



# i. AM. Radio Transmitter

## Installation and Operation

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Easy to follow instructions on how to program and use your Model 5.0 i. AM. Radio Transmitter

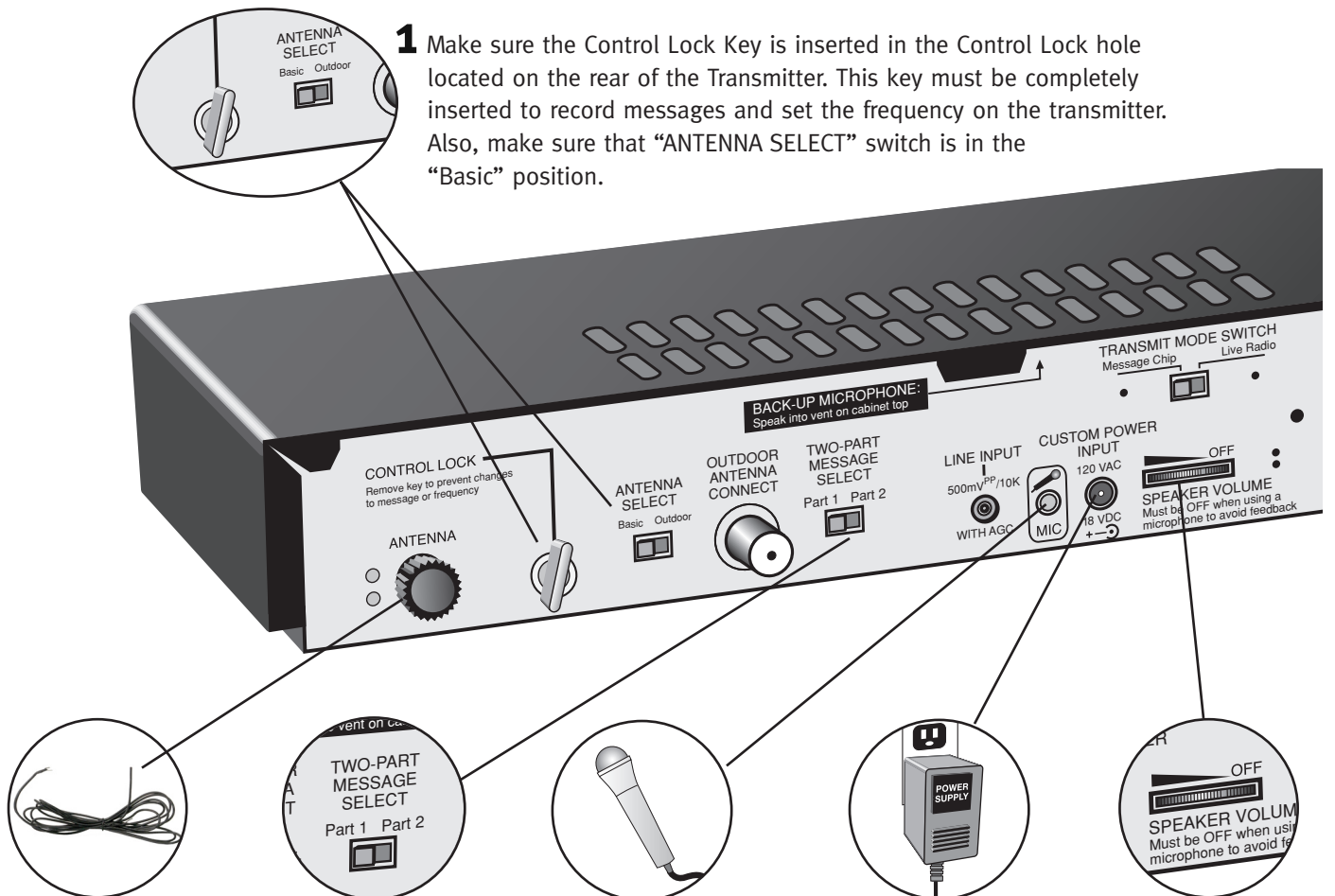
**i. AM. radio**

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# Quick Start

This Quick Start contains the basic steps necessary to set up and operate your i. AM. Radio Transmitter using the Indoor Wire Antenna. Please read the detailed procedures in this manual for complete instructions, especially if your set-up includes the Outdoor Antenna.



**1** Make sure the Control Lock Key is inserted in the Control Lock hole located on the rear of the Transmitter. This key must be completely inserted to record messages and set the frequency on the transmitter. Also, make sure that “ANTENNA SELECT” switch is in the “Basic” position.

**2** Connect the indoor antenna and be sure to uncoil and fully extend the wire.

**3** Set the TWO-PART MESSAGE SELECT switch to Part-one. You are now ready to record a message to be broadcast via the internal or external mic or any external input source connected to the LINE INPUT jack.

**4** Plug the hand-held microphone into the MIC jack located on the back of the Transmitter. **If you are not using a hand-held mic** the transmitter input will default to the internal microphone located just under the perforated lid.

Or, plug any line-level source (Mp3 player, Cassette deck) into the LINE INPUT jack on the rear panel.

**5** Next, plug the power transformer into a grounded wall outlet, and then plug the power cord into the CUSTOM POWER input jack located on the back of the Transmitter.

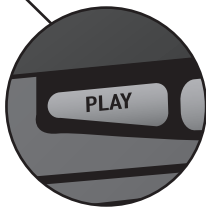
The Transmitter will then begin calibrating itself. When it is finished calibrating, a frequency will appear on the front panel display.

**6** The SPEAKER VOLUME should be turned off when using the mic to avoid feedback.



**6** To record, press and hold the Record/Pause button on the Front Panel until you see the countdown begin on the Front Display. Then, release the button and begin recording your message by speaking clearly into the internal mic under the top perforated grill of the unit, or into a hand held mic plugged in to the MIC jack on the rear of the unit, or by starting an external source plugged into the LINE INPUT jack on the rear of the unit.

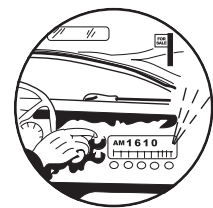
The front panel digital display will count down the total record time available, but you can pause recording at any time by pushing the record button again. Then, finish the record process by pushing the play button or continue recording by pushing the record/pause button again.



**7** To begin playback, press and hold the Play button until you see the frequency reappear. The message will now be broadcast in a continuous loop.



**8** Next, determine an open frequency in your area and set this frequency on the front panel display using the up/down arrow keys. Please see the "Frequency Selection" page in this manual to select the best frequency.



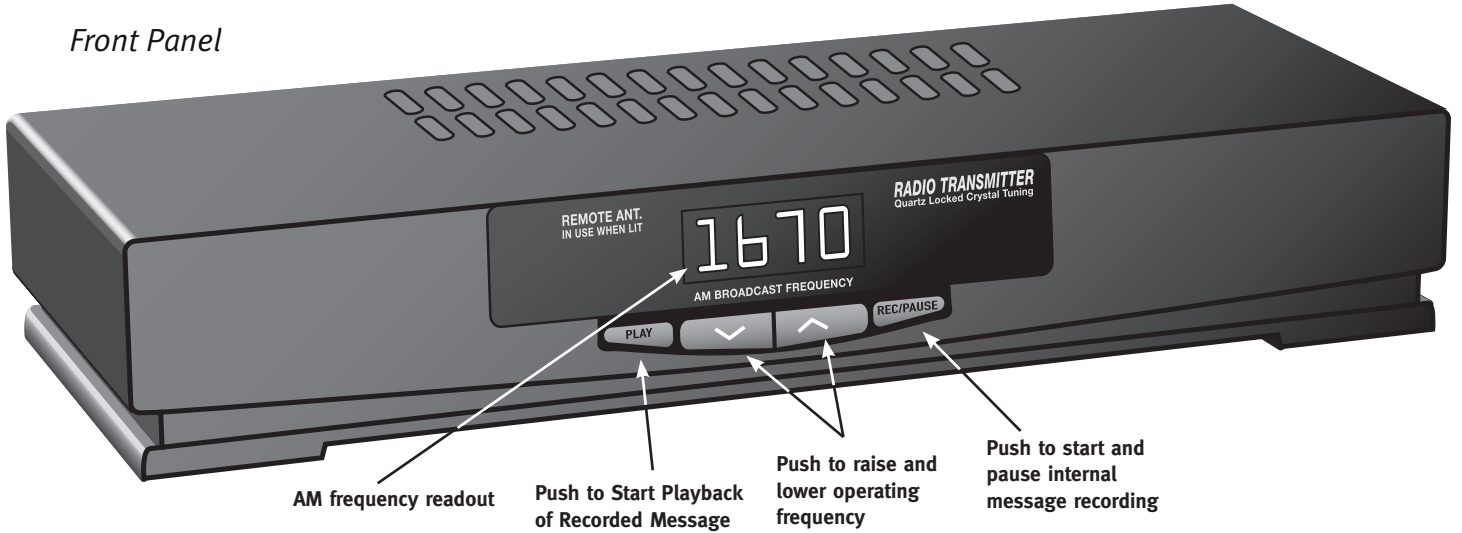
**9** Finally, monitor the radio signal on a good car radio to check coverage and audio quality.

You can try different transmitter locations and frequency selection to improve coverage and minimize noise.

Use of the outdoor antenna/ range extender will substantially increase coverage.

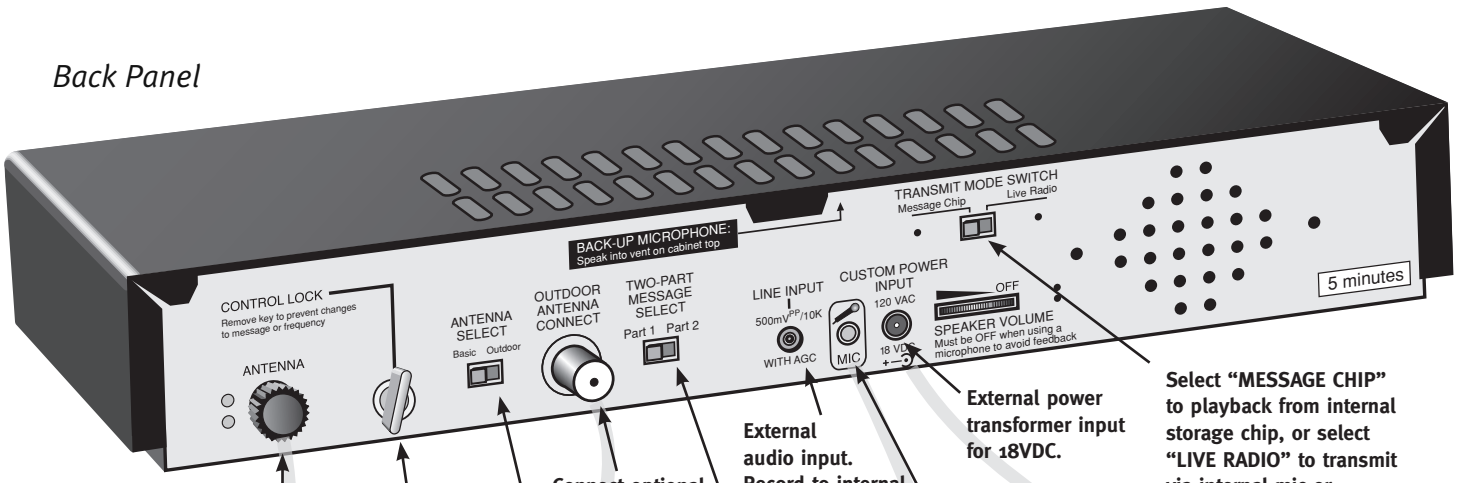
# Front and Rear Panel Controls

Front Panel



- AM frequency readout
- Push to Start Playback of Recorded Message
- Push to raise and lower operating frequency
- Push to start and pause internal message recording

Back Panel



- Connect indoor antenna here, uncoil and stretch out fully along a wall or window sill.
- Insert key to allow message record or frequency change
- Connect optional outdoor antenna here via RG-6 coaxial cable
- Select indoor or outdoor antenna
- External audio input. Record to internal storage chip and/or broadcast live.
- Select recording of part 1 or part 2 internal message
- External power transformer input for 18VDC.
- External hand-held microphone jack. Use automatically overrides internal microphone.
- Select "MESSAGE CHIP" to playback from internal storage chip, or select "LIVE RADIO" to transmit via internal mic or external line source.

Indoor AM Antenna  
Model # IAM-Indoor Antenna



Antenna Tuner / Range Extender  
Model # IAM-ATU



Transmitter Hand-held Mic  
Model # IAM-Mic



Transmitter Power Supply  
Model # IAM-Power Supply



# Frequency Selection and Antenna Connections

## Set the Frequency



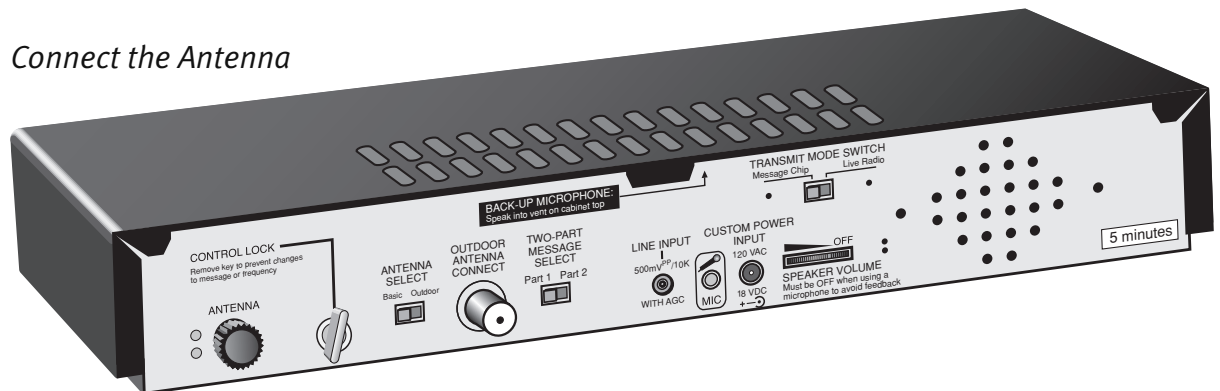
Determine an available frequency (preferably on the high end of the band) by using a good quality digital car radio parked in your primary listening area. Select a channel on your car radio where no other radio station is audible as well as on one channel above and one channel below. It is advisable to make this listening test at dusk when radio reception is at best.

Use the front panel raise and lower controls to set this frequency.

Note: When using the indoor antenna, the transmitter will go through an automatic antenna calibration routine after a frequency has been set. This routine will be automatically repeated once an hour to keep the transmitter calibrated (an internal motor sound will be heard.)

Note: When operating the transmitter, the built in speaker can be used to monitor the broadcast signal or manually turned off or down via the rear panel "SPEAKER VOLUME" control. The volume level setting of the speaker volume will not affect the audio level of the broadcast signal.

## Connect the Antenna



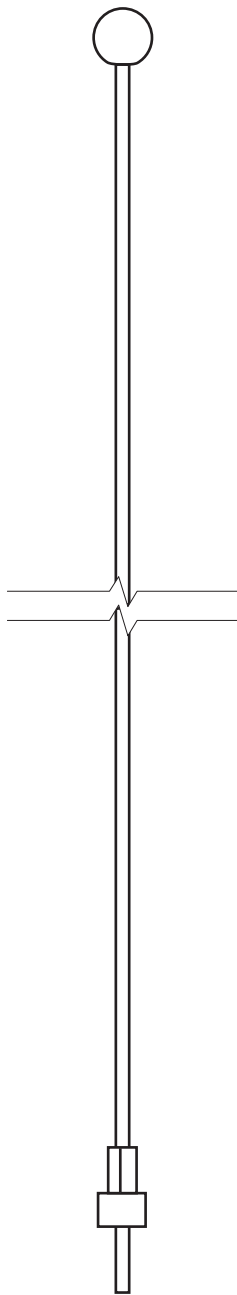
Connect the indoor antenna to the rear panel lug. Locate the transmitter by a window and stretch the full length of antenna cable out in a straight path as possible. Set the "ANTENNA SELECT" to "BASIC."

OR

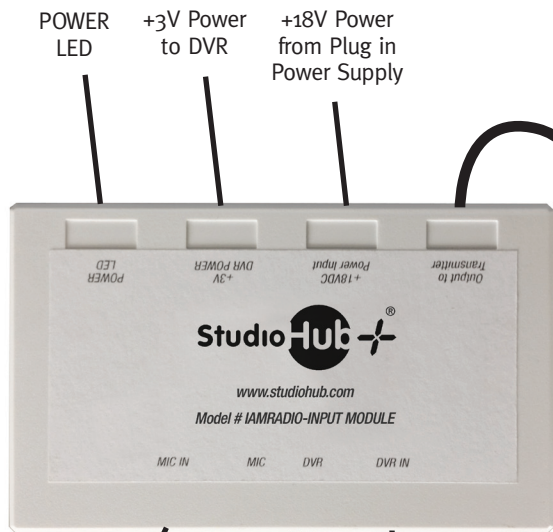
Utilize the outdoor antenna tuning unit for extended range. Set the "ANTENNA SELECT" to "OUTDOOR" and follow the "Using the Outdoor Antenna" page in this manual for installation and tuning instructions.

Note: make sure that the transmitter is grounded either via the three prong power transformer or ground wire connected to a screw on the rear of the unit.

# Using the Outdoor Antenna



Thread 3 meter whip antenna securely into connector on top of antenna enclosure



Optional Mic Input

Switch to Right for DVR Playback  
Switch to Left for LIVE Broadcasting

Plug into Headphone Jack



100ft. CAT-5 Patch cable to provide audio and power. Enter via waterproof grommet and plug into provided RJ-45 connector inside lid.

For best performance, attach a wire (not supplied) from the Ground Wire Connector on the top of the ATU to a good earth ground.\*

Some examples of good earth grounds are:

- The center screw that holds the cover on a wall electrical outlet.
- Plumbing and water pipes (metal).
- A copper ground rod driven into the earth.



Consult the DVR manual for recording and loop playback. Note that the internal audio storage in the transmitter is not available and the switch on the rear of transmitter should be set to "LIVE" radio.

Mount the Outdoor Enclosure to a pole or top side of a building so that the antenna is unobstructed and not near any trees or metal structures.

Connect the transmitter via the supplied CAT-5 patch cable.

**CAUTION : DO NOT CONTACT ELECTRICAL OR HIGH TENSION WIRES WITH THE ANTENNA. YOU CAN BE KILLED.**

\*Please note that Part 15 FCC regulations do not allow an antenna in excess of 3 meters in length and usually the ground wire length is considered a part of this length and is added to this total antenna measurement calculation.

# Broadcasting Live



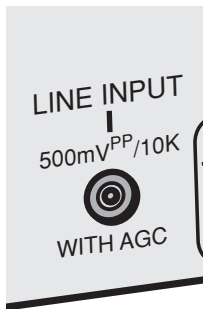
## Broadcast Live from a Microphone.

Set the Transmit Mode Switch on the Back Panel, to “Live Radio.” This immediately and automatically selects the built-in microphone (located inside the unit and under the top panel grill) to act as the audio source for the transmission.

Plugging in a hand held, high-Z microphone into the “MIC” jack on the rear panel automatically supersedes the built-in MIC and selects this MIC as the audio source for the transmission.

*Note that the built-in audio limiter will keep the signal from distorting, but it is still best to speak directly into the microphone and at normal and consistent volume for best sound quality.*

*Note that when using a microphone, the built-in speaker must be manually turned off or down via the rear-panel ‘SPEAKER VOLUME’ control to avoid feedback*

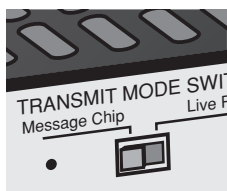


## Broadcast Live from a Studio or External Recorded Message.

Set the Transmit Mode Switch on the Back Panel, to “Live Radio” and plug a line-level signal (.1V to .5V, unbalanced) into the “LINE INPUT” (1/8” mini phone) connector on the rear panel. This immediately and automatically selects this external line input to act as the audio source for the transmission or recording.

*Note that the built-in audio limiter will keep the signal from distorting, but it is still best to maintain the incoming signal level at a consistent volume for best sound quality.*

*Note that when recording or broadcasting a LINE INPUT, the built-in speaker can be used to monitor the broadcast signal or manually turned off or down via the rear-panel “SPEAKER VOLUME” control. The volume level of the internal speaker will not effect the audio level of the broadcast signal.*



## Broadcast a prerecorded message from the internal “Message Chip” storage.

Set the Transmit Mode Switch on the back panel, to “Message Chip”. The transmitter will automatically begin and continue to playback any audio recorded on the internal “Message Chip.”

Set the “Two-Part Message Select” switch in the “Part-1” position to playback only message one. Set the “Two-Part Message Select” switch in the “Part-2” position to consecutively playback both messages parts one and two.



# Record Procedure - in detail

Front Panel



## Recording a message onto the internal “message chip.”

- 1 Insert the Control Lock Key in the control lock hole located on the back of the Transmitter. Select either Part-1 or Part-2 on the Two-Part Message Switch located on the back of the Transmitter. Note that you can record or re-record either message part at any time and select to playback either only Part-1 or Part-1 and Part-2 when transmitting. Therefore, Part-1 is often used as a “wrap-around” or permanent part of the message while Part-2 is used for additional information and topical updates.
- 2 To record from the internal built-in MIC, speak into the top grill of the unit. To record from an external MIC or LINE-INPUT plug either device into its corresponding rear panel connector.
- 3 Press and hold the Record /Pause button on the front of the Transmitter until the Display Panel begins counting down in seconds (i.e. 300, 299, 298...) and then immediately begin speaking or press the start button on your external audio source.
- 4 To pause during recording, press the Record/Pause button. Push Record/Pause again to continue. Do not use the Pause Button to end a recording.
- 5 When your message is complete, wait a second or two then press and hold the Play button located on the front of the Transmitter until you see the frequency re-display on the front panel. The message will begin to playback, and will repeat in a loop.

If desired, repeat the recording procedure for message PART-2 by selecting Part-2 on the TWO-PART MESSAGE SELECT SWITCH.

- 6 To protect your message from accidental erasure or tampering, remove the Control Lock Key from the Control Lock located on the back of the Transmitter and place it in a safe place where it cannot be lost.

**Note** - You can monitor your recording on the Transmitter’s Internal Speaker by turning up the “SPEAKER VOLUME” control on the transmitter rear panel, but doing so when utilizing a MIC as the record source may cause feedback. The setting for this internal speaker volume will not affect of audio transmission.

# Technical Specifications and FCC Regulations

## **Model 5.o i.AM. - AM Radio Transmitter**

- Frequency Agile with front-panel selectability - frequency range: 520 to 1700 kHz
- Automatic Tuning – internal automatic servo-operated tuning circuit for range maximization (U.S. Patent No. 6,295,443)
- Audio Inputs – internal microphone plus external mic (mono) and line level (stereo) inputs (on 1/8" "mini phone" connector-line level sensitivity .1 to .5 volts)
- Audio Processing: built in automatic audio limiter / compressor
- Message Storage: digital voice record/playback solid state memory chip, 5 minutes max.
- Message Length: variable depending upon model of transmitter (see sticker on unit back panel)
- Microphone: built-in or hand-held
- Size: 8" x 14" x 2.5" (shipping size boxed - 12" x 20" x 6")
- Weight: 4 lbs. (shipping weight - 7 lbs)
- Indoor Antenna: black, rubberized wire, approximately 8' in length
- Power: 110/120VAC via included 18VDC 100mA external transformer / grounded AC plug adapter
- RF output power: 100 mW average
- Frequency Control: Crystal controlled phase locked loop tuner
- Frequency Stability: - +/- 30 Hz
- Range: typically 300-3000 feet (dependent on conditions and use of outdoor range extender)

## **Model ATU – Outdoor tuning Unit / Range Extender**

- Input Power: .01 mW to 1 watt
- Frequency Range: 520 to 1700 kHz
- Connectors: "F" type input, 3/8"-24 threaded antenna coupling, grounding post with knurled knob
- Radiator: 9' fiberglass whip antenna (included)
- Internal controls: frequency range switch, tuning knob
- Internal indicator: signal strength meter
- Size: 5" x 7" x 3" (shipping size boxed - 6" x 8.5" x 4")
- Weight: 1.5 lbs. (shipping weight - 2 lbs)
- Mounting: mounts to any metal pipe from 1/2" to 1 3/4" diameter (mounting brackets included, pipe not included)
- US Patent Number US 7, 437,130 B2

## **Applicable FCC and Licence Regulations - FCCID: DLB5LTT98**

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: 1.) This device may not cause harmful interference, and 2.) this device must accept any interference received, including interference that may cause undesired operation.

The model ATU Outdoor Manual Antenna Tuning unit is FCC accepted within this certification as serving as the final output stage.

## **FCC part 15 rules, Section 15.219 Operation in the band 510–1705 kHz.**

- (a) The total input power to the final radio frequency stage (exclusive of filament or heater power) shall not exceed 100 milliwatts.
- (b) The total length of the transmission line, antenna and ground lead (if used) shall not exceed 3 meters.
- (c) All emissions below 510 kHz or above 1705 kHz shall be attenuated at least 20 dB below the level of the unmodulated carrier. Determination of compliance with the 20 dB attenuation specification may be based on measurements at the intentional radiator's antenna output terminal unless the intentional radiator uses a permanently attached antenna, in which case compliance shall be demonstrated by measuring the radiated emissions.



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