4468 thru 4473	0611079A98	10K, +/-5%; 1/10W
C4313,4314	2113740A75	680 pF, +/-5%; 50V	R4474	0611079A90	4700 ohms, +/-5%; 1/10W
C4315 thru 4319	2113741B69	0.1 uF, +/-5%; 50 V	R4475	0611077A69	620 ohms, +/-5%; 1/8 W
C4320	2113740A75	680 pF, +/-5%; 50V	R4476 thru 4479	0611079A98	10K, +/-5%; 1/10W
C4321 thru 4327	2113741B69	0.1 uF, +/-5%; 50 V	R4480	0611079B09	27K, +/-5%; 1/10W
C4328	2311049A45	10 uF, +/-10%; 35V	R4481	0611079A98	10K, +/-5%; 1/10W
C4329,4330	2113740B34	24 pF, +/-5%; 50V	R4482	0611077A69	620 ohms, +/-5%; 1/8 W
C4331,4332	2113741B69	0.1 uF, +/-5%; 50 V	R4483 thru 4488	0611079A98	10K, +/-5%; 1/10W
C4333	2113740A55	100 pF, +/-5%; 50V	R4489	0611079B05	18K, +/-5%; 1/10W
C4334,4335	2113740A65	270 pF, +/-5%; 50V	R4490 thru 4494	0611079A98	10K, +/-5%; 1/10W
C4336	2113741B69	0.1 uF, +/-5%; 50 V	R4496,4497	0611077G88	100K, +/-1%; 1/8 W
C4337,4338	2113740A77	0.82 pF, +/-5%; 50V	R4499	0611079A90	4700 ohms, +/-5%; 1/10W
C4339	2113741B69	0.1 uF, +/-5%; 50 V	R4500 thru 4505	0611079A98	10K, +/-5%; 1/10W
C4340	2113740A65	270 pF, +/-5%; 50V	R4506	0611079B07	22K, +/-5%; 1/10W
C4342	2113741B69	0.1 uF, +/-5%; 50 V	R4507,4508	0611077G88	100K, +/-1%; 1/8 W
C4343 thru 4349	2113740A79	1000 pF, +/-5%; 50V	R4509 thru 4512	0611079A98	10K, +/-5%; 1/10W
diode: (see note)			R4513	0611079B47	1MEG, +/-5%; 1/10W
CR4301 thru 4304	4813833C10	0.1A, 70V	R4514	0611079A98	10K, +/-5%; 1/10W
CR4305,4306	4813833C05	dual 70V	R4515	0611079B01	12K, +/-5%; 1/10W
connector:			R4516	0611079A98	10K, +/-5%; 1/10W
J2900	2813922B14	PLUG, Header; 14-contact	R4518	0611079A01	0 ohms, +/-5%; 1/10W
J2901	2813922B12	PLUG, Header; 12-contact	R4519 thru 4528	0611079A58	220 ohms, +/-5%; 1/10W
connector:			R4529	0611079A34	22 ohms, +/-5%; 1/10W
P2904	3083139N48	CABLE, Ribbon; 50 pin	integrated circuit: (see note)		
P2905	3083139N47	CABLE, Ribbon; 40 pin	U4231	5113802A01	Micro Computere Unit w/Switch Control Interface
transistor: (see note)			U4232	0980245P01	Low Pass Dual Input Package
Q4209	4813824A10	NPN	U4233,4234	5184494R03	ASIC Station Control
Q4211 thru 4213	4813824A10	NPN	U4235	0980245P07	Socket, IC; 28-contact
Q4214	4884955T01	NPN	U4236	5113804A03	8K x 8 Static Ram
Q4215	4813824A10	NPN	U4237	5113805A41	Synchronous Counter
Q4216	4884955T01	NPN	U4238	5113819A04	Quad Operational Amplifier
Q4217	4813824A10	NPN	U4240	5113818A09	Dual Differential op-amp; MC3358DR2
Q4221 thru 4223	4813824A10	NPN	crystal: (see note)		
Q4228	4813824A10	NPN	Y4200	4883793T06	7.9488 MHZ
Q4229 thru 4234	4884955T01	NPN	non-referenced items:		
Q4235	4813824A10	NPN	2885155U06		PLUG, Header; 40 contacts (used with P2905)
Q4237	4813824A10	NPN	2885155U07		PLUG, Header; 50 contacts (used with P2904)
Q4238	4813824A16	PNP	4380054K01		Spacer, pcb support (3 used)
Q4239	4813824A10	NPN	5191012H80		IC PRGMD EPROM 12H80
resistor, fixed:			5483865R01		Label, bar code: 1/4" wide, white
R4410,4411	0611072A49	1K, +/-5%; 1/4W	5484960T01		Label, bar code: 6.3 x 12.7MM, white
R4412	0611079A98	10K, +/-5%; 1/10W	Note: For optimum performance, diodes, transistors, integrated circuits, and crystals must be ordered by Motorola part number.		
R4413	0611079B09	27K, +/-5%; 1/10W			
R4415 thru 4417	0611079A34	22 ohms, +/-5%; 1/10W			
R4418	0611079A40	39 ohms, +/-5%; 1/10W			
R4419,4420	0611079A34	22 ohms, +/-5%; 1/10W			
R4421	0611079A50	100 ohms, +/-5%; 1/10W			
R4422 thru 4424	0611077G88	100K, +/-1%; 1/8 W			
R4425	0611077H18	200K, +/-1%; 1/8 W			
R4426	0611077G88	100K, +/-1%; 1/8 W			
R4427,4428	0611077H18	200K, +/-1%; 1/8 W			
R4429 thru 4431	0611077G88	100K, +/-1%; 1/8 W			
R4432	0611077H18	200K, +/-1%; 1/8 W			
R4433 thru 4435	0611077G88	100K, +/-1%; 1/8 W			
R4436 thru 4443	0611077H18	200K, +/-1%; 1/8 W			
R4444	0611079B03	15K, +/-5%; 1/10W			
R4445	0611079A84	2700 ohms, +/-5%; 1/10W			
R4446 thru 4460	0611079A98	10K, +/-5%; 1/10W			
R4462	0611079A98	10K, +/-5%; 1/10W			
R4463	0611079A58	220 ohms, +/-5%; 1/10W			
R4464	0611079B47	1MEG, +/-5%; 1/10W			

Secure Board

Table 3-3 lists parts that may or may not be placed on all Secure Boards. Some boards may also use different values for the same component.

Table 3-3 Secure Board Kit Component Values

REFERENCE DEISGNATOR	PARTS NUMBER	TLN3045C	TLN3267A
BT4001	0983662T01	Battery	--
J4001	2813922B06	Connector	--
U4005	0980082P05	IC-CVSD 1	--
U4006	0980082P05	IC-CVSD 2	--
Note: Unless otherwise noted, all resistors are in ohms and all capacitors are in microfarads.			

Secure Board Connectors

Secure Board Connectors

P803

1	SYSTEM GND (AUDIO GND)
2	SYSTEM GND (AUDIO GND)
3	+9.6V
4	SECURE RX AUDIO
5	TX AUDIO
6	RAW TX AUDIO
7	CODED MOD AUDIO
8	LOCAL AUDIO
9	HSR OUT
10	LOGIC GND
11	HSR IN
12	LOGIC GND
13	HSR CLK
14	LOGIC GND
15	HSR SYNC
16	LOGIC GND
17	BD3*
18	BD2*
19	BD1*
20	BD0*
21	BA3
22	BA2
23	BA1
24	BA0
25	DS*
26	SPARE
27	QUAD AUDIO
28	INBOUND MRTI
29	IPCB
30	U/D*
31	INC*
32	CODED MOD CS*
33	EXPANSION RESET*
34	SECURE ALERT TONES
35	SECURE RX CS*
36	SPARE
37	BATTERY GND
38	SPARE
39	+5V
40	SYSTEM GND (AUDIO GND)

J4001

1	CI KEY
2	KID
3	CI WE*
4	CI GND*
5	EXT KR*
6	GND

ASTERISK (*) INDICATES
ACTIVE LOW STATE

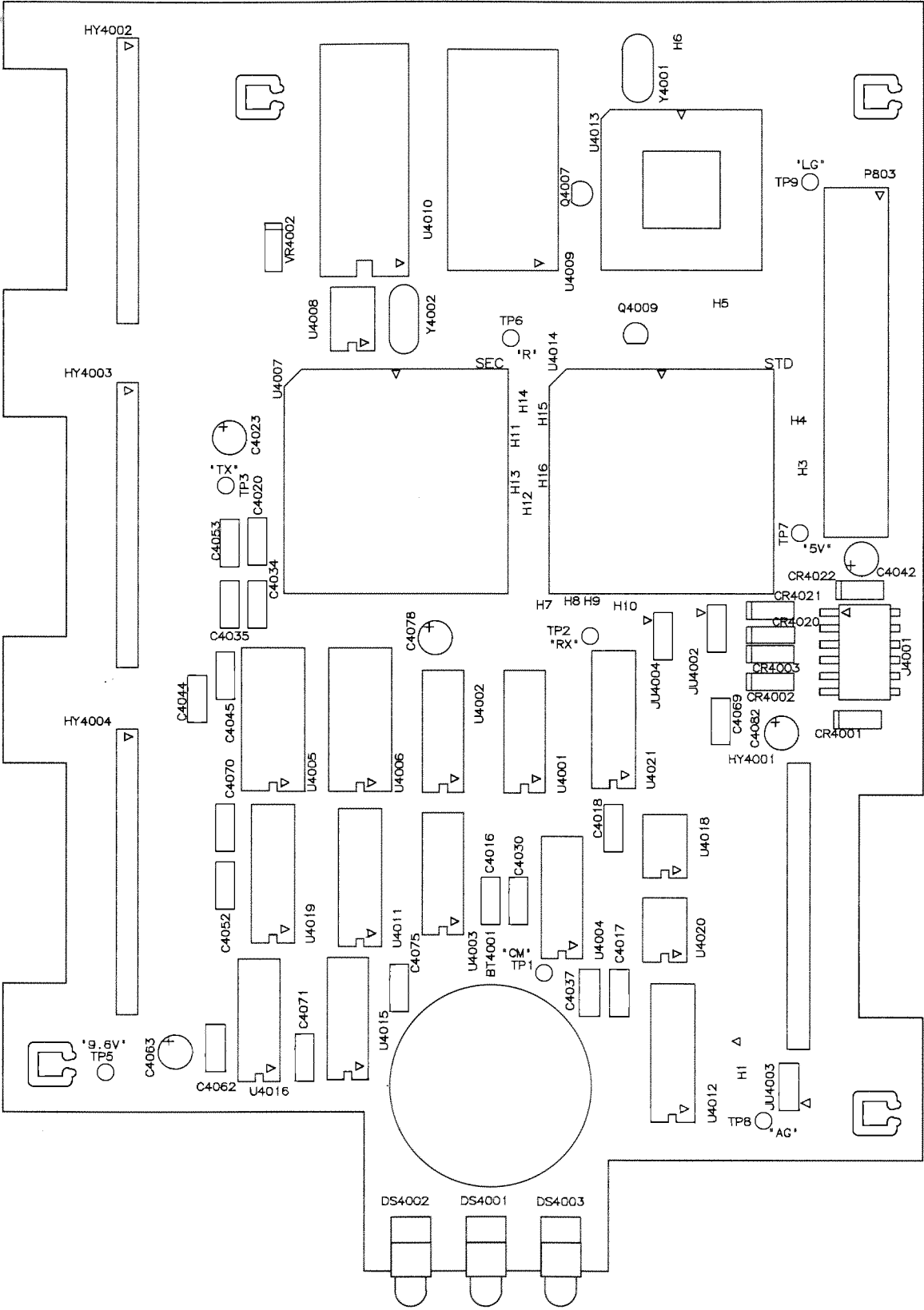
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12	13	10	8	6	4	2	84	82	80	78
14	15									76
16	17									74
18	19									72
20	21									70
22	23									68
24	25									66
26	27									64
28	29									62
30	31									60
32	34	36	38	40	42	44	46	48	50	52
33	35	37	39	41	43	45	47	49	51	53

ASIC SOCKET DETAIL

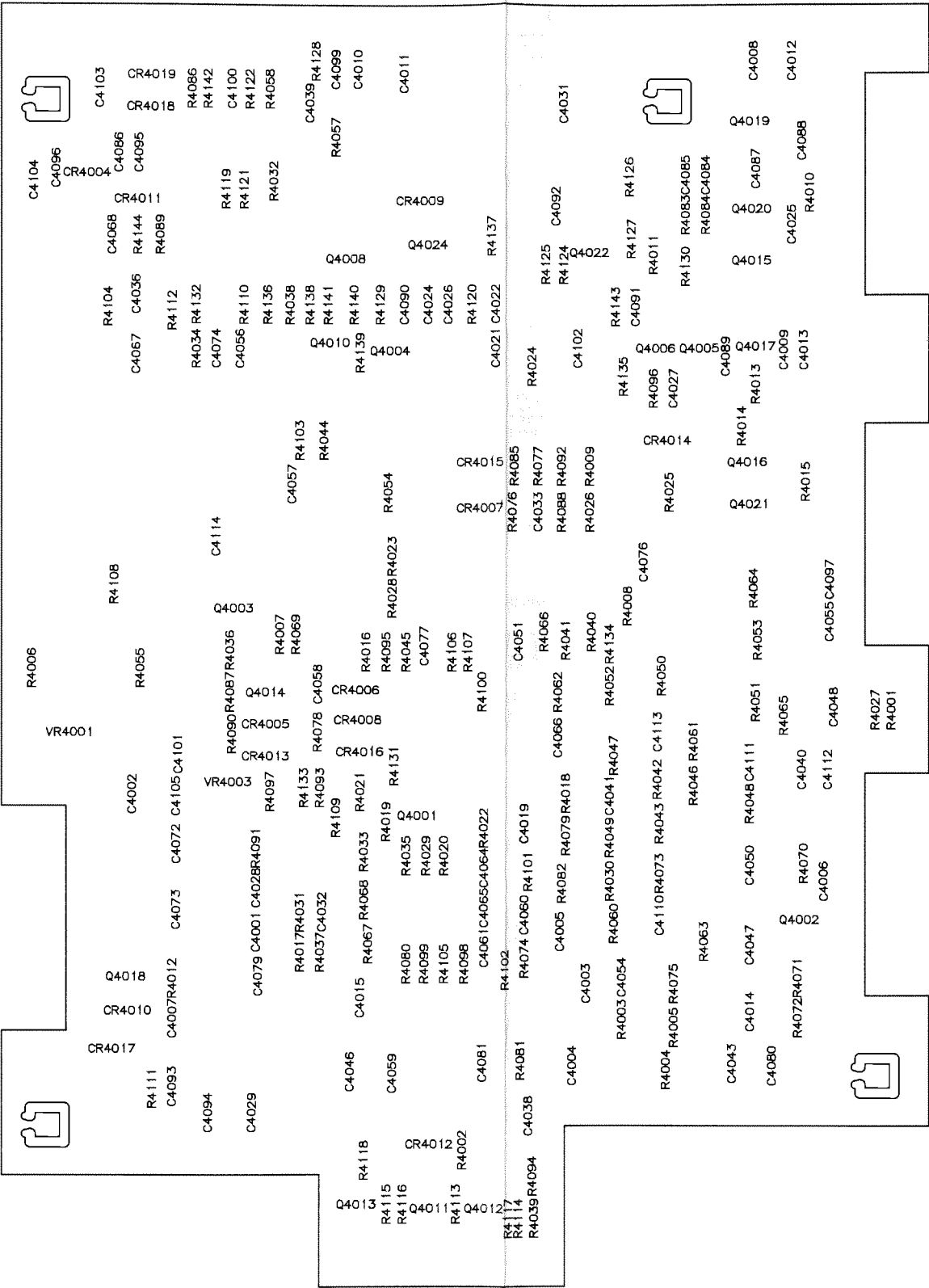
7	5	3	1	51	49	47
8	9	6	4	2	52	50
10	11					48
12	13					46
14	15					45
16	17					44
18	19					43
20	22	24	26	28	30	32
21	23	25	27	29	31	33

μP SOCKET DETAIL

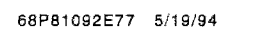
MSF017
D40704KOM



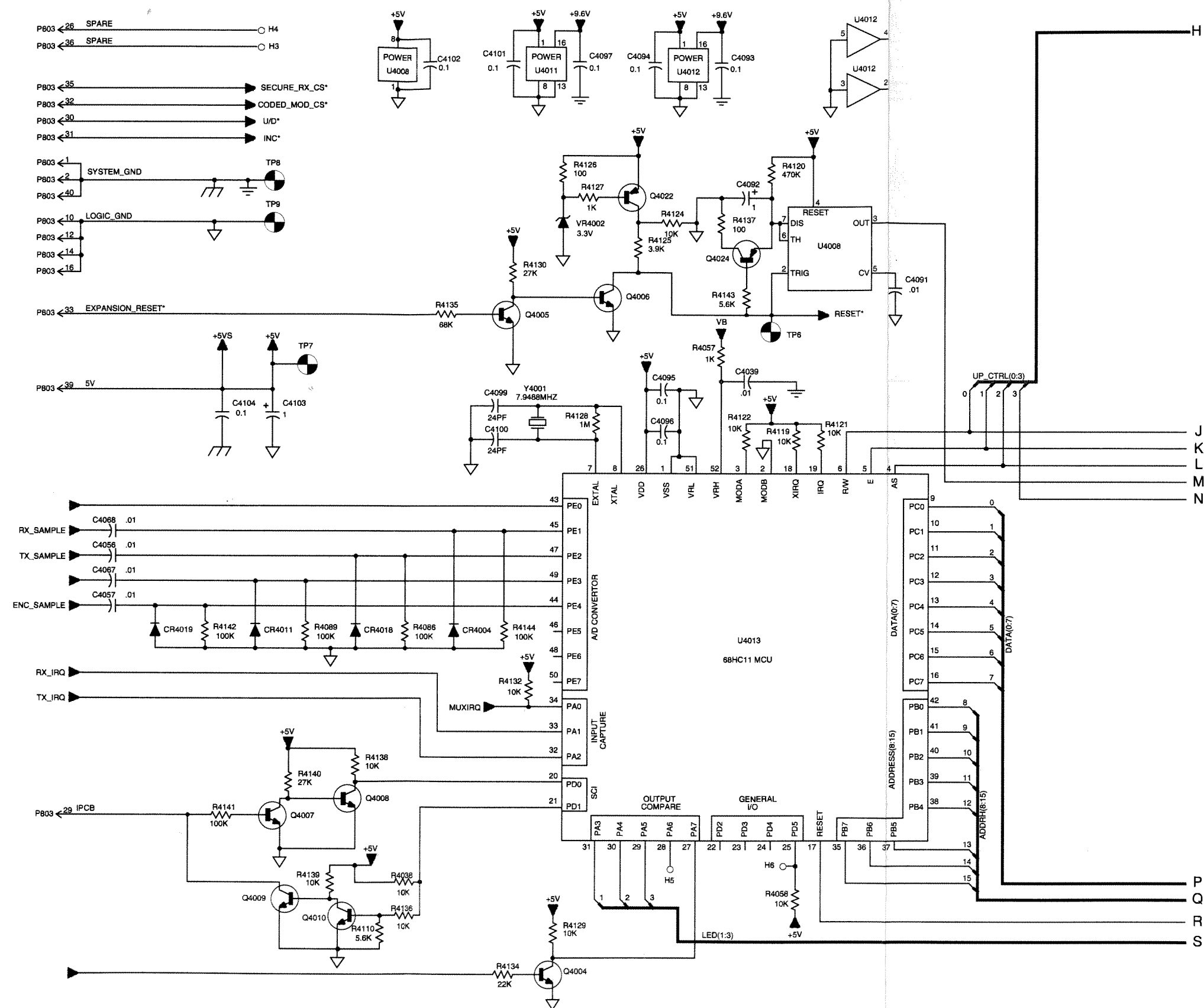
COMPONENT SIDE

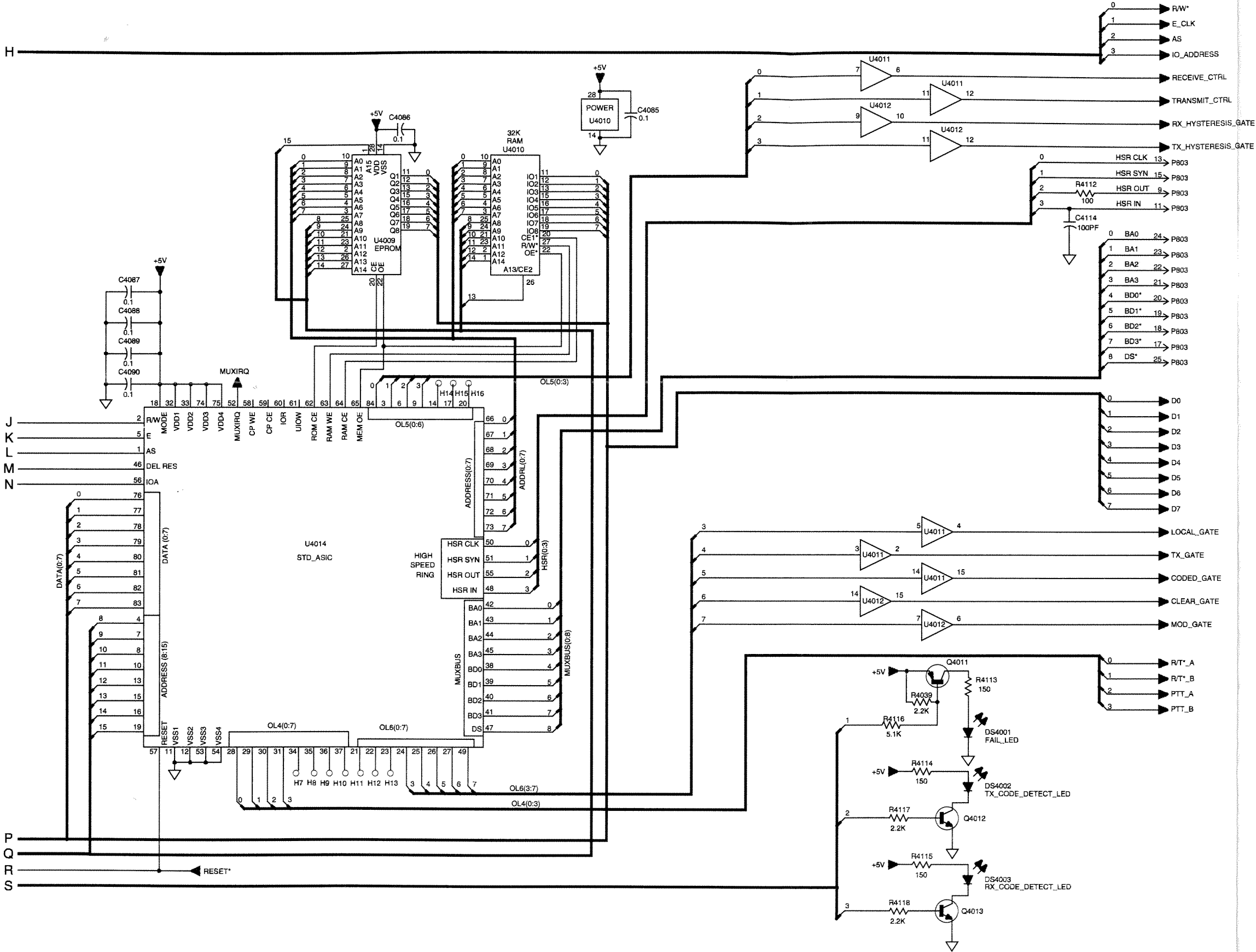


SOLDER SIDE









- NOTES:
1. Unless otherwise specified, all resistor values are in ohms and capacitor values in microfarads.
 2. An asterisk (*) after or a line over a signal name indicates an active low level signal.
 3. Parts not included on standard kits, but it may be added for special applications.

TLN3045 Secure Board Parts List

TLN3045 Secure Board Parts List

Reference Symbol	Motorola Part No.	Description
battery:		
BT4001	0983662T01	SOCKET, contact (3 used)
capacitor, fixed:		
C4001,4002	2113741B69	0.1 uF, +/-5%; 50 V
C4003	2113740B74	1200 pF, +/-5%; 50V
C4004	2113740B80	2200 pF, +/-5%; 50V
C4005	2113741B69	0.1 uF, +/-5%; 50 V
C4006	2113740B61	330 pF, +/-5%; 50V
C4007 thru 4014	2113741B69	0.1 uF, +/-5%; 50 V
C4015	2113740B73	1000 pF, +/-5%; 50 V
C4016	0811017A06	470 pF, +/-5%; 50V
C4017	0811017A07	6800 pF, +/-5%; 50V
C4018	0811051A09	0.022 uF, +/-5%; 63 V
C4019	2113741B69	0.1 uF, +/-5%; 50 V
C4020	0811017A06	470 pF, +/-5%; 50V
C4021,4022	2113740B34	24 pF, +/-5%; 50V
C4023	2313748G13	22 uF, +/-20%; 25V
C4024 thru 4027	2113741B69	0.1 uF, +/-5%; 50 V
C4028	2113740B49	100 pF, +/-5%; 50 V
C4029	2113741B69	0.1 uF, +/-5%; 50 V
C4030	0811051A09	0.022 uF, +/-5%; 63 V
C4031	2311049A19	10 uF, +/-10%; 25 V
C4032	2113740B49	100 pF, +/-5%; 50 V
C4033	2113741B45	0.01 uF, +/-5%; 50 V
C4034,4035	0811051A08	0.015 uF, +/-5%; 63V
C4036	2311049A08	1 uF, +/-10%; 35 V
C4037	0811051A10	0.033 uF, +/-5%; 63V
C4038	2113741B69	0.1 uF, +/-5%; 50 V
C4039	2113741B45	0.01 uF, +/-5%; 50 V
C4040,4041	2113740B80	2200 pF, +/-5%; 50V
C4042	2313748G13	22 uF, +/-20%; 25V
C4043	2113741B69	0.1 uF, +/-5%; 50 V
C4044,4045	0811051A08	0.015 uF, +/-5%; 63V
C4046 thru 4048	2311049A08	1 uF, +/-10%; 35 V
C4050,4051	2311049A08	1 uF, +/-10%; 35 V
C4052,4053	0811051A09	0.022 uF, +/-5%; 63 V
C4054,4055	2113741B69	0.1 uF, +/-5%; 50 V
C4056,4057	2113741B45	0.01 uF, +/-5%; 50 V
C4058	2113740B73	1000 pF, +/-5%; 50 V
C4059	2311049A08	1 uF, +/-10%; 35 V
C4060	2113740B73	1000 pF, +/-5%; 50 V
C4061	2113740B49	100 pF, +/-5%; 50 V
C4062	0811051A23	0.056 uF, +/-5%; 1V
C4063	2313748G13	22 uF, +/-20%; 25V
C4064	2113740B80	2200 pF, +/-5%; 50V
C4065	2113740B49	100 pF, +/-5%; 50 V
C4066	2113740B61	330 pF, +/-5%; 50V
C4067,4068	2113741B45	0.01 uF, +/-5%; 50 V
C4069	0811017A05	3300 pF, +/-5%; 50V
C4070	0811051A10	0.033 uF, +/-5%; 63V
C4071	0811017A06	470 pF, +/-5%; 50V
C4072	2113741B69	0.1 uF, +/-5%; 50 V
C4073	2311049A08	1 uF, +/-10%; 35 V
C4074	2113740B80	2200 pF, +/-5%; 50V
C4075	0811017A07	6800 pF, +/-5%; 50V
C4076	2113741B69	0.1 uF, +/-5%; 50 V
C4077	2113740B49	100 pF, +/-5%; 50 V
C4078	2313748G08	10 uF, +/-20%; 16 V
C4079	2113740B49	100 pF, +/-5%; 50 V
C4080	2113741B69	0.1 uF, +/-5%; 50 V
C4081	2311049A19	10 uF, +/-10%; 25 V
C4082	2313748G13	22 uF, +/-20%; 25V
C4084	2113741B45	0.01 uF, +/-5%; 50 V
C4085 thru 4090	2113741B69	0.1 uF, +/-5%; 50 V
C4091	2113741B45	0.01 uF, +/-5%; 50 V
C4092	2311049A08	1 uF, +/-10%; 35 V
C4093 thru 4097	2113741B69	0.1 uF, +/-5%; 50 V
C4099,4100	2113740B34	24 pF, +/-5%; 50V
C4101,4102	2113741B69	0.1 uF, +/-5%; 50 V
C4103	2311049A08	1 uF, +/-10%; 35 V

Reference Symbol	Motorola Part No.	Description
C4104	2113741B69	0.1 uF, +/-5%; 50 V
C4105	2113741B45	0.01 uF, +/-5%; 50 V
C4110 thru 4114	2113740B49	100 pF, +/-5%; 50 V
diode: (see note)		
CR4001 thru 4003	4883654H01	silicon
CR4004 thru 4019	4805129M41	Rectifier
CR4020 thru 4022	4883654H01	silicon
light emitting diode: (see note)		
DS4001	4888245C24	RED
DS4002,4003	4888245C23	YEL
connector:		
J4001	2813922B06	HDR 6 POS RT.1 CTR GLD PLTD
jumper:		
JU4002 thru 4004	0984181L01	SHORTING JUMPER: 2-contact
connector:		
P803	3083139N23	CABLE ASSEMBLY, flat, 40-conductor: includes connector P803
transistor: (see note)		
Q4001 thru 4006	4813824A10	NPN
Q4007	4813824D06	NPN
Q4008	4813824A10	NPN
Q4009	4813824D06	NPN
Q4010	4813824A10	NPN
Q4011	4811056A08	PNP
Q4012 thru 4021	4813824A10	NPN
Q4022	4811056A08	PNP
Q4024	4811056A08	PNP
resistor, fixed:		
R4001	0611077B07	22K, +/-5%; 1/8 W
R4002	0611077A74	1K, +/-5%; 1/8 W
R4003	0611077A92	5.6K, +/-5%; 1/8W
R4004	0611077B05	18K, +/-5%; 1/8 W
R4005	0611077A96	8.2K, +/-5%; 1/8 W
R4006	0611077A50	100 ohms, +/-5%; 1/8 W
R4007	0611077A98	10K, +/-5%; 1/8 W
R4008	0611077B03	15K, +/-5%; 1/8 W
R4009 thru 4016	0611077A98	10K, +/-5%; 1/8 W
R4017	0611077A92	5.6K, +/-5%; 1/8W
R4018	0611077B31	220K, +/-5%; 1/8 W
R4019	0611077B03	15K, +/-5%; 1/8 W
R4020	0611077B07	22K, +/-5%; 1/8 W
R4021	0611077A92	5.6K, +/-5%; 1/8W
R4022	0611077B23	100K, +/-5%; 1/8 W
R4023	0611077A94	6.8K, +/-5%; 1/8W
R4024	0611077B47	1 meg, +/-5%; 1/8 W
R4025	0611077B11	33K, +/-5%; 1/8 W
R4026	0611077B31	220K, +/-5%; 1/8 W
R4027	0611077B07	22K, +/-5%; 1/8 W
R4028	0611077A98	10K, +/-5%; 1/8 W
R4029	0611077A92	5.6K, +/-5%; 1/8W
R4030	0611077B07	22K, +/-5%; 1/8 W
R4031	0611077A91	5.1K, +/-5%; 1/6W
R4032	0611077A98	10K, +/-5%; 1/8 W
R4033	0611077B03	15K, +/-5%; 1/8 W
R4034	0611077B15	47K, +/-5%; 1/8 W
R4035	0611077B07	22K, +/-5%; 1/8 W
R4036	0611077A50	100 ohms, +/-5%; 1/8 W
R4037	0611077B07	22K, +/-5%; 1/8 W
R4038	0611077A98	10K, +/-5%; 1/8 W
R4039	0611077A92	2.2K, +/-5%; 1/8 W
R4040,4041	0611077A98	10K, +/-5%; 1/8 W
R4042,4043	0611077B31	220K, +/-5%; 1/8 W

TLN3045 Secure Board Parts List

Reference Symbol	Motorola Part No.	Description
R4044	0611077A82	2.2K, +/-5%; 1/8 W
R4045	0611077B15	47K, +/-5%; 1/8 W
R4046 thru 4050	0611077B39	470K, +/-5%; 1/8 W
R4051	0611077B13	39K, +/-5%; 1/8 W
R4052	0611077B39	470K, +/-5%; 1/8 W
R4053	0611077B13	39K, +/-5%; 1/8 W
R4054	0611077A98	10K, +/-5%; 1/8 W
R4055	0611077A01	0 ohm, +/-5%; 0 W
R4057	0611077A74	1K, +/-5%; 1/8 W
R4058	0611077A98	10K, +/-5%; 1/8 W
R4060	0611077B39	470K, +/-5%; 1/8 W
R4061,4062	0611077A94	6.8K, +/-5%; 1/8W
R4063,4064	0611077B09	27K, +/-5%; 1/8 W
R4065,4066	0611077B25	120K, +/-5%; 1/8W
R4067	0611077A74	1K, +/-5%; 1/8 W
R4068	0611077B15	47K, +/-5%; 1/8 W
R4069	0611077B02	13K, +/-5%; 1/8W
R4070	0611077A98	10K, +/-5%; 1/8 W
R4071	0611077A92	5.6K, +/-5%; 1/8W
R4072	0611077B07	22K, +/-5%; 1/8 W
R4073	0611077B39	470K, +/-5%; 1/8 W
R4074	0611077A88	3.9K, +/-5%; 1/8 W
R4075	0611077B03	15K, +/-5%; 1/8 W
R4076,4077	0611077B15	47K, +/-5%; 1/8 W
R4078	0611077B07	22K, +/-5%; 1/8 W
R4079	0611077A74	1K, +/-5%; 1/8 W
R4080	0611077B15	47K, +/-5%; 1/8 W
R4081	0611077B02	13K, +/-5%; 1/8W
R4082 thru 4084	0611077A82	2.2K, +/-5%; 1/8 W
R4085	0611077B15	47K, +/-5%; 1/8 W
R4086	0611077B23	100K, +/-5%; 1/8 W
R4087	0611077B05	18K, +/-5%; 1/8 W
R4088	0611077B15	47K, +/-5%; 1/8 W
R4089	0611077B23	100K, +/-5%; 1/8 W
R4090	0611077A96	8.2K, +/-5%; 1/8 W
R4091	0611077B23	100K, +/-5%; 1/8 W
R4092	0611077B15	47K, +/-5%; 1/8 W
R4093	0611077B09	27K, +/-5%; 1/8 W
R4094	0611077A26	10 ohms, +/-5%; 1/8 W
R4095,4096	0611077B15	47K, +/-5%; 1/8 W
R4097	0611077B09	27K, +/-5%; 1/8 W
R4098	0611077A78	1.5K, +/-5%; 1/8W
R4099	0611077B10	30K, +/-5%; 1/8W
R4100	0611077A78	1.5K, +/-5%; 1/8W
R4101	0611077B13	39K, +/-5%; 1/8 W
R4102	0611077B01	12K, +/-5%; 1/8W
R4103	0611077A92	5.6K, +/-5%; 1/8W
R4104	0611077B08	24K, +/-5%; 1/8W
R4105	0611077B09	27K, +/-5%; 1/8 W
R4106,4107	0611077A98	10K, +/-5%; 1/8 W
R4108,4109	0611077B09	27K, +/-5%; 1/8 W
R4110	0611077A92	5.6K, +/-5%; 1/8W
R4111	0611077B09	27K, +/-5%; 1/8 W
R4112	0611077A50	100 ohms, +/-5%; 1/8 W
R4113 thru 4115	0611077A54	150 ohms, +/-5%; 1/8 W
R4116	0611077A91	5.1K, +/-5%; 1/8W
R4117,4118	0611077A82	2.2K, +/-5%; 1/8 W
R4119	0611077A98	10K, +/-5%; 1/8 W
R4120	0611077B39	470K, +/-5%; 1/8 W
R4121,4122	0611077A98	10K, +/-5%; 1/8 W
R4124	0611077A98	10K, +/-5%; 1/8 W
R4125	0611077A88	3.9K, +/-5%; 1/8 W
R4126	0611077A50	100 ohms, +/-5%; 1/8 W
R4127	0611077A74	1K, +/-5%; 1/8 W
R4128	0611077B47	1 meg, +/-5%; 1/8 W
R4129	0611077A98	10K, +/-5%; 1/8 W
R4130	0611077B09	27K, +/-5%; 1/8 W
R4131	0611077B11	33K, +/-5%; 1/8 W
R4132	0611077A98	10K, +/-5%; 1/8 W
R4133	0611077A92	5.6K, +/-5%; 1/8W
R4134	0611077B07	22K, +/-5%; 1/8 W
R4135	0611077B19	68K, +/-5%; 1/8W
R4136	0611077A98	10K, +/-5%; 1/8 W
R4137	0611077A50	100 ohms, +/-5%; 1/8 W
R4138,4139	0611077A98	10K, +/-5%; 1/8 W
R4140	0611077B09	27K, +/-5%; 1/8 W
R4141,4142	0611077B23	100K, +/-5%; 1/8 W

Reference Symbol	Motorola Part No.	Description
R4143	0611077A92	5.6K, +/-5%; 1/8W
R4144	0611077B23	100K, +/-5%; 1/8 W
integrated circuit: (see note)		
U4001 thru 4004	5113819D04	General Purpose Differential Operational Amplifier
U4005,4006	0980082P05	SOCKET, IC: 18-contact
U4007	5184494R04	ASIC Encryption
U4008	5113815J04	555 Timer
U4009	5191012H65	Programmed 64Kx8 Bit UV EPROM
U4010	5184064F76	Static 32Kx8 Bit RAM
U4011,4012	5184704M19	Hex Level Shifter/Logic Level Converter
U4013	5113802A01	Micro Computere Unit w/Switch Control Interface
U4014	5184494R03	ASIC Station Control
U4015,4016	5113806D21	analog switching multiplexer
U4018	5182802R24	Digitally Controlled 50K Potentiometer
U4019	5183977M42	Capacitor Switched Filter
U4020	5182802R24	Digitally Controlled 50K Potentiometer
U4021	5184887K26	Analog Mux/Demux
voltage regulator: (see note)		
VR4001	4813830A16	DIODE 6.0V 5% 225MW MMBZ5233B_
VR4002	4882479V02	DIODE ZENER 3.3V
VR4003	4813830A16	DIODE 6.0V 5% 225MW MMBZ5233B_
crystal: (see note)		
Y4001	4880113K04	7.948 MHZ
Y4002	4882611M12	3.072 MHZ
non-referenced items:		
	TRN9999C	Secure Module
	TVN6057A	Secure Software
	0982449T01	SOCKET, IC: 52-contact (used with U4013)
	0982449T03	SOCKET, IC: 84-contact (used with U4007)
	0982449T03	SOCKET, IC: 84-contact (used with U4014)
	0982483T01	SOCKET, IC: 18-contact (used with HY4001)
	0982483T01	SOCKET, IC: 18-contact (used with HY4002)
	0982483T01	SOCKET, IC: 18-contact (used with HY4003)
	0982483T01	SOCKET, IC: 18-contact (used with HY4004)
	0982483T02	SOCKET, IC: 16-contact (used with HY4001)
	0982483T02	SOCKET, IC: 16-contact (used with HY4002)
	0982483T02	SOCKET, IC: 16-contact (used with HY4003)
	0982483T02	SOCKET, IC: 16-contact (used with HY4004)
	0982808R10	Socket, IC: 28-contact (used with U4009)
	0984728L01	Shorting Jumper: 2-contact (3 used)
	1485334U01	INSULATOR RUBBER (SILICON) (2 used)
	2880001R03	plug: 3-contact (3 used)
	4380054K01	Spacer, pcb support (4 used)
	5483865R01	Label, bar code: 1/4" wide, white
	5484960T01	Label, bar code: 6.3 x 12.7MM, white

Note: For optimum performance, diodes, transistors, integrated circuits, and crystals must be ordered by Motorola part number.

TLN3267 Secure Board Parts List

TLN3267 Secure Board Parts List

Reference Symbol	Motorola Part No.	Description
capacitor, fixed:		
C4001,4002	2113741B69	0.1 uF, +/-5%; 50 V
C4003	2113740B74	1200 pF, +/-5%; 50V
C4004	2113740B80	2200 pF, +/-5%; 50V
C4005	2113741B69	0.1 uF, +/-5%; 50 V
C4006	2113740B61	330 pF, +/-5%; 50V
C4007 thru 4014	2113741B69	0.1 uF, +/-5%; 50 V
C4015	2113740B73	1000 pF, +/-5%; 50 V
C4016	0811017A06	470 pF, +/-5%; 50V
C4017	0811017A07	6800 pF, +/-5%; 50V
C4018	0811051A09	0.022 uF, +/-5%; 63 V
C4019	2113741B69	0.1 uF, +/-5%; 50 V
C4020	0811017A06	470 pF, +/-5%; 50V
C4021,4022	2113740B34	24 pF, +/-5%; 50V
C4023	2313748G13	22 uF, +/-20%; 25V
C4024 thru 4027	2113741B69	0.1 uF, +/-5%; 50 V
C4028	2113740B49	100 pF, +/-5%; 50 V
C4029	2113741B69	0.1 uF, +/-5%; 50 V
C4030	0811051A09	0.022 uF, +/-5%; 63 V
C4031	2311049A19	10 uF, +/-10%; 25 V
C4032	2113740B49	100 pF, +/-5%; 50 V
C4033	2113741B45	0.01 uF, +/-5%; 50 V
C4034,4035	0811051A08	0.015 uF, +/-5%; 63V
C4036	2311049A08	1 uF, +/-10%; 35 V
C4037	0811051A10	0.033 uF, +/-5%; 63V
C4038	2113741B69	0.1 uF, +/-5%; 50 V
C4039	2113741B45	0.01 uF, +/-5%; 50 V
C4040,4041	2113740B80	2200 pF, +/-5%; 50V
C4042	2313748G13	22 uF, +/-20%; 25V
C4043	2113741B69	0.1 uF, +/-5%; 50 V
C4044,4045	0811051A08	0.015 uF, +/-5%; 63V
C4046 thru 4048	2311049A08	1 uF, +/-10%; 35 V
C4050,4051	2311049A08	1 uF, +/-10%; 35 V
C4052,4053	0811051A09	0.022 uF, +/-5%; 63 V
C4054,4055	2113741B69	0.1 uF, +/-5%; 50 V
C4056,4057	2113741B45	0.01 uF, +/-5%; 50 V
C4058	2113740B73	1000 pF, +/-5%; 50 V
C4059	2311049A08	1 uF, +/-10%; 35 V
C4060	2113740B73	1000 pF, +/-5%; 50 V
C4061	2113740B49	100 pF, +/-5%; 50 V
C4062	0811051A23	0.056 uF, +/-5%; 1V
C4063	2313748G13	22 uF, +/-20%; 25V
C4064	2113740B80	2200 pF, +/-5%; 50V
C4065	2113740B49	100 pF, +/-5%; 50 V
C4066	2113740B61	330 pF, +/-5%; 50V
C4067,4068	2113741B45	0.01 uF, +/-5%; 50 V
C4069	0811017A05	3300 pF, +/-5%; 50V
C4070	0811051A10	0.033 uF, +/-5%; 63V
C4071	0811017A06	470 pF, +/-5%; 50V
C4072	2113741B69	0.1 uF, +/-5%; 50 V
C4073	2311049A08	1 uF, +/-10%; 35 V
C4074	2113740B80	2200 pF, +/-5%; 50V
C4075	0811017A07	6800 pF, +/-5%; 50V
C4076	2113741B69	0.1 uF, +/-5%; 50 V
C4077	2113740B49	100 pF, +/-5%; 50 V
C4078	2313748G08	10 uF, +/-20%; 16 V
C4079	2113740B49	100 pF, +/-5%; 50 V
C4080	2113741B69	0.1 uF, +/-5%; 50 V
C4081	2311049A19	10 uF, +/-10%; 25 V
C4082	2313748G13	22 uF, +/-20%; 25V
C4084	2113741B45	0.01 uF, +/-5%; 50 V
C4085 thru 4090	2113741B69	0.1 uF, +/-5%; 50 V
C4091	2113741B45	0.01 uF, +/-5%; 50 V
C4092	2311049A08	1 uF, +/-10%; 35 V
C4093 thru 4097	2113741B69	0.1 uF, +/-5%; 50 V
C4099,4100	2113740B34	24 pF, +/-5%; 50V
C4101,4102	2113741B69	0.1 uF, +/-5%; 50 V
C4103	2311049A08	1 uF, +/-10%; 35 V
C4104	2113741B69	0.1 uF, +/-5%; 50 V
C4105	2113741B45	0.01 uF, +/-5%; 50 V
C4110 thru 4114	2113740B49	100 pF, +/-5%; 50 V

Reference Symbol	Motorola Part No.	Description
		diode: (see note)
CR4001 thru 4003	4883654H01	silicon
CR4004 thru 4019	4805129M41	Rectifier
CR4020 thru 4022	4883654H01	silicon
		light emitting diode: (see note)
DS4001	4888245C24	RED
DS4002,4003	4888245C23	YEL
		jumper:
JU4002 thru 4004	0984181L01	SHORTING JUMPER: 2-contact
		connector:
P803	3083139N23	CABLE ASSEMBLY, flat, 40-conductor: includes connector P803
		transistor: (see note)
Q4001 thru 4006	4813824A10	NPN
Q4007	4813824D06	NPN
Q4008	4813824A10	NPN
Q4009	4813824D06	NPN
Q4010	4813824A10	NPN
Q4011	4811056A08	PNP
Q4012 thru 4021	4813824A10	NPN
Q4022	4811056A08	PNP
Q4024	4811056A08	PNP
		resistor, fixed:
R4001	0611077B07	22K, +/-5%; 1/8 W
R4002	0611077A74	1K, +/-5%; 1/8 W
R4003	0611077A92	5.6K, +/-5%; 1/8W
R4004	0611077B05	18K, +/-5%; 1/8 W
R4005	0611077A96	8.2K, +/-5%; 1/8 W
R4006	0611077A50	100 ohms, +/-5%; 1/8 W
R4007	0611077A98	10K, +/-5%; 1/8 W
R4008	0611077B03	15K, +/-5%; 1/8 W
R4009 thru 4016	0611077A98	10K, +/-5%; 1/8 W
R4017	0611077A92	5.6K, +/-5%; 1/8W
R4018	0611077B31	220K, +/-5%; 1/8 W
R4019	0611077B03	15K, +/-5%; 1/8 W
R4020	0611077B07	22K, +/-5%; 1/8 W
R4021	0611077A92	5.6K, +/-5%; 1/8W
R4022	0611077B23	100K, +/-5%; 1/8 W
R4023	0611077A94	6.8K, +/-5%; 1/8W
R4024	0611077B47	1 meg, +/-5%; 1/8 W
R4025	0611077B11	33K, +/-5%; 1/8 W
R4026	0611077B31	220K, +/-5%; 1/8 W
R4027	0611077B07	22K, +/-5%; 1/8 W
R4028	0611077A98	10K, +/-5%; 1/8 W
R4029	0611077A92	5.6K, +/-5%; 1/8W
R4030	0611077B07	22K, +/-5%; 1/8 W
R4031	0611077A91	5.1K, +/-5%; 1/8W
R4032	0611077A98	10K, +/-5%; 1/8 W
R4033	0611077B03	15K, +/-5%; 1/8 W
R4034	0611077B15	47K, +/-5%; 1/8 W
R4035	0611077B07	22K, +/-5%; 1/8 W
R4036	0611077A50	100 ohms, +/-5%; 1/8 W
R4037	0611077B07	22K, +/-5%; 1/8 W
R4038	0611077A98	10K, +/-5%; 1/8 W
R4039	0611077A82	2.2K, +/-5%; 1/8 W
R4040,4041	0611077A98	10K, +/-5%; 1/8 W
R4042,4043	0611077B31	220K, +/-5%; 1/8 W
R4044	0611077A82	2.2K, +/-5%; 1/8 W
R4045	0611077B15	47K, +/-5%; 1/8 W
R4046 thru 4050	0611077B39	470K, +/-5%; 1/8 W
R4051	0611077B13	39K, +/-5%; 1/8 W
R4052	0611077B39	470K, +/-5%; 1/8 W
R4053	0611077B13	39K, +/-5%; 1/8 W
R4054	0611077A98	10K, +/-5%; 1/8 W

TLN3267 Secure Board Parts List

Reference Symbol	Motorola Part No.	Description	Reference Symbol	Motorola Part No.	Description
R4055	0611077A01	0 ohm, +/-5%; 0 W			integrated circuit: (see note)
R4057	0611077A74	1K, +/-5%; 1/8 W	U4001 thru 4004	5113819D04	General Purpose Differential Operational Amplifier
R4058	0611077A98	10K, +/-5%; 1/8 W	U4007	5184494R04	ASIC Encryption
R4060	0611077B39	470K, +/-5%; 1/8 W	U4008	5113815J04	555 Timer
R4061,4062	0611077A94	6.8K, +/-5%; 1/8W	U4009	5191012H65	Programmed 64Kx8 Bit UV EPROM
R4063,4064	0611077B09	27K, +/-5%; 1/8 W	U4010	5184064F76	Static 32Kx8 Bit RAM
R4065,4066	0611077B25	120K, +/-5%; 1/8W	U4011,4012	5184704M19	Hex Level Shifter/Logic Level Converter
R4067	0611077A74	1K, +/-5%; 1/8 W	U4013	5113802A01	Micro Computere Unit w/Switch Control Interface
R4068	0611077B15	47K, +/-5%; 1/8 W	U4014	5184494R03	ASIC Station Control
R4069	0611077B02	13K, +/-5%; 1/8W	U4015,4016	5113806D21	analog switching multiplexer
R4070	0611077A98	10K, +/-5%; 1/8 W	U4018	5182802R24	Digitally Controlled 50K Potentiometer
R4071	0611077A92	5.6K, +/-5%; 1/8W	U4019	5183977M42	Capacitor Switched Filter
R4072	0611077B07	22K, +/-5%; 1/8 W	U4020	5182802R24	Digitally Controlled 50K Potentiometer
R4073	0611077B39	470K, +/-5%; 1/8 W	U4021	5184887K26	Analog Mux/Demux
R4074	0611077A88	3.9K, +/-5%; 1/8 W			voltage regulator: (see note)
R4075	0611077B03	15K, +/-5%; 1/8 W	VR4001	4813830A16	DIODE 6.0V 5% 225MW MMBZ5233B_
R4076,4077	0611077B15	47K, +/-5%; 1/8 W	VR4002	4882479V02	DIODE ZENER 3.3V
R4078	0611077B07	22K, +/-5%; 1/8 W	VR4003	4813830A16	DIODE 6.0V 5% 225MW MMBZ5233B_
R4079	0611077A74	1K, +/-5%; 1/8 W			crystal: (see note)
R4080	0611077B15	47K, +/-5%; 1/8 W	V4001	4880113K04	7.948 MHZ
R4081	0611077B02	13K, +/-5%; 1/8W	Y4002	4882611M12	3.072 MHZ
R4082 thru 4084	0611077A82	2.2K, +/-5%; 1/8 W			non-referenced items:
R4085	0611077B15	47K, +/-5%; 1/8 W	TRN7690A		TRANSPARENT SECURE BD
R4086	0611077B23	100K, +/-5%; 1/8 W	TVN6057A		Secure Software
R4087	0611077B05	18K, +/-5%; 1/8 W	0982449T01		SOCKET, IC: 52-contact (used with U4013)
R4088	0611077B15	47K, +/-5%; 1/8 W	0982449T03		SOCKET, IC: 84-contact (used with U4007)
R4089	0611077B23	100K, +/-5%; 1/8 W	0982449T03		SOCKET, IC: 84-contact (used with U4014)
R4090	0611077A96	8.2K, +/-5%; 1/8 W	0982808R10		Socket, IC: 28-contact (used with U4009)
R4091	0611077B23	100K, +/-5%; 1/8 W	0984728L01		Shorting Jumper: 2-contact (3 used)
R4092	0611077B15	47K, +/-5%; 1/8 W	1485334U01		INSULATOR RUBBER (SILICON) (2 used)
R4093	0611077B09	27K, +/-5%; 1/8 W	4380054K01		Spacer, pcb support (4 used)
R4094	0611077A26	10 ohms, +/-5%; 1/8 W	5483865R01		Label, bar code: 1/4" wide, white
R4095,4096	0611077B15	47K, +/-5%; 1/8 W	5484960T01		Label, bar code: 6.3 x 12.7MM, white
R4097	0611077B09	27K, +/-5%; 1/8 W			
R4098	0611077A78	1.5K, +/-5%; 1/8W			
R4099	0611077B10	30K, +/-5%; 1/8W			
R4100	0611077A78	1.5K, +/-5%; 1/8W			
R4101	0611077B13	39K, +/-5%; 1/8 W			
R4102	0611077B01	12K, +/-5%; 1/8W			
R4103	0611077A92	5.6K, +/-5%; 1/8W			
R4104	0611077B08	24K, +/-5%; 1/8W			
R4105	0611077B09	27K, +/-5%; 1/8 W			
R4106,4107	0611077A98	10K, +/-5%; 1/8 W			
R4108,4109	0611077B09	27K, +/-5%; 1/8 W			
R4110	0611077A92	5.6K, +/-5%; 1/8W			
R4111	0611077B09	27K, +/-5%; 1/8 W			
R4112	0611077A50	100 ohms, +/-5%; 1/8 W			
R4113 thru 4115	0611077A54	150 ohms, +/-5%; 1/8 W			
R4116	0611077A91	5.1K, +/-5%; 1/8W			
R4117,4118	0611077A82	2.2K, +/-5%; 1/8 W			
R4119	0611077A98	10K, +/-5%; 1/8 W			
R4120	0611077B39	470K, +/-5%; 1/8 W			
R4121,4122	0611077A98	10K, +/-5%; 1/8 W			
R4124	0611077A98	10K, +/-5%; 1/8 W			
R4125	0611077A88	3.9K, +/-5%; 1/8 W			
R4126	0611077A50	100 ohms, +/-5%; 1/8 W			
R4127	0611077A74	1K, +/-5%; 1/8 W			
R4128	0611077B47	1 meg, +/-5%; 1/8 W			
R4129	0611077A98	10K, +/-5%; 1/8 W			
R4130	0611077B09	27K, +/-5%; 1/8 W			
R4131	0611077B11	33K, +/-5%; 1/8 W			
R4132	0611077A98	10K, +/-5%; 1/8 W			
R4133	0611077A92	5.6K, +/-5%; 1/8W			
R4134	0611077B07	22K, +/-5%; 1/8 W			
R4135	0611077B19	68K, +/-5%; 1/8W			
R4136	0611077A98	10K, +/-5%; 1/8 W			
R4137	0611077A50	100 ohms, +/-5%; 1/8 W			
R4138,4139	0611077A98	10K, +/-5%; 1/8 W			
R4140	0611077B09	27K, +/-5%; 1/8 W			
R4141,4142	0611077B23	100K, +/-5%; 1/8 W			
R4143	0611077A92	5.6K, +/-5%; 1/8W			
R4144	0611077B23	100K, +/-5%; 1/8 W			

Note: For optimum performance, diodes, transistors, integrated circuits, and crystals must be ordered by Motorola part number.



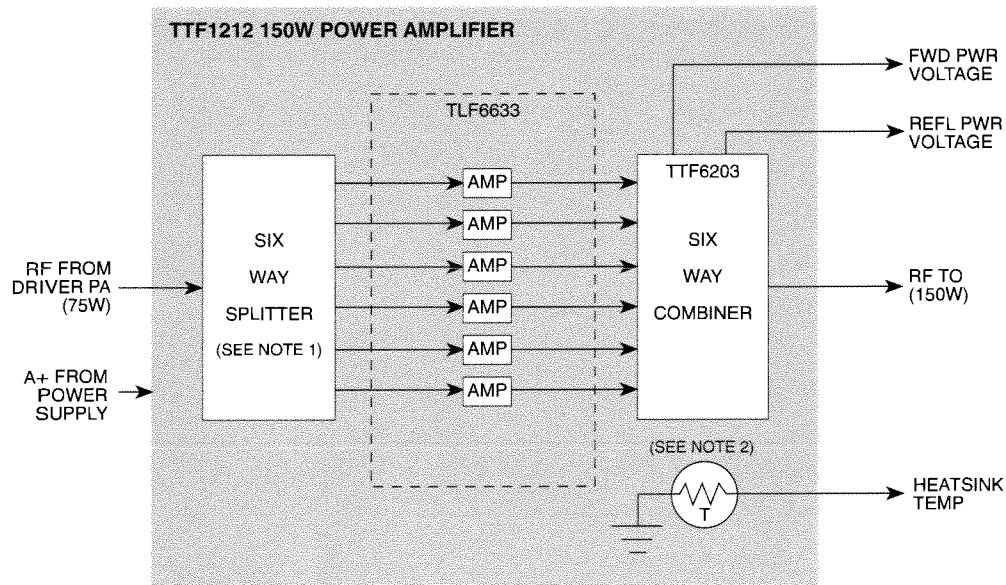
Power Amplifier

Chapter Overview

This chapter contains block diagrams and replaceable components for the *MSF 5000* Power Amplifiers.

TTF1212 and TTF1242 Power Amplifier

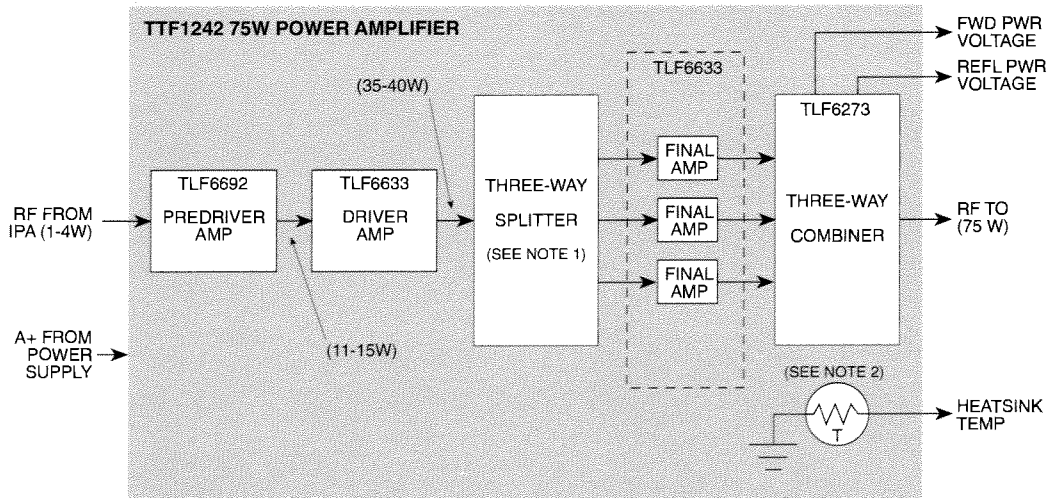
TTF1212 and TTF1242 Power Amplifier



Hardware Kit: TRN7173

NOTES:

1. Part of TRN7173.
2. Part of TRN9386.

MSFS115
050594KOM

Hardware Kit: TRN9840

NOTES:

1. Part of TRN9840.
2. Part of TRN9386.

MSFS114
050594KOM



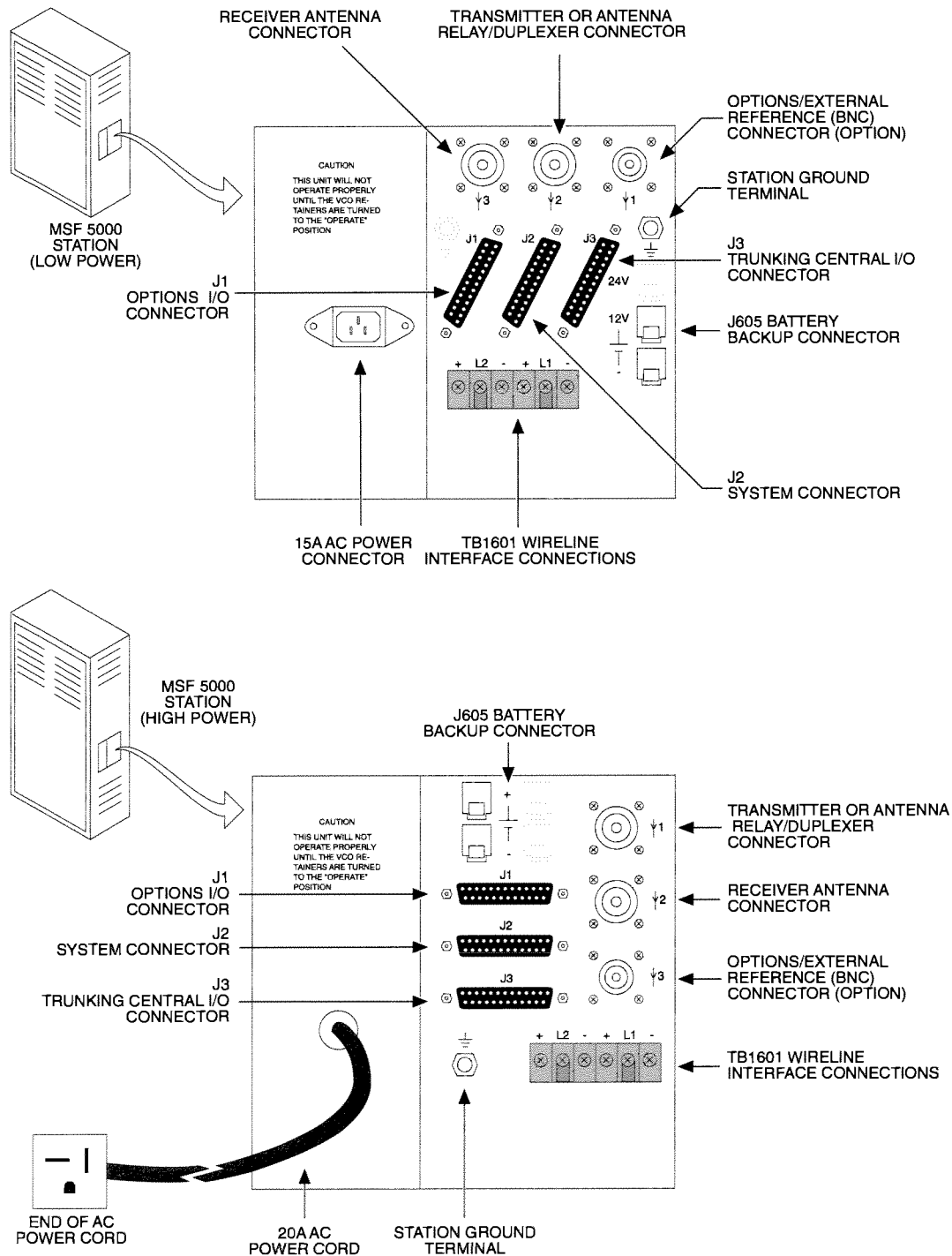
Junction Box

Chapter Overview

This chapter contains component locator and interconnect diagrams for components of the Junction Box.

Junction Boxes

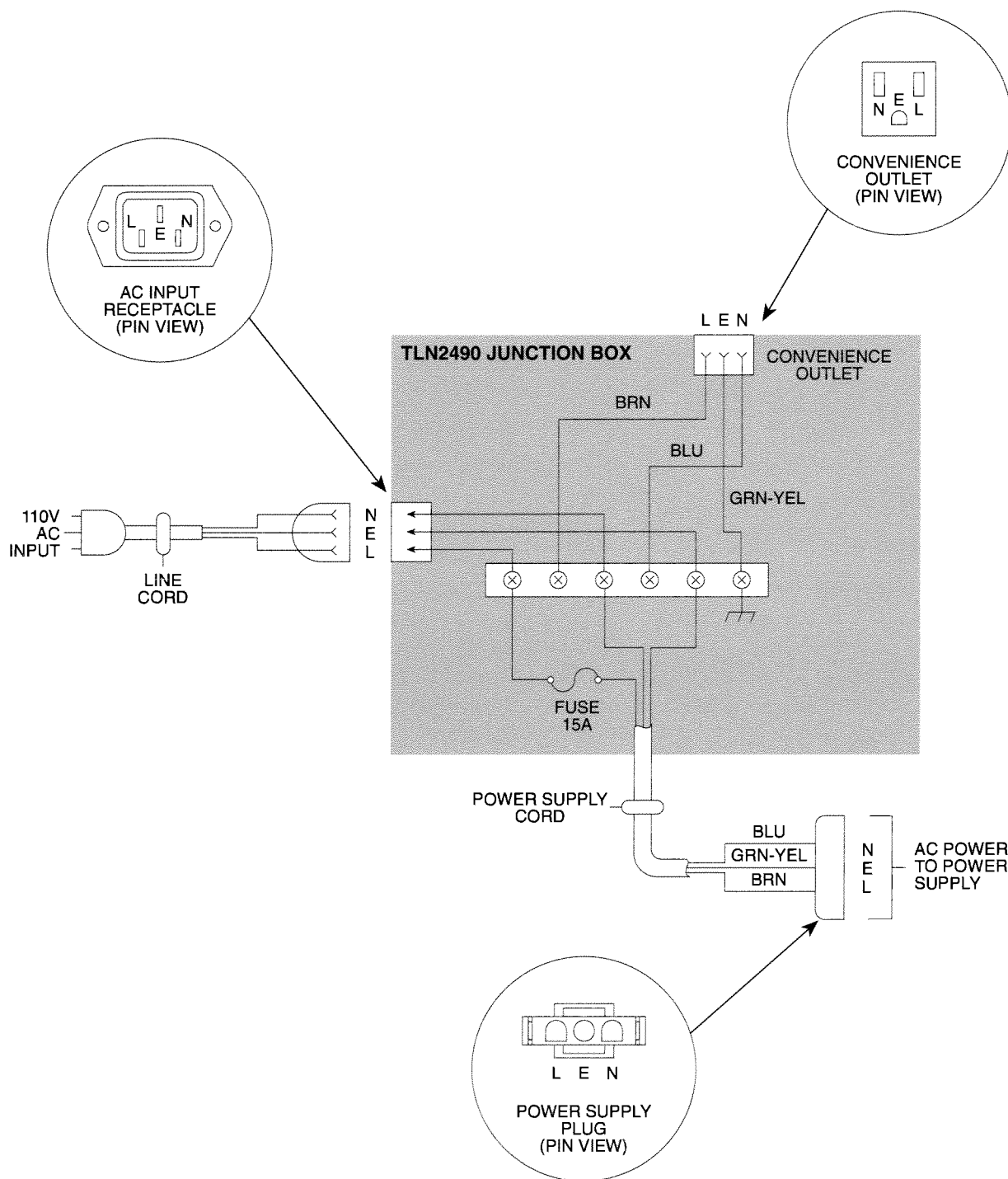
Junction Boxes



NOTE: Connectors may not be on all stations.
Dashed components (24V connection and ground) are used on VHF models only.

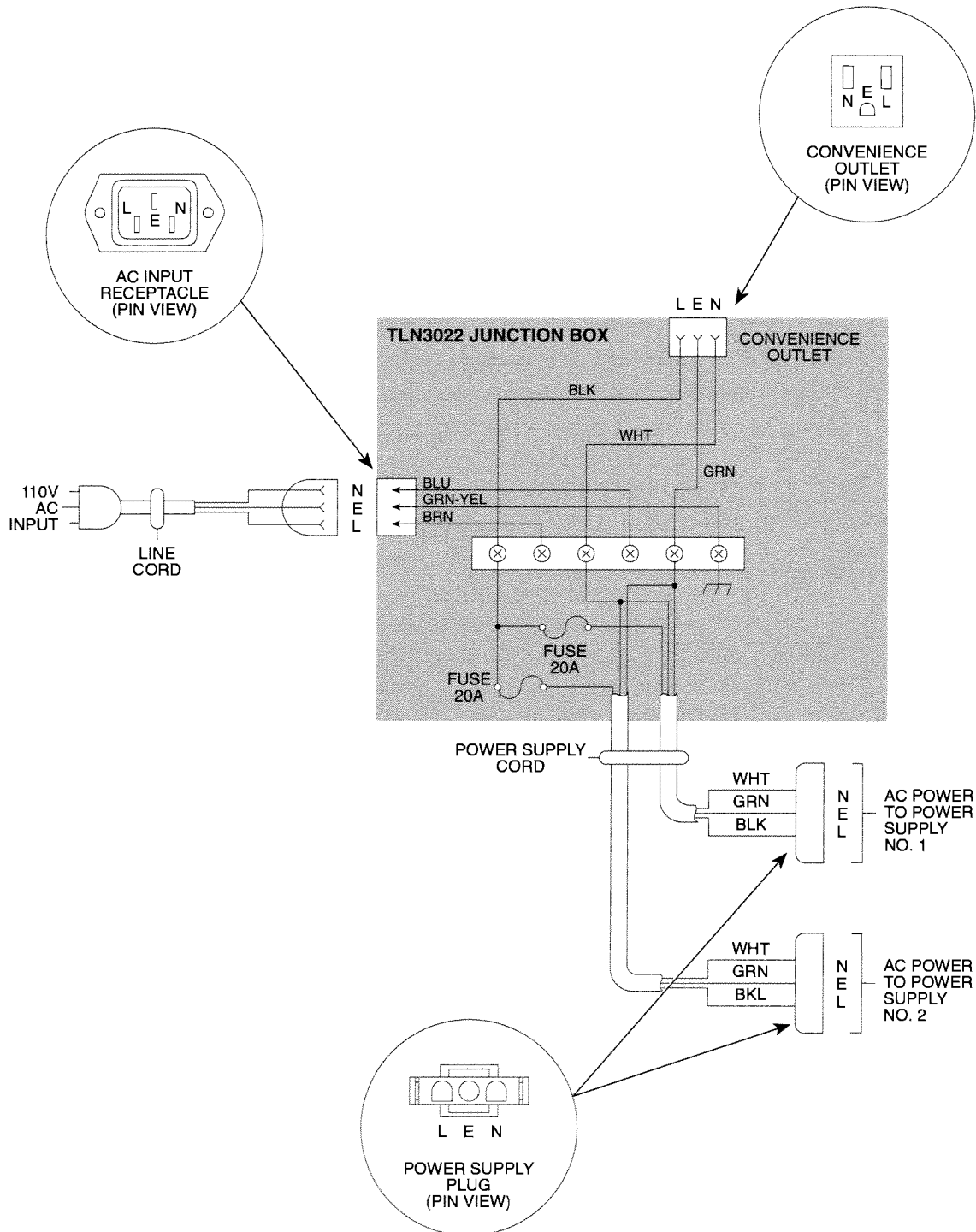
MSFS123
052394KOM

TLN2490 Low Power Junction Box

MSFS100
053194JNM

TLN3022 High Power Junction Box

TLN3022 High Power Junction Box

MSFS108
053194JNM

Power Supply

Chapter Overview

This chapter contains information for power supplies that are available for the MSF 5000.

Kit No.	Power Rating (Watts)	Frequency (Hz)	Input Voltage (AC)	Information
TPN1185	500	60	110	Battery Revert
TPN1186	500	60	110	Battery Revert
TPN1200	500	60	110/220	Battery Revert
TPN1217	250	60	110/220	Battery Revert
TPN1218	250	60	110/220	Battery Revert
TPN1260	675	60	110	Dual Output
TPN1261	250	50	110/220	
TPN1263	500	60	110/220	Battery Revert
TPN1264	575	50	110/220	Dual Output
TPN1265	675	60	110/220	Dual Output
TPN1268	500	50	110/220	
TPN1269	500	50	110/220	Battery Revert
TPN1270	250	50	110/220	Battery Revert
TPN1271	675	60	110	Battery Revert/Dual Output
TPN1272	575	50	110/220	Battery Revert/Dual Output
TPN1273	675	60	110/220	Battery Revert/Dual Output

Power Supply

Power Supply

The station Power Supply is mounted in the upper half of the cabinet behind the Power Amplifier (PA). The Standard Power Supply is a ferro-resonant type that operates from a nominal 110 volt, single-phase, 60 Hz AC power source. Options are available for 220 Vac, 50 Hz operation, as well as different power levels and DC supplies on selected models.

The Power Supply accepts an AC input voltage and generates DC voltages for the station. Each PA requires a dedicated Power Supply. Low power stations require one Power Supply and high power stations require two Power Supplies. A Battery Charger Power Supply is also available.

The following available power supply options are:

- ☐ 110 or 220 Vac inputs
- ☐ 50 or 60 Hz operating frequencies
- ☐ 250, 500, 575, or 675 watts
- ☐ various output voltages

Refer to the Power Supply manual for a more detailed explanation of power supplies and options.

Standard Power Supply

The Standard Power Supply receives AC power from the Junction Box via the line cord. Refer to Figure 6-1. The Standard Power Supply provides high current A+ (UHF, 800 MHz and 900 MHz Stations) or 28Vdc (VHF Stations) to the PA and two unfiltered +13.8 Vdc (A++) outputs to the station RF Tray.

The Standard Power Supply provides the following features:

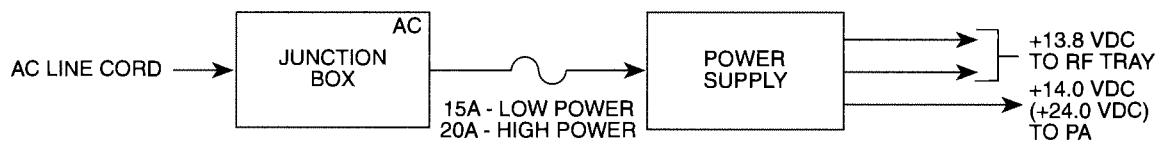
- ☐ output regulation
- ☐ filtering
- ☐ short circuit protection
- ☐ current limiting
- ☐ overvoltage protection

Battery Charger Power Supply

The Battery Charger Power Supply receives AC power from the Junction Box via the line cord. Refer to Figure 6-2. The battery charger circuitry permits the station to operate from AC power normally, but provides continued operation from external batteries (emergency power) if the AC power should fail. The Power Supply provides high current A+ to the PA (if installed) and two +13.8 Vdc unfiltered outputs to the RF Tray.

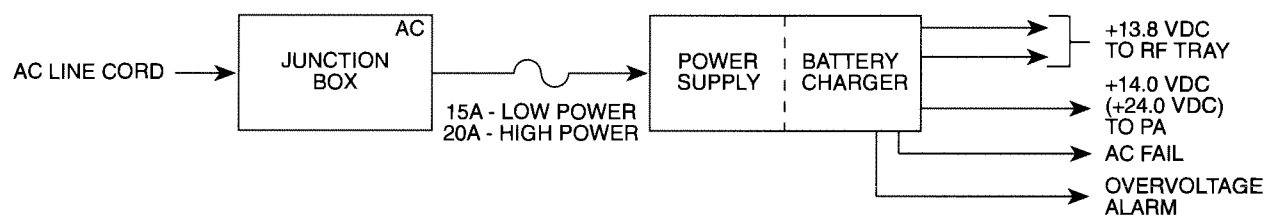
In addition to the features of the standard Power Supply, the Battery Charger Power Supply provides:

- ☐ battery equalization
- ☐ AC line failure detection
- ☐ low voltage battery disconnect (option)



MSFX022
050294JNM

Figure 6-1 **Standard Power Supply**



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Figure 6-2 **Battery Charger Power Supply**

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