APPENDIX

to

TECHNICAL MANUAL

for

GENERAL PURPOSE TRANSMITTER

MODEL SBT-1K(B)

(AN/URT-19(v))

THE TECHNICAL MATERIEL CORPORATION

MAMARONECK, N.Y. OTTAWA, ONTARIO

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IN 329-A

Issue Date: 15 Jan. 1964

THE TECHNICAL MATERIEL CORPORATION
COMMUNICATIONS ENGINEERS
700 FENIMORE ROAD MAMARONECK, N. Y.

Warranty

The Technical Materiel Corporation, hereinafter referred to as TMC, warrants the equipment (except electron tubes*, fuses, lamps, batteries and articles made of glass or other fragile or other expendable materials) purchased hereunder to be free from defect in materials and workmanship under normal use and service, when used for the purposes for which the same is designed, for a period of one year from the date of delivery F.O.B. factory. TMC further warrants that the equipment will perform in a manner equal to or better than published technical specifications as amended by any additions or corrections thereto accompanying the formal equipment offer.

TMC will replace or repair any such defective items, F.O.B. factory, which may fail within the stated warranty period, PROVIDED:

1. That any claim of defect under this warranty is made within sixty (60) days after discovery thereof and that inspection by TMC, if required, indicates the validity of such claim to TMC's satisfaction.
2. That the defect is not the result of damage incurred in shipment from or to the factory.
3. That the equipment has not been altered in any way either as to design or use whether by replacement parts not supplied or approved by TMC, or otherwise.
4. That any equipment or accessories furnished but not manufactured by TMC, or not of TMC design shall be subject only to such adjustments as TMC may obtain from the supplier thereof.

Electron tubes* furnished by TMC, but manufactured by others, bear only the warranty given by such other manufacturers. Electron tube warranty claims should be made directly to the manufacturer of such tubes.

TMC's obligation under this warranty is limited to the repair or replacement of defective parts with the exceptions noted above.

At TMC's option any defective part or equipment which fails within the warranty period shall be returned to TMC's factory for inspection, properly packed with shipping charges prepaid. No parts or equipment shall be returned to TMC, unless a return authorization is issued by TMC.

No warranties, express or implied, other than those specifically set forth herein shall be applicable to any equipment manufactured or furnished by TMC and the foregoing warranty shall constitute the Buyers sole right and remedy. In no event does TMC assume any liability for consequential damages, or for loss, damage or expense directly or indirectly arising from the use of TMC Products, or any inability to use them either separately or in combination with other equipment or materials or from any other cause.

*Electron tubes also include semi-conductor devices.

PROCEDURE FOR RETURN OF MATERIAL OR EQUIPMENT

Should it be necessary to return equipment or material for repair or replacement, whether within warranty or otherwise, a return authorization must be obtained from TMC prior to shipment. The request for return authorization should include the following information:

1. Model Number of Equipment.
2. Serial Number of Equipment.
3. TMC Part Number.
4. Nature of defect or cause of failure.
5. The contract or purchase order under which equipment was delivered.

PROCEDURE FOR ORDERING REPLACEMENT PARTS

When ordering replacement parts, the following information must be included in the order as applicable:

1. Quantity Required.
2. TMC Part Number.
3. Equipment in which used by TMC or Military Model Number.
4. Brief Description of the Item.
5. The *Crystal Frequency* if the order includes crystals.

PROCEDURE IN THE EVENT OF DAMAGE INCURRED IN SHIPMENT

TMC's Warranty specifically excludes damage incurred in shipment to or from the factory. In the event equipment is received in damaged condition, the carrier should be notified immediately. Claims for such damage should be filed with the carrier involved and not with TMC.

All correspondence pertaining to Warranty Claims, return, repair, or replacement and all material or equipment returned for repair or replacement, within Warranty or otherwise, should be addressed as follows:

THE TECHNICAL MATERIEL CORPORATION
Engineering Services Department
700 Fenimore Road
Mamaroneck, New York

RECORD OF CORRECTIONS MADE

Change No.	Date of Change	Date Entered	Entered By

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APPENDIX

RACK AND ACCESSORIES

1. INTRODUCTION

This appendix contains technical information pertaining to the equipment rack and accessory units used in the SBT-1K(B) transmitter

The units covered in this appendix are:

a. Electrical Equipment Cabinet RAK-9B

b. Auxiliary Power Panel APP-4

c. RF Output Assembly AX-198

2. DESCRIPTION OF EQUIPMENT

a. ELECTRICAL EQUIPMENT CABINET RAK-9B - Electrical Equipment Cabinet RAK-9B is a standard relay-type rack providing an enclosure for the various modular units comprising the SBT-1K(B). The rack is equipped with four sets of tilt-lock drawer slides for mounting Amplifier RFD-1A, Variable Frequency Oscillator VOX-5, Exciter Unit A-1516, and LV Power Supply PS-4A; tracks are provided on the rack floor for installation of HV Power Supply PS-5. Reel-mounted springs are provided for retracting the wiring cables of slide-mounted units to prevent cable snagging. Cable access holes with removable cover plates are conveniently located on both sides, bottom, and rear of the rack for installation flexibility (refer to Section 2 of the SBT-1K(B) system manual).

RAK-9B-B is a base-mounted rack; a separate base sits directly on the floor and the rack bolts to the base. RAK-9B-S is a shock-mounted rack which is mounted to the structure with six shock mounts, four at the bottom and two at the top.

RAK-9B contains a forced-air cooling system employing washable air filters. The exhaust blower for the cooling system is mounted on the lower portion of the rear door. Air intake is through the top of the rack.

Refer to Sections 1 and 2 of the SBT-1K(B) system manual for further information concerning RAK-9B.

b. AUXILIARY POWER PANEL APP-4. - Auxiliary Power Panel APP-4 distributes line voltage to various SBT-1K(B) modular units and facilitates connection of external equipment. Two individually fused utility outlets provide 115- or 230- vac (depending upon input power source) for external test equipment. Two terminal blocks (E501 and E502) are provided for connection of external equipment intended to function with the SBT-1K(B).

Refer to Sections 1 and 2 of the SBT-1K(B) systems manual for further information concerning the APP-4.

c. RF OUTPUT ASSEMBLY AX-198. - RF Output Assembly AX-198, containing control relay K602 and antenna relay D601, permits use of the SBT-1K(B) in a transmitter/receiver antenna system (refer to Section 4 of SBT-1K(B) system manual).

3. INSTALLATION OF APP-4, AX-198, AND RAK-9B

The APP-4 and AX-198 units are mounted in RAK-9B prior to shipment. Ensure that the APP-4 and AX-198 have not become loose during transit; secure units as required. Refer to Section 2 of the SBT-1K(B) system manual for information concerning the installation of RAK-9B and all other modular units.

4. PARTS LISTS

Reference designations have been assigned to identify all maintenance parts of the equipment. These designations are used for marking the equipment (adjacent to the part they identify) and are included on drawings, diagrams, and in the parts lists. Parts lists for RAK-9B, APP-4, and AX-198 are given in tables 1, 2, and 3 respectively.

The TMC part number given in these tables is the number by which the part may be ordered.

5. SCHEMATIC DIAGRAMS

Schematic diagrams for the APP-4 and the AX-198 are given in figures 1 and 2 respectively.

TABLE 1. PARTS LIST, RAK-9B

REF SYM	DESCRIPTION	FUNCTION	TMC PART NO.
B601	FAN, AXIAL: 115 v, 50/60 cps; single phase, nominal rpm 1650; running capacitor 2 uf; full load watts 35; CW; 450 cfm at 60 cps; 8 in. blade with fan guard.	Rack Cooling	BL-101
C613	CAPACITOR, FIXED, PAPER DIELECTRIC: 2 uf, ±10%; 600 vdcw.	Phase Shift	CP53B1FF205K
CP609	ADAPTER, CONNECTOR: RF type; 1 male and 1 female contact; right angle HN to HN.	CU-2-50/U Input Adapter	UG-212C/U
CP610	Same as CP609.	CU-2-50 Output Adapter	
CP612	ADAPTER, CONNECTOR: RF type; 2 round male contacts; straight type; HN to UHF.	CU-2-50/U Input Adapter	SA-103
CP613	Same as CP612	CU-2-50/U Output Adapter	
CP615	ADAPTER, CONNECTOR: RF type; two round female and one male contact; tee type; BNC to BNC to BNC; (supplied as a loose item).	VOX Output Adapter	UG-274/U
E601	TERMINAL BOARD: barrier type; two double screw terminals, 6-32 thd; phenolic type.	Blower Interconnect	TM-101-2
E604	TERMINAL BOARD: fanning type; 11 angle type terminals, left end feed; part of symbol no. W610.	PS-4A Control Voltage Output	TM-105-11AL
E605	TERMINAL BOARD: fanning type; 14 angle type terminals; right end feed.	P/O W609	TM-105-14AR

TABLE 1. PARTS LIST, RAK-9B (Cont)

REF SYM	DESCRIPTION	FUNCTION	TMC PART NO.
J601	CONNECTOR, RECEPTACLE, ELECTRICAL: twist locking type; 3 half round, male contacts; straight type; part of symbol no. W612.	AC Input P/O W612	JJ-194-NG
J602	CONNECTOR, RECEPTACLE, ELECTRICAL: twist locking type; 2 half round, male contacts; straight type.	Utility AC Line Input	JJ-100
J603	CONNECTOR, RECEPTACLE, ELECTRICAL: 4 round No. 16 female contacts; straight type	Blower Interconnect	MS3102A14S-2S
J604	CONNECTOR, RECEPTACLE, ELECTRICAL: 1 round No. 12 female contact; straight type; part of symbol No. W605.	P/O W605	MS3102A18-16S
J605	CONNECTOR, RECEPTACLE, ELECTRICAL: 28 No. 16 contacts, 7 No. 12 contacts; straight type; part of symbol No. W606.	Power & Control Interconnect P/O W606	MS3102A32-7S
J612	CONNECTOR, RECEPTACLE, ELECTRICAL: twist lock type; 2 half round, straight female contacts; supplied with mounting brackets and hardware.	AC Outlet	JJ-170
J613	Same as J612.	AC Outlet	
J614	Same as J613.	AC Outlet	

TABLE 1. PARTS LIST, RAK-9B (Cont)

REF SYM	DESCRIPTION	FUNCTION	TMC PART NO.
MP601	FILTER, AIR CONDITIONING: replaceable type; filtering medium, steel mesh; steel frame; capacity 640 cfm; o/a dimensions 10-1/8 x 9-7/8 x 1/2".	Air Filter	AD-103-9
MP602	FILTER, AIR CONDITIONING: replaceable type; filtering medium, steel mesh; steel frame; capacity 640 cfm; o/a dimensions 16-7/8 x 7-5/8 x 1/2 inches	Air Filter	AD-103-5
P601	CONNECTOR, PLUG, ELECTRICAL: twist lock type; 3 half round female contacts straight type; part of symbol W611.	AC Input P/O W611	PL-134-NG
P603	CONNECTOR, PLUG, ELECTRICAL: 4 round No. 16 male contacts; angle type.	Blower Interconnect	MS3108A14S-2P
P604	CONNECTOR, PLUG, ELECTRICAL: RF type; 1 round male coaxial contact; straight type; series BNC to BNC.	Signal Input P/O W608	UG-260/U
P606	CONNECTOR, PLUG, ELECTRICAL: RF type;1 No. 33 male contact; straight type; (supplied as a loose item)	Antenna Plug	PL-150
P607	CONNECTOR; PLUG, ELECTRICAL; 14 No. 16 female contacts; straight type; (supplied as a loose item)	P/O W610	MS3106B20-27S
P609	CONNECTOR, PLUG, MIL type MS3106B28-11P, male.	P/O W609	MS3106B28-11P
P611	Same as P604	P/O W607	
P612	Same as P608	Signal Input	

TABLE 1. PARTS LIST, RAK-9B (Cont)

REF SYM	DESCRIPTION	FUNCTION	TMC PART NO.
P613	Same as P604.	P/O W608	
P614	CONNECTOR, PLUG, ELECTRICAL: 28 No. 16 contacts, 7 No. 12 contacts, straight type; part of symbol No. W606.	Power and Control Interconnect P/O W606	MS3106B32-7P
P615	CONNECTOR, PLUG, ELECTRICAL: 1 round No. 12 male contact, straight type; part of symbol No. W605.	HV Interconnect Plug P/O W605	MS3106B18-16P
P620	CONNECTOR, PLUG, ELECTRICAL: twist lock type, 3 round female contacts; straight type; (supplied as a loose item).	AC Input Plug	PL-190NG
P624	Same as P604 (supplied as a loose item)	Receiver Input (mates with J606 on AX-198)	
P627	CONNECTOR, PLUG, ELECTRICAL: twist lock type; 2 half round female contacts straight type; with cable clamp; (supplied as a loose item).	Utility AC Input	PL-100
S601	SWITCH, PUSH-PULL: SPDT; 15 amps at 120,250 vac; .2 amps at 250 vdc.	Interlock	SW-230
S602	Same as S601.	Interlock	
W605	CABLE ASSEMBLY, POWER, ELECTRICAL: consists of, 96 in. high voltage wire; two connectors, symbol nos. J604, P615.	HV Interconnect Cable PS-5 to RFD-1A.	CA-490

TABLE 1. PARTS LIST, RAK-9B (Cont)

REF SYM	DESCRIPTION	FUNCTION	TMC PART NO.
W606	CABLE ASSEMBLY, POWER, ELE-TRICAL: consists of 76 in. of insulated stranded MIL type MWC wire; connectors, J605, P614.	Power and Control In-terconnect Cable RFD-1A to PS-4A	CA-491
W607	CABLE, RF: consists of RG-59/U coaxial cable, P611 and P612, 78 in. long	RF Interconnect cable; SBE-2 to RFD-1A.	CA-383-78C
W608	CABLE, RF: consists of RG-59/U coaxial cable, P604 and P613, 49 in. long	RF Interconnect cable; VOX-5 to SBE-2	CA-480-6-49
W609	CABLE, SPECIAL PURPOSE; consists of, 11 lengths of insulated stranded MIL type MWC wire; connector P609; 48 inches long.	Interconnect cable; APP-4 to SBE-2	CA-507-1
W610	CABLE ASSEMBLY, SPECIAL PURPOSE ELECT., BRANCHED: consists of, various len-gths of insulated stranded MIL type MWC and HWC wire; connector P607; terminal board E604.	Power/Control Cable	CA-506
W611	CABLE ASSEMBLY, POWER, ELE-TRICAL: consists of, 60 in. of black HWC14(19)UO; WH/ BLK HWC10(37)U90; white HWC10(37)U9 insulated cable; connector J601; 3 terminal lugs.	AC Line Input to PS-4A	CA-509
W612	CABLE ASSEMBLY, POWER, ELE-TRICAL: consists of, 31 in. of black HWC14(9)UO; WH/ BLK/HWC10(37)U90; white HWC10(37)U9 insulated cable; connector J601; 3 terminal lugs.	AC Input to APP-4	CA-493
W629	CABLE ASSEMBLY, RF: con-sists of RG-174/U coaxial and connectors P635 and P636	ALDC feedback LV Power Supply PS-4A to Exciter Unit A-1516	

TABLE 2. PARTS LIST, APP-4

REF SYM	DESCRIPTION	FUNCTION	TMC PART NO.
C501	CAPACITOR, feed-thru type: 1000 uuf, ±20%, 500 wvdc, char. A.	RF Bypass	CK70A102M
C502 through C520	Same as C501	RF Bypass	
	Same as C501	RF Bypass	
C521	CAPACITOR, fixed: mica; .01 uf, ±10%, char. B, 300 wvdc	Filter	CM35B103K
C522	Same as C521	Filter	
C523	Same as C521	Filter	
C524	Same as C521	Filter	
CB501	CIRCUIT BREAKER; dual, companion trip; 15 amp, curve 5, 230 VAC operation	Main Power	SW-261
E501	TERMINAL, strip: barrier lug type; 16 terminals; base material black bakelite.	Terminal Board	TM-100-16
E502	Same as E501	Terminal Board	
F501	FUSE, cartridge: hi-rating 250 v, 15 amps	Utility Outlet	FU-103-15
F502	Same as F501	Utility Outlet	
I501	LAMP, incandescent: double contact; 120 volts, 3 watts; bayonet base	Main Power Indicator	BI-102-3
J501	CONNECTOR, receptacle: AN socket; 22 contacts	Power Connector	MS3102A-28-11S
J502	PLUG, receptacle: U-shape grounding type - 3 prongs	Utility Outlet	JJ-173
J503	Same as J502	Utility Outlet	
L501	COIL, R.F.: fixed; 2.5 mh	RF Choke	CL-140-2

TABLE 2. PARTS LIST, APP-4 (Cont)

REF SYM	DESCRIPTION	FUNCTION	TMC PART NO.
L502 through L520	Same as L501	RF Choke	
	Same as L501		
L521	COIL, 2 uf, ±.1 uh Q=200 at 7.9 mc.	Filter Choke	CL-269
L522	Same as L521	Filter Choke	
R501	SHUNT ASSY., .0042 ohms, +5% -1%; 20 amps at 115 VAC.	Shunt Input	AR-132
R502	Same as R501	Shunt Input	
R503	SHUNT ASSY., .075 ohms, ±10%, 5 amps at 115 VAC	Shunt Input	AR-133
R504	Same as R503	Shunt Input	
R505	RESISTOR, fixed: wire wound; 5000 ohms, ±5%, 10 watts	Shunt	RW-109-32
XF501	FUSE, extractor post: end terminal is removable	F501 Socket	FH-100-1
XF502	Same as XF501	F502 Socket	
X1501	LIGHT, INDICATOR: bayonet base; w/red frosted lamp	I501 Socket	TS-124-1

TABLE 3. PARTS LIST, AX-198

REF SYM	DESCRIPTION	FUNCTION	TMC PART NO.
C601	CAPACITOR, FIXED, CERAMIC DIELECTRIC: 10,000 uuf; GMV; 500 vdcw.	Bypass	CC-100-16
C602 through C612	Same as C601	Bypass	

TABLE 3. PARTS LIST, AX-198 (Cont)

REF SYM	DESCRIPTION	FUNCTION	TMC PART NO.
CP601	ADAPTER, CONNECTOR: rf type; 1 male and 1 female contact; angle type; series UHF to UFH	Receiver Input Adapter	UG-646/U
CP602	Same as CP601	Receiver Input Adapter	
CP603	Same as CP601	Antenna Adapter	
CP604	Same as CP601	Transmitter Output Adapter	
CP605	Same as CP601	Antenna Adapter	
CP606	ADAPTER, CONNECTOR: rf type; 2 round male contacts; straight type UHF to UHF.	Transmitter Output Adapter	SA-104
CP607	Same as CP606	Relay Adapter	
E601	See table 1		
E602	CONTACT, ELECTRICAL: beryllium copper silver plated; spring loaded 3/4 x 1-1/8 x 3/4 over all.	Transmitter Output	AX-154
E603	TERMINAL BOARD: barrier type; three single screw terminals and feed thru solder lugs 8-32thd; phenolic body.	Interlock Jumper	TM-100-3
J606	ADAPTER, CONNECTOR: rf type; 2 round female contact; straight type; series BNC to BNC.	Receiver Input	UG-492A/U
J607	CONNECTOR, RECEPTACLE, ELECTRICAL: 14 No. 16 round male contacts; straight type	Power Input	MS3102A-20-27P

TABLE 3. PARTS LIST, AX-198 (Cont)

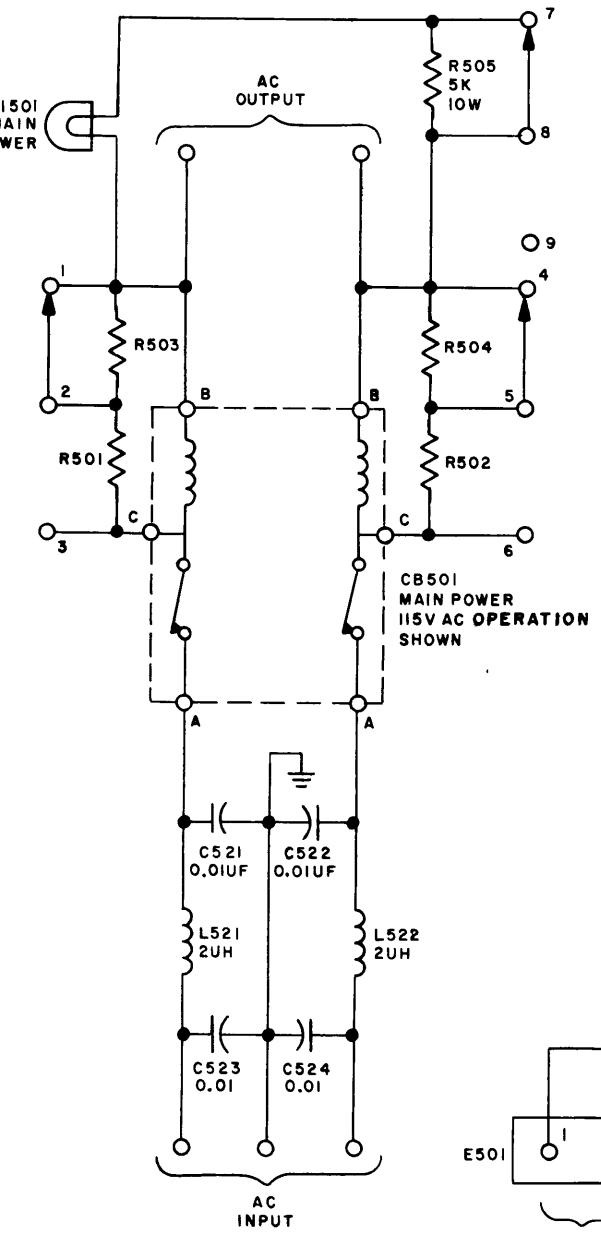
REF SYM	DESCRIPTION	FUNCTION	TMC PART NO.
J608	ADAPTER, CONNECTOR: rf type, two round female contacts; straight type series UHF to UFH	Coupler	UG-307/U
J609	ADAPTER, CONNECTOR: rf type, 1 round remale contact each end; straight type; series QDS to UHF	Antenna	JJ-147
J610	Same as J608.	Coupler Jack	
J611	CONNECTOR, RECEPTACLE, ELECTRICAL: rf type; 1 round female contact; straight type; series UHF to UHF	Transmitter Jack	JJ-195
K601	RELAY, SOLENOID: coaxial type; coil rating, 220 vdc at 2 watts; auxiliary contacts, DPDT; transmit-receive contact, 1 KW power rating to 400 mc; c/o three 50 ohm UHF connectors	Antenna Relay	RL-139-4-220DC
K602	RELAY, ARMATURE: 10,000 ohm coil resistance; 115 VAC; contacts rated at 5 amps 115V non-inductive	Control Relay	RL-116-AC-2C-115
P605	See table 1		
P606	See table 1		
P608	See table 1		
P616	CONNECTOR, PLUG, ELECTRICAL: rf type; 1 round male coaxial contact; straight type; teflon dielectric	P/O W601	PL-259-A/TEF

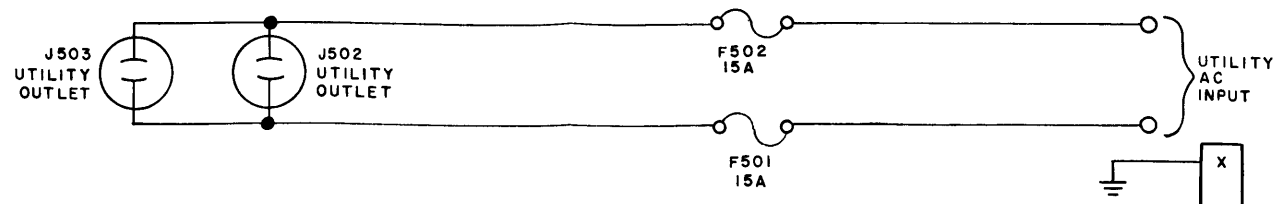
TABLE 3. PARTS LIST, AX-198 (Cont)

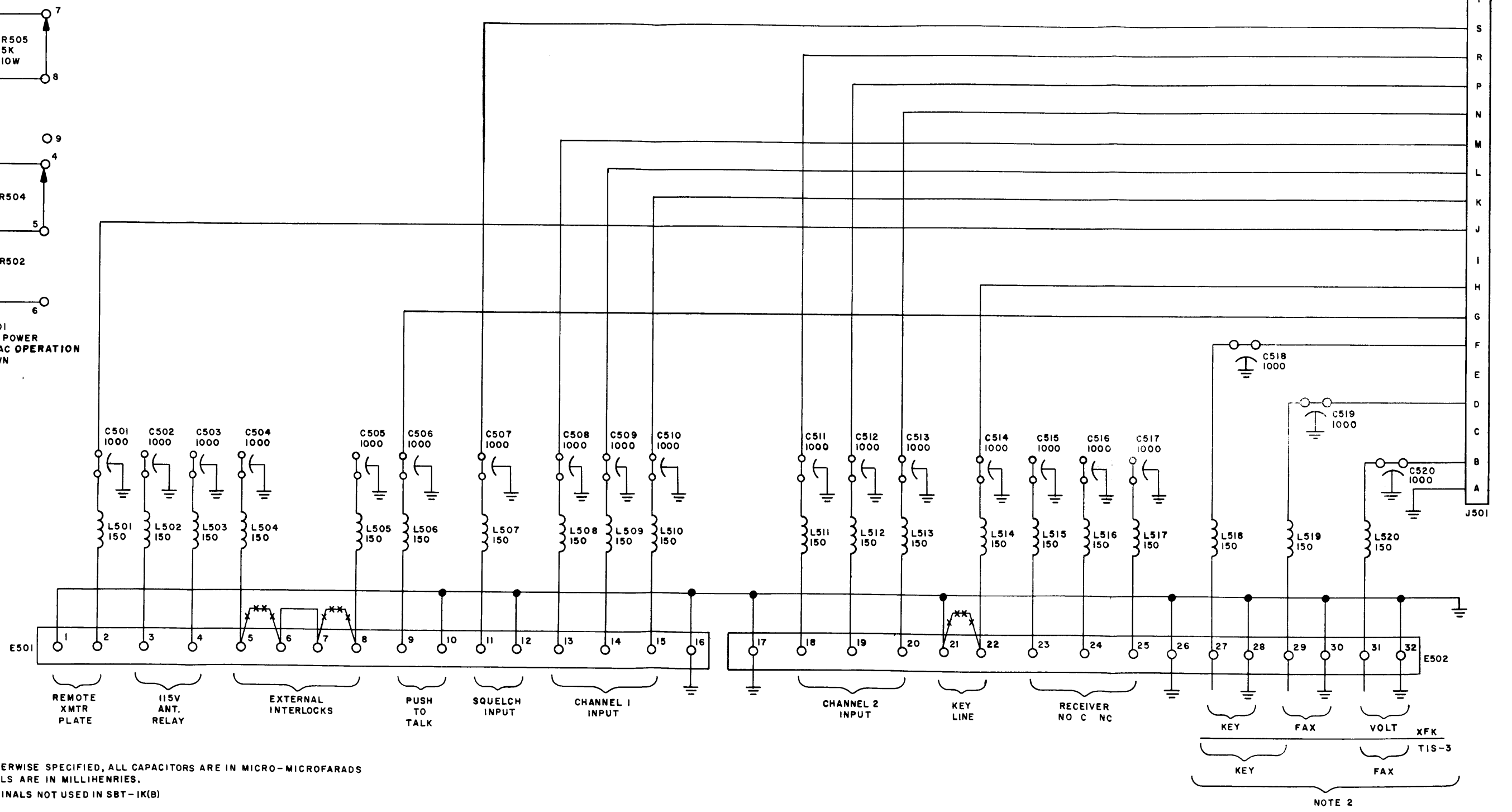
REF SYM	DESCRIPTION	FUNCTION	TMC PART NO.
P617	CONNECTOR, PLUG, ELECTRICAL: rf type; 1 round male coaxial contact; straight type; series BNC to BNC	P/O W602	UG-260/U
P618	Same as P616	P/O W602	
P619	Same as P616	P/O W601	
R601	RESISTOR, FIXED, WIREWOUND: 35,000 ohms; ±5%; 10 watts with solder lug type terminals	Dropping Resistor	RW-109-40
S603	SWITCH, PUSH-PULL: SPDT; 15 amps at 120, 250 VAC; .2 amps at 250 vdc	Interlock Switch	SW-230
S604	SWITCH, SENSITIVE: SPDT; operating force 6 to 14 oz. release force, 4 oz. min.; 10 amps at 125/250 vac; 1/2 amp at 125 vdc	Interlock Switch	SW-189
W601	CABLE ASSEMBLY, RF: consists of 5-1/4 inch of RG-8/U cable and connectors P616 and P619	Interconnect Cable, Coupler Output Jack to Antenna Input Jack	CA-512-1-5.25
W602	CABLE ASSEMBLY, RF; consists of 11-1/4 inch of RG-59/U and connectors P617 and P618	Interconnect Cable, Relay to Receiver Input	CA-383-11.25C

FOR 230V AC OPERATION OF CB-501

1. REMOVE STRAP MARKED → FROM TERMINAL 1, AND ATTACH TO TERMINAL 3.
2. " " " " " " 4, " " " " 6.
3. " " " " " " 7, " " " " 9



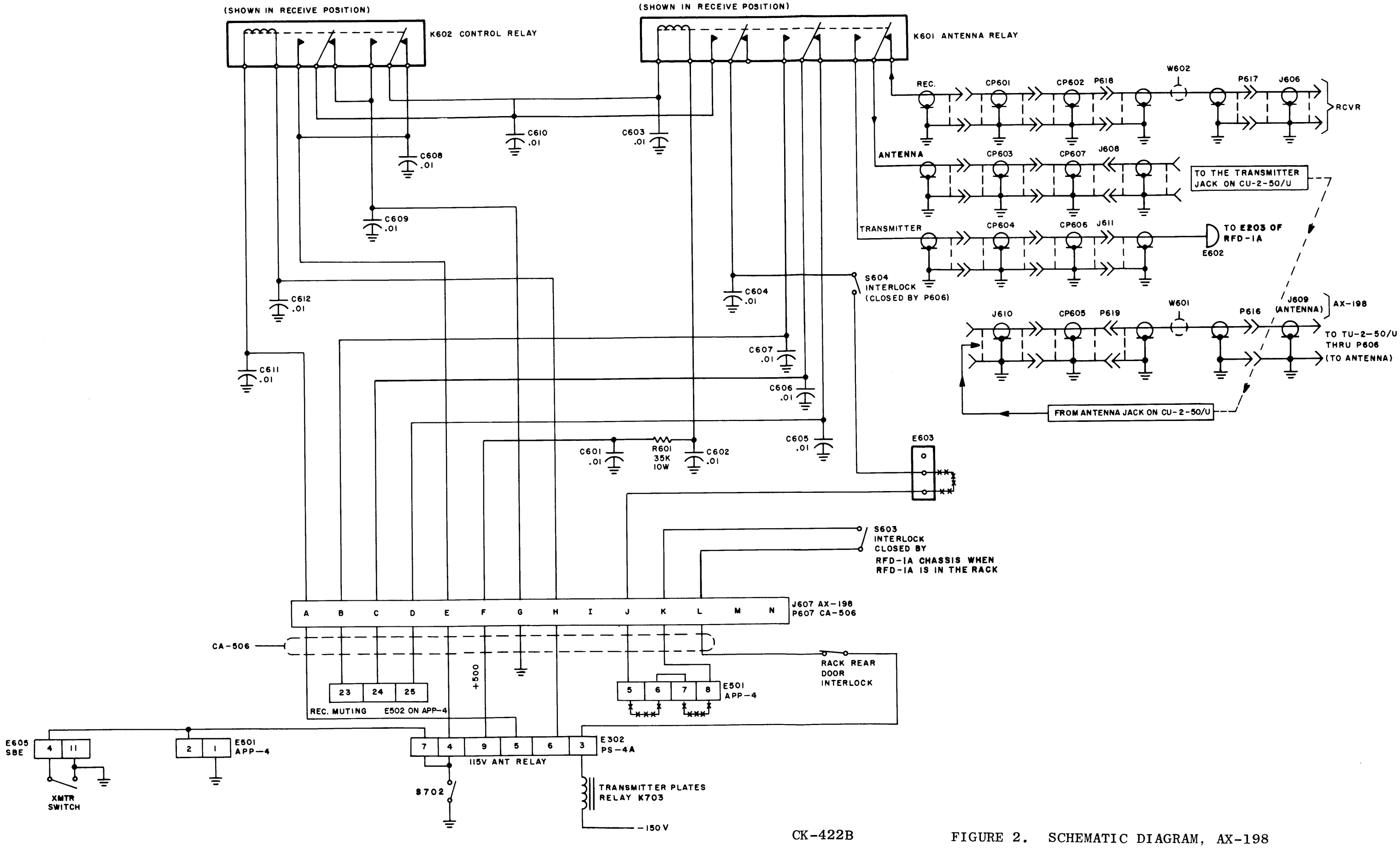




NOTES:

1. UNLESS OTHERWISE SPECIFIED, ALL CAPACITORS ARE IN MICRO-MICROFARADS AND ALL COILS ARE IN MILLIHENRIES.
2. THESE TERMINALS NOT USED IN SBT-IK(B)

CK-467C FIGURE 1. SCHEMATIC DIAGRAM, APP-4



CK-422B

FIGURE 2. SCHEMATIC DIAGRAM, AX-198