

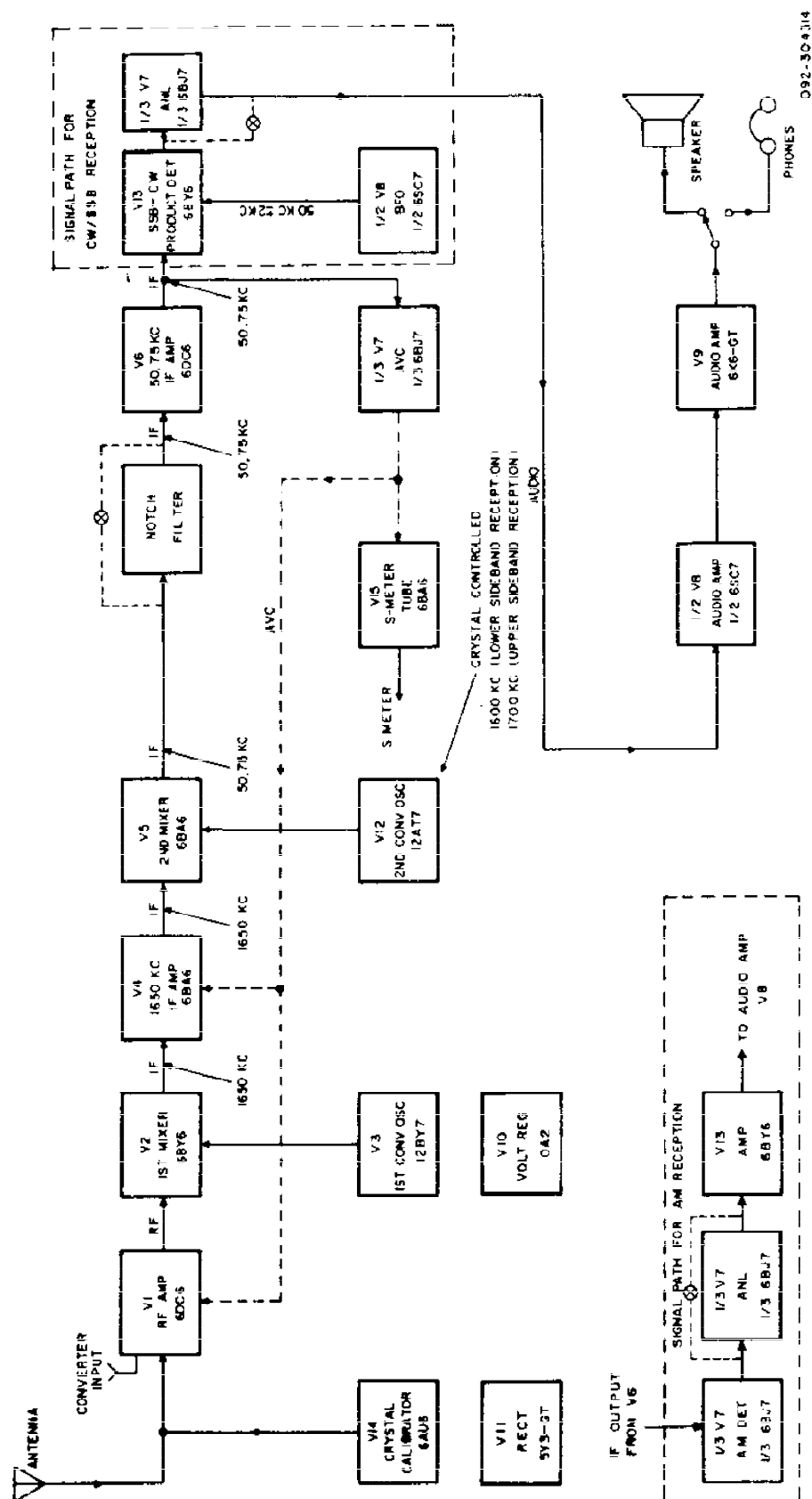


Figure 15. Block Diagram of SX-101A Receiver

- NOTES:
VOLTAGE READINGS TAKEN UNDER THE FOLLOWING CONDITIONS:
1. LINE VOLTAGE -117 VOLTS, 60 CYCLES AC.
 2. ANTENNA TERMINALS SHORTED, SENSITIVITY AT "IO" RECEIVE-STANDBY AT "RECEIVE", AVC AT "ON", NOISE LIMITER AT "OFF", RESPONSE AT "LOWER SIDEBAND AM" SELECTIVITY AT "5 KC", AND BAND SELECTOR AT "60M".
 3. ALL VOLTAGES ARE DC AND POSITIVE UNLESS OTHERWISE SPECIFIED DC VOLTAGES MEASURED WITH VTVM, AC VOLTAGES WITH 1000 OHMS-PER-VOLT METER.
 4. ALL VOLTAGES MEASURED BETWEEN TUBE SOCKET TERMINALS AND CHASSIS UNLESS OTHERWISE SPECIFIED
 5. VOLTAGES SHOWN FOR V12 ARE WITH RESPONSE CONTROL AT "LOWER SIDEBAND" IN THE "UPPER SIDEBAND" POSITIONS, THE VOLTAGES OF THE TWO TRIODE SECTIONS ARE REVERSED THE GRID VOLTAGE WILL VARY WITH CRYSTAL ACTIVITY.
- * VOLTAGES FOR PINS 2 AND 3 OF V8 ARE "TAKEN WITH RESPONSE SWITCH AT "CW-SSB."
- ** 5 VAC MEASURED ACROSS PINS 2 & 8
- *** MEASURED IN CALIBRATE POSITION
- ***** VOLTAGE VARIES WITH SETTING OF TUNING GANG AND BAND-SWITCH
- NM - NOT MEASUREABLE
- IC - INTERNAL CONNECTION
- NC - NO CONNECTION
- HT - HEATER MID-TAP
- IS - INTERNAL SHIELD

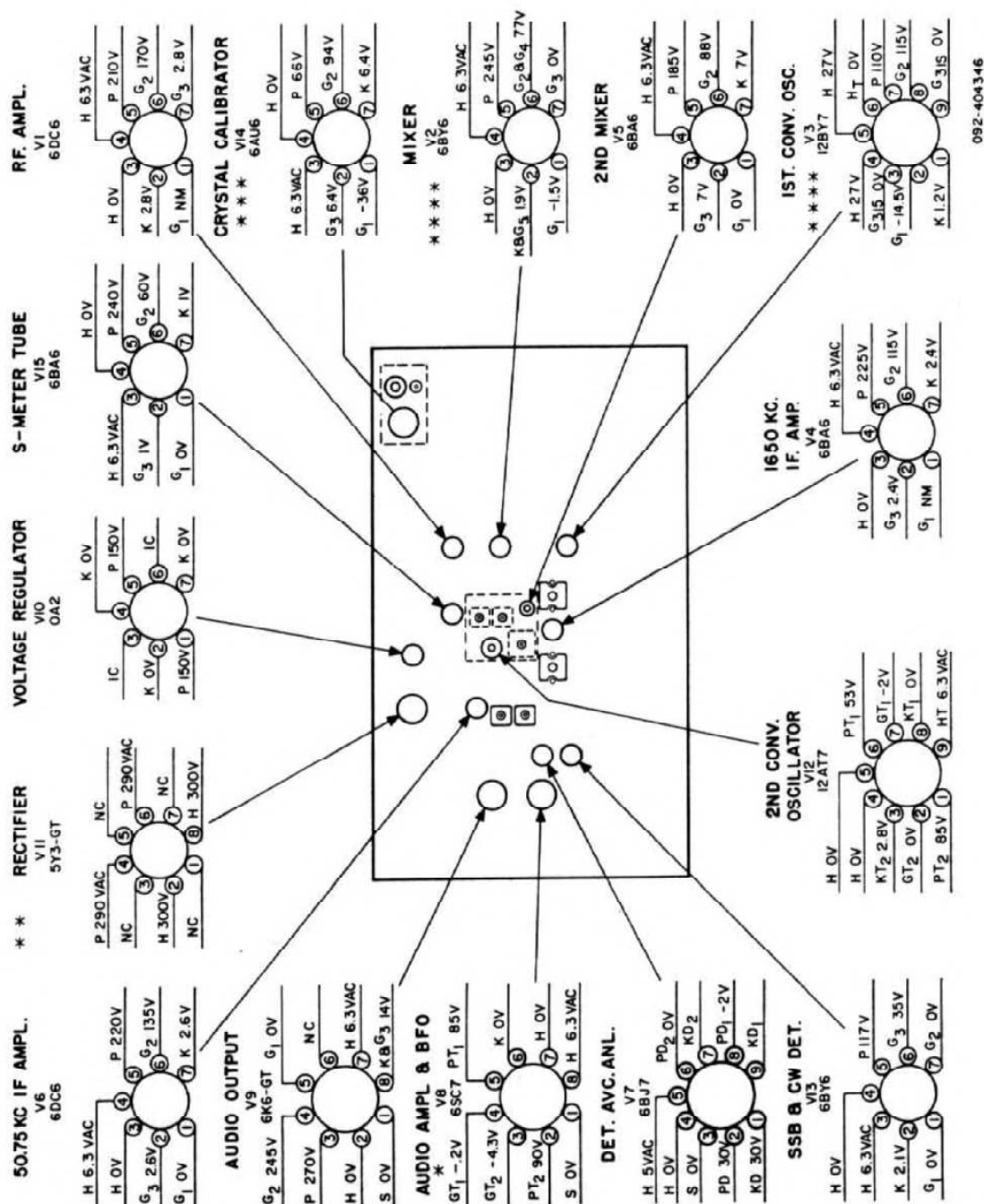


Figure 16. Voltage Chart

SERVICE PARTS LIST

Schematic Symbol	Description	Hallcrafters Part Number	Schematic Symbol	Description	Hallcrafters Part Number	Schematic Symbol	Description	Hallcrafters Part Number
CAPACITORS			CAPACITORS (cont)			COILS		
C1	240 mmf., 5%, N750; cer.	491-155241-95	C95,203	100 mmf., 10%, cer.	491-026101-94	L1	Coil, Ant. (Band 1)	051-202545
C2	20 mmf., 10%, N750; cer.	491-105200-95	C97	560 mmf., 500V, 5%, mica	470-232561	L2	Coil, Ant. (Band 2)	051-202291
C3,4	5-80 mmf. and 100-450 mmf. dual trimmer; mica compression	044-200479	C98	10 mmf., N4750; cer.	470-042100	L3	Coil, Ant. (Band 3)	051-202196
C5,13,20	51 mmf., 10%, N750; cer.	491-105519-95	C99	470 mmf., 500V, 10%; mica	470-213471	L4	Coil, Ant. (Band 4)	051-202197
C6,21	.005 mfd., cer. disc	047-200523	C101	10 mfd., 50V, electrolytic	045-100211	L5	Coil, Ant. (Bands 5, 6, 7)	051-202198
C7,24,26,48,66,67,68,69,201,202,207,211,302	.02 mfd., 500V; cer. disc	047-100242	C103	470 mmf., 10%, cer. tub.	478-026471	L6	Coil, Mixer (Band 1)	051-202546
C8,23,25	.005 mfd., 500V, +80-20%; cer. disc	047-100165	C208,209,210	.01 mfd., 500V, 10%; molded paper	499-031103	L7	Coil, Mixer (Band 2)	051-202289
C9,35,52,206	2.2 mmf., 10%; cer.	047-200403-04	C301	8-50 mmf., trimmer; N750	044-200437	L8	Coil, Mixer (Band 3)	051-202201
C10	1500 mmf., 500V, 10%, mica	470-213152	C304	82 mmf., 500V, 10%; mica	470-213820	L9	Coil, Mixer (Band 4)	051-202202
C11,31,32,44,71,80,90	.047 mfd., 600V; molded paper	499-034473	*RESISTORS			L10	Coil, Mixer (Bands 5, 6, 7)	051-202203
C12,15,85	15 mmf., 10%, N750; cer.	491-106150-95	R1,6	22 ohm	451-252220	L11	Choke, RF; 540uh., 10 ohm DC	053-100107
C14,16,17	5-50, 5-50, 100-350 mmf. trimmer; triple unit compression mica	044-100480	R2,8,21,25,58	1 megohm	451-252105	L12	Coil, T Bridge	051-102270
C18	300 mmf., 5%, N750; cer.	491-065301-95	R3,34,37	180 ohm	451-252181	L13	Coil, Osc. (Band 1)	051-202547
C19	4-80 mmf., trimmer; mica compression	044-200477	R4,11,17	15K ohm, 2W	451-652153	L14	Coil, Osc. (Band 2)	051-202336
C22,72,86,100	.022 mfd., 600V; molded paper	499-034223	R5,16	47K ohm, 1W	451-352473	L15	Coil, Osc. (Bands 3, 7)	051-202337
C27	270 mmf., 500V, 10%; mica	470-213271	R7,77	3.9K ohm, 1W	451-352392	L16	Coil, Osc. (Band 4)	051-202338
C28,29	7500 mmf., 5%; mica	470-422752	R9,51,61,71,304	220K ohm	451-252224	L17	Coil, Osc. (Band 5)	051-202339
C30,70,89	.22 mfd., 200V; molded paper	499-014224	R10	350 ohm	451-252331	L18	Coil, Osc. (Band 6)	051-202340
C33,34,204,205	390 mmf., 500V, 5%; mica	482-262391	R12,24	3.3K ohm	451-252332	L19	Coil, RF	053-200475
C36A,B,C	Main Tuning Capacitor	048-400387	R13,44,62,65,203,204,205,206,207,303	180K ohm	451-252104	L20	Choke, RF, 2.2 uh., 1.1 ohm DC	053-200193
C37	3-50 mmf., ant. trimmer	048-200313	R14	15 ohm	451-252150	L21	Choke, SHY Filter; 135 ma., 260 ohms DC	056-200281
C38	3-50 mmf., Trimmer; mica compression	044-200478	R15,43,79	100 ohm	451-252101	L22	Coil, BFO	054-200853
C39,40,41	5-50 mmf; each section mica compression insulated	044-100475	R18,41	3.3K ohm, 1W	451-352332	L201,202	Choke, RF	053-400008
C42	110 mmf., 500V, 2%; mica	482-161111	R19	15K ohm, Variable; NOTCH ADJUST	025-201231	TRANSFORMERS		
C43,73	.022 mfd., 400V; molded paper	499-021223	R20	5K ohm, Variable w/switch; NOTCH DEPTH	025-101723	T1,2	Transformer, 1st and 2nd I.F. (1650KC)	050-200733
C45,49	4700 mmf., 600V, 10%, molded paper	499-031472	R22	150 ohm	451-252151	T3,4,6,7	Transformer, I.F. (50,75 KC)	050-200735
C46,50,54,303,305	.01 mfd., 500V; cer. disc	047-100224	R23	30K ohm, 1W	451-352393	T5	Transformer, 2nd Converter Oscillator	050-300734
C47,51,75	.022 mfd., 600V, 10%; molded paper	499-031223	R26	2 megohm, Variable; "S" Meter Calibrate	025-201052	T8	Transformer, Power	055-300264
C54	180 mmf., 5%, N30; cer.	491-065181-35	R27	200 ohm, Variable; "S" Meter Adjust	025-200714	T9	Transformer, Output	055-300264
C53,55,56,57,58,59,61	3-30 mmf.; air trimmer	048-200415	R28	620 ohm	451-252821	T10	Transformer, Filament	052-100540
C60	680 mmf., N750; dura mica	482-251681	R29,42	10K ohm, 1W	451-252103	SWITCHES		
C62	100 mmf., N75; cer.	491-064101-42	R30	8.2K ohm, 1W	451-252822	S1A	Wafer, Antenna Input	062-200109
C63	35 mmf., 2%, N330; cer.	491-004300-73	R31	470 ohm	451-252471	S1B	Wafer, Antenna Grid	062-200110
C64	24 mmf., 5%; dura mica	482-162240	R32,33,74	470K ohm	451-252474	S1C	Wafer, Mixer Grid	062-200105
C65	330 mmf., 2%; dura mica	482-161331	R35,38	220 ohm	451-252221	S1D	Wafer, Mixer Plate	062-200121
C74	.001 mfd., 500V, 20%; cer. disc	047-100503	R36,39	390 ohm	451-252331	S1E	Wafer, Osc. Grid	062-200105
C76,86	220 mmf., 10%, N750; cer.	491-155221-95	R40,46,50,52,55,63,73	47K ohm	451-252473	S1F	Wafer, Osc. Plate	062-200120
C77,79	220 mmf., 10%; cer.	478-026221	R45,206	22K ohm	451-252223	S1G	Wafer, Pilot Light	060-300689
C81	27 mmf., 10% ceramic	478-026221	R46	10K ohm, 2W, 5%	451-651103	S1H	Wafer, Converter Sw.	062-200149
C82,94,102	.001 mfd., 600V; molded paper	499-034102	R47	2.5K ohm, 10W, W.W.	453-062252	S2	Switch, NOTCH FILTER; Part of R20	-----
C83	470 mmf., 20%, cer. tub.	483-221471	R48	500K ohm, Variable; AF GAIN	025-201811	S3,8	Switch, SPST TOGGLE, AVC (ON/OFF) and ANT. (ON/OFF)	060-100139
C87	.1 mfd., 200V; molded paper	499-011104	R52	10 megohm	451-252106	S4A,B,C	Switch, RESPONSE	060-200272
C88	.1 mfd., 600V; molded paper	409-034104	R54	270K ohm	451-252274	S5A,B,C	Switch, SELECTIVITY	060-300273
C91,92	.01 mfd., 1400 W.V.D.C. (AC Line By-Pass)	047-200732	R56,202	120K ohm	451-252124	S6,7	Switch, SPST Toggle; CALIB/OFF and AVC (FAST/SLOW)	060-100138
C93A,B,C	60-20-20 mfd., 450V; electrolytic	045-200113	R57	820K ohm	451-252824	S9A,B	Switch, DPST Toggle; RECEIVE/STANDBY	060-100192
			R59,60	6.6 ohm	451-252658	JACKS, PLUGS AND SOCKETS		
			R64,201	2.2K ohm	451-252222	PL1	Line Cord and Plug	087-104690
			R66	150K ohm	451-252154	PL2	Plug, Octal; Jumper	035-100303-01
			R67	10K ohm, 2W, Variable; RF GAIN	025-201720		Socket, Tube; 7 Pin Min (Full Lock) (V1,2,4,5,6,13,15)	006-200633
			R68	330K ohm	451-252334		Socket, Tube; 9 Pin Min (Full Lock) (V3,7,12)	006-200572
			R69	3.3K ohm, 10W, W.W.	024-101218		Socket, 5 Pin (V14)	006-100166
			R70	10K ohm	451-252109		Socket, 7 Pin Min (V10)	006-100644
			R72	15 megohm	451-252156		Socket, Octal (V8, 9, 11)	006-200298
			R75	390 ohm, 1W	451-352391	SO1	Jack, Converter Input	035-100241
			R76	47 ohm, 1W	451-352470	SO2	Connector, Coax	010-100056
			R78	2K ohm, 10W, W.W.	453-062292	SO3	Socket, Tube, Octal; ACCESSORY OUTLET	006-200296
			R89	68 ohm	451-252686	SO4	Jack, PHONES	036-200210
			R81	100K, 2W, 20%	451-653104	XV1,2	Socket, Crystal	006-200673
			R82	3.3 ohm, 1W	451-352033			
			R301	680K	451-252684			
			R302	4.7K	451-252472			

*All resistors are 10%, 1/2 watt, carbon type unless otherwise specified.

SERVICE PARTS LIST CONT'D

Schematic Symbol	Description	Hallcrafters Part Number
TUBES AND LAMPS (cont)		
V2, 13	6BY6; Mixer and SSB-CW Det.	090-901114
V3	12BY7A; 1st Conv. Osc.	090-900041
V4, 5, 15	6BA6; 1650 KC IF Amplifier, 2nd Mixer and "S" Meter Tube	090-901112
V7	6BJ7; AM Detector, AVC and Noise Limiter	090-901113
V8	6SC7; Audio Amp. and RFO	090-900874
V9	6K6GT; Audio Output	090-900856
V10	0A2; Voltage Regulator	090-900001
V11	5Y3GT; Rectifier	090-901111
V12	12AT7; 2nd Conv. Osc.	090-900034
V14	5AU6; Crystal Calibrator	090-900808
LM 1 thru 7	Pilot Light, Type #47	039-100004

KNOB AND KNOB SKIRTS ASSEMBLIES

Knob, PITCH CONTROL	015-001699
Knob, AF or RF GAIN	015-001700
Knob, SELECTIVITY	015-001701
Knob, RESPONSE	015-001697
Knob, NOTCH FREQUENCY	015-001703
Knob, NOTCH DEPTH	015-001705
Knob, BAND SELECTOR	015-001698
Knob, POINTER RESET	015-001609
Knob, ANT. TRIMMER	015-001702
Knob, TUNING and LOGGING	015-001704

MISCELLANEOUS

Bracket, Coil Mtg	067-107363
Bracket, Dial Scale Mtg.	067-104283
Bracket, Diffuser Mtg.	067-104296
Bracket, Rear Ant. Trimmer	067-104293
Bracket, Front Ant. Trimmer	067-104294
Bracket, Rail Pointer Assembly	067-205594
Bracket, Pot. Mtg.	067-104289
Bracket, Rail Adj.	067-204286
Bracket, "S" Meter Adj.	067-104294
Bracket, Shield (Bandswitch)	067-204214
Bushing, BFO stop	077-102261
Cabinet Assembly	066-401446
Cabinet, Top	066-101444
Cam Assembly (Main Tuning)	077-200914
Channel, Rubber	016-200929
Clip, Glass Mtg.	076-101815

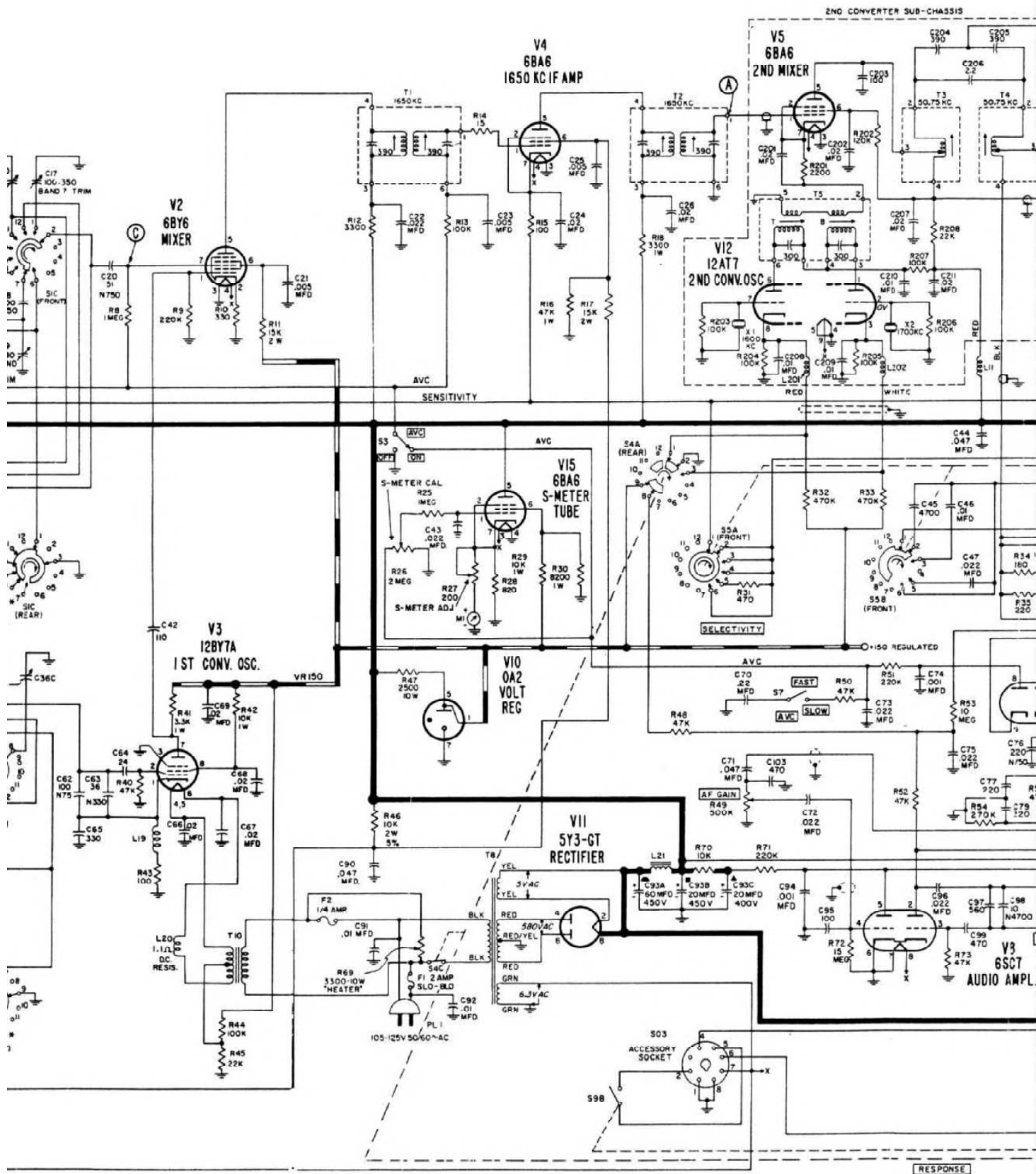
Schematic Symbol	Description	Hallcrafters Part Number
MISCELLANEOUS (cont)		
	Core, Iron IF and RF	077-100968
	Core, Iron, RF Osc.	003-101543
	Coupler, Flexible	029-100294
	Coupler, Solid	029-100264
	Cover, Bottom	066-302362
X3	Crystal Marker, 100KC	019-202351
	Dial, Cable	038-100042
X1, 2	Matched Crystal Pair Consists of One 1600KC Crystal and one 1700KC Crystal	019-201902
	Escutcheon, Front Panel	007-100751
	Foot, Mtg.	016-100029
F1	Fuse, 2 amp. Slo-Blo	039-100428
F2	Fuse, 1/4 amp. w/ Leads	039-100344
	Fuse Holder (F1)	006-100451
	Gear (99 Teeth, 48 Pitch) Fixed	076-200514
	Gear (99 Teeth, 48 Pitch) Loose	026-200515
	Gear (55 Teeth, 48 Pitch)	026-200516
	Gear, Drive	026-200258
	Glass, Dial Scale (Calibrated)	022-400603
	Grommet, Meter	016-100200
	Light Diffuser	069-300954
	Lock, Line Cord (Male)	076-100953-01
	Lock, Line Cord (Female)	076-100953-02
	Panel, Front	068-400890
	Pilot Light Assembly (Meter)	086-200255
	Pilot Light Assembly (Dial)	086-200256
	Plate, Pointer Adjust	062-202365
	Pointer	062-300427
TS1	Post, Binding (Antenna)	068-100032
TS2	Post, Binding (Speaker)	088-100578
	Post, Latch	011-100326
	Rubber Channel, Escutcheon	016-100755
M1	"S" Meter	082-300428
	Separator, Light Diffuser	032-300713
	Shaft, Gear	074-201271
	Shaft, Bandswitch	074-201276
	Shaft, Rail Adj.	074-202154
	Shield, Light	060-400951
	Shield, Tube (7 Pin)	060-201181
	Shield, Tube (9 Pin) (12BY7A)	069-201189
	Shield, Tube (9 Pin)	069-201190
	Spring, Compression	075-200706
	Spring, Dial Wire	075-100570
	Trimount Stud	005-100406
	Window, Escutcheon	022-300537
	100 KC Marker Xial Assembly	001-903832
CR1	Crystal Diode Type 1N295	019-201980

NOTES

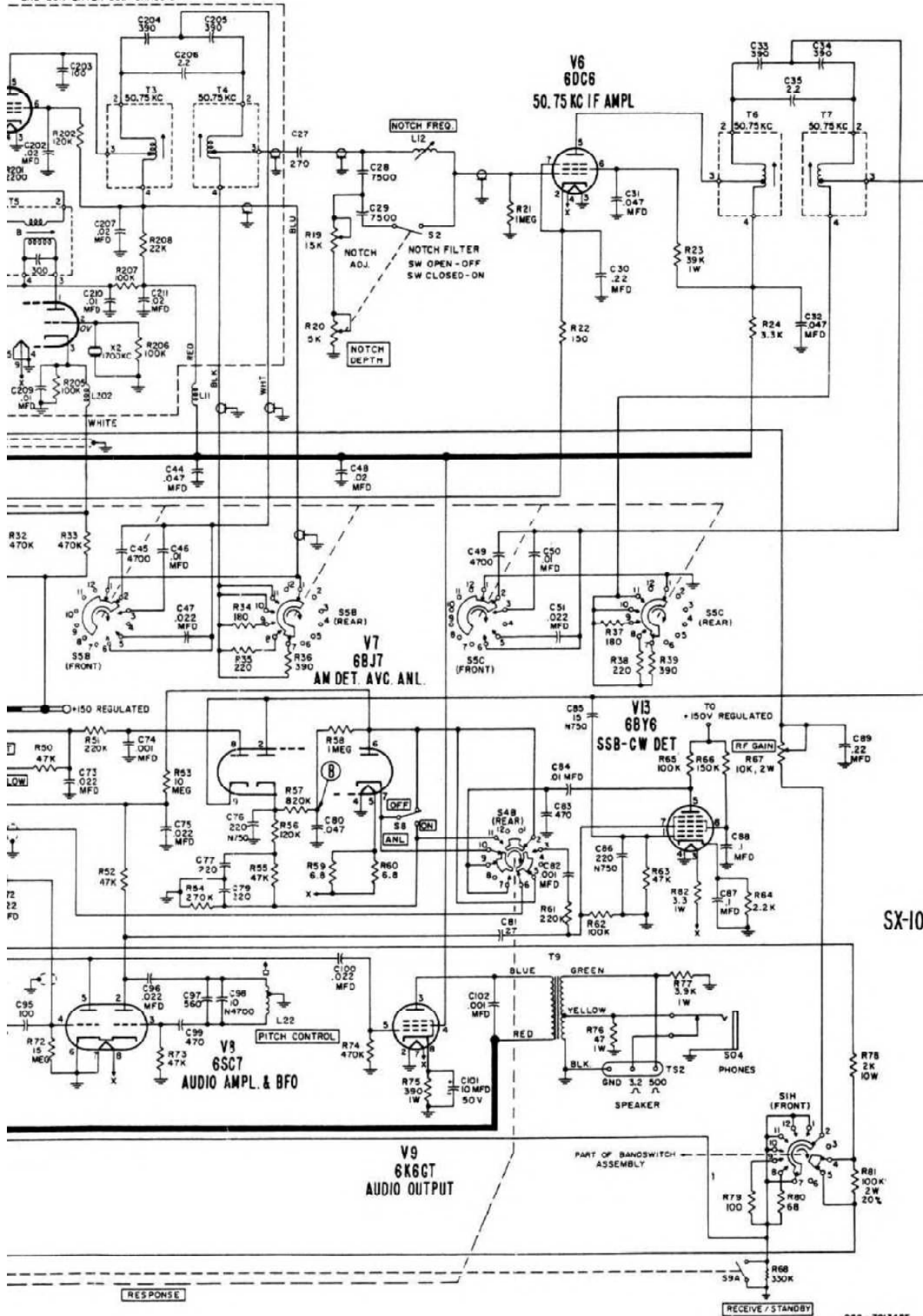
1. Resistor values in ohms and capacitor values in MMF unless otherwise specified. K = 1000.
2. Resistors are 1/2 watt and 10% unless otherwise specified.
3. Band Selector (S1) switch positions: CONV, 80M, 40M, 20M, 15M, 10M, and WWV 10MC. Shown in "CONV" position (fully counterclockwise). Switch sections are shown as viewed from front of set.
4. Selectivity switch (S5) positions: 5KC; 3KC; 2KC; 1KC; .5KC. Shown in "5KC" (fully counterclockwise). Switch sections are shown as viewed from front of set.
5. Response switch (S4) positions: Power Off; Lower, SSB-CW; Upper, SSB-CW; Lower, AM; Upper, AM. Shown in "Lower, SSB-CW" (second position from extreme counterclockwise end). Switch sections are shown as viewed from front of set. Section S4C is open in the "Power Off" position and closed in all others.
6. See Fig. 12 for location of all switch sections.
7. Values and tolerances are nominal and variations may be found. It is recommended that the value of any replacement correspond to the nominal value of the part being replaced.

$\perp$ Chassis

- * Band selector contacts marked with * indicates these contacts are internally connected to the same numbered contacts on the reverse side of the switch wafer section.



2ND CONVERTER SUB-CHASSIS



SX-101A

FIELD ALIGNMENT
PROCEDURE FOR 50.75 KC
IF SYSTEMS SX-117
SX-115, SX-101A, SX-100 MK II

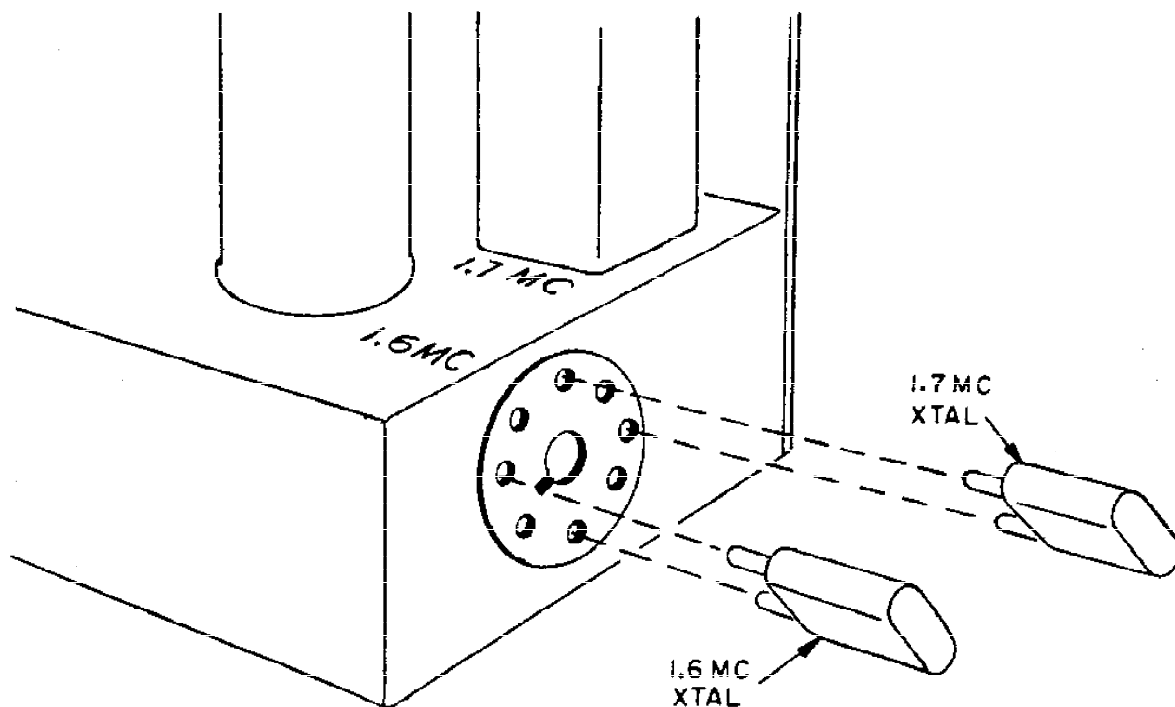
FIELD ALIGNMENT PROCEDURE FOR 50.75 KC IF SYSTEMS, SX-101A, SX-115, SX-117, SX-100 MK II

- STEP 1. Turn on crystal calibrator.
- STEP 2. Center BFO frequency exactly so that switching from upper to lower side causes no change in zero beat. Set selectivity to the half kilocycle position.
- STEP 3. Set sideband selector for lower sideband and tune receiver dial slightly higher in frequency than the zero beat point (until a beat note is heard).
- STEP 4. Make a parallel connection to the loudspeaker with an audio frequency oscillator set to 750 CPS and tune receiver dial until audio pitch of receiver is the same as the AF oscillator. This condition is noted by the wavering beat between the two tones coming to within a few CPS.
- STEP 5. Reduce RF gain so that approximately S-6 to S-7 is indicated on "S" meter. Adjust four coil slugs on 50 KC transformers for maximum "S" meter indication. This completes the alignment of the 50 KC system.

In the SX-117, due to the AVC circuitry used, the "S" meter will not correctly indicate the peak of coils number three and four. Therefore, all IF coils should be peaked for maximum audio output @ 750 CPS.

SUPPLEMENTARY DATA SHEET
FOR
MODEL SX-101A

As shown in the accompanying illustration, your SX-101A Receiver has been equipped with plug-in type second conversion oscillator crystals, X1 and X2. This provides a convenient means of checking these components and simplifies their replacement. When removing and replacing these crystals, care must be taken to re-insert them into the proper pins in the 8 prong socket.



Pack with Instruction Manual
094-902012
Form Number 094-902146

(B)