

TONO

東野電気株

USER'S MANUAL

取扱説明書

VHF ALL MODE LINEAR AMPLIFIER

VM-100W

INPUT POWER 0.1~15W OUTPUT POWER 100~110W (AT 15W INPUT)

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VHF LINEAR AMPLIFIER V M - 1 0 0 W

FEATURES

- The VM-100W is a high-performance linear amplifier which works with any transceiver of 0.1W to 15W output.
- Equipped with a GaAs FET as preamplifier to provide high receiving sensitivity.
- You can easily select the transmitting amplifier, preamp or passing through state by switches. (The transmitting amplifier or preamplifier alone can be activated.)
- Operating mode (type of emission) is automatically selected. No need of time delay switch or PTT remote jack.
- An NG circuit is built in for protecting a power transistor.

PRECAUTIONS

1. Environment

Install the unit avoiding high temperature and humidity, direct sun and direct exposure to a heat vent.

2. Power supply

The unit requires a 13.8V DC power supply. In mobile operation, ensure that the input voltage stays under 15V DC. Connect power supply cords directly to the battery. Do not connect to a 24V DC power supply. At a fixed station, use a 13.8V DC stabilizing power supply whose current is proper to the VM-100W. To make connections, confirm both the TX Amp and RX Amp switches are off. Connect the red cord to positive (+) and the black cord to negative (-) terminals. Use a fuse of the rated value for replacement.

Note: A fuse (20A) is installed inside the unit. Replace it in the following procedure when necessary.

- (1) Remove four bolts and take off the front panel.
- (2) Pull out the bottom panel toward the front.
- (3) Replace the fuse.
- (4) Put the front panel back and bolt it up.

3. Input

As output power of the companion transceiver drives the unit, be sure that the driving power should not exceed the rated value of the VM-100W.

4. Antenna

Impedance of the unit is 50 Ohms. Use the antenna whose SWR is under 1:1.5. Never transmit in unloaded state (with no connection to the ANT connector).

LOCATION

FRONT PANEL

Three switches and four lamps are provided on the front panel.

TX Amp switch : Turns on and off the TX amplifier. In on state, power is applied to the unit, and when turned off, the unit is in passing through state.

RX Amp switch : Turns on and off the preamplifier. In on state, power is applied to the unit, and when turned off, the unit is in passing through state.

SSB switch : Selects time delay for smooth communication in SSB mode. Press it in for SSB operation. Turn it off for operation in FM mode.

TX lamp : Lights up when the TX amplifier is activated.

RX lamp : Lights up when the preamp is activated.

NG lamp : Lights up when the NG (protection) circuit is activated.

PO lamp : Lights up when power is applied to the unit.

REAR PANEL

Two connectors and a power supply cord are provided on the rear panel.

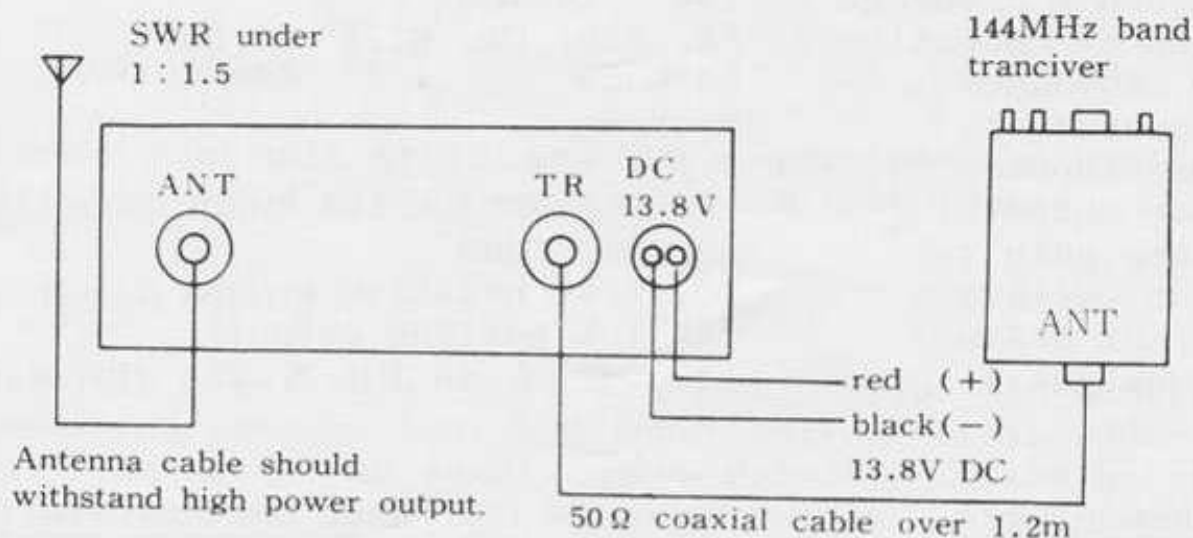
TR connector : Connects to the antenna terminal of the transceiver.

DC13.8V cord : Connects to the 13.8V DC power supply. (Red for positive and black for negative.)

ANT connector : Connects to the antenna line.

CONNECTIONS AND OPERATION

1. The following figure shows the connections to the VM-100W. Turn all switches off before making connections.



2. Turn on the preamp, TX amplifier or both. The unit switches operation of transmission, reception and passing through state by the carrier control system.
3. In SSB and CW modes, turn on the SSB switch. The unit produces a time delay of approximately 0.1 second in the changeover from transmission to reception.

4. Turn off the SSB switch in operation of FM and RTTY.

NG (PROTECTION) CIRCUIT

The VM-100W has an NG circuit built in to protect a power transistor. The following causes will activate the NG circuit.

1. Supply voltage is over 15.5V DC.
2. SWR is greater than 1:1.8 due to fault in antenna line.

Once the NG circuit works, it will be released and reset only by manually turning the TX Amp and RX Amp switches off, and turning it back on after removing the cause of the trouble.

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SPECIFICATIONS

| | |
|----------------------|-------------------------------|
| Frequency coverage : | 144 - 146MHz |
| Modes of operation : | FM, SSB, CW, RTTY and SSTV |
| I/O impedance : | 50 Ohms |
| Connectors : | M-type |
| Power input : | 0.1 - 15W |
| Power output : | 100 - 110W (at 15W input) |
| Preamp gain : | approx. 18dB |
| Input voltage : | DC 13.8V negative ground |
| Current drain : | 15A (at maximum output) |
| Dimensions : | 147 (W) X 48 (H) X 254 (D) mm |

ACCESSORIES

| | |
|--------------------------|---|
| Instruction manual | 1 |
| RC plug | 1 |
| Mount bracket | 2 |
| Rubber foot | 4 |
| 4x6mm screw | 4 |
| 3x6mm screw | 4 |
| (for rubber foot) | |

I/O POWER CHARACTERISTICS

