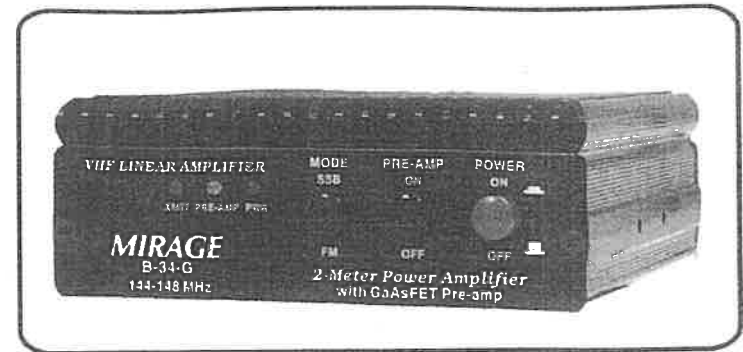


# Instruction Manual

## **MIRAGE B-34-G**

**2 METER AMPLIFIER (144-148 MHz)**



*(Before operating this unit, please read these instructions completely.)*

## **MIRAGE**

**COMMUNICATIONS EQUIPMENT  
300 Industrial Park Road  
Starkville, MS 39759**

***MIRAGE B-34-G***

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Manual  
Version A

# MIRAGE

COMMUNICATION EQUIPMENT

300 Industrial Park Road

Starkville, MS 39759 USA

Tel: 662-323-8287 FAX: 662-323-6551

*Use of input power greater  
than specified in the equipment's manual  
will void this warranty.*

## MIRAGE B-34-G

The Mirage B-34-G is a VHF power amplifier designed for the 144-148 MHz band. New features make it the most useful and versatile amplifier available for the handheld transceiver. Features include all mode compatibility (FM/SSB/CW), wrap-around heat sink, high gain GaAsFET preamplifier, and 1 to 8 watts input.

### ■ FEATURES

**1. High output power of 30 to 35 watts**

330 to 35 watts is achieved with 1 - 8 watts input.

**2. All mode compatibility (FM/SSB/CW)**

In the SSB mode the time constant of the Carrier Operated Transmit (COX) relay is set to approximately one second to prevent annoying relay chatter during conversation, and achieving smooth SSB transmission.

**3. Wrap-around heat sink**

The heat sink and combined case, by original design is used for excellent heat dissipation as well as a new smart appearance.

**4. Input power from 1 to 8 watts**

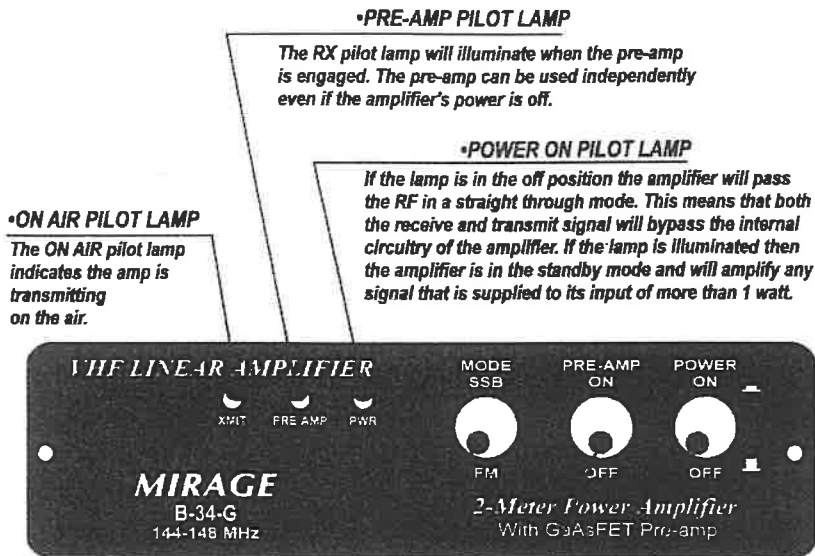
With an input power of 8 watts maximum, the Mirage is compatible with most modern handheld transceivers.

**5. GaAsFET receive pre-amplifier**

A built-in low noise GaAsFET receive pre-amp enables you to enjoy a more comfortable VHF QSO with weak stations.

■ EXPLANATION OF FEATURES

FRONT PANEL



**•ON AIR PILOT LAMP**  
The ON AIR pilot lamp indicates the amp is transmitting on the air.

**•PRE-AMP PILOT LAMP**  
The RX pilot lamp will illuminate when the pre-amp is engaged. The pre-amp can be used independently even if the amplifier's power is off.

**•POWER ON PILOT LAMP**  
If the lamp is in the off position the amplifier will pass the RF in a straight through mode. This means that both the receive and transmit signal will bypass the internal circuitry of the amplifier. If the lamp is illuminated then the amplifier is in the standby mode and will amplify any signal that is supplied to its input of more than 1 watt.

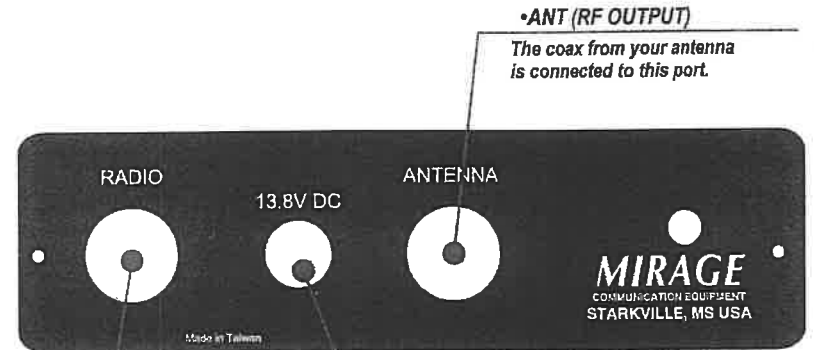
**•SSB/FM SWITCH**  
When in the SSB mode the amplifier will delay the changeover time of the carrier operated transmit relay to 1 second before disengaging. This will prevent relay chatter as a result of working SSB or CW. In the FM mode the relay will operate normally and disengage once the transmit signal is dropped.

**•PRE-AMP SWITCH**  
When engaged the amplifier's pre-amp will be switched into the circuit for receive. A sensing circuit will disengage the pre-amp when a transmitted signal is applied to the amplifier's input. The pre-amp may also work independently if the amplifier's main power switch is off.

**•POWER ON SWITCH**  
When engaged, the amplifier is ready to amplify any signal applied to its input of the proper frequency.

■ EXPLANATION OF FEATURES

BACK PANEL



**• RADIO (RF INPUT)**  
The coax from your radio or exciter is connected to this port.

**•DC PWR (13.8V)**  
This port has two wires. The Red wire is for positive and incorporates a FUSE holder. The Black wire is for negative. The Mirage B-34 amplifier will accept voltages of 12 to 15 volts DC.

**•ANT (RF OUTPUT)**  
The coax from your antenna is connected to this port.

■ SPECIFICATIONS

FREQUENCY	144 TO 148MHz
RF INPUT	1 - 8 WATTS
RF OUTPUT	35 WATTS TYPICAL
DUTY CYCLE	INTERMITTENT (ICAS)
MODE	FM SSB CW
RECEIVE PRE-AMP	18db TYPICAL
KEYING	AUTOMATIC SENSING
SUPPLY VOLTAGE	12 - 15 VOLTS DC
RF CONNECTORS	TWO (2) SO-239 VHF
SUPPLY CURRENT	4 AMPS TYPICAL
FUSE	FAST BLOW, 8 AMP
INPUT/OUTPUT IMPEDANCE	50 OHMS

■ INSTALLATION

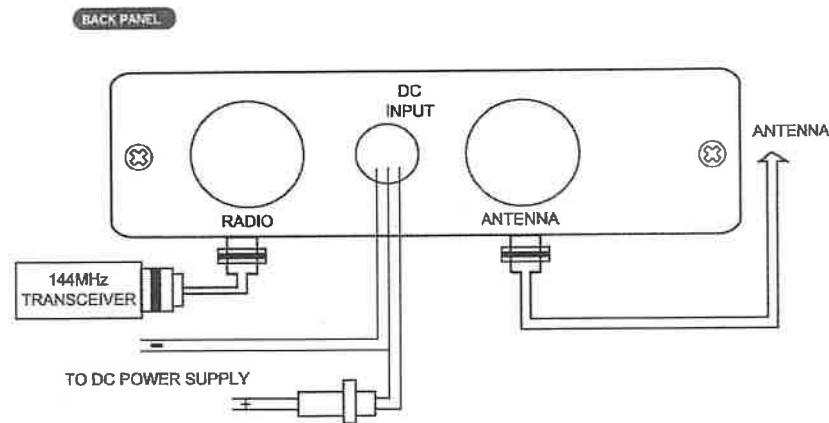
The Mirage B-34 may be placed in a convenient operating position. There must be adequate ventilation for the finned heat-sink. This generally means at least 1 inch clearance from the heat-sink to any surrounding enclosure and an unobstructed flow from the front to back of the heat-sink. Do not operate the amplifier in places where it will be exposed to the direct rays of sun or a nearby heat source such as heaters, radiators, etc.

■ CAUTION : With extended use the heat-sink becomes very hot.

■ Wiring and Operation

If it is necessary to extend the DC power leads use wire of the same gauge in order to avoid a voltage drop on your power leads. Be careful that the DC power supplied is no higher than 15 volts or damage may result. A source voltage of 13.8 volts is recommended and should be used whenever available. Some automobiles will generate a high current surge when started. It is recommended that the amplifier be placed in the off position when starting your vehicle.

Use a minimum length of good quality 50 ohm cable between the radio and the amplifier. The antenna system should have a VSWR of 1.5:1 or better for the best performance. If used in a mobile installation, choose a good mobile antenna which will withstand the power of this amplifier. Be sure to check the SWR for any degrading once the antenna has been heated by a few minutes of operation. An antenna with a rating of 100 watts is recommended.



### ■ TROUBLESHOOTING

The Mirage B-34-G is designed for long, trouble-free performance and should not require extensive troubleshooting in the field. If difficulty is encountered, check the following before assuming the amplifier has malfunction:

1. Loose antenna or power supply connections
2. VSWR of the antenna system
3. Coaxial cables from radio to amplifier, and amplifier to antenna
4. Output voltage of power supply
5. Power output of radio
6. Improper fuse rating

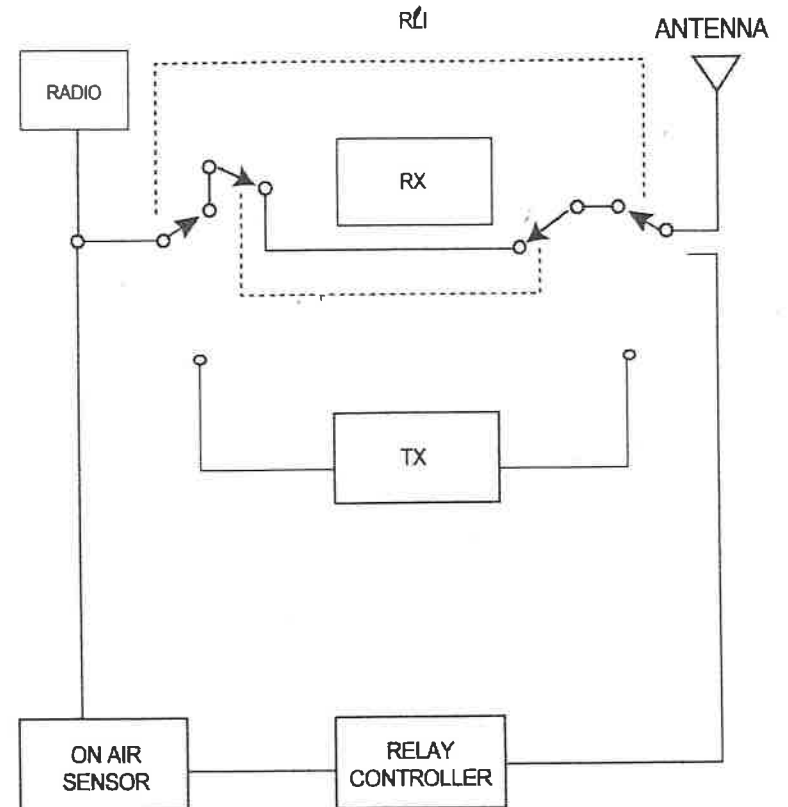
### ■ TECHNICAL ASSISTANCE

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 you may call MIRAGE at 662-323-8287.

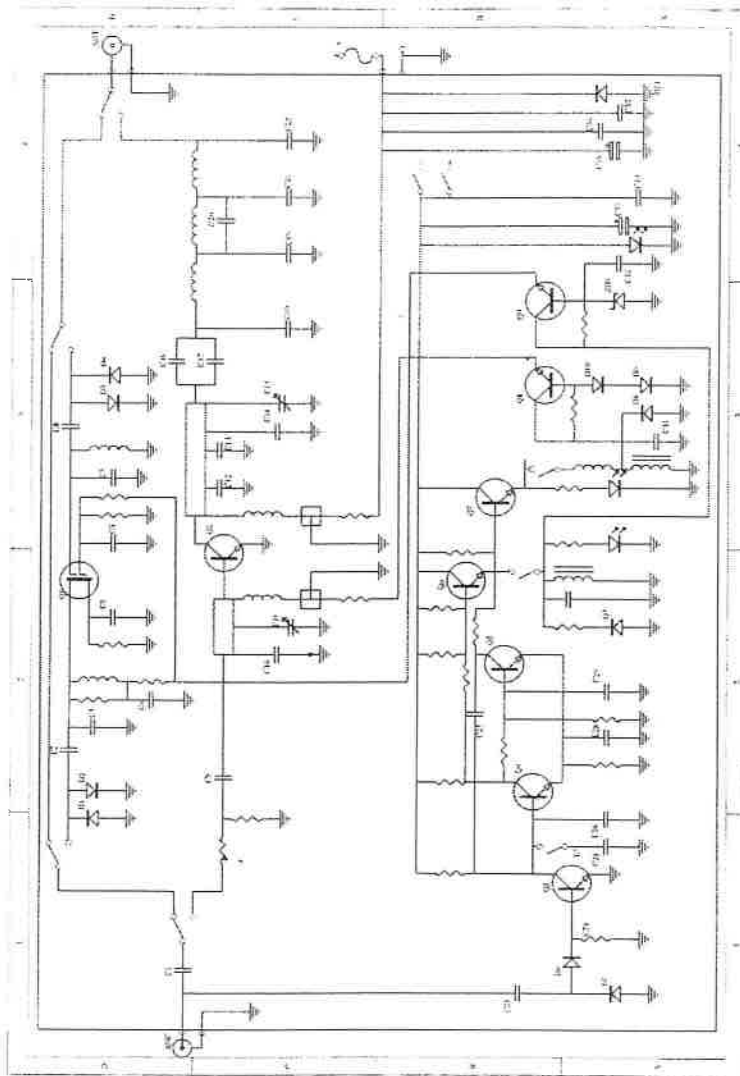
You will be best helped if you have your unit, manual and all information on your station handy so you can answer any questions the technicians may ask.

You can also send questions by FAX to 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 station.

### ■ B-34-G BOOSTER AMP. BLOCK DIAGRAM



■ B-34-G SCHEMATIC



**NOTES:**

A large rectangular area containing ten horizontal lines for taking notes.

# MIRAGE

COMMUNICATION EQUIPMENT  
300 Industrial Park Road  
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## ONE YEAR LIMITED WARRANTY

Any Mirage Communications product found to be defective in materials or workmanship will be repaired or replaced (at Mirage's option) for a period of one year from the date of original purchase. This warranty applies only to the original purchaser.

During the warranty period Mirage Communications will provide, free of charge, both parts and labor necessary to correct defects in material or workmanship to the original purchaser.

To obtain such warranty service, the original purchaser must:

- (1) Provide proof of purchase, such as a copy of the invoice.
- (2) Ship the product in its original container, fully insured and shipping charges prepaid, to Mirage, as addressed below.
- (3) Include a check or money order for \$10 for return shipping and handling within the continental U.S.A.  
Include a check or money order for U.S.\$35 for return shipping and handling outside the continental U.S.A.

The following items may/will void the warranty:

- (1) Using input power greater than specified will void the warranty.
- (2) All internal adjustments are factory set for best performance consistent with reliable operation. Changing these adjustments may void this warranty.
- (3) Improper maintenance or repair may also void this warranty. We recommend that, during the warranty period, you return the unit to us for repair.
- (4) Using this product for a purpose other than intended by the manufacturer may void the warranty. Out of band operation may void the warranty.

This unit was not designed for repeater operation, and its use in such service is at your own risk.

Mirage assumes no responsibilities for any item connected to or used in conjunction with this product.

The foregoing constitutes Mirage's entire obligation with respect to this product and the original purchaser and any user or owner shall have no remedy and no claim for incidental or consequential damages.

All Mirage products to be serviced, in-warranty or out-of-warranty, should be sent, freight paid, to:

Mirage  
300 Industrial Park Road  
Starkville, MS 39759 USA

This product must be accompanied by a letter describing the problem in detail.

Be sure to include YOUR NAME, ADDRESS, AND TELEPHONE NUMBER.

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### WARNING:

This unit should not be operated with the cover removed. The cover confines RF radiation. The harmonic filters contained in the circuit will not suppress direct radiation that may result if the cover is removed.