

# REPEATER AMPLIFIERS

Your MIRAGE repeater amplifier has several improvements over our standard model amplifier.

## **RACK-MOUNT HEATSINK**

The large rack-mount heatsink with horizontal fins keeps the transistor temperature low for longer life in high duty cycle applications. All of the transistors are mounted on 1/4" copper plates which have been milled into the aluminum heatsink. This provides considerable faster transmittal of heat from the devices.

## **AIR-FLOW CHASSIS**

The perforated chassis cover allows heat that builds up on the printed circuited board and components to escape outside the amplifier. This, of course, will increase components and PC board life in high duty cycle.

## **DUAL OVER-TEMP PROTECTION**

The amplifier has two temperature protection sensors; one on the heatsink and one on the circuit board. If the amplifier is used under conditions that cause it to overheat, the relay will drop into the bypassed condition. Your repeater will then operate at the power level normally going into the amp.

## **REDUCED RELAY WEAR**

Repeater operation greatly increases the number of times the relays must change over. We have modified the relay drop-out time to hold the relay in for up to 5 seconds when in the "SSB" position. This allows one station to stop transmitting , allows the repeater to stop transmitting, and allows the next station to transmit with no relay action in the power amplifier. This should greatly increase relay life for repeaters that reset when the transmitter output drops. For repeaters that reset on the input or receive squelch, use the "FM" position of the switch.

## **ON-SITE CONTROL**

The amplifier has built in switches that control DC voltages to the transmit power amp and relay delay time circuits. If a more convenient switching panel is desired, the MIRAGE RC I plugs directly into the repeater amplifier and duplicates the switching function in a compact box at the end of an 18 foot cable.

## REMOTE TTL CONTROL

If you have a TTL logic "high" available during the transmit time of your repeater, you can use the circuit shown in Figure 1.

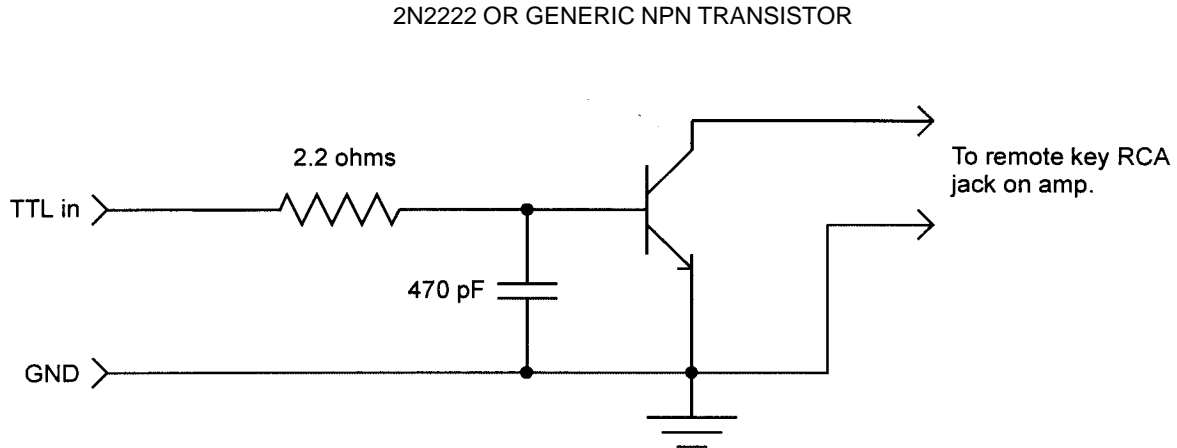


Figure 1

**Note:** This circuit will key the amplifier when a positive voltage between 2 and 15 volts is applied to the TTL input terminal.

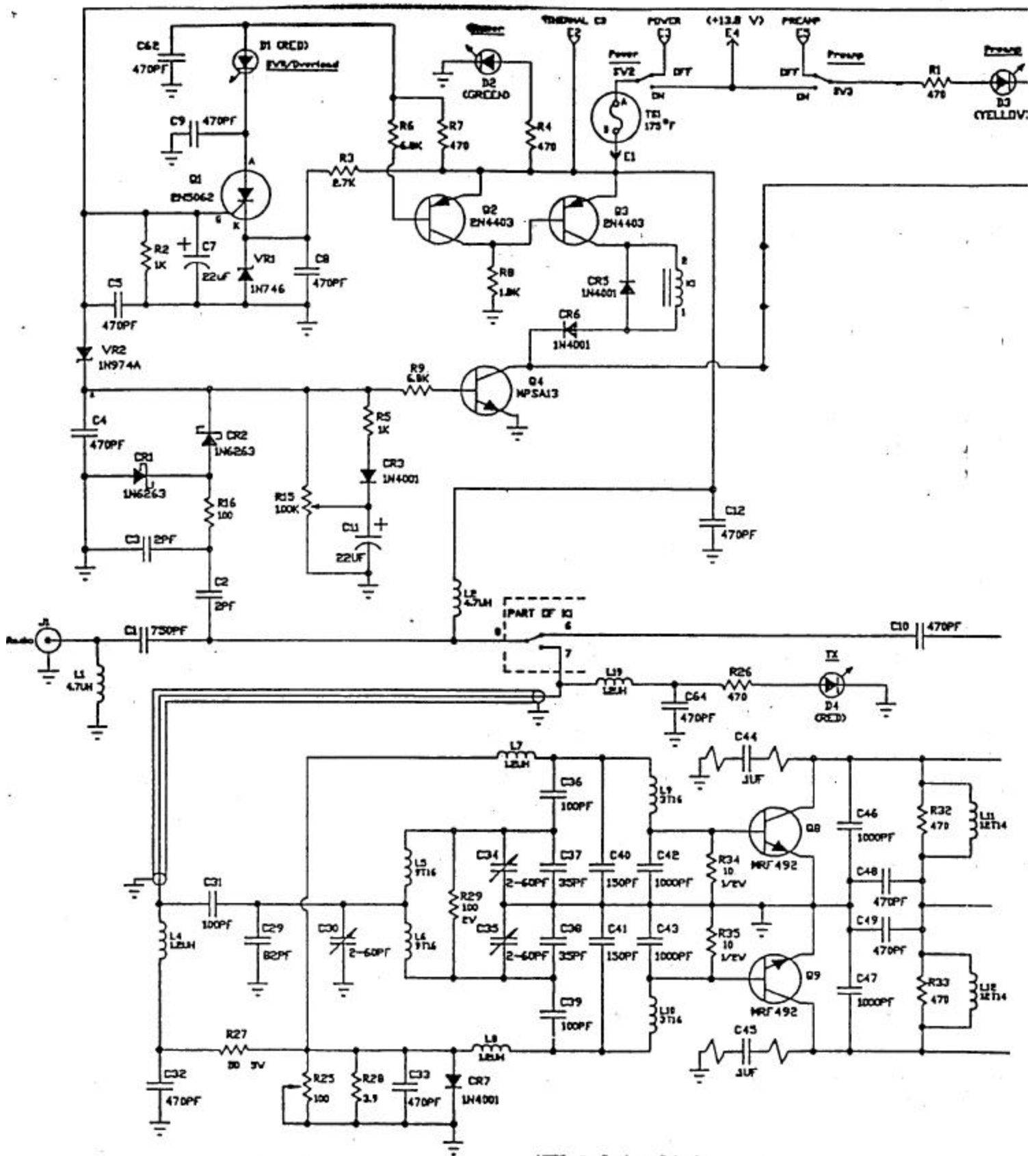
If you have a logic line which is controllable remotely, you can remotely activate the MIRAGE amp. A NAND gate tied both to your repeater COR and the remote control line would engage the amp on transmit when your remote control line was at the correct level.

**WARNING:** This unit should not be operated with the cover removed. The cover confines RF radiation, including harmonics, to the inside of the case. Operation of the unit without the cover could result in direct harmonic radiation. The harmonic filters contained in the circuit will no suppress direct radiation.

## RF DRIVE LEVELS

### MIRAGE REPEATER AMPLIFIER MODELS

MHz FREQ RANGE	MODEL NUMBER	WATTS POWER INPUT		AMPS NOMINAL CURRENT	POWER SUPPLY	RF CONNECT. (VDC)
50-54	A1015R	3-4	----- 110	16-18	13.8	TEFLON SQ-239
144-148	B215R	1	----- 110	16-18	13.8	TEFLON SQ-239
145-148	B1016R	3-4	----- 120	16-18	13.8	TEFLON SQ-239
145-148	B2516R	10-12	----- 120	14-15	13.8	TEFLON SQ-239
223-225	C211R		----- 80	15-16	13.8	TEFLON SQ-239
222-225	C1012R	5	----- 90	16-18	13.8	TEFLON SQ-239
223-225	C2512R	13-15	----- 90	13-14	13.8	TEFLON SQ-239
440-450	D101ORN	2-4	----- 80	14-15	13.8	TEFLON "N" UG58AU
440-450	D301ORN	10-12	----- 80	11-13	13.8	TEFLON "N" UG58AU
420-450 ATV			-----			TEFLON "N" UG58AU
420-450 ATV			-----			TEFLON "N" UG58AU



NOTE: = Factory Select  
 1) SE is the 6 pin REMOTE connector



# MIRAGE

COMMUNICATIONS EQUIPMENT

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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.

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

To obtain such warranty service, the original purchaser must: (1)

Provide "proof of purchase".

(2) Ship the product in its original container or equivalent, fully insured and shipping charges prepaid, to Mirage, as addressed below.

(3) Mirage agrees to repair without charge to the original owner any defective product under warrantee provided the product is returned with postage prepaid to Mirage with a personal check, cashiers check, or money order for **\$10.00** covering postage and handling.

All internal adjustments are factory set for best performance consistent with reliable operation. Changing internal adjustments may void this warranty.

Improper maintenance or repair may also void this one year warranty. We recommend that units requiring repair during the warranty period be returned to the factory.

Using Mirage non-repeater amplifiers for repeater operations is not recommend and will void this warranty.

Mirage assumes no responsibility 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 shipped, freight paid, to:

**Mirage**  
**300 Industrial Park Road**  
**Starkville, MS 39759 USA**

Product must be accompanied by a letter describing the problem in detail. **Be sure to include YOUR NAME, ADDRESS, AND TELEPHONE NUMBER!**

This warranty gives specific legal rights and you may also have other rights which vary from state to state.