K4XL's  BAMA

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held liable for damages in transit, if packing, IN HIS OPINION, is insufficient.

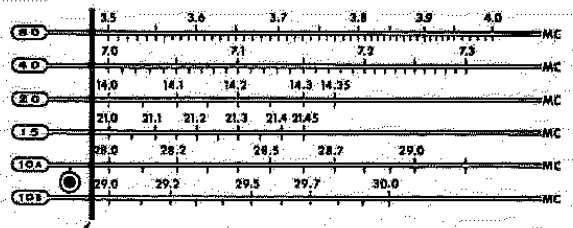
*Authorized service stations are for out-of-warranty units only, unless the station is specifically noted on the List of Authorized Service Stations to be authorized for other work.

EICO THE EICO WARRANTY EICO

The Electronic Instrument Company, Inc., hereafter referred to as EICO, warrants that, for a period of 90 days from the date of purchase, any EICO kit will be free of defects in parts, and that any EICO factory-wired unit will be free of defects in parts and workmanship. For an EICO kit, EICO's obligation is limited to those parts which are returned transportation prepaid to the factory without further damage, and in the judgement of EICO are either originally defective or have become defective in normal use. For an EICO factory-wired unit, EICO's obligation is limited to those parts, sections, or the entire unit which is returned transportation prepaid to the factory without further damage, and in the judgement of EICO are either originally defective or have become defective in normal use.

The warranty does not apply to any parts damaged in the course of handling, assembling, or wiring by the customer, or damaged due to abnormal usage or in violation of instructions or reasonable practice, or further damaged to a consequential degree in return shipment. Furthermore, the foregoing warranty is made only to the original customer, and is and shall be in lieu of all other warranties, whether expressed or implied, and of all other obligations or liabilities on the part of EICO, and in no event shall EICO be liable for any anticipated profits, consequential damages, loss of time, or other losses incurred by the customer in connection with the purchase or operation of EICO products or components thereof.

The registration card, which accompanies each EICO kit or factory-wired unit, must be filled in and returned to the company within 10 days after the date of purchase. This warranty applies only to registered units.



SET POINTER TO THE LEFT OF THE FIGURE "29.0" ON THE SCALE FOR BAND 10B

Figure 4-1. Dial Pan

TRANSMIT - VFO feeds out signal and transmitter radiates signal from antenna as long as key is held down.

SECTION IV. MAINTENANCE

4-1. GENERAL

Your VFO will normally require little service outside of tube replacement. The performance is not dependent upon tube selection and the types employed are available everywhere.

All of the required adjustment procedures are described in this section. Operating voltages are shown on the schematic diagram. The material of Section 2 and 3 should be helpful in reading the schematic diagram.

4-2. CASE REMOVAL

Loosen and remove the four sheet metal screws at the rear. Slide the case out of the panel frame and off the instrument.

4-3. VFO ADJUSTMENTS AND CALIBRATION

A. General

During the following procedures, the VFO function switch is in SPOT position, and the 1-foot length of coaxial cable is connected to the VFO and terminated in the transmitter which is to be used with the VFO. The transmitter should be properly tuned-up and should be turned on in the TUNE mode (not on the air).

NOTE: The transmitter termination is not essential for VFO calibration, but it is desirable because various transmitter loads will require slightly different settings of L4 and L5 to achieve maximum signal output.

A well calibrated communications receiver covering 3.5-4.0mc and 7.0-7.3mc (and, if possible, a crystal calibrator to check receiver calibration) is required for VFO calibration. The VFO should be in close enough proximity to the receiver so that the VFO signal can be heard. A lead from the receiver antenna terminal brought near to the VFO will assure audibility of the VFO signal.

Allow a half-hour warm-up of all equipment before starting adjustments.

B. Adjustment of Output Circuit Tuning Elements (Coils L4 and L5).

1. Tune receiver to 3.75mc.
2. Turn VFO band switch to 80M.
3. Tune VFO until signal is heard in receiver, disregarding the calibration of the VFO dial at this time.
4. Adjust L4 to obtain maximum signal output as indicated by the receiver S-Meter. If the receiver is not equipped with an S-Meter, L4 may be adjusted by observing grid drive to one of the stages in the transmitter, and maximizing this quantity with L4. If the latter method is used, set the band selector of the transmitter to the 80M band for adjustment of L4.
5. Tune receiver to 7.15mc.
6. Turn VFO band switch to 40, 20, 15, 10A M.
7. Repeat steps (3) and (4), this time adjusting L5. If the indication is grid drive in the transmitter, set the band selector of the transmitter to 40M for adjustment of L5.

C. VFO Calibration

1. Turn TUNING knob to fully close variable capacitor.
2. Re-set scale pointer on dial cord so that right edge of pointer is tangent to the left side of the figure "20.0" on the scale for band 10M. See Figure 4-1 on page 8.

3. Bend center lip of pointer carriage down to pinch dial cord permanently.

4. Set both the VFO and the transmitter band switches to the 80M band.

5. Set both VFO and receiver tuning controls at 4.0mc on the respective dials. Carefully rotate trimmer C3 until VFO is heard on receiver (and/or gives maximum S-Meter reading) indicating that the VFO is exactly tuned to 4.0mc.

6. Set both VFO and receiver at 3.5mc on their respective dials. Carefully adjust slug of coil L1 until the VFO is heard indicating exact tuning of the VFO to 3.5 mc.

7. Repeat step 5 and then step 6, and continue repeating them as long as is necessary to get the calibration of the VFO at 3.5 and 4.0mc to correspond exactly to that of the receiver. Take the time necessary to perform these adjustments carefully and accurately, since the accuracy of the VFO calibration depends on these adjustments.

8. Set the VFO BAND switch at the 40, 20, 15, 10A M position, and the transmitter band switch at the 40M position.

9. Set both VFO and receiver tuning controls at 7.0mc on their respective dials. Carefully rotate trimmer C6 until the VFO (second harmonic) is heard on the receiver (and/or gives maximum S-Meter reading) indicating that the VFO second harmonic is exactly at 7.0mc.

10. Set the VFO BAND switch at the 10B position. The transmitter band switch remains set at the 40M band position.

11. Set the VFO TUNING knob at 28.0mc on the 10B scale, and the receiver tuning control at exactly 7.25mc. Carefully rotate trimmer C11 until the VFO (second harmonic) is heard on the receiver (and/or gives maximum S-Meter reading) indicating that the VFO second harmonic is exactly at 7.25mc (and, consequently, that the eighth harmonic is exactly at 29.0mc).

This completes the VFO calibration.

SECTION V. EICO SERVICE POLICY

SERVICE CONSULTATION

If you are experiencing trouble that you cannot diagnose yourself, you are invited to avail yourself of the EICO Service Consultation Department. The consultant handling your inquiry will make every effort to diagnose the cause of your particular difficulty based on the information that you provide. Please be as thorough as possible. Include the following information about your unit:

a) Have you made a thorough check of the wiring, checking also for cold solder joints, or accidental shorting between parts, or to chassis? (Check to see whether a bare wire or lead extends far enough to be shorted when the bottom plate is put on).

b) Have you checked that the proper tube or transistor is in each socket, and also making proper contact in the socket? Are all shields firmly in place?

c) Does the trouble occur all one time or one operating situation, but not at another time or operating situation? Be as specific as possible in this respect.

d) If the unit is of the type that involves alignment or calibration, be as specific as possible as to what you have done or not done with regard to these requirements. If the unit incorporates tuned circuits stated to be factory pre-aligned, did you change any settings? If so, what alignment procedure did you use?

e) Have you observed any peculiarity about a part? If a part appears charred or otherwise damaged by excessive heat, please say so. If you think

SYM. #	STOCK NO.	AM'T.	DESCRIPTION
	CAPACITORS		
C1	22012	1	capacitor, ceramic, 110mmf (N080), 1% (red, brown, brown, brown, brown)
C2	20010	1	capacitor, variable, 3mmf - 32mmf
C3	29021	1	capacitor, trimmer, 2.5mmf - 32mmf
C4	22590	1	capacitor, ceramic, 27mmf (NPO), 10%
C5	22014	1	capacitor, ceramic, 10mmf (N750), 5% (violet, brown, black, black, green)
C6	29021	1	capacitor, trimmer, 2.5mmf - 32mmf
C7	22013	1	capacitor, ceramic, 22mmf (NPO), 2%
C8	22020	1	capacitor, ceramic, 5mmf (N750), 5% (violet, green, black, white, green)
C9, 10	21873	2	capacitor, mica, .001mfd, 1%, 300V
C11	29021	1	capacitor, trimmer, 2.5mmf - 32mmf
C12	22570	1	capacitor, ceramic, 12mmf (NPO), 5%
C13	22020	1	capacitor, ceramic, 5mmf (N750), 5% (violet, green, black, white, green)
C14	22553	1	capacitor, disc, .002mfd (2K or 2000mmf), GMV, 1000V
C15, 16	22505	2	capacitor, disc, .01mfd (10K or 10,000mmf), GMV, 500V
C17	22537	1	capacitor, disc, 10mmf, 10%, 500V
C18, 19	22553	2	capacitor, disc, .002mfd, (2K or 2000mmf) GMV, 1000V
C20, 21	22520	2	capacitor, disc, 2 x .005mfd (5K or 5000mmf) 500V
C22	22409	1	capacitor, disc, 100mmf, 10%, 500V
C23	22505	1	capacitor, disc, .01mfd, (10K or 10,000mmf) GMV, 500V
C24	24016	1	capacitor, elect., 3 x 20mfd, 200V, 250V
	DIODES		
CR1, 2	93005	2	rectifier, 400 PIV
	FUSE		
F1	91002	1	fuse, 1 Amp
	NEON INDICATOR		
I1	92005	1	bulb, neon, NE-2
	JACKS		
J1	50022	1	jack, key
J2	50014	1	jack, phono single
	COILS		
L1	35080	1	coil, 20.5uh, oscillator
L2, 3	35034	2	choke, 1mh, RF
L4	35083	1	coil, 20uh
L5	35081	1	coil, 7uh
L6	34000	1	choke, 5h, filter

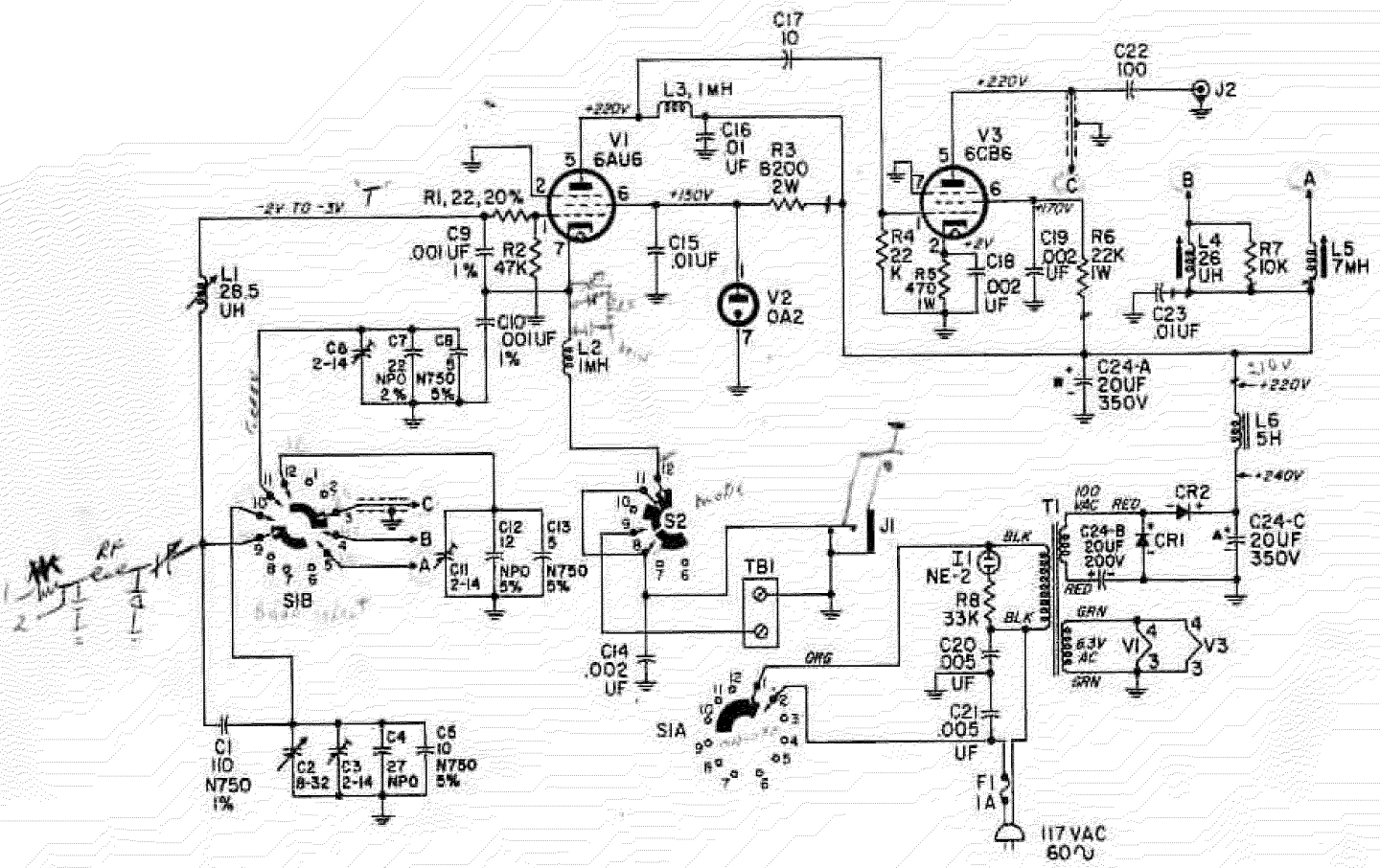
STOCK NO.	AM'T.	DESCRIPTION
MISCELLANEOUS		
40011	4	foot, rubber
47004	1	spring
53053	1	knob, lever switch
53054	2	knob
53502	1	pointer, slide
57000	1	line cord
58400	1	cable, insulated, 2'
61006	2	plug, RCA phono
62101	1	strain relief
65004	4	bushing, ceramic (Male)
65005	4	bushing, ceramic (Female)
80507	1	assembly, drive shaft
80621	1	assembly, drum and disc
80213	1	shaft, nonconductor
80534	2	pulley, small, 1-T
80590	1	dial cord
80685	1	window, plastic
85701	1	faceplate
87301	2	shield, tube
60115	1	Instruction Manual
60271	1	Construction Manual

SYM. #	STOCK NO.	AM'T.	DESCRIPTION
	SWITCHES		
S1	60073	1	switch, rotary, ceramic
S2	60075	1	switch, lever
	TRANSFORMER		
T1	20040	1	transformer, power
	TERMINAL STRIPS		
TB1	54513	1	terminal board, 3 screw
TB2	54013	1	terminal strip, 1 post left with ground
TB3	54010	1	terminal strip, 2 post right
TB4	54007	1	terminal strip, 3 post, 2 right with ground
TB5	54018	1	terminal strip, 4 post with ground
TB6	54016	1	terminal strip, 3 post left, upright
	TUBES		
V1	96020	1	tube, 6AU6
V2	90074	1	tube, OA2
V3	96020	1	tube, 6CB6
	SOCKETS		
XF1	97600	1	fuseholder
XV1	97047	1	socket, 7 pin miniature (top mount)
XV2	97022	1	socket, 7 pin miniature
XV3	97047	1	socket, 7 pin miniature (top mount)

	RESISTORS		
R1	10800	1	resistor, 22Ω, 1/2W, 20% (red, red, black)
R2	10428	1	resistor, 47KΩ, 1/2W, 10% (yellow, violet, orange, silver)
R3	10953	1	resistor, 82000, 2W, 10% (gray, red, red, silver)
R4	10424	1	resistor, 22KΩ, 1/2W, 10% (red, red, orange, silver)
R5	10081	1	resistor, 470Ω, 1W, 10% (yellow, violet, brown, silver)
R6	10051	1	resistor, 23KΩ, 1W, 10% (red, red, orange, silver)
R7	10407	1	resistor, 10KΩ, 1/2W, 10% (brown, black, orange, silver)
R8	10429	1	resistor, 33KΩ, 1/2W, 10% (orange, orange, orange, silver)

	MOUNTING HARDWARE		
40000	78	nut, hex, No. 6-32	
40001	2	nut, hex, 3/8"	
40007	10	nut, hex, No. 4-40	
40016	1	nut, hex, 1/2"	
41000	22	screw, No. 6-32 x 1/4"	
41007	1	screw, No. 6-32 x 3/4"	
41016	8	screw, No. 4-40 x 1/4"	
41035	11	screw, No. 6 self-tapping	
41045	4	screw, No. 6 self-tapping, brown	
41080	5	screw, No. 6-32 x 5/16	
41089	6	screw, No. 6-32 x 3/16, round head	
41090	2	screw, No. 4-40 x 5/16	
42000	3	washer, lock, 3/8"	
42001	3	washer, flat, 3/8"	
42002	38	washer, lock, No. 6	
42003	2	washer, flat fiber, No. 6	
42007	10	washer, lock, No. 4	
42020	1	washer, rubber, 1/2"	
42505	2	pin, cotter	
43000	4	lug, ground, No. 6	
45002	2	standoff, shoulder, 3/16"	
46000	2	lug, ground, No. 4	
	SHEET METAL		
00101	1	panel, control (nomenclature)	
01203	1	chassis	
01204	1	dial pan (scale plate)	
01205	1	shield, cover	
01206	1	shield	
01207	1	bracket, left	
01208	1	bracket, right	
01918	1	bracket, capacitor	
01919	1	bracket, switch	
00002	1	frame	
00005	1	cabinet	

Figure 4 - 2. Schematic Diagram for Model 722



NOTES

1. All resistors are in ohms, 1/2W, 10%, unless otherwise specified.
2. All capacitors are in uuf, 10%, unless otherwise specified.
3. M = Megohms (1, 000, 000).

K = Kilohms (1, 000)

4. "BAND" switch S1 shown in "OFF" Extreme counter-clockwise position.
5. "MODE" switch S2 shown in "SPOT" position.

VOLTAGE MEASUREMENT INSTRUCTIONS
Voltages Measured to Ground with VTVM When:

1. FUNCTION switch is in "SPOT" position.
2. BAND switch in 80M position.
3. VFO tuned to 3.5Mc.

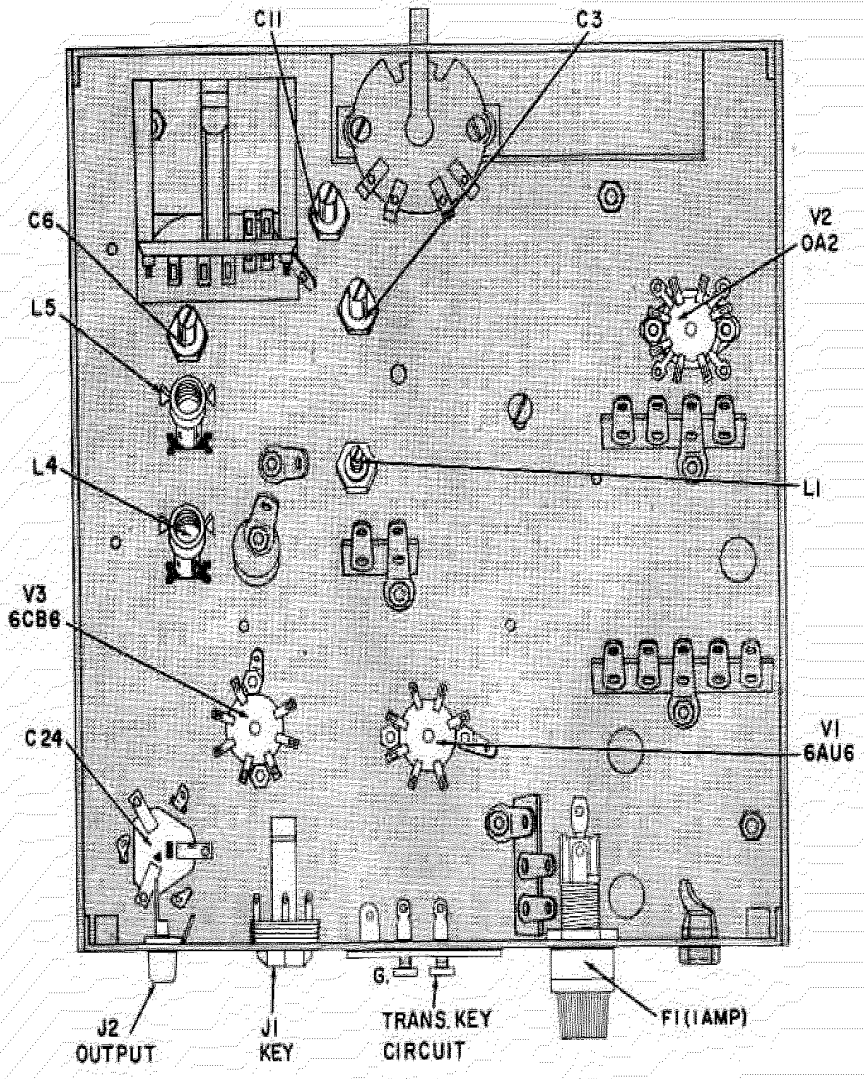


Figure 4-3 Bottom Chassis Layout