

MX800 OPERATION

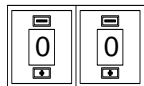
VOLUME (OPTIONAL-T13)



Rotate the volume control clockwise to adjust the volume control for a comfortable listening level. If no sound is heard, temporarily un-mute the radio by briefly rotating the Squelch Control full anticlockwise. You can adjust the volume by listening to the receiver's background noise.

When finished, return squelch setting. (See section on setting Squelch.)

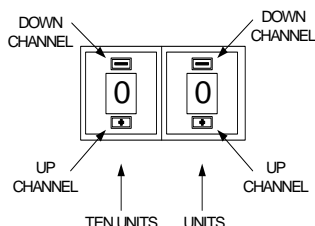
CHANNEL SELECTING (OPTIONAL-T14)



Push to select the memory channel number for the selected readout.

The channel display will rotate and select the higher channel when the up button is pressed.

By pressing the down button the Channel display will rotate to display the lower channel selected. The selected channel is displayed.



SQUELCH (Front panel option-T13)

The squelch is used to eliminate any annoying background noise when there are no signals present.

This control is located on the main controller motherboard (RV6) an optional model can have it fitted on the front panel. A technicians tuning tool will be required to adjust this setting. (Factory set for 8dB SINAD)

When no signal is received, rotate the Squelch control (SQL) fully counterclockwise first, and then rotate SQL clockwise to the point that the noise just disappears. This will provide optimum Squelch performance.

When the Squelch is Open, the receiver's background noise can be heard and 'Amber RX LED' is lit on the front panel display. When the Squelch is closed, the receiver remains quiet when there are no signals present but any incoming signals will override the Squelch and be heard in the speaker.

NOTE: If an incoming signal is very weak and is close to the minimum squelch level, it may become broken or "chopped" by the squelch action. To prevent this, simply open the squelch to allow the signal to be heard clearly. Alternatively, you can reduce the squelch sensitivity as described above.

When CTCSS is enabled the channel remains quiet until someone transmits using the same tone, and the 'Green Tone LED' lamp will be lit. When the transmission ends, the channel becomes quiet again. By using different tones, several groups of people can share the same channel without disturbing each other.

ACCESSORY SWITCH (Depends on Options)



The Accessory button is a programmable momentary switch. Which is assigned a function in software programming. (Subject to Radios firmware)

See Dealer for application notes for further information on this feature.

REPEATER MODE

In repeater mode, the received signal is processed and retransmits at a different frequency.

Repeaters are usually located on hills, mountains or tall buildings. The increased elevation greatly improves the range of the repeater beyond that of a normal base or Mobile. This means that the repeaters are able to receive and retransmit signals to radios that would otherwise be out of range of each other.

To enable the Repeater Function (TTR) the operating channel will required to be programmed as a repeater and User Dip Switch2-4 enable on motherboard.

Receiving A Call

With the MX800 powered 'ON' the front panel Green led is lit.

- Set the audio and squelch levels as per SQUELCH and VOLUME section.
- Select the desired receiving channel as per Channel selecting section.
- When receiving a signal the 'Amber RX LED' indicator lights green when the squelch is open, and audio is emitted from the speaker.
- Listen for your call sign when you hear activity, and reply promptly by identifying yourself if called. (For example: Base receiving).

Transmitting To Making A Call

With the MX800 powered 'ON' the front panel Green led is lit.

- Select the desired channel, as previously described.
- If the 'Amber RX LED' indicator is on, the channel is busy and you must wait until it is free, before proceeding. If you attempt to transmit anyway, the other party may not receive your transmitted signal.
- Lift the microphone off-hook and listen to check that no one else is using the channel. You may also have to press the Monitor Key on the desktop Microphone or the Accessory button on the radio briefly, depending on the microphone used and the options programmed to your radio.
- When using the Hand-Held microphone, Hold it about 5cm from your mouth and press the Press-To-Talk (PTT) key, located on the side of the microphone (see Figure 3-1). Speak clearly into the microphone at your normal voice level, identifying yourself by your call sign, and the person you wish to contact. (For example: Base to Mobile 2.)
- The 'Red RX LED' indicator lights while transmitting.
- Release the PTT key when you have finished talking.

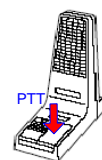


Figure 3-1

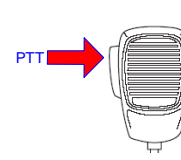


Figure 3-2

Transmit Timer

Your MX800 is fitted with a preprogrammed timer to limit the maximum length of transmissions.

When the time limit is reached, the transmission is terminated. (Subject to Radio Firmware)



Illustration only. Microphone not included

INSTALLATION

Unpacking

The MX800 Radio is securely packed for transport with special foam packers within a pasteboard container. Before unpacking the MX800 radio, please inspect the MX800 & packaging for signs of damage and report any damage to your MX800 distributor.

Upon unpacking of the MX800 radio, please ensure that all items shipped were received, report any missing items to your MX800 distributor. All ports on the rear of the radio should be carefully examined to ensure that packaging has not become wedged inside them. It is very important to examine the fan, as operation of the radio will be affected if any packaging or shipping damage causes the fan to stop working.

Installing the Base Station System

The design of the MX800 allows it to be installed in a 19inch rack.

If you intend to install the radio in an equipment rack consult the supplier's instructions for your system.

Ensure that it is in a secure, dry location with sufficient air space around it to allow for adequate ventilation. It is recommended that the chassis be earthed.

Power Supply

The MX800 requires an external 13VDC power supply. Spectra Engineering manufactures an Automatic Backup Battery Change Over System and single power supplies. The built-in backup system supports automatic switching to an external power DC battery supply if the AC power supply fails.

Make sure the [POWER] switch on the back of the PSU is turned OFF when connecting an AC power cable and also when connecting the DC power cable for a backup battery (Refer to the Mains ratings label on the rear of the PSU module)

Note.

The MX800 will draw approximately 7 to 10Amps 50W (band dependent) & 15Amp 100W opt. on transmit and when external power supply \ batteries are used, the gauge of the DC cable fitted to the 12V supply connector should be adequate to ensure less than 0.5V volt drop at this current.

If external batteries are used and are non-sealed Lead-acid batteries type, placement should be at least 4 m away from the repeater.

No reverse polarity protection.

Be sure both the positive (red) and negative (black) terminals are correctly connected and an inline 15Amp fuse for 50W or 20Amp for 100W opt. should be fitted on the Positive wire. See example in picture below (Not include)



Antenna

In radio communications, the antenna is critical importance, effecting the output power and sensitivity.

The antenna and coax cable should be the 50ohm type, and have a Voltage Standing Wave Ratio (VSWR) of 1.5:1 or better.

CAUTION: Protect repeater from lightning by using a lightning arrestor.

NOTE: There are many publications covering antennas and their installation. Consult with your local dealer for more information and recommendations.

SWR

Each antenna is tuned for a specified frequency range and SWR may be increased if used out-of-range.

When the SWR is higher than approx. 3.0:1, the transceiver's power drops to protect the Power Amplifiers final transistor. Low SWR allows full power for transmitting. The MX800 has a software diagnostic SWR meter to monitor the Antenna SWR continuously.

Duplexer

The MX800 with optional external duplexer kit provides mounting for a number of different manufactures mobile duplexers.

A duplexer is required when only one antenna is used for both transmitting and receiving. Select a duplexer according to the transmitting and receiving frequencies.

See Dealer for further information on this feature

Software Programming

The MX800 can operate in a number of different modes. The primary alternatives are full duplex, which is the default mode, repeater and simplex. Using MXtools programming utility the MX800 can be programmed to suit individual system needs. This is done through the configuration menu system, with a Personal Computer (PC) Windows XP and a RS232 programming cable.



MXTOOLS is a Base Station Programming Utility specifically designed to use in conjunction with the Spectra MX800 Base Station. MXTOOLS provides easy viewing and setup of the parameters within the MX800 Base Station. MXTOOLS is used for three main purposes:

- Channel programming and viewing
- Configuration setup
- Viewing and radio diagnostics.

MXTOOLS is a powerful utility giving comprehensive control over the information within the radio while maintaining an easy to use user interface simplifying the setup of your MX800 Base Station.

MXTOOLS RD is an application in which you can diagnose and log single or multiple MX800 base station(s) data, by working in conjunction with option T31 board and MXSSU unit or T34 board.

MXTOOLS RD features:

- Real Time Diagnostic through Serial Communication or Ethernet
- Data Logging (Time Interval period 1 to 60 minutes or manual log).
A file (dataExcel.txt) is formatted so that user can import data to MS Excel easily.
- Alarm Logging, depending on the alarm mask (programmable from MXTOOLS)

In addition to the features above MXTOOLS RD allows you to connect to a single MX800 radio directly, where you can log any diagnostic result as well.

Please see the MX800 Technical Manual or contact your dealer for application notes for further information on MX800 features.

Further information can be found at;

www.spectraeng.com.au/MX800-docs.shtml