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**M-588**

**AM/FM/SSB**

**80-CHANNEL DIGITAL PLL SYNTHESIZED TRANSCEIVER**
**Specifications**

**Receiver**
- Sensitivity: (AM): 1 μV at 10 dB S/N
  (FM): 0.5 μV at 20 dB S/N
  (SSB): 0.5 μV at 10 dB S/N
- Spurious Rejection Ratio: 40 dB
- Squelch Sensitivity at Maximum (AM/FM): 300 μV
- Squelch Sensitivity at Maximum (SSB): 300 μV
- Squelch Sensitivity at Threshold (AM/FM): 1 μV
- Squelch Sensitivity at Threshold (SSB): 0.7 μV
- A.G.C. (As measured to EIA specs): 70 dB
- IF response at 6 dB down bandwidth (AM/FM): 6 kHz
- IF response at 6 dB down bandwidth (SSB): 2 kHz
- Adjacent Channel Selectivity: 40 dB
- Frequency Stability: ±0.005%
- Audio Output Power at Maximum (8 Ohm): 4 W
- Audio Output Power at 10% distortion (8 Ohm): 3 W
- Audio Fidelity at 400 Hz: -15 dB
- Audio Fidelity at 3,000 Hz: -15 dB
- S-Meter Sensitivity for S-9: 100 μV
- Current Drain at no signal: 350 mA
- Current Drain at Maximum Audio Output: 1500 mA

**Transmitter**
- RF Output Power (SSB) at 13.8V DC: 20W PEP nominal
- RF Output Power (AM/FM) at 13.8V DC: 10W nominal
- Modulation Capability (AM): 100% down
- Frequency Stability: ±0.005%
- SSB Generation: Double Balanced Modulator with crystal lattice filter
- Carrier Suppression (SSB): 40 dB down
- Unwanted Sideband Suppression: 60 dB down
- Harmonic Suppression: 60 dB down
- FM Deviation with 20 mV: 1250 Hz audio: 1.5 kHz
- Current Drain at no Modulation: 1850 mA (AM)
  800 mA (SSB)
- Current Drain at Maximum Modulation: 2.4 A (AM)
  2.0 A (SSB)
- Antenna Impedance: 50 ohms

**Installation Instructions**

This transceiver is designed for 12 volt DC operation with either a negative or positive ground system. In order to install the radio, it is important to know whether your vehicle has a positive or negative ground system. Connecting the radio incorrectly will damage it.

**Vehicle's Electrical System**

We suggest that you check with qualified technician and find out if your make and model vehicle uses a positive ground or negative ground system.

**Location**

Mount the radio so that all controls are within easy reach of the operator. Avoid mounting it directly in front of air conditioning or heater ducts. Be sure it does not interfere with the operation of the vehicle, or any equipment in the vehicle. Your CB Radio could be installed inside your glove compartment if desired. Most often, CB equipment is mounted under the dash within easy reach of the driver. If under-the-dash mounting is impractical, consider mounting the unit on the transmission hump in the center of the floorboard. Disconnecting the battery will prevent short-circuits, blown fuses, and other potential hazards and inconveniences. Reconnect the battery only after the radio and antenna have been installed and all electrical connections completed.

**Mounting The Radio**

Locate the mounting bracket and hardware furnished with the radio. Remove the bracket from the unit, and hold the bracket up to the mounting location you have selected. Take a soft lead pencil and draw an outline of the entire bracket, including the holes for drilling, on the place it is to be mounted. Do not drill any holes yet. Before you drill, look behind the place that you have chosen to mount your unit to make sure that there are no wires or other items that can be damaged by the drill bit. Drilling without a thorough check can result in damage to the electrical system or other parts of your car or truck.

If the area is clear, take a center punch and make a small indentation in each of the places marked for drilling. Using the center punch first will keep the drill from sliding and damaging the upholstery or surface of the dash. Use a #30 (1/8 inch) drill bit for the self threading screws. Wrap tape around the bit about one inch from the point. The tape will prevent the bit from entering too far into the hole and damaging objects behind the hole. Place the drill bit in the indentations made by the center punch and drill slowly, being careful not to damage the surface or make the hole larger than necessary. Protect your eyes with goggles. If you are drilling through heavy upholstery or carpeting, mark an ‘X’ exactly at the spot for the hole. Cut the upholstery or carpeting material along
the lines of the X with a sharp knife. Peel the corner back so that while you are drilling, the drill does not catch on the material and unravel it. Once you have drilled the necessary holes, use the hardware to mount the bracket firmly to the mounting location.

Connecting to a Negative Ground System
Follow these instructions if you are certain that your vehicle has a negative ground system. Connect the negative (black or green) wire to a screw or bolt on the metal frame supporting the instrument panel, or to any metal point that is part of the vehicle's metal structure. Remove any paint or coating from under the screw or bolt to ensure good electrical contact. If you want your radio to operate at all times without having the ignition switch turned on, connect the positive (red) wire to the DOME LAMP terminal on the vehicle's fuse panel. If you want your radio to operate only when the ignition switch is turned on, connect the positive (red) wire to the RADIO terminal on the vehicle's fuse panel. Do not turn on the CB radio until the antenna is connected. If you attempt to transmit without the antenna connected, you risk burning out the unit's power transistors.

Connecting to a Positive Ground System
Follow the instructions in this section only if you are certain that your vehicle has a positive ground system. Connect the positive (red) wire to a screw or bolt on the metal frame supporting the instrument panel, or to any metal point that is part of the vehicle's metal structure. Remove any paint or coating from under the screw or bolt to ensure good electrical contact.

If you want your radio to operate at all time without having the ignition switch turned on, connect the negative (black or green) wire to the DOME LAMP terminal on the vehicle's fuse panel. If you want your radio to operate only when the ignition switch is turned on, connect the negative (black) wire to the RADIO terminal on the vehicle's fuse panel. Do not turn on the CB radio until the antenna is connected. If you attempt to transmit without the antenna connected, you risk burning out the unit's power transistors.

Antennas
The antenna's mounted location on the vehicle affects the operation of the CB radio. Transmission and reception characteristics vary for different antenna locations. Ideally, the transmitted power and receiving sensitivity should be uniform in all directions, regardless of which direction the vehicle faces. In a typical installation however, the vehicle's irregular shape produces some cancellation effects which prevent ideal performance. However, an antenna located near the center of the vehicle's roof will provide performance closest to ideal. A compromise between such factors as the cost of the antenna, the ease and personal preference of installation, and uniformity of the desired transmission/reception characteristics will determine the best mounting location.

Operating Instructions

To Receive
1. Turn the unit on by rotating the Volume control clockwise. Continue to rotate the knob in the same direction to increase the loudness.
2. Turn the Squelch control counterclockwise, then slowly clockwise until the hissing sounds just stop. It is important to set this control carefully. When properly set, annoying static noise (hiss) will be eliminated while allowing reception of weak signals. Turning the Squelch control too far clockwise increases the signal required to actuate the receiver and may prevent reception of weaker signals. Turning the control too far counterclockwise will allow the receiver to pick-up atmospheric noise and objectionable background hiss.

Install the unit as described in the installation instructions. Make sure the antenna and power wires are properly connected before you attempt to operate the unit.
3. Set the Hi-Lo switch to either position, as required.
4. Turn the channel selector to any of the six channels you choose.
5. Set the Mode switch to AM, FM, LSB or USB.

Loc-Dx Switch
For normal operation, set the switch to the DX (up position). If the signal is too strong, distortion may result, in which case set the switch to the LOC (down position).

NB Switch
Set the Noise Blanking switch to the NB position to reduce impulse interference such as vehicle ignition noise. When no interference is present, set the switch to Off for clearest reception.

ANL Switch
Set the Automatic Noise Limiter switch to the ANL position to reduce atmospheric and electrical interference. When no interference is present, set the switch to Off for clearest reception.

To Transmit
1. Plug the microphone cord into the MIC jack.
2. Wait until the channel you selected is clear.
3. Set the Mode switch to AM, FM, LSB or USB.
4. Hold the microphone directly in front of you at a distance of 2 or 3 inches. Press the microphone's pushbutton and talk in a normal voice to transmit your message.

Note: To avoid garbled transmissions, don't shout into the microphone or hold the mic against your mouth.

Release the microphone's pushbutton to receive.

TX Indicator
Illumination of the TX indicator shows that your CB unit is transmitting.

S-RF Power Meter
This meter shows the relative strength of incoming signals when receiving, and RF power output when transmitting.

At the LSB and USB switch positions, adjust the Clarifier to obtain the most pleasing (normal) range of voice tones. Varying this control to either extreme varies the tone of the voice from a high pitch to a barely intelligible low tone.

Public Address
This unit may be used as a PA amplifier as follows:
1. Connect an 8-ohm PA speaker to the PA jack located on the back of the cabinet.
2. Turn the unit on by rotating the Volume control clockwise.
3. Rotate the Squelch control fully counterclockwise to PA. The internal speaker will be automatically disconnected.

External Speaker Jack
A remote 8-ohm speaker may be connected to the unit in order to overcome muffled sounds caused by a carpet or other obstruction in the vehicle. With the remote speaker plugged into the jack, the internal speaker is automatically disconnected.

In Case of Difficulty
If you encounter difficulty in operating your unit please check the following:

Symptom
Radio dead, no indicator lights
Unit will not send on illuminated S-meter
Unit will not receive, no background noise
Unit will receive but not transmit
Reception garbled with loud whining background noise. Symptom comes and goes, or persists for days

Possible Cause (And Remedy)
1) Blown fuse (Replace fuse)
2) Power wire disconnected (Refer to installation instructions)
1) Unit's PA switch set to PA (Reset)
2) Antenna problem (Check)
1) Squelch control set too high (Readjust)
1) Loose microphone connection
2) Antenna Problem (Check)
3) Microphone defective (Substitute another microphone)
1) Atmospheric disturbances. Worsens during peak sunspot activity.

4. Press the microphone's pushbutton and talk in a normal voice.

Important: Always face the PA speaker away from the mic and as far as possible from the unit to prevent feedback (high-pitched howling sounds).
5. Rotate the Squelch control clockwise to other than PA to turn PA off and return unit to normal operation.