



English Translation
73 ANGEL

SP-13 SUPER AMP GaAsFET SERIES 2304 - 2400 MHz. Mast-Mounted Preamplifier

The SP-13 is SSB ELECTRONIC's newest triple stage mast-mounted preamplifier for 13cm. It features: PTT or RF-SENSED (VOX) operation, Voltage and pre-amplifier control via the feedline, three stages of pre-amplification, plus high quality coaxial relays. In addition, the SP13 is constructed on low loss teflon printed circuit board material for the lowest possible noise figure and insertion loss.

The SP-13 utilizes two low noise GaAsFet stages which are then followed by a microwave bi-polar transistor stage. Additional gain is provided by the low power microwave bi-polar transistor which maintains the system noise figure and dynamic range of the first and second stage. Voltage to the SP-13 can be feed either via the feedline or via the SO239 connector. The center pins are + and the outside shell is -.

The SP-13 Super Amp. has a built in RF SWITCHING (Vox) capability. This makes for an extremely simple installation. However, it is important that the following maximum power limits are not exceeded in order to prevent permanent damage to the GaAsFET and possible burning of the relay contacts.

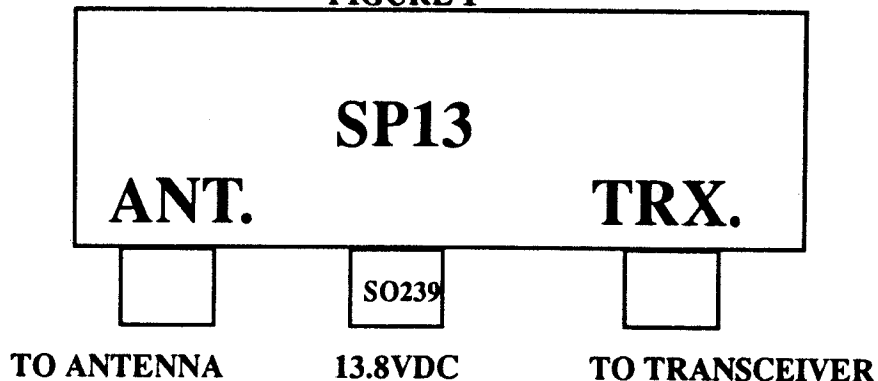
THE MAXIMUM RF VOX SWITCHED POWER IS:

2304 -2400 MHz

10 Watts

Provided these levels are not exceeded the preamp may be connected as shown in Fig. 1

FIGURE 1

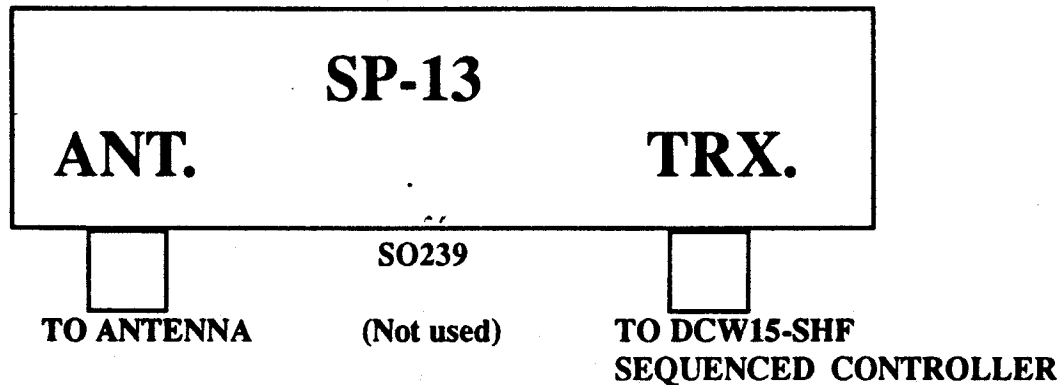


+13.8V should be connected to the SO239 connector that is located between the "N" female connectors. The center pin of the SO239 is positive and the outer shell is negative. If you choose to utilize your preamp in an RF Sensed environment as illustrated in figure 1, voltage may be left on to the preamp at all times.

Some of the newer radios can provide a switched preamp control voltage via the feedline. If your radio provides this feature, you may hookup your preamp as illustrated in Figure 1. It will not be necessary to provide 13.8VDC via the SO239 connector, since your radio will provide this function.

If higher power levels are to be used then it is imperative to use the DCW15-SHF sequenced controller. Figure 2 and Figure 3 illustrates this arrangement.

FIGURE 2



By utilizing our DCW15-SHF Sequenced Controller, the SP-13 SERIES preamplifiers can be safely used in a high power environment. The maximum sequenced power levels are:

2304-2400MHz

50 Watts

The DCW15-SHF SEQUENCER provides sequenced control of your Linear Power amplifier. It guarantees that preamplifier switchover occurs prior to linear amplifier turn-on. The DCW15-SHF insures that hot-switching of the coaxial relays at elevated power levels will not take place. The DCW15-SHF has a built in low loss BIAS "T" that provides the preamplifier control voltage via the feedline thus eliminating the additional expense of another cable. In addition, the DCW15-SHF allows front panel switch selection of Linear amplifier In/Out and Preamplifier In/Out functions.

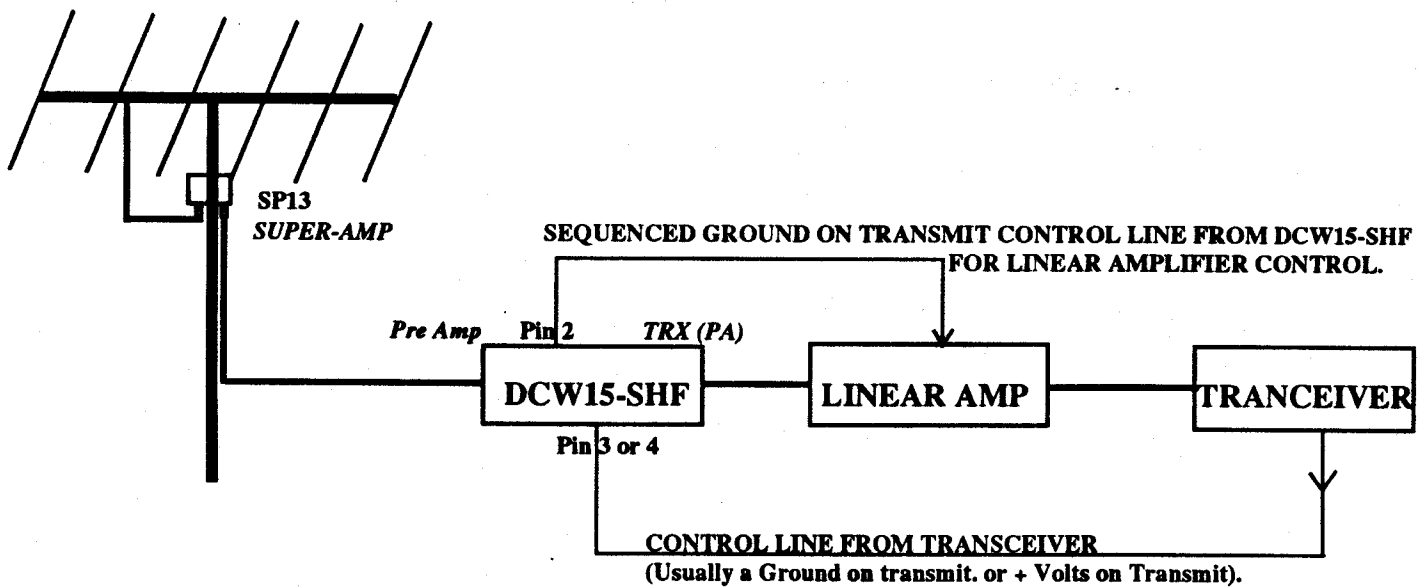


FIGURE 3

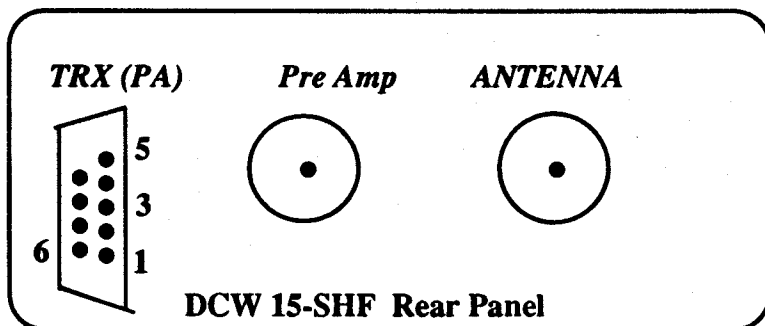
SP-13 HIGH POWER HOOK-UP

DCW15-SHF D-Sub Connector Pin-outs

Pin 1 Ground	Ground
Pin 2 PA Control	Provides a sequenced ground on transmit via a relay contact to control Linear Amplifier turn on. This function is bypassed when Linear amplifier <i>OUT</i> has been selected via the front panel.
Pin 3 PTT Line 1	Grounding this line starts sequencer functions. If your rig provides a ground on transmit via a PTT jack, connect your rig's PTT line to PIN 3.
Pin 4 PTT Line 2	Some rig's do not provide a ground on transmit to control other auxilliary equipment. If your rig provides +V on transmit, connect the +V line to Pin 4. +V on this pin starts the sequencer function. Do not exceed 13.8VDC
Pin 5 +13.8V	Connect to +13.8V
Pin 6 Ground	Ground

DCW15-SHF REAR PANEL CONNECTIONS CONTINUED

Control



TRX (PA) N(F) - If a Linear Power Amplifier is being used - connect to the Power Amplifier RF Output. If only a transceiver or a transverter is being used, connect to the RF output of the transceiver or transverter.

Pre Amp N(F) - The feedline from the preamp should be connected here. +13.8VDC will be present during receive cycles on the center pin of the "N" connector. NOTE: 13.8VDC will not be present if Preamplifier *OUT* was selected.

Note: This preamplifier has been designed with failsafe circuitry. When power is not applied to the preamp or the DCW15-SHF, the preamp is not in line.

Please insure that the cables that you use are assembled properly. Insure that the center pin of your "N" connectors are centered and do not protrude. Replacement of a relay can get expensive!

Should you ever have any questions concerning the operation or the hook up of your SP-13 SERIES Preamplifier or your DCW15-SHF Sequencer, please do not hesitate to contact us.

73's
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