

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
 - a) RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4W.
 - b) CAPACITANCE IS IN μF .
2. DENOTES FRONT PANEL CONTROL.
3. SPARE "E" NOS. AND CAPACITORS ARE NOT SHOWN. EACH CAPACITOR REFERENCE NUMBER IS IDENTICAL TO EACH "E" NO.
4. a) SCHEMATIC IS SHOWN WITH TWO POSSIBLE CONTROL OPTIONS,
 - 1) 8718/MCM-1 MANUAL TUNING CONTROL
 - 2) 8718/MCM-2 MANUAL TUNING CONTROL WITH REMOTE CONTROL
 DIFFERENCE BETWEEN 8718/MCM-1 AND 8718/MCM-2 IS SHOWN IN TABLE 1. OTHER AVAILABLE OPTIONS ARE SHOWN IN TABLE 2.
5. A10A1, AND A10A2 ARE PART OF:
 - FRONT PANEL CONTROL
 - TYPE 791684
 - REF DESIG PREFIX A10
6. MOST MODULE PINS ARE NOT SHOWN DUE TO UNNECESSARY LINE DUPLICATIONS. GROUND PINS ON SOME MODULES ARE NOT SHOWN BECAUSE OF COMPLEXITY (SEE EACH MODULE'S DWG FOR CLARITY).
7. TEST POINT/PINS NOT SHOWN ARE:
 - A5A1, MODULE PINS B3 (TPI), A13 (TP2) TIED TO A17, A60 (TP3) TIED TO A55
 - B9 (TP5), B1 (TP6); A5A2, MODULE PINS A51 (TP7), A55 (TP8), A49 (TPIO), B57, (TPI2).
9. R3 & R4 SHALL BE ADDED AT U3 AS SHOWN IN DETAIL A, WHEN OPTIONS NOTED IN TABLE 2 ARE USED.

8. TEST POINT DESCRIPTIONS:

- A5 — TPI N/U
- TP2 1MHz REF
- TP3 3RD LO
- TP4 N/U
- TP5 1ST LO UNLOCK
- TP6 1ST LO TUNING VOLTS
- TP7 2ND LO MAIN LOOP TUNING VOLTS
- TP8 2ND LO 32.2 MHz TUNING VOLTS
- TP9 10kHz
- TPIO 2ND LO UNLOCK
- TPI1 1MHz REF
- TPI2 2ND LO 32MHz TUNING VOLTS
- TPI3 2ND LO OUT
- TPI4 1kHz REF
- TPI5 BFO TUNING VOLTS
- TPI6 BFO OUT
- TPI7 FIXED BFO
- TPI8 BFO INHIBIT
- A4 — TPI 10.7MHz INHIBIT
- TP2 10.7MHz FILTER SW OUTPUT
- TP3 455kHz FILTER SW IF OUTPUT
- TP4 455 kHz AMPLIFIER OUTPUT
- TP5 DETECTED AM
- TP6 IF INPUT TO FM/CW/SSB DETECTOR
- TP7 FM/CW AUDIO
- TP8 } LINE AUDIO
- TP9 } LINE AUDIO
- TPIO PHONE AUDIO
- TPI1 LINE AUDIO LEVEL
- TPI2 3RD LO INPUT TO 10.7MHz/455kHz CONVERTER
- TPI3 10.7MHz/455kHz CONVERTER IF OUTPUT
- TPI4 ISB IF INPUT
- TPI5 BFO INPUT
- TPI6 } ISB AUDIO
- TPI7 } ISB AUDIO
- TPI8 } ISB AUDIO
- TPI9 IF AGC
- TP20 N/U
- TP21 ISB AGC
- TP22 RF AGC

TABLE 2

OPTION	DESCRIPTION	SCHEM	
8718/B10	10Hz BFO	480049	
8718/B18	HP21MX/12566B I/O	480070	(NOTE 9)
8718/COR	CARRIER OPERATED RELAY	480056	
8718/ISB	INDEPENDENT SIDEBAND	SEE A4 A4 A4A5, A4A8	
8718/LLA	LOW LEVEL AUDIO	380214	
8718/NAVMFP	MICROPROCESSOR FRONT PANEL	580051	(NOTE 9)
8718/PRE	PRESELECTOR	380034	
8718/SMO	SIGNAL MONITOR OUTPUT	380027	
8718/1Hz	1 Hz TUNING RESOLUTION	480058	
8718/232	RS-232 INTERFACE	480098	(NOTE 9)
8718/488-1	IEEE-488 INTERFACE LISTEN ONLY	380031	
8718/488-2	IEEE-488 INTERFACE TALK/LSTN	480115	(NOTE 9)
8718/COM	COMMAND INPUT	480093	
8718/MON	MONITOR OUTPUT	480097	

TABLE 1

OPTION	A6A1	A6A1J1	A7
8718/MCM-1	791575-1	NOT USED	791874-1
8718/MCM-2	791575-2	AS SHOWN	791874-1

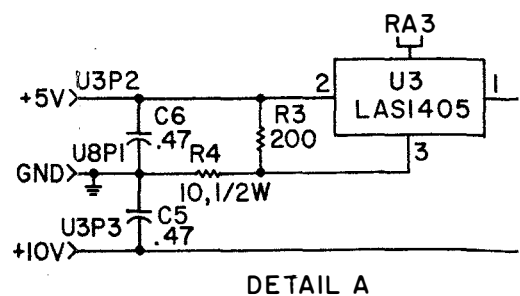


Figure FO-1. Receiver, Radio AN/URR-74(V)2
Main Chassis Schematic Diagram
(Sheet 1 of 6)

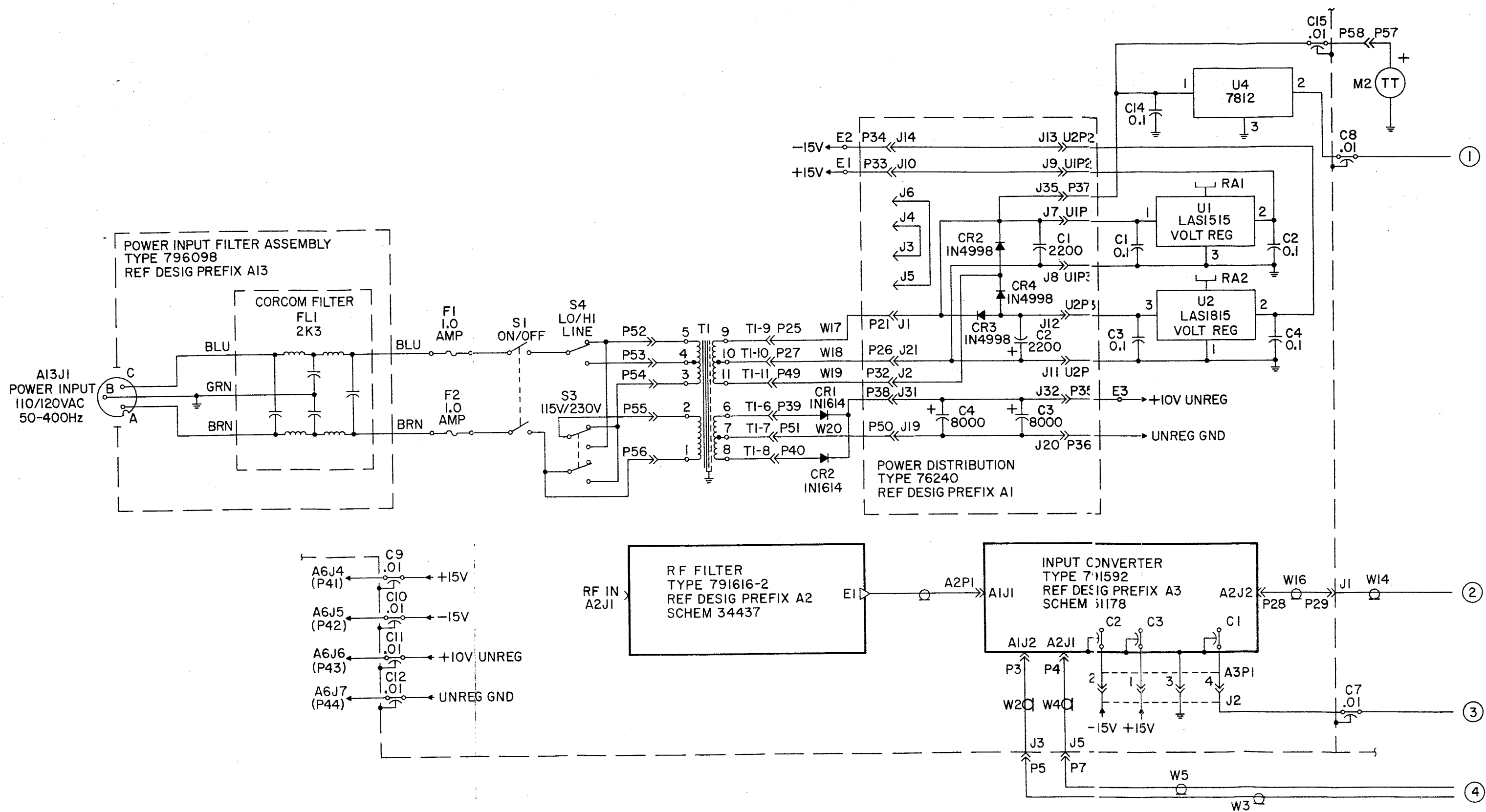


Figure FO-1. Receiver, Radio AN/URR-74(V)2
Main Chassis Schematic Diagram
(Sheet 2 of 6)

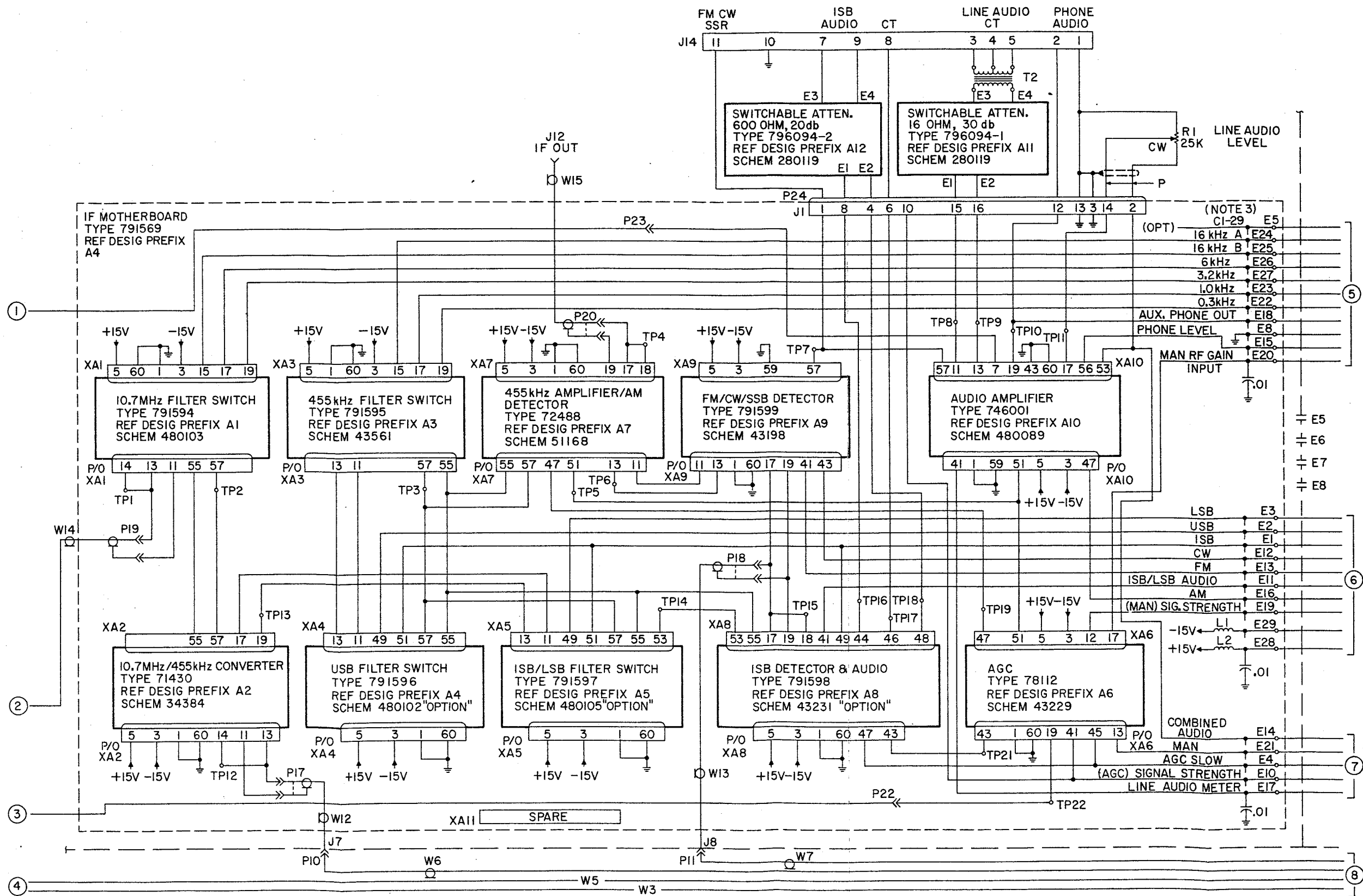


Figure FO-1. Receiver, Radio AN/URR-74(V)2
Main Chassis Schematic Diagram
(Sheet 3 of 6)

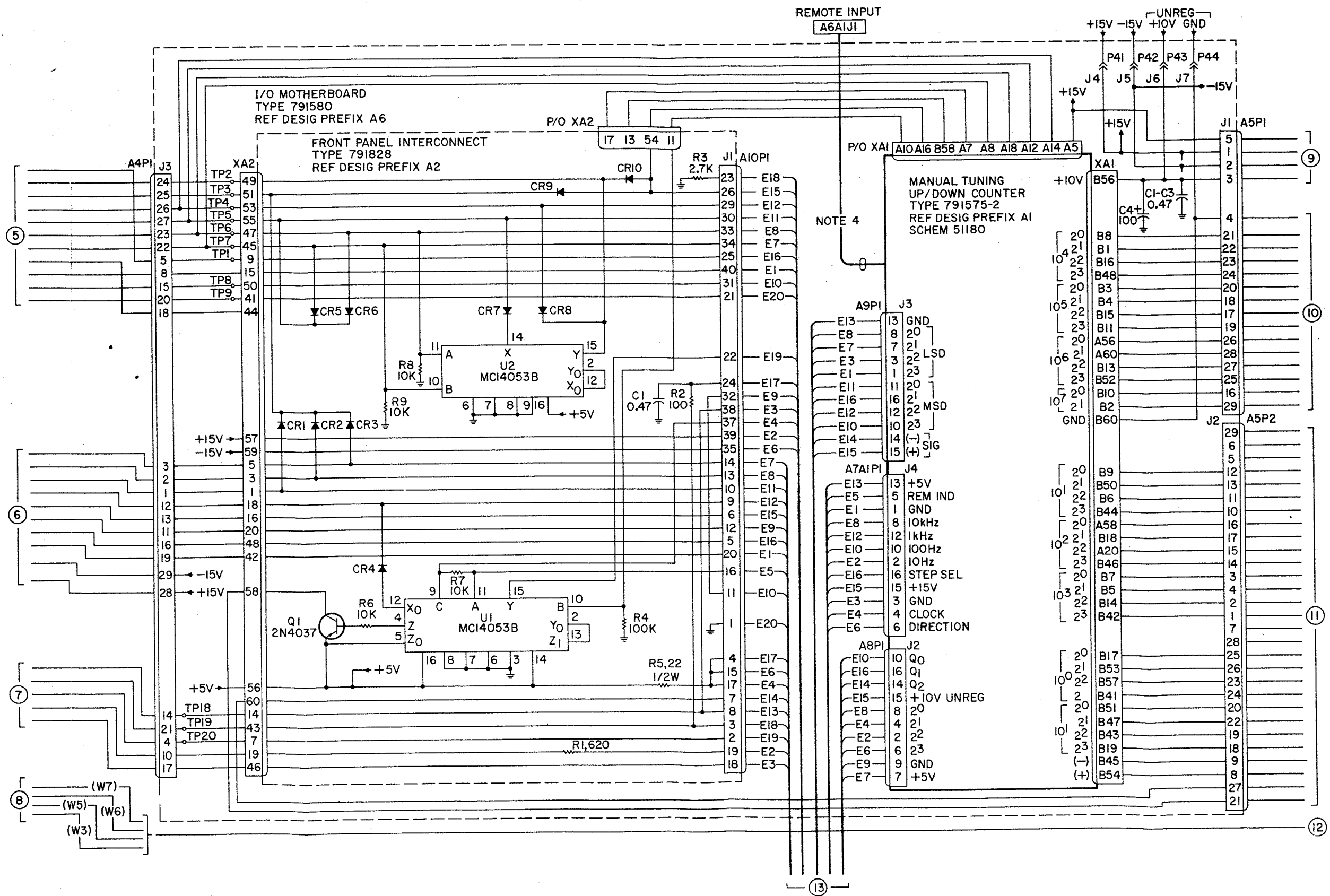


Figure FO-1. Receiver, Radio AN/URR-74(V)2
Main Chassis Schematic Diagram
(Sheet 4 of 6)

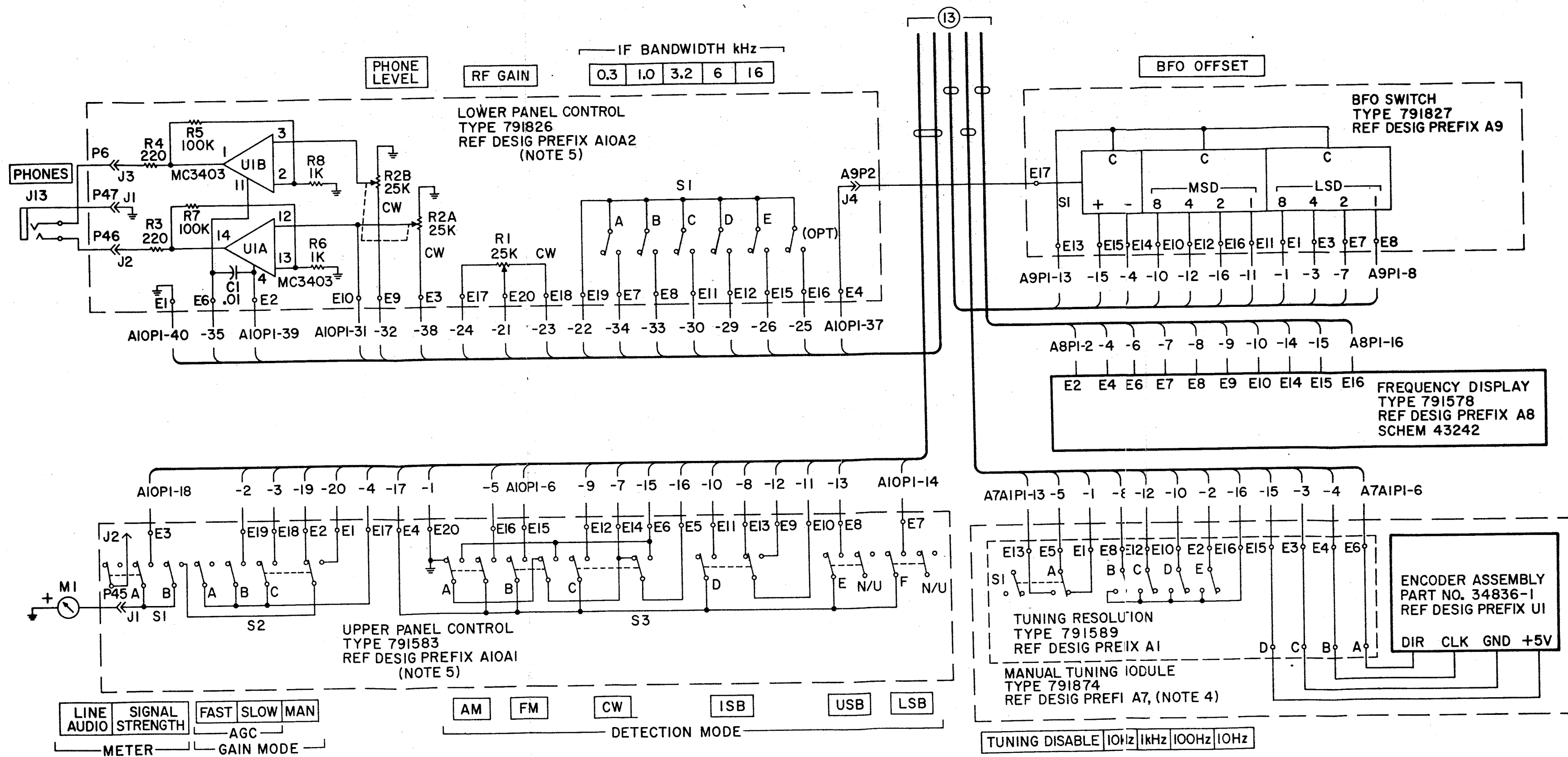


Figure FO-1. Receiver, Radio AN/URR-74(V)2
Main Chassis Schematic Diagram
(Sheet 5 of 6)

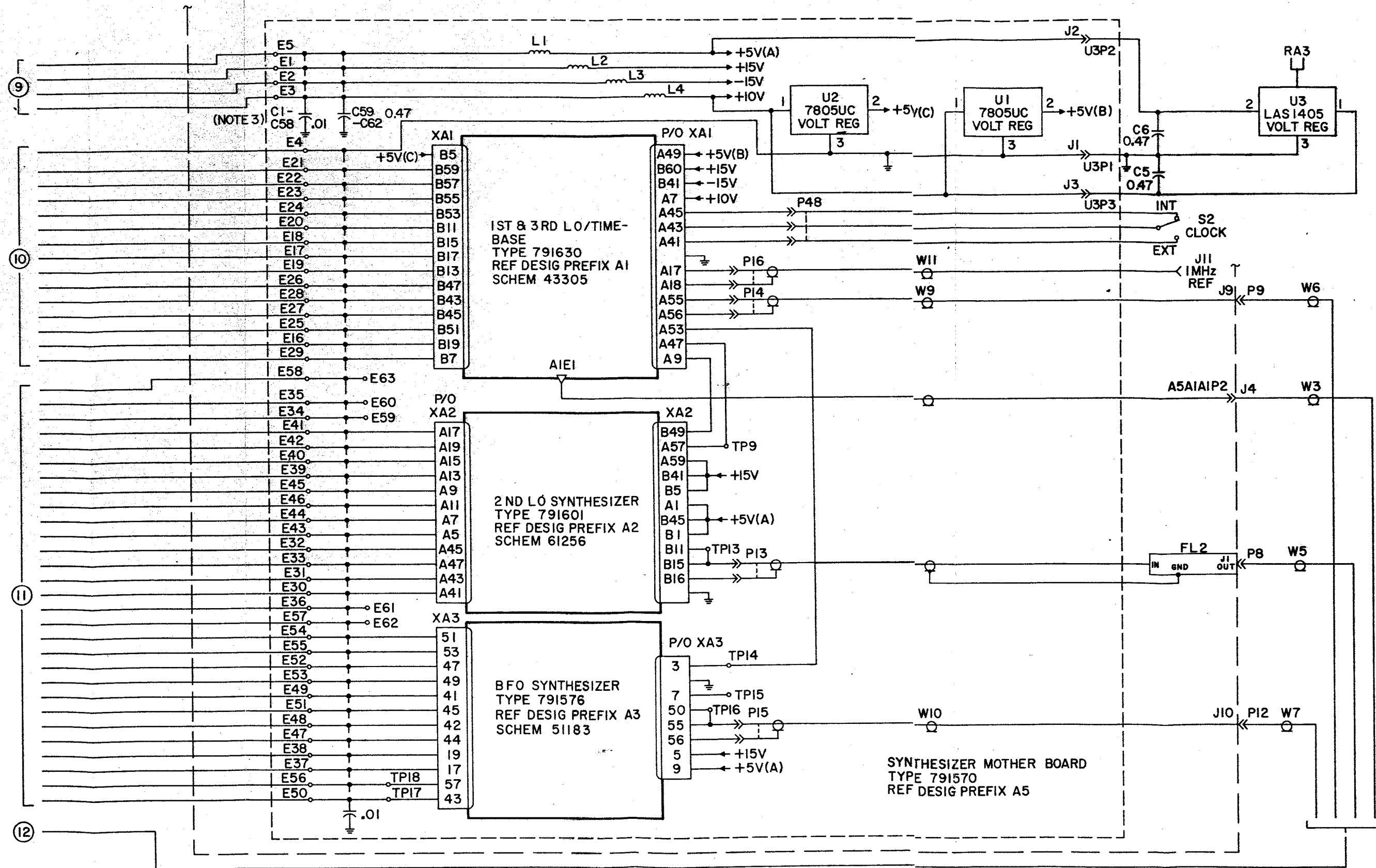
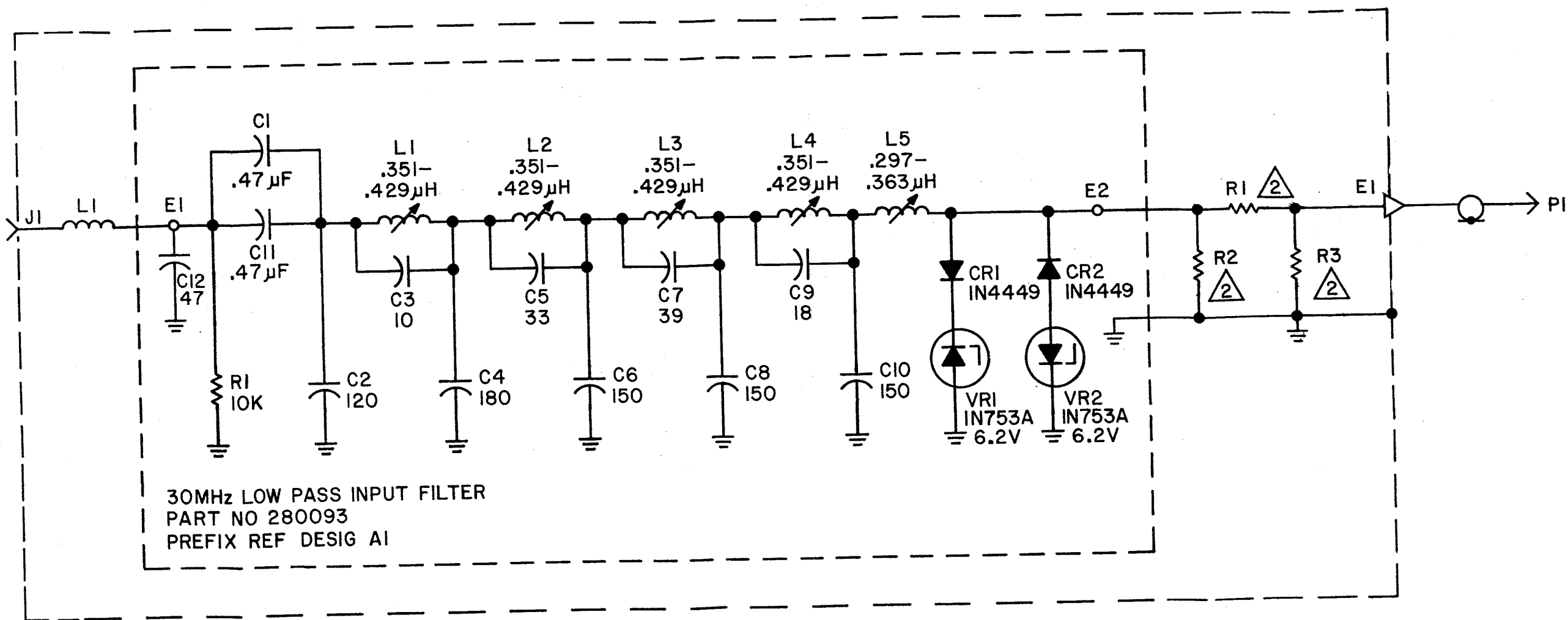


Figure FO-1. Receiver, Radio AN/URR-74(V)2
Main Chassis Schematic Diagram
(Sheet 6 of 6)

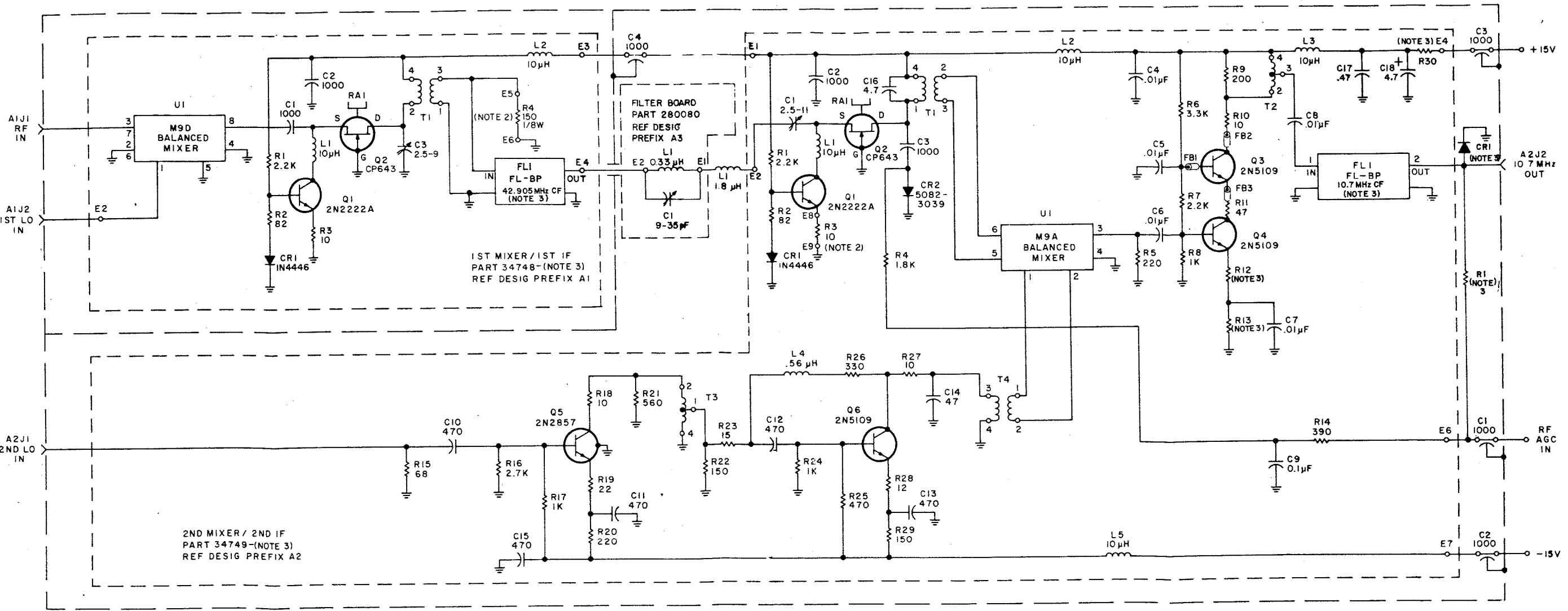


NOTES:

- I. UNLESS OTHERWISE SPECIFIED:
 - a.) RESISTANCE IS IN OHMS $\pm 5\%$, 1/4W
 - b.) CAPACITANCE IS IN pF

DASH NO.	R1	R2	R3
-1	8.2 1/8 W	560 1/8 W	560 1/8 W
-2	NOT USED (JUMPER)	NOT USED	NOT USED

Figure FO-2. Type 791616-2 RF Filter (A2), Schematic Diagram



- NOTES:
- 1 UNLESS OTHERWISE SPECIFIED.
 - a) RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4 W.
 - b) CAPACITANCE IS IN pF.
 - 2 NOMINAL VALUE; FINAL VALUE FACTORY SELECTED
 3. DIFFERENCE BETWEEN TYPES ARE SHOWN IN TABLE I.

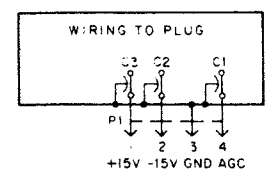


TABLE I

TYPE	A1	A2	A1FL1		A2FL1		A2R12	CR1	P1	A2R13	A2R30
			PART	BW	PART	BW					
791592-1	34748-1	34749-1	92123	28 kHz	92124	16 kHz	4 7	NOT USED	NOT USED	68	10
791592-2	34748-1	34749-1	92123	28 kHz	92124	16 kHz	4 7	5082-3039	1 F	68	10
791592-3	34748-2	34749-2	92195	64 kHz	92196	40 kHz	12 0	NOT USED	NOT USED	68	10
791592-4	34748-4	34749-3	92221	100 kHz	SEE DETAIL A		4 7	NOT USED	NOT USED	68	10
791592-5	34748-5	34749-4	92212	40 kHz	92211	30 kHz	13	NOT USED	NOT USED	22	22

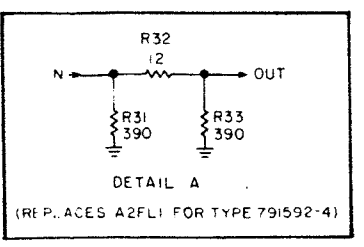


Figure FO-3. Type 791592-1 Input Converter (A3), Schematic Diagram

NOTES

- 1. UNLESS OTHERWISE SPECIFIED:
 a) RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4W.
 b) CAPACITANCE IS IN μF .
- 2. PIN CONFIGURATION SHOWN IN DETAIL A.

3. DIFFERENCE BETWEEN TYPES IS SHOWN IN TABLE I.

TABLE I

TYPE	R19	R46	C17	FL1		FL2		FL3	L4	R22	R23	R24
				PART	BW	PART	BW					
791594-1	220	12	0.1	92126	3.2 kHz	92125	6.0 kHz	NOT USED	NOT USED	33	560	33
791594-2	220	12	0.1	92229	4.0 kHz	92125	6.0 kHz	NOT USED	NOT USED	33	560	33
791594-3	1.2K	47	27 pF	92220	8.0 kHz	92219	40 kHz	SFE10.7MA - 5RED	10 μH	NOT USED	510	510

DETAIL A



MCI458

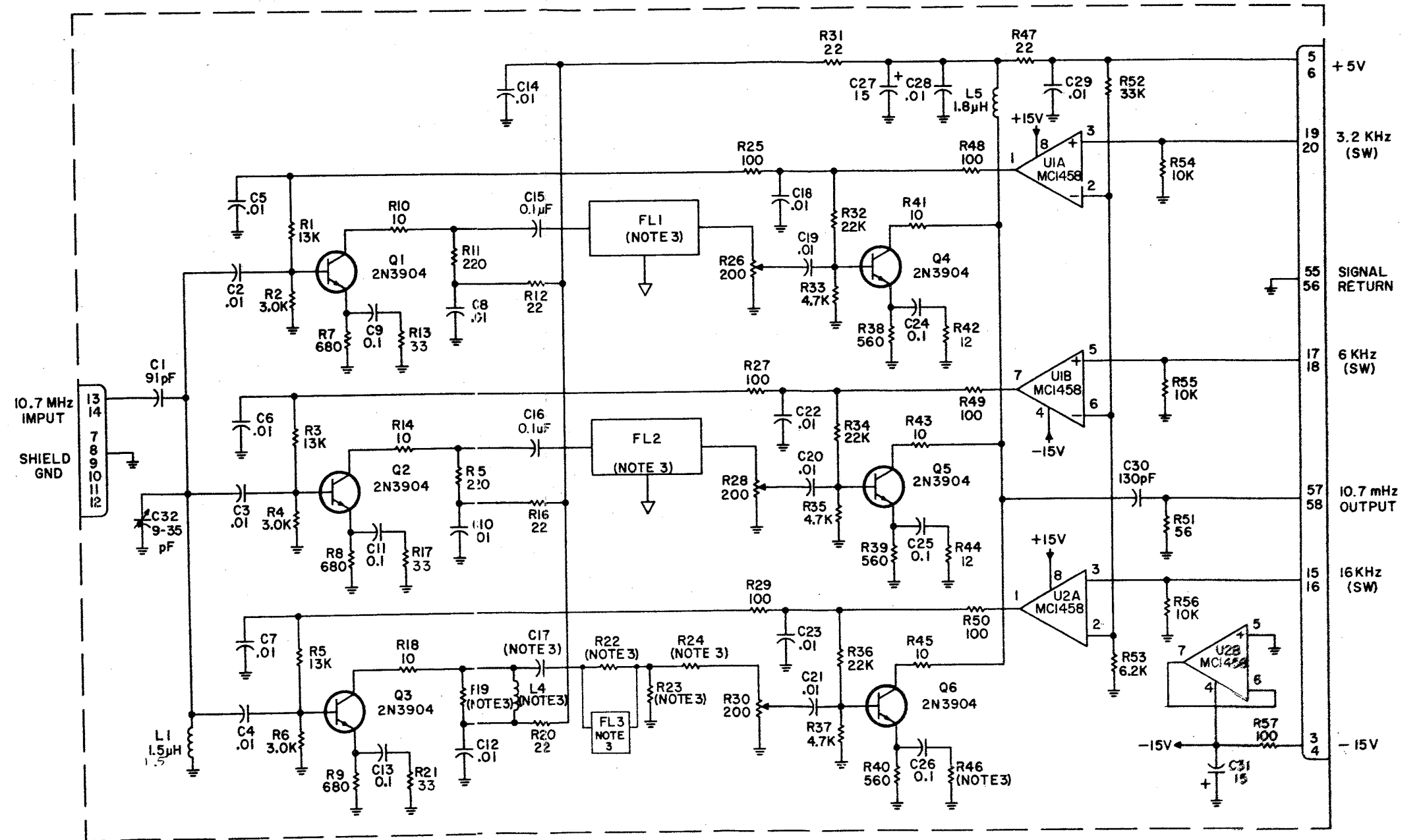
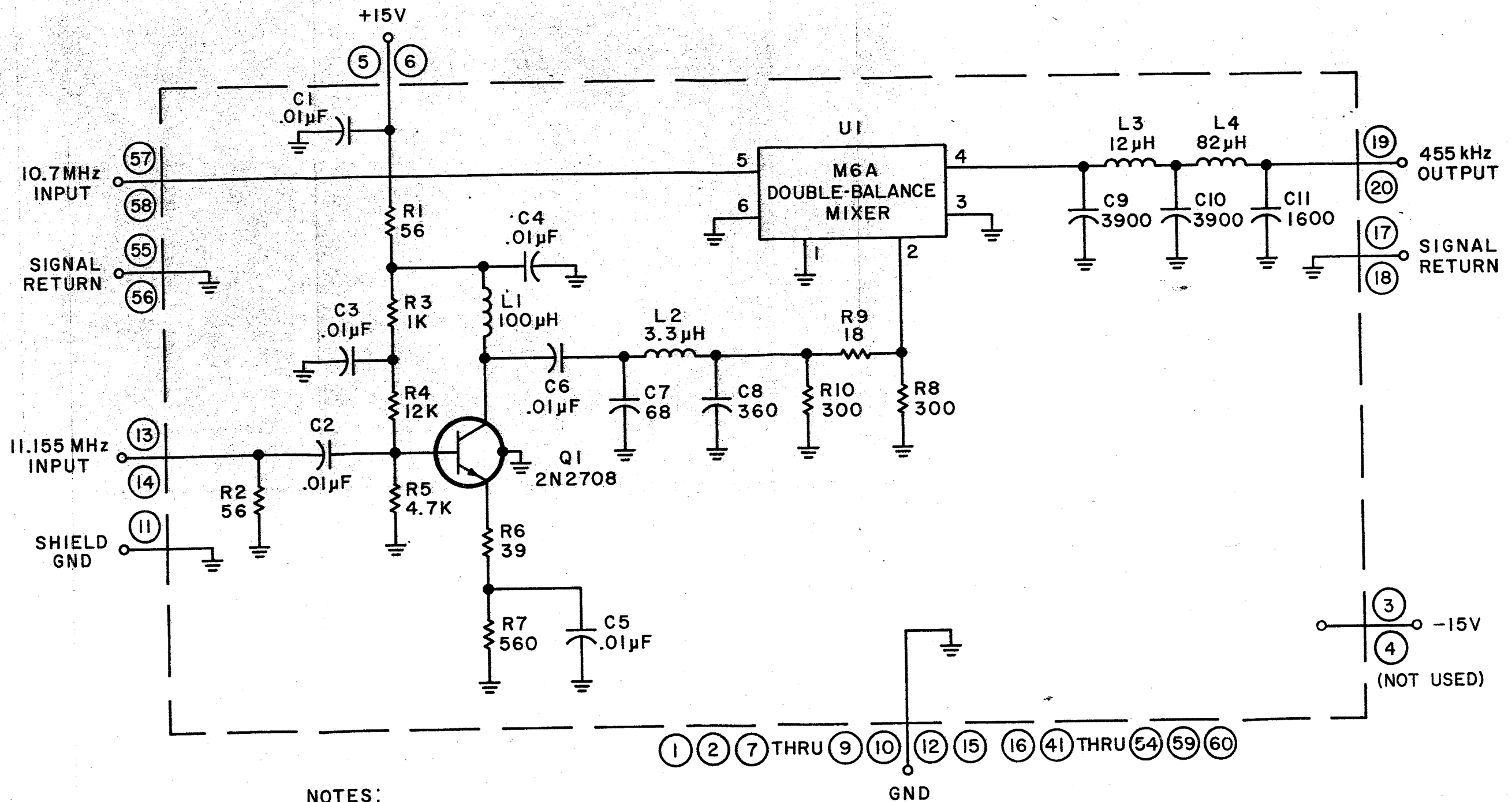


Figure FO-4. Type 791594 10.7 MHz Filter Switch (A4A1), Schematic Diagram



NOTES:

1. UNLESS OTHERWISE SPECIFIED:
 - a) RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4W.
 - b) CAPACITANCE IS IN pF.
2. ENCIRCLED NUMBERS ARE MODULE PINS.

Figure FO-5. Type 71430 10.7 MHz/455 kHz Converter (A4A2), Schematic Diagram

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
 a) RESISTANCE IS IN OHMS $\pm 5\%$, 1/4W.
 b) CAPACITANCE IS IN μF .
2. ENCIRCLED NUMBERS ARE MODULE PINS.
3. DIFFERENCE BETWEEN TYPES IS SHOWN IN TABLE 1.
4. IF DIFFULTY OF PROCUREMENT EXISTS FOR PART MC3403P PART LM348N MAY BE USED AS ALTERNATE IN THIS APPLICATION.
5. NOMINAL VALUE, FINAL VALUE FACTORY SELECTED.

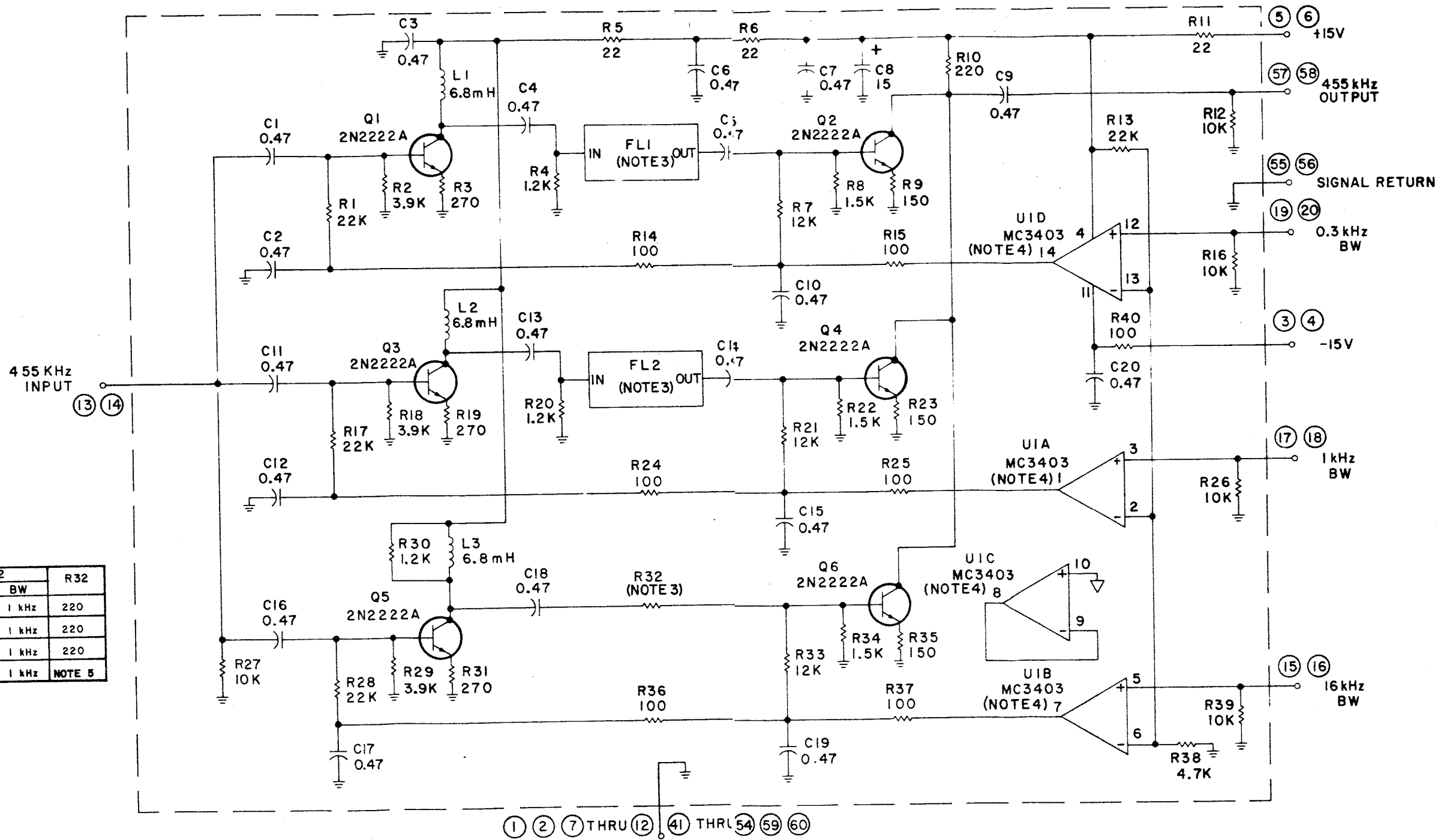


TABLE 1

TYPE	FL1		FL2		R32
	PART	BW	PART	BW	
791595-1	92128	325 Hz	92127	1 kHz	220
791595-2	20611	100 Hz	92127	1 kHz	220
791595-3	92210	300 Hz	92209	1 kHz	220
791595-4	92128	325 Hz	92127	1 kHz	NOTE 5

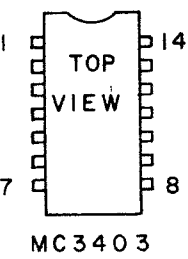


Figure FO-6. Type 791595 455 kHz Filter Switch (A4A3), Schematic Diagram

NOTES:

1. UNLESS OTHERWISE SPECIFIED:
 a) RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4W.
 b) CAPACITANCE IS IN μF .
2. PIN CONFIGURATION IS SHOWN IN
 DETAIL A
3. DIFFERENCE BETWEEN TYPES IS
 SHOWN IN TABLE A

DETAIL A

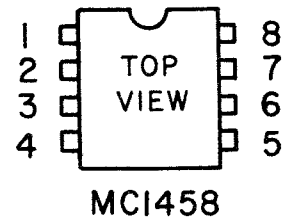


TABLE A

TYPE	FLI
791596-1	92122
791596-2	92194

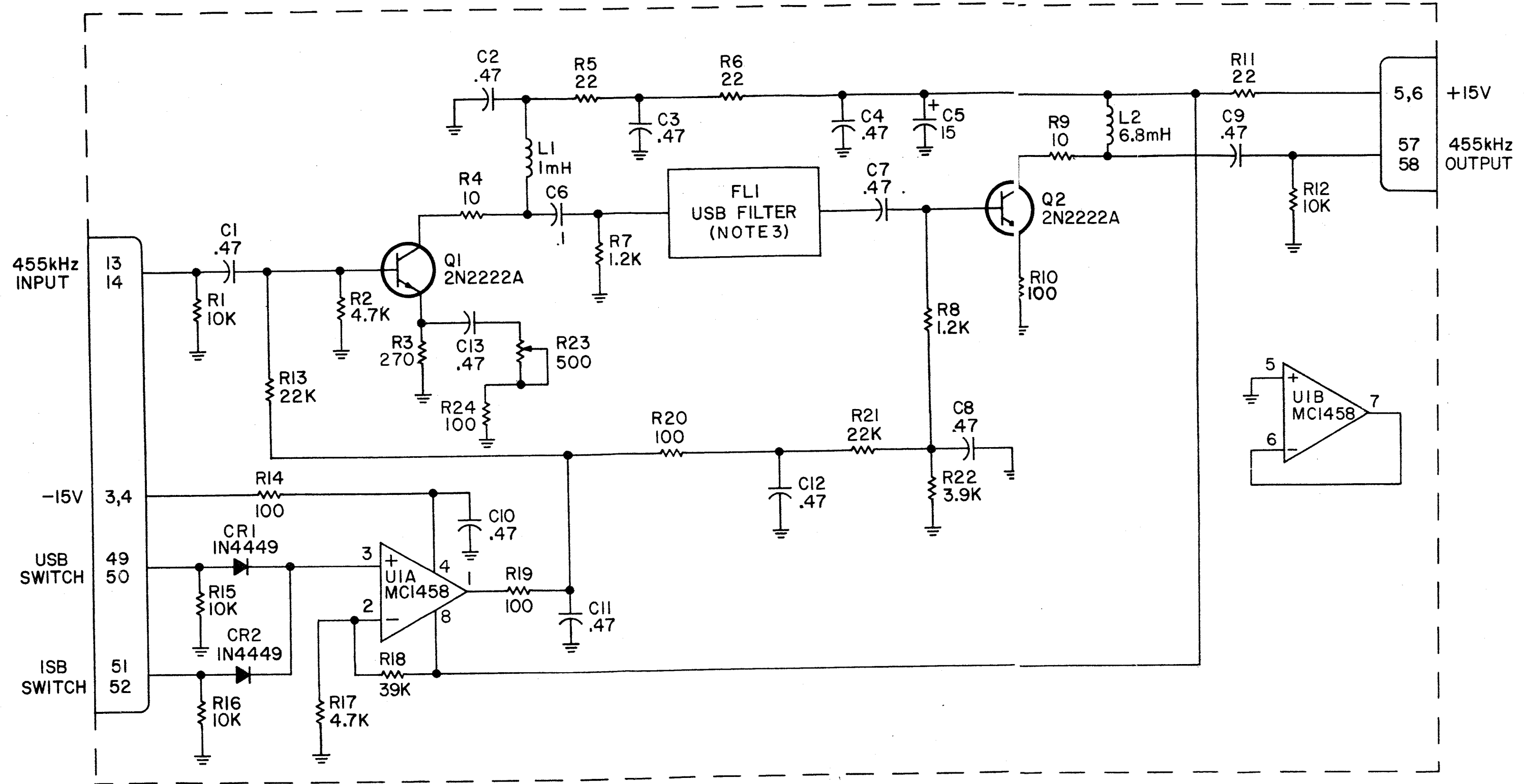


Figure FO-7. Type 791596 USB Filter Switch (A4A4), Schematic Diagram

- NOTES:
- UNLESS OTHERWISE SPECIFIED:
 a) RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4W.
 b) CAPACITANCE IS IN μF .
 - PIN CONFIGURATION IS SHOWN IN DETAIL A.
 - DIFFERENCE BETWEEN TYPES IS SHOWN IN TABLE A

DETAIL A

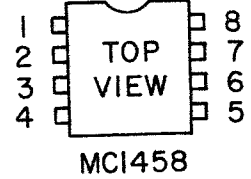


TABLE A

TYPE	FLI
791597-1	92121
791597-2	92193

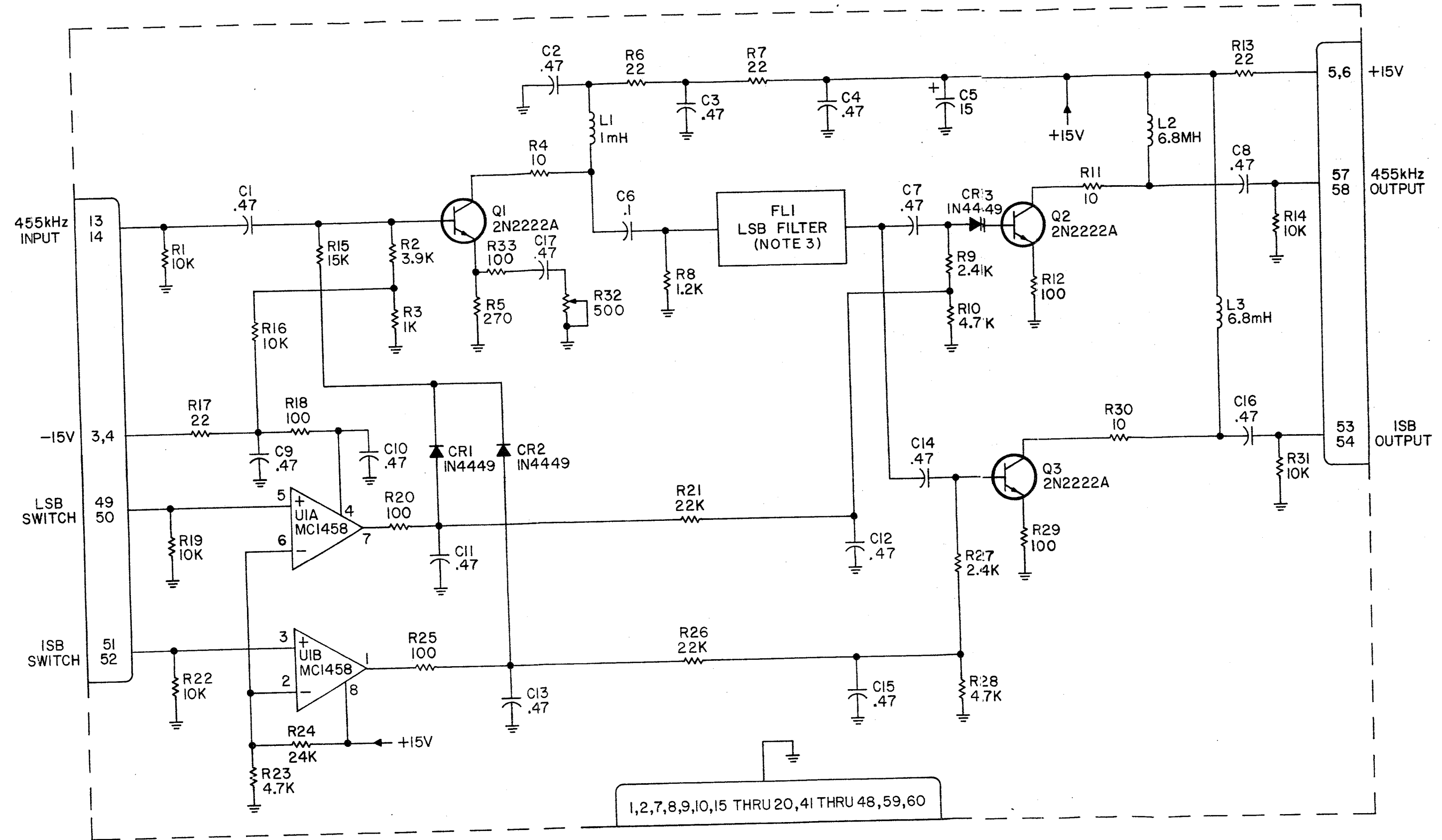
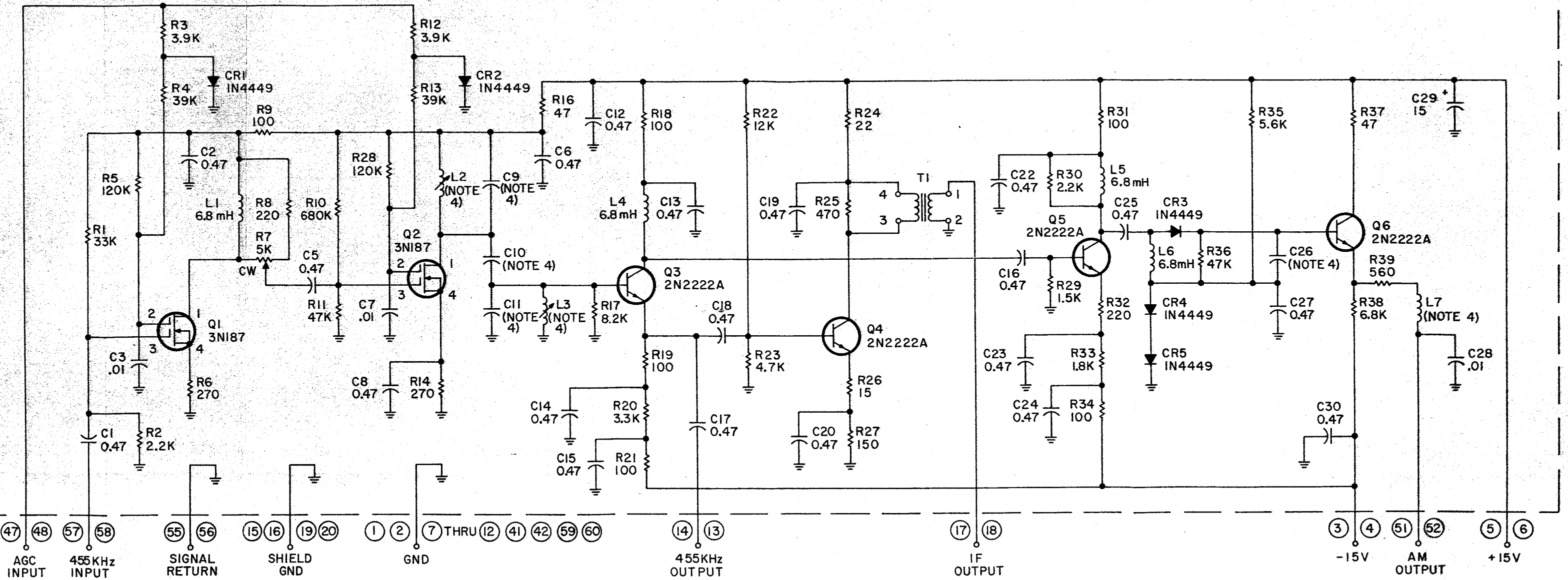


Figure FO-8. Type 791597 LSB/LSB Filter Switch (A4A5), Schematic Diagram



NOTES:

1. UNLESS OTHERWISE SPECIFIED:
 - a) RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4 W.
 - b) CAPACITANCE IS μF .
2. ENCIRCLED NUMBERS (LETTERS) ARE MODULE PIN NUMBERS.
3. CW ON R7 INDICATES FULL CLOCKWISE POSITION OF ACTUATOR.
4. DIFFERENCE BETWEEN TYPES IS SHOWN IN TABLE A.

TABLE A

TYPE NO	C9	C10	C11	C26	L2	L3	L7	USED ON
72488-1	3300pF	180pF	3300pF	180pF	39 μH	39 μH	6.8 mH	WJ-8718
72488-2	910pF	110pF	910pF	150pF	120mH	120mH	4.7 mH	WJ-8718 12

Figure FO-9. Type 72488 455 kHz Amplifier/AM Detector (A4A7), Schematic Diagram

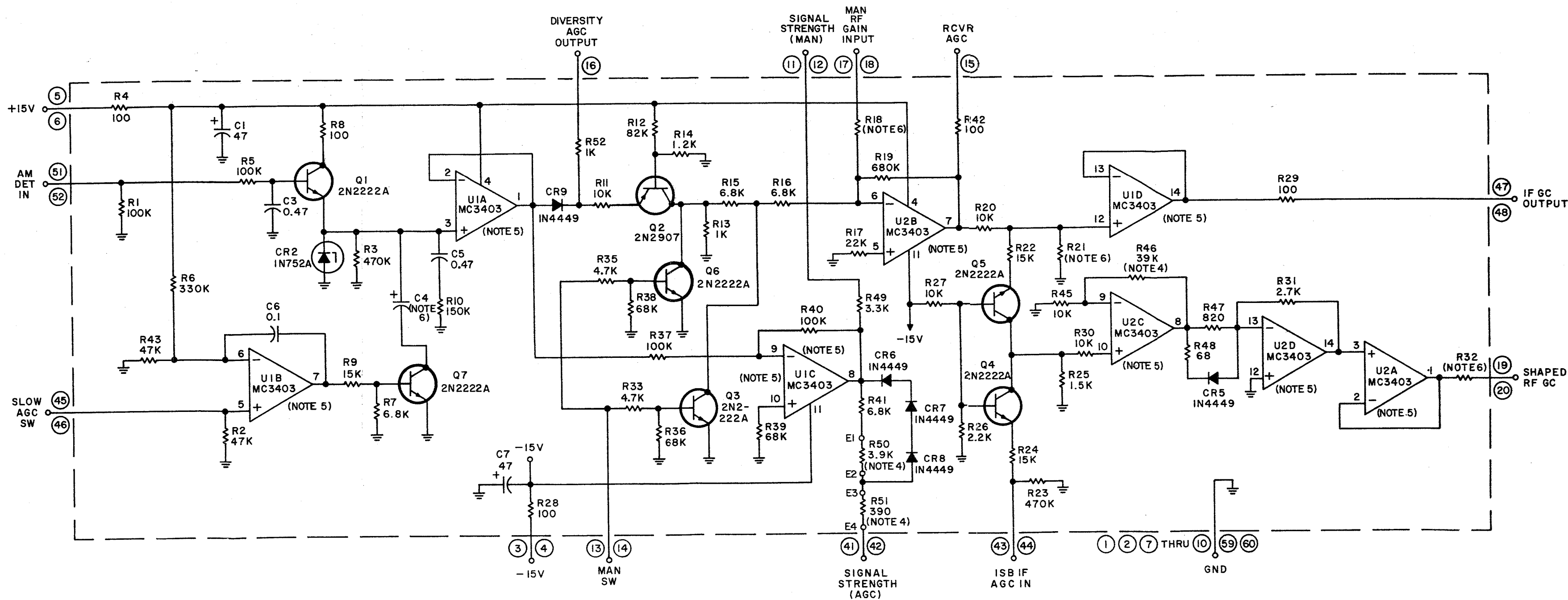


TABLE A

TYPE NO	C4	R18	R21	R32
78112-1	33 μ F	270K	15K	390
78112-2	1.5 μ F	270K	15K	390
78112-3	33 μ F	330K	10K(VAR)	(NOTE 4)

- NOTES:
- UNLESS OTHERWISE SPECIFIED:
 a) RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4W.
 b) CAPACITANCE IS IN μ F.
 - ENCIRCLED NUMBERS ARE MODULE PINS.
 - U1, U2 LEAD ARRANGEMENT—DETAIL A.
 - NOMINAL VALUE; FINAL VALUE FACTORY SELECTED.
 - LM348N MAY BE USED AS AN ALTERNATIVE FOR MC3403 (SHOULD A DIFFICULTY IN PROCURING MC3403 ARISE) AT U1 AND U2 IN THIS APPLICATION.
 - DIFFERENCE BETWEEN TYPES AS INDICATED IN TABLE A

DETAIL A

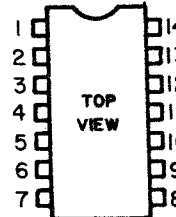


Figure F0-10. Type 78112 AGC Amplifier (A4A6), Schematic Diagram

- NOTES:
1. UNLESS OTHERWISE SPECIFIED
 - a) RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4W.
 - b) CAPACITANCE IS IN μ F.
 2. ENCIRCLED NUMBERS ARE MODULE PINS.
 3. LEAD ARRANGEMENT OF IC'S - DETAIL A, B
 - * 4. IF DIFFICULTY OF PROCUREMENT EXISTS FOR PART MC3403P, PART LM 348N MAY BE USED AS ALTERNATE IN THIS APPLICATION.
 5. DIFFERENCE BETWEEN TYPES AS INDICATED IN TABLE A.

TABLE A

TYPE NO	C11	L3	R11
791599-1	.015	47MH	470K
791599-2	.0033	6.8MH	390K

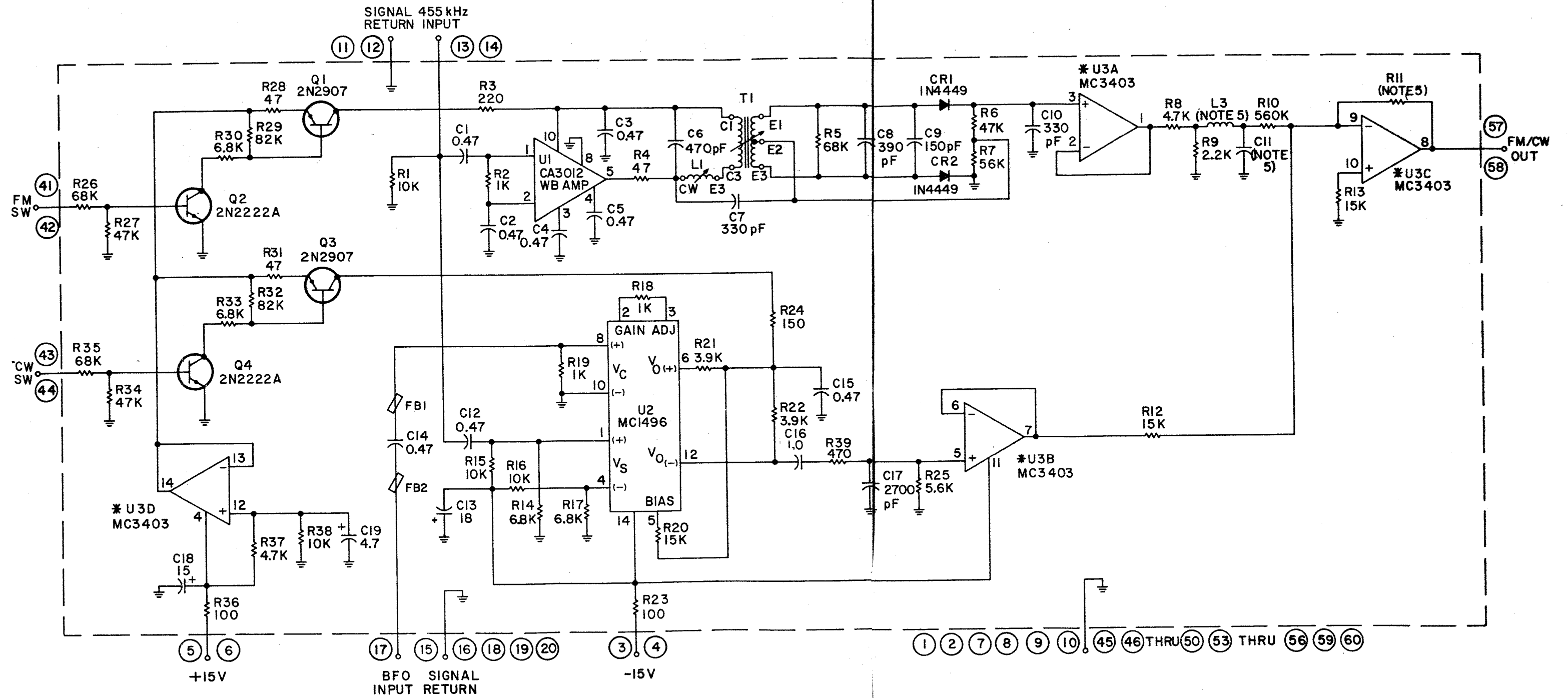
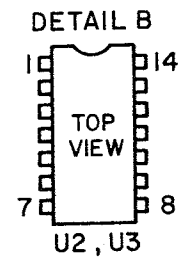
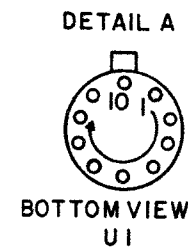
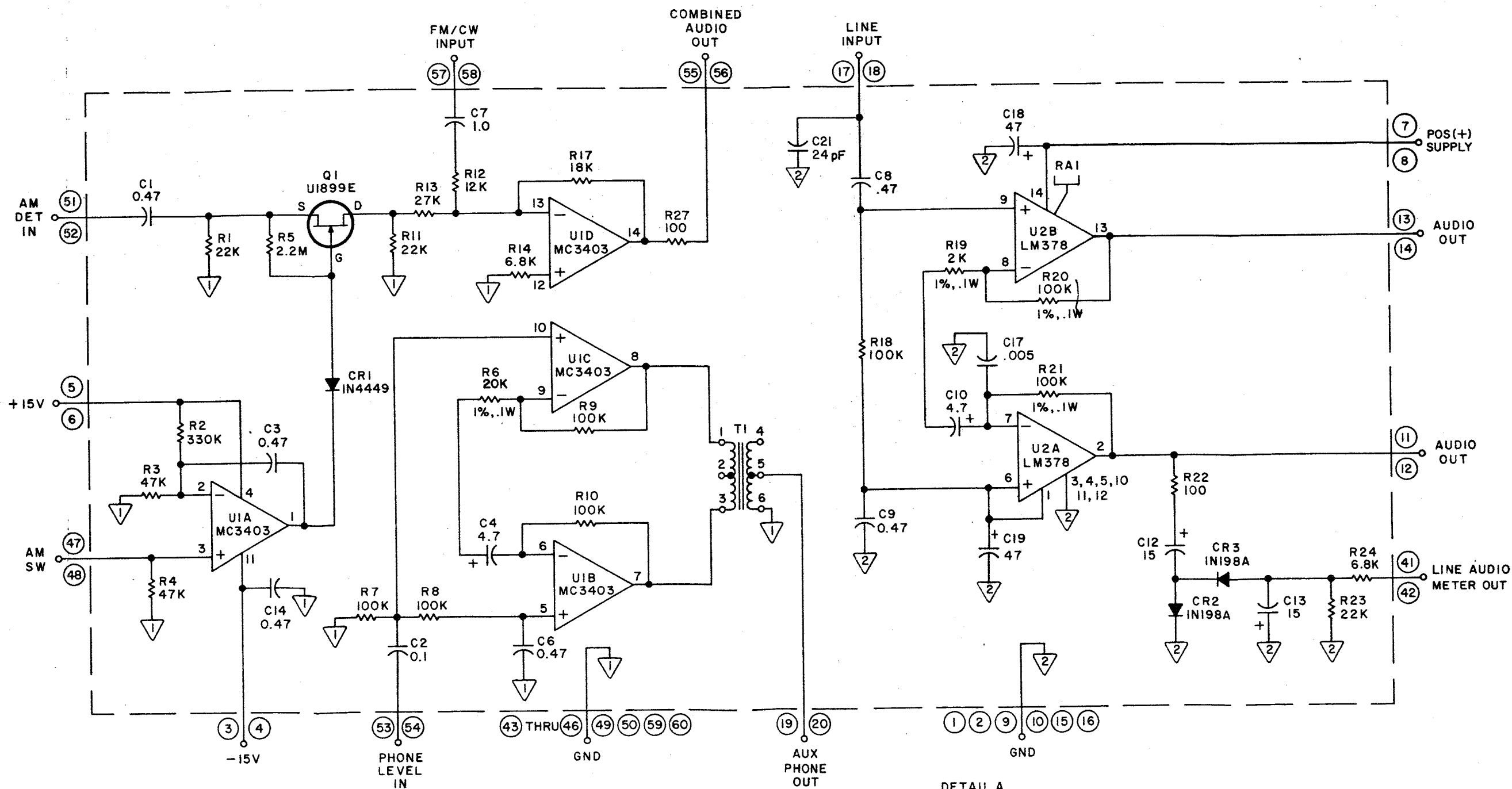


Figure FO-11. Type 791599 FM, CW and SSB Detector (A4A9), Schematic Diagram



NOTES:

1. UNLESS OTHERWISE SPECIFIED:
 - a) RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4W.
 - b) CAPACITANCE IS IN μF .
2. ENCIRCLED NUMBERS ARE MODULE PINS.
3. U1, U2 LEAD ARRANGEMENT - DETAIL A.

DETAIL A

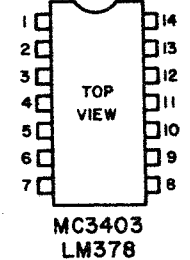
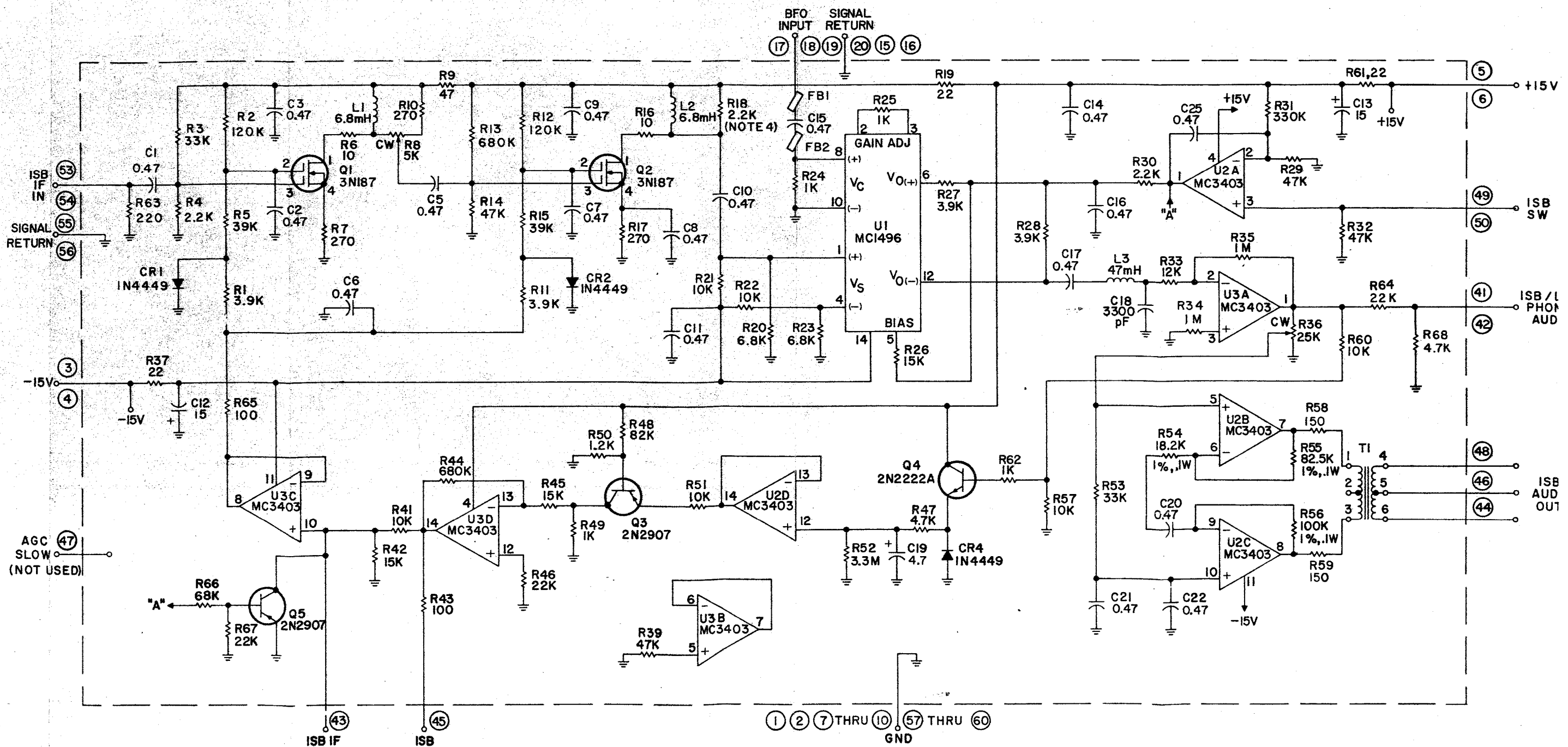


Figure FO-12. Type 746001 Audio Amplifier (A4A10), Schematic Diagram



- NOTES**
- 1 UNLESS OTHERWISE SPECIFIED:
 - a) RESISTANCE IS IN OHMS, ±5%, 1/4W.
 - b) CAPACITANCE IS IN μF
 2. ENCIRCLED NUMBERS ARE MODULE PINS.
 - 3 U1, U2, U3 LEAD ARRANGEMENT-DETAIL A
 - 4 NOMINAL VALUE, FINAL VALUE FACTORY SELECTED.

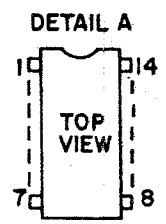


Figure FO-13. Type 791598 ISB Detector/Audio (A4A8), Schematic Diagram

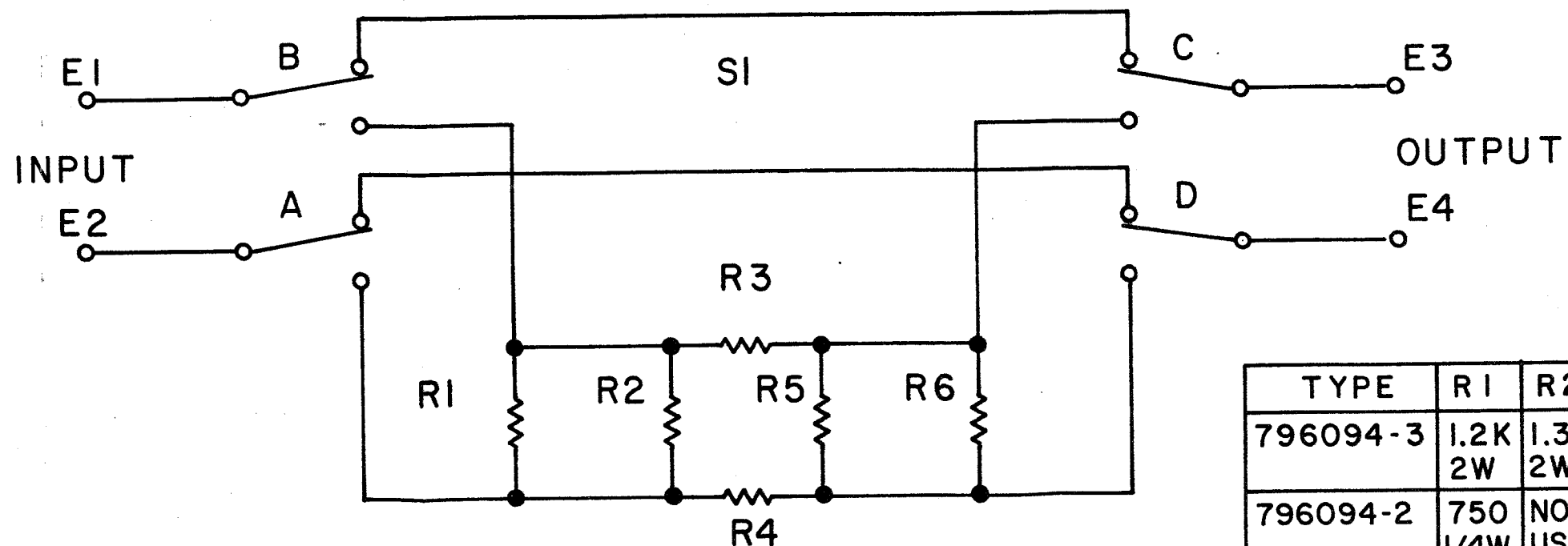


TABLE A

TYPE	R1	R2	R3	R4	R5	R6	ATTEN	IMPD
796094-3	1.2K 2W	1.3K 2W	4.7K	4.7K	1.2K	1.3K	30 db	600 Ω
796094-2	750 1/4W	NOT USED	1.5K 1/4W	1.5K 1/4W	750 1/4W	NOT USED	20 db	600 Ω
796094-1	33 2W	36 2W	120	120	33	36	30 db	16 Ω

NOTE: UNLESS OTHERWISE SPECIFIED
 1. RESISTANCE IS IN OHMS, $\pm 5\%$, 1/2W.
 2. DIFFERENCE BETWEEN TYPES
 IS LISTED IN TABLE A

Figure FO-14. Type 796094-1 and 796094-2 Switchable Audio Attenuator (A11 and A12), Schematic Diagram

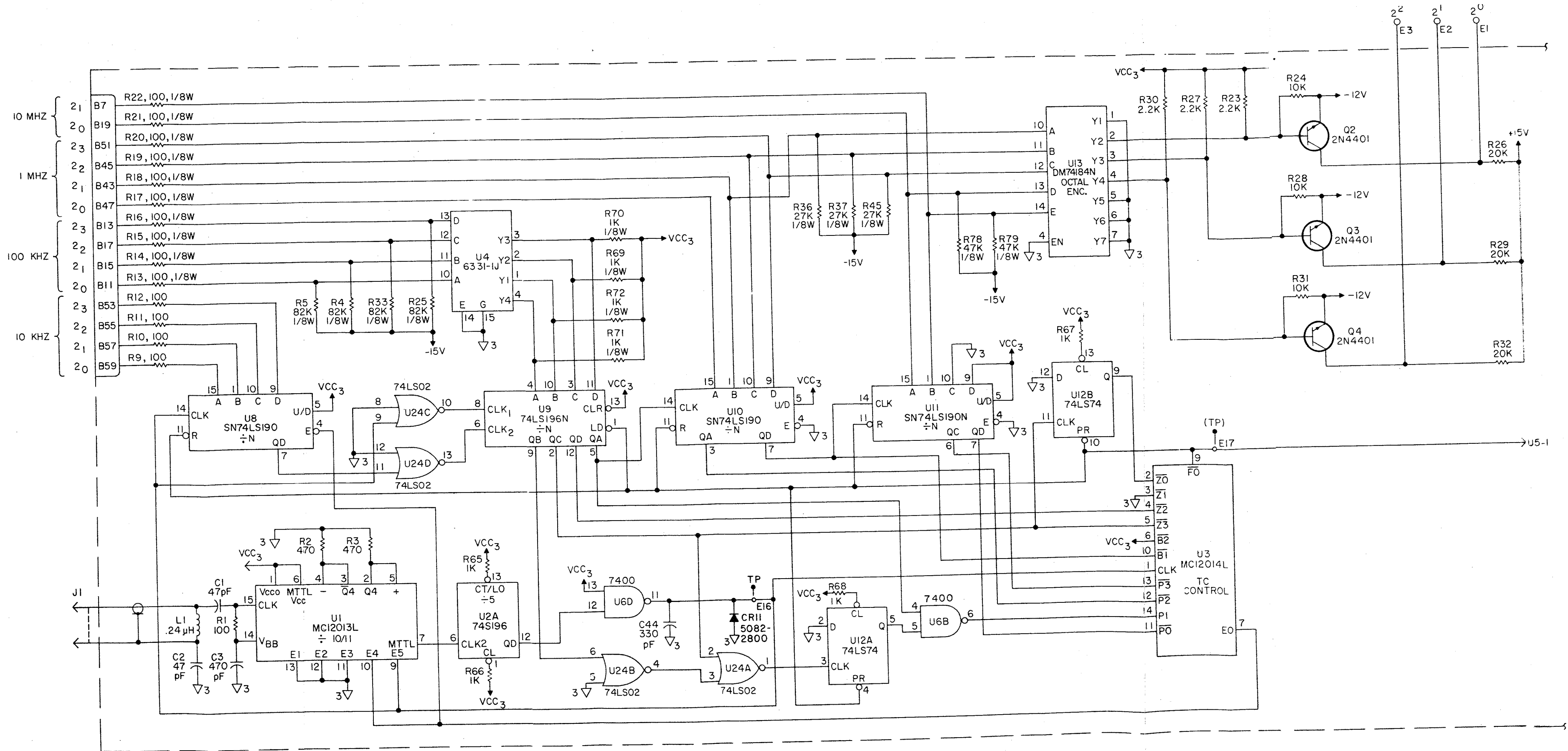


Figure FO-15. Type 791600 1st and 3rd LO Synthesizer Time Base (A5A1A2) Schematic Diagram (Sheet 1 of 2)

- NOTES:
 1. UNLESS OTHERWISE SPECIFIED:
 a) RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4W.
 b) CAPACITANCE IS IN pF.
 2. VCC, GND PINS OF IC'S ARE SHOWN IN TABLE A.
 3. LEAD ARRANGEMENT FOR IC'S ARE SHOWN IN TABLE A.
 4. NOMINAL VALUE. FINAL VALUE FACTORY SELECTED.
 5. DIFFERENCE BETWEEN TYPES IS SHOWN IN TABLE B.
 6. GROUND LEVEL PINS ARE LISTED BELOW.
 a) PIN NOS. OF GND LEVEL ONE ARE A48, A50, A52, A54, A56 & A58.
 b) GND LEVEL TWO ARE A2, A4, A6, A8, A10, A12, A14, A16, A18, A20, A42, A44, A46, A43.
 c) GND LEVEL THREE ARE B2, B4, B6, B8, B10, B12, B14, B16, B18, B20, B42, B44, B46, B48, B50, B52, B54, B56 & B58.

TABLE A

IC	REF DESIG	VCC			GND			DTL	VCC ₂ (FIL)
		1	2	3	1	2	3		
MC4044P	U5			14			7	B	
MC4044P	U22						7	B	14
MC12013L	U1			16			8	A	
MC12014L	U3			16			8	A	
SN74LS196N	U9			14			7	B	
SN74LS196	U2			14			7	B	
SN7400	U6			14			7	B	
82SI23	U4			16			8	A	
SN74LS190	U8, U10			16			8	A	
SN74S74	U11			16			8	A	
SN74184	U13			16			8	A	
SN75140	U16	8			4			C	
74LS74	U21						7	B	14
8292	U15, U17	14			7			B	
8292	U18, U20		14			7		B	
741	U7							C	
SN74LS74	U12			14			7	B	
SN74125	U23	14			7			B	
SN74LS02	U24			14			7	B	

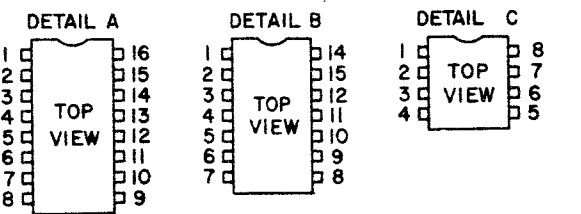


TABLE B

TYPE	C36	L3	W1	U14
791600-1	AS SHOWN	AS SHOWN	NOT USED	92063-1
791600-2	NOT USED	NOT USED	AS SHOWN	92063-1
791600-3	AS SHOWN	AS SHOWN	NOT USED	841038

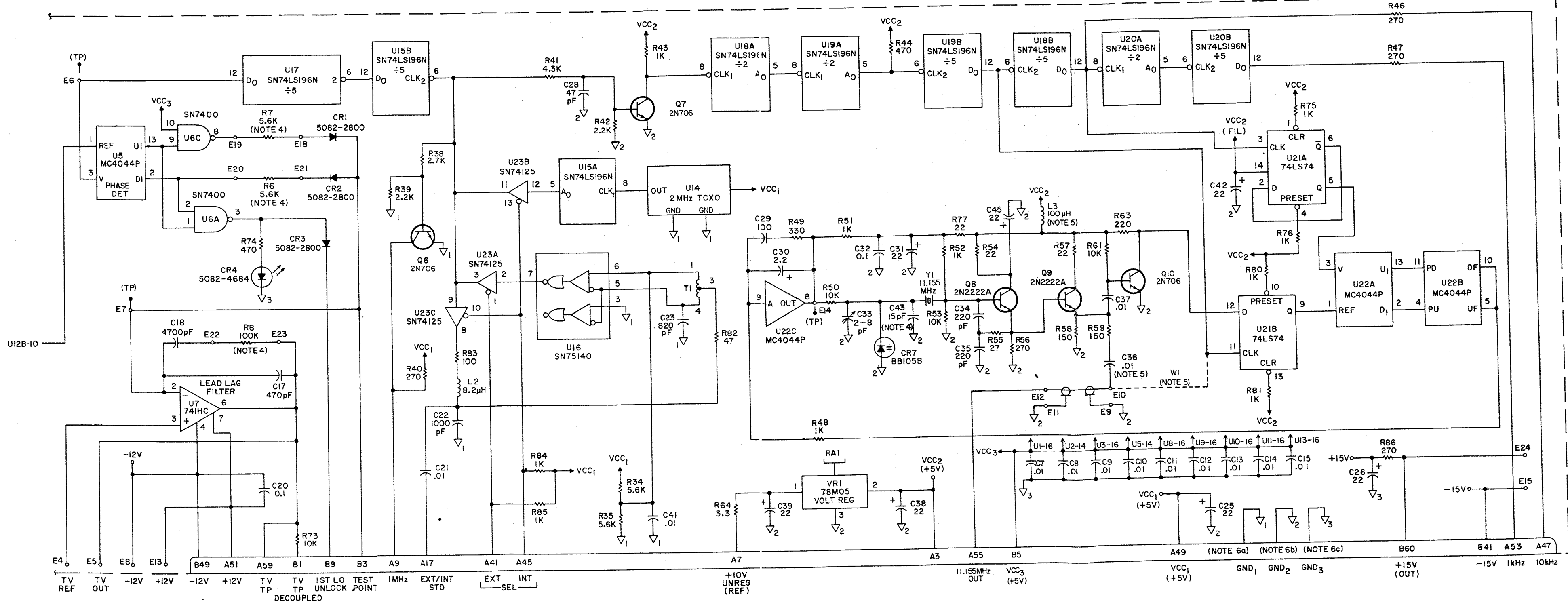
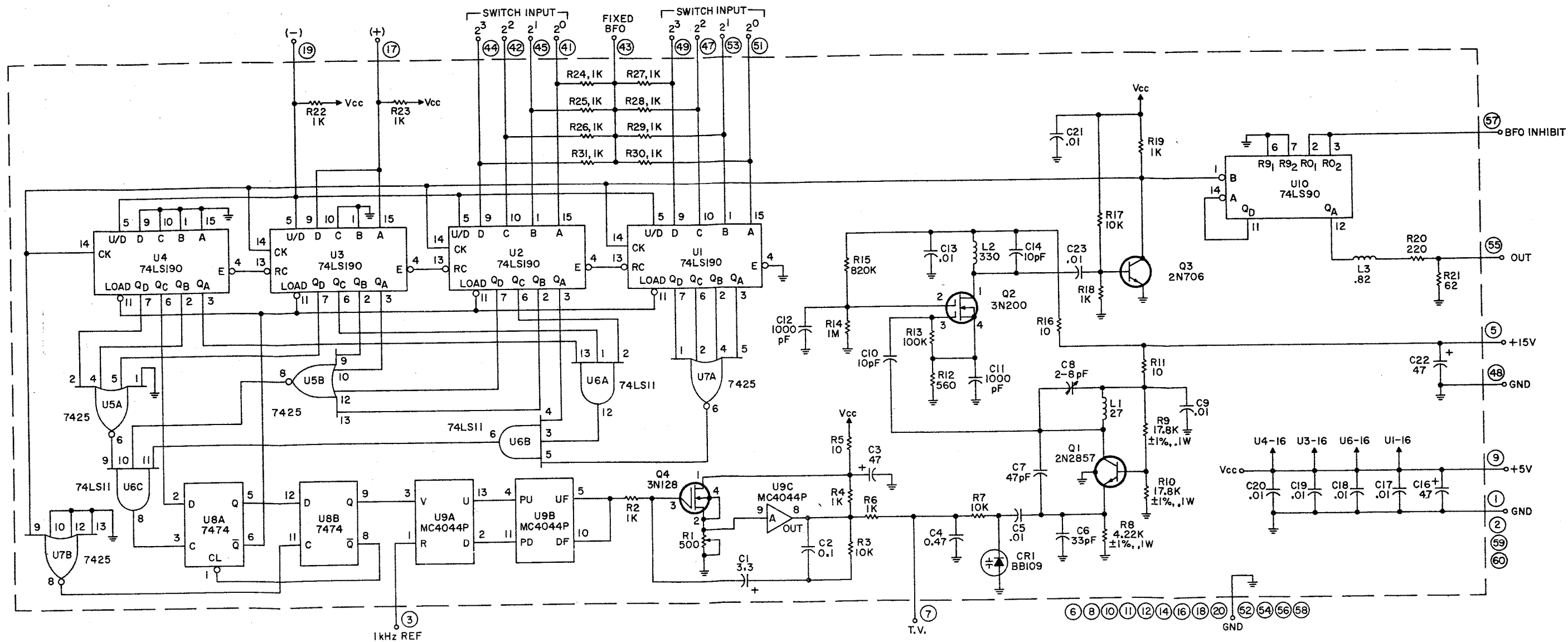


Figure FO-15. Type 791600 1st and 3rd LO Synthesizer/Time Base (A5A1A2) Schematic Diagram (Sheet 2 of 2)



- NOTES:
 1. UNLESS OTHERWISE SPECIFIED:
 a) RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4W.
 b) CAPACITANCE IS IN μF .
 c) INDUCTANCE IS IN μH .
 2. ENCIRCLED NUMBERS ARE MODULE PIN NUMBERS.
 3. FOR I/C PIN ARRANGEMENTS SEE DETAILS A & B.
 4. FOR PIN NOS. OF Vcc & GND SEE TABLE A.

I/C	REF DESIG	Vcc	GND
74LS190	U1,U2,U3,U4	16	8
7425	U5,U7	14	7
74LS11	U6	14	7
7474	U8	14	7
MC4044P	U9	14	7
74LS90	U10	5	10

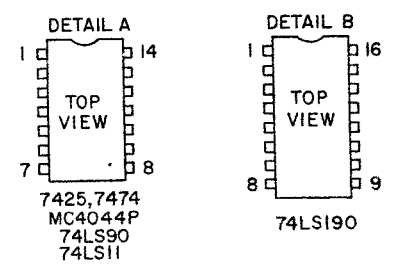
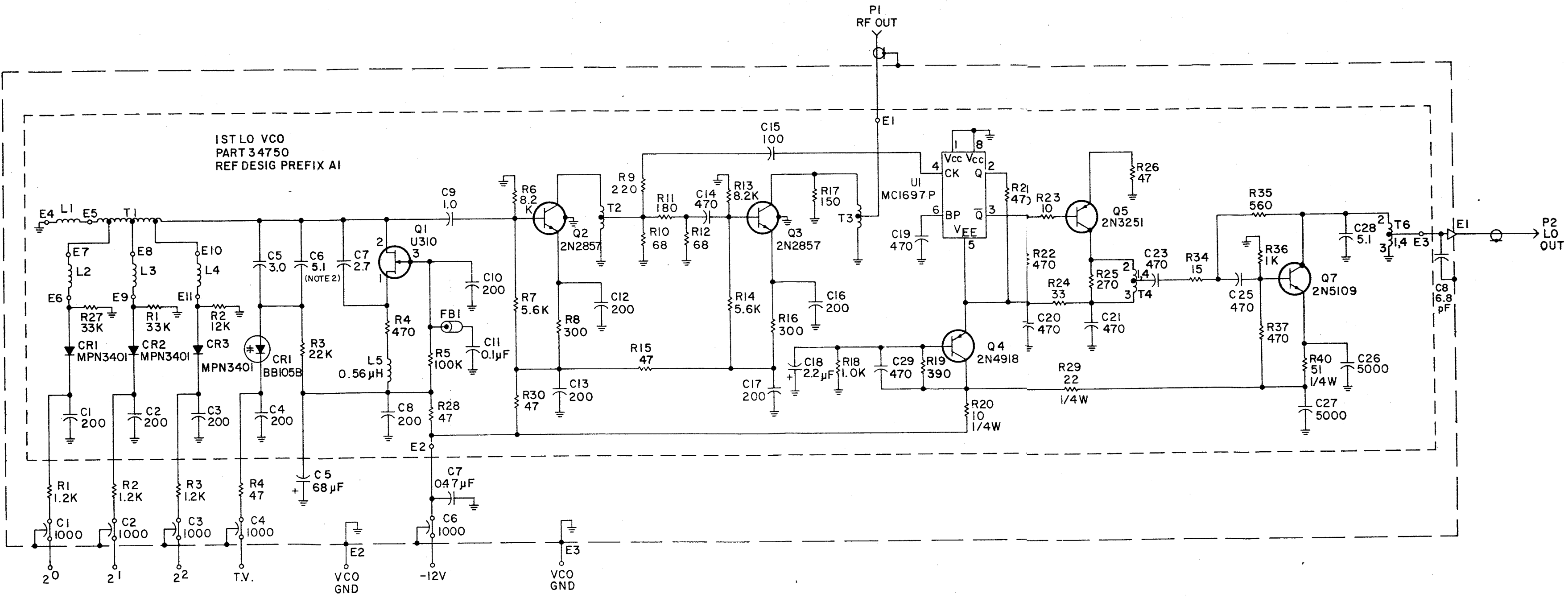


Figure FO-16. Type 791576 BFO Synthesizer (A5A3), Schematic Diagram



NOTES:

1. UNLESS OTHERWISE SPECIFIED
 - a) RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4W
 - b) CAPACITANCE IS IN μF .
 - c) INDUCTANCE IS IN mH.
2. LEAD ARRANGEMENT FOR VRI IS SHOWN IN DETAIL A.
3. LETTERS (NUMBERS) ARE MODULE (A2) PINS. GND PINS FOR GND₁, GND₂, GND₃, ARE LISTED IN TABLE A.
4. DIFFERENCE BETWEEN TYPES IS SHOWN IN TABLE B.

TABLE A

GND	MODULE PIN
GND ₁	A48, 50, 52, 54, 56, 58, 60
GND ₂	A2, 4, 6, 8, 10, 14, 16, 18, 20, 42, 44, 46
GND ₃	B2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 42, 44, 46, 48, 50, 52, 54, 56, 58

TABLE B

TYPE	A2
791630-1	791600-1
791630-2	791600-2
791630-3	791600-3

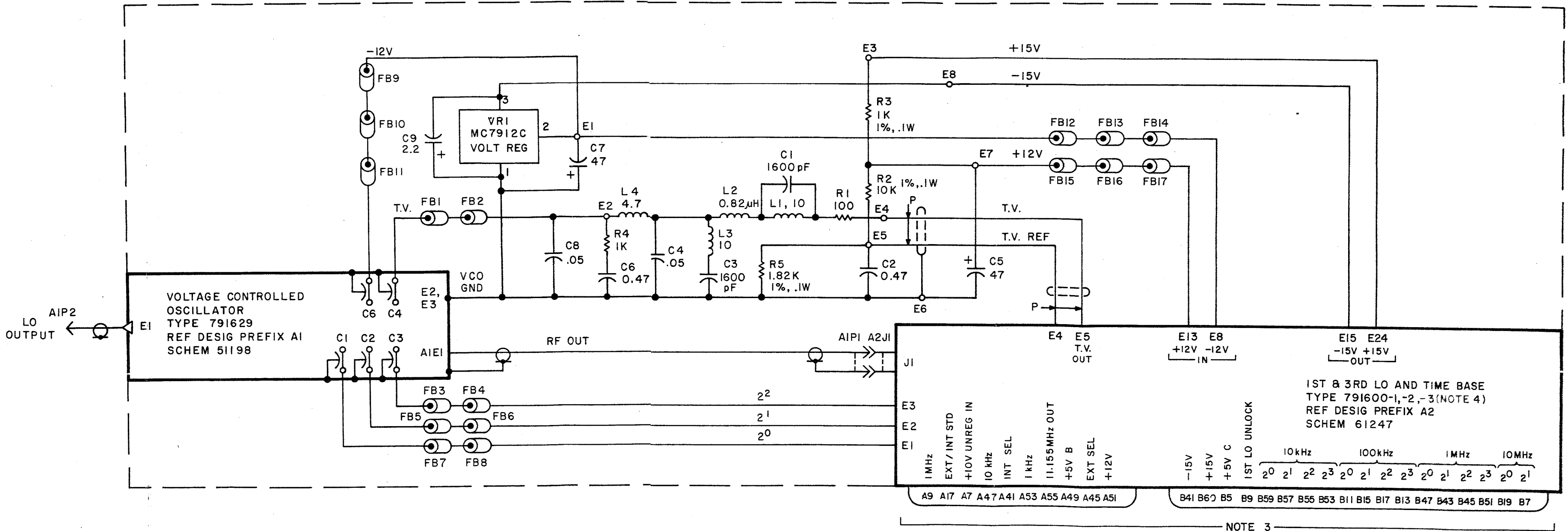
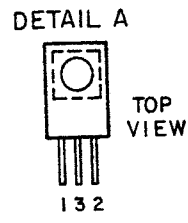


Figure FO-19. Type 791630 1st and 3rd LO Synthesize Time Base (A5A1), Schematic Diagram

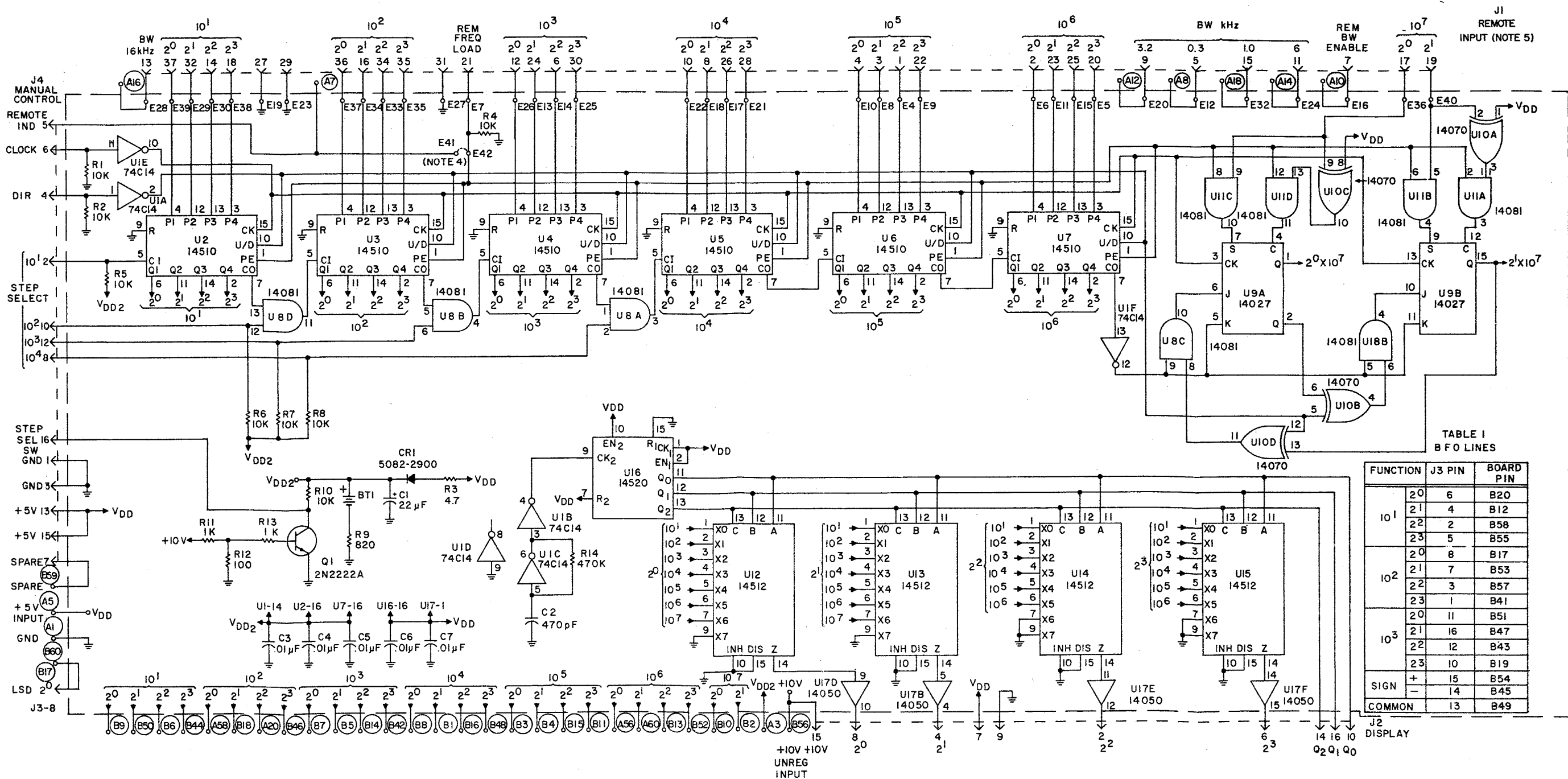
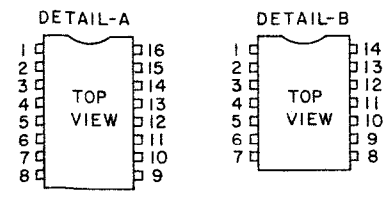


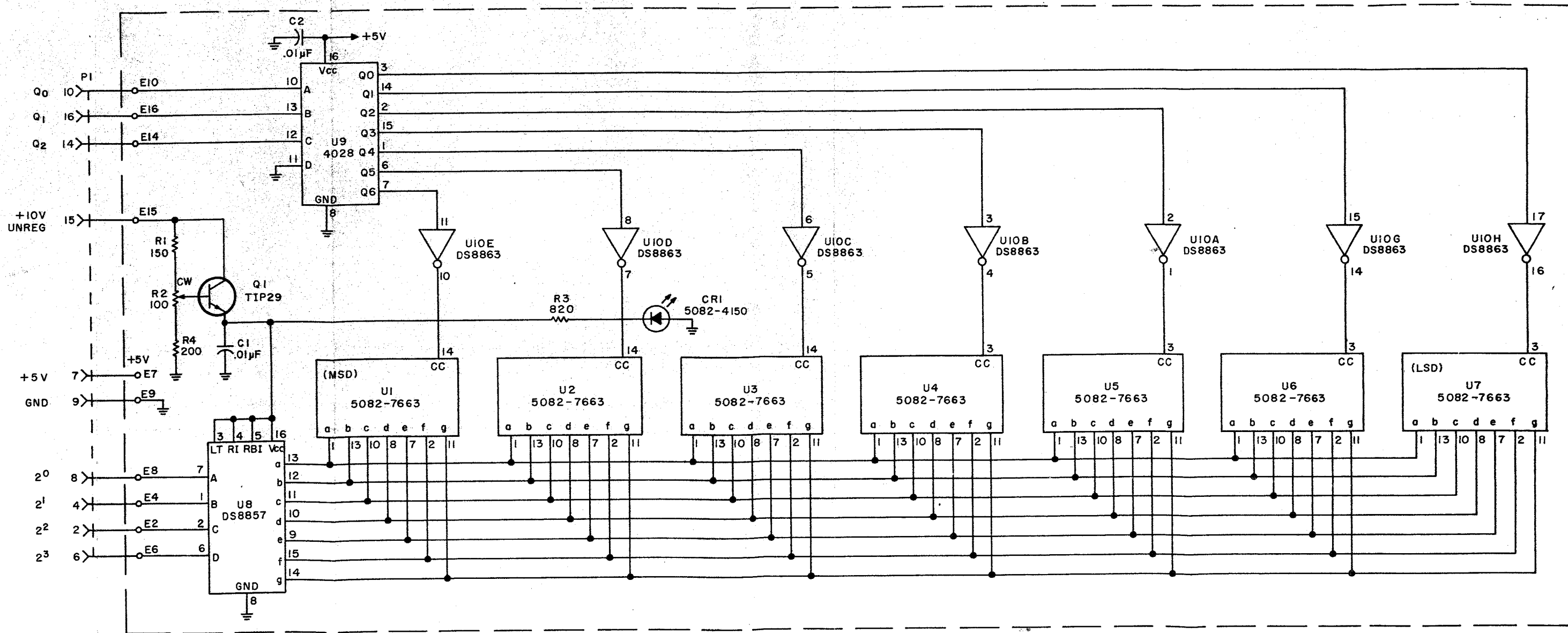
TABLE I
B F O LINES

FUNCTION	J3 PIN	BOARD PIN
10 ¹	2 ⁰	6 B20
	2 ¹	4 B12
	2 ²	2 B58
10 ²	2 ⁰	8 B17
	2 ¹	7 B53
	2 ²	3 B57
10 ³	2 ⁰	11 B51
	2 ¹	16 B47
	2 ²	12 B43
SIGN	+	15 B54
	-	14 B45
	COMMON	13 B49

TABLE 2

IC	V _{DD} PIN	V _{DD2} PIN	GND PIN	DETAIL
U1, U8, U18		14	7	B
U2-U7, U9, U12-U15		16	8	A
U10, U11	14		7	B
U16	16		8	A
U17	1		8	A





NOTES:

1. UNLESS OTHERWISE SPECIFIED, RESISTANCE IS IN OHMS, $\pm 5\%$, 1/4W.
2. UIO PIN 18 IS +5V; UIO PIN 9 IS GND.
3. PIN ARRANGEMENT FOR ICs IS SHOWN IN DETAILS A-C.

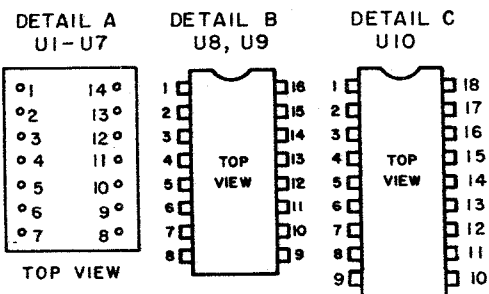


Figure FO-21. Type 791578 Frequency Display (A8), Schematic Diagram

NOTES

1. REFER TO FO-1, SHEET 2, FOR AC POWER DISTRIBUTION.
2. ALL VOLTAGES REFERENCED TO CHASSIS GND.
3. ALL MOTHER BOARD COMMON PRINTED CIRCUIT PATHS BOLTED TO CHASSIS GND.
4. DC VOLTAGE RANGES:

NOMINAL	ALLOWABLE RANGE
+15V REG	+15 ± 0.75V
-15V REG	-15 ± 0.75V
+5V REG	+5 ± 0.25V
+12V REG	+12 ± 0.60V
+10V UNREG	+10 V MIN

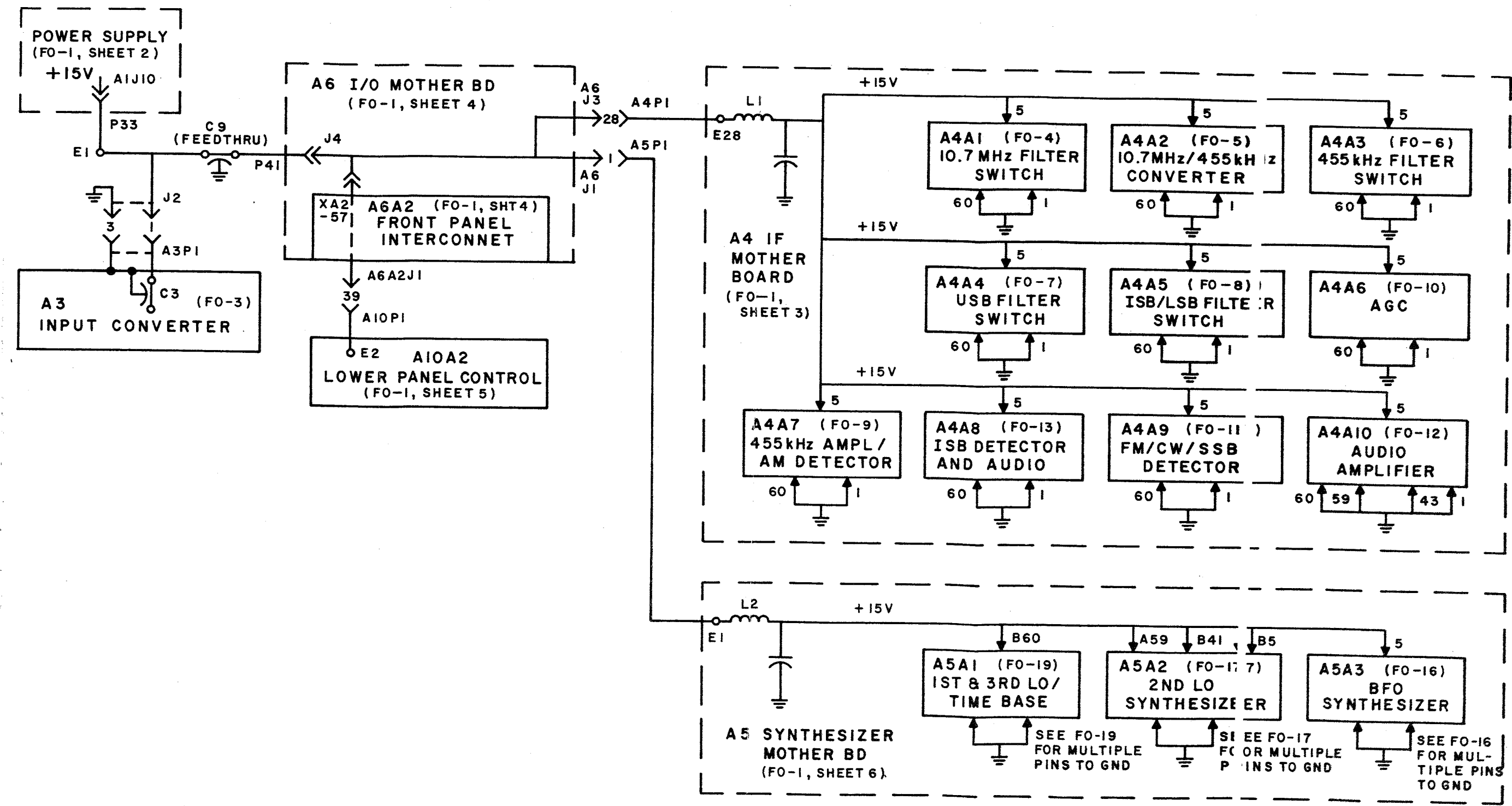


Figure FO-22. Receiver Power Distribution Diagram (Sheet 1 of 3)

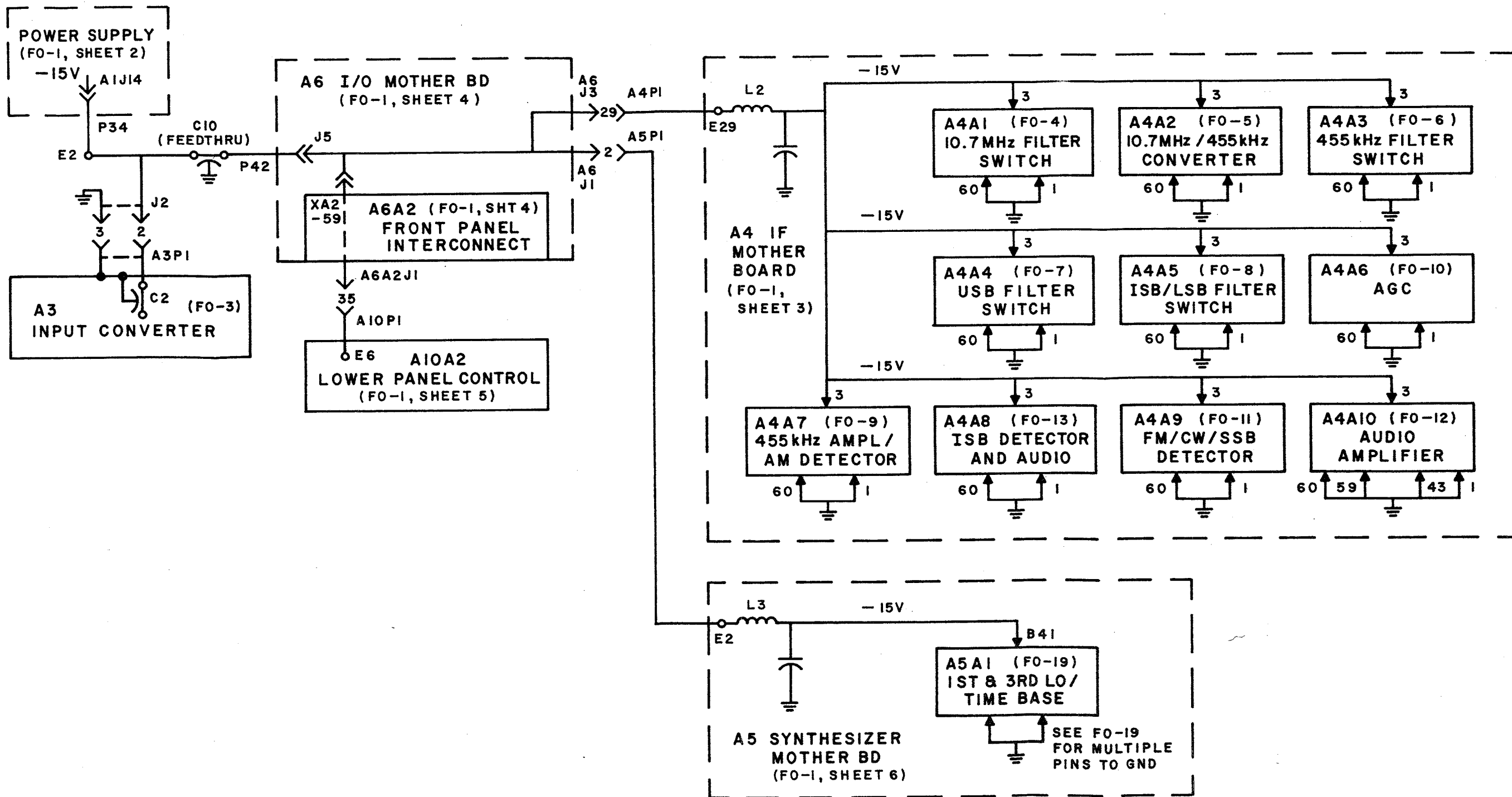


Figure F0-22. Receiver Power Distribution Diagram (Sheet 2 of 3)

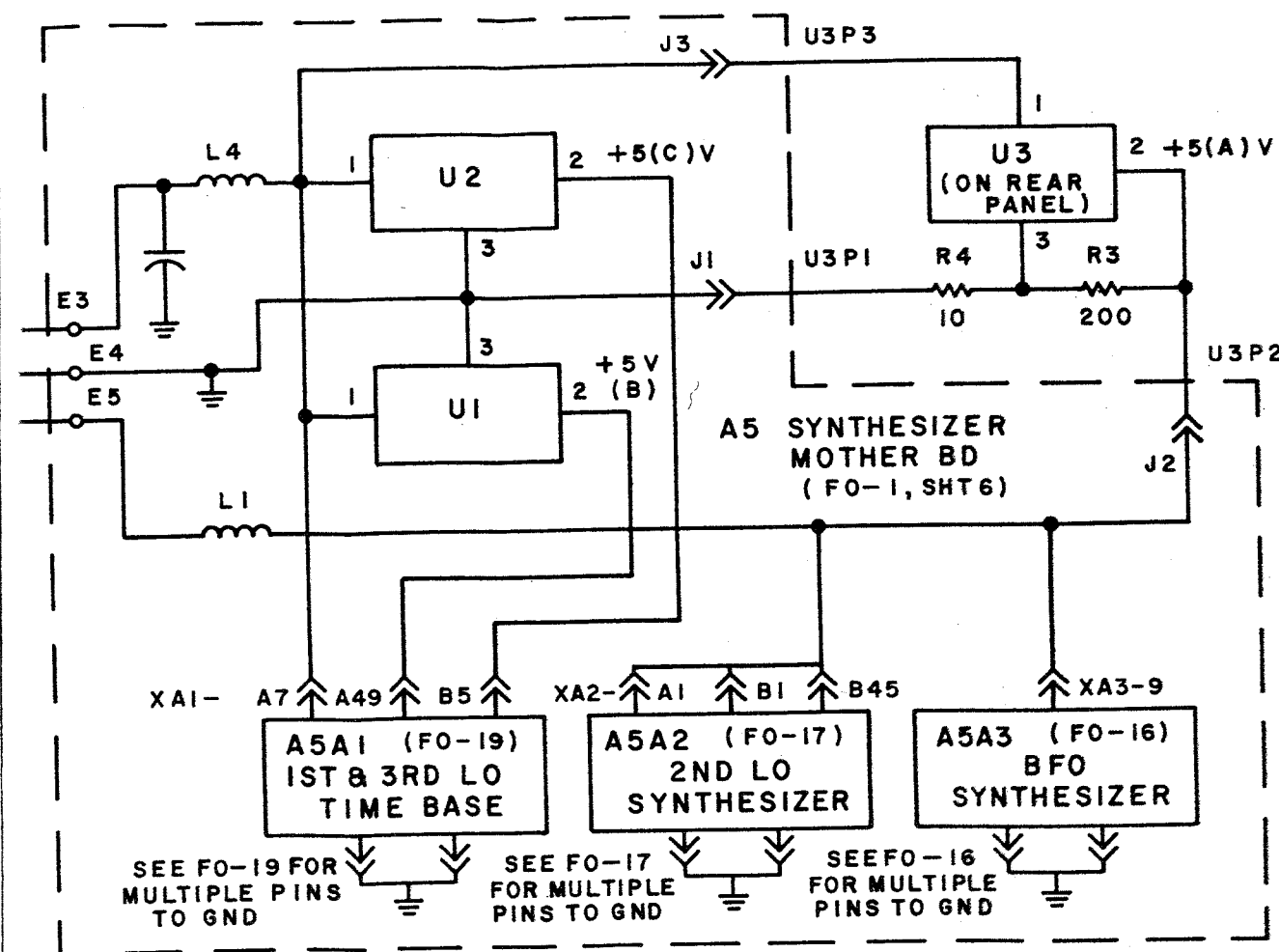
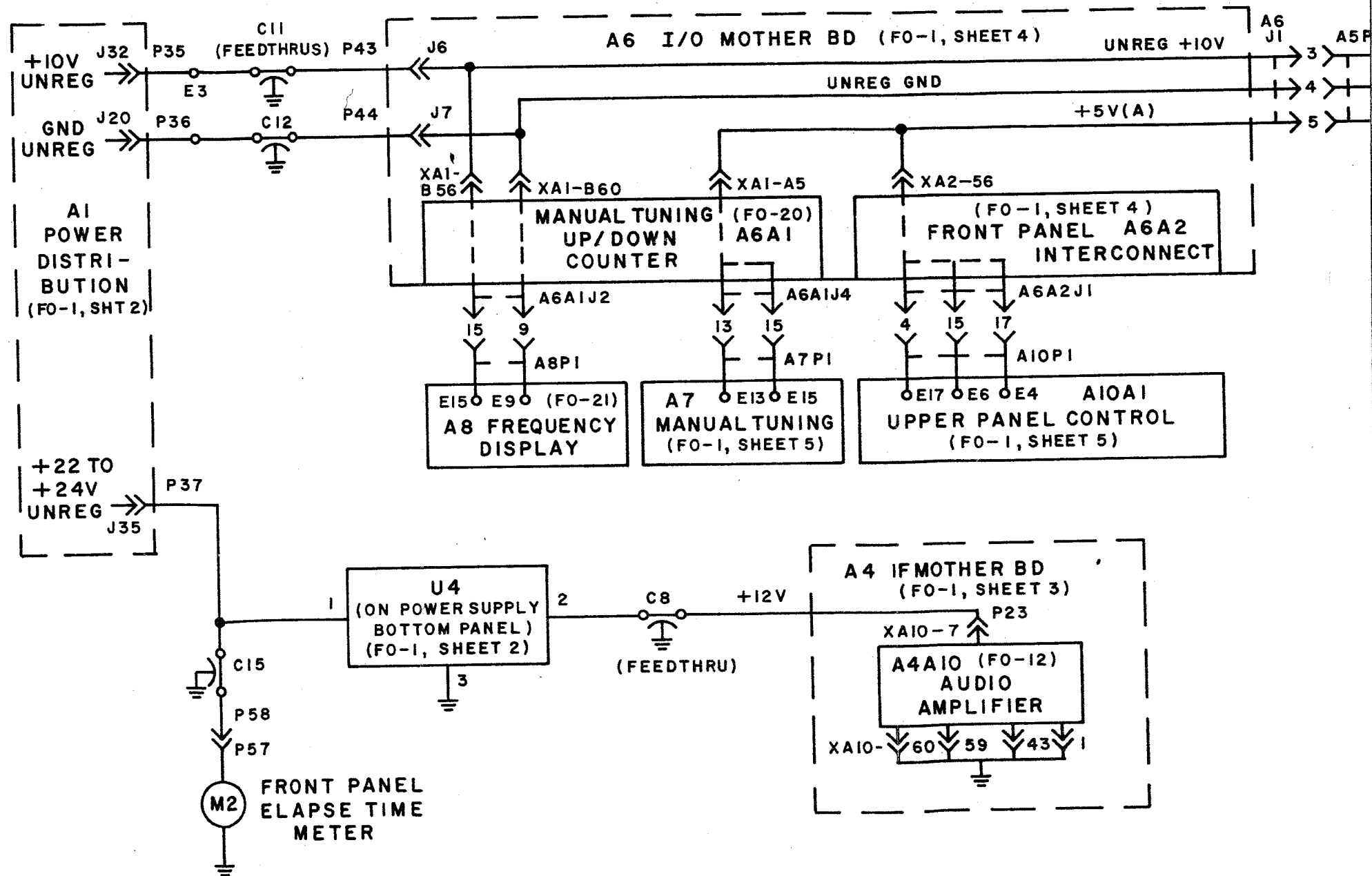


Figure F0-22. Receiver Power Distribution Diagram (Sheet 3 of 3)

LEGEND

- MAIN SIGNAL PATH
- - - OPTIONAL MAIN SIGNAL PATH OR MODE
- OTHER SIGNAL PATHS

NOTES

1. REFER TO CHAPTERS 3 & 5 FOR APPROPRIATE SIGNAL FREQUENCIES AND LEVELS AS A FUNCTION OF RECEIVER INPUTS AND SETTINGS.
2. REFER TO CHAPTER 5 FOR TROUBLESHOOTING PROCEDURES.
3. REFER TO CHAPTER 6 FOR ADJUSTMENT AND ALIGNMENT PROCEDURES.

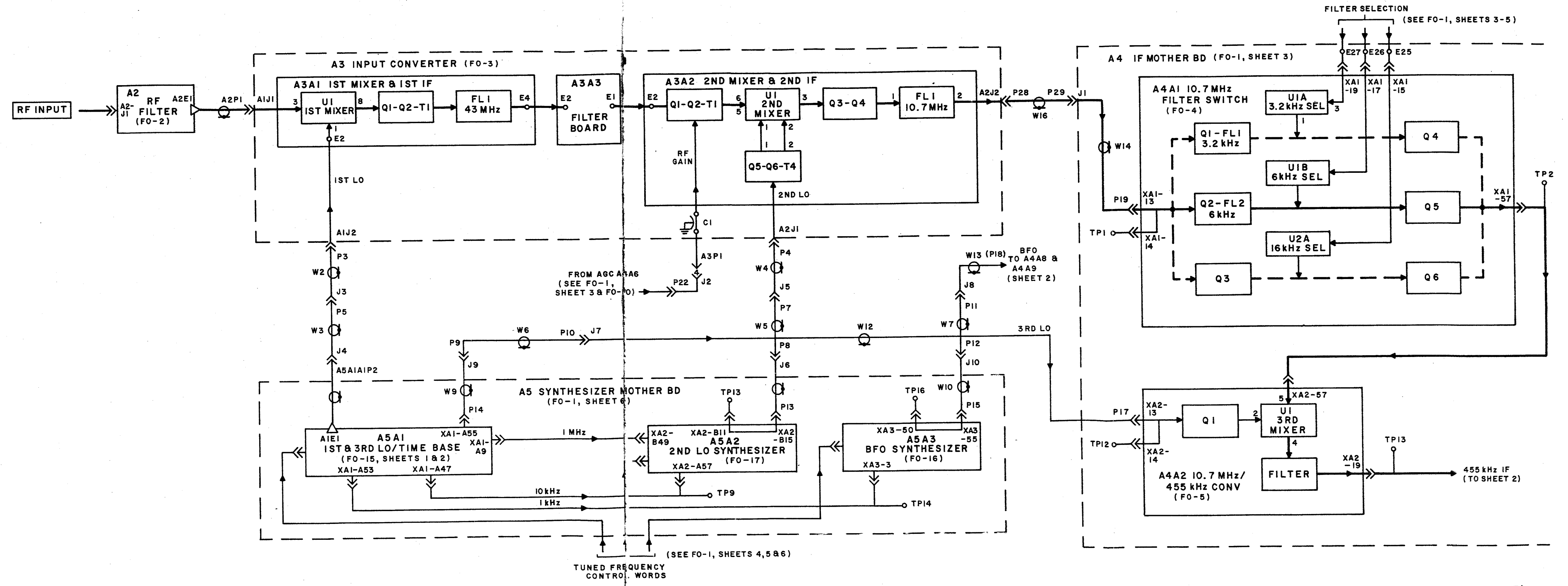


Figure FO-23. Receiver Signal Flow Diagram (Sheet 1 of 3)

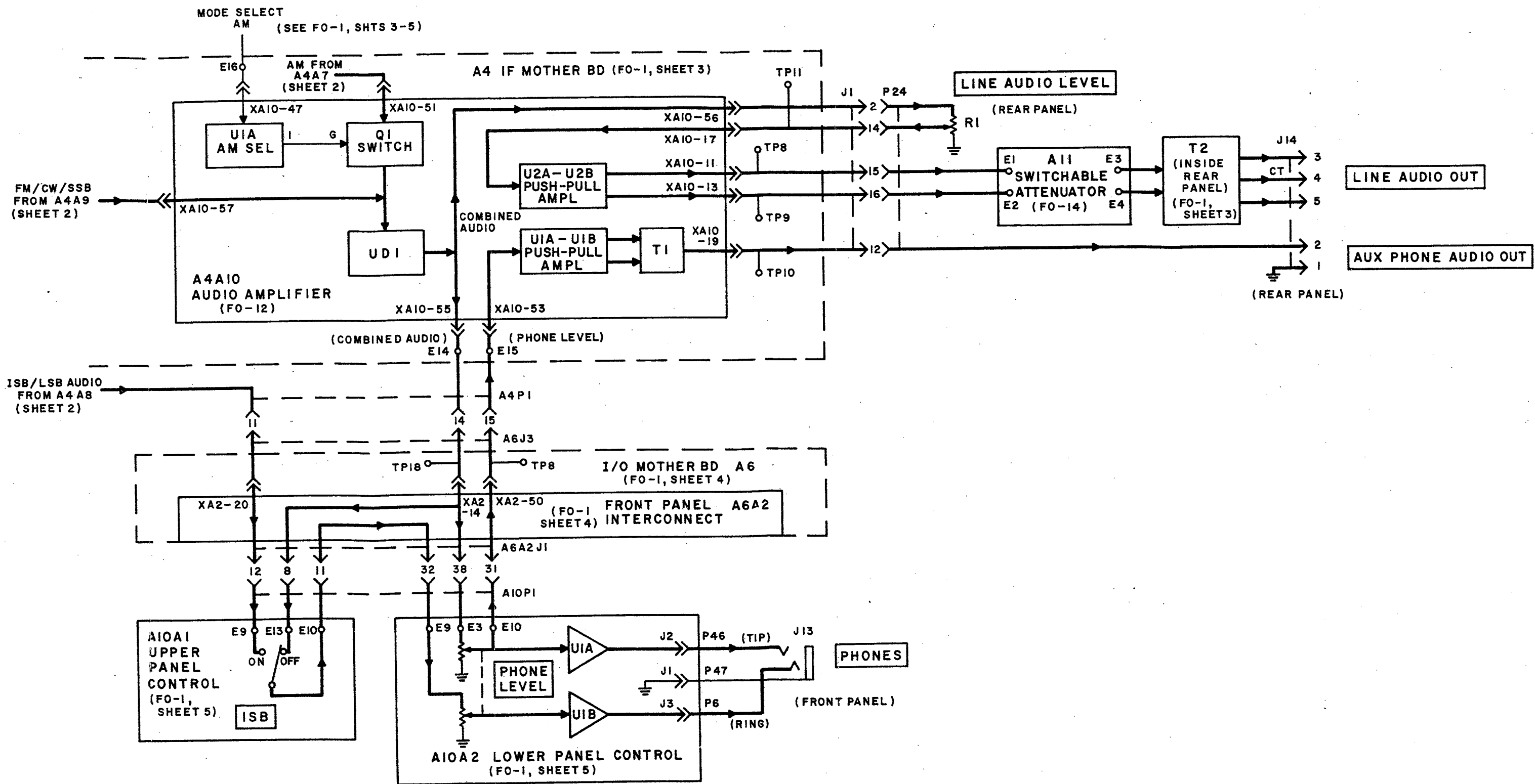


Figure F0-23. Receiver Signal Flow Diagram (Sheet 3 of 3)