

TARGETuner

Antenna Management System for Screwdrive Antennas



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Thank you for choosing the **TARGETuner** from West Mountain Radio. This product is designed as mobile antenna management system that includes motor control for the antenna and sensing for frequency band matching. It is ideal for mobile antennas with a remote control head.

TARGETuner senses the RF Signal going to the antenna and will work with any Transmitter or Transceiver. It does not depend on radio data link for band selection and does not need to control the radio for activation. The motor control uses a Full Bridge Power FET Direction Switch that incorporates pulse width modulation for control of motor speed and direction. Stall Current Sensing is programmable in an Antenna Model Specific Firmware Setup Menu.

TARGETuner provides a digital display of Basic Transmitter Frequency and SWR Readout, as well as Manual Tuning Control options which allows the user to monitor antenna performance and manually adjust the antenna if necessary. The TARGETuner System continuously monitors transmitter frequency and antenna performance and can adjust the antenna accordingly with vehicle movement, antenna icing, or any other proximity or environmental related antenna detuning effects.

The TARGETuner RF Sensing Module is remote from the radio controls, and can be placed closer to the antenna insuring proper antenna match into the connecting Coaxial Feedline. This also limits the RF Exposure to other radio and antenna control components and limits the length of the connecting coax needed to connect to the Antenna. An industry standard CAT-5 Cable serves as an interconnect between the TARGETuner RF Sensor Module and TARGETuner Controller. Power is supplied through industry standard PowerPole Connectors for ease of power connection and fusing.

Product Contents

- **TARGETuner Controller Unit**
- **TARGETuner RF Sensing Module**
- **Shielded RJ-45 Cable**
- **Power Cable with standard Powerpole connectors**
- **PL-259 Coaxial Jumper Cable**

Installation

Antenna Installation:

Follow the antenna manufacture's installation instructions outlining Antenna Placement, Grounding, Control Cable preparation and Ferrite Choke Placement. Follow the pre-tuning instructions for the antenna model and record the useable tuning range of the installation based on the antenna element length. An Antenna Analyzer is handy for this. (Record the useable "Frequency Range" for use later).

RF Sensing Module Installation:

1. Install the TARGETuner RF Sensing Module in an area close to the antenna feed point.
2. Connect a short ground braid from the grounding stud to a metal body panel or the vehicle frame. Be sure to scrape off a patch of paint to insure a good RF Ground.
3. Connect a short coax cable between the antenna and the "Antenna" connector of the RF Sensing Module.
4. Connect the antenna manufacture's Antenna Control Cable between the antenna and the TARGETuner Controller. Be sure the Ferrite RF Choke is placed as close to the antenna as possible.
5. Connect the antenna manufacture's longer coax cable between the TARGETuner RF Sensing Module and the Radio Transmitter.
6. Connect the CAT-5 Sensor Cable between the TARGETuner Sensing Module and TARGETuner Controller.

TARGETuner Control Unit Installation:

1. Select a location close to the radio transmitter control panel that will be using the tunable antenna.
2. Connect the Antenna Control Cable between the antenna and the TARGETuner Controller Unit.
3. Connect the controller end of the shielded CAT-5 sensor cable from the RF Sensing Module to the TARGETuner controller unit.
4. Connect the Powerpole power cable to the 12V power source for the radio.

Initial Configuration:

1. Push and hold the "PWR" button on the TARGETuner to apply power to the antenna controller.
2. Press "MENU" button until "Menu Select" appears in the LCD display.
3. Use Down arrow and scroll to "Antenna Range", Press Down until reaching the bottom, press "SAVE". Use UP arrow until reaching the top, press "SAVE".
4. Press "AUTO" or "Manual" to return to operational mode.

Setting Basic Band Centers

Turn radio on and set the transmitter frequency to a frequency at the high end of the antenna's tuning range. (See useable "Frequency Range" in the antenna's Installation Instructions). (i.e:10 Meters – 29.00 MHz)

While in the "System Start", scroll down to "Set Point" and key the transmitter with a low power carrier (AM, FM, CW) at 5 to 10 watts. The antenna Controller should Display the approximate frequency, and search out a low SWR Point, then stop. Press "Save" and go on to the next radio band.

This procedure will set the direction for tuning of the antenna relative to each set point in frequency. Specific and favorite frequencies can be pre-set in this way as well. Press "Auto" three times to return to the "Normal Operation" menu.

Specifications

Primary Power	13.75VDC 2.1 Amp max. 33mA Standby (internally monitored and fused)
Antenna Motor Voltage	13.75V PWM Speed Controlled
Antenna Motor Current	Monitored. Maximum current selectable - 2.0A max (intermittent)
Antenna Encoder Range	0 to 9999
Frequency Range	1.800Mhz to 54.000Mhz
Frequency Readout	+/- 0.01%
Useable RF Power Range	2.0 to 800 Watts
SWR Range	1.0:1 to 9.9:1 (auto level and ranging)
Frequency/SWR Antenna Location Memories	30

TARGETuner Warranty

TARGETuner is warranted against failure due to defects in workmanship or materials for one year after the date of purchase from West Mountain Radio. Warranty does not cover damage caused by abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation, alteration, lightning, or other incidence of excessive voltage or current. If failure occurs within this period, return the *TARGETuner* or accessory to West Mountain Radio at your shipping expense. The device or accessory will be repaired or replaced, at our option, without charge, and returned to you at our shipping expense. Repaired or replaced items are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the *TARGETuner* or accessory made after the expiration of the warranty period.

West Mountain Radio shall have no liability or responsibility to customer or any other person or entity with respect to any liability, loss, or damage caused directly or indirectly by use or performance of the products or arising out of any breach of this warranty, including, but not limited to, any damages resulting from inconvenience, loss of time, data, property, revenue, or profit, or any indirect, special incidental, or consequential damages, even if West Mountain Radio has been advised of such damages.

Except as provided herein, West Mountain Radio makes no express warranties and any implied warranties, including fitness for a particular purpose, are limited in duration to the stated duration provided herein.



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FCC INFORMATION

For a Class B digital device or peripheral, the user instructions shall include the following or similar statement, placed in a prominent location in the text of the manual:

Note: This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Modifications not expressly approved by the manufacturer could void the user's authority to operate equipment under the FCC Rules.

