

## Mirage B-34-GC

The Mirage B-34-GC is a two-way radio signal amplifier (or booster) designed for commercial mobile or fixed location use. This amplifier is specifically designed to boost the range of low power (less than 3 watts output) mobile or hand held two way radios by increasing output power nearly ten times. This unit also contains a receive signal booster that increases the signal level of incoming signals.

### FEATURES

1. Output power of 15 to 30 watts.
2. Wide input power range (from 1/2 to 3 watts).
3. GaAsFET receive amplifier to boost reception of weak stations.

### SPECIFICATIONS

FREQUENCY	: 150 TO 162 MHz
DUTY CYCLE	: INTERMITTENT (ICAS)
RF INPUT	: 3 WATTS maximum
RF OUTPUT	: 25 WATTS TYPICAL
RF CONNECTORS	: SO-239 (2) UHF Female
RECEIVE PRE-AMP	: 18 dB TYPICAL
SUPPLY VOLTAGE	: 11-15 Vdc neg. gnd
TRANSMITTING CURRENT	: less than 4 AMPS
FUSE	: FAST BLOW, 7 AMP
INPUT/OUTPUT IMPEDANCE:	: 50 OHMS

## EXPLANATION OF FRONT PANEL

*(lights from left to right)*

1. "XMT" indicator light  
This indicator lamp illuminates whenever the transmit signal is being boosted.
2. "PRE-AMP" indicator light  
The "PRE-AMP" indicator lamp illuminates whenever the listening (reception) booster is active. The listening booster can be used even if the amplifier's main power switch (and transmit signal booster) is off.

If unwanted signals interfere with reception, turn the receive booster off by releasing the "PRE-AMP" switch.

3. "PWR" indicator light  
The "PWR" indicator lamp illuminates whenever the transmission power (PWR) booster system is "ON" and ready to boost your transmitter's signal.

*(switches from left to right)*

4. "MODE " switch  
This switch controls the transmit and receive time delay. Pressing the switch in adds a small time delay just after you quit transmitting, and before the receiver is restored. You should only operate this switch in the FM position.
5. "PRE-AMP" switch  
When this switch is depressed and engaged, the internal receiving booster amplifier will be activated. The receiving amplifier functions independently of the "POWER" switch position.
6. "POWER" switch

When this button is depressed and engaged, the booster is ready to amplify any signal applied to the RADIO port.

## BACK PANEL

### 7. RADIO

The coaxial cable from the radio (not to exceed three watts) connects to this port.

### 8. ANTENNA

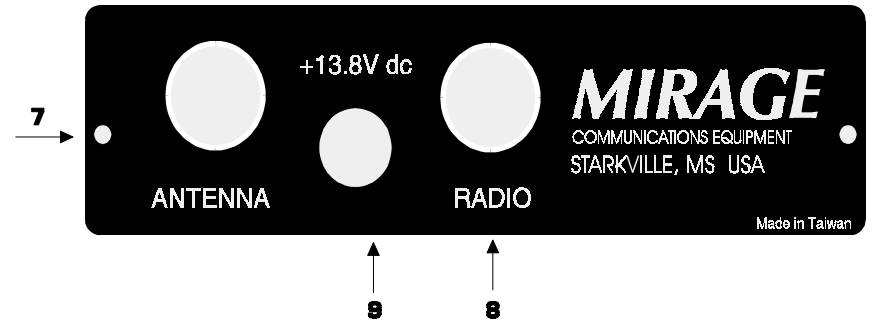
The coaxial cable from your radio antenna connects to this port.

### 9. DC PWR (13.8V)

This point has two wires exiting the signal booster. The RED wire must connect only to the positive wire coming from a 12 volt battery, electrical system, or power supply.

The black wire must only be connected to the chassis ground side of a negative ground vehicle, or the negative side of a power supply.

**Never** remove the fuse holder, defeat or bypass the fuse, or install a fuse larger than originally supplied. **Never** use with a positive ground system, or with a system supplying more than 15 volts dc. **Never** use with battery chargers or other devices not specifically designed to operate radio equipment. the mirage b-34-gc amplifier should only be operated with voltages of 12 to 15 volts dc.



## INSTALLATION

The Mirage B-34-GC may be mounted using the bracket supplied or simply placed in a convenient operating position. In either case, there must be adequate ventilation for the cooling fins. Always maintain at least two inches clearance from the finned heat transfer area to surrounding air obstructions.

Do not mount this unit in places exposed to the direct rays of the sun or any other strong heat source (such as heaters, radiators, etc.). Do not mount this unit in confined hot areas such as unventilated trunks or under the hoods of automobiles.

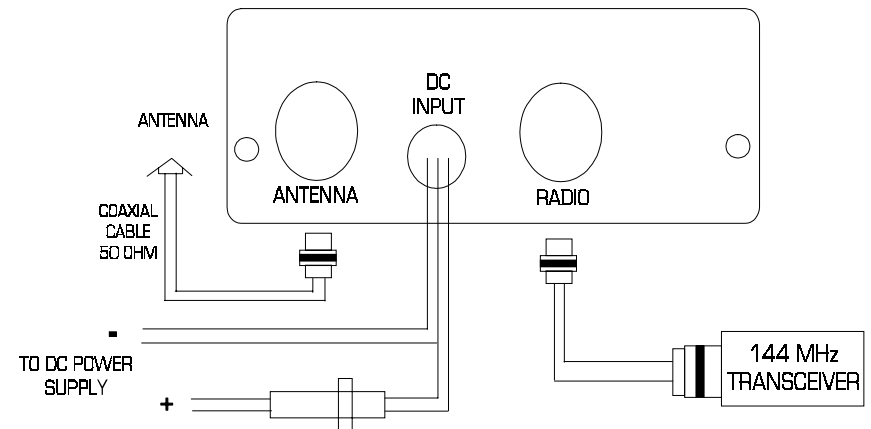
**CAUTION:** With extended use, the heat transfer area becomes very hot.

## WIRING AND OPERATION

1. If it is necessary to extend the DC power leads, use wire of the same gauge (number 14 AWG stranded) as the original wires or larger (for example, a lower numerical wire gauge number such as #12), and no longer than 18 feet.

If the power leads are extended and operated from a high current source like a vehicle electrical system, be sure the leads are properly fused at the power source. The correct fuse size is 7 amperes.

2. Be absolutely sure the DC power source is never higher than 15 volts to prevent damage. **Never** use a positive ground supply system. A source voltage of 13.8 volts is optimum and should be used whenever available. Always place all switches in the "OFF" position when jump starting, boosting, or charging any vehicle electrical system or battery powering this device.
3. Use a reasonable length (less than 20 feet) of good quality 50 ohm cable between your radio and this unit. If you have excessive cable, neatly coil the excess cable in smooth large (one foot diameter or so) coils, taping the turns in place. **Never** sharply bend, kink, or fold excess wiring back on itself.
4. The antenna system should be properly tuned and installed, and free from bad or loose connections.



## **TROUBLESHOOTING**

The Mirage B-34-GC is designed for long, trouble-free performance and simple operation. If difficulty or poor performance occurs, check for the following:

1. Loose or defective radio or antenna cables, or poor or incorrect power supply connections
2. An improperly tuned or installed, or a defective antenna. (This will normally require the use of test equipment by an experienced radio service technician.
3. Improper output voltage of power supply during transmission.
4. Improper power output of radio or an improper fuse rating.

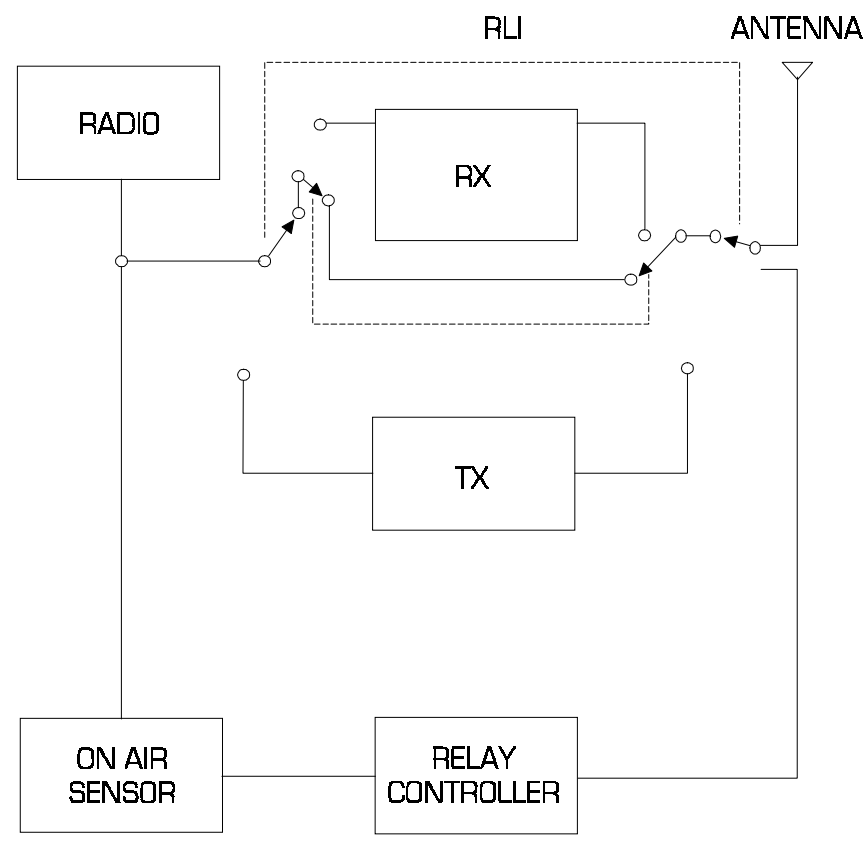
## **TECHNICAL ASSISTANCE**

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, please contact MIRAGE at 662-323-8287.

We can provide the most efficient and accurate help if you have your unit, manual and other basic information about your installation handy.

You can also send questions by FAX to 662-323-6551. Send a complete description of your problem, an explanation of exactly how you are using your unit, and a complete description of your installation with a drawing of your wiring connections.

### B-34-GC BOOSTER AMP. BLOCK CIRCUIT



## **SCHEMATIC**