

**Model M15-25**

The Model M15-25 Base Station is designed for ARINC channel communications and other uses in the 118 to 137 MHz VHF band. Typical users include air carriers, airport authorities, corporate flight departments, hospitals (medical evacuations – MEDEVAC) and general aviation support.

**FEATURES:**

- 19" rack mount installation
- 25 watt transmitter carrier (approximately 100 watts PEP)
- Highly effective receiver AGC (automatic gain control) with additional leveling in audio amplifiers
- Built-in remote control interface allows connection for almost any configuration requirement.
- Silent operation. No fan needed for cooling.

The M15-25 can be configured to work with a wide selection of external equipment for remote operation, from "extended local control" for a dedicated connection to ac pairs of phone lines with tone signaling utilizing either 2-wire or 4-wire type interfaces. This gives the M15-25 the ability to connect to dial up long distance phone lines, or leased phone lines for even more control.

**ACCESSORIES:****Antennas**

Mentor Radio offers two styles of antennas to choose from to connect to the M15-25 base radio.



**Broadband antenna:** Mentor Radio part number 1101273. This is also known as an AV-1 antenna. This is a very durable antenna built to withstand winds of up to 100 MPH. This antenna is a Broadband antenna which means that it does not require any tuning. Simply connect the antenna UHF connector from the coax transmission line and it's ready to operate on any frequency in the aviation band. (118-136.975MHz) Mentor Radio recommends this antenna for all installations where the customer is connecting the antenna to a radio with multiple channels where the frequency range from the lowest to the highest transmitted frequency will be equal or greater than 300 KHz. If you have any questions about whether this antenna would be suitable for your installation please call our customer support at 216-265-2315. Our support staff can help you in your installation planning stage.

**Narrow Band antenna:** Mentor Radio part number 1101275. This is a less expensive antenna for those customers who are using the M15-25 configured as a single channel radio and would like to reduce their installation costs. This antenna being a narrow band device requires tuning during installation. Tuning involves cutting the antenna to the appropriate length for use at a specific frequency. Instructions are included to facilitate this procedure.

**ACCESSORIES CONTINUED:**

**Microphones**

Mentor Radio offers our base radio customers two different styles of microphones to choose from for local transmission control.

<p><b>Pedestal Style microphone.</b> Mentor Radio part number 2101319</p>	<p>This is an Astatic desktop style microphone specially modified for Mentor Radio base radios. Includes a Mentor Radio designed preamp and connector jack for all Mentor Radio products.</p>	
<p><b>Handheld Style Microphone.</b> Mentor Radio part number 1101276</p>	<p>This is an aviation standard aircraft microphone, the Telex 66TRA.</p>	

**ACCESSORIES CONTINUED:****Remote Controls**

Remote controls allow the radio to be located in one place and the operators who need to use it anywhere else. There are several reasons this is desirable.

1. From an electrical perspective it's important to keep the radio and antenna close together. The shortest physical distance between the radio and the antenna results in the minimum signal loss when transmitting. Reception sensitivity also increases. Unfortunately, it's not always convenient to have the antenna and radio where the operators are located. Users without remote control must balance the installation location to satisfy both of these requirements. Depending upon the installation, this may pose a daunting challenge.
2. Two or more individuals in multiple locations may need to hear and talk on the radio at the same time.
3. One individual may need to operate more than one radio. Without remote control this would require multiple controllers. One for each radio. Operations become challenging at this point.



Mentor Radio's It allows multiple users to monitor and transmit using a single radio. Used in this configuration everyone connected with a remote control unit can hear all transmissions being sent and received by any other control unit. Remote controls also allow a single user to control multiple radios using a single console.

The Mentor Radio remote control system is comprised of a M15-25 base radio, at least one controller and the appropriate cable which connects the radio to the control unit. There are four basic styles of controllers and two basic types of connections to the radio available. Mentor Radio base units are capable of interfacing to most of them.

Another feature of remote controls is to allow a single user to change the operating frequency (channel) of the currently transmitting radio. Mentor Radio M15-25 and MB can be configured for this feature only on a two channel basis. It requires using a special tone remote adapter (Mentor Radio part number 1101837) plus a special two frequency tone remote controller (See Remote Control Data Sheet for more information.)



**Options:**

**Uninterruptible Power Supplies (UPS)**

The Mentor Radio part number 1101723 provides automatic backup power for emergency communications when normal power is disrupted during mission critical times.

**Lightning Protection**

Depending upon your installation location you may want to consider adding lightning protection to your radio installation. Mentor Radio offers the option of adding both AC line and antenna lightning protection. The antenna lightning protector is the gas discharge tube type.

**SPECIFICATIONS:**

**GENERAL:**

**Physical:** 19 inches wide by 3.5 inches high by 14.5 inches deep; 18 lbs.

**Power requirement:** Only 4 amps at 105-125 vac or 2 amps at 210-250 vac 50-60 Hz, voltage is switch selectable from rear panel. Appropriate International power cord and plug provided for non United States customers.

**Temperature Range:** -20 to +122° F (-30 to +50° C)

**Frequency Range:** 118.000 to 136.975 MHz (25 KHz channel spacing)

**FCC Identifiers:** QQTM15 and QQTPA25

**Receiver:**

- **Sensitivity:** 1 uv 50% mod. for 6 dB (s+n)/n or 3 uv 50% mod. for full audio output
- **Selectivity:** -80 dB at 25 KHz adjacent channel
- **AGC:** 3 dB 5-100,000 uv
- **Audio Output:** 3.5 watts into 4 ohms with less than 5% distortion

**Transmitter:**

- **Power Output:** 25 watts carrier nominal
- **Load Impedance:** 50 ohms
- **Frequency Stability:** +/- .002%
- **Spurious Outputs:** meets FCC requirements
- **Modulation:** peak 85% nominal

**Remote Interface:**

- **Audio Output:**  
Speaker: 3.5 watts, 4 ohm  
Line: -8 dBm to +13 dBm at 600 ohms
- **Transmitter "key" (push-to-talk)**
- **Modulation (Microphone) Adjustable Audio:** -20 dBm to 0 dBm
- **Squelch Logic Signal ("squelch break"):** 0-5 vdc or 0-12 vdc
- **+13.5 vdc power supply output:** 300 ma. max