

MIRAGE KP-2 Mast-Mount Pre-Amplifier

General Information

This in-line GaAs-FET receive pre-amp provides high gain and low noise amplification for weak receive signals. The KP-2 also has automatic RF-switching, which disengages the pre-amp any time it detects a transmission signal being emitted by the transceiver.

The KP-2 pre-amp has an attenuator built into the circuit which can be selected by changing the position of a switch on the internal circuit board. This switch is set in the LOW level gain position at the factory. This has been included to prevent *receiver overloading* and subsequent *intermodulation distortion* that can come from very strong signals.

The following is a list of associated parts shipped with the unit:

- 1 KP2RC Control Unit
- 1 1-3/4" U-Bolt
- 1 1-3/4" Cradle
- 2 5/16" Nuts with lock washers

KP2RC RF Line Voltage Control Unit

The RF line voltage control unit designated KP2RC requires that you apply a positive 13.6 - 15 Vdc to the power jack positioned on the end of the control box. The center pin is positive. When the KP2RC is turned on, it places the DC voltage onto the RF signal line running up to the antenna. The DC voltage is blocked at your radio by a coupling capacitor. The mast-mounted KP-2 pre-amp is designed to pick this DC voltage off the RF line and use it to power the pre-amp.

The RCA phono jack located on the side next to the **RADIO** connector allows you to connect **ON/OFF** switching devices (such as an external switch option on an SSB/CW radio) to the KP2RC. This option allows you to automatically remove the DC voltage (by grounding the center pin of the RCA phono jack) from the RF signal line any time your radio is in the **transmit** mode.

MIRAGE KP-2 Pre-Amplifier

Specifications

– **NOTE: Unless otherwise indicated, specifications apply to all models of the KP-2 Series.**

Frequency Coverage:

<u>MIRAGE Model #</u>	<u>Range</u>
KP-2 / 10 Meter:	28.000 - 28.500 MHz
KP-2 / 6 Meter:	50 - 54 MHz
KP-2 / 2 Meter:	144 - 148 MHz
KP-2 / 1-1/4 Meter:	222 - 225 MHz
KP-2 / 70 Centimeter:	440 - 450 MHz

Gain: 20-25 dB (HIGH gain setting)
10-15 dB (LOW gain setting)

Noise Figure: 0.6 dB, independent of gain setting

Power Requirements: Positive 13.6 - 15 Vdc

Power Capability: 100 Watts, maximum

Connectors:

KP-2 Pre-Amplifier:	2 UG-58N VHF connectors
KP2RC Control Unit:	2 UG-58N VHF connectors 1 3.5mm Coax plug 1 RCA Phono plug

KP-2 Pre-Amplifier Installation

The *MIRAGE* KP-2 is designed to be easily mounted on your 1-3/4" diameter antenna mast:

1. Place the supplied 1-3/4" U-bolt around your antenna mast and slip the supplied 1-3/4" cradle onto it.
2. Slip the base plate of the KP-2 (with the **RADIO** 'N'-connector pointing *down*) onto the U-bolt.
3. Secure the KP-2 using the provided 5/16" nuts and lock washers.
4. Connect the **ANTENNA** 'N'-connector of the KP-2 to your antenna using RG-8U (or equivalent) cable.
5. Connect the coax from the Pre-Amp output of the KP2RC control unit to the **RADIO** 'N'-connector of the KP-2.
6. Ensure that **ALL** connections are tight!

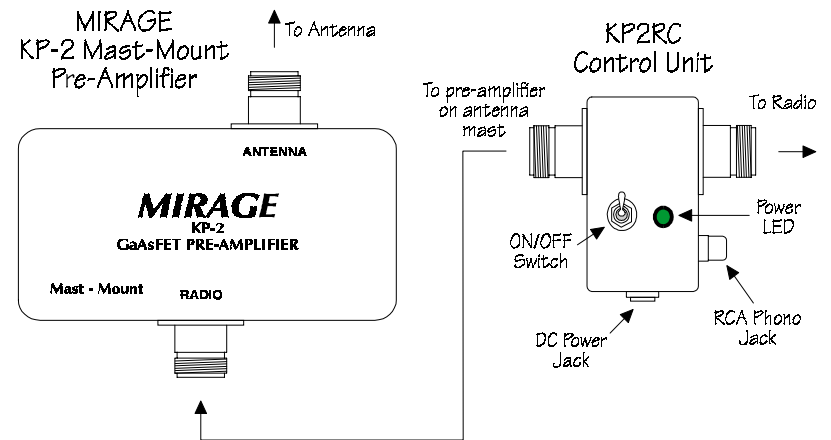
KP2RC Control Unit Installation

This unit has been designed to allow operators to control the operation of the mast-mounted KP-2 pre-amplifier by using the existing RF signal line between the Ham Shack and the antenna to power the pre-amp. Locate the Control Unit for ease of access to the **ON/OFF** switch.

1. From the ANTENNA side of the KP2RC Control Unit, run a length of good quality 50 Ohm coax cable from the 'N'-Connector to the Antenna Mast. Allow enough length to reach the KP-2 Pre-Amplifier which will be mounted on your antenna mast.
2. Connect a positive 13.6 - 15 Vdc power supply to the 3.5mm DC coaxial power jack located on the end of the Control Unit. The center should be positive with the sleeve ground.

+ CAUTION: *Before connecting the control unit to your radio, ensure that there is no voltage on the center-pin of the RADIO connector of the KP2RC!*

3. Connect a short length of good quality 50 Ohm coax cable from the ANTENNA output of your Radio to the 'N'-Connector on the right side of the KP2RC Control Unit (the side with the RCA phono connector).



MIRAGE KP-2 Pre-Amplifier and Control Unit
Figure 1

MIRAGE KP-2 Pre-Amplifier

– **NOTE:** If the KP2RC is turned OFF, there is no placement of DC voltage on the RF signal line, and the pre-amp remains inactive.

In cases of very weak signal reception, you may want to change the pre-amp gain level to the HIGH position. To do so, following these steps:

1. Remove the four screws in the cover.
2. Carefully pry open the silicone-sealed cover.
3. Move the two white toggles on the black switch (located approximately 1" from the **RADIO** connector) to the downward position.
4. Reseal the cover with a small bead of silicone or other appropriate sealing material.

The *MIRAGE* KP-2 Pre-Amplifier is now ready to go! Apply power to the KP-2 by placing the **POWER** switch on the KP2RC Control Unit in the ON position. Power to the pre-amp is indicated by the LED located to the right of the switch.

Technical Assistance

If you have any problem with this unit, first check the appropriate section of this manual. If the manual does not reference your problem or your problem is not solved by reading the manual you may call *MIRAGE* at **601-323-8287**. You will be best helped if you have your unit, manual and all information on your station handy so you can answer any questions the technicians may ask.

You can also send questions by **FAX** to **601-323-6551**. Send a complete description of your problem, an explanation of exactly how you are using your unit, and a complete description of your station.