



P-410X and P-412X Transceiver Preamp

The Palomar P-410X (AC) and P-412X (DC) transceiver preamps.

Transceiver Preamplifier

Model P-410X
&
Model P-412X

OPERATOR'S MANUAL

PALOMAR ENGINEERS

INSTRUCTIONS

All Band Preamplifier

The Palomar Engineers preamplifier may be added to most transceivers in the frequency range 1.8 to 54 MHz. It improves the gain, noise figure, spurious signal and image rejection of the receiver section. This all-new preamplifier has been designed specifically for use with a transceiver. Its sophisticated control circuitry permits it to be added to virtually any transceiver without modification. This is accomplished by the use of automatic antenna switching inside the preamplifier. When the preamplifier senses transmitter RF power, it automatically switches out of the amplifier mode and connects the antenna directly to the transceiver.

The preamplifier uses a tuned RF amplifier, covering all the amateur bands from 160 through 6 meters and, in addition, all foreign broadcasts, as well as other services within this frequency range. It employs a low noise dual gate FET transistor, providing a noise figure of 1.5 to 3.5 db, over the frequency range 1.8 to 54 MHz. The preamplifier will be found especially effective with those transceivers employing the Pi-output network of the transmitter section as the receiver RF stage input. Many transceivers of this type begin to suffer a noticeable decrease in sensitivity on 15 meters, and especially on 10 meters. The preamplifier will be most beneficial on these bands. The inclusion of 6 meters makes it useable with 6 meter transceivers.

INSTALLATION

1. Connect your antenna to the ANTENNA jack on the preamplifier rear panel.
2. Run a coaxial cable from your transceiver antenna jack to the RECEIVER jack on the preamplifier rear panel.
3. P-410X: Plug the power cord into a 117-v 60 Hz outlet.
P-412X: Connect red power lead to +12-v DC. Ground rear post.
4. If you use a linear amplifier with the transceiver connect it between the preamplifier and the antenna. The maximum power that can run through the preamplifier is 350 watts peak. So, do not ever connect it to the output of your linear.

OPERATION

1. After installing the preamplifier as described above, and with the preamplifier power switch in OFF position, the transceiver is connected directly to the antenna. Tune in a signal on the desired frequency band.
2. Turn the BAND switch to a position that includes the desired frequency. Turn the DELAY switch clockwise. Peak the signal with the TUNE control. Set the GAIN control for the desired amplification. The preamplifier is now in operation.

3. As soon as you start to transmit, the preamplifier cuts itself out of the circuit and the transceiver is connected directly to the antenna. After transmission stops there is a short delay, then the preamplifier cuts back in. The DELAY control sets the delay time. For CW and most SSB work it should be set full clockwise (maximum delay). For contest or net operation a shorter delay may be desired. The delay is continuously adjustable from about $\frac{1}{2}$ -second to over 3-seconds.

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