

DIGITAL VOICE PROTECTION (DVP)

CIRCUIT MODULE
MODEL VLN1009A

parts list

VLN4127A Interface Board PL-8350-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C101	23-82397D25	capacitor, fixed: 0.27 uF ± 10%; 20 V
C106	23-82397D52	1.0 uF ± 20%; 20 V
C108	23-82397D03	10 uF ± 20%; 6 V
C112	21-84547A13	0.1 uF ± 10%; 50 V
C119	23-82397D52	1.0 uF ± 20%; 20 V
C120	21-82397D16	22 uF ± 20%; 15 V
C121	21-11032A09	1000 pF ± 10%; 50 V (chip)
C123	23-84538G14	1 uF ± 10%; 35 V
C128	23-82397D15	10 uF ± 20%; 20 V
C129	23-82397D16	22 uF ± 20%; 15 V
C130	21-11032A09	1000 pF ± 10%; 50 V (chip)
C139	21-11032A09	1000 pF ± 10%; 50 V (chip)
CR101, 102, 103	48-84939C33	diode: (see note) silicon
CR113	48-84939C33	silicon
CR117	48-84939C35	hot carrier
CR119, 120	48-84939C33	silicon
CR124	48-84939C33	silicon

J101	28-82288N03	connector: male; 25 contact
P105	9-83680M13	female; 26 contact

Q101, 102, 103, 104	48-05148G06	transistor: (see note)§ NPN; (chip)
Q105	48-05448G05	PNP; (chip)
Q110, 111	48-05148G06	NPN; (chip)
Q112	48-05148G05	PNP; (chip)
Q114	48-05148G06	NPN; (chip)
Q116, 117	48-05148G06	NPN; (chip)

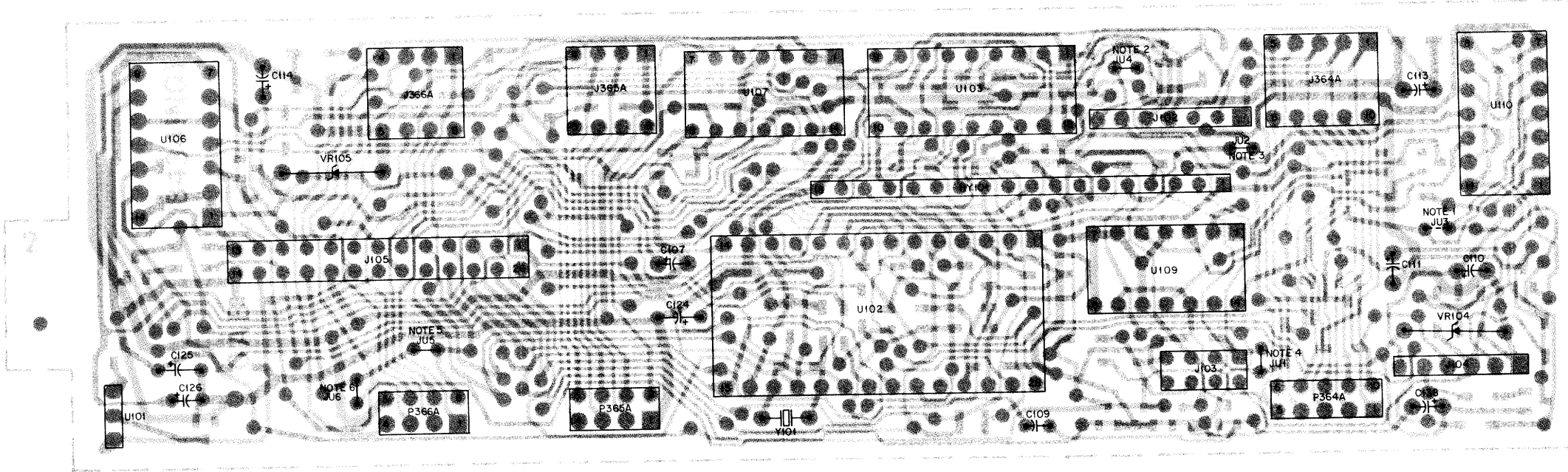
R101, 102	6-11024A89	resistor, fixed: ± 5%; 1/8 W: 47k (chip)
R103, 104, 105	6-11024A97	100k (chip)
R107	6-11024A81	22k (chip)
R108	6-11024A73	10k (chip)
R109	6-11029A89	47k (chip)
R110, 111	6-11024A73	10k (chip)
R112	6-11024A89	47k (chip)
R127	6-11024A97	100k (chip)
R128	6-11024A93	68k (chip)
R141	6-11024A89	47k (chip)
R145, 146	6-11024A65	4.7k (chip)
R147	6-11024A89	47k (chip)
R148	6-11024A81	22k (chip)
R149	6-11024A97	100k (chip)
R157	6-11024A97	100k (chip)
R158	18-83452F33	variable; 25k
R159, 160	6-11024A97	100k (chip)
R161	18-83452F33	variable; 25 V
R164	6-11024A97	100k (chip)
R167	6-11024A89	47k (chip)
R169	6-11024A22	82 (chip)
R170	6-11024A97	100k (chip)
R177	6-11024A97	100k (chip)
R179	6-11024A03	12 (chip)
R181	6-11024A97	100k (chip)
R183	6-11024A87	39k
R185	6-11024A73	10k (chip)

U105	51-82884L65	integrated circuit: (see note) analog switch
U108	51-82884L61	hex multi-function

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

68P81064E24-O
(Sheet 1 of 2)
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ENCRYPTION BOARD



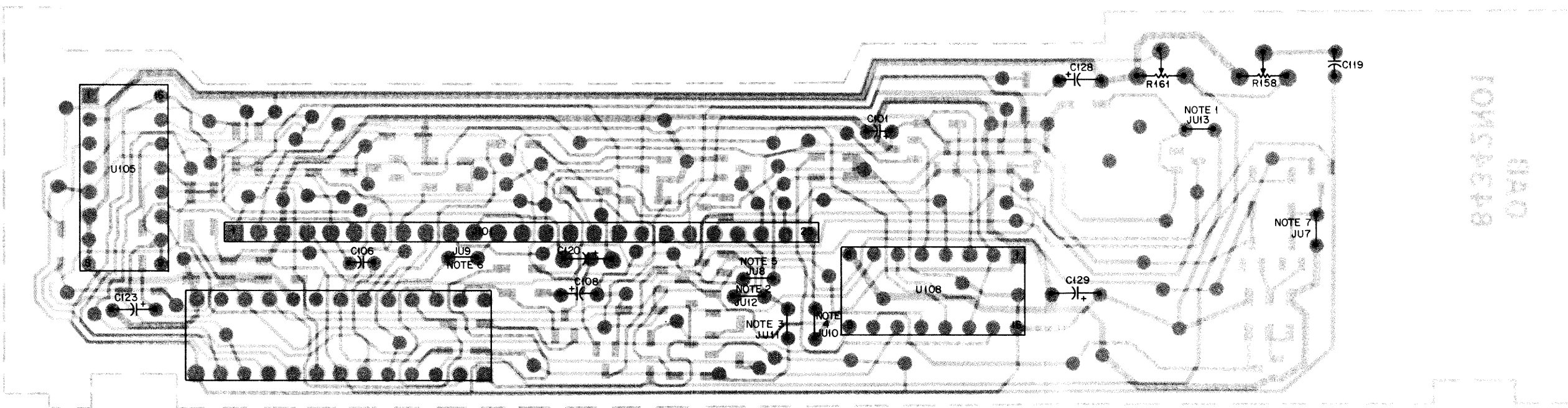
SHOWN FROM COMPONENT SIDE

NOTES:

- JU3 jumper is always removed.
- JU4 jumper is always installed.
- JU2 jumper is removed for dual code option.
- JU1 jumper is always installed.
- JU5 jumper is always installed.
- JU6 jumper is removed for Single Tone and Select 5 models only.

COMPONENT SIDE DEPS-35908-0
SOLDER SIDE DEPS-35909-0
OL DEPS-35910-0

INTERFACE BOARD

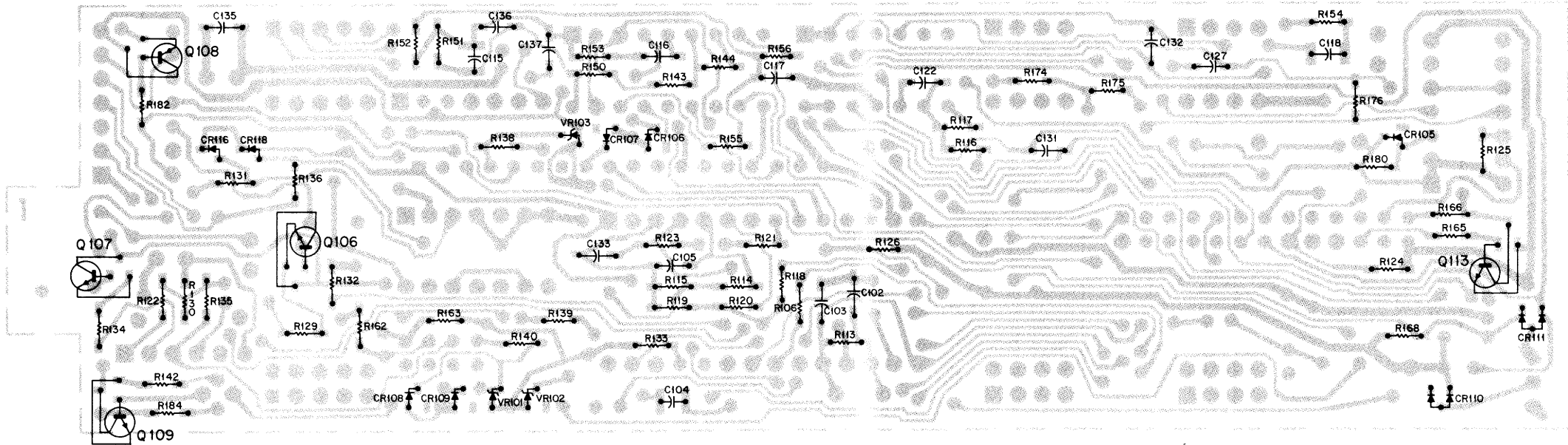


SHOWN FROM COMPONENT SIDE

NOTES:

- JU13 jumper is installed in Select 5 models only.
- JU12 jumper is removed for Select 5 models only.
- JU11 jumper is installed in Select 5 models only.
- JU10 jumper is removed in PL and single tone models only.
- JU8 jumper is installed in radios with proper code or carrier squelch.
- JU9 jumper is removed when alert tone is not desired.
- JU7 jumper is installed for special applications only.

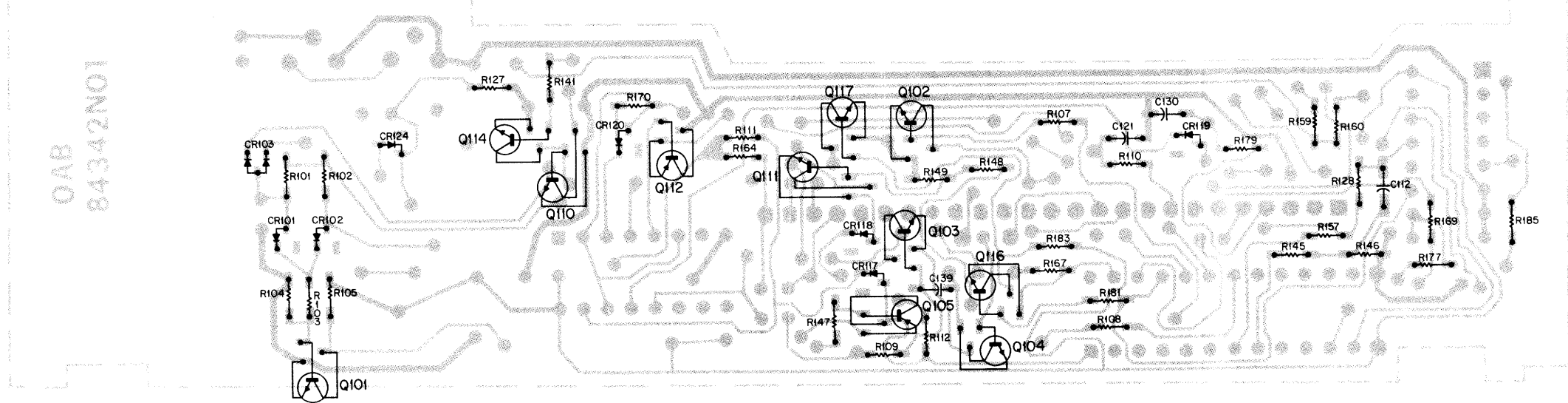
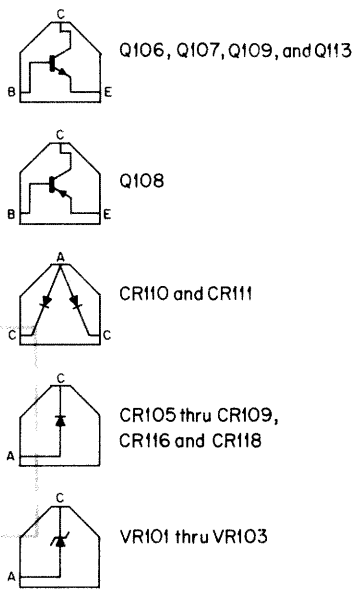
COMPONENT SIDE BD-DEPS-35912-0
SOLDER SIDE BD-DEPS-35913-0
OL- DEPS-35914-0



SHOWN FROM SOLDER SIDE

SOLDER SIDE DEPS-35926-0
SSOL DEPS-35911-0

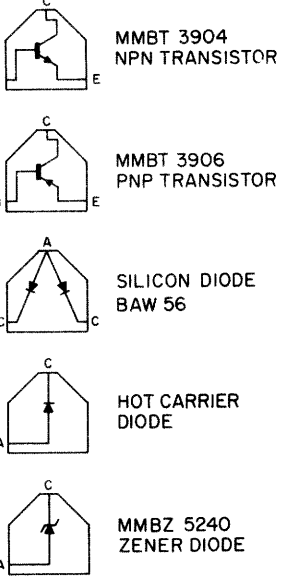
TRANSISTOR/DIODE DETAILS
(AS VIEWED FROM TOP OF COMPONENTS
ON SOLDER SIDE OF BOARD)



SHOWN FROM SOLDER SIDE

SOLDER SIDE BD-DEPS-35927-0
SSOL OL-DEPS-35915-0

TRANSISTOR/DIODE DETAILS
(AS VIEWED FROM TOP OF COMPONENTS
ON SOLDER SIDE OF BOARD)



parts list

VLN4126A Encryption Board PL-8349-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C102, 103	21-11031B26	capacitor, fixed: 30 pF ± 5%; 50 V (chip)
C104	21-84296M08	0033 uF ± 5%; 50 V (chip)
C105	21-11031D53	390 pF ± 0.5 pF; 50 V (chip)
C107	23-84538G14	1 uF ± 10%; 35 V
C109	23-82397D52	1 uF ± 20%; 20 V
C110, 111	23-84538G14	1 uF ± 10%; 35 V
C113, 114	23-84538G14	1 uF ± 10%; 35 V
C115	21-84296M07	.0022 uF ± 5%; 50 V (chip)
C116, 117	21-11032A23	.015 uF ± 10%; 50 V (chip)
C118	21-84547A13	0.1 uF ± 10%; 50 V (chip)
C122	21-11031A34	62 pF ± 5%; 50 V (chip)
C124	23-82397D15	10 uF ± 20%; 20 V
C125	23-82397D16	22 uF ± 20%; 15 V
C126	23-84538G14	1 uF ± 10%; 35 V
C127	21-11031A34	62 pF ± 5%; 50 V (chip)
C131, 132, 133	21-11031A34	62 pF ± 5%; 50 V (chip)
C135, 136, 137	21-11031A34	62 pF ± 5%; 50 V (chip)
C138	23-84538G14	1 uF ± 10%; 35 V
CR105 thru 109	48-84939C35	diode (see note) hot carrier
CR110, 111	48-84939C33	silicon
CR116	48-84939C35	hot carrier
CR118	48-84939C35	hot carrier
J103	28-84528K20	connector: male; 8 contact
J104	28-84318M29	housing; 8 contact
J105	28-84528K47	male; 26 contact
J364A	9-83880M01	female; 10 contact
P366A	9-83880M02	female; 8 contact
P364A	28-83186M14	male; 10 contact
P365A, 366A	28-83186M13	male; 8 contact
Q106, 107	48-05148G06	transistor (see note) NPN (chip)
Q108	48-05148G05	PNP (chip)
Q109	48-05148G06	NPN (chip)
Q113	48-05148G06	NPN (chip)

R106	6-11024A97	100k (chip)
R113	6-11024B22	1 meg. (chip)
R114	6-11024A93	68k (chip)
R115	6-11024A69	6.8k (chip)
R116	6-11024A93	68k (chip)
R117	6-11024B06	220k (chip)
R118	6-11024A93	68k (chip)
R119	6-11024A49	1k (chip)
R120	6-11024B22	1 meg. (chip)
R121	6-11024A65	4.7k (chip)
R122	6-11024A49	1k (chip)
R123	6-11024A73	10k (chip)
R124	6-11024A89	47k (chip)
R125	6-11024A89	47k (chip)
R126	6-11024A97	100k (chip)
R129	6-11024A32	200 (chip)
R130	6-11024A87	39k (chip)
R131	6-11024A93	68k (chip)
R132, 133	6-11024A57	100k (chip)
R134	6-11024A32	200 (chip)
R135	6-11024A87	39k (chip)
R136	6-11024A93	68k (chip)
R138, 139, 140	6-11024A47	820 (chip)
R142	6-11024A41	470 (chip)
R143	6-11024A97	100k (chip)
R144	6-11024A69	6.8k (chip)
R145	6-11024A97	100k (chip)
R150	6-11024B14	470k (chip)
R151	6-11024B14	470k (chip)
R152	6-11024B06	220k (chip)
R153	6-11024A87	39k (chip)
R154	6-11024A69	6.8k (chip)
R155, 156	6-11024B14	470k (chip)
R162, 163	6-11024A57	22k (chip)
R165	6-11024A89	47k (chip)
R166	6-11024A73	10k (chip)
R168	6-11024A69	6.8k (chip)
R174, 175	6-11024A89	47k (chip)
R176	6-11024B14	470k (chip)
R180	6-11024B06	220k (chip)
R182	6-11024A41	470 (chip)
R184	6-11024A89	47k (chip)

U101	51-84561L86	integrated circuit (see note) 5V-regulator
U102	51-83977M38	control and interface
U103	51-83977M33	CVSD and detector
U106	51-82884L06	3-input NAND gate
U107	51-84561L75	Quad operational amplifier
U109	51-82884L13	D-flip-flop
U110	51-82884L63	hex inverting

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
VR101, 102, 103	48-84904N01	voltage regulator (see note) Zener type; 10 V (chip)
VR104, 105	48-82297D16	Zener type; 13 V
Y101	48-82611M12	crystal (see note) 3072 kHz
mechanical part		
14-05160A01 INSULATOR		
note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.		
VLN4128A DVP Extension Hardware PL-8351-O		
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
3-84208M01	15-84663N02	SCREW, tapping M3 x 0.5 x 8; 2 used
2-84334M01	NUT, M3	CASTING, chassis extension
3-84208M01	42-84940N01	SCREW, tapping 3-0.5 x 8; 5 used
CLIP, bracket		
VLN4129A Key Loading Kit PL-8352-O		
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
P103	14-84277D17	connector: housing, 8 contact
mechanical parts		
15-84663N01	9-84279D03	CASTING, chassis extension
9-80263D01		CONTACT, female; 5 used
KEY, plug receptacle		

NOTES:

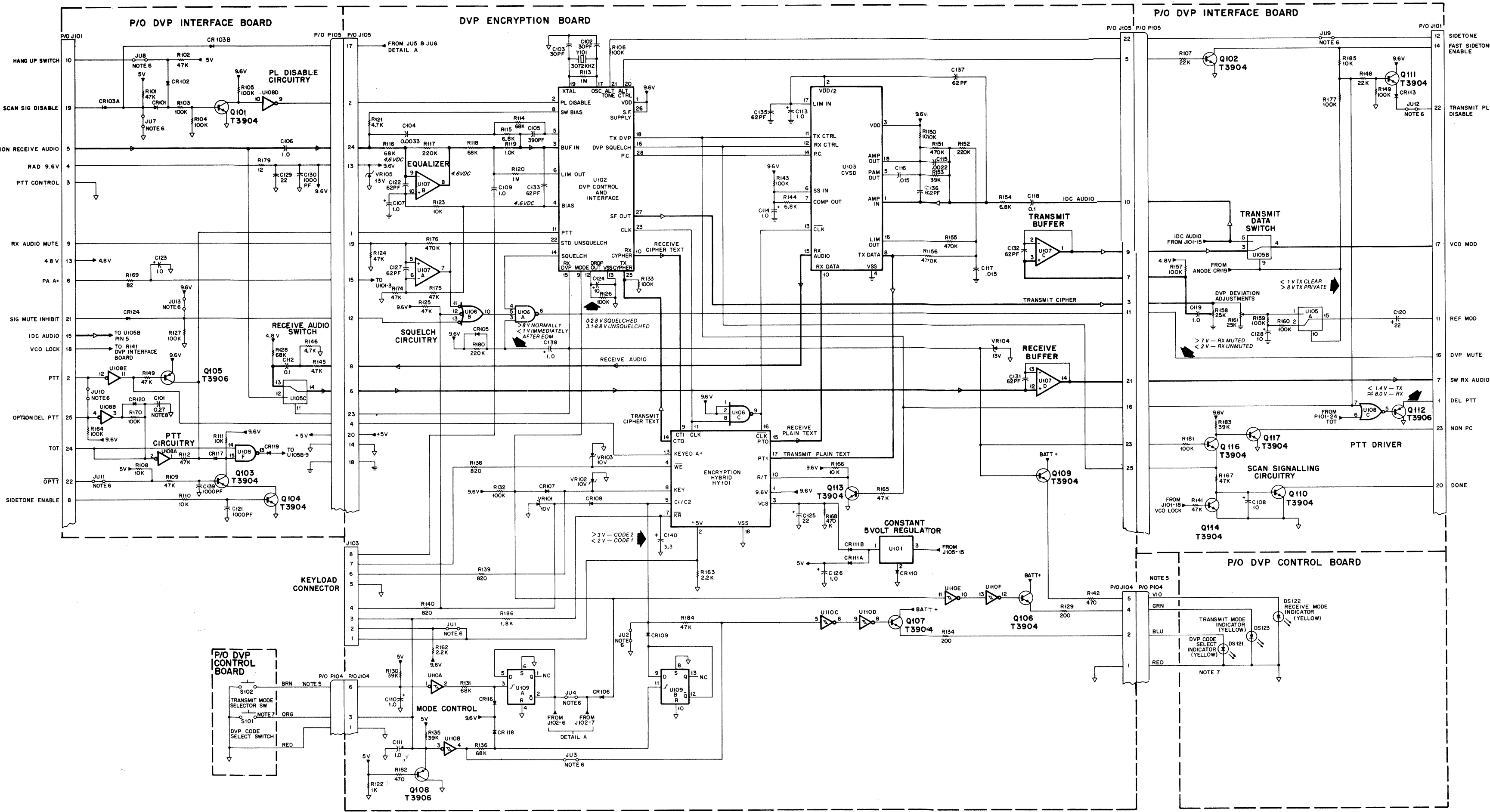
- Unless otherwise indicated: resistor values are in ohms, and capacitor values are in microfarads.
- This diagram shows positive logic:
 - Logic "1" greater than 70% of supply voltage
 - Logic "0" less than 30% of supply voltage
- Integrated circuits on this board are CMOS devices.
- IC types and connections for this board are as follows:

Reference Designation	Manufacturer's Description	Vcc	Gnd
U101	5 V Regulator	1	2
U102	Control and Interface	1	13
U103	CVSD	3	4
U104	Not Used		
U105	Quad Analog Switch	16	8
U106	3-Input NAND Gate	14	7
U107	Quad Op Amp	11	4
U108	Hex Multifunction Gate	16	8
U109	D Flip-Flop	14	7
U110	Hex Inverter	14	7

- Cabling and connectors from J104 on DVP Encryption Board to the DVP Control Board are shown for dash mount radios only. For remote mount radio cabling, refer to "Remote Radio Set Cabling" diagram.

Jumper	Usage Description
JU1	Always In
JU2	Out for Dual Code Option
JU3	Always Out
JU4	Always In
JU5	Always In
JU6	Out for Single Tone and Select 5 Models Only
JU7	In for Special Applications Only
JU8	In for Radios With Proper Code or Carrier Squelch
JU9	Out if Alert Tone Not Wanted
JU10	Out for PL and Single Tone Models Only
JU11	In for Select 5 Models
JU12	Out for Select 5 Models Only
JU13	In for Select 5 Radios Only

- Used only in radios equipped with dual code.
- C101 is in for Single Tone and Select 5 models only.



DIGITAL VOICE PROTECTION (DVP)

CIRCUIT MODULE

MODEL VLN1009A

FUNCTION

These boards contain the circuitry necessary to perform all the *DVP* functions. Audio conversion and re-construction, plain text encryption and cipher text decryption, as well as the generation of necessary *DVP* control signals are done on the Encryption board. Most of the circuitry required to interface with the rest of the radio circuitry is on the Interface board.

Model Complement

VLN1009A	DVP Circuit Module
VLN4126A	Encryption Board
VLN4127A	Interface Board
VLN4128A	Extension Hardware

68P81064E26-O
(Sheet 1 of 2)
3/15/83- *PHI*

PNONENT SIDE

TRANSISTOR BASE DETAIL

LEGEND:

- TEST POINT (SOLDER SIDE)
- ⬡ SCAN POINT

COMPONENT SIDE OL- DEFS-33326-A
 SOLDER SIDE BD- DEFS-33280-A

NOTE

RESISTOR R1741, DIODE CR1711, TRANSISTOR Q1712, AND JUMPER J1711 ARE NORMALLY OUT AND ARE INSTALLED FOR SCAN BASE OPTION B455. IN ADDITION, CR1705 MUST BE REMOVED FOR OPTION B455.

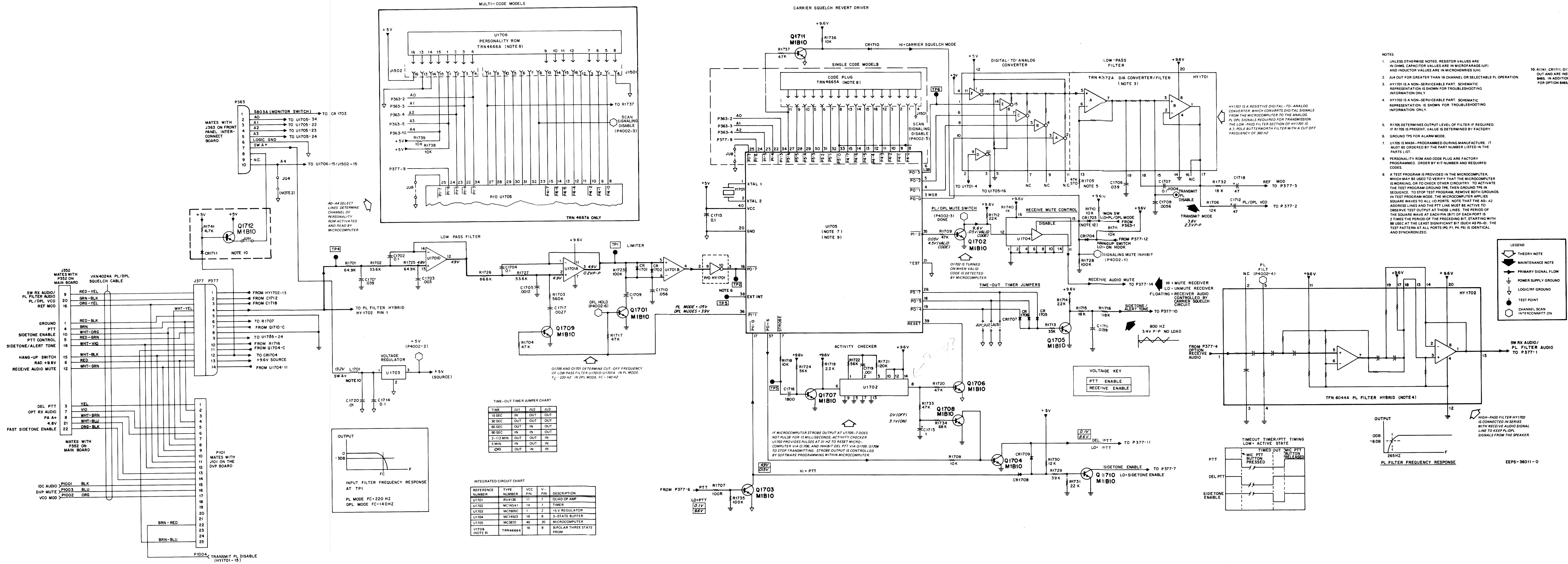


REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		capacitor, fixed: $\mu\text{F} \pm 5\%$; 50 V: unless otherwise stated
C1701	8-11023A20	.039
C1702	8-11023A25	0.1
C1703	8-11023A35	.003
C1704	8-11023A25	0.1
C1705	8-11023A02	.0012
C1706	8-11023A20	.039
C1707	8-11023A25	0.1
C1708	8-11023A10	.0056
C1709	23-84538G01	$1 \pm 20\%$
C1710	8-11023A22	.056
C1711	8-11023A20	.039
C1712	23-84665F25	$47 \pm 20\%$; 10 V
	or 23-11019A38	$47 \pm 20\%$; 10 V
C1713, 1714	8-11023A25	0.1
C1715	23-84538G01	$1 \pm 20\%$
C1716	8-11023A04	.0018
C1717	8-11023A06	.0027
C1718	23-84665F25	$47 \pm 20\%$; 10 V
	or 23-11019A38	$47 \pm 20\%$; 10 V
C1719	8-11023A01	.001
C1720	21-82428B07	$.01 \pm 20\%$; 100 V
		diode: (see note)
CR1701 - 1710	48-84399M01	silicon
CR1711	48-84399M01	silicon (Channel Scan base models only)
		connector, receptacle:
J1502	9-80269B01	SOCKET, 16-contact
J1004	39-10184A10	TERMINAL, pin
		coil, rf:
L1701	24-83451F02	choke: 47 μH
		connector, plug:
P363	28-84528K14	male: 10-contact
P377	28-84318M02	male: 14-contact
		transistor: (see note)
Q1701 - 1711	48-02081B10	NPN; type M1B10
Q1712	48-02081B10	NPN; type M1B10 (Channel Scan base models only)
		resistor, fixed: $\pm 5\%$; 1/4 W: unless otherwise stated
R1701	6-10621D70	64.9K $\pm 1\%$
R1702	6-10621D62	53.6K $\pm 1\%$
R1703	6-11020B16	560K
R1704, 1705	6-11020A89	47K (note 3)
R1706	6-11020A75	12K
R1707	6-11020A97	100K
R1708	6-11020A73	10K
R1709	6-11020A89	47K
R1710, 1711	6-11020A73	10K
R1712	6-11020A81	22K
R1713	6-11020A85	33K
R1714	6-11020A57	2.2K
R1715, 1716	6-11020A79	18K
R1717	6-11020A89	47K
R1718	6-11020A73	10K
R1719	6-11020A57	2.2K
R1720	6-11020A89	47K
R1721	6-11020A99	120K
R1722	6-11020A91	56K
R1723	6-11020A97	100K
R1724	6-11020A91	56K
R1725	6-10621D70	64.9K $\pm 1\%$
R1726	6-10621D82	86.6K $\pm 1\%$
R1727	6-10621D62	53.6K $\pm 1\%$
R1728	6-11020A97	100K
R1729	6-11020A87	39K
R1730	6-11020A75	12K
R1731	6-11020A81	22K
R1732	6-11020A79	18K
R1733	6-11020A89	47K
R1734	6-11020A93	68K
R1735	6-11020A97	100K
R1736	6-11009C73	10K
R1737	6-11020A89	47K
R1738, 1739	6-11020A73	10K
R1740	6-11020A49	1K
R1741	6-11020A65	4.7K (Channel Scan base models only)
		integrated circuit: (see note)
U1701	51-83629M06	type M2906
U1702	51-82884L57	type 84L57
U1703	51-83629M17	type 29M17
U1704	51-83627M62	type 27M62
U1705	51-83625M72	type 25M72

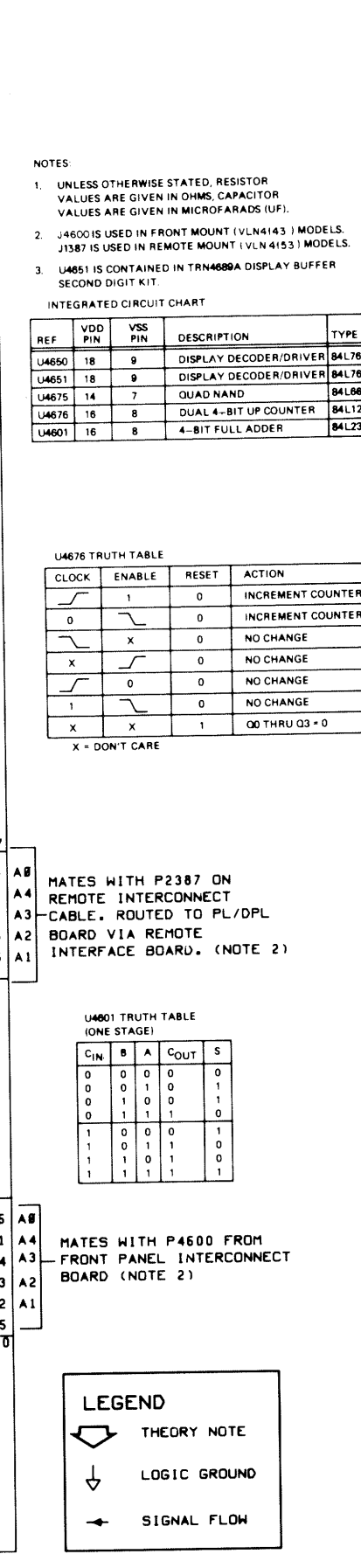
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
Y1701	48-82611M06	crystal: 4 MHz
mechanical parts		
	9-80269B04	SOCKET, 40-contact (U1705)
	14-05160A01	INSULATOR, crystal
	TRN4666A	ROM, personality
notes:		
1. For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.		
2. For parts not listed in the above parts list refer to the radio set mechanical parts list section.		
3. Value of R1705 may be varied at time of production. Replace with value originally supplied.		
VKN4024A PL Cable Kit		PL-8361-O
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
connector, receptacle:		
J352	9-82301N01	female; 22 contact
J377	9-82301N04	female; 14 contact
P101.	9-84319M18	female; 25 contact
P1001 thru 1004	39-10184A73	contact, receptacle
mechanical part		
	42-10217A02	STRAP, cable; 5 used

PL/DPL ENCODER/DECODER

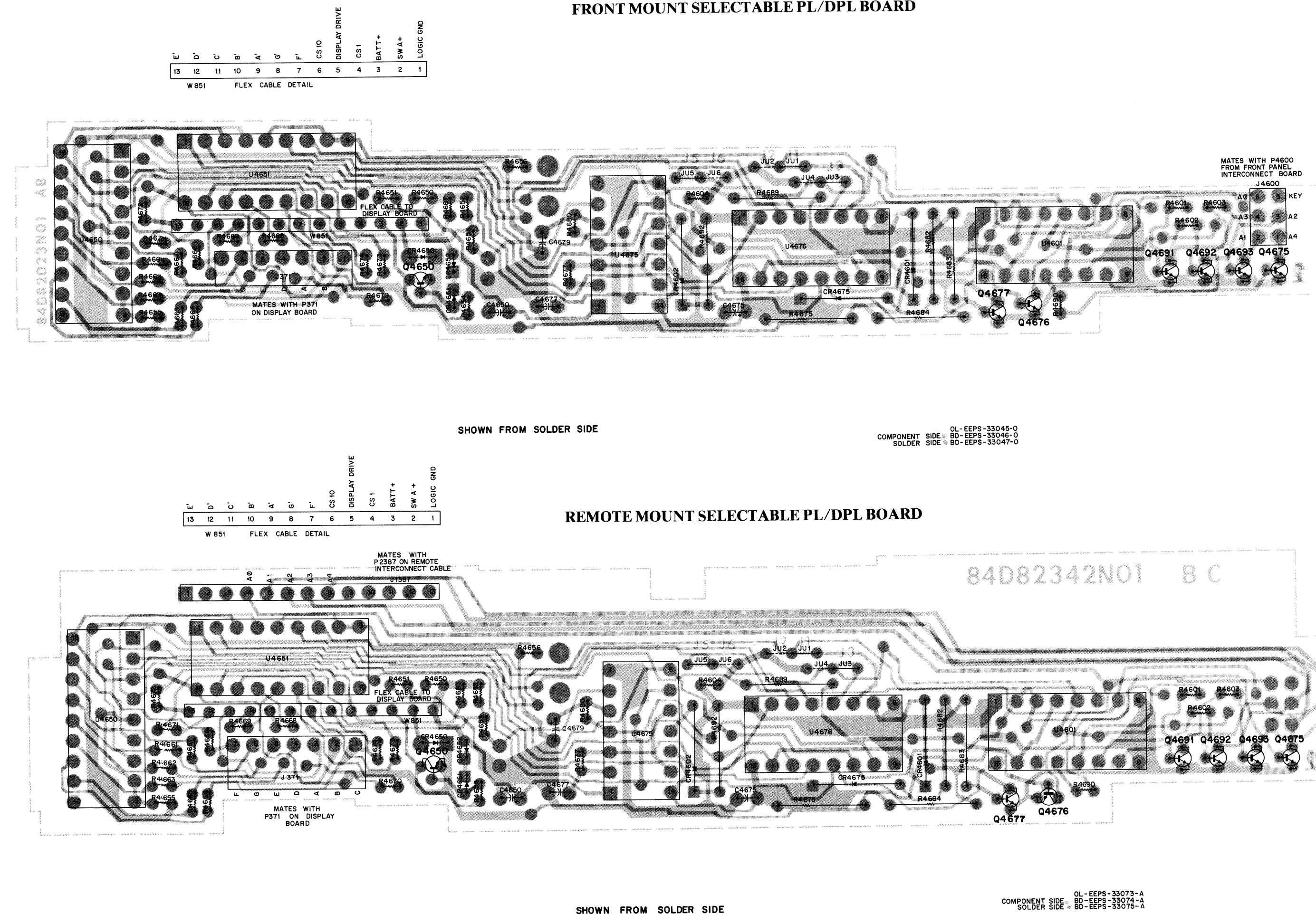
TONE PRIVATE-LINE AND DIGITAL PRIVATE-LINE ENCODER/DECODER MODEL VLN1024A



68P81064E27-O
(Sheet 1 of 2)
3/15/83- PHI



REMOTE MOUNT SELECTABLE PL/DPL BOARD



parts list

VLN4143A Selectable PL/DPL Board (Front Mount) PL-8415-O
VLN4153A Selectable PL/DPL Board (Remote Mount)

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C4650, 4651	23-11037H09	capacitor, fixed: uF ± 20%; 25 V 1.0 1.0 1.0 1.0
C4675	23-11037A09	
C4677	23-11037A20	
C4679	23-11037A20	
CR4601, 4602	48-83654H01	diode: (see note) silicon silicon silicon
CR4650	48-82466H13	
CR4651	48-84399M01	
J371	9-82846L04	connector, receptacle: female, 7-contact
J4600	28-84528K16	connector, plug: male, 6-contact (VLN4143A only)
Q4601, 4602, 4603	42-2081B10	transistor: (see note) NPN; type M1B10
Q4650	48-2081B10	
Q4675, 4676, 4677	48-2081B10	NPN; type M1B10
R4601, 4602, 4603	6-11020A85	resistor, fixed: ± 5%; 1/4 W 33k
R4604	6-11020A49	
R4650	6-11020A57	1k
R4651	6-11020A85	2.2k
R4652	6-11020A57	33k
R4653	6-11020A85	2.2k
R4653	26-11020A77	33k
R4655, 4656	6-11020A49	15k
R4687	6-11020A97	1k
R4661 thru 4674	6-11020A36	100k
R4675	6-11009C49	300
R4677, 4680	6-11020A96	1k
R4682	6-11009C81	91k
R4683, 4684	6-11009C91	22k
R4689	6-11009C85	56k
R4690	6-11020A85	33k
R4692	6-11009D22	33k
U4601	51-82884L23	1.0 meg integrated circuit: (see note) 4-bit full added decoder/driver; type 84L23 quad NAND; type 84L66 dual 4-bit up-counter; type 84L12
U4650	51-82884L76	
U4675	51-82884L66	
U4676	51-82884L12	
W851	30-82906L08	cable, flat: 13-conductor
VR4652	48-82256C11	voltage regulator: (see note) Zener; 10 V Zener; 4.7 V
VR4675	48-82256C03	
mechanical parts		
	42-84064M01	CLIP, board retainer (VLN4143A)
	46-82377N01	GUIDE, circuit board; 2 used (VLN4153A)

- notes:
- For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.
 - For component not listed in the above parts list, refer to the exploded view/mechanical parts list section.

VKN4034A DVP Selectable PL/DPL Cable (Remote Mount) PL-8427-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
J1387	9-84319M02	female, 10 contact
mechanical parts		
	42-10217A02	STRAP, cable harness; 2 used

VKN4028A DVP Selectable PL/DPL Cable (Front Mount) PL-8426-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
P4600	9-84279D02	TERMINAL, female; 5 used
	14-84277D21	6 pin receptacle
	22-84835F01	PLUG, polarizing key
mechanical parts		
	42-10217A02	STRAP, cable harness

TRN4689A Second Digit Display Buffer PL-7644-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
U4651	51-82884L76	integrated circuit: (see note) decoder/driver; type 84L76

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

SELECTABLE PL/DPL
ENCODER/DECODER

MODELS VLN1013A AND VLN1014A



FUNCTION

Allows operator to select PL/DPL squelch codes encoded and decoded by the PL/DPL encoder/decoder. Replaces the channel selector switch input to the PL/DPL board with input corresponding to operator-selected code displayed on front panel.

Model Complement Chart

VLN1013A	DVP Selectable PL/DPL (Dash)
VLN4143A	DVP Selectable PL/DPL Kit
VKN4028A	DVP Selectable PL/DPL Cbl. Kit
VLN1014A	DVP Selectable PL/DPL (Remote)
VLN4153A	DVP Selectable PL/DPL Kit
VKN4034	DVP Selectable PL/DPL Cbl. Kit

parts list

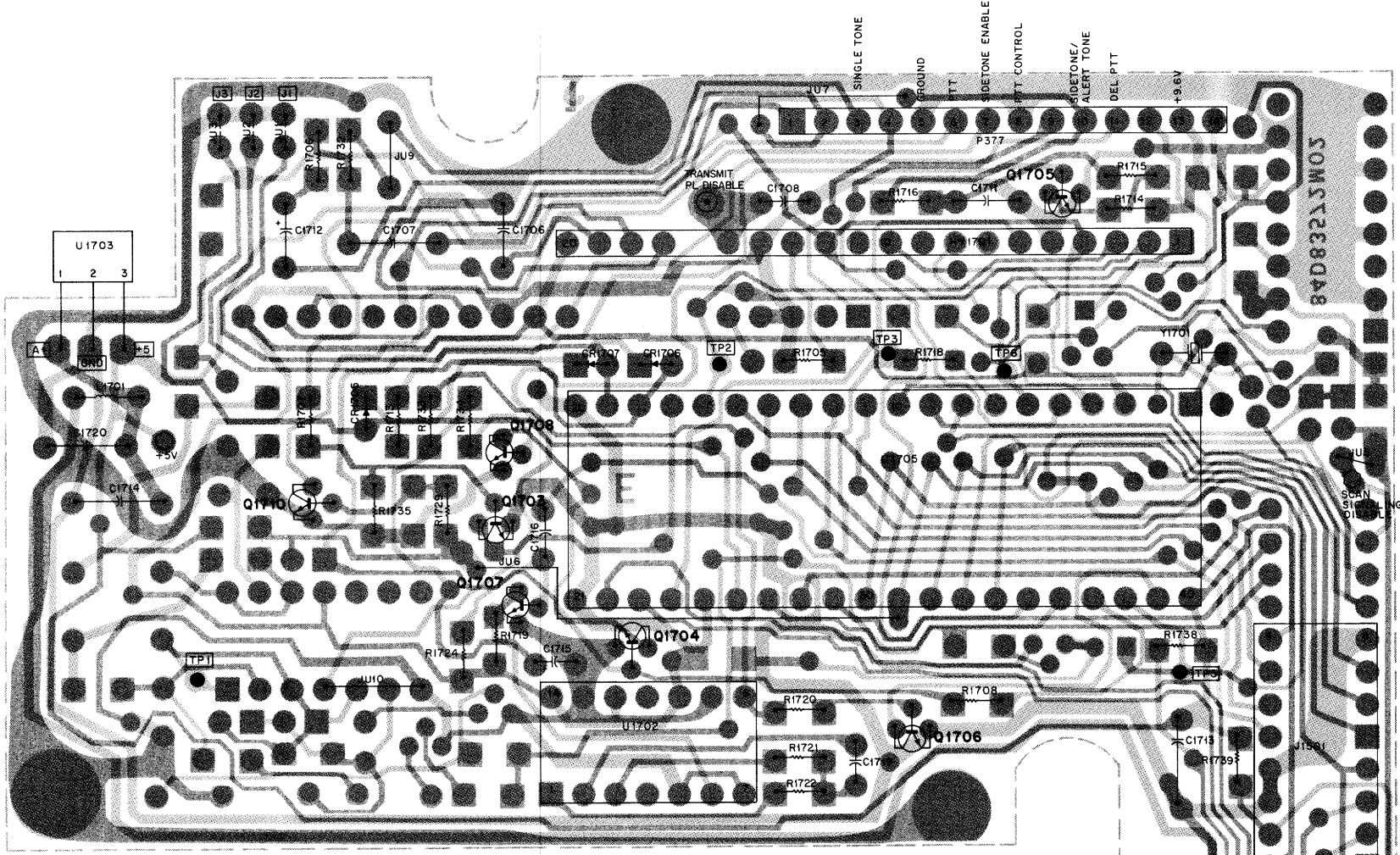
TRN5042B Single Tone Board PL-8428-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C1706	8-11023A08	capacitor, fixed: $\mu\text{F} \pm 5\%$; 50 V; unless otherwise stated
C1707	8-11023A13	.01
C1708	21-82428B45	820 pF
C1711	8-11023A20	.039
C1712	23-84665F25	47 $\pm 20\%$; 10 V
C1713, 1714	8-11023A25	0.1
C1715	23-84538D01	1 $\pm 20\%$
C1716	8-11023A04	.0018
C1719	8-11023A01	.001
C1720	21-82428B07	01 $\pm 20\%$; 100 V
CR1705-1707	48-84399M01	diode: (see note) silicon
J1501	9-80269B01	connector, receptacle: SOCKET, 18-contact
L1701	24-83451F02	coil, rf; choke: 47 μH
P363	28-84528K14	connector, plug: male: 10-contact
P377	28-84318M02	male: 14-contact
Q1703-1708, 1710	48-02081B10	transistor: (see note) NPN; type M1B10
R1705	6-11020A89	resistor, fixed: $\pm 5\%$; 1/4 W; unless otherwise stated
R1706	6-11020A75	47k (note 3)
R1707	6-11020A97	100k
R1708	6-11020A73	10k
R1713	6-11020A85	33k
R1714	6-11020A57	2.2k
R1715, 1716	6-11020A79	18k
R1718	6-11020A73	10k
R1719	6-11020A57	2.2k
R1720	6-11020A89	47k
R1721	6-11020A98	120k
R1722	6-11020A91	56k
R1724	6-11020A91	56k
R1725	6-10621D70	64.9k $\pm 1\%$
R1726	6-10621D62	86.6k $\pm 1\%$
R1727	6-10621D62	53.6k $\pm 1\%$
R1728	6-11020A97	100k
R1729	6-11020A87	39k
R1730	6-11020A75	12k
R1731	6-11020A81	22k
R1732	6-11020A79	18k
R1733	6-11020A89	47k
R1734	6-11020A93	68k
R1735	6-11020A97	100k
R1738, 1739	6-11020A73	10k
U1702	51-82884L57	integrated circuit: (see note) type 84L57
U1703	51-83629M17	type 29M17
U1705	51-83625M39	type 25M39
Y1701	48-82811M06	crystal: 4 MHz
mechanical parts		
9-80269B04	SOCKET, 40-contact (U1705)	
14-05160A01	INSULATOR, crystal	
TRN4666A	ROM, personality	
38-10184A10	TERMINAL, pin	

- notes:
- For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part numbers.
 - For parts not listed in the above parts list refer to the radio set mechanical parts list section.
 - Value of R1705 may be varied at time of production. Replace with value originally supplied.

VKN4026A Singletone Cable Kit PL-8408-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
J352	9-82301N01	connector, receptacle: female; 22-contact
J377	9-82301N04	female; 14-contact
P101	9-84319M18	female; 25-contact
mechanical parts		
42-10217A02	STRAP, cable; 5 used	



SHOWN FROM COMPONENT SIDE

NOTE: U1704 LOCATED ON SOLDER SIDE OF BOARD.

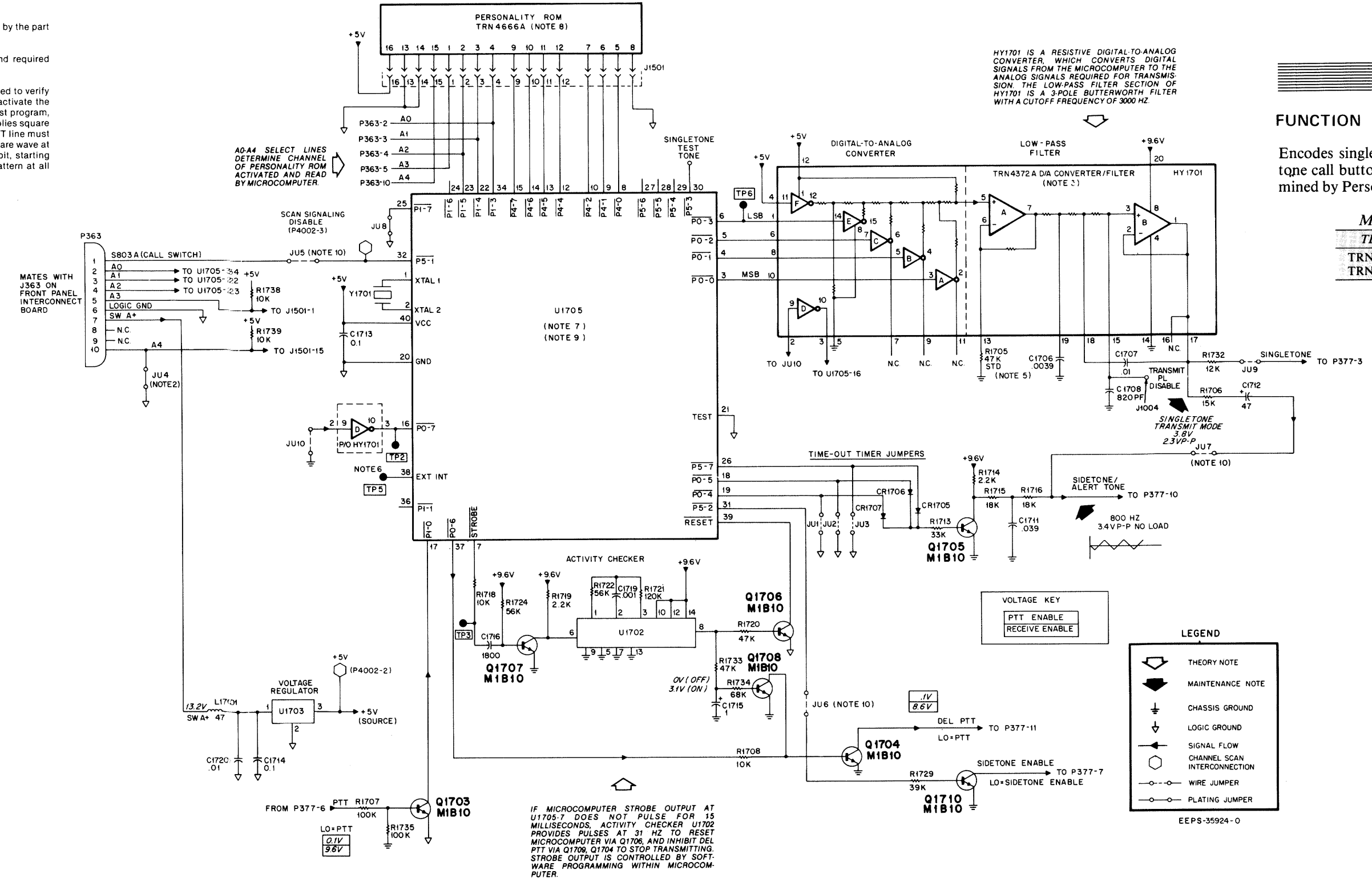
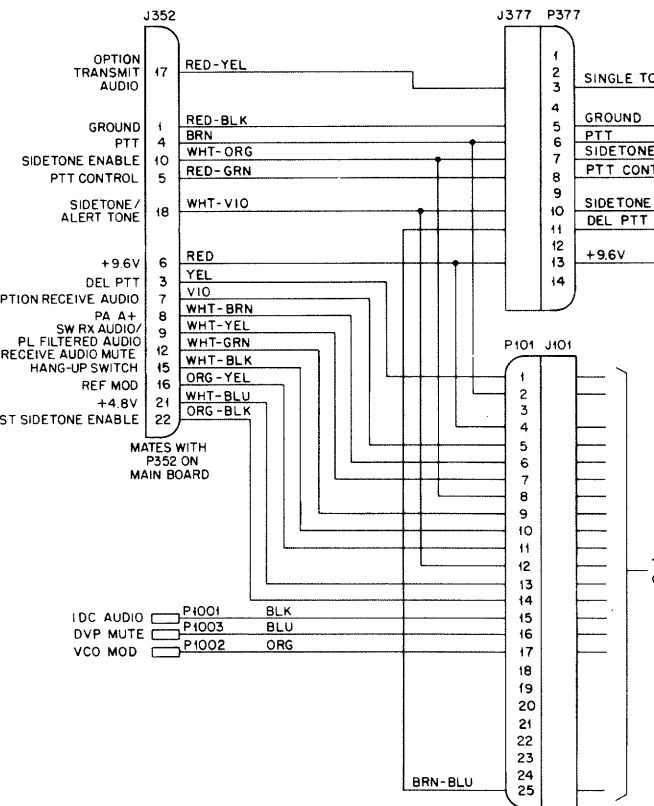
TRANSISTOR BASE DETAIL
EBC
(PIN SIDE)

LEGEND:
● TEST POINT (SOLDER SIDE)
○ SCAN POINT

COMPONENT SIDE = 80-DEPS-33280-A
SOLDER SIDE = 80-DEPS-33281-A

NOTES:

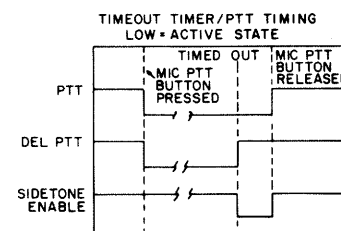
- Unless otherwise noted, resistor values are in ohms, capacitor values are in microfarads (μF) and inductor values are in microhenries (μH).
- JU4 is always out.
- HY1701 is a non-serviceable part. Schematic representation is shown for troubleshooting information only.
- Not used.
- R1705 determines output level of filter if required. If R1705 is present, value is determined by factory.
- Ground TP5 for alarm mode.
- U1705 is mask-programmed during manufacture. It must be ordered by the part number listed in the parts list.
- Personality ROM is factory programmed. Order by kit number and required codes.
- A test program is provided in the microcomputer, which may be used to verify that the microcomputer is working, or to check other circuitry. To activate the test program ground TP5, then ground TP5 in sequence. To stop test program, remove both grounds. In test program mode, the microcomputer applies square waves to all I/O ports. Note that the A0-A4 address lines and the PTT line must be active to observe test output at those lines. The period of the square wave at each pin (bit) of each port is 2 times the period of the preceding bit, starting with 88 μs at the least significant bit (such as P0-0). The test pattern at all ports (P0, P1, P4, P5) is identical and synchronized.
- JU5, JU6, JU7, JU8, JU9 are always in.



FUNCTION

Encodes single tone when operator presses front panel tone call button. Tone frequency and duration is determined by Personality ROM.

Model Complement Chart
TLN2394B Single Tone Encoder
TRN5042B Single Tone Board
TRN4372A D-A Hybrid



TIME-OUT TIMER JUMPER CHART

TIME	JU1	JU2	JU3
15 SEC	IN	OUT	OUT
30 SEC	OUT	OUT	OUT
60 SEC	OUT	IN	OUT
90 SEC	IN	IN	OUT
2-1/2 MIN	OUT	OUT	IN
3 MIN	IN	OUT	IN
5 MIN	OUT	IN	IN

INTEGRATED CIRCUIT CHART

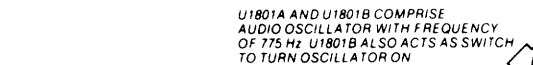
REFERENCE NUMBER	TYPE NUMBER	VCC PIN	V-PIN	DESCRIPTION
U1702	MC14541	14	7	TIMER
U1703	MC7805C	1	2	+5V REGULATOR
U1705	MC6810	40	20	MICROCOMPUTER
TRN4666A (NOTE 8)	74S287	16	8	BIPOLAR THREE STATE PROM

TRN5666A Time-Out Timer PL-8429-O

VKN4021A Time-Out Timer Cable Kit PL-8409-1

TIME-OUT TIMER

MODEL TRN5666A



U1802 IS A 14-STAGE RIPPLE COUNTER. WHEN PTT GOES LOW (RADIO KEYED), RESET IS REMOVED FROM U1802-11. THE COUNTER ADVANCES COUNT ON EACH TRAILING EDGE OF CLOCK AT U1802-10. AFTER A PREDETERMINED TIME PERIOD (SELECTED VIA JUI-JU5), THE APPROPRIATE COUNTER OUTPUT IS HIGH TURNING OFF THE TRANSMITTER AND SENDING ALERT TONE TO THE SPEAKER. WHEN PTT GOES HIGH (RADIO UNKEYED) U1802 IS RESET. ALL COUNTER OUTPUTS ARE LOW AND CLOCK INPUTS HAVE NO EFFECT.

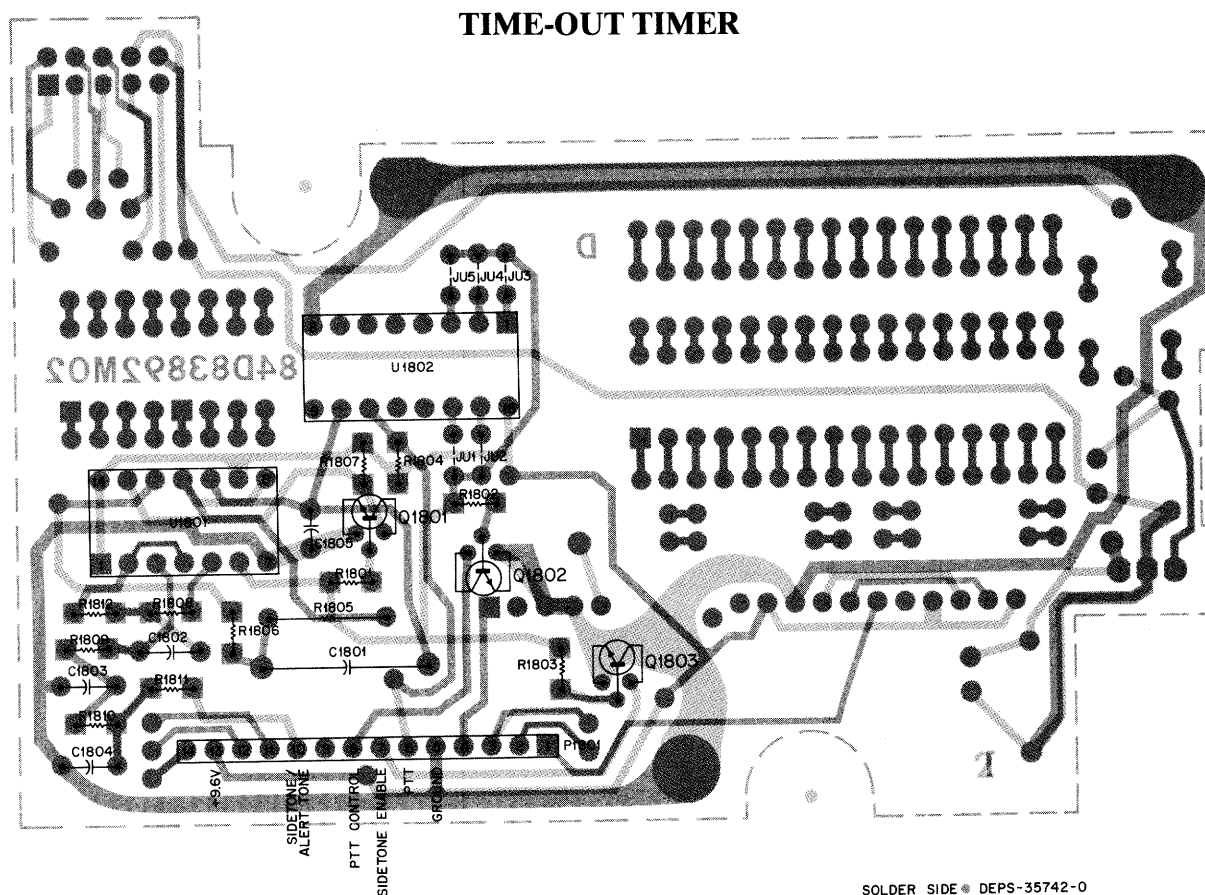
U1801D AND C COMPRISE A CLOCK OSCILLATOR WITH AN APPROXIMATE FREQUENCY OF 33.3 KHz. CLOCK OSCILLATOR IS FREE RUNNING EXCEPT DURING TIME-OUT PERIOD WHICH TIME U1801C OUTPUT IS A LOGIC LOW.

LEGEND:

 **THEORY NOTE**

 **MAINTENANCE NOTE**

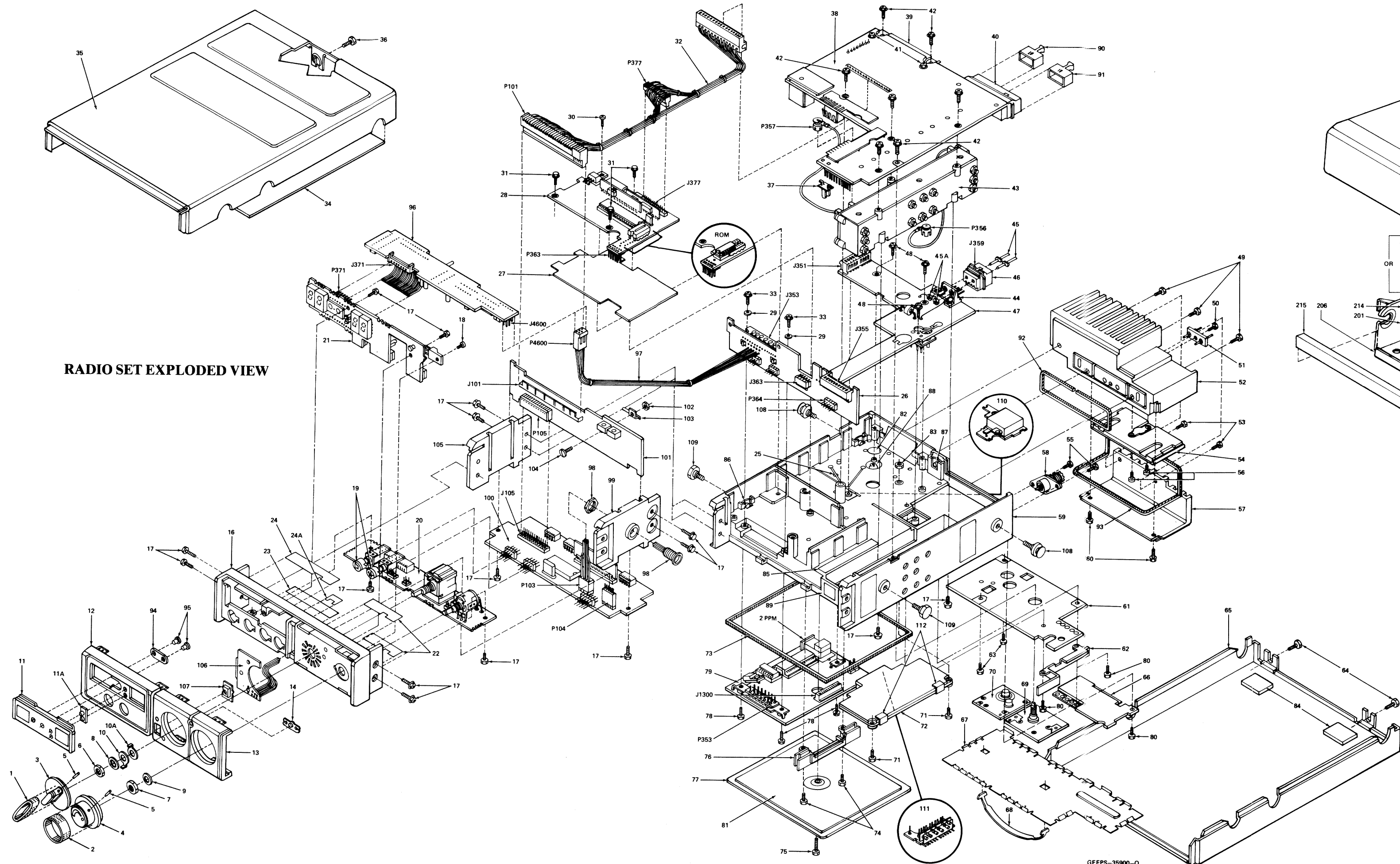
DEPS - 36016-0



SOLDER SIDE DEPS-35742-0
COMPONENT SIDE DEPS-35743-0
OL DEPS-35744-0

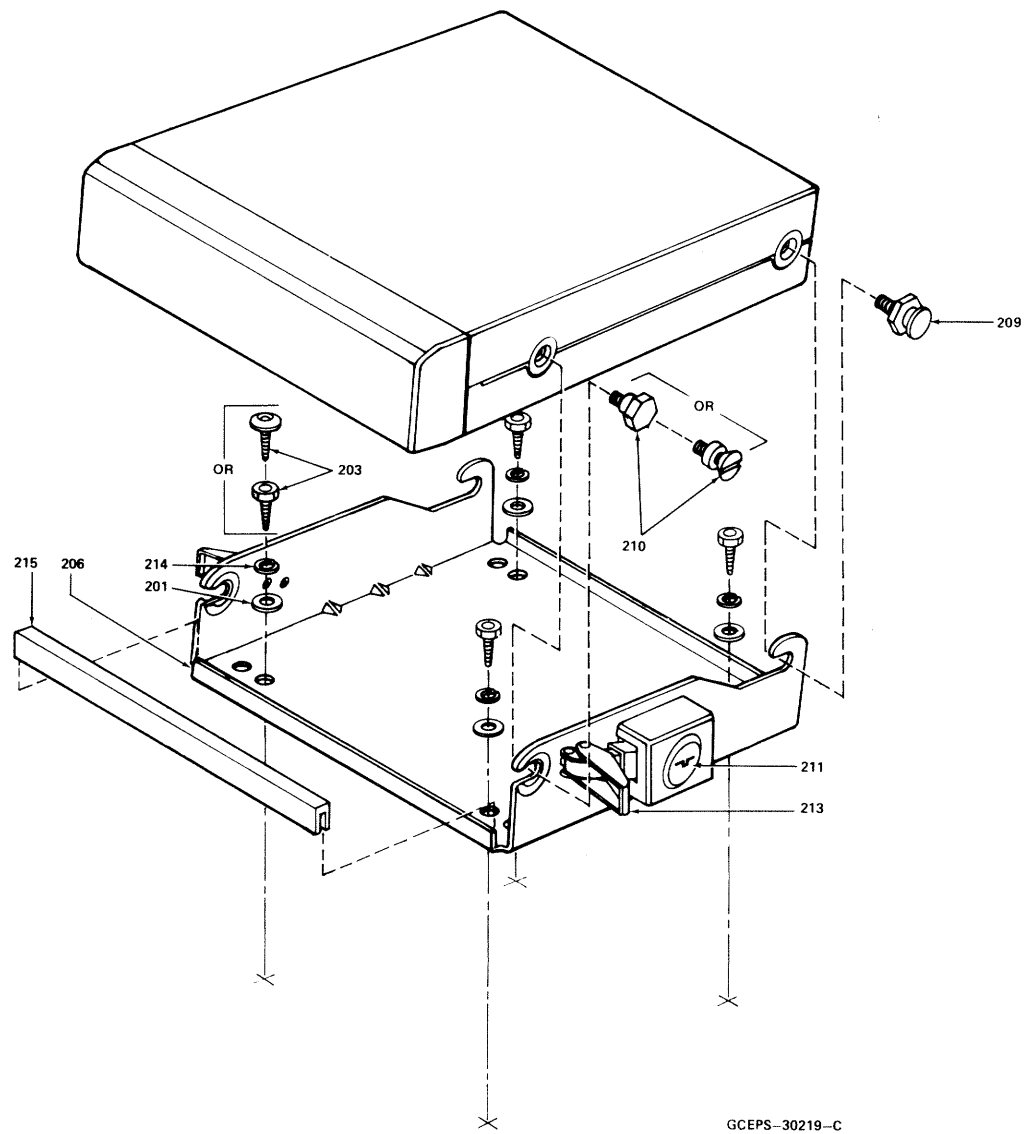
TIME-OUT TIMER

68P81064E29-O
3/15/83- *PHI*



RADIO SET EXPLODED VIEW

MOUNTING HARDWARE



GCEPS-30219-C

parts list

Radio Set Mechanical Parts			PL-8400-O
ITEM	MOTOROLA PART NO.	DESCRIPTION	
1	37-84215M01	BAND KNOB (channel select)	
2	37-84215M02	BAND KNOB (volume control)	
3	36-84149M01	KNOB (channel select)	
4	36-84140M01	KNOB (volume on/off)	
5	3-84220M01	SCREW, set, M3 x 0.5 x 5; 2 used	
6	2-84218M02	NUT, M9 x 0.75	
7	2-84218M01	NUT, M7 x 0.75	
8	4-84219M02	LOCK WASHER #9 internal	
9	4-84219M01	LOCK WASHER, #7 internal	
10	46-84150M02	STOP KNOB	
10A	46-84150M01	STOP KNOB	
11	61-84153M01	LENS (TRN4638A)	
	or 61-84153M02	LENS (TRN4639A)	
	or 61-84153M11	LENS (TRN4644A)	
	or 61-84153M12	LENS (TRN4645A)	
11A	61-82106N01	LENS, display LED	
12	64-84145M01	PANEL, button (TRN4623A)	
	or 64-84145M02	PANEL, button (TRN4624A)	
13	64-84345N01	DVP, front panel (VLN4123A)	
	or 64-84345N02	DVP, dual code panel (VLN4124A)	
14	61-84152M02	LENS, photocell	
15	NOT USED		
16	64-84046M01	PANEL, frame front (TRN4620A)	
17	3-84208M01	SCREW, tapping; M3 x 0.5 x 8	
18	3-84208M03	SCREW, tapping; M2.2 x 0.45 x 6	
19	36-84139M01	BUTTON, push (squell) TRN4608A	
	and	TRN4609A, TRN4607A	
	36-84139M03	BUTTON, push (monitor) TRN4606A	
20	—	BOARD, switch	
21	—	BOARD, display	
22	14-84183M01	INSULATOR, front panel	
23	14-84183M02	INSULATOR, front panel	
24	14-84183M03	INSULATOR, front panel	
24A	14-84183M05	INSULATOR, front panel center	
25	30-84177M01	CABLE, solid coaxial	
	& 29-10208A08	EYELET, 2 used	
26	—	BOARD, front panel interconnect	
27	14-84184M01	INSULATOR, option area	
28	—	BOARD, PL/DPL	
29	4-82318N01	WASHER, flat synthesizer connector	
30	3-84208M03	SCREW, M2.2 x 0.45 x 6.0	
31	3-84208M01	SCREW, washer; M3 x 0.5 x 8.0	
32	—	CABLE, assembly (refer to associated circuit board parts list)	
33	3-84208M01	SCREW, washer; M3 x 0.5 x 8.0	
34	14-84173M01	INSULATOR, top cover	
35	15-84175M01	COVER, top	
36	3-84208M12	SCREW, Phillips M4 x 0.7 x 9.0	
37	46-84135M01	GUIDE, printed circuit	
38	—	BOARD, main	
39	26-84104M01	HEATSINK	
40	—	J350 (refer to main board parts list)	
41, 42	3-84208M01	SCREW, washer M3 x 0.5 x 8.0	
43	—	Dual front end assembly	
44	15-84143M01	HOUSING connector base dc	
45	29-84167M01	TERMINAL, round	
45A	2-84334M01	NUT, terminal M3	
46	15-84144M01	HOUSING, connector cover dc	
47	—	BOARD, power interconnect	
48	3-84208M01	SCREW, washer M3 x 0.5 x 8.0	
49	3-84208M12	SCREW, Phillips M4 x 0.7 x 9.0	
50	3-84208M01	SCREW, washer M3 x 0.5 x 8.0	
51	64-84188M01	PLATE, feed-thru	
52	26-84142M01	HEATSINK (30 W)	
53	3-84208M01	SCREW, washer M3 x 0.5 x 8.0	
54	—	HYBRID, 30 W PA	
55	3-84208M01	SCREW, washer M3 x 0.5 x 8.0	
56	3-84208M04	SCREW, washer M2.5 x 0.45 x 8.0	
57	15-84141M01	COVER, heat sink	
58	9-82442E09	J300 CONNECTOR, antenna	
59	27-84061M01	CHASSIS	
60	3-84208M01	SCREW, washer M3 x 0.5 x 8.0	
61	—	BOARD PA interconnect	
62	26-84102M01	SHIELD, wall transmitter	
63	3-84208M01	SCREW, washer M3 x 0.5 x 8.0	
64	3-84208M12	SCREW, Phillips M4 x 0.7 x 9.0	
65	15-84174M01	COVER, bottom	
66	—	HYBRID, harmonic filter	
67	26-84176M01	SHIELD, PA	
68	55-84300B01	HANDLE	
69	—	HYBRID, 10 W PA	
70	—	HYBRID, low level amplifier	
71	3-84208M01	SCREW, washer M3 x 0.5 x 8.0	
72	—	HYBRID, VCO	
73	32-84178M01	GASKET, rf (19 inches)	
74	3-84208M01	SCREW, washer M3 x 0.5 x 8.0	
75	3-84208M11	SCREW, washer M3.5 x 0.6 x 14.0	
76	26-84103M01	SHIELD, synthesizer (std lock models)	
77	15-84147M01	COVER, synthesizer	
78	3-84208M01	SCREW, washer M3 x 0.5 x 8.0	
79	—	BOARD, synthesizer VHF	
80	3-84208M01	SCREW, washer M3 x 0.5 x 8.0	
81	14-84170M01	INSULATOR, synthesizer cover	

GEEPS-35900-O

ITEM	MOTOROLA PART NO.	DESCRIPTION
82	43-83779N01	INSERT, chassis plug
83	2-7003	NUT, 8-32 x 5/16 x 1/8"
84	75-82200H03	PAD, 2 used
85	14-84172M01	INSULATOR, power board
86	64-84169M01	PLATE NUT, cover side; 4 used
87	64-84168M01	PLATE NUT, cover rear; 3 used
88	42-82604H01	CLIP, transistor
89	14-84171M01	INSULATOR
90	15-82221N01	COVER, connector (microphone)
91	15-82222N01	COVER, connector (accessory)
92	32-84178M01	GASKET, rf (11.6 inches)
93	32-84178M01	GASKET, rf (8.3 inches)
94	75-84198M01	PAD, button
95	36-84113M01	SELECTABLE PL/DPL board
96	—	CABLE, selectable PL/DPL (refer to front panel parts list)
97	—	J109 KEY PLUG, receptacle
98	—	CHASSIS, extension casting
99	15-84663N01	DVP encryption board
100	—	DVP interface board
101	—	NUT, M3 x 0.5
102	2-84334M01	BRACKET, hybrid
103	42-84940N01	SCREW, machine; M3 x 0.5 x 8
104	3-84208M01	CHASSIS, extension casting
105	15-84663N02	DVP control board
106	—	S102 transmit mode selector switch
107	3-84195M01	SCREW, mounting; M5 x 0.8 x 6
108	3-84967M01	SCREW, mounting tray (front)
109	—	Board, synthesizer RF amplifier (Fast Lok models only)
110	—	Assembly, VCO feed-thru
111	—	Clip, ground (2 used)
112	42-83694N01	—

TRN4678A Tray with Latch, Mounting			PL-7254-B
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION	
201	4-8285	WASHER, flat; 4 used	
203	3-138021	SCREW, tapping; 10-16 x 3/4"; 4 used	
203	3-139926	SCREW, tapping; 10-16 x 1-1/2"; 4 used	
206	7-84196M01	BRACKET mounting tray	
209	3-84195M01	SCREW, mounting rear; 2 used	
210	3-84194M01	SCREW, mounting front; 2 used	
213	55-84201M01	LATCH; 2 used	
214	4-119332	WASHER, lock #10 split; 4 used	
215	46-82540N01	CHANNEL, rubber	

TRN4679A Tray, Mounting with Lock, Right-Hand			PL-7255-B
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION	
203	3-138021	SCREW, tapping; 10-16 x 3/4"; 4 used	
203	3-139926	SCREW, tapping; 10-16 x 1-1/2"; 4 used	
206	7-84196M02	BRACKET, mounting tray, right hand lock	
209	3-84195M01	SCREW, mounting rear; 2 used	
210	3-84194M01	SCREW, mounting front; 2 used	
211	55-84201M01	LATCH; 2 used	
213	55-84201M01	LATCH; 2 used	
	45-84200M01	CAM	
215	46-82540N01	CHANNEL, rubber	

VLN4130A Top Cover Kit			PL-8357-O
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION	
	14-84173M01	INSULATOR, top cover	
	15-84289N01	COVER, top	
	75-82200H01	PAD	
	75-82200H03	PAD, oscillator	

VLN4131A Bottom Cover Kit			PL-8356-O
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION	
	15-84288N01	COVER, bottom	
	75-82200H03	PAD, oscillator; 2 used	

DVP MCX100 RADIO EXPLODED VIEWS AND MECHANICAL PARTS LISTS

TRN4603A Chassis Hardware Kit PL-7248-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
J357	9-84135B02	connector, receptacle: female, single contact (phono)
mechanical parts		
	3-84208M01	SCREW, tapping, M3 x 0.5 x 8; 2 used
	29-10208A08	TERMINAL; 2 used

TRN4671A Tuning Tool Kit PL-7249-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
	66-83395A01	TOOL, align
	66-84974L01	TOOL, tuning

TRN4675A Standard Mounting Hardware PL-7272-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
201	4-8285	WASHER, flat; 4 used
203	3-138021	SCREW, tapping; 10-16 x 3/4"; 4 used
203	3-139926	SCREW, tapping; 10-16 x 1-1/2"; 4 used
206	7-84196M01	BRACKET, mounting tray
209	3-84195M01	SCREW, mounting rear; 2 used
210	3-84867M01	SCREW, mounting front; 2 used
214	4-119332	WASHER, lock #10 split; 4 used
215	46-82540N01	CHANNEL, rubber

TRN4672B Radio Set Hardware Kit PL-7537-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C299	21-11022G36	capacitor: 18 pF ± 5%; 50 V
L299	24-83884G08	coil, rf: 5.5 turns, ORG
mechanical part		
	29-5369	LUG

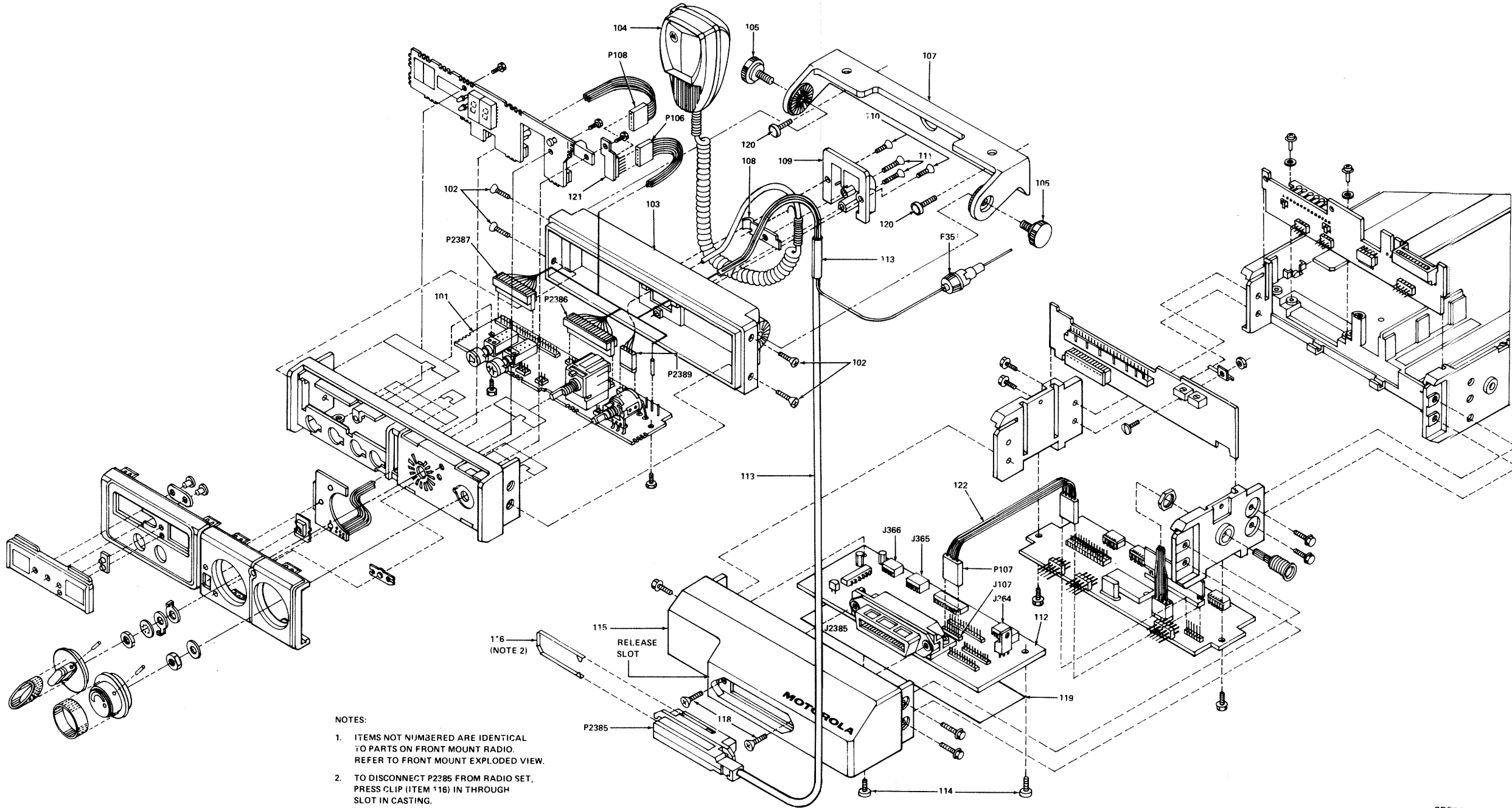
TRN4778A Tuning Probe Adaptor PL-8330-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
	43-00055M01	SLEEVE, tuning adjustment
	81-82603N01	TESTER, magnetic field probe

note: For parts not listed in the above parts list refer to the radio set mechanical parts list.

DVP MCX100 RADIO EXPLODED VIEWS
AND MECHANICAL PARTS LISTS

REMOTE MOUNT RADIO SET WITH
CONTROL HEAD



parts list

Radio Set Mechanical Parts			PL-8401-O
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION	
101	—	BOARD, remote switch	
102	3-84208M07	SCREW, M3 x 0.5 x 8, cover; 4 used	
103	15-84877M01	COVER, control head	
104	—	MICROPHONE (refer to Microphone section)	
105	1-80761D701	KNOB, control head mounting; 2 used	
106	—	NOT USED	
107	7-84891M01	BRACKET, trunnion	
108	7-84899M01	BRACKET, strain relief	
109	15-84881M01	STRAIN RELIEF	
110	3-84208M07	SCREW, M3 x 0.5 x 8; 2 used	
111	3-84208M08	SCREW, M3 x 0.5 x 20; 2 used	
112	—	BOARD, remote interface	
113	—	CABLE, remote (VKN4031A or VKN4032A)	
114	3-84208M01	SCREW, mounting; M3 x 0.5 x 8	
115	64-84876M01	COVER, remote transceiver (front)	
116	—	CLIP, plug retainer (VKN4031A or VKN4032A)	
118	3-141143	SCREW, 4-40; 2 used	
119	14-82125N01	INSULATOR, front panel	
120	3-140147 or 3-140148	SCREW, tapping; 10-32 x 3/4"; 3 used	
121	—	DVP, interconnect board	
122	—	DVP, remote interface cable kit	

MCX 100 FRONT PANEL LENSES

TYPE "A" LENSES—BASIC RADIO MODELS

REFERENCE ITEM	1	2	3	4	LENS KIT NUMBER	LENS PART NUMBER
					TRN4638A	61-84153M01
					TRN4639A	61-84153M02
					TRN4640A	61-84153M03
					TRN4644A	61-84153M11
					TRN4645A	61-84153M12
					TRN4646A	61-84153M14

TYPE "B" LENSES—SELECT 5 WITH 10/100—CALL OPTIONS OR PL DPL WITH SELECTABLE CODE OPTIONS

REFERENCE ITEM	1	2	3	4	LENS KIT NUMBER	LENS PART NUMBER
					TRN4652A	61-84153M01
					TRN4801A	61-84153M28
					TRN4641A	61-84153M06
					TRN4653A	61-84153M25
					TRN4800A	61-84153M27
					TRN4642A	61-84153M08
					TRN4654A	61-84153M24
					TRN4802A	61-84153M29
					TRN4647A	61-84153M16
					TRN4655A	61-84153M26
					TRN4803A	61-84153M30
					TRN4648A	61-84153M18

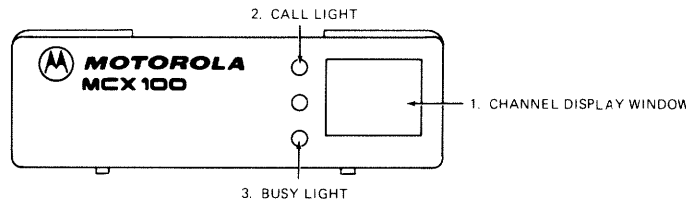
TYPE "C" LENSES—SELECT 5 MODELS WITH OPTIONS REQUIRING THUMBWHEEL SWITCHES

REFERENCE ITEM	1	2	3	4	LENS KIT NUMBER	LENS PART NUMBER
					TRN4804A	61-84153M31
					TRN4643A	61-84153M10
					TRN4650A	61-84153M21
					TRN4651A	61-84153M22
					TRN4649A	61-84153M20

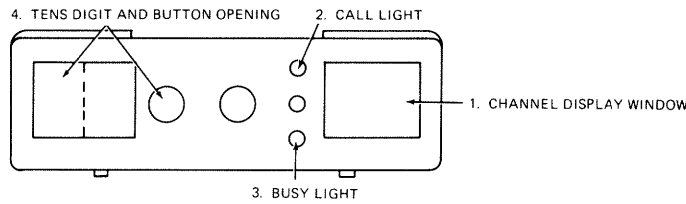
● DENOTES ITEM PRESENT IN LENS

FRONT PANEL LENS DETAILS

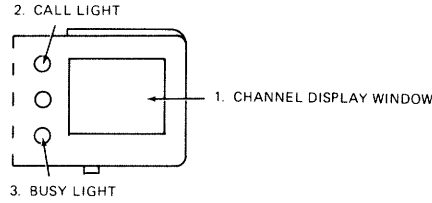
TYPE A LENS



TYPE B LENS



TYPE C LENS



GBEPS-32318-A

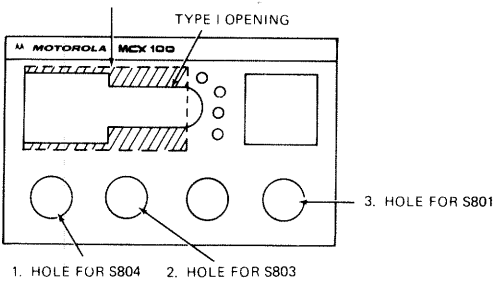
BUTTON PANEL DETAILS

MCX 100 FRONT PANEL BUTTON PANELS

TYPE I OPENING WITHOUT "MOTOROLA" EMBLEM

REFERENCE ITEM	1	2	3	BUTTON PANEL KIT NUMBER	BUTTON PANEL PART NUMBER
				TRN4623A	64-84145M01
				TRN4635A	64-84145M15
				TRN4624A	64-84145M02
				TRN4636A	64-84145M16
				TRN4807A	64-84145M18
				TRN4625A	64-84145M03
				TRN4637A	64-84145M17
				TRN4626A	64-84145M04

TYPE II OPENING FOR THUMBWHEEL SWITCHES OR CHANNEL SCAN CONTROLS



TYPE I OPENING WITH "MOTOROLA" EMBLEM

REFERENCE ITEM	1	2	3	BUTTON PANEL KIT NUMBER	BUTTON PANEL PART NUMBER
				TRN4805A	64-84145M05
				TRN4634A	64-84145M14
				TRN4806A	64-84145M06
				TRN4808A	64-84145M19
				TRN4629A	64-84145M07
				TRN4630A	64-84145M08

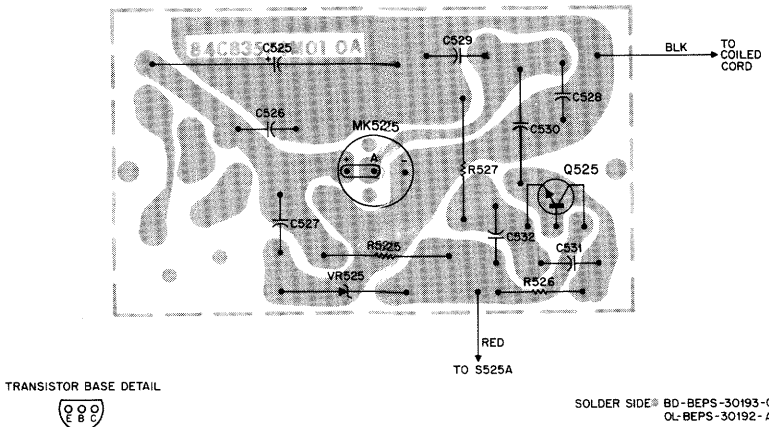
TYPE II OPENING WITH "MOTOROLA" EMBLEM

REFERENCE ITEM	1	2	3	BUTTON PANEL KIT NUMBER	BUTTON PANEL PART NUMBER
				TRN4627A	64-84145M09
				TRN4633A	64-84145M13
				TRN4638A	64-84145M10
				TRN4822A	64-84145M22
				TRN4809A	64-84145M20
				TRN4631A	64-84145M11
				TRN4832A	64-84145M21
				TRN4632A	64-84145M12

● DENOTES HOLE PRESENT IN BUTTON PANEL

GBEPS-32318-A

MICROPHONE CIRCUIT BOARD



parts list

TRN4700A Microphone Hardware, Standard
TRN4701A Microphone Hardware, Signaling
PL-7182-C

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
1	3-135102	SCREW, tapping, 4-40 x 1/4"; 2 used
2	3-139999	SCREW, tapping, 6-19 x 3/8"; 3 used
3	3-140000	SCREW, tapping, 6-19 x 3/4"; 3 used
5	1-80731D39	HOUSING, riveted; microphone rear (TRN4701A) includes: 41-84190M01 SPRING, plunger 42-10219A52 C-RING, retainer 45-82336M01 PLUNGER, actuator or 1-80709B93 HOUSING, riveted, microphone rear (TRN4700A)
6	15-82662M23	HOUSING, microphone flat
7	15-82896M01	HOUSING, microphone adapter
8	30-83385L01	CABLE (TRN4701A), with connector and strain relief, 5-conductor (W526) or 30-83731M03 CABLE (TRN4700A), with connector and strain relief, 4-conductor (W525)
9	32-82703B01	GASKET, microphone
10	37-12706	GROMMET, 2 used
11	38-84559B03	BUTTON, microphone
12	40-82263G02	S525, switch, push-to-talk
13	1-80762D02	S526 switch assembly, hang-up (TRN4701A)
14	42-852710	STRAP
15	—	part of ref. item 8
16	35-82652K01	BAFFLE, microphone

non-referenced items		
13-84599B02	EMBLEM	
33-82102N01	NAMEPLATE (TMN1024A)	
33-82102N02	NAMEPLATE (TMN1025A)	
1-851093	CLIP, hang-up; includes: SCREW, hang-up clip mounting, 8-15 x 1/2"; tapping; 2 used	
38-84383D01	CAP, protective; 2 used	
1-80731D40	ASSEMBLY lead and terminal, red includes:	
29-82713M01	TERMINAL, single contact	
1-80731D38	ASSEMBLY wire and terminal wht-blu (TRN4701A) includes:	
29-82713M01	TERMINAL, single contact	

SHOWN FROM SOLDER SIDE

TSN6031A Mobile Speaker (8-foot cable)
TSN6032A Mobile Speaker (17-foot cable)
PL-7186-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
1	15-84981B10	COVER, rear
2	7-84568B02	BRACKET, trunnion
3	3-136756	SCREW, tapping: 10-16 x 5/8"; 3 used
4	3-84244C03	SCREW, wing; 2 used
5	50-84561B07	SPEAKER, dynamic: 5"; 2 ohm
6	32-84554B01	GASKET, speaker
7	13-82671M05	BEZEL, speaker
8	14-84566B01	HOUSING, connector: 2 position
9	42-82018H05	RETAINER, cable
10	1-80731D32	ASSEMBLY, cable (TSN6031A); includes 9-84151B03 CONTACT, receptacle: female; 2 used 30-83155H01 CABLE, 2-conductor; 8 feet or 1-80734D90 ASSEMBLY, cable (TSN6032A); includes 9-84151B03 CONTACT, receptacle; female; 2 used 30-83155H01 CABLE, 2-conductor; 17 feet
11	3-140001	SCREW, tapping: 10-16 x 5/8"; 4 used

non-referenced items		
33-83102N03	NAMEPLATE (TSN6031A)	
33-82102N06	NAMEPLATE (TSN6032A)	

TRN4699A Microphone Board
PL-7183-A

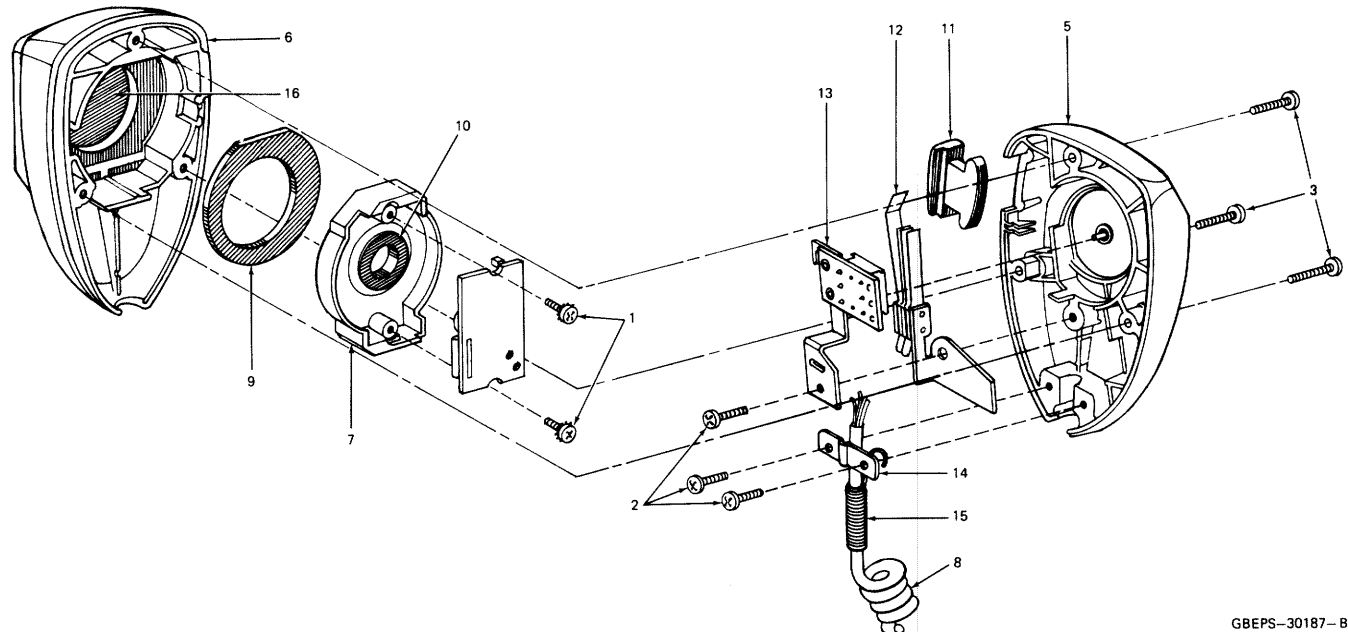
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C525	23-84669A24	capacitor, fixed: $\mu F \pm 5\%$; 50 V; unless otherwise stated: 1 + 150-10%; 25 V
C526	21-11021E13	.001
C527	21-11022M29	30 pF
C528	21-11021E13	.001
C529	21-11022M29	30 pF
C530	8-84637L12	.047 $\pm 10\%$; 250 V
C531	21-11022M50	220 pF
C532	21-11021E13	.001

MK525	50-82825M01	cartridge: electret
Q525	48-869642	transistor: (see note) NPN; type M9642
R525	6-11009C57	resistor, fixed: $\pm 5\%$; 1/4 W; 2.2k
R526	6-11009C97	100k
R527	6-11009C19	56

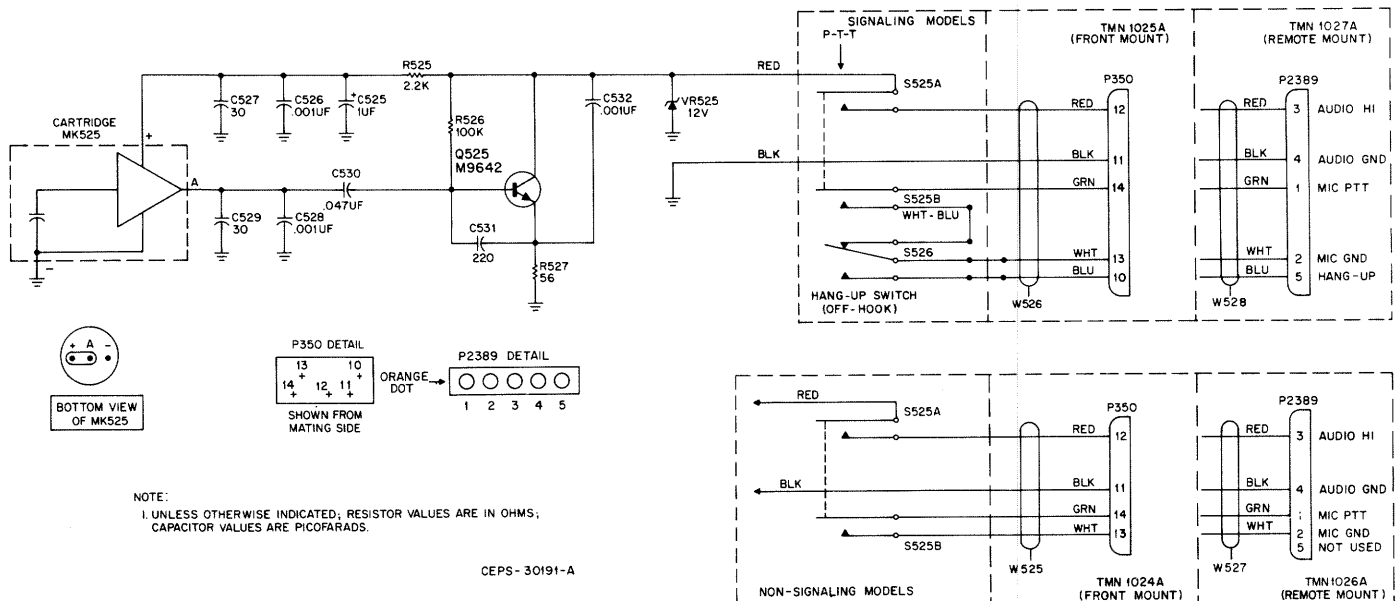
S525	—	switch: dpst, refer to mechanical parts list
VR525	48-82256C54	voltage regulator: (see note) Zener type: 12 V

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

MICROPHONE EXPLODED VIEW



MICROPHONE SCHEMATIC DIAGRAM



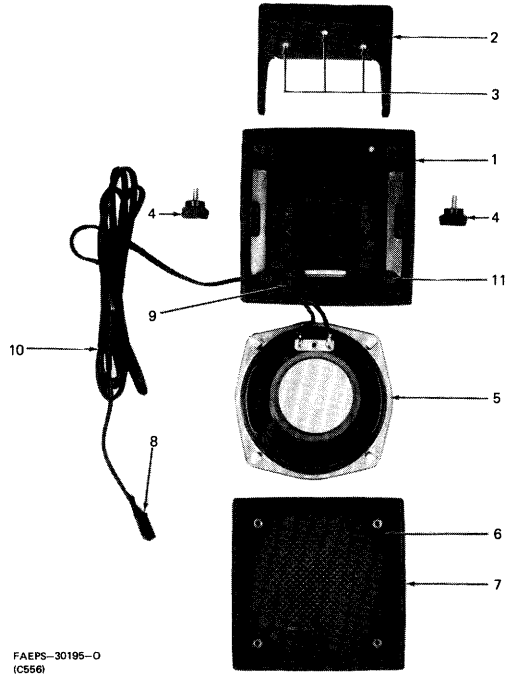
MCX100 SPEAKER

MODEL TSN6031A

MCX100 MOBILE MICROPHONES

MODELS TMN1024A, TMN1025A
TMN1026A, AND TMN1027A

SPEAKER PARTS



Microphone Model Complement	
TMN1024A Microphone, Standard Front Mount	
TRN4699A Board	
TRN4700A Mic Hardware, Standard Front	
TMN1025A Microphone, Signaling Front Mount	
TRN4699A Board	
TRN4701A Mic Hardware, Signaling Front	
TMN1026A Microphone, Standard Remote Mount	
TRN4699A Board	
TRN4810A Mic Hardware, Standard Remote	
TMN1027A Microphone, Signaling Remote Mount	
TRN4699A Board	
TRN4811A Mic Hardware, Signaling Remote	

68P81045E94-C
1/19/83- PHI

BASE STATION POWER CABLE AND SPEAKER TRAY

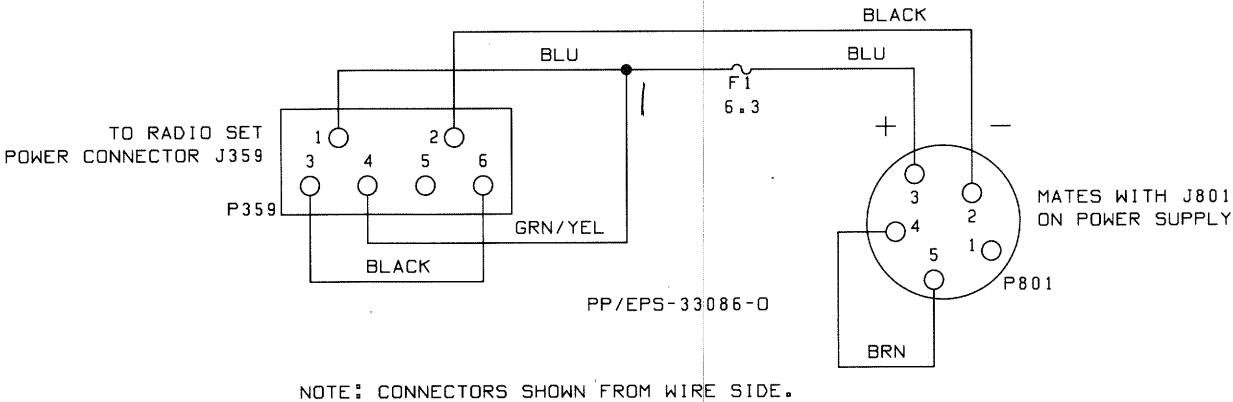


FUNCTION

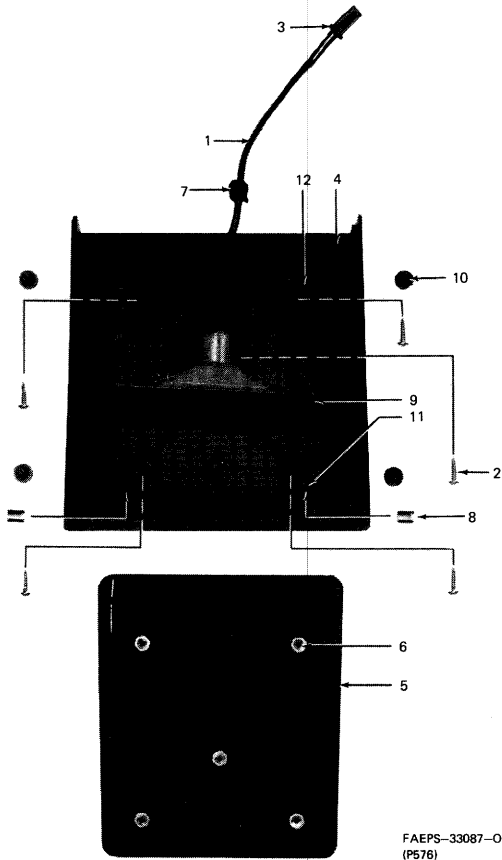
Provides interconnection between GPN6101A Power Supply and *MCX100* Radio set.

NOTE

Refer to Power Supply section of this manual for information on cables used with TPN series power supplies.



BASE STATION SPEAKER TRAY



parts list

TKN8208A Low Power Cable Kit		PL-7637-O
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F1	65-84711C04	fuse: 6.3 amp
P359 P801	15-84192M01 23-84749B01	connector, plug: HOUSING, 6-contact male, 5-contact
mechanical parts		
1-80733D11		assembly, jumper and terminal; includes:
9-84151B05		TERMINAL; 2 used
1-80737D34		assembly power cable; includes:
29-84151L05		TERMINAL; 2 used
9-84151B03		CONTACT, receptacle
37-135566		TUBING, 1/4" heatshrink
1-80737D35		assembly blue wires includes:
5-82050		EYELET
14-84710C01		BODY, fuseholder
41-84707C01		SPRING
42-84754B01		CLAMP
2-84745B01		NUT
15-84746B02		SHELL
3-84747B01		SCREW, set

TRN4898A Base Station Mounting Tray			PL-7633-O
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION	
1	1-80735D98	CABLE, with connector pins	
2	3-122916	SCREW	
3	14-84566B01	HOUSING, cable connector	
4	15-82086N01	HOUSING	
5	15-82087N01	COVER	
6	38-82132N01	NUT, clamp-on	
7	42-82018H18	GROMMET, cable	
8	42-82105N01	CLIP, speaker	
9	50-84401D01	SPEAKER	
10	55-82104N01	BUTTON, detent	
11	75-82172N01	PAD, speaker	
12	75-83951F01	FOOT, bumper	
non-referenced item			
	33-82102N07	NAMEPLATE	

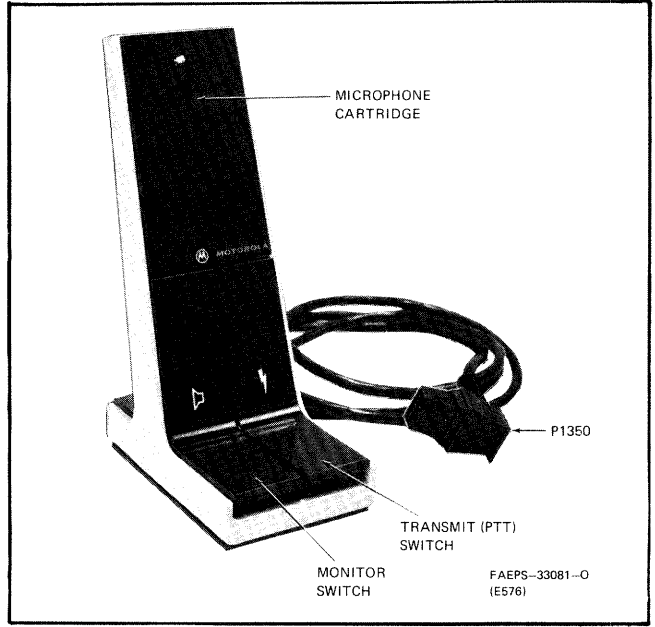


Figure 1. Microphone Controls

1. DESCRIPTION

1.1 The TMN1028A Desk Microphone contains a microphone and preamplifier circuit board, and a dual-action "Transmit" switch which allows easy operation for either hand-held or desk-top use in carrier squelch applications. The TMN1029A Desk Microphone is the same as the TMN1028A except that it contains an additional dual action "Monitor" switch for use in coded squelch applications.

1.2 All electrical components are mounted vertically in the housing with the microphone cartridge at the top and the switches at the bottom. A stranded cord with connector is routed out through the back at the base of the housing.

2. INSTALLATION

Before connecting the desk microphone to the radio set, verify that printed circuit board jumpers JU1 and JU2 are configured correctly for the system application. Microphones are shipped from the factory with both jumpers installed. Jumper JU2 (Model TMN1029A only) is removed when it is necessary to prevent an operator from transmitting without first monitoring a channel to verify it is clear. With JU2 removed, both the MONITOR and TRANSMIT switches must be activated before transmitting.

Refer to paragraph 4.1 for front cover removal to gain access to the jumpers when it is necessary to change the microphone jumper configuration.

3. OPERATION

3.1 GENERAL MICROPHONE PROCEDURE

To assure good audio transmission quality, observe the following general microphone practices.

- Keep microphone approximately 8 inches away from the mouth. The distance may vary depending on the user's tone of voice.
- Speak clearly and directly into the microphone at a normal conversational level.

3.2 TRANSMIT SWITCH

When pressed and held, the dual-action TRANSMIT switch causes the associated transmitter to be keyed.

3.3 MONITOR SWITCH

The MONITOR switch is a dual-action switch which operates in the same manner as the TRANSMIT switch.

The MONITOR switch (Model TMN1029A only) when activated, allows the operator to monitor a channel to be sure it is clear before transmitting. In systems using coded squelch, this feature is an FCC requirement. If jumper JU2 is removed, the operator must press and hold both the MONITOR and TRANSMIT switches before he can transmit. Releasing either switch ends the transmission.

4. MAINTENANCE

4.1 DISASSEMBLY

Step 1. At the rear of the microphone, remove the four screws that secure the front cover to the housing; then remove the front cover.

Step 2. On the bottom of the microphone, remove the four screws that secure the baseplate to the housing then remove the baseplate.

Step 3. Remove the shaft retainer clip from the pivot shaft (see Figure 2).

Step 4. Remove the cord grommet from the U-shaped slot. (See Figure 3).

Step 5. Slide both halves of the pivot shaft toward the center releasing the shaft from the retaining holes in the housing.

Step 6. Swing the lower edge of the printed circuit board (including switches) forward to disengage the upper portion of the circuit board from the housing. Remove the circuit board.

4.2 ASSEMBLY

Assembly is essentially the reverse order of disassembly.

4.3 TESTING

4.3.1 Test Equipment Required

- S-1063 Motorola Solid-State DC Multimeter or equivalent
- S-1053 Motorola Solid-State AC Voltmeter or equivalent
- R-1004 Motorola General Purpose Dual Trace 15 MHz Oscilloscope.

4.3.2 Test Procedure

NOTE

Potentiometer R1 is factory set and field adjustment is not required.

The microphone can be tested either while connected to its associated equipment or to the test setup as shown in Figure 4. Basic testing consists of checking resistances and dc voltages against the schematic diagram. Dynamic testing can be accomplished by speaking into the microphone and using an oscilloscope or ac voltmeter to monitor the amplification (gain) of the various stages. However, since a known dynamic input signal for field testing is not practicable, gain measurements are to be used only as indications of proper stage functioning. For that reason, no ac voltages are provided on the schematic.

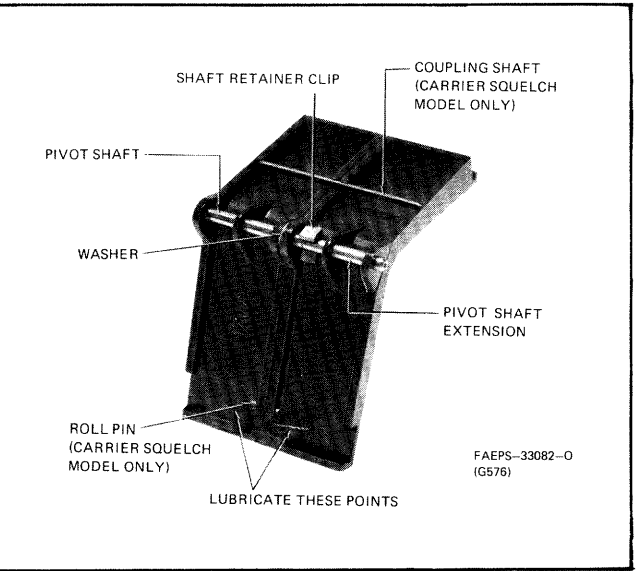


Figure 2. Pivot Shaft Detail

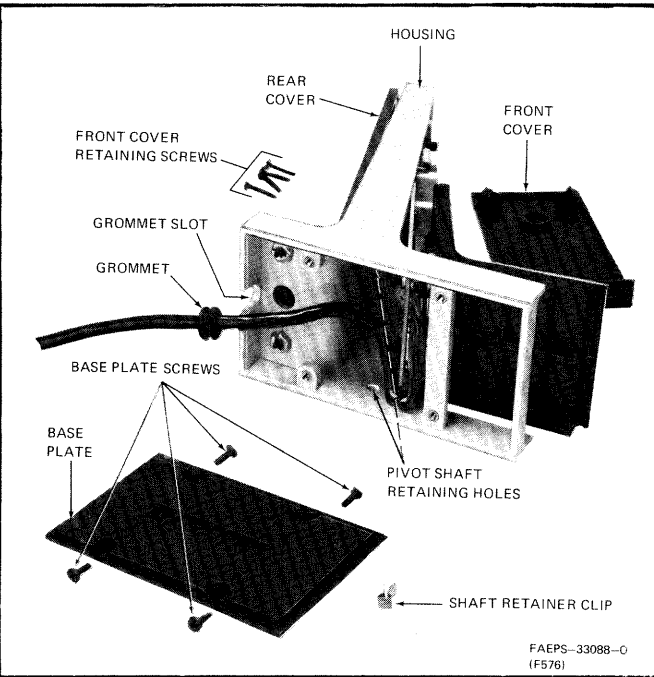


Figure 3. Microphone Assembly Detail

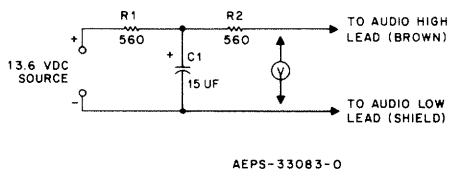


Figure 4. Test Setup

TMN1028A Model Complement		
Item	Description	Ver
TRN4861A	Mic Circuit Board	0
TRN4820A	Mic Housing and Hardware	0

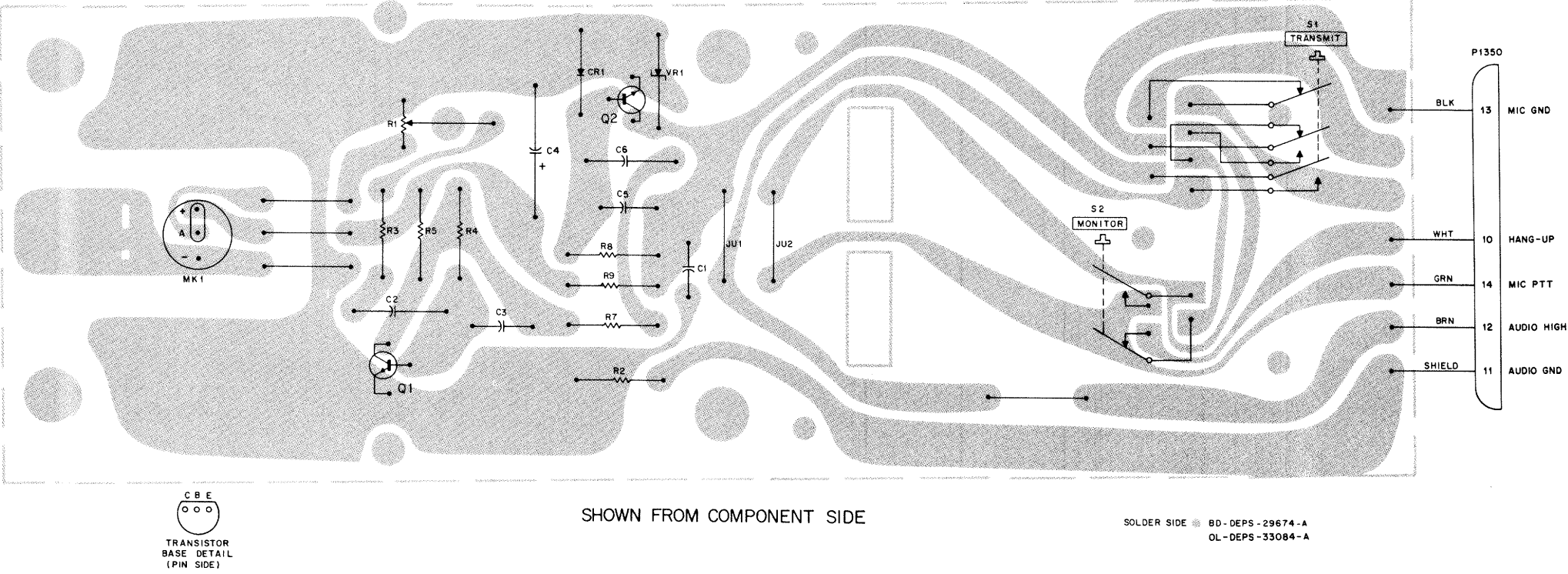
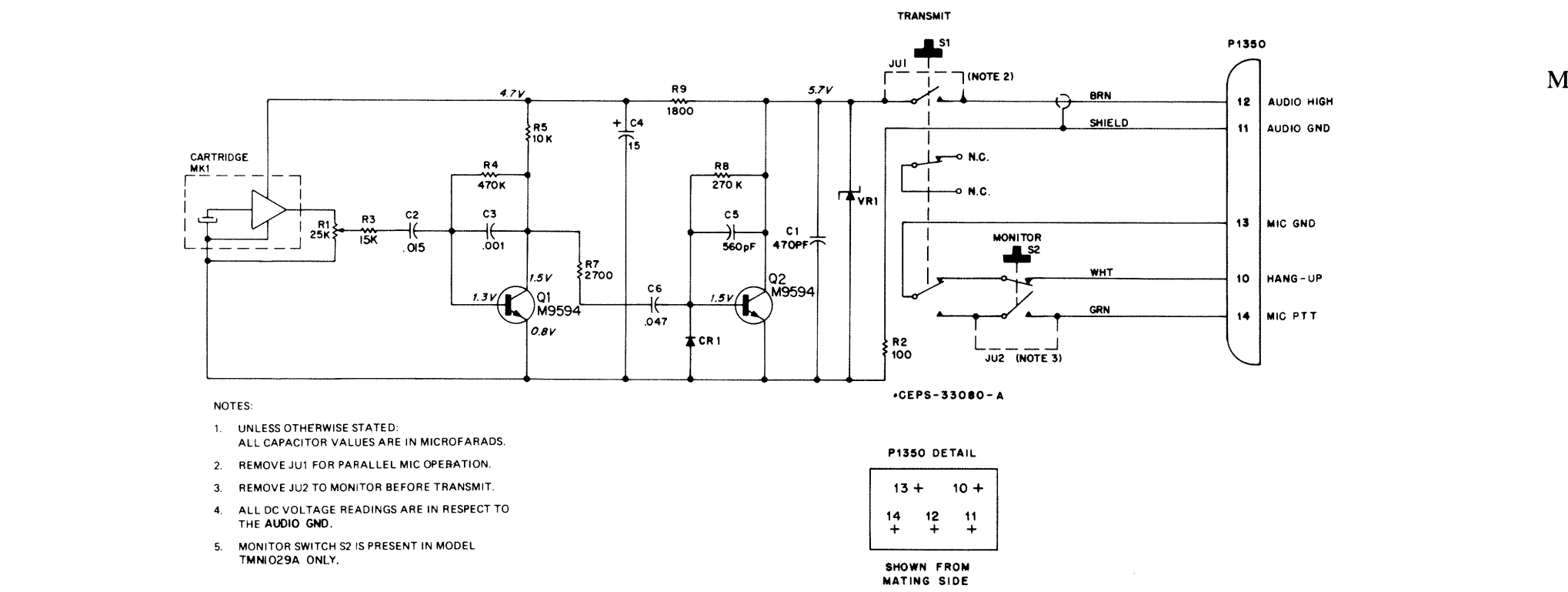
TMN1029A Model Complement		
Item	Description	Ver
TRN4861A	Mic Circuit Board	0
TRN4821A	Mic Housing and Hardware	0

parts list

TRN4861A Microphone Circuit Board PL-7604-O		
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C1	21-82187B45	capacitor, fixed: uF ± 10%; unless otherwise stated
C2	8-84637L08	470 pF; 500 V
C3	21-82187B44	0.01; 100 V
C4	23-84665F09	15 + 150 -10%; 25 V
C5	21-82187B06	560 pF; 500 V
C6	8-84637L12	.047; 250 V
CR1	48-83654H01	diode; Silicon
MK1	50-82825M01	cartridge, microphone: miniature
Q1,2	48-869594	transistor: (see note) NPN; type M9594
R1	18-84944C02	resistor, fixed ± 5%; 1/4 W; unless otherwise stated
R2	6-11009C25	variable; 25k
R3	6-11009C77	100
R4	6-11009D14	15k
R5	6-11009C73	470k
R6	6-11009C59	10k
R7	6-11009C59	2.7k
R8	6-11009C08	270k
R9	6-11009C55	1.8k
VR1	48-82256C38	voltage regulator: Zener; 9.1 V

TRN4820A & TRN4821A Microphone Housing & Hardware Kit PL-7605-A		
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
S1,2	40-84711E02	switch, leaf: 2 section, multiple nonlocking contacts (TRN4820A)
	40-84711E03	2 section multiple nonlocking contacts (TRN4821A)
mechanical parts		
2-10101A69		NUT, spring steel; 2 used
3-135676		SCREW, tapping: 4-40 x 1/4"; 3 used (switch)
3-138809		SCREW, machine: 4-40 x 5/16"; 4 used (baseplate)
3-140047		SCREW, tapping: 4-40 x 5/8"; 4 used (front cover)
4-10058B10		WASHER, ("TEFLON") THN4820A
15-82976M03		COVER, front
15-82976M01		COVER, rear
15-84191E02		HOUSING
22-82591C05		PIN, roll (TRN4820A)
38-84184E06		BUTTON, left hand (TRN4820A)
38-84184E03		BUTTON, left hand (TRN4821A) (monitor)
38-84192E02		BUTTON, right hand (transmit)
42-82143C05		CLAMP, cable
42-84725E01		CLIP, retainer
47-84193E01		SHAFT, button mounting pivot
47-84194E01		SHAFT, extension
47-84723E01		SHAFT, coupling (TRN4820A)
64-82977M01		PLATE, base
75-84722E01		PAD, base plate
42-82143C05		CLAMP, cable
30-82247M01		CABLE, 5-conductor
37-82633B13		GROMMET

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



DESK MICROPHONES

MODELS TMN1028A AND TMN1029A

parts list

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F602	65-86099	fuse, cartridge: 7.5 amp; 32 V; type 3AG; fast-blow
P601	15-83293K01 29-84706E05 30-10286A21	connector, plug: includes: INSULATOR, connector; 15-circuit TERMINAL, pin; male; 4 used WIRE, jumper; BLK
P602	15-10183A52 29-82335A01	insulator, connector; 6-circuit TERMINAL, pin; male; 4 used
W601	30-84396L01	cable, power: 2-conductor, (18 ga.); 120" used
XF602	14-82882A01 14-82883A01 41-82885A01 42-82884A01	fuseholder, in-line: includes: BODY, fuseholder CAP, fuseholder SPRING, compression CLIP, fuseholder; 2 used
		non-referenced part
	37-134371	TUBING, heatsink (BLK) 1" length; 2 used

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F603	65-4165	fuse, cartridge: 15 amp; 35 V; fast-blow type
P601	15-83958L01 29-82335A01 29-84706E05 30-10286A21	connector, plug: includes: INSULATOR, connector; 17-circuit TERMINAL, pin; male; (large) 2 used TERMINAL, pin; male; (small) 6 used WIRE, jumper; BLK
P602	15-10183A52 29-82335A01	insulator, connector; 6-circuit TERMINAL, pin; male; 4 used
W601	30-84396L02	cable, power: 2-conductor, (14 ga.); 120" used
XF603	14-82882A01 14-82883A01 41-82885A01 42-82884A01	fuseholder, in-line: includes: BODY, fuseholder CAP, fuseholder SPRING, compression CLIP, fuseholder; 2 used
		non-referenced part
	37-134371	TUBING, heatsink (BLK) 1" length; 2 used

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C1	8-82905G02	capacitor, fixed; uF: $\pm 10\%$; 50 V; unless otherwise stated
C2	23-83906L01	100 $\pm 75-10\%$; 25 V
C3, 4	8-82905G02	.022
CR5	48-82392B03	semiconductor device, diode: (see note) silicon
Q1, 2	48-869642	transistor: (see note) NPN; type M9642
R1	6-125A41	resistor, fixed: $\pm 5\%$; 1/2 W: unless otherwise stated
R2	6-125A53	470
R3	6-125A13	1.5k
R4	17-82177B40	33
R5, 6	6-125C41	200; 5 W
R7, 8	6-125A49	470 $\pm 10\%$; 1 W
R9, 10	6-125C73	1k
R11	6-125C51	10k $\pm 10\%$ (note: Use is optional, determined at factory)
VR1	48-83696E01	1.2k $\pm 10\%$
		semiconductor device, diode: (see note) silicon; Zener type: 6.8 V $\pm 5\%$

note: Replacement diodes and transistors must be ordered by listed part number only for optimum performance.

parts list

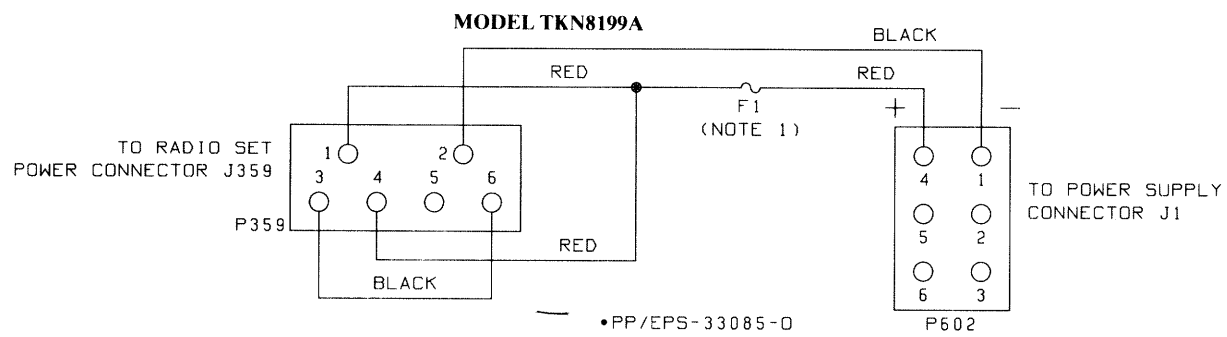
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C1	23-82464C08	capacitor, fixed: 11,000 uF $\pm 75-10\%$; 35 V
CR1	48-84571H02	semiconductor device, diode: (see note) Bridge Rectifier Assembly; silicon
J1	15-10183A53 29-82336A01	connector, receptacle: includes: INSULATOR, 8-contact CONTACT, female; 4 req'd. (plo Model TLN5219A)
F1	65-42092	fuse, cartridge: fast-blow type; 2A
P1	30-83212F01	line cord: includes: ac plug
Q3	48-869807	transistor: (see note) PNP; type M9807
Q4	48-869639	transistor: (see note) NPN; type M9639
S1	40-84241G04	switch, slide: dpst
T1	25-83594E02	transformer, power: pri. res. 2.75 ohms sec. res. 0.11 ohm
TB1	31-121700	terminal strip: 8-terminals; no. 2 & 7 mtg.
XF1	9-82083C01	fuseholder: extractor post type
		non-referenced items
	1-80745B56	WIRE & LUG ASSEMBLY, includes:
	29-824456	LUG, ring tongue
	3-2977	SCREW, machine: 6-32 x 1-1/8"; 4 req'd.
	4-7569	WASHER, flat: 145 x .312 x .027"; 4 req'd.
	4-7650	WASHER, lock: #6 (split); 2 req'd.
	8-84496C01	WASHER, shoulder; 4 req'd.
	28-84923B06	HEATSINK
	29-5248	LUG, soldering; #6; 2 req'd.
	1-80745B57	DIODE BRACKET ASSEMBLY includes:
	1-80745B56	WIRE & LUG ASSEMBLY includes:
	29-824456	LUG, ring tongue
	1-80745B58	WIRE & LUG ASSEMBLY, includes:
	29-824456	LUG, ring tongue
	1-80745B60	WIRE & LUG ASSEMBLY, includes:
	29-824456	LUG, ring tongue
	1-80745B61	WIRE & LUG ASSEMBLY, includes:
	29-824456	LUG, ring tongue
	3-134168	SCREW, tapping: 4-40 x 1/4"; 2 req'd.
	3-134268	SCREW, tapping: 4-40 x 7/16"; 2 req'd.
	4-114057	WASHER, flat: .125 x .312 x .032"
	7-83095F02	BRACKET, circuit board
	14-84286A01	INSULATOR, transistor: 520 x .660"
	14-84525G01	INSULATOR, transistor (T066 base)
	29-5261	LUG, soldering; #6; 2 req'd.
	29-5369	LUG, soldering; #4
	1-80745B88	HOUSING ASSEMBLY, includes:
	13-868710	DECAL, patent
	15-83096F02	HOUSING
	1-80778B37	CHASSIS ASSEMBLY, includes:
	1-80747B60	WIRE & LUG ASSEMBLY, includes:
	29-82336A01	CONTACT, female
	1-80747B61	WIRE & LUG ASSEMBLY, includes:
	29-82336A01	CONTACT, female
	1-80747B62	WIRE & LUG ASSEMBLY, includes:
	29-82336A01	CONTACT, female
	1-80747B63	WIRE & LUG ASSEMBLY, includes:
	29-82336A01	CONTACT, female
	2-1355	NUT, hex: 8-32 x 5/16 x 1/8"; 4 req'd.
	2-7005	NUT, hex: 8-32 x 1/4 x 3/32"; 14 req'd.
	2-9627	NUT, hex: 4-40 x 3/16 x 3/32"; 2 req'd.
	2-119913	NUT, 8-32 x 1/32"
	3-2979	SCREW, machine: 6-32 x 3/8"; 7 req'd.
	3-7312	SCREW, machine: 6-32 x 3/4"
	3-7346	SCREW, machine: 6-32 x 3/4"
	3-139085	SCREW, machine: 4-40 x 5/16"; 2 req'd.

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
	3-490773	SCREW, machine: 6-32 x 9/16"; 4 req'd.
	4-2645	WASHER, lock: #6 (split); 12 req'd.
	4-9746	WASHER, lock: #8 (split); 4 req'd.
	4-114583	WASHER, lock: #4 (split); 2 req'd.
	4-82418B88	WASHER, insulator: .125 x .250 x .010"; 2 req'd.
	13-84639D04	ESCUTCHEON
	27-83252N01	CHASSIS
	42-82016H01	RETAINER, cable
	42-83415C01	CLIP, capacitor mounting
	43-82599M01	SPACER, 4 req'd.
	75-84215A02	BUMPER, recessed: 4 req'd.
	3-139854	SCREW, tapping: 6-32 x 3/8"; 6 req'd.
	3-134168	SCREW, tapping: 4-40 x 1/4"; 2 req'd.
	3-139138	SCREW, tapping: 10-32 x 3/8"; 3 req'd.
	33-84035E05	NAMEPLATE, model number
	42-10217A02	STRAP, cable harness; 3 req'd.
	54-84347M01	LABEL, warning
	9-10454A04	CONN. (YELLOW)

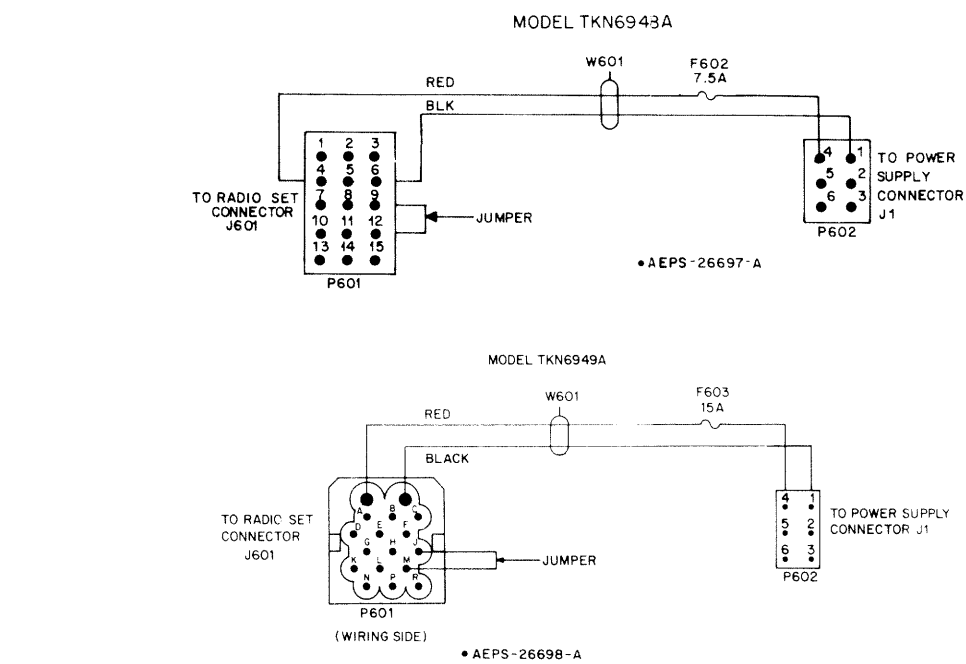
note: Replacement diodes and transistors must be ordered by listed part number only for optimum performance.

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F1	65-10286 or 65-15270	fuse: 10 amp 6 amp
P359 P602	15-84192M01 15-10183A52	connector, plug: HOUSING, 6-contact HOUSING, 6-contact
		mechanical parts
	1-80737D31	assembly power cable; includes:
	14-82883A01	CAP, fuse holder
	42-82884A01	CLIP, fuse
	29-82335A01	TERMINAL, male
	30-84396L02	CABLE, 2-conductor
	37-134370	TUBING, heatshrink; 3/4" (BLK)
	37-134371	TUBING, heatshrink; 3/8" (BLK)
	9-82845L01	CRIMP, connector
	1-80737D32	ASSEMBLY, red wire and lug; includes:
	9-84151B03	RECEPTACLE, single contact
	1-80737D33	ASSEMBLY, red wire and lug; includes:
	14-82882A01	BODY, fuseholder
	29-82335A01	TERMINAL, male
	41-82885A01	TERMINAL, fuseholder
	42-82884A01	CLIP, fuseholder

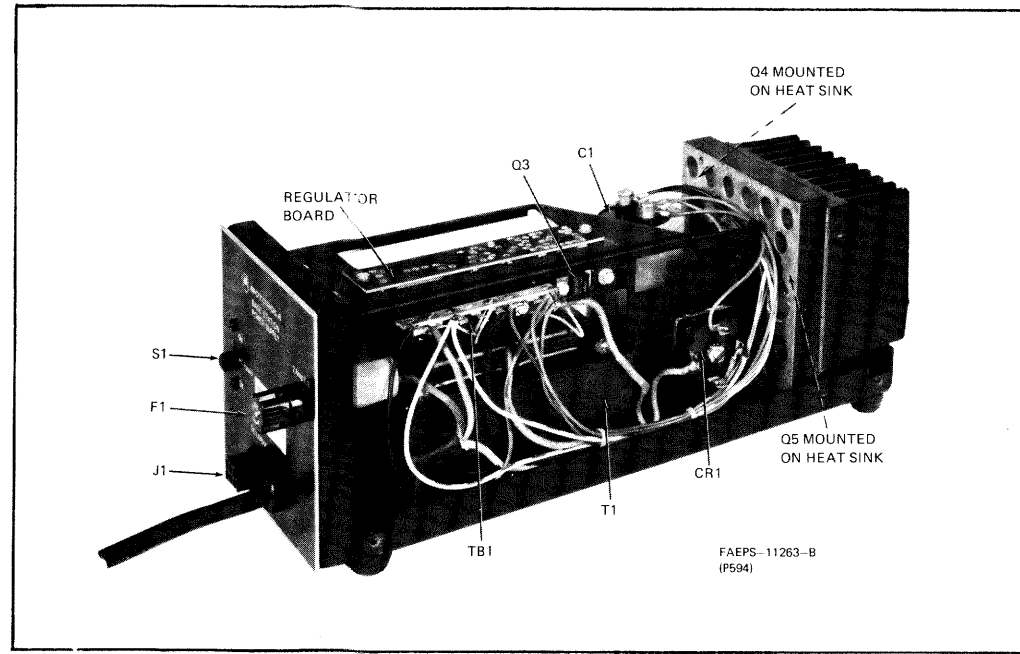
CABLE DETAILS



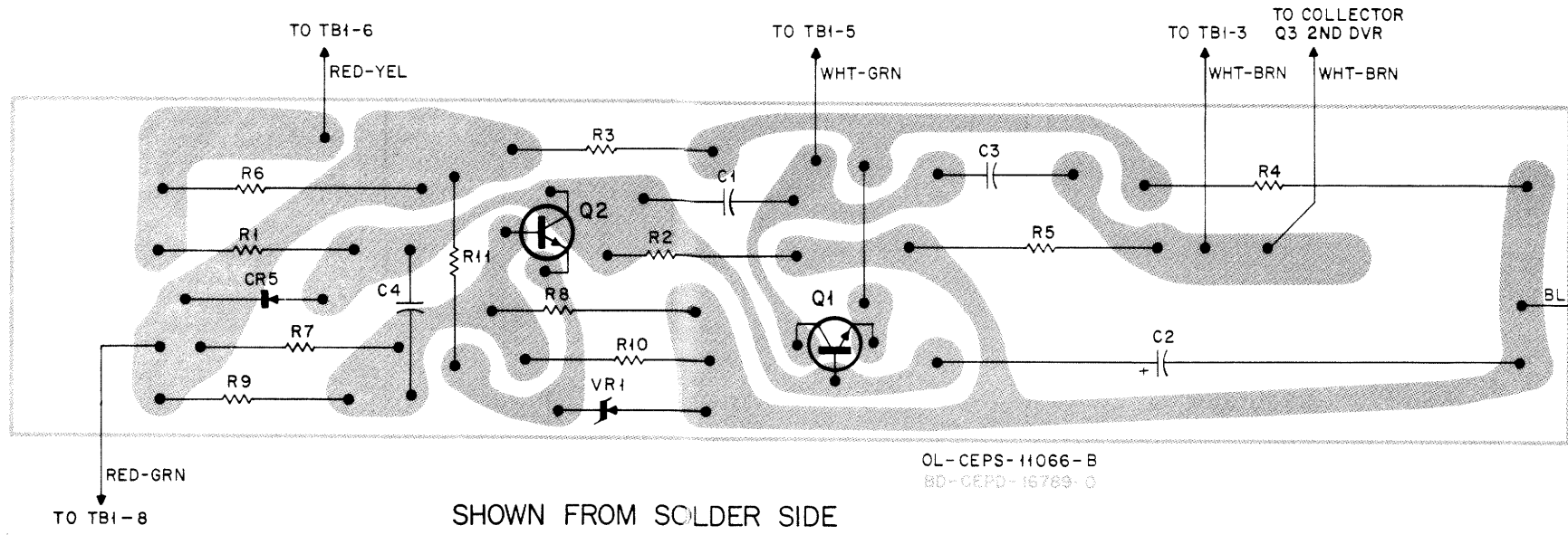
- NOTES
1. F1 IS 5A IN 6/10W MODELS, 10A IN 25/30W MODELS.
 2. CONNECTORS SHOWN FROM WIRE SIDE.



PARTS LOCATION



REGULATOR BOARD DETAIL



BASE STATION POWER SUPPLY

MODEL TPN1136A

POWER CABLES

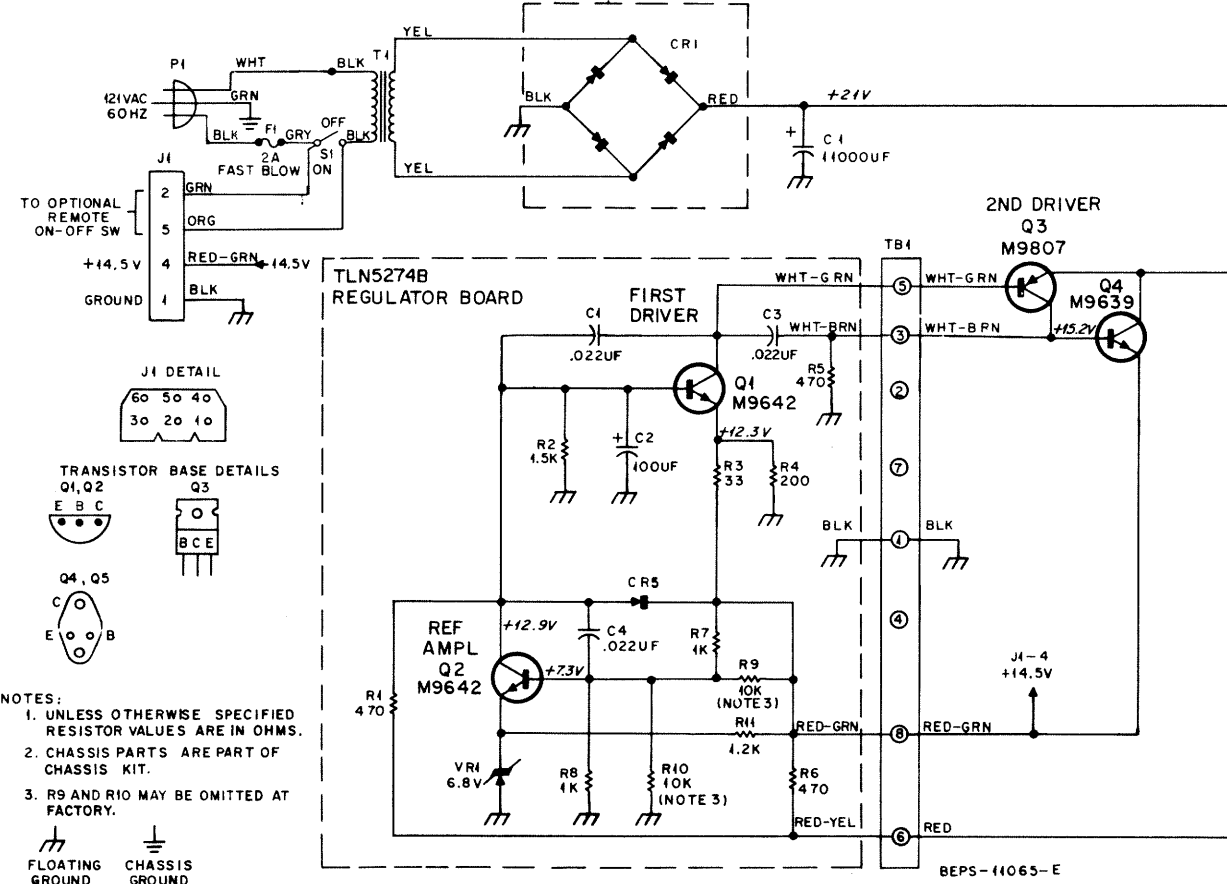
MODELS TKN6948A, TKN6949A, AND TKN8199A

MODEL TABLE

Model	Sub-Model	Description
TPN1136A	TLN5274B	Regulator Board
TRN6282A		Power Supply Chassis
TKN6948A		Power Cable (Maxar)
TKN6949A		Power Cable (Maxar-80)
TKN8199A		Power Cable (MCX100 or DVP MCX100)

FUNCTION

Provides the entire radio with regulated +14.5 V dc when used in a 120 V ac primary power fixed installation.



68P81029E96-P
3/15/83-PHI

parts list

TKN8199A Power Cable Kit PL-7636-G

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F1	65-10266 or 65-15270	fuse: 10 amp 6 amp
P359 P602	15-84192M01 15-10183A52	connector, plug: HOUSING, 6-contact BRIDGE Rectifier Assembly, silicon
mechanical parts		
1-80737D31 14-82884A01 42-82884A01 29-82335A01 30-84396L02 37-134370 37-134371 9-82845L01 1-80737D32 9-84151B03 1-80737D33 14-82882A01 29-82335A01 41-82885A01 42-82884A01		assembly power cable; includes: CAP, fuse holder CLIP, fuse TERMINAL, male CABLE, 2-conductor TUBING, heatshrink; 3/4" (BLK) TUBING, heatshrink; 3/8" (BLK) CRIMP, connector ASSEMBLY, red wire and lug; includes: RECEPTACLE, single contact ASSEMBLY, red wire and lug; includes: BODY, fuseholder TERMINAL, male TERMINAL, fuseholder CLIP, fuseholder

TKN6948A Power Cable Kit PL-6084-O

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F602	65-86099	fuse, cartridge: 7.5 amp; 32 V; type 3AG; fast-blow
P601	15-83293K01 29-84706E05 30-10286A21	connector, plug: includes: INSULATOR, connector; 15-circuit TERMINAL, pin; male; 4 used WIRE, jumper; BLK
P602	15-10183A52 29-82335A01	INSULATOR, connector; 6-circuit TERMINAL, pin; male; 4 used
W601	30-84396L01	cable, power: 2-conductor; (18 ga.); 120" used
XF602	14-82882A01 14-82883A01 41-82885A01 42-82884A01	fuseholder, in-line: includes: BODY, fuseholder CAP, fuseholder SPRING, compression CLIP, fuseholder; 2 used
non-referenced part		
37-134371		TUBING, heatsink (BLK) 1" length; 2 used

TKN6949A Power Cable Kit PL-6085-A

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
F603	65-4165	fuse, cartridge: "15 amp; 35 V; fast-blow type
P601	15-83958L01 29-82335A01 29-84706E05 30-10286A21	connector, plug: includes: INSULATOR, connector; 17-circuit TERMINAL, pin; male; (large) 2 used TERMINAL, pin; male; (small) 6 used WIRE, jumper; BLK
P602	15-10183A52 29-82335A01	INSULATOR, connector; 6-circuit TERMINAL, pin; male; 4 used
W601	30-84396L02	cable, power: 2-conductor; (14 ga.); 120" used
XF603	14-82882A01 14-82883A01 41-82885A01 42-82884A01	fuseholder, in-line: includes: BODY, fuseholder CAP, fuseholder SPRING, compression CLIP, fuseholder; 2 used
non-referenced part		
37-134371		TUBING, heatsink (BLK) 1" length; 2 used

TRN6561A Power Supply Chassis PL-5362-G

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C1	23-82464C10	capacitor, fixed: 15-8296L02 25,000 uF + 75-10%; 40 V
CR1	48-84571H02	semiconductor device; diode: (see note) Bridge Rectifier Assembly, silicon
J1		connector, receptacle: includes: 15-10183A53 INSULATOR, 6-contact CAP, fuse holder CLIP, fuse
F1	65-52293	fuse, cartridge: fast-blow type; 5 A
P1	30-83212F01	line cord: includes: ac plug
Q3 Q4, 5	48-869807 48-869639	transistor: (see note) PNP; type M9807 NPN; type M9639
S1	40-84241G04	switch, slide: DPST
R12, 13	17-82177B50	resistor, fixed: 0.1 ± 10%; 7 W
T1	25-84638C02	transformer, power: pri. res. 4.9 ohms (240 volt configuration) sec. res. 0.035 ohms
TB1 TB2	31-121700 31-898341	terminal strip: 8 terminals; No. 2 & 7 mtg. 4-terminals, screw
XF1	9-82083C01	fuseholder: extractor post type

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
non-referenced items		
37-134371		TUBING, heatshrink: BLK 1" length; 2 used
1-80794B62 1-80745B56 29-824456 1-80794B63		HEAT SINK ASSEMBLY: WIRE & LUG ASSEMBLY, includes: LUG, ring tongue TRANSISTOR & LUG ASSEMBLY: 2 req'd, includes: WASHER, insulator; 2 req'd. INSULATOR, transistor
4-474216 14-865854 29-84489B01 2-7005 3-2977 4-7569		LUG, transistor; 2 req'd. (used with Q4 & Q5) NUT, hex: 6-32 x 1/4 x 3/32"; 10 req'd. SCREW, machine: 6-32 x 1/8"; 4 req'd. WASHER, flat: 1/4 x .312 x .027"; 2 req'd.
4-7650 4-84496C01 26-84923B06 29-5248 31-490181 1-80794B64 1-80745B56 29-824456 1-80745B58 29-824456 1-80745B60 29-824456 1-80745B61 29-824456 1-80795B10 29-812979 2-121841 3-134168 3-134268 3-138341 4-114057 4-921633 7-83095F02 14-83275L01 14-84268A01 14-84525G01 29-5261 29-5369		WASHER, lock: #6 (split); 2 req'd. WASHER, shoulder; 4 req'd. HEAT SINK LUG, soldering; #6; 2 req'd. TERMINAL STRIP: #1 mtg; 2 req'd. DIODE BRACKET ASSEMBLY, includes: WIRE & LUG ASSEMBLY, includes: LUG, ring tongue WIRE & LUG ASSEMBLY, includes: LUG, ring tongue WIRE & LUG ASSEMBLY, includes: LUG, ring tongue WIRE & LUG ASSEMBLY, includes: LUG, crimp terminal NUT, hex: 6-32 x 5/16 x 7/64"; 2 req'd. SCREW, tapping: 4-40 x 1/4"; 2 req'd. SCREW, tapping: 4-40 x 7/16"; 2 req'd. SCREW, machine: 6-32 x 5/8"; 2 req'd. WASHER, flat: 1/4 x .312 x .032" 4-921633 7-83095F02 14-83275L01 14-84268A01 14-84525G01 29-5261 29-5369

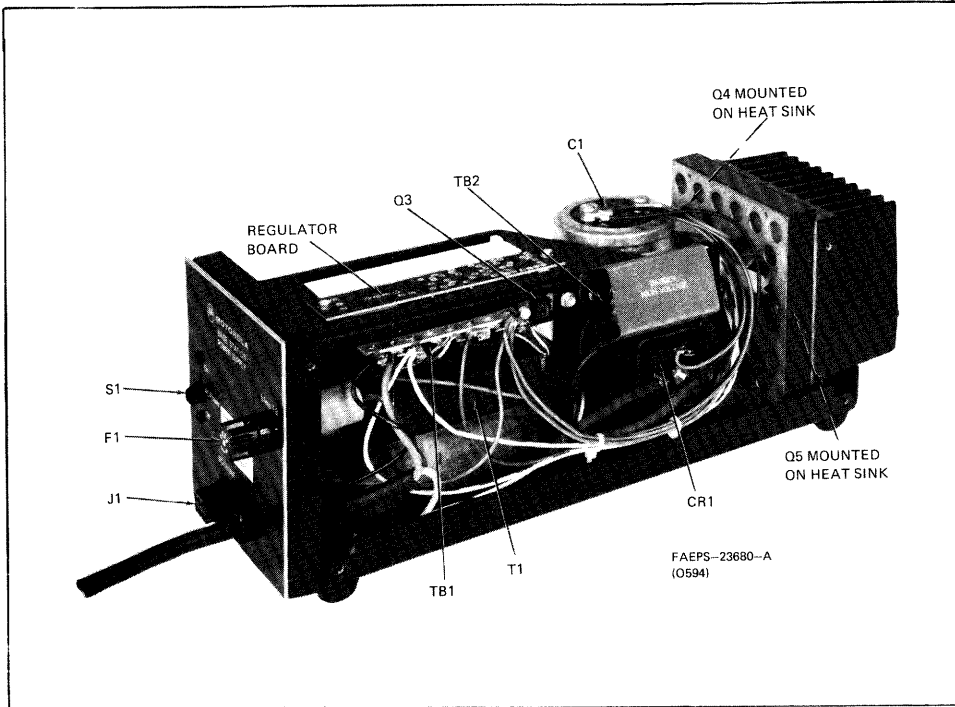
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C1	8-82905G02 C2 C3, 4	capacitor, fixed: uF: ± 10%; 50 V: unless otherwise stated 100 + 75-10%; 25 V .022
CR5	48-82392B03	semiconductor device, diode: (see note) silicon
Q1, 2	48-869642	transistor: (see note) NPN; type M9642
R1 R2 R3 R4 R5, 6 R7, 8 R9, 10 R11	6-125A41 6-125A53 6-125A13 17-82177B40 6-125C41 6-125A49 6-125C73 6-125C51	resistor, fixed: ± 5%; 1/2 W: unless otherwise stated 470 1.5k 33 200; 5 W 470 ± 10%; 1 W 10k ± 10% (note: Use is optional, determined at factory) 1.2k ± 10%
VR1	48-83696E01	semiconductor device, diode: (see note) silicon; Zener type: 6.8 V ± 5%

REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
1-80794B65 15-83296L02 1-80794B66 1-80747B60 29-82336A01 9-10454A04 1-80747B61 29-82336A01 1-80794B67		HOUSING ASSEMBLY, includes: HOUSING COVER CHASSIS ASSEMBLY, includes: WIRE & LUG ASSEMBLY, includes: TERMINAL, female connector WIRE & LUG ASSEMBLY, includes: TERMINAL, female TRANSFORMER & LUG ASSEMBLY, includes: LUG, crimp terminal NUT, 8-32 x 1 1/32" NUT, hex: 4-40 x 3/16 x 3/32"; 2 req'd. 3-7312 3-2979 3-7346 3-136143 3-139085 3-490773 4-2645 4-7657 4-114583 4-82418B88 7-83158L01 13-84639D05 27-83252N01 42-82018H01 75-84215A02
3-2979 3-139854 3-134168 3-139138 4-2645 42-10217A02		SCREW, machine: 6-32 x 3/8"; 3 req'd SCREW, machine: 6-32 x 3/4"; 3 req'd SCREW, machine: 6-32 x 3/4"; 3 req'd SCREW, tapping: 8-32 x 1/4"; 4 req'd. SCREW, machine: 4-40 x 5/16"; 2 req'd SCREW, machine: 6-32 x 9/16"; 4 req'd WASHER, lock: #6 (split); 4 req'd. WASHER, lock: #6 (split); 4 req'd. WASHER, insulator BRACKET ESCUTCHEON CHASSIS RETAINER, cable BUMPER, recessed SCREW, machine: 6-32 x 3/8"; 4 req'd SCREW, tapping: 6-32 x 3/8"; 8 req'd SCREW, tapping: 4-40 x 1/4"; 2 req'd SCREW, tapping: 10-32 x 3/3"; 3 req'd. WASHER, lock #6 (split); 4 req'd. STRAP, cable harness; 3 req'd.

TLN5274B Regulator Board PL-5361-C

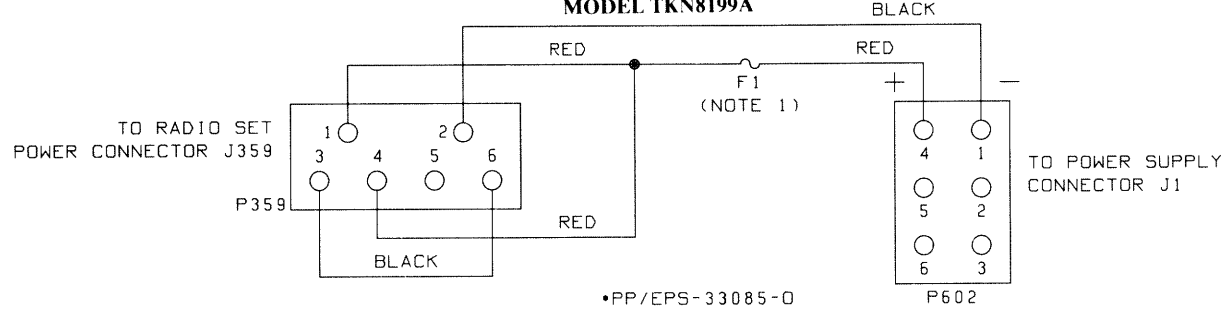
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
C1 C2 C3, 4	8-82905G02 23-83906L01 8-82905G02	capacitor, fixed: uF: ± 10%; 50 V: unless otherwise stated 100 + 75-10%; 25 V .022
CR5	48-82392B03	semiconductor device, diode: (see note) silicon
Q1, 2	48-869642	transistor: (see note) NPN; type M9642
R1 R2 R3 R4 R5, 6 R7, 8 R9, 10 R11	6-125A41 6-125A53 6-125A13 17-82177B40 6-125C41 6-125A49 6-125C73 6-125C51	resistor, fixed: ± 5%; 1/2 W: unless otherwise stated 470 1.5k 33 200; 5 W 470 ± 10%; 1 W 10k ± 10% (note: Use is optional, determined at factory) 1.2k ± 10%
VR1	48-83696E01	semiconductor device, diode: (see note) silicon; Zener type: 6.8 V ± 5%

note: Replacement diodes and transistors must be ordered by listed part number only for optimum performance.



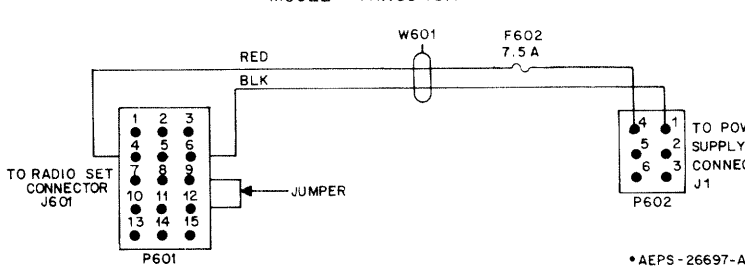
CABLE DETAILS

MODEL TKN8199A

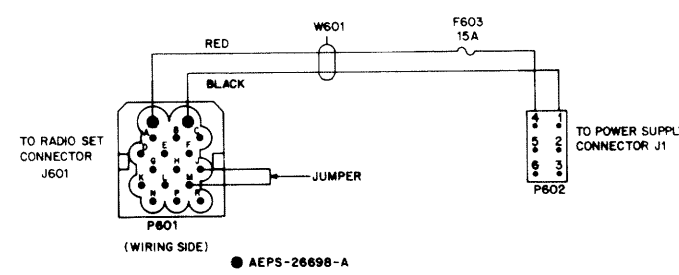


- NOTES
1. F1 IS 5A IN 6/10W MODELS.
10A IN 25/30W MODELS.
 2. CONNECTORS SHOWN FROM WIRE SIDE.

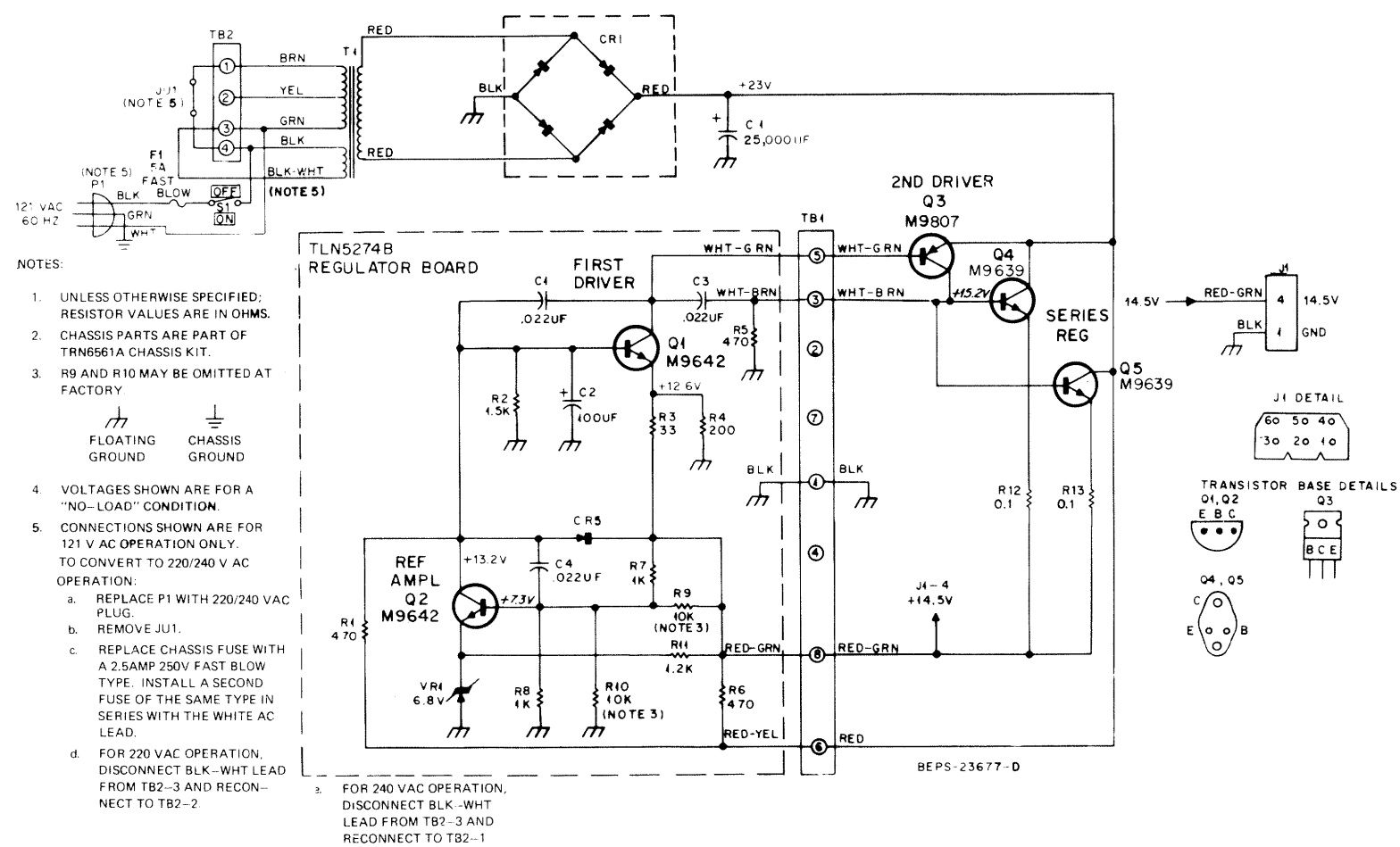
MODEL TKN6948A



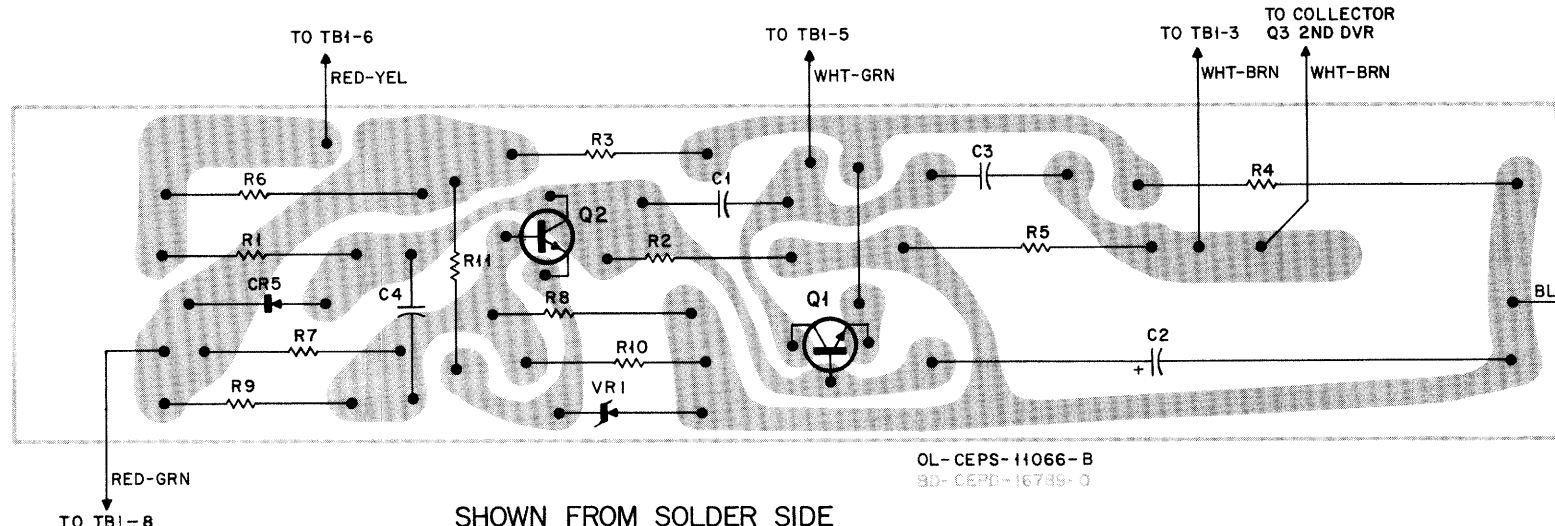
MODEL TKN6949A



TPN1154A POWER SUPPLY SCHEMATIC DIAGRAM



TLN5274B REGULATOR BOARD DETAIL



BASE STATION POWER SUPPLY

MODEL TPN1154A

POWER CABLE

MODELS TKN6948A, TKN6949A
AND TKN8199A

FUNCTION

Provides the entire radio with regulated +14.5 V dc when used in a 121 V ac primary power fixed installation.

MODEL TABLE

MODEL	SUB-MODEL	DESCRIPTION
TPN1154A	TLN5274B	REGULATOR BOARD
	TRN6561A	POWER SUPPLY CHASSIS
TKN6949A		POWER CABLE (MAXAR 80)
TKN8199A		POWER CABLE (MCX100 or DVP MCX100)
TKN6948A		POWER CABLE (MAXAR)