MAINTENANCE MANUAL

DF1105)
DF1118,

IF-DETECTOR BOARD 19C321662G1-G3, G7-G9

IMTS)

TABLE OF CONTENTS	
DESCRIPTION	Domo
CIRCUIT ANALYSIS	1
OUTLINE DIAGRAM	2
SCHEMATIC DIAGRAM	3
PARTS LIST	4

DESCRIPTION

The IF-Detector board (IF-DET) provides approximately 120 dB gain at the IF frequency, detects the audio frequencies and provides the volume squelch Hi output to the System-Audio & Squelch board (SAS). The F1 keying lead, and RX OSC control from the SAS board, compensation voltage from the exciter and the requlated +10 Volt circuits are completed through P903 and J602 on the IF-DET board.

IF-DET board 19C321662G2, G8 contains a 4-pole and a 2-pole crystal filter and operates with an IF frequency of 9.4 MHz. It is used in radios with an operating frequency of 29.7--36 MHz, 42--50 MHz and 851--870 MHz.

IF-DET board 19C321662G1, G7 also contains a 4-pole and a 2-pole crystal filter it operates with an IF frequency of 11.2 MHz and is used in radios with an operating frequency between 36-42 MHz and 66-88 MHz.

IF-DET board 19C321662G3, G9 contains two 2-pole crystal filters and operates with an IF frequency of 11.2 MHz. It is used in radios with an operating frequency of 138-174 MHz, and 406-512 MHz.

CIRCUIT ANALYSIS

CRYSTAL FILTERS, IF AMP & LIMITER-DETECTOR

The IF input from the MIF or IF Filter board is applied to a monolithic crystal filter (FL601 and FL602). The crystal filter provides additional selectivity and is followed by an impedance matching network Z601 and IF amplifier U601. The IC amplifier provides approximately 60 dB gain.

Final IF selectivity is provided by two-pole crystal filter FL603. Impedance matching network Z602 matches the output impedance of IF amplifier IC U601 to the input of two-pole crystal filter FL603. The IF amplifier output is metered at J601-1 through a metering network consisting of C612, C613, CR601 and CR602. Impedance matching network Z603 matches the output impedance of FL603 to the input of Limiter-Detector IC U602.

In addition to providing 60 dB of gain at the IF frequency, Limiter-Detector IC U602, C620, C621 and L603 comprise a quadrature phase detector to recover the audio from the IF frequency. The quadrature phase detector utilizes a 90 degree phase shift in the IF frequency to detect the audio signal. It compares the phase of the IF input at U602-4 with the same IF input frequency shifted 90 degrees at U602-2. The resultant signal varies phase linearly as the carrier signal deviates about the center frequency.

The detector output is adjusted for maximum audio output by L603 and is metered at J601-2 through R607.

AUDIO PREAMPLIFIER

The audio preamplifier consists of transistors Q601, Q602, and Q603. It provides approximately 26 dB of gain.

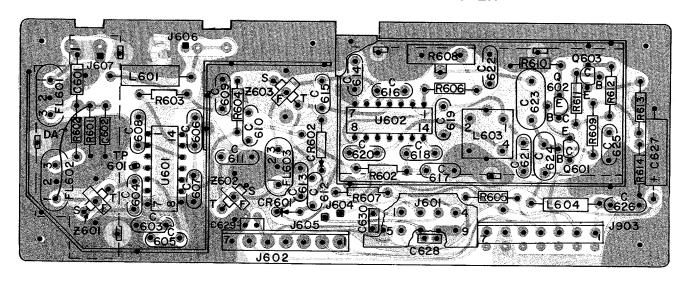
The output of the Limiter-Detector is coupled to the audio preamplifier through audio level adjust control R608. R608 sets the audio input level to the preamplifier circuit

The output of the audio preamplifier is coupled through a low pass filter (L604 and C626) to volume and squelch control circuit on the SAS board. The filter removes any IF signal remaining in the audio output of the preamplifier.

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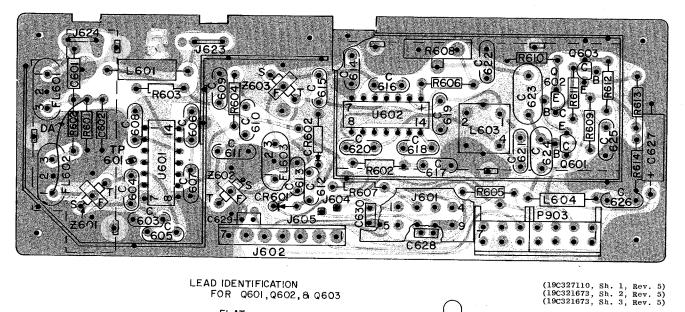


CUSTOM MVP/MONITOR RECEIVER

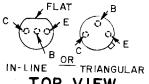


(19C327110, Sh. 2, Rev. 0) (19C321673, Sh. 2, Rev. 5) (19C321673, Sh. 3, Rev. 5)

MASTR EXECUTIVE II

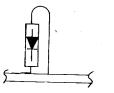


LEAD IDENTIFICATION FOR Q601,Q602,8 Q603



TOP VIEW

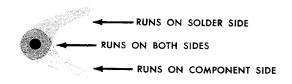
NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION. TAB INDICATES EMITTER LEAD.

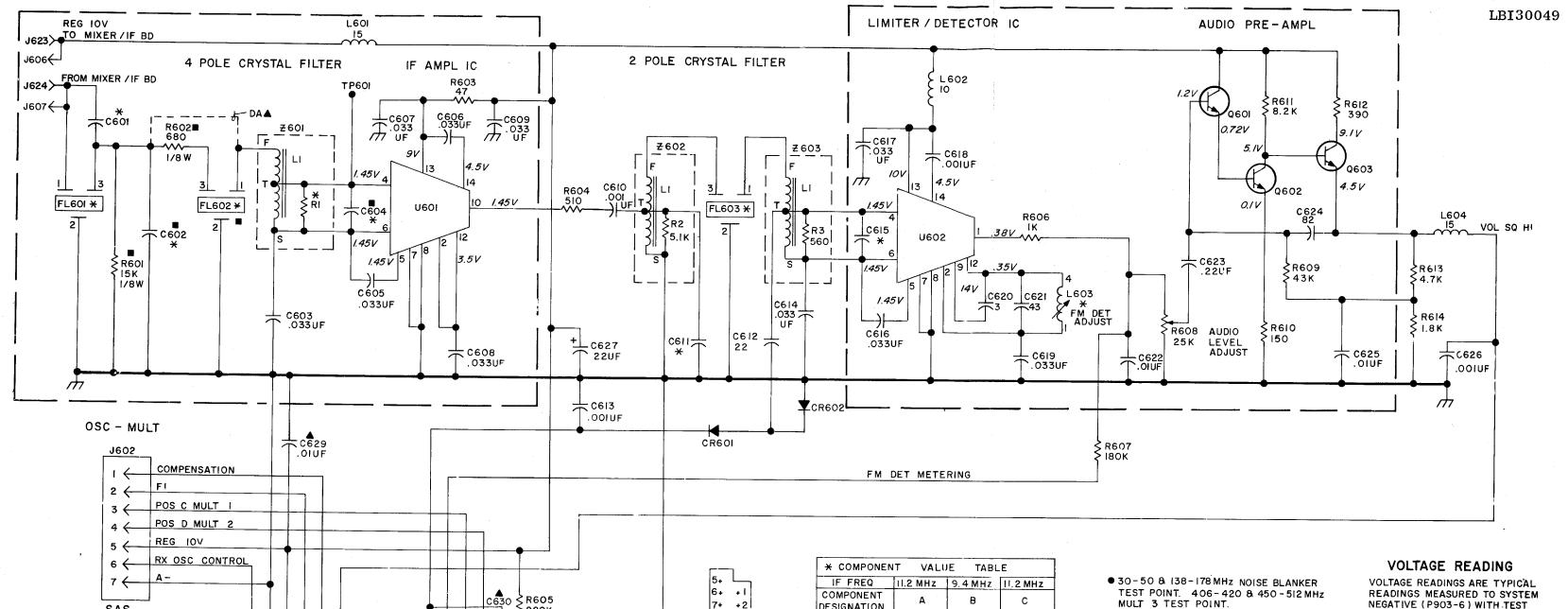


POLARITY FOR CR601

OUTLINE DIAGRAM

IF DETECTOR BOARD 19C321662G1-G3, G7-G9





* COMPONEN	T VALU	IE TABL	·Ε
IF FREQ	II.2 MHz	9.4 MHz	II.2 MHz
COMPONENT DESIGNATION	Α	В	С
C60I	.22 PF	.22PF	.47PF
C602	.57PF	1.5PF	
C604	12PF	7 PF	
C611	20PF	15 PF	20PF
C615	5PF	18 PF	5PF
L603	6.8	8.2	6.8
FL60I	FL60IA	FL60IB	FL60IC
FL602	FL602A	FL602B	
FL603	FL603A	FL603B	FL603C
₹60I - RI	680	680	560

- MULT 3 TEST POINT.
- PRESENT IN GROUPS 1, 2, 7 & 8
- ▲ PRESENT IN GROUPS 3 & 9

NOTES:

- I. J623, J624 & P903 ARE PRESENT IN GROUPS 1, 2 & 3 ONLY FOR MASTR EXEC. II.
- 2. J606, J607 & J903 ARE PRESENT IN GROUPS 7, 8 & 9 ONLY FOR CUSTOM MVP

NEGATIVE (P903-6) WITH TEST SET MODEL 4EX3AII OR A 20,000 OHM-PER- VOLT METER.

ALL RESISTORS ARE 1/4 WATT UNLESS OTHERWISE SPECIFIED AND RESISTOR VALUES IN OHMS UNLESS FOLLOWED BY K=1000 OHMS OR MEG=1,000,000 OHMS CAPACITOR VALUES IN PICOFARADS (EQUAL TO MICROMICROFARADS) UNLESS FOLLOWED BY UF = MICROFARADS, INDUCTANCE VALUES IN MICROHENRYS UNLESS FOLLOWED BY MH= MILLIHENRYS OR H=HENRYS.

SCHEMATIC DIAGRAM

IF DETECTOR BOARD 19C321662G1-G3. G7-G9

Issue 6

PERFORMANCE, REPLACEMENT OF ANY SERVICE PART SHOULD BE MADE ONLY WITH A COMPONENT HAVING THE SPECIFICATIONS SHOWN ON THE PARTS LIST FOR THAT PART.

IN ORDER TO RETAIN RATED EQUIPMENT

8+ +3

J60I

(TOP VIEW)

9+

≥ 280K

Y•

市.OIUF

20

A FM DET METERING

MULT

POS D W

- a m 4 m o r m o METERING

/ J604

SAS

P903

2 >

3 >

4 >

5 > 6 > VOL SQ HI

REG IOV

BLKR DISABLE

COMPENSATION

RX OSC CONTROL

J903

IF DETECTOR	REV LETTER	!F FREQ	FREQ RANGE
19C321662G1	D	II.2 MHz	36-42MHz, 66-88MHz
19C321662G2	E	9.4 MHz	30-36MHz, 42-50MHz 851-870 MHz
19032166263	F	II.2 MHz	138-174MHz, 406-512MHz
19032166267	_	11.2 MHz	36-42 MHz , 66-88 MHz
19C321662G8		9.4MHz	30-36MHz, 42-50MHz 851-870MHz
19032166269	_ 1	II. 2MHz	138 - 174 MHz,406 - 512 MHz

LBI30049

PARTS LIST

LBI30081E

IF DETECTOR BOARD

19C321662G1 36-42 MHz (IF 11.2 MHz)
19C321662G2 30-36, 42-50 MHz (IF 9.2 MHz)
19C321662G3 138-174, 406-512 MHz (IF 11.2 MHz)
19C321662G7 36-42 MHz (IF 11.2 MHz)
19C321662G8 30-36, 42-50 MHz (IF 9.2 MHz)
19C321662G9 138-174, 406-512 MHz (IF 11.2 MHz)

SYMBOL	GE PART NO.	DESCRIPTION
C601A and C601B	5491601P105	Phenolic: 0.22 pf ±5%, 500 VDCW.
C601C	5491601P113	Phenolic: 0.47 pf ±5%, 500 VDCW.
C602A	5491601P115	Phenolic: 0.56 pf ±5%, 500 VDCW.
C602B	5491601P123	Phenolic: 1.5 pf ±5%, 500 VDCW.
C603	19A116080P104	Polyester: 0.033 µf ±10%, 50 VDCW.
C604A	5496219P642	Ceramic disc: 12 pf ±5%, 500 VDCW, temp coef -470 PPM.
C604B*	5496219P638	Ceramic disc: 7.0 pf ±0.25 pf, 500 VDCW, temp coef -470 PPM.
		In REV D and earlier:
	5496219P647	Ceramic disc: 22 pf ±5%, 500 VDCW, temp coef -470 PPM.
C605 thru C609	19Ai16080P104	Polyester: 0.033 µf ±10%, 50 VDCW.
C610	5494481P111	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C611A	5496219P646	Ceramic disc: 20 pf ±5%, 500 VDCW, temp coef -470 PPM.
C611B*	5496219P644	Ceramic disc: 15 pf ±5%, 500 VDCW, temp coef -470 PPM.
		In REV D and earlier:
	5496219P649	Ceramic disc: 27 pf ±5%, 500 VDCW, temp coef -470 PPM.
C611C	5496219P646	Ceramic disc: 20 pf ±5%, 500 VDCW, temp coef -470 PPM.
C612	5496219P647	Ceramic disc: 22 pf ±5%, 500 VDCW, temp coef -470 PPM.
C613*	5494481P111	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
		Earlier than REV A:
	5494481P101	Ceramic disc: 150 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap.
C614	19A116080P104	Polyester: 0.033 µf ±10%, 50 VDCW.
C615A	5496219P636	Ceramic disc: 5.0 pf ± 0.25 pf, 500 VDCW, temp coef -470 PPM.
C615B*	5496219P645	Ceramic disc: 18 pf ±5%, 500 VDCW, temp coef -470 PPM.
		In REV C and D:
	5496219P649	Ceramic disc: 27 pf ±5%, 500 VDCW, temp coef -470 PPM.
		In REV B and earlier:
	5496219P645	Ceramic disc: 18 pf ±5%, 500 VDCW, temp coef -470 PPM.
C615C	5496219P636	Ceramic disc: 5.0 pf ±0.25 pf, 500 VDCW, temp coef -470 PPM.
C616 and C617	19A116080P104	Polyester: 0.033 µf ±10%, 50 VDCW.
C618	5494481P111	Ceramic disc: 1000 pf $\pm 20\%$, 1000 VDCW; sim to RMC Type JF Discap.
C619	19A116080P104	Polyester: 0.033 µf ±10%, 50 VDCW.
C620*	19A116656P3J1	Ceramic disc: 3.0 pf ±0.5 pf, 500 VDCW, temp coef -150 PPM.
		In Gl, G2 of REV C and earlier: In G3 of REV E and earlier:
	5496219P334	Ceramic disc: 3.0 pf ±0.25 pf, 500 VDCW, temp coef -150 PPM.

*COMPONENTS ADDED, DELETED OR CHANGED BY PRODUCTION CHANGES.

SYMBOL	GE PART NO.	DESCRIPTION
C621*	19A116656P43J1	Ceramic disc: 43 pf ±5%, 500 VDCW, temp coef -150 PPM.
		In G1, G2 of REV C and earlier: In G3 of REV E and earlier:
	5496219P354	Ceramic disc: 43 pf ±5%, 500 VDCW, temp coef -150 PPM.
C622	19A116080Pl01	Polyester: 0.01 \(\mu\text{f \pm 10%, 50 VDCW.}\)
C623	19A116080P109	Polyester: 0.22 µf ±10%, 50 VDCW.
C624	7489162P25	Silver mica: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.
C625	19A116080P101	Polyester: 0.01 µf ±10%, 50 VDCW.
C626	5494481P111	Ceramic disc: 1000 pf $\pm 20\%$, 1000 VDCW; sim to RMC Type JF Discap.
C627	5496267P10	Tantalum: 22 µf ±20%, 15 VDCW; sim to Sprague Type 150D.
C628* and C629*	19A116192P1	Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. Added to G3 by REV C.
C630*	19A116114P39	Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. Added to G3 by REV C.
		DIODES AND RECTIFIERS
CR601 and CR602	4038056Pl	Germanium.
-MUV2		
FL601A	19B219573G3	Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz. Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz.
FL601B	19B219574G3	Crystal freq: Resonator A: 9400.300 KHz, Resonator B: 9396.324 KHz. Resonator A: 9400.300 KHz, Resonator B: 9396.324 KHz.
FL601C*	19B219573G6	Crystal freq: Resonator A: 11,200000 KHz, Resonator B: 11,200000 KHz.
		In Gl of REV B and earlier: In G3 of REV D and earlier:
	19B219573G1	Crystal freq: Resonator A: 11,200000 KHz, Resonator B: 11,200000 KHz.
FL602A		(Part of FL601A).
FL602B		(Part of FL601B).
FL603A*	19B219573G6	Crystal freq: Resonator A: 11,200000 KHz, Resonator B: 11,200000 KHz.
		In G1 of REV B and earlier: In G3 of REV D and earlier:
	19B219573G1	Crystal freq: Resonator A: 11,200000 KHz,
		Resonator B: 11,200000 KHz.
FL603B	19B219574G1	Crystal freq: Resonator A: 9400.300 KHz, Resonator B: 9400.300 KHz.
FL603C	19B219573G6	Crystal freq: Resonator A: 11,200000 KHz, Resonator B: 11,200000 KHz.
		JACKS AND RECEPTACLES
J601	19B219374G1	Connector. Includes:
	19C317957P1	Shell.
	19A116651Pl	Contact, electrical; sim to Malco X0-2864.
J602	19A116659P106	Connector, printed wiring: 7 contacts; sim to Molex 09-60-1071.
J604 and J605	19A116779P1	Contact, electrical; sim to Molex 08-50-0404.
J606*	19A116779P1	Contact, electrical; sim to Molex 08-50-0404. Added to G1, G2 by REV B. Added to G3 by REV D.

SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE
J623	19A116975P1	Contact, electrical.	Z602A	19B2
and J624		·	R2	3R15
J903	19Al16659P106	Connector, printed wiring: 7 contacts; sim to	Z602B*	19B2
		Molex 09-60-1071.	R2	3R15
L601	7488079P18	Choke, RF: 15.0 µh ±10%, 1.20 ohms DC res max; sim to Jeffers 4421-9K.		1982
L602	19B209420P125	Coil, RF: 10.0 µh ±10%, 3.10 ohms DC res max;	R2	3R15
1602	1982094207120	sim to Jeffers 4446-4K.	Z602C	19B2
L603A	19C311181G13	Coil,	R2	3R15
L603B	19C311181G14	Coil.	Z603A R3	3R15
L603C	19C311181G13	Coil.	Z603B*	19B2
L604	7488079P18	Choke, RF: 15.0 µh ±10%, 1.20 ohms DC res max; sim to Jeffers 4421-9K.	R3	3R15
P903		Connector, Includes:		1982
	19A116659P1	Connector, printed wiring: 3 contacts; sim to Molex 09-52-3032.	R3	3R15
	19A116659P15		Z603C	1982
	TAWITGOODATO	Connector, printed wiring: 4 contacts; sim to Molex 09-52-3042.	R3	3R15
2601	19A115910P1	Silicon, NPN; sim to Type 2N3904.		19B2
hru 603				19B2
				""
R601	3R151P153J	Composition: 15K ohms ±5%, 1/8 w.		19B2
3602	3R151P681J	Composition: 680 ohms ±5%, 1/8 w.		19B2
R603	3R152P470K	Composition: 47 ohms ±10%, 1/4 w.		19B2
R604	3R152P511J	Composition: 510 ohms ±5%, 1/4 w.		19A1
R605	19C314256P22803	Metal film: 280K ohms ±1%, 1/4 w.		1903
R606	3R152P102K	Composition: 1K ohms ±10%, 1/4 w.		19C3
R607	3R152P184J	Composition: 0.18 megohm ±5%, 1/4 w.		
R608	19B209358P107	Variable, carbon film: approx 800 to 25K ohms ±10%, 0.25 w; sim to CTS Type X-201.		
R609	3R152P433J	Composition: 43K ohms ±5%, 1/4 w.		
R610	3R152P151J	Composition: 150 ohms ±5%, 1/4 w.	1	
R611	3R152P822K	Composition: 8.2K ohms ±10%, 1/4 w.		
R612	3R152P391J	Composition: 390 ohms ±5%, 1/4 w.		
R613	3R152P472J	Composition: 4.7K ohms ±5%, 1/4 w.		
R614	3R152P182J	Composition: 1.8K ohms ±5%, 1/4 w.		
TP601	N503P304F15	Cotter pin.		
U601	19A116445Pl	Integrated circuit, linear: sim to ULN 2111.		
and U602				
		NETWORKS		
Z601A	19B226649G1	Coil assembly. Includes:		
R1	3R152P68lJ	Resistor, composition: 680 ohms ±5%, 1/4 w.		
Z601B*	19B226649G4	Coil assembly. Includes:		
R1	3R152P681J	Resistor, composition: 680 ohms ±5%, 1/4 w.		
		In REV D and earlier:		
	19B226649G1	Coil assembly. Includes:		
R1	3R152P681J	Resistor, composition: 680 ohms ±5%, 1/4 w.		
Z601C	19B226649G3	Coil assembly. Includes: Resistor, composition: 560 ohms ±5%, 1/4 w.		
R3	3R152P561J	Resistor, composition. 500 onas 10%, 1/4 ".		
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SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	DESCRIPTION
J623	19A116975P1	Contact, electrical.	Z602A	19B226649G2	Coil assembly. Includes:
and J624			R2	3R152P512J	Resistor, composition: 5.1K ohms ±5%, 1/4 w.
J903	19Al16659P106	Connector, printed wiring: 7 contacts; sim to	Z602B*	19B226649G5	Coil assembly. Includes:
		Molex 09-60-1071.	R2	3R152P512J	Resistor, composition: 5.1K ohms ±5%, 1/4 w.
					In REV D and earlier:
L601	7488079P18	Choke, RF: 15.0 μ h \pm 10%, 1.20 ohms DC res max; sim to Jeffers $4421-9K$.		19B226649G2	Coil assembly. Includes:
L602	19B209420P125	Coil. RF: 10.0 µh ±10%, 3.10 ohms DC res max;	R2	3R152P512J	Resistor, composition: 5.1K ohms ±5%, 1/4 w.
2002		sim to Jeffers 4446-4K.	Z602C	19B226649G2	Coil assembly. Includes: Resitor, composition: 5.1K ohms ±5%, 1/4 w.
L603A	19C311181G13	Coil.	R2 Z603A	3R152P512J 19B226649G3	Coil assembly. Includes:
L603B	19C311181G14	Coil,	R3	3R152P561J	Resistor, composition: 560 ohms ±5%, 1/4 w.
L603C	19C311181G13	Coil. Choke, RF: 15.0 \(\mu h \pm 1.0\), 1.20 ohms DC res max;	Z603B*	19B226649G6	Coil assembly. Includes:
L604	7488079P18	sim to Jeffers 4421-9K.	R3	3R152P561J	Resistor, composition: 560 ohms ±5%, 1/4 w.
		PLUGS			In REV D and earlier:
P903		Connector, Includes:		19B226649G3	Coil assembly. Includes:
1505	19A116659P1	Connector, printed wiring: 3 contacts; sim to	R3	3R152P561J	Resistor, composition: 560 ohms ±5%, 1/4 w.
		Molex 09-52-3032.	Z603C	19B226649G3	Coil assembly. Includes:
	19A116659P15	Connector, printed wiring: 4 contacts; sim to Molex 09-52-3042.	R3	3R152P561J	Resistor, composition: 560 ohms ±5%, 1/4 w.
0003	10411501001	Silicon, NPN; sim to Type 2N3904.			MISCELLANEOUS
Q601 thru	19A115910P1	Silicon, Rek, Sim to 1990 200004.		19B226648G1	Shield. (Located around FL601, FL602).
Q603				19B219571G1	Shield. (Located under Z601, J624 on opposite side of component board).
R601	3R151P153J	Composition: 15K ohms ±5%, 1/8 w.		19B219554G1	Can. (Located around U692, Q603)
R602	3R151P681J	Composition: 680 ohms ±5%, 1/8 w.		19B219555Pl	Cover. (Used with 19B219554Gl can).
R603	3R152P470K	Composition: 47 ohms ±10%, 1/4 w.		19B219727G1	Shield. (Located under 19B219554G1 can).
R604	3R152P511J	Composition: 510 ohms ±5%, 1/4 w.		19A116428P4	Ground tab; sim to AMP 86031-1 (Strip Form). (Used with shields on bottom of circuit board).
R605	19C314256P22803	Metal film: 280K ohms $\pm 1\%$, $1/4$ w.		19C327289P1	Bottom Cover. (IF Detector- 25-512 MHz).
R606	3R152P102K	Composition: 1K ohms ±10%, 1/4 w.		19C321744P1	Bottom Cover. (IF Detector- 806-870 MHz).
R607	3R152P184J	Composition: 0.18 megohm ±5%, 1/4 w.			
R608	19B209358P107	Variable, carbon film: approx 800 to 25K ohms ±10%, 0.25 w; sim to CTS Type X-201.			
R609	3R152P433J	Composition: 43K ohms ±5%, 1/4 w.			
R610	3R152P151J	Composition: 150 ohms ±5%, 1/4 w.	1		•
R611	3R152P822K	Composition: 8.2K ohms ±10%, 1/4 w.			
R612	3R152P391J	Composition: 390 ohms ±5%, 1/4 w.			
R613	3R152P472J	Composition: 4.7K ohms ±5%, 1/4 w.			
R614	3R152P182J	Composition: 1.8K ohms ±5%, 1/4 w.			
		TEST POINTS			
TP601	N503P304F15	Cotter pin.			
		INTEGRATED CIRCUITS			
U601 and U602	19A116445Pl	Integrated circuit, linear: sim to ULN 2111.			
		NETWORKS			
Z601A	19B226649G1	Coil assembly. Includes:			
R1	3R152P68lJ	Resistor, composition: 680 ohms ±5%, 1/4 w.			
Z601B*	19B226649G4	Coil assembly. Includes:			
R1	3R152P681J	Resistor, composition: 680 ohms ±5%, 1/4 w.			
		In REV D and earlier:			
	19B226649G1	Coil assembly. Includes:			
R1	3R152P681J	Resistor, composition: 680 ohms ±5%, 1/4 w.			
Z601C	19B226649G3	Coil assembly, Includes:			
R3	3R152P561J	Resistor, composition: 560 ohms ±5%, 1/4 w.			

PRODUCTION CHANGES

Changes in the equipment to improve performance or to simplify circuits are identified by a "Revision Letter", which is stamped after the model number of the unit. The revision stamped on the unit includes all previous revisions. Refer to the Parts List for descriptions of parts affected by these revisions.

- REV. A IF Detector Board 19C321662G1-3 To improve IF stability. Changed C613.
- REV. C IF Detector Board 19C321662G3

 To improve IF tuning. Added C628, C629 and C630.
- REV. B IF Detector Board 19C321662G1, 2
- REV. D IF Detector Board 19C321662G3 To make compatable for Custom MVP applications. Added J606 and J607.
- REV. C IF Detector Board 19C321662G1
- REV. E IF Detector Board 19C321662G3 To improve operation. Changed FL601C and FL603A.
- REV. C IF Detector Board 19C321662G2
- To improve IF response. Changed C615B.
- REV. D IF Detector Board 19C321662Gl, 2
- REV. F IF Detector Board 19C321662G3 To improve operation. Changed C620 and C621.
- REV. E IF Detector Board 19C321662G2
 - To improve IF response. Changed C604B, C611B, C615B, Z601, Z602 and Z603.

ADDENDUM #1 TO LBI30049E

This addendum contains information on IF-Detector board 19D432538G1-G6. The IF-Det board used tuneable IF transformers to facilitate alignment and troubleshooting. Changes in the IF alignment and circuit analysis of the IF-Det board are contained in this addendum.

DESCRIPTION

The IF-Detector board (IF-DET) provides approximately 120 dB gain at the IF frequency, detects the audio frequencies and provides the volume squelch Hi output to the System-Audio & Squelch board (SAS). The Fl keying lead, and RX OSC control from the SAS board, compensation voltage from the exciter and the regulated +10 Volt circuits are completed through P903/J903 and J602 on the IF-DET board.

IF-DET board 19D432538G2 and G5 contains a 4-pole and a 2-pole crystal filter and operates with an IF frequency of 9.4 MHz. It is used in radios with an operating frequency of 29.7-36 MHz, 42-50 MHz and 851-870 MHz.

IF-DET board 19D432538G1 and G4 also contains a 4-pole and a 2-pole crystal filter. It operates with an IF frequency of 11.2 MHz and is used in radios with an operating frequency between 36-42 MHz and 66-88 MHz.

IF-DET board 19D432538G3 and G6 contains two 2-pole crystal filters and operates with an IF frequency of 11.2 MHz. It is used in radios with an operating frequency of 138-174 MHz, and 406-512 MHz.

CIRCUIT ANALYSIS

CRYSTAL FILTERS, IF AMP & LIMITER-DETECTOR

The IF input from the MIF or IF Filter board is applied to monolithic crystal filter FL601 and FL602. The cyrstal filter provides additional selectivity and is followed by a tuneable impedance matching network (T601) and IF amplifier U601. The IC amplifier provides approximately 60 dB gain.

Final IF selectivity is provided by two-pole crystal filter FL603. A tuneable impedance matching network T602 matches the output impedance of IF amplifier IC U601 to the input of crystal filter FL603. The IF amplifier output is metered at J601-1 through a metering network consisting of

C612, C613, CR601 and CR602. Tuneable impedance matching network T603 matches the output impedance of FL603 to the input of Limiter-Detector IC U602.

In addition to providing 60 dB of gain at the IF frequency, Limiter-Detector IC U602, C620, C621 and L603 comprise a quadrature phase detector to recover the audio from the IF frequency. The quadrature phase detector utilizes a 90 degree phase shift in the IF frequency to detect the audio signal. It compares the phase of the IF input at U602-4 with the same IF input frequency shifted 90 degrees at U602-2. The resultant signal varies phase linearly as the carrier signal deviates about the center frequency.

The detector output is adjusted for maximum audio output by FM DET ADJUST T604, and is metered at J601-2 through R607.

AUDIO PREAMPLIFIER

The audio preamplifier consists of transistors Q601, Q602, and Q603. It provides approximately $26\ dB$ of gain.

The output of the Limiter-Detector is coupled to the audio preamplifier through audio level adjust control R608. R608 sets the audio input level to the preamplifier circuit.

The output of the audio preamplifier is coupled through a low pass filter (L604 and C626) to volume and squelch control circuit on the SAS board. The filter removes any IF signal remaining in the audio output of the preamplifier.

ALIGNMENT CHANGES

FM DETECTOR

When adjusting the FM detector, substitute T604 for L603 in the Complete Receiver Alignment.

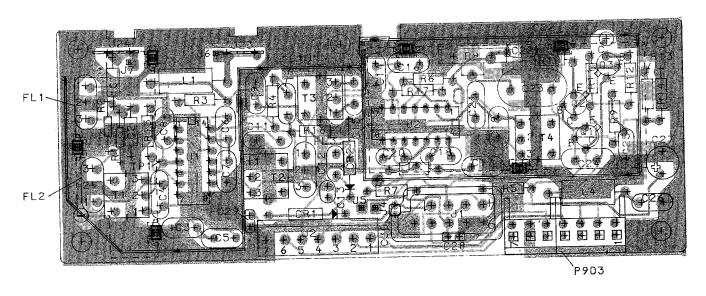
IF-DETECTOR

After completing the Mixer-IF alignment steps, set cores of T601, T602 and T603 to top of coil form. Then tune T601, T602 and T603 for double trace as shown on scope pattern in the Complete Receiver Alignment. Reduce generator output as required to keep full waveform on scope.

GENERAL ELECTRIC COMPANY+ MOBILE COMMUNICATIONS DIVISION WORLD HEADQUARTERS+LYNCHBURG, VIRGINIA 24502 U.S.A.

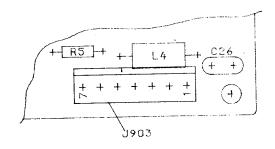


MASTR EXECUTIVE II

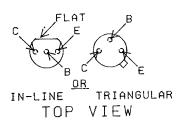


(19A143462, Sh. 1, Rev. 0) (19A143462, Sh. 2, Rev. 0)

CUSTOM



LEAD IDENTIFICATION FOR Q1, Q2 & Q3

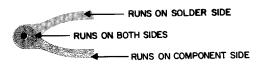


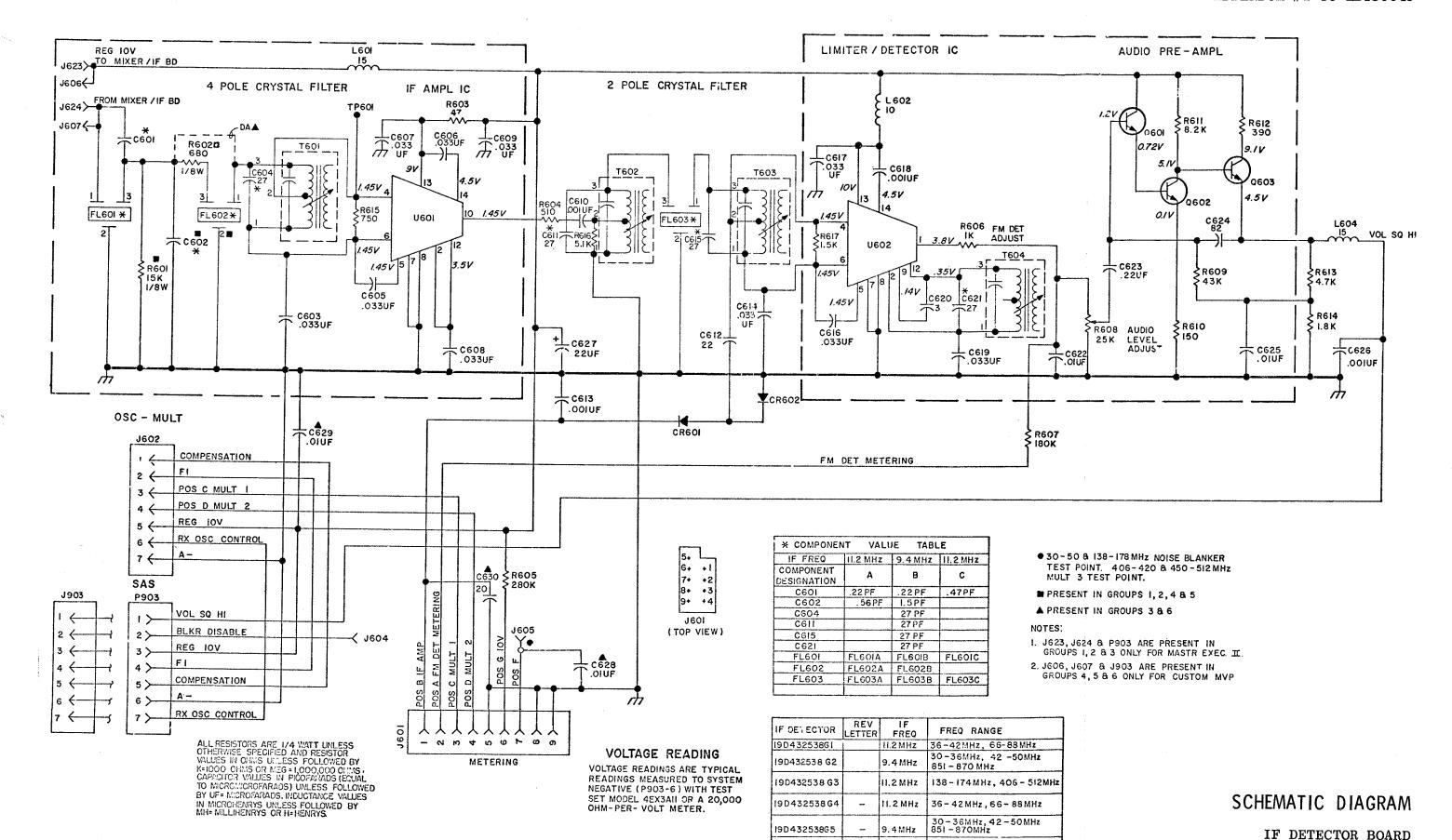
NOTE: LEAD ARRANGEMENT, AND NOT CASE SHAPE, IS DETERMINING FACTOR FOR LEAD IDENTIFICATION.

(19D432539, Rev. 0)

OUTLINE DIAGRAM

IF DETECTOR BOARD 19D432538G1-G6





19D432538G1-G6

19D432538G6

II. 2 MHz

138-174 MHz 406-512 MHz

PARTS LIST

| IF DETECTOR BOARD | 19D432538G1 | 11.2 MHz | MASTR EXEC II | 19D432538G3 | 11.2 MHz | MASTR EXEC II | 19D432538G4 | 11.2 MHz | CUSTOM MVP | 19D432538G5 | 9.4 MHz | CUSTOM MVP | 19D432538G6 | 11.2 MHz | CUSTOM MVP | 11.2 MHz |

C601A and	SYMBOL	GE PART NO.	DESCRIPTION
C801A and C801B C801C 19A700013P6 Phenolic: 0.22 pf ±5%, 500 VDCM. C801C 19A700013P1 Phenolic: 0.47 pf ±5%, 500 VDCM. C802B 19A700013P10 Phenolic: 0.56 pf ±5%, 500 VDCM. C803 19A70023AP10 Polyester: 0.033 pf ±10%, 500 VDCM. C804 19A143481P27K8 Polyester: 0.033 pf ±10%, 500 VDCM, temp coef -80 PPM. C805 19A10023AP10 Polyester: 0.033 pf ±10%, 500 VDCM, temp coef -80 PPM. C811 19A143481P19 Cramic disc: 27 pf ±10%, 500 VDCM, temp coef -80 PPM. C812 19A143491P27K8 Cramic disc: 27 pf ±10%, 500 VDCM, temp coef -470 PPM. C813 19A116192P13 Cramic disc: 27 pf ±10%, 500 VDCM, temp coef -470 PPM. C814 19A70023AP10 Polyester: 0.033 pf ±10%, 50 VDCM, temp coef -80 PPM. C815 19A143491P27K8 Cramic disc: 27 pf ±10%, 500 VDCM, temp coef -80 PPM. C816 19A70023AP10 Polyester: 0.033 pf ±10%, 50 VDCM, temp coef -80 PPM. C817 19A143491P311 Cramic disc: 27 pf ±10%, 500 VDCM, temp coef -80 PPM. C818 19A1023AP10 Polyester: 0.033 pf ±10%, 50 VDCM, temp coef -80 PPM. C819 19A70023AP10 Polyester: 0.033 pf ±10%, 500 VDCM, temp coef -80 PPM. C820 19A143491P311 Cramic disc: 1000 pf ±20%, 1000 VDCM; sim to RMC Type JF Discap. C821 19A1023AP10 Polyester: 0.033 pf ±10%, 500 VDCM, temp coef -80 PPM. C822 19A70023AP1 Polyester: 0.033 pf ±10%, 500 VDCM, temp coef -80 PPM. C823 19A10023AP7 Polyester: 0.01 pf ±10%, 500 VDCM, temp coef -80 PPM. C824 19A70023AP7 Polyester: 0.02 pf ±50%, 500 VDCM. C825 19A70023AP7 Polyester: 0.01 pf ±10%, 500 VDCM. C826 19A143481P19 Cramic disc: 1000 pf ±20%, 1000 VDCM; sim to RMC Type JF Discap. C826 19A143481P19 Cramic disc: 1000 pf ±20%, 1000 VDCM; sim to RMC Type JF Discap. C827 19A143481P19 Cramic disc: 1000 pf ±20%, 1000 VDCM; sim to RMC Type JF Discap. C828 19A70023AP7 Polyester: 0.01 pf ±10%, 50 VDCM. C829 19A143481P19 Cramic disc: 1000 pf ±20%, 1000 VDCM; sim to RMC Type JF Discap. C820 19A143481P19 Cramic disc: 1000 pf ±20%, 1000 VDCM; sim to RMC Type JF Discap. C821 19A143481P19 Cramic disc: 1000 pf ±20%, 1000 VDCM; sim to RMC Type JF Discap. C822 19A1023AP7 Polyester: 0.01 pf ±10%			CAPACITORS
C601B C601C C601B C601C C601C C602A 19A700013P10 Phenolic: 0.47 pf ±5%, 500 VDCW. C602B 19A700013P15 Phenolic: 0.56 pf ±5%, 500 VDCW. C603 19A700013P15 Phenolic: 1.50 pf ±5%, 500 VDCW. C603 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C604 19A143491P27K8 C67 ppM. C67 pp JF Discap. C681 19A143491P27K8 C67 pp JF Discap. C681 19A143491P27K8 C67 ppM. C681 19A16192P13 C67 ppM. C681 19A1700234P10 Polyester: 0.033 µf ±10%, 50 VDCW, temp coef - 470 ppM. C6815 19A143491P27K8 C6816 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW, temp coef - 60 ppM. C6816 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW, temp coef - 60 ppM. C6817 C6818 19A143491P27K8 C67 ppM. C6820 19A143491P311 C67 c67 ppM. C6821 19A143491P37K8 C67 ppM. C6821 19A143491P37K9 C6821 19A143491P37K9 C6821 19A143491P37K9 C6821 19A143491P37K9 C6822 19A700234P7 Polyester: 0.033 µf ±10%, 50 VDCW. C6823 19A143491P37K9 C6824 19A700234P7 Polyester: 0.033 µf ±10%, 50 VDCW. C6825 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C6826 19A143481P19 Polyester: 0.22 µf ±10%, 50 VDCW. C626 19A143481P19 C627 19A143481P19 C628 19A143481P19 C628 19A143481P19 C628 19A143481P19 C629 C630 19A143481P19 C629 C630 19A143481P19 C620 C620 19A143481P19 C621 C621 19A143481P19 C622 C623 19A16192P1 C624 19A16192P1 C626 19A143481P19 C627 19A143481P19 C628 C630 19A1614P39 C628 C630 19A1614P39 C629 C630 19A1616P30 C630 C630 C630 C630 C630 C630 C630 C6	C601A	19A700013P5	
C602A 19A700013P10 Phenolic: 0.56 pf ±9%, 500 VDCW. C602B 19A700013P15 Phenolic: 1.50 pf ±5%, 500 VDCW. C604 19A143491P27KS Ceramic disc: 27 pf ±10%, 50 VDCW, temp coef -80 PPM. C605 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW, temp coef -80 PPM. C606 19A143491P27KS Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to NMC Type JF Discap. C611 19A143491P27KS Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C612 19A143491P22J4 Ceramic disc: 22 pf ±5%, 500 VDCW, temp coef -80 PPM. C613 19A116192P13 Ceramic: 1000 pf ±10%, 50 VDCW; sim to Eric 8121-A050-W5R-102K. C614 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C615 19A143491P27KS Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C616 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C617 C618 19A143491P3TH Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to NMC Type JF Discap. C620 19A143491P311 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to NMC Type JF Discap. C621 19A143491P27KS Ceramic disc: 3.0 pf ±0.5 pf, 500 VDCW, temp coef -80 PPM. C622 19A700234P7 Polyester: 0.033 µf ±10%, 50 VDCW. C623 19A16080P109 Polyester: 0.01 µf ±10%, 50 VDCW. C624 19A700234P7 Polyester: 0.02 µf ±10%, 50 VDCW. C625 19A70023AP7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to Type DM-15. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to NMC Type DM-15. C627 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to NMC Type DM-15. C628 19A108182P1 Ceramic 1000 pf ±20%, 1000 VDCW; sim to NMC Type DM-15. C629 19A143481P19 Ceramic: 0.01 µf ±10%, 50 VDCW. C620 19A143481P19 Ceramic: 0.01 µf ±20%, 1000 VDCW; sim to Frie R0C Type DM-15. C620 19A143481P19 Ceramic: 0.01 µf ±20%, 50 VDCW. C620 19A143481P19 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Frie R0C Type DM-15. C621 19A143481P19 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Frie R0C Type DM-15. C622 19A108182P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Frie R0C Type DM-15. C623 19A116182P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Frie R0C Type DM-15. C624 19A10			
C602B 19A700013P15 Phenolic: 1.50 pf ±5%, 500 VDCW. C603 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C604 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C605 19A100234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C610 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C611 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C612 19A143491P22J4 Ceramic disc: 22 pf ±5%, 500 VDCW, temp coef -470 PPM. C613 19A116192P13 Ceramic: 1000 pf ±10%, 50 VDCW, temp coef -470 PPM. C614 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C615 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C616 19A100234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C617 19A143491P311 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C620 19A143491P27K8 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C621 19A100234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C620 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C621 19A100234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C622 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C623 19A116080P109 Polyester: 0.02 µf ±10%, 50 VDCW. C624 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C625 19A170016P32 Mica: 22 pf ±5%, 500 VDCW; sim to RMC Type DM-15. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type DM-15. C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 19A143481P10 Ceramic: 1000 pf ±20%, 50 VDCW; sim to RMC Type DM-15. C629 19A143481P10 Ceramic: 20 pf ±5%, 500 VDCW; sim to Eric RMC Type JF Discap. C620 19A143481P10 Ceramic: 20 pf ±5%, 500 VDCW; sim to Eric RMC Type JF Discap. C621 19A143481P2P1 Ceramic: 20 pf ±5%, 500 VDCW; sim to Eric RMC Type JF Discap. C622 19A116192P1 Ceramic: 20 pf ±5%, 500 VDCW; sim to Eric RMC Type JF Discap. C623 19A116192P1 Ceramic: 20 pf ±5%, 500 VDCW; sim to Eric RMC Type JF Discap. C624 19A103481P10 Ceramic: 20 pf ±5%, 500 VDCW; sim to Eric RMC Type JF Discap. C626 19A143481P10 Ceramic: 20 pf ±5%, 500 VDCW; sim to	C601C	19A700013P9	Phenolic: 0.47 pf ±5%, 500 VDCW.
C603 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C604 19A143491P27KS Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef c60 PPM. C605 thru C609 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C611 19A143491P27KS Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef c60 PPM. C612 19A143491P22J4 Ceramic disc: 22 pf ±5%, 500 VDCW, temp coef c60 PPM. C613 19A116192P13 Ceramic: 1000 pf ±10%, 500 VDCW; sim to Eric 8121-A050-W5R-102K. C614 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C615 19A143491P27KS Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef c60 PPM. C616 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C617 C618 19A143491P3J1 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C620 19A143491P3J1 Ceramic disc: 3.0 pf ±0.5 pf, 500 VDCW, temp coef c617 Ceramic disc: 3.0 pf ±0.5 pf, 500 VDCW, temp coef c70 PPM. C621 19A143491P27KS Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef c70 PPM. C622 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C623 19A16080P109 Polyester: 0.01 µf ±10%, 50 VDCW, temp coef c70 PPM. C624 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C625 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to Emic Type JF Discap. C627 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to EMC Type JF Discap. C628 19A16182P1 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to EMC Type JF Discap. C629 19A14348P9 Tantalum: 22 µf ±20%, 15 VDCW. C620 19A16182P1 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. C620 19A16182P1 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. C621 19A16182P1 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. C622 19A161812P1 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. C623 19A16182P1 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. C624 19A16182P1 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. C625 19A16348P9 Tantalum: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. C626 19A1648P0 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. C795 17 PM = 1000000 Miz, C795 17 PM = 1000000 Miz, C795 17 PM = 1000000 Miz, C795 1	C602A	19A700013P10	Phenolic: 0.56 pf ±5%, 500 VDCw.
C604 19A143491P27K8	C602B	19A700013P15	Phenolic: 1.50 pf ±5%, 500 VDCW.
-80 PPM. 18A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW.	C603	19A700234P10	Polyester: 0.033 µf ±10%, 50 VDCW.
C610 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C611 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coof -80 PPM. C612 19A143491P22J4 Ceramic: 1000 pf ±10%, 500 VDCW, temp coof -470 PPM. C613 19A116192P13 Ceramic: 1000 pf ±10%, 50 VDCW; sim to Eric 8121-A050-H5R-102K. C614 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C615 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coof -80 PPM. C616 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C617 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C620 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C621 19A143491P3J1 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C622 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C623 19A143491P3TK8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coof -80 PPM. C624 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C625 19A700234P7 Polyester: 0.02 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 20 pf ±10%, 50 VDCW. C627 19A14348PP Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C628 19A16189P1 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C629 19A14348P9 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C620 19A14348P9 Ceramic: 0.01 µf ±10%, 50 VDCW. C621 19A14348P9 Ceramic: 0.01 µf ±20%, 15 VDCW. C622 19A1618PP1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to RMC Type JF Discap. C623 19A11619P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to RMC Type JF Discap. C624 19A14348P9 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to RMC Type JF Discap. C625 19A14348P9 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to RMC Type JF Discap. C626 19A11619P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Eric RMC Type JF Discap. C795 TAI, freq Resonator A: 11,200000 KHz,	C604	19A143491P27K8	Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM.
C611 19A143491P27K8	thru	19A700234P10	Polyester: 0.033 μf ±10%, 50 VDCW.
C612 19A143491P22J4 Ceramic disc: 22 pf ±5%, 500 VDCW, temp coef 470 PPM. C613 19A116192P13 Ceramic: 1000 pf ±10%, 50 VDCW; sim to Erie 8121-A050-M5R-102K. C614 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C615 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef 80 PPM. C616 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C617 C618 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C619 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C620 19A143491P3J1 Ceramic disc: 3.0 pf ±0.5 pf, 500 VDCW, temp coef -150 PPM. C621 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C622 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C623 19A16080P109 Polyester: 0.01 µf ±10%, 50 VDCW. C624 19A700105P32 Mca: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15. C625 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RWC Type JF Discap. C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 and C628 and C629 Ceramic: 20 pf ±5%, 100 VDCW; sim to Erie 8121 SPECIAL. CR601 4038056P1 Germanium. CR601 4038056P1 Germanium. CR601 4038056P1 Germanium. CR601 19B219573G3 Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz. Resonator B: 11,196024 KHz. Resonator B: 11,196000 KHz, Resonator B: 11,196000 KHz,	C610	19A143481P19	
-470 PPM. Ceramic: 1000 pf ±10%, 50 VDCW; sim to Erie 8121- A050-M5R-102K. C614	C611	19A143491P27K8	Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef ~80 PPM.
A050-WGR-102K. C614 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C615 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C616 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C617 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C619 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C620 19A143491P3J1 Ceramic disc: 3.0 pf ±0.5 pf, 500 VDCW, temp coef -80 PPM. C621 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C622 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C623 19A16080P109 Polyester: 0.02 µf ±10%, 50 VDCW. C624 19A700105P32 Mica: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15. C625 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 19A116192P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie and C629 C630 19A11614P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. DIODES AND RECTIFIERS CCR601 and CR602 FL601A 19B219573G3 Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,1960200 KHz,		19A143491P22J4	-470 PPM.
C615 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C616 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C617 C618 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C619 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C620 19A143491P3J1 Ceramic disc: 3.0 pf ±0.5 pf, 500 VDCW, temp coef -150 PPM. C621 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C622 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C623 19A16080P109 Polyester: 0.22 µf ±10%, 50 VDCW. C624 19A700105P32 Mica: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15. C625 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 and C629 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. C630 19A116114P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. DIODES AND RECTIFIERS CC6602 Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz,	C613	19A116192P13	Ceramic: 1000 pf $\pm 10\%$, 50 VDCW; sim to Erie 8121-A050-W5R-102K.
-80 PPM.	C614	19A700234P10	
C618 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C619 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C620 19A143491P3J1 Ceramic disc: 3.0 pf ±0.5 pf, 500 VDCW, temp coef -150 PPM. C621 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C622 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C623 19A116080P109 Polyester: 0.22 µf ±10%, 50 VDCW. C624 19A700105P32 Mica: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15. C625 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 19A116192P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. C629 C630 19A116114P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. DIODES AND RECTIFIERS CR601 and CR602 FL601A 19B219573G3 Crystal, freq: Resonator B: 11,196024 KHz, Resonator B: 11,190000 KHz,	C615	19A143491P27K8	
and C617 C618 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 vDCW; sim to RMC Type JF Discap. C619 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C620 19A143491P3J1 Ceramic disc: 3.0 pf ±0.5 pf, 500 VDCW, temp coef -150 PPM. C621 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C622 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C623 19A116080P109 Polyester: 0.22 µf ±10%, 50 VDCW. C624 19A700105P32 Mica: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15. C625 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 19A116192P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. C630 19A11614P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. C7002 Crystal, freq: Resonator A: 11,200000 KHz,			
and C617 C618 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 vDCW; sim to RMC Type JF Discap. C619 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C620 19A143491P3J1 Ceramic disc: 3.0 pf ±0.5 pf, 500 VDCW, temp coef -150 PPM. C621 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C622 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C623 19A116080P109 Polyester: 0.22 µf ±10%, 50 VDCW. C624 19A700105P32 Mica: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15. C625 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 19A116192P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. C630 19A11614P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. C7002 Crystal, freq: Resonator A: 11,200000 KHz,			
C618 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C619 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C620 19A143491P3J1 Ceramic disc: 3.0 pf ±0.5 pf, 500 VDCW, temp coef -150 PPM. C621 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C622 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C623 19A116080P109 Polyester: 0.22 µf ±10%, 50 VDCW. C624 19A700105P32 Mica: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15. C625 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 19A116192P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. C629 C630 19A116114P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. DIODES AND RECTIFIERS CR601 and CR602 FL601A 19B219573G3 Crystal, freq: Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,190000 KHz, Resonator B: 11,190000 KHz,		19A700234P10	Polyester: 0.033 µf ±10%, 50 VDCW.
C619 19A700234P10 Polyester: 0.033 µf ±10%, 50 VDCW. C620 19A143491P3J1 Ceramic disc: 3.0 pf ±0.5 pf, 500 VDCW, temp coef -150 PPM. C621 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C622 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C623 19A116080P109 Polyester: 0.22 µf ±10%, 50 VDCW. C624 19A700105P32 Mica: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15. C625 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 and C629 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. C630 19A116192P1 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. DIODES AND RECTIFIERS CR601 and CR602 FL601A 19B219573G3 Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator A: 11,200000 KHz, Resonato		19A143481P19	
C620 19A143491P3J1 Ceramic disc: 3.0 pf ±0.5 pf, 500 VDCW, temp coef -150 PPM. C621 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C622 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C623 19A116080P109 Polyester: 0.22 µf ±10%, 50 VDCW. C624 19A700105P32 Mica: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15. C625 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 and 19A116192P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. C629 C630 19A116114P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. DIODES AND RECTIFIERS CR601 and CR602 FL601A 19B219573G3 Crystal, freq: Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,190000 KHz,	C619	19A700234P10	
C621 19A143491P27K8 Ceramic disc: 27 pf ±10%, 500 VDCW, temp coef -80 PPM. C622 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C623 19A116080P109 Polyester: 0.22 µf ±10%, 50 VDCW. C624 19A700105P32 Mica: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15. C625 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 19A116192P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. C629 C630 19A116114P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. DIODES AND RECTIFIERS CR601 and CR602 FL601A 19B219573G3 Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator A: 11,200000 KHz,			
G622 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. G623 19A116080P109 Polyester: 0.22 µf ±10%, 50 VDCW. G624 19A700105P32 Mica: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15. G625 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. G626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. G627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. G628 19A116192P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. G630 19A11614P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM.			
C623 19A116080P109 Polyester: 0.22 µf ±10%, 50 VDCW. C624 19A700105P32 Mica: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15. C625 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 19A116192P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. C630 19A11614P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. DIODES AND RECTIFIERS CR601 and CR602 FL601A 19B219573G3 Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator A: 11,200000 KHz,	C621	19A143491P27K8	
Mica: 82 pf ±5%, 500 VDCW; sim to Electro Motive Type DM-15.	C622	19A700234P7	Polyester: 0.01 µf ±10%, 50 VDCW.
Type DM-15. 19A700234P7 Polyester: 0.01 µf ±10%, 50 VDCW. C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 19A116192P1 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. C630 19A116114P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. DIODES AND RECTIFIERS GR601 and CR602 Crystal, freq: Resonator A: 11,200000 KHz, Resonator A: 11,196024 KHz. Resonator A: 11,1200000 KHz, Resonator A: 11,1200000 KHz, Resonator A: 11,1200000 KHz,	C623	19A116080P109	Polyester: 0.22 µf ±10%, 50 VDCW.
C626 19A143481P19 Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to RMC Type JF Discap. C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 and C629 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. C630 19A116114P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. DIODES AND RECTIFIERS CR601 and CR602 Germanium. FL601A 19B219573G3 Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator A: 11,200000 KHz,	C624	19A700105P32	
RMC Type JF Discap. C627	C625	19A700234P7	
C627 19A143486P9 Tantalum: 22 µf ±20%, 15 VDCW. C628 and C629 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. C630 19A116114P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. DIODES AND RECTIFIERS Germanium. FL601A 19B219573G3 Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz, Resonator B: 11,196024 KHz, Resonator A: 11,200000 KHz, Resonator A: 11,200000 KHz,	C626	19A143481P19	Ceramic disc: 1000 pf ±20%, 1000 VDCW; sim to
C628 and C629 Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie 8121 SPECIAL. C630 19Al16114P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. DIODES AND RECTIFIERS Germanium. FL601A 19B219573G3 Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz. Resonator A: 11,200000 KHz,	C627	19414348629	
and C629 C630 19A116114P39 Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM. DIODES AND RECTIFIERS Germanium. Germanium. FL601A 19B219573G3 Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz. Resonator B: 11,196024 KHz. Resonator A: 11,200000 KHz,		i	Ceramic: 0.01 µf ±20%, 50 VDCW; sim to Erie
CR601 and CR602 4038056Pl Germanium. FL601A 19B219573G3 Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz. Resonator A: 11,200000 KHz,	and		8121 SPECIAL.
CR601 4038056Pl Germanium. FL601A 19B219573G3 Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz. Resonator A: 11,200000 KHz,		19A116114P39	Ceramic: 20 pf ±5%, 100 VDCW; temp coef 0 PPM.
and CR602			DIODES AND RECTIFIERS
FL601A 19B219573G3 Crystal, freq: Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz. Resonator A: 11,200000 KHz,	and	4038056P1	Germanium.
Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz. Resonator A: 11,20000 KHz,			FILTERS
	FL601A	19B219573G3	Resonator A: 11,200000 KHz, Resonator B: 11,196024 KHz. Resonator A: 11,200000 KHz,

SYMBOL	GE PART NO.	DESCRIPTION	SYMBOL	GE PART NO.	
FL601B	19B219574G3	Crystal freq:	R609	19A143400P56	Deposited
		Resonator A: 9400.300 KHz, Resonator B: 9396.324 KHz.	R610	19A700019P27	Composition
		Resonator A: 9400.300 KHz, Resonator B: 9396.324 KHz.	R611	19A700019P48	Composition
FL601C*	19B219573G6	Crystal freq:	R612	19A700019P32	Composition
		Resonator A: 11,200000 KHz, Resonator B: 11,200000 KHz.	R613	19A700019P45	Composition
		In Gl of REV B and earlier:	R614	19A700019P40	Composition
		In G3 of REV D and earlier:	R615	19A143400P35	Deposited
	19B219573G1	Crystal freq: Resonator A: 11,200000 KHz,	R616	19A143400P45	Deposited
		Resonator B: 11,200000 KHz.	R617	19A700019P39	Composition
FL602A		(Part of FL601A).			_
FL602B		(Part of FL601B).			
FL603A	19B219573G6	Crystal freq: Resonator A: 11,200000 KHz, Resonator B: 11,200000 KHz.	T601 thru T604	19A134747P2	Transforme TOKO Inc.
FL603B	19B219574G1	Crystal freq: Resonator A: 9400.300 KHz, Resonator B: 9400.300 KHz.	TP601	N503P304F15	Cotter pin
FL603C	19B219573G6	Crystal freq: Resonator A: 11,200000 KHz, Resonator B: 11,200000 KHz.			
		, Actionation 2. 22,200000 mag.	U601	19A116445P1	Integrated
		JACKS AND RECEPTACLES	and U602		
J601	19B219374G1	Connector. Includes;			
	19C317957P1	Shell.			
	19A116651P1	Contact, electrical; sim to Malco X0-2864.		19B226648G1	Shield.
J602	19A116659P106	Connector, printed wiring: 7 contacts; sim to Molex 09-60-1071.		19B219571G1	Shield.
J604	19A116779P1	Contact, electrical; sim to Molex 08-50-0404.	ł	10003077463	side of co
thru J607			İ	19B219554G1	Can. (Loc
				19B219555P1 19B219727G1	Shield.
	İ		1	19A116428P4	Ground tal
				19411012011	(Used with
J623 and	19A116975P1	Contact, electrical.			
J624 J903	19A116659Pl06	Connector, printed wiring: 7 contacts; sim to Molex 09-60-1071.			
Te01	19A700000P25	Choke, RF: 15.0 μh ±10%, 1.20 ohms DC res max.			
L602	19A700024P25	Coil, RF: 10.0 µh ±10%, 3.70 ohms DC res max.			
L604	19A700000P25	Choke, RF: 15.0 µh ±10%, 1.20 ohms DC res max.			
20.55		Connector, Includes:			
P903	19A116659P1	Connector, Printed wiring: 3 contacts; sim to Molex 09-52-3032.			
	19A116659P15	Molex 09-52-3032. Connector, printed wiring: 4 contacts; sim to Molex 09-52-3042.			
		Molex 09-52-3042.			
Q601	19A115910P1	Silicon, NPN; sim to Type 2N3904.	İ		
thru Q603					
ngo.	3R151P153J				
R601 R602	3R151P681J	Composition: 680 ohms ±5%, 1/8 w.			
R603	19A700019P21	Composition: 47 ohms ±5%, 1/4 w.			
R604	19A143400P33	Composition: 510 ohms ±5%, 1/4 w.			
R605	19C314256P22803	Metal film: 280K ohms ±1%, 1/4 w.	1		
R606	19A700019P37	Composition: 1K ohms ±10%, 1/4 w.	1		
R607	19A700019P64	Composition: 0.18 megohm ±5%, 1/4 w.	1		
R608	19B209358P107	Variable, carbon film; approx 800 to 25,000 ohms	1		
ACC CO		±10%, 0.25 w; sim to CTS Type X-201.			

R609 R610 R611 R612 R613 R614 R615 R616 R617	19A143400P56 19A700019P27 19A700019P48 19A700019P32 19A700019P45 19A700019P40 19A143400P35	Deposited carbon: 43K ohms ±5%, 1/4 w. Composition: 150 ohms ±5%, 1/4 w. Composition: 8.2K ohms ±5%, 1/4 w. Composition: 390 ohms ±5%, 1/4 w. Composition: 4.7K ohms ±5%, 1/4 w. Composition: 1.8K ohms ±5%, 1/4 w.
R610 R611 R612 R613 R614 R615	19A700019P48 19A700019P48 19A700019P32 19A700019P45 19A700019P40 19A143400P35	Composition: 150 ohms ±5%, 1/4 w. Composition: 8.2K ohms ±5%, 1/4 w. Composition: 390 ohms ±5%, 1/4 w. Composition: 4.7K ohms ±5%, 1/4 w.
R611 R612 R613 R614 R615 R616	19A700019P48 19A700019P32 19A700019P45 19A700019P40 19A143400P35	Composition: 8.2K ohms ±5%, 1/4 w. Composition: 390 ohms ±5%, 1/4 w. Composition: 4.7K ohms ±5%, 1/4 w.
R612 R613 R614 R615 R616	19A700019P32 19A700019P45 19A700019P40 19A143400P35	Composition: 390 ohms ±5%, 1/4 w. Composition: 4.7K ohms ±5%, 1/4 w.
R613 R614 R615 R616	19A700019P45 19A700019P40 19A143400P35	Composition: 4.7K ohms ±5%, 1/4 w.
R614 R615 R616	19A700019P40 19A143400P35	
R615 R616	19A143400P35	Composition: 1.8K ohms +5%, 1/4 w.
R616		
		Deposited carbon: 750 ohms ±5%, 1/4 w.
R617	19A143400P45	Deposited carbon: 5.1K ohms ±5%, 1/4 w.
	19A700019P39	Composition: 1.5K ohms ±5%, 1/4 w.
T601 thru T604	19A134747P2	Transformer, IF: resonant freq. 10.7 MHz; sim TOKO Inc. 154 PC-470073N3.
TP601	N503P304F15	Cotter pin.
U601 and U602	19A116445P1	Integrated circuit, linear; sim to ULN 2111.
		MISCELLANEOUS
ı	19B226648G1	Shield. (Located around FL601, FL602).
	19B219571G1	Shield. (Located under 2601, J624 on opposite side of component board).
	19B219554G1	Can. (Located around U602, Q603)
	19B219555P1	Cover. (Used with 19B219554G1 can).
	19B219727G1	Shield. (Located under 19B219554G1 can).
	19B219727G1 19A116428P4	Ground tab; sim to AMP 86031-1 (Strip Form).
	1011101201	(Used with shields on bottom of circuit board).
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