ELECRAFT® K3S

HIGH-PERFORMANCE

160 – 6 METER TRANSCEIVER

KBPF3A GENERAL COVERAGE RECEIVE OPTION
INSTALLATION INSTRUCTIONS

Rev A1, July 2, 2015

Contents

⚠ Elecraft manuals with color images may be downloaded from
www.elecraft.com.

Introduction

This manual covers the installation of the KBPF3A General Coverage Receive option in your K3S or K3 transceiver.

The KBPF3A provides the proper input filters to optimize receiver sensitivity outside of the Ham bands from 100 KHz to 30 MHz and from 48 MHz through 54 MHz. Both the main receiver and the optional KRX3A sub receiver may be equipped with the KBPF3A.

The KBPF3A consists of a single circuit board supported by two threaded standoffs. It plugs into the K3S or K3 RF board that covers the bottom of the chassis enclosure, or the KRX3A Subreceiver board inside the shielded enclosure. The attachment points for the KBPF3A and KBPF3 are identical, so no change is needed if you are upgrading from the KBPF3 to the KBPF3A.The K3S and later K3 transceivers are already equipped with the necessary standoffs in both the KRX3A sub receiver and the main receiver. For those with an older K3 that does not have the necessary standoffs pre-installed, a pair of standoffs and all the necessary hardware is included in this kit, along with full instructions for installing them.

In any case, only a few simple hand tools are needed and the installation of the KBPF3A board does not involve any soldering. The tools required are listed on page 5.

⚠ **If you are adding the KBPF3A to s K3 transceiver:**

1. **The K3 must be equipped with the KSYN3A synthesizer to tune below 500 kHz. The KSYN3A synthesizer is standard on the K3S and newer K3 transceivers. See Appendix B on page 22 if you aren't sure what type of synthesizer is installed in your K3.**

2. **K3 transceivers need a bypass capacitor added to the K3 RF board if the KBPF3 is being added to the main receiver or. A bypass capacitor must be added to the KRX3 main board if the KBPF3 is being added to the sub receiver. See Appendix A on page 17 for detailed instructions for installing the capacitor(s).**

Customer Service and Support

Technical Assistance
You can send e-mail to k3support@elecraft.com and we will respond quickly - typically the same day Monday through Friday. Telephone assistance is available from 9 A.M. to 5 P.M. Pacific time (weekdays only) at 831-662-8345. Please use e-mail rather than calling when possible since this gives us a written record of the details of your problem and allows us to handle a larger number of requests each day.

Repair / Alignment Service *(We want to make sure everyone succeeds!)*
If necessary, you may return your Elecraft product to us for repair or alignment. (Note: We offer unlimited email and phone support to get your kit running, so please try that route first as we can usually help you find the problem quickly.)

IMPORTANT: You must contact Elecraft before mailing your product to obtain authorization for the return, what address to ship it to and current information on repair fees and turn around times. (Frequently we can determine the cause of your problem and save you the trouble of shipping it back to us.) Our repair location is different from our factory location in Aptos. We will give you the address to ship your kit to at the time of repair authorization. *Packages shipped to Aptos without authorization will incur an additional shipping charge for reshipment from Aptos to our repair depot.*

Preventing Electrostatic Discharge Damage

Sensitive components may be damaged by Electrostatic Discharge (ESD) simply by touching them or a circuit board containing them unless you take specific steps to prevent such damage. Damage may occur with static discharges far too little for you to notice.

A damaged component may not fail completely at first. Instead, the damage may result in below-normal performance for an extended period of time before you experience a total failure.

Parts which are especially ESD-sensitive are identified in the parts list and in the assembly procedures.

We strongly recommend you take the following anti-static precautions (listed in order of importance) to ensure there is no voltage difference between the components and any object that touches them:

- Leave ESD-sensitive parts in their anti-static packaging until you install them. The packaging may be a special plastic bag that allow static charges to flow harmlessly over their surface, or a component's leads may be inserted in conductive foam that keep them at the same potential.

- Wear a conductive wrist strap with a series 1-megohm resistor that will constantly drain off any static charge that accumulates on your body. If you do not have a wrist strap, touch a ground briefly before touching any sensitive parts to discharge your body. Do this frequently while you are working. You can collect a destructive static charge on your body just sitting at the work bench.

⚠ *WARNING*

DO NOT attach a ground directly to yourself without a current-limiting resistor as this poses a serious shock hazard. A wrist strap must include a 1-megohm resistor to limit the current flow. If you choose to touch an unpainted, metal ground to discharge yourself, do it only when you are not touching live circuits with any part of your body.

- Use a grounded anti-static mat on your work bench (see below).

- If you pick up a pc board that was not placed on an anti-static mat or in an anti-static package, touch first a ground plane connection on the board such as a connector shell or mounting point.

- If you use a soldering iron to work on a circuit board, be sure your iron has an ESD-safe grounded tip tied to the same common ground used by your mat and wrist strap.

Choosing an Anti-Static Mat

An anti-static mat must bleed off any charge that comes in contact with it at a rate slow enough to avoid a shock or short circuit hazard but fast enough to ensure dangerous charges cannot accumulate. Typically, a mat will have a resistance of up to 1 Gigaohm (10^9 ohms). Testing a mat requires specialized equipment, so we recommend that you choose an anti-static mat that comes with published resistance specifications and clean it as recommended by the manufacturer. Testing has shown that many inexpensive mats that do not specify their resistance have resistance values much too high to provide adequate protection, even after they were cleaned and treated with special anti-static mat solutions.

Suitable anti-static table mats are available from many sources including:

- U-line (Model 12743 specified at 10^7 ohms)

- Desco (Model 66164, specified at 10^6 to 10^8 ohms)

- 3M^{TM} Portable Service Kit (Model 8505 or 8507, specified at 10^6 to 10^9 ohms)

Preparing for Installation

Tools Required
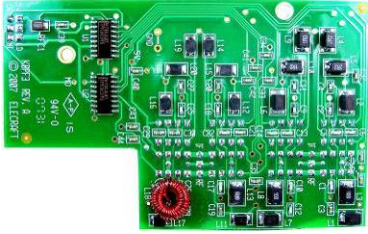
1. #0 and #1 size Phillips screwdrivers. To avoid damaging screws and nuts, a power screwdriver is *not* recommended. Use the screwdriver that best fits the screw in each step.
2. Small needle-nose pliers or tweezers to position small parts.
3. Soft cloth or clean, soft static dissipating pad to lay cabinet panels on to avoid scratching.

The following tools are strongly recommended:

1. ESD wrist strap.
2. Static dissipating work pad.

Parts Included

The following parts should be included in your kit. Check to ensure you have them all. If any parts are damaged or missing, contact Elecraft for replacements (see *Customer Service and Support*, page 3).

ILLUSTRATION	DESCRIPTION	QTY.	ELECRAFT PART NO.
	KBPF3A Printed Circuit Board ⚠ *ESD Sensitive. Follow ESD safe handling procedures. Keep in ESD-safe bag until installed.*	1	E850269
	Standoff, 4-40, 1/2" (13 mm)	2	E700061
	Screw, 4-40, 1/4" (6.4 mm)	4	E700005
	Lock Washer, #4 split	6	E700004

Installation Procedure

⚠ **As you install components and reassemble your K3S or K3, be sure all the screws are in place and secure, but do not over tighten them. Failure to tighten all screws may result in poor shielding of sensitive components, resulting in possible noise or birdies in the receiver as well as other difficult-to-trace problems.**

Removing the Top Cover and Chassis Stiffener

☐ Disconnect power and all cables from your K3S/K3.

☐ Remove the nine screws to free the top cover as shown in Figure 1. After the cover is open, lift it gently to reach the speaker wire connector. Unplug the speaker then set the top cover aside in a safe place.

⚠ **Whenever you remove screws from a panel, if one screw seems too tight to loosen without damaging it, first loosen the other screws then try again. Sometimes one screw binds in its hole when the other screws are tightened.**
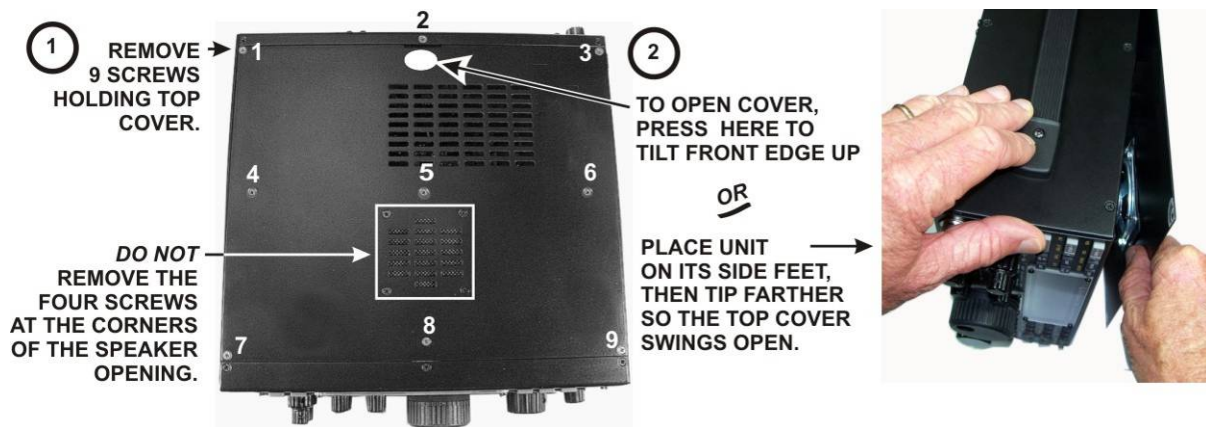
Figure 1. Removing K3s/K3 Top Cover.

⚠ CAUTION: Touch an unpainted metal ground or wear a grounded wrist strap before touching components or circuit boards inside the K3s/K3. See *Preventing Electrostatic Discharge Damage* **on page 4 for more information.**

☐ Remove the stiffener bar that runs from side to side across the top of the chassis. This is the bar the three screws across the center of the top cover thread into. The bar is held in place by a single screw at each side and, if the KPA3A 100 watt option is installed, by two screws attaching it to the KPA3A shield. KPA3A and some older KPA3 shields have PEM nuts permanently attached to the shield for the screws. Others use ordinary nuts that must be removed with the screws and lock washers.

Removing the K144XV 2-Meter Module

If you do not have the K144XV 2-meter option installed, skip this section and go to *Removing the KRX3 or KRX3A Sub Receiver Module* on page 8.

☐ The K144XV module is mounted on the left side panel of the K3. Remove the five screws shown in Figure 2 and lift the top cover off of the module. Note: Some units may have a sixth screw in the hole near the Elecraft name on the top cover that must be removed.
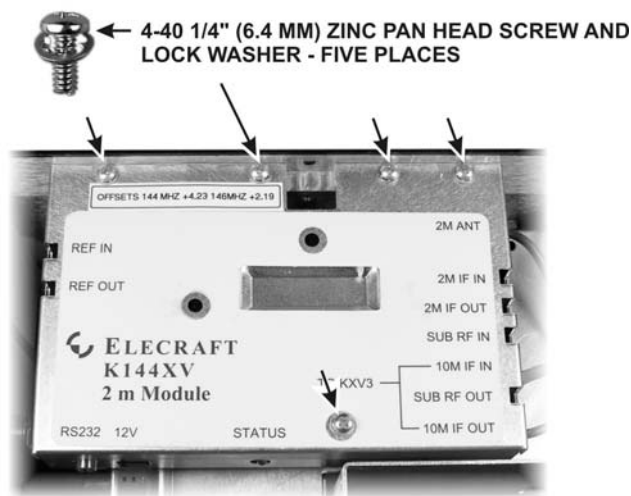

Figure 2. Removing the K144XV 2 Meter Module.

☐ Unplug the coaxial cables and the power connector attached to the K144XV module. Pull on the metal part of the TMP coaxial connectors (see Figure 4) . Do not pull on the cables.

☐   Remove the three 6-32 screws that secure the K144XV module to the side panel. Hold the module to keep it from falling if the KRX3 sub receiver is not installed. Lift the module out, set the top cover on it to protect it, and set it aside in a safe place.

Removing the KRX3 or KRX3A Sub Receiver Module

If your K3s or K3 is equipped with the optional KRX3 or KRX3A sub receiver, you must remove the sub receiver module to install the KBPF3A in either the main receiver or the sub receiver. The sub receiver module is the "L" shaped metal enclosure (see Figure 3). Remove the sub receiver module as follows:

☐   Remove the two 1-1/2" (38 mm) screws and lock washers shown in Figure 3. These screws extend all the way through the KRX3 module and secure it to standoffs mounted on the main RF board that fills the bottom of the K3s/K3.
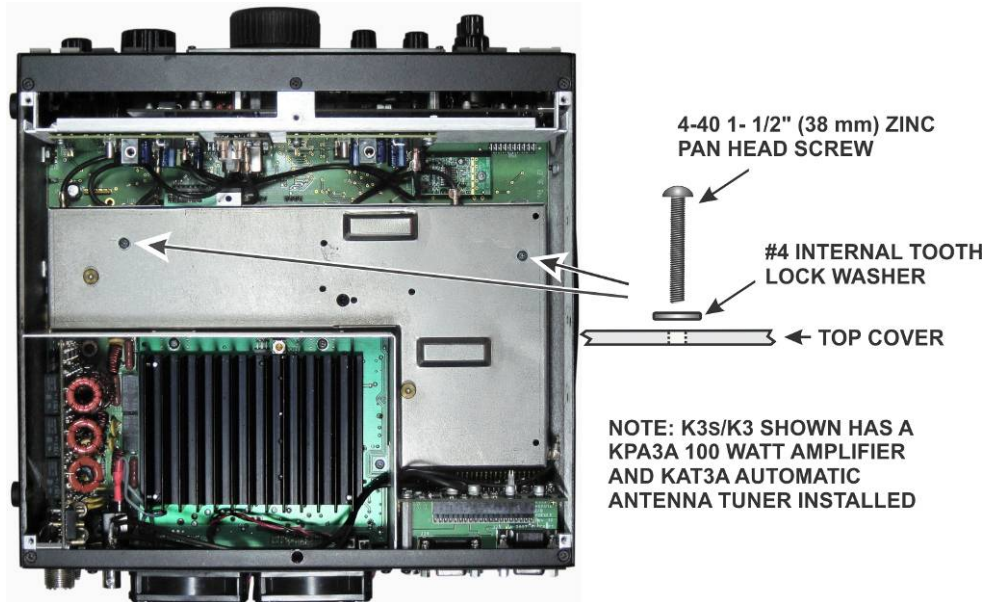

Figure 3. Removing the KRX3 or KRX3A Module.

⚠ **In the following steps you will handle small TMP coaxial connectors. These are friction-fit connectors shown in Figure 4. Handle the connectors by the grips as shown.** *Do not pull on the coaxial cable.*

Figure 4. TMP Coaxial Connectors.

☐ Hold the KRX3 or KRX3Asubreceiver module by the two brass knurled nuts on the top, and lift it straight up to gain access to the small TMP coaxial connectors plugged into the sub receiver module. There are two along the front. There may be one at the back as well, depending upon the options installed. As you lift the sub receiver module, it will unplug from two small interface circuit boards. One is at the front and the other is at the rear. These small boards may come out with the module or they may remain attached to the main RF board.

☐ Unplug the TMP coaxial cables leading to the sub receiver module, then lift the module free and set it aside.

☐ Locate the two small interface circuit boards that fit between the connectors on the KRX3 module and the connectors on the RF board. Remove them and put them in a safe place.

Installing the KBPF3A in the Sub Receiver

If you are *not* installing a KBPF3A in the sub receiver, go directly to *Installing the KBPF3A in the Main Receiver* on page 12.

☐ Unscrew the two knurled nuts shown in Figure 5 and lift the top half of the enclosure off. There are two unthreaded sleeves over the long screws above the circuit board that will slide off easily (see Figure 6). Be sure you don't lose them.
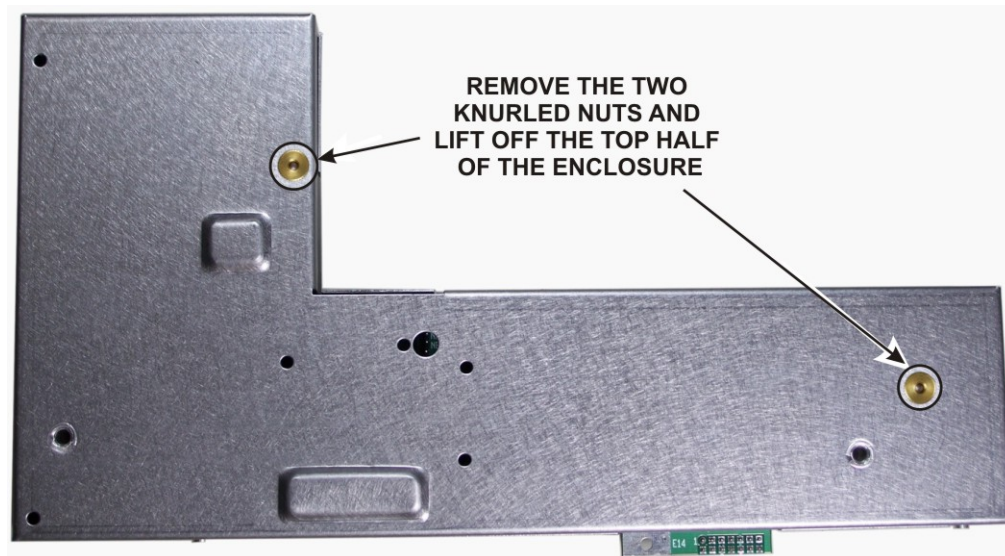

Figure 5. Removing the Top of the Sub Receiver Enclosure.

☐ Check to see if the standoffs are already mounted on the sub receiver at the locations shown in Figure 6. if so, go directly to *Installing the KBPF3A on the Sub Receiver* Board on page 11 Otherwise continue with *Installing Standoffs on the Sub Receiver* Board below.
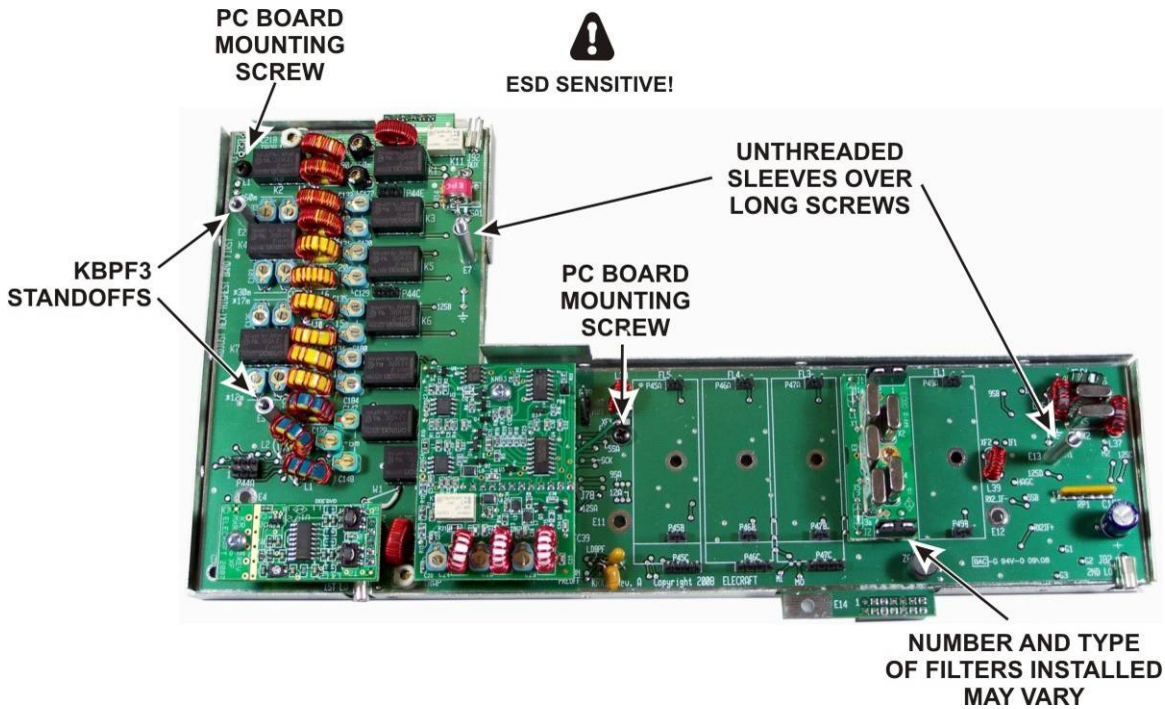
Figure 6. Sub Receiver PC Board

Installing Standoffs on the Sub Receiver Board

☐ Remove the two unthreaded sleeves over the long screws shown in Figure 6, then remove the two PC board mounting screws. Each screw has a split lock washer under it.

☐ Lift the pc board with the two pony boards and filters attached out of the bottom half of the enclosure. The board fits snugly in the bottom of the enclosure with small bumps along the edges of the board resting in small holes along the sides of the enclosure. Lift the board straight up and off of the long screws.

☐ Install the 1/2" (13 mm) standoffs at locations E1 and E3 on the sub receiver pc board (see Figure 6). Use the hardware exactly as shown in Figure 7. The lock washer between the standoff and the pc board is very important to establish the correct height above the board.

Figure 7. Installing the Standoffs.

10

☐ Place the sub receiver main circuit board in the bottom shield so that the 1-1/2" screws extend through holes E7 and E13 on the board. Press the main circu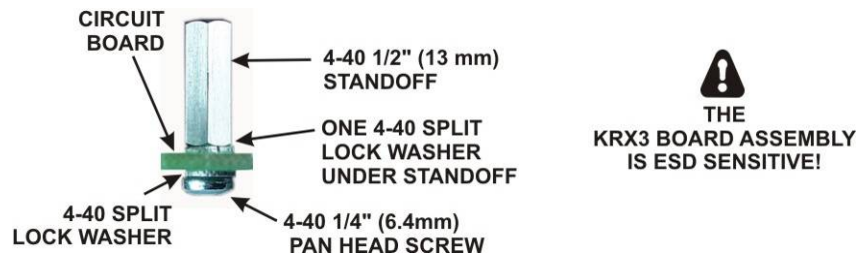it board down against the standoffs. The board will "snap" into position in the enclosure as the small bumps along the edges of the board slip into the holes in the sides of the shield. When properly positioned, the board will be against the standoffs in the bottom of the enclosure under holes E1 and E10 (the label for E10 may be partially covered by a jumper wire on the board).

☐ Secure the sub receiver main circuit board to the standoffs at E1 and E10 with 4-40 3/16" (4.8 mm) black pan head screws and #4 split lock washers you removed earlier (see Figure 8).
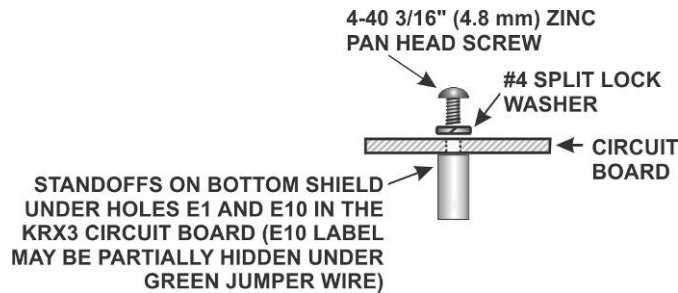
Figure 8. Mounting the Main Sub Receiver Board on Bottom Shield.

Installing the KBPF3A on the Sub Receiver Board

☐ Install the KBPF3A, making sure the three connectors on the bottom of the board mate with P44A, P44C and P44E on the sub receiver board. The screw holes will line up with the standoffs when the board is positioned correctly (see Figure 6). Secure the KBPF3A board with two 4-40 1/4" (6.4 mm) pan head screws and #4 split lock washers as shown.

Figure 9. Mounting KPBF3A on the Sub Receiver Board.

☐ If you removed them, place the 7/8" (22 mm) unthreaded sleeves over the long screws so they rest against the top of the circuit board (see Figure 6).

☐ Place the top shield over the assembly and adjust its position so the edge of the top fits inside the bottom and rests against the sub receiver main board on all sides. The long screws will pass through holes in the top cover.

☐ Secure the top with the knurled nuts, tightened only enough to hold the cover in place so it isn't loose.
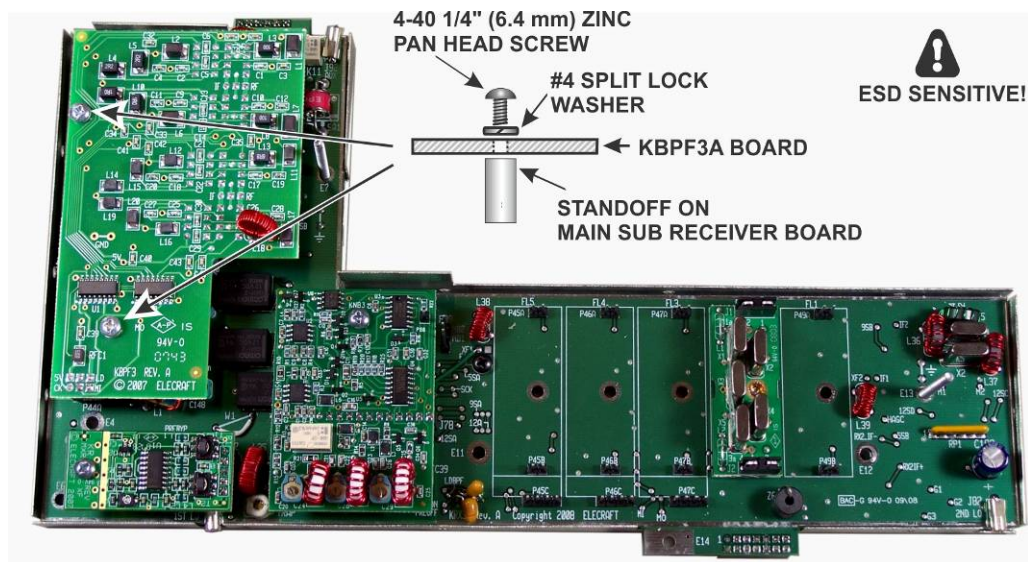
If you are installing another KBPF3A in the main receiver, go to *Installing the KBPF3A in the Main Receiver* below. Otherwise, go to *Reassembly* on page 15 to finish the installation.

Installing the KBPF3A in the Main Receiver

Installing the Standoffs on the RF Board

Check the RF board that covers the bottom of the chassis area to see if the standoffs shown in Figure 10 are installed. (Note that the stiffening bar across the top of the chassis has been removed to show the standoffs more clearly.) Do the following steps only if the standoffs are not already installed as shown. If the standoffs are already in place, go directly to *Installing the KBPF3A* on page 14.
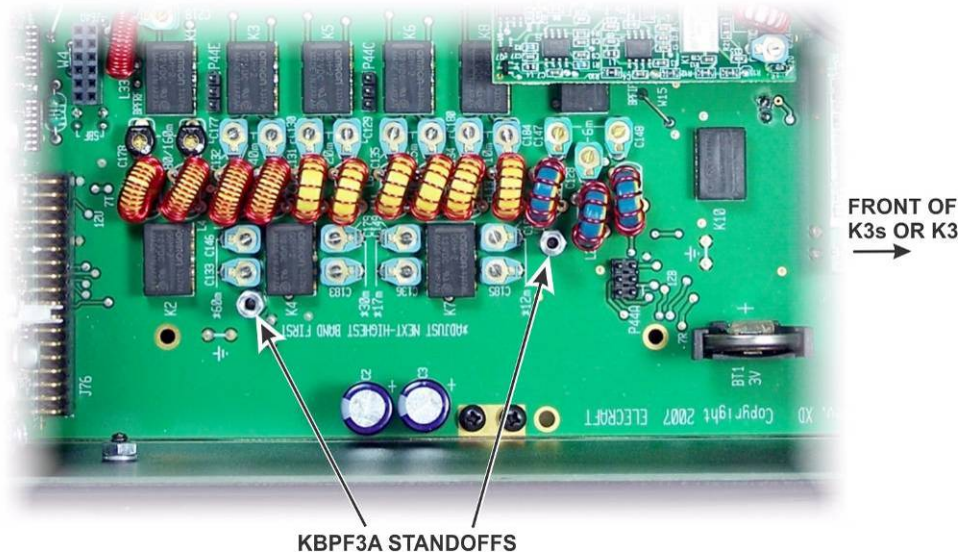

Figure 10. KBPF3A Standoff Locations.

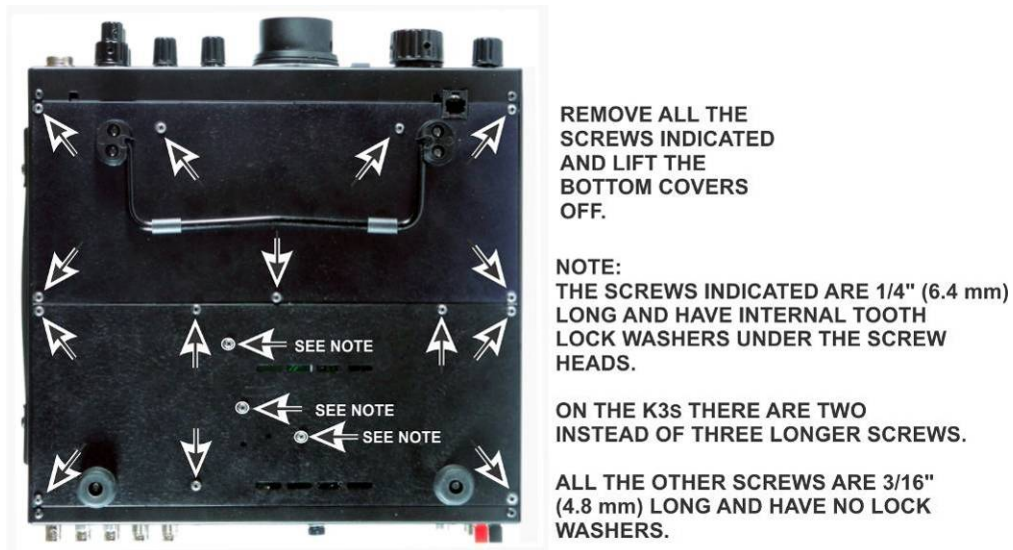☐ Remove both bottom covers from the K3sor K3 by removing the screws shown in Figure 11.

REMOVE ALL THE
SCREWS INDICATED
AND LIFT THE
BOTTOM COVERS
OFF.

NOTE:
THE SCREWS INDICATED ARE 1/4" (6.4 mm)
LONG AND HAVE INTERNAL TOOTH
LOCK WASHERS UNDER THE SCREW
HEADS.

ON THE K3s THERE ARE TWO
INSTEAD OF THREE LONGER SCREWS.

ALL THE OTHER SCREWS ARE 3/16"
(4.8 mm) LONG AND HAVE NO LOCK
WASHERS.

Figure 11. Removing K3s/ K3 Bottom Cover.

☐ Install two 1/2" (13 mm) standoffs on the RF board as shown Figure 12.Use the hardware exactly as shown. The lock washer between the standoff and the pc board is very important to establish the correct height above the board.

TOP OF
RF BOARD

4-40 1/2" (13 mm)
STANDOFF

4-40 SPLIT
LOCK WASHER

ESD SENSITIVE!

4-40 SPLIT
LOCK WASHER

4-40 1/4" (6.4mm)
ZINC PAN HEAD SCREW
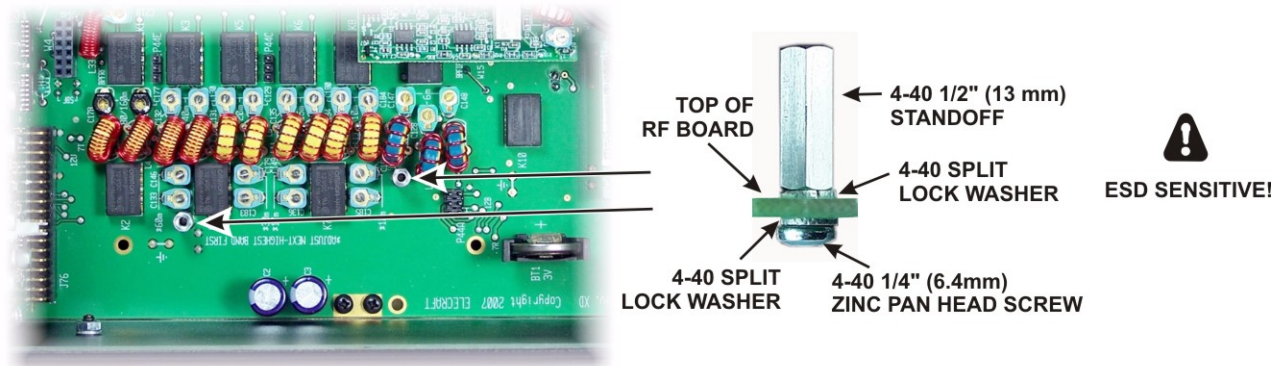
Figure 12. Installing KBFP3A Standoffs.

☐ Replace both bottom covers using the 4-40 black pan head screws you removed earlier. Note that three locations take the 4-40 1/4" (6.4 mm) black pan head screws with lock washers as shown in Figure 11 while the remainder are 4-40 3/16" (4.8 mm) screws . Be sure these are in the correct locations!

⚠ CAUTION!

Failure to replace the 1/4" (6.4 mm) bottom screws with their lock washers in the locations shown in Figure 11 may destroy power transistors in your K3s/K3.

Installing the KBPF3A Board on the RF Board

There are three connectors on the bottom of the KBPF3A board that must be properly mated to P44A, P44C and P44E on the RF board (see Figure 13). Even though the connectors may be hard to see as they are mated, especially if the amplifier shield is installed, they can be aligned as follows:

☐ Set the KBPF3A board in place over the standoffs, aligning it so the holes in the board are aligned with the screw holes in the tops of the standoffs. This will align the connectors.

☐ Press down on the board to mate the while checking to ensure that the holes in the board are aligned with the holes in the standoffs. *Note that simply installing the mounting screws will not ensure the 3-pin connectors are fully mated.* When properly mounted the board should rest on top of the standoffs and be parallel with the RF board underneath.

☐ Attach the board with a 4-40 1/4" (6.4 mm) zinc pan head screw and lock washer at each standoff as shown in Figure 13.
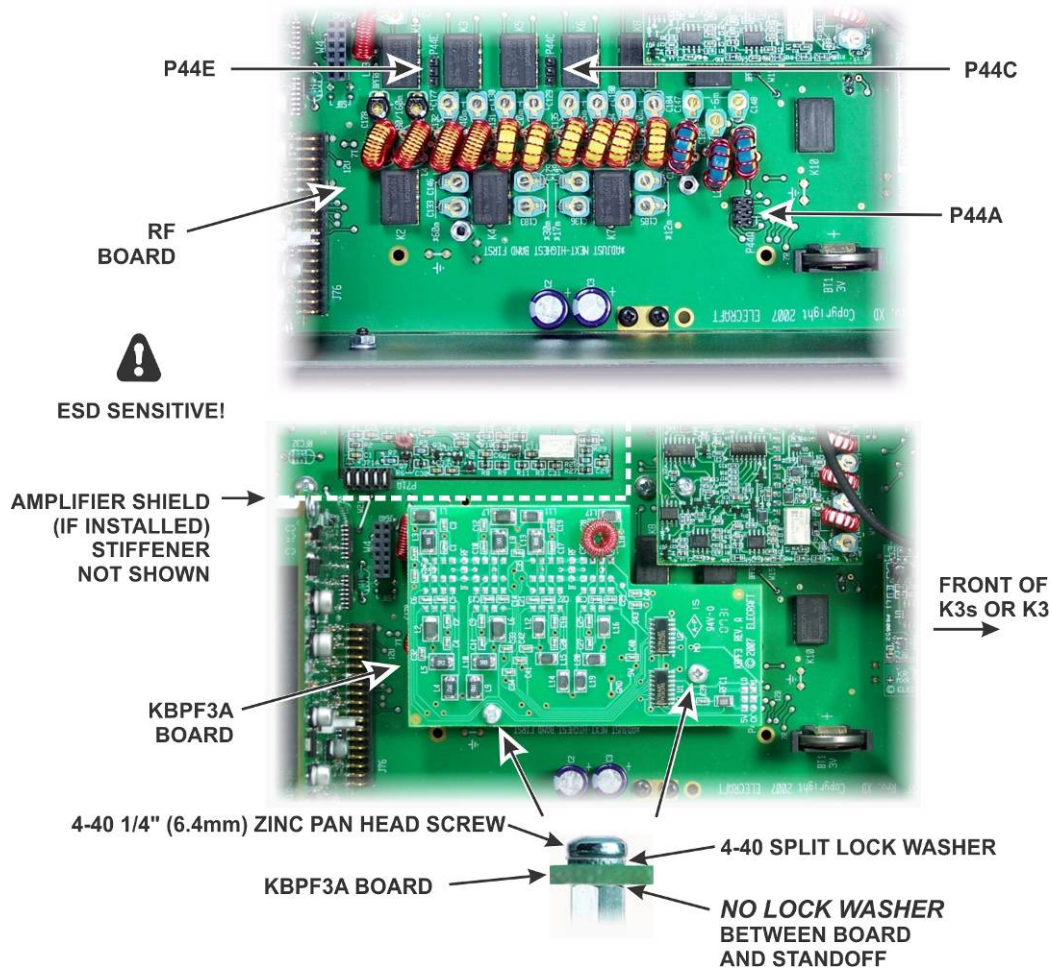

Figure 13. Mounting the KPBF3 Board.

Reassembly

☐ If your K3S/K3 is equipped with the sub receiver, turn to your *KRX3A Sub Receiver Installation and Operation* manual, *Installing the KRX3A Sub Receiver Module* section to replace the KRX3A module. Be especially careful to do the following as described in that procedure:

– If you have a K3 (not a K3S), be sure the cover on battery BT1 on the RF board is in place. The cover is essential to avoid shorting the battery. The outer rim of the battery is the positive terminal, and may come in contact with the grounded bottom of the sub receiver enclosure if the cover is not in place. The K3S battery lies flat on the board and needs no protective cover.

– Be sure all the TMP cables are properly connected or your K3S or K3 will not operate properly.

⚠ REPLACE ALL THE SCREWS!

The chassis has excellent rigidity despite its light weight. The screws that hold the top cover in place are an important part of the structural design. Be sure to replace all the screws and verify they are tight whenever you replace the cover or other panels

☐ If your K3 is equipped with the K144XV option and you removed the K144XV module earlier, replace it now. Refer to your K144XV manual for instructions for reconnecting the power and coaxial cables and replacing the module cover. If you find more cables than shown in the K144XV manual, your unit has the K144 Reference Oscillator Phase Lock option installed. Refer to that manual to connect the remaining cables.

☐ If you removed the chassis stiffener replace it as shown in Figure 14. Some stiffener bars do not have permanently-attached PEM nuts for the screws attaching them to the amplifier shield. If not, you found 4-40 nuts when the bar was removed. Place the lock washers under the nuts instead of under the screw heads.
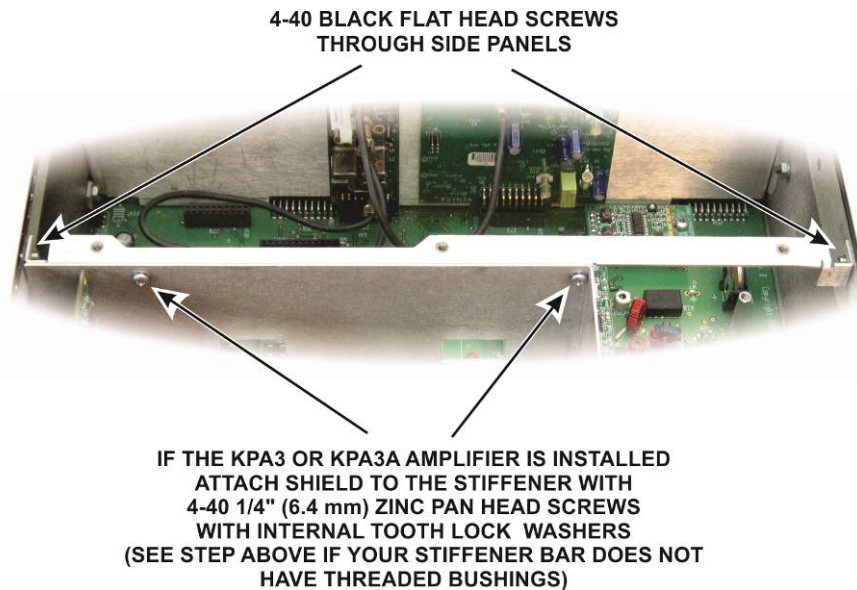

Figure 14. Installing the Chassis Stiffener.

☐ Hold the top cover above the K3S/ K3, route the speaker wire under the stiffener bar and plug it into P25 on the KIO3 or KIO3B board at the left rear of the chassis as shown in Figure 15.
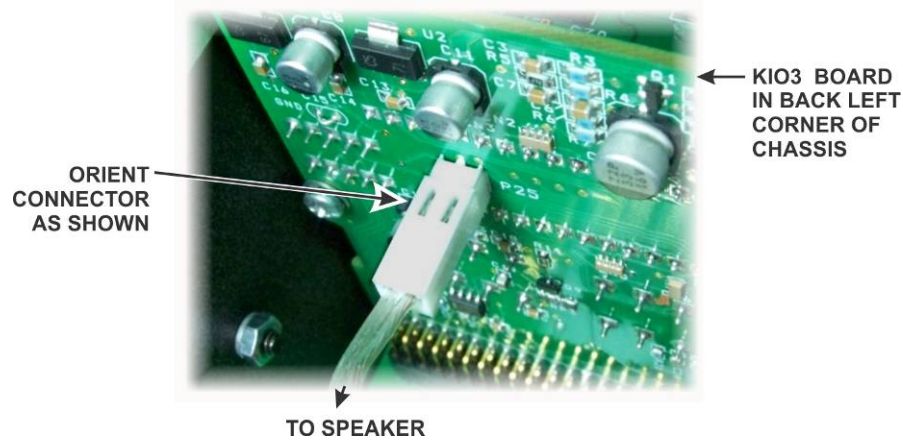

ORIENT
CONNECTOR
AS SHOWN

KIO3 BOARD
IN BACK LEFT
CORNER OF
CHASSIS

TO SPEAKER

Figure 15. Connecting Speaker Cable.

☐ Position the top cover on the K3S/ K3. Note that the tab on the back center goes under the rear lip of the rear panel. Secure the top cover with the nine 4-40 3/16" (4.8 mm) black flat head screws you removed earlier.

Enable the KBPF3A Module

☐ Enable the KBPF3A for either the main or sub receiver using the `CONFIG` menu as described in the Owner's Manual. *The KBPF3A will not operate until this is done!*

This completes the installation of the KBPF3A module(s) in your K3S or K3 transceiver.

Appendix A
Modification Required for K3 and KRX3 Receivers

⚠ **This modification is required ONLY on K3 (not K3S) transceivers and KRX3 (not KRX3A) sub receivers**.

To obtain proper operation on the lower frequency tuning ranges, a bypass capacitor must be added the K3 RF board when a KBPF3A is added to the main receiver or to the KRX3 main board when a KBPF3A is added to the sub receiver. Adding the capacitor(s) requires soldering a leaded part to each board.

This capacitor is already installed in all K3S transceivers, and in the A version (KRX3A) of the sub receiver. You can easily check to see if the capacitors are present while installing the KBPF3A modules. The installed bypass capacitors are shown in Figure A-1 and Figure A- 3. If you are unsure whether you need to install them, you may wish to obtain the necessary capacitors and be ready to install them to avoid having to disassemble your K3 twice.

Parts Required

A 220 µF, 16V aluminum-polymer capacitor is required for each KBPF3A installation. The Nichicon RL81C221MDN1KX capacitor shown at the right is recommended. It is available from many suppliers such as Digikey (part number 493-4026-1-ND), Mouser Electronics (part number 647-RL81C221MDN1KX) or Newark (part number 79R3109). If necessary it may be obtained from Elecraft (part number E530625).

⚠ **DO NOT SUBSTITUTE A COMMON ELECTROLYTIC CAPACITOR**
The aluminum polymer type specified is required to obtain the bypass performance required for optimum receiver performance.

Tools Required

In addition to the tools listed *Tools Required* on page 5 in the main text, you will need:

1. Flush-cutting diagonal cutter.

2. ESD-Safe soldering iron with a fine tip.

3. 63/37 or 60/40 rosin-core solder.

Installation in the KRX3 Sub Receiver

You need to make this modification only if you are installing the KBPF3A board in a KRX3 sub receiver.

☐ After opening the sub receiver enclosure (see Figure 9, page 11) check to see if the modification has been made before. If so the capacitor will be visible under the Noise Blanker module (see Figure A-1).
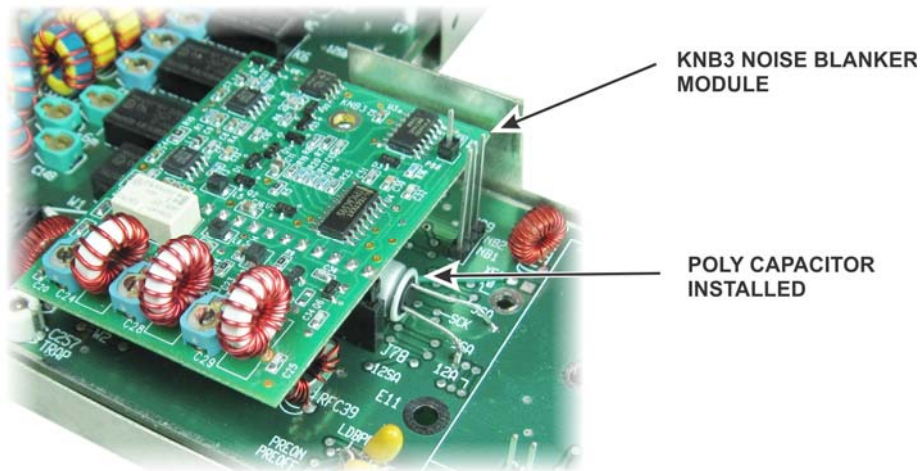

Figure A-1. Poly Capacitor Location on KRX3 Main Board.

☐ To install the capacitor, remove the KNB3 Noise Blanker module. Remove the screw and lock washer and then unplug the KNB3 from the KRC3 main board.

☐ Remove the KRX3 Main board from the enclosure so you can solder from the bottom side of the board. Details for removing the main board are given in the main part of the manual under *Installing Standoffs on the Sub Receiver Board* on page 10. If you need to install the standoffs, you can do both at the same time.

☐ Install the poly capacitor on the sub receiver main board as shown in Figure A- 2 . Bend the leads so the capacitor lays against the pc board next to J78 as shown so it will fit under the KNB3 module. The capacitor case is covered with a thin clear insulation that prevents short circuits. Recommend you solder from the bottom side of the board. Clip the leads flush after soldering.

⚠ **Observe polarity when installing the capacitor. Unlike older electrolytic capacitors, the negative lead on the solid polymer electrolytic capacitor is marked with red instead of black.**
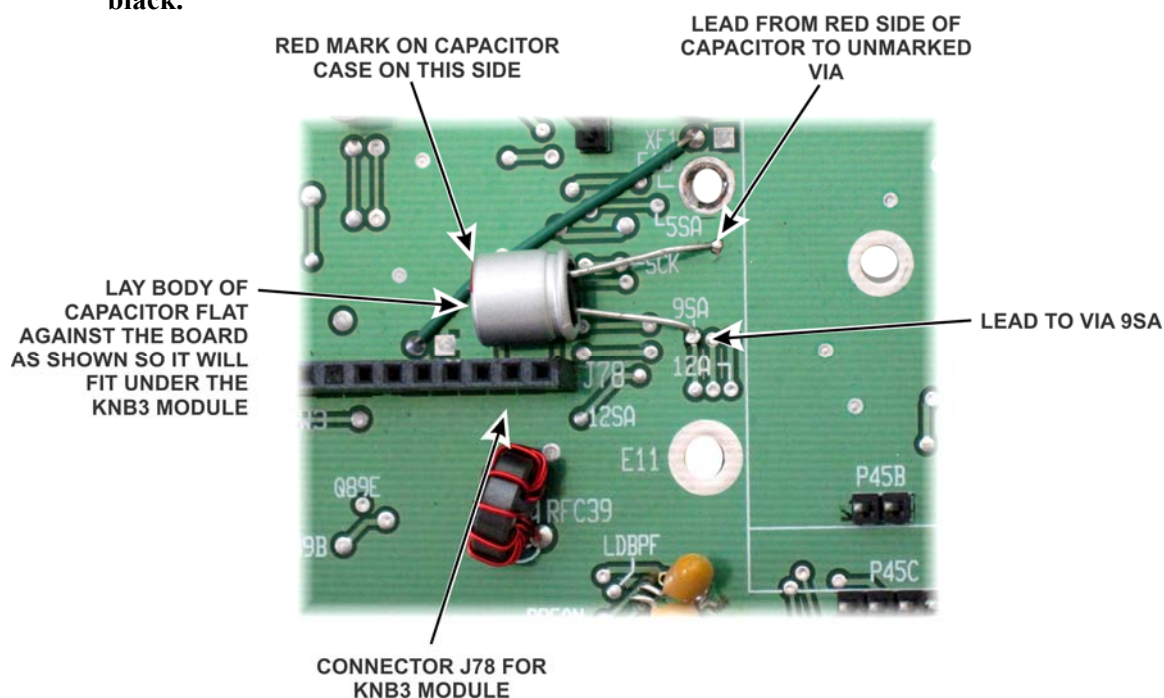

Figure A- 2. Mounting the Poly Capacitor on the KRX3 Main Board.

☐ Replace the KNB3 module and secure it with the screw and lock washer. Use the split ring lock washer you removed. Do not use an internal tooth lock washer. An internal tooth lock washer may cause a short circuit to nearby circuits.

☐ Reassemble the KRX3 as described in the main text under *Installing Standoffs on the Sub Receiver Board* after you have installed the standoffs for the KBPF3A module, if needed.

Installation in the K3 Main Receiver

You need to make this modification only if you are installing the KBPF3A module in the K3 main receiver.

☐ After removing the K3 top cover as described on page 6, check to see if the modification has been made before as follows:

- If the KRX3 sub receiver is installed, remove the sub receiver module as described under *Removing the KRX3 or KRX3A Sub Receiver Module* on page 8. You will need to do this in any case to install the KBPF3A module.

- If the capacitor has been installed, it will be visible under the KNB3 Noise Blanker module on the K3 RF board next to the crystal filter locations (see Figure A- 3).
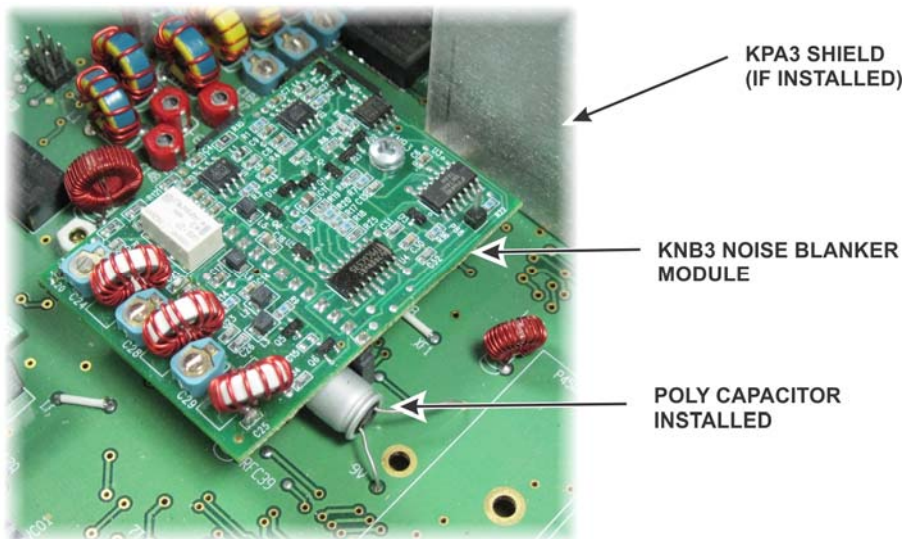
KPA3 SHIELD
(IF INSTALLED)

KNB3 NOISE BLANKER
MODULE

POLY CAPACITOR
INSTALLED

Figure A- 3. Poly Capacitor Location on K3 RF Board.

☐ To install the capacitor, remove the KNB3 Noise Blanker module. Remove the screw and lock washer and then unplug the KNB3 from the K3 RF board.

☐ Remove the K3 bottom cover(s) as described under *Installing the Standoffs on the RF Board* on page 12. If you do not need to install the standoffs for the KBPF3A board, remove only the section of the bottom cover closest to the front panel.

☐ Install the poly capacitor on the main board as shown in Figure A- 4. Bend the leads so the capacitor lays against the pc board next to J77 as shown so it will fit under the KNB3 module. The capacitor case is covered with a thin clear insulation that prevents short circuits. Recommend you solder from the bottom side of the board. Clip the leads flush after soldering.

⚠ **Observe polarity when installing the capacitor. Unlike older electrolytic capacitors, the negative lead on the solid polymer electrolytic capacitor is marked with red instead of black.**
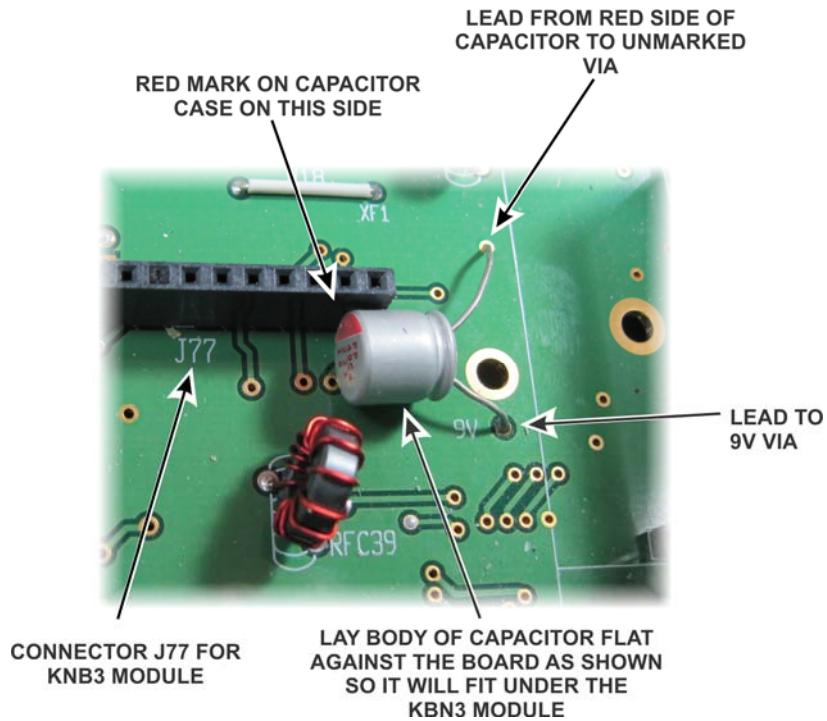

Figure A- 4. Mounting the Poly Capacitor on the K3 RF Board.

☐ Replace the KNB3 module and secure it with the screw and lock washer. Use the split ring lock washer you removed. Do not use an internal tooth lock washer. An internal tooth lock washer may cause a short circuit to nearby circuits.

☐ Replace the bottom cover(s) after you have installed the standoffs for the KBPF3A module, if needed.

Appendix B
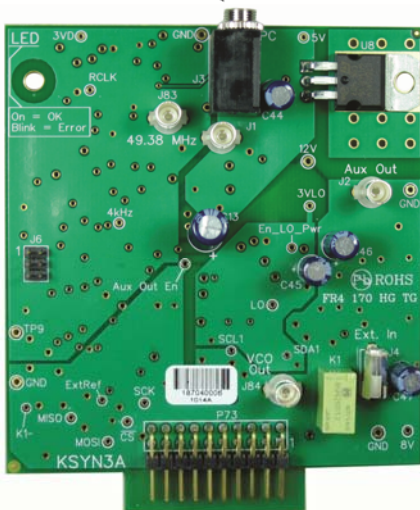# Checking Synthesizer Type in K3 Transceivers

⚠ **This applies ONLY to K3 transceivers. All K3S transceivers are equipped with the newer KSYN3A synthesizers .**

The location of the synthesizer(s) inside the K3 is shown below. The original KSYN3 synthesizers are shown.
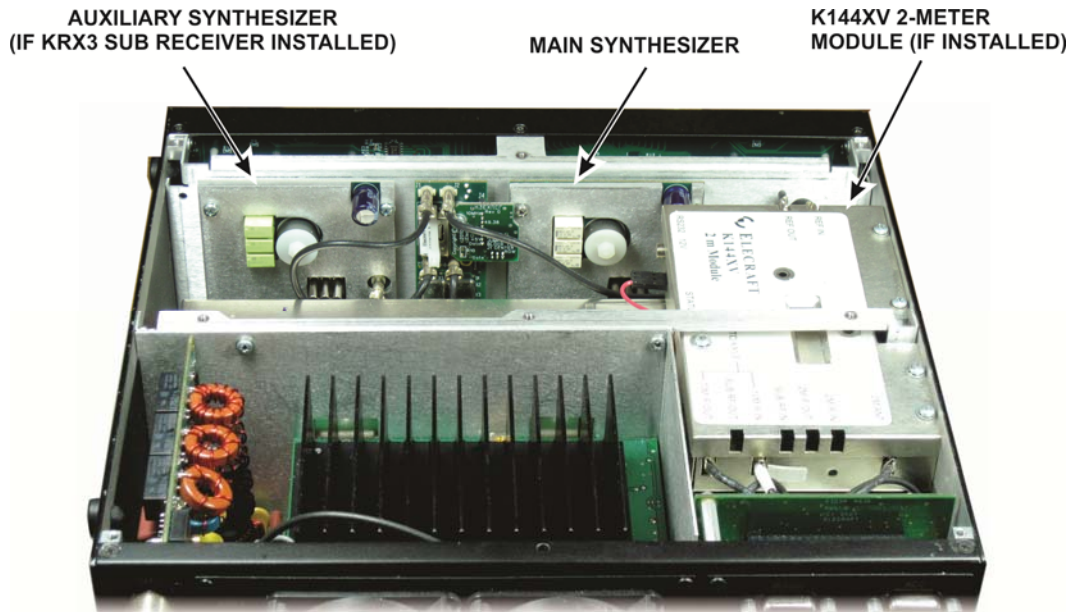
Your K3 transceiver must be equipped with the newer KSYN3A synthesizer shown below to take advantage of the extended tuning range. If you have a sub receiver installed, you must have two new KSYN3A synthesizers e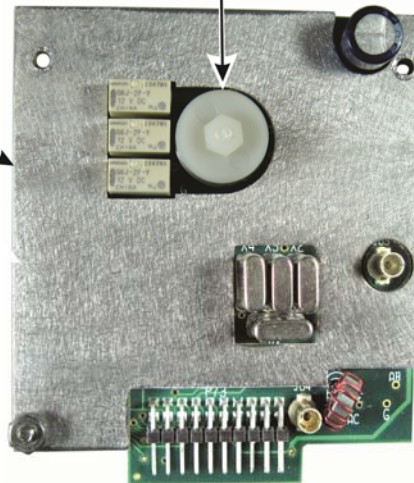ven if you install the KXBF3 module in only one receiver.