

The RMR-C450 model is a full-featured radar and laser detector. It detects 360° radar and laser. The radar detector is a dual conversion scanning superheterodyne receiver with separate alarms for each of the radar bands, dim function, city/highway and mute select. It detects front and rear laser and radar.

SPECIFICATIONS:

Radar & Laser Detector:	Sensitivity:
Frequencies: 10.525 GHz	X-112 Dbm
24.125 GHz	K-110 Dbm
33-36 GHz	Ka-wide-102 Dbm
904 Nano-meter	Laser < 200 nano-watt

Alarm: Separate for each Band
Variable alarm for Range
Controls: Volume, On/Off, Dim, Mute, City/Highway, Test
VG-2, VG-3: Frequency Plan
Size: 1.4" x 3.0" x 4.4"

Other:
1-Year Ticket Rebate Program and a 3-Year Warranty

This product has been designed and certified to comply with Part 15 of the FCC Rules. Any changes or modifications not expressly approved by Rocky Mountain Radar may void your authority to use this product. 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. Radar detectors are **not** legal in Washington D.C., Virginia or most provinces in Canada.

SPECIFICATIONS:
Radar Scrambler:
Frequencies: 8.0-38.2 GHz
Antenna: Dual ridge cast waveguide
Mixer: Custom MM wave Schottky
Doppler: FM Chirp 500-9,000 Hz

Lidar Scrambler:

Full laser coverage using asynchronous pulse position modulation to confuse the lidar computer.

- Installation:**
- 1) Complete, sign, and mail Ticket Rebate Registration card.
 - 2) Attach the windshield bracket to the RMR-C450 unit. Align the edge on the bracket with the slot opening on the front of the case. Slide the bracket into the case until it locks into place.
 - 3) Place the windshield bracket in the upper center portion of the windshield. The ideal position will be right below the rearview mirror. Press suction cups firmly against windshield to adhere suction cups. Note: Tinted glass will degrade the laser performance.
 - 4) Bend the windshield bracket mount to a level position.
 - 5) The RMR-C450 will hang from the bottom of the bracket and must have an unobstructed view of the road ahead.
 - 6) Insert the small end of the power cord gently into the power jack on the right side of the unit and the large end into the cigarette lighter receptacle.

Remote mounting is not recommended.

Hard wire: Remove cigarette lighter plug. Connect the red wire to +12 Volts, and then connect the white wire to ground. If your power cord has a dashed white stripe then connect this white stripe wire to ground and solid black wire to +12 Volts.

- CONTROLS:** There are 3 buttons on top of the RMR-C450: Dim, Mute and City.
- Dim:** Press the Dim button for a split second (momentary contact) to dim the alarm lights. There are 3 levels of illumination. To brighten the alarm lights press the dim button again. The unit will have two beeps for "dim", "dimmer" and "dark", and one beep for "bright".
- Mute:** Press the Mute button for a split second (momentary contact) to disable the alarm speaker for quiet operation. To reactivate the alarm speaker press the Mute button again. The unit will have two beeps for "mute on" and one beep for "mute off".
- Auto-Mute:** Press the Mute button for a split second (momentary contact) to disable the alarm speaker for quiet operation. In Auto-Mute operation it will beep the signal 3 times then switch to mute automatically.
- City:** Engage the City function to reduce false alarms in high RF noise areas. City function has 3 levels of sensitivity, City 1, City 2, and Highway mode.

Press the City button for a split second (momentary contact). With City 1 mode "X" Band will be turned off and K – Ka sensitivity will remain 100% active. City 2 mode "X" Band will remain off and K – Ka sensitivity will reduce to 50% sensitivity. Highway mode has all bands at 100% sensitivity. The unit will have two beeps for "city 1", three beeps for "city 2" and one beep for "highway".

Selectable Tone: The RMR-C450 has selectable tones. To change the tone of the unit, press and hold the Mute button down for an extended period of time (approximately 3 to 5 seconds). A flat tone buzz changes the tone. Three beeps returns the setting to normal.

Selectable VG2 alarm: To activate VG-2 detection, press and hold the City button down for an extended period of time (approximately 3 to 5 seconds) until unit beeps 3 times, VG2 is now on. VG-2 detection is now activated. To deactivate press and hold the City button for an extended period of time (approximately 3 to 5 seconds) until unit beeps a flat tone buzz. VG-2 is now off. The unit will have three beeps for "VG2 on" and a flat tone buzz for "VG2 off".

Voice On/Off: To turn the voice on and off press and hold the Dim button down for an extended period of time (approximately 3 to 5 seconds) until the unit responds, "voice on" or "voice off".

Bi-lingual: To select bi-lingual mode from English to Spanish or Spanish to English, power off the unit, press and hold the Dim button down while turning power back on the unit.

Reminder! The C450 will memorize the settings of the features above when the unit is powered off. Be sure to re-adjust the settings to your normal preferences.

Test Function: To run the system diagnostics check on the unit press and hold down both the Dim and City buttons simultaneously for an extended period of time (approximately 3 to 5 seconds). The unit will perform a test sequence to verify all systems are operating properly. Once the diagnostics test is completed, the unit will remain with all LEDs lit. To reset the unit press any button: Dim, Mute, or City. This test is also performed automatically when the unit is powered on.

Power and Volume: Power is provided through the thumb wheel switch on the left side of the unit. Rotate the wheel forward to turn on and increase the volume for the alarm.

Rocky Mountain Radar does not condone the use of excessive speed on the highways, nor does it endorse breaking the speed limit laws of the United States of America. Please drive safely when using this or any other electronic product in your vehicle.

Alarms: A separate alert tone will sound for each band of Radar encountered with a different colored light illuminated, (K/Ka-Green), (X-Red), (2, 3, 4-Red). The signal strength indicators are the numbers 2, 3 and 4, the stronger the signal the more numbers indicated will light up. Tone frequency will increase as signal strength becomes stronger. All alarm lights (X, K/Ka, 2, 3, 4) will flash when Laser is detected.

Signal Strength: Signal Strength will be first indicated by the illumination of the LED of the band detected, then the three numbers 2, 3, and 4 red LED's. When all three are illuminated the signal is strongest.

VG-2: VG-2 detection is indicated with a separate alarm along with the yellow power light (P) blinking. **The C450 is automatically undetectable by VG-2/VG3.**

Diagnostics: The RMR-C450 has a full internal automatic diagnostic system. If the power light goes off and remains off, check the 2-amp fuse in the power cord by unscrewing the silver tip and removing the fuse. If the fuse is good (wire inside the fuse unbroken), return the unit for service.

How does it work?

The Rocky Mountain Radar scramblers are full-featured radar and laser scramblers combining active laser and passive radar scrambling capabilities. The radar scrambling circuit mixes a Doppler FM chirp with the incoming police radar signal and reflects it back to the radar gun. The computer in the radar gun must receive eight identical, consecutive readings before it will display your speed. All the different speeds contained in the FM chirp confuse the computer in the radar gun so it does not display any speed. This effect duplicates the normal operation that the officer usually sees. Since it is normal to occasionally lose the target speed, the officer is not suspicious. Reasonable care should be used as flagrant violators could still be caught with an estimated speed. The laser scrambling circuit transmits a series of pulses at the same wavelength used by the police laser guns (Lidar), which are electronically timed at about 100 feet apart. When the pulses pass through the windshield they will lose up to 50% of their power. The power output is four to eight times

that needed to trigger the detector in the laser gun. Lidar sends out laser pulses and measures how long it takes to hit your car and come back. From the speed of light it can determine your *range*. It sends out several more pulses and calculates your speed from the change in distance over time. The Rocky Mountain Radar scramblers only allow the Lidar to see up to 100 feet so it is unable to calculate your speed.

SCRAMBLER ACTIVATION:

All scramblers are factory set to the OFF position.

Scrambler: To turn the scrambler on/off, power off the unit, press and hold the City button down while turning power back on the unit.

If the scrambler is on, the "T" LED light will be included in the start up sequence. If the scrambler is off, the "T" LED light will not be included in the start up sequence. The "T" LED light is the test diagnostics for the scrambler.

SCRAMBLER OPERATION:

Drive normally. When the detector sounds an alert, take your foot off the gas, check your speed, adjust if necessary, and resume driving. Do not apply brakes unless you are grossly exceeding the speed limit. The scrambler will disable the radar long enough for you to adjust speed safely, if necessary.

Rocky Mountain Radar does not condone the use of excessive speed on the highways, nor does it endorse breaking the speed limit laws of the United States of America. Please drive safely when using this or any other electronic product in your car.

IS IT LEGAL?

The Rocky Mountain Radar scramblers conform to all FCC rules and regulations. Part 15 of the FCC code regulates consumer products that may leak or transmit radio frequency energy into the atmosphere. Since the scramblers are not transmitters, these sections do not apply.

The radar scrambler is a *reflective receiver* and has no emissions. **It does not transmit**, but uses the police radar gun's own signal as a carrier of its information. The laser scrambler transmits a series of light pulses. There are no laws regarding the transmission of invisible light.

Frequently Asked Questions

The Rocky Mountain Radar scramblers are designed to give you radar and laser scrambling from the front half of the car.

Can I test it with roadside trailer radars?

The trailers you see on the side of the road that show your speed are not legal to use to write tickets. They do not contain the sophisticated sampling computers that are in police radar guns. Since our units confuse the computer and there is none, they will not work reliably against the trailers.

Can the police detect it?

The radar and laser scramblers do not have RF emissions and cannot be detected.

What states are they NOT legal in?

The Rocky Mountain Radar scramblers are **not** legal in Colorado, Utah, California, Nebraska, Oklahoma, Minnesota, Illinois, Tennessee, South Carolina (*unless the switchable scrambler feature is set to off*) and Virginia. The Rocky Mountain Radar detectors are **not** legal in commercial vehicles in most states. Use caution in these states.

What is Punch-Through?

The signal reflected by the car gets stronger the closer the target is to the radar gun. The Rocky Mountain Radar scrambler uses the radar signal as a carrier and reflects it through a high-gain antenna. It will work only as long as the scrambling signal is greater than the signal from the target. Punch-through is when these signals are equal or within 50-200 feet.

What is the effective range?

The radar scrambler works at four to six times the range of the radar gun. The laser scrambler is effective at more than two times the Lidar range.

Important information:

When driving in states that ban scramblers – turn off the scrambler function. Detectors are legal in all states except Virginia and Washington D.C. With the scrambler off, this unit is only a detector.

Warranty

The RMR-C450 is guaranteed against defects in workmanship and materials for 36 months from the date of purchase. Should any malfunction occur, the unit would be repaired or replaced by the factory at no charge. You may have your unit checked free of charge at the factory during this warranty period. Returns should be sent freight prepaid with an explanation of the problem, your **physical address** (no PO Boxes), **proof of purchase**, and **telephone number**.

We do not accept COD shipments. We do not accept freight collect shipments

Send to: Rocky Mountain Radar
6469 Doniphan Drive
El Paso, TX 79932
Phone: 915-587-0307
Fax: 915-587-6408

Accessories

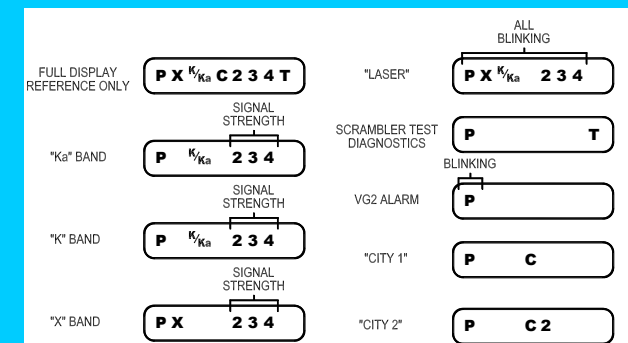
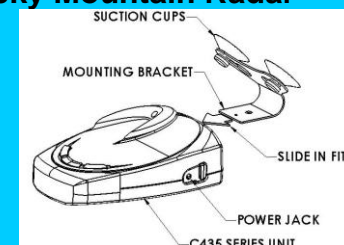
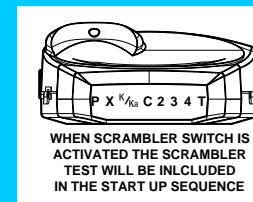
The following accessories are available:

- Windshield mount \$ 5.00
 - Suction Cups (set of 2) \$ 2.00
 - 2 amp fuses (two each) \$ 2.00
 - Power Cord 9ft. straight \$ 5.00
 - Owners Manual \$ 3.50
- A **\$10.00** shipping and handling fee will be added to the total of each order.
- VISA/MC and Discover Accepted**

Tamper Fee

Tampering with, disassembly, or modification of this product voids the warranty and a tamper fee of \$150.00 will be charged to repair it. Unit is not waterproof.

Made in the USA by Rocky Mountain Radar



www.rockymountainradar.com



SCRAMBLER IS DE-ACTIVATED

RMR-C450

Radar and Laser Detector Radar and Laser Scrambler Owners Manual

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