

BEL ProRemote Plus

MODEL RX75 PLUS

BELTRONICS[™]
Professional Series

5442 West Chester Road
West Chester, Ohio
45069 USA



Made and printed in Canada
121R75P-0

BELTRONICS[™]
Professional Series

Owner's Manual

Congratulations

Your new Bel Pro Remote is the most advanced custom-installed radar/laser detector available.

The Bel Pro Remote includes long-range X, K, and SuperWide Ka radar capability, improved Digital Signal Processing for superior range and reduced false alarms, our patented Mute and AutoMute, audible and visual band alerts, and all the performance you'd expect from Beltronics.

In addition, your new Bel Pro Remote introduces a new level of Radar/Laser defense including:

- Blistering radar performance, for superior K, and Ka-band sensitivity
- New programmable laser blockers for maximum against laser guns
- Advanced Programming lets you instantly set up to 8 customized features
- Exclusive AutoScan™ mode drastically reduces false alarms, plus Highway and City settings
- Ultra-bright alphanumeric display uses 280 LEDs for crystal clear information
- Exclusive Threat Display™ tracks and displays multiple radar signals and signal strength
- Exclusive Tech Mode™ display provides numeric frequency for any radar signals
- Standard remote Mute button provides one-touch Mute, and volume adjustment

If you've used a radar detector before, a review of the Quick Reference Guide on page 4, and the Programming information on pages 10 and 11 will briefly explain the new features.

If this is your first detector, please read the manual in detail to get the most out of your new RX75 PLUS's performance and features.

Please drive safely.

IMPORTANT INSTALLATION WARNING

Your new RX75 PLUS must be installed by a professional. Car Audio specialists and many car dealers can install the RX75 PLUS for you.

Attempting to install the Bel Pro Remote without expertise in automotive electronic installations can cause personal injury during the installation, or can damage your RX75 PLUS or your vehicle. If your vehicle is damaged during installation, its safety systems may be compromised, which could cause personal injury or property damage.

FCC Note:

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

▼ Remove card along perforations ▼

Bel Pro Remote Quick Reference Card

There are 8 user-selectable options so you can customize your RX75 PLUS for your own preferences.

The buttons labeled CITY and VOL/MUTE are also used to enter the Program Mode, REVIEW your current program settings, and to CHANGE any settings as desired. The words PGM, REV and CHG are located on the front of the display.

How to use Programming

1 To enter Program Mode, press and hold both buttons down for 2 seconds. (The unit will beep twice, and will display the word "Program").

2 Then press the REV button to REVIEW the current settings. (You can either tap the button to change from item to item, or hold the button to scroll through the items).

3 Press the CHG button to change any setting. (You can either tap the button to change from setting to setting, or hold the button to scroll through all the options).

4 To leave Program Mode, simply wait 8 seconds without pressing any button. (The unit will display Complete, beep 4 times, and return to normal operation).

Factory Default Settings

To reset RX75 PLUS to its original factory settings, press and hold the "CITY" and "VOL/MUTE" buttons while turning the power on. The RX75 PLUS's display will provide a "Reset" message, accompanied by an audible alert, acknowledging the reset.

An example of Programming

Here is how you would turn RX75 PLUS's AutoMute feature off.

1 Enter the Program Mode by holding both the CITY and VOL/MUTE buttons down for 2 seconds. *The RX75 PLUS will beep twice and display Program.*

2 Press and hold the REV button. *The RX75 PLUS will scroll through the categories, starting with Power-on indication (Pilot), then Power-on sequence (PwrOn), then Signal strength meter (Meter), and then AutoMute (aMute).*

3 Release the REV button when the RX75 PLUS shows the AutoMute item. *Since the factory setting is for AutoMute to be on, the RX75 PLUS will display aMute ON. (If you accidentally don't release the REV button in time, and the RX75 PLUS goes to the next category, hold the REV button down again, and after the RX75 PLUS scrolls through all categories, it will begin again at the top of the list.)*

4 Press the CHG button to change from aMute ON to aMute OFF.

5 To complete the Programming, simply wait 8 seconds without pressing any button. *The RX75 PLUS will display Complete, beep 4 times, and return to normal operation.*

Remove card along perforations

Quick Reference Card



Remove card along perforations

Bel Pro Remote Quick Reference Card

Press the **REV** button to go from one category to the next

Press the **CHANGE** button to change your setting within a category

PILOT LIGHT Pilot HWY
Pilot H
Pilot U

* Full word: Highway or Auto or City
Letter: H or A or C
Vehicle voltage

POWER-ON SEQUENCE Pwr-On STD
Pwr-On FST

* Standard power-on sequence
Fast power-on sequence

SIGNAL STRENGTH METER Meter STD
Meter TH1
Meter TEC

* Standard signal strength meter
Threat Display™
TechDisplay™

AUTOMUTE aMute ON
aMute OFF

* AMute On
AMute Off

VOICE** Voice On
Voice Off

* Voice on
Voice off

CITY MODE SENSITIVITY City STD
City LoX
City NoX

* Standard City mode sensitivity
Low X band sensitivity in City Mode
No X band sensitivity in City Mode

BRIGHTNESS Brt AUTO
Brt MIN
Brt MED
Brt MAX
Brt DARK

* Brightness adjusts automatically
Minimum brightness when turned on
Medium brightness when turned on
Maximum brightness when turned on
Dark Mode when RX75 PLUS turned on

BANDS Bands ALL
Bands MOD

* All bands enabled
One or more bands has been modified

Turn bands "ON" or "OFF" by pressing the VOL/MUTE button

X ON or OFF
K ON or OFF
Ka ON or OFF
LSR ON or OFF or BLCK
SWS ON or OFF

Remove card along perforations

* Factory Default Settings
** Available only with External Speaker

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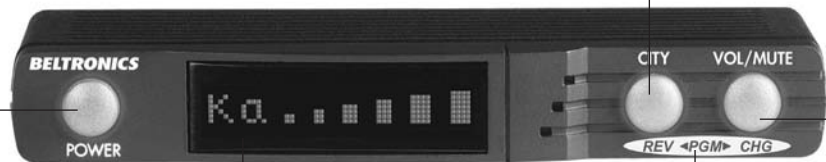
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Power

Press the Power button to turn the RX75 PLUS on. (We recommend wiring the RX75 PLUS to a switched circuit so that it will turn on/off with your vehicles ignition).

City Button

Switches sensitivity modes between Highway, AutoScan™, and City settings. In general, we recommend the AutoScan™ mode. *Page 6.*



Matrix Display

The RX75 PLUS's display will show "Highway," "AutoScan," or "City" as its standard power-on indication. *Page 5.* If you prefer, you can choose other power-on indications. *Page 11.*

During an alert, the display will indicate the radar band, and a precise bar graph for the signal strength. *Page 7.*

You can program the RX75 PLUS for Threat Display™, which displays multiple radar signals and relative signal strength for each, or choose TechDisplay™ mode, which provides the actual numeric radar frequency. *Pages 7-8.*

The display can also show Safety Radar text messages. *Pages 18-19.*

Programming

The RX75 PLUS is ready to go - just turn it on. But you can easily change 8 features for your preferences. Press both buttons to enter the Program Mode, then easily Review or Change your settings. *Pages 9-13.*

VOL/MUTE Button

Briefly press this button on the display controller, or the standard Remote Mute button, to silence the audio for a specific alert. (The audio will alert you to the next encounter.) *Page 5.*

AutoMute

The RX75 PLUS's patented AutoMute feature automatically reduces the volume level of the audio alert. *Page 5.* If you prefer, you can turn AutoMute off. *Page 9.*

Power On

To turn the RX75 PLUS on, simply press the Power button on the RX75 PLUS's Display/Controller. When you turn the RX75 PLUS on, it goes through a sequence of alerts.

If you prefer, you may program your RX75 PLUS for a shorter power-on sequence. See the Programming section for details.

Power-on indication

After RX75 PLUS's start-up sequence is complete, the matrix display will show "Highway," "AutoScan," or "City" to show which sensitivity mode is selected.

If you prefer, you can select alternate power-on displays. See the Programming section for details.

AutoMute

Your RX75 PLUS has our patented AutoMute feature. After the RX75 PLUS alerts you to a radar encounter at your selected volume level, it automatically reduces the volume to a lower level. This keeps you informed without the annoyance of a continuous full-volume alert.

If you prefer, you can turn the AutoMute feature off. See the Programming section for details.

Volume/Mute

The VOL/MUTE Button, located on RX75 PLUS's front panel, or the installed Remote Mute button, allows you to adjust the audio level.

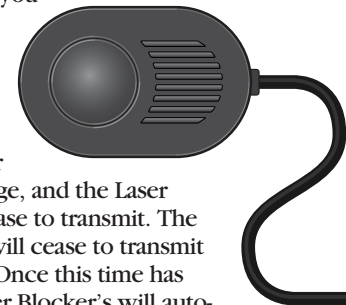
To change the volume level, simply press either button and hold. An audible tone will be generated, and the display will provide a bar graph for the volume level. When your preferred audio level is reached, simply release the button. Your RX75 PLUS stores this setting in memory, even when the power is turned off.

To mute the audio for a single specific signal, briefly press the VOL/MUTE button on the display controller, or the installed Remote Mute Button during an alert. After that radar encounter has passed, the volume level will automatically reset and the audio will alert you to the next encounter.

Remote Mute Button/Laser Blocking Off

When the Laser Blockers are turned on, (see Programming section) the Remote Mute button can be used to manually stop "blocking" once you have corrected your speed.

Simply press the Remote Mute button twice during the "Laser Blocking" message, and the Laser Blocker's will cease to transmit. The Laser Blocker's will cease to transmit for one minute. Once this time has expired, the Laser Blocker's will automatically reset, and return to their active state. A reset message will be displayed to verify and acknowledge the reset.



Highway / AutoScan / City Switch

The “City” button selects the RX75 PLUS’s sensitivity. We recommend the “AutoScan” mode for most driving.

The RX75 PLUS’s exclusive AutoScan mode provides long-range warning, with minimum false alarms. In this mode, the RX75 PLUS’s internal computer continuously analyzes all incoming signals and intelligently adjusts the sensitivity – eliminating the majority of false alarms.

You can also select conventional “Highway” and “City” modes. When driving in urban areas where annoying X-band intrusion alarms and door openers are common, City Mode can be engaged to lower X-band sensitivity and reduce X-band alerts. Full sensitivity is maintained on all other bands. You can customize the RX75 PLUS’s City Mode sensitivity. See the Programming section for details.

Display Brightness

The RX75 PLUS’s display brightness is automatically adjusted to suit ambient light conditions in your vehicle. (The light sensor is located inside the text display window)

If you prefer, you can program your RX75 PLUS for a fixed brightness level (Maximum, Medium, Minimum, or Dark). See the Programming section for details.

Dark Mode

If you set the RX75 PLUS to its Dark Mode using the Programming feature, the RX75 PLUS changes to a very inconspicuous power-on indication: a very dim “AD,” “HD,” or “CD.” (In this display, the A, H, or C indicates AutoScan, Highway, or City, and the D indicates Dark.)

When the RX75 PLUS is in Dark Mode, the display will not show visual alerts when it detects signals. Only the audible alert will tell you of detected signals. See the Programming section for more details.

Audible Alerts

For Radar signals:

The RX75 PLUS uses a Geiger-counter-like sound to indicate the signal strength and type of radar signal being encountered.

When you encounter radar, a distinct audible alert will sound and occur faster as the signal gets stronger. This allows you to judge

the distance from the signal source without taking your eyes from the road. Each band has a distinct tone for easy identification.

X-band = chirping

K-band = buzzing

Ka-band = double-chirp

For Laser signals:

Since Laser signals are a possible threat no matter how weak, the RX75 PLUS alerts you to all laser signals with a full laser alert.

For Safety signals:

If you have turned on the SWS detection in the RX75 PLUS’s programming, it will alert you to these signals with a double-beep tone, and a corresponding text message. A complete listing of the text messages is on page 19.

If you haven’t programmed your RX75 PLUS to decode these safety signals (see pages 9, 13, 19), it will still detect them as K-band radar signals.

Signal Strength Meter

The RX75 PLUS’s matrix display consists of 280 individual LED’s, to provide an intuitive ultra-bright display of signal strength and text messages.

When the RX75 PLUS detects radar, it displays the band of the radar signal (X, K, or Ka), and a precise bar-graph of signal strength.

Threat Display™

The RX75 PLUS’s exclusive Threat Display™ option is an advanced display for experienced detector users. Please use the RX75 PLUS for a few weeks to get fully familiar with its other features before using its Threat Display™.

To use the Threat Display™ instead of the standard bar-graph signal strength meter, you must select Threat Display™ in RX75 PLUS’s Programming (see pages 9-13).

Threat Display™ simultaneously tracks multiple radar signals and provides the relative signal strength for each signal received.

Threat Display™ can help you spot a change in your normal driving environment; for example, a traffic radar unit being operated in an area where there are normally other signals present.

The Threat Display™ is actually a miniature spectrum analyzer. It shows the radar band, and its relative signal strength.

KA9 K1 X5

Above is the Threat Display™ if the RX75 PLUS was detecting 1 strong Ka-band, 1 weak K-band, and a medium X-band signal.

As you can see, there are numeric values for signal strength after each band designator. The higher the number, the stronger the signal.

Note: If you use Threat Display™, the brief signal shown in the power-on sequence when you turn on your RX75 PLUS will also be in Threat Display™: an “X” with descending numeric value.

A few more examples will help you better see how the Threat Display™ works.

K9 X2

Here Threat Display™ shows 1 strong K-band signal, and a weak X-band signal.

Controls and Features

KA1 X1

Here Threat Display™ shows 1 weak Ka-band signal, and a weak X-band signal.

X

On very weak signals, there will not be a number at all. This shows a very weak X-band signal.

Threat Display™ Details

The band designators (X, K, Ka) will stay on the display for a few seconds after the signal has passed. This allows you to see what the unit detected, even on very brief signals.

However, the numbers representing the signal strength continuously change (several times a second) to give you a continuous view of the signal strength of all radar signals present.

TechDisplay

The RX75 PLUS's new TechDisplay option is also designed for the advanced detector user. In this mode, the RX75 PLUS will display the actual numeric radar frequency being received.

K 24.150

Display shows a K-band signal at 24.150 GHz

Ka34.700

Display shows a Ka-band signal at 34.700 GHz

X 10.525

Display shows an X-band signal at 10.525 GHz

Note: Even long-time detector users will require a significant amount of time to get familiar with this new level of information.

Laser Blocking

Your Bel Pro Remote is equipped with integrated Laser Blocker's, making it the ultimate defense against laser guns.

Under the "Laser" option in the Bands category, the Laser Blocker's can be programmed to receive only, or "Block" an incoming laser signal.

During a laser alert, the display will show "Front" "Lsr Blck" when a signal is received from the front, or "Rear" "Lsr Blck" when a signal is received from the rear. This message will be accompanied by the normal Laser alert tone.

How to customize the RX75 PLUS with Programming

There are 8 user-selectable options so you can customize your RX75 PLUS for your own preferences. The buttons that are normally used for CITY and VOL/MUTE are used to enter the Program Mode, to REVIEW your current program settings, and to CHANGE any settings as desired. Pages 11-13 explain each option in more detail.

1 How to use Programming

To enter Program Mode, press both buttons and hold for 2 seconds. RX75 PLUS will beep twice and display "Program." (Brightness is at maximum during programming.)

2 Then press the REV button to REVIEW the current settings. (You can either tap the button to change from item to item, or hold the button to scroll through the items.)

3 Press the CHG button to CHANGE any setting. (You can either tap the button to change from setting to setting, or hold the button to scroll through all the options.)

4 To leave the Program Mode, simply wait 8 seconds without pressing any button. (The unit will display "Complete," beep 4 times, and return to normal operation.)

(To quickly return to all of the factory defaults, press and hold the CITY and VOL/MUTE buttons while turning on the unit.)

An example

Here's how you would turn RX75 PLUS's AutoMute feature off.

1 Enter the Program Mode by holding both buttons down for 2 seconds. RX75 PLUS will beep twice and display Program.

2 Press and hold the REV button. The RX75 PLUS will scroll through the categories, starting with Pilot Light Pilot, then Power-on sequence PowerOn, then Signal strength meter Meter, then AutoMute mute.

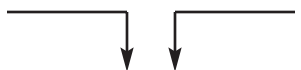
3 Release the REV button when the RX75 PLUS shows the AutoMute item. Since the factory setting is for AutoMute to be on, the RX75 PLUS will display mute ON. (If you accidentally don't release the REV button in time, and RX75 PLUS goes to the next category, hold the REV button down again, and after RX75 PLUS scrolls through all categories, it will begin again at the top of the list.)

4 Press the CHANGE button to change from mute ON to mute OFF.

5 To complete the Programming, simply wait 8 seconds without pressing any button. The RX75 PLUS will display Complete, beep 4 times, and return to normal operation.

Overview of Programming Options

Press the **REV** button to go from one category to the next

<p>PILOT LIGHT (Power-on indication)</p> <p>POWER-ON SEQUENCE</p> <p>SIGNAL STRENGTH METER</p> <p>AUTOMUTE</p> <p>VOICE**</p> <p>CITY MODE SENSITIVITY</p> <p>BRIGHTNESS</p> <p>BANDS</p>		<p>Pilot HWY Pilot H Pilot U</p> <p>PwrOn STD PwrOn FST</p> <p>Meter STD Meter THT Meter TEC</p> <p>aMute ON aMute OFF</p> <p>Voice On Voice Off</p> <p>City STD City LoX City NoX</p> <p>Brnt AUTO Brnt MIN Brnt MED Brnt MAX Brnt DARK</p> <p>Bands ALL Bands MOD</p>	<p>Press the CHANGE button to change your setting within a category</p> <p>* Full word: Highway or Auto or City Letter: H or A or C Vehicle voltage</p> <p>* Standard power-on sequence Fast power-on sequence</p> <p>* Standard signal strength meter Threat Display™ TechDisplay</p> <p>* AutoMute on AutoMute off</p> <p>* Voice on Voice off</p> <p>* Standard City mode sensitivity Low X-band sensitivity in City Mode No X-band sensitivity in City Mode</p> <p>* Brightness adjusts automatically Minimum brightness Medium brightness Maximum brightness Dark Mode</p> <p>* All bands enabled One or more bands has been modified</p>
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* RX75 PLUS's Factory Default Settings

To reset RX75 PLUS to its original factory settings, press and hold the "CITY" and "VOL/MUTE" buttons while turning the power on. The RX75 PLUS's display will provide a "Reset" message, accompanied by an audible alert, acknowledging the reset.

** Available only with External Speaker

Details of Programming Options

Pilot Light (Power-on indication)

Note: When you are using the Dark mode, the display will only show HD, AD, or CD, (Highway-Dark, AutoScan-Dark, or City-Dark).

PilotHWY (Full description)

In this setting, the RX75 PLUS will display "Highway," "City," or "AutoScan" as its power-on indication. (factory default)

Pilot H (Letter)

In this setting, the RX75 PLUS will display "H" for Highway, "C" for City, or "A" for AutoScan.

Pilot U (Vehicle voltage)

In this setting, the RX75 PLUS will display "H" for Highway, "C" for City, and "A" for Auto, and the vehicle's voltage. If the vehicle's voltage drops below 10.5 volts, a low voltage warning will be displayed, followed by an audible alert. A high voltage warning is also given when the vehicle's voltage goes above 16.0 volts.

Power-on Sequence

PwrOnSTD (Standard)

In this setting, each time you turn on the RX75 PLUS, it will display "BEL PRO," "RX75," "Laser," "Ka-band," "K-band," "X-band," followed by a brief X-band alert. It then confirms communications to all of its components. If a communications error occurs, the appropriate error message will be displayed. (see page 21 for error messages)

Note: If there is a problem with the front laser receiver or wiring after the initial start-up sequence, the RX75 PLUS will briefly display "LsrF ERR." If there is a problem with the rear laser receiver or wiring after the initial start-up sequence, the RX75 PLUS will briefly display "LsrR N/A."

In both cases, the RX75 PLUS will continue to receive radar signals, but will not receive laser signals. If there is a problem with the front radar receiver or wiring after the initial start-up sequence, the RX75 PLUS will display "Front N/A," and will then continue to display "Check," "Receiver," "Wiring." The RX75 PLUS will not operate in this condition. Please contact your installer if this occurs.

PwrOnFST (Fast power-on)

This setting shortens RX75 PLUS's start up sequence to a single beep, eliminating the words "BEL PRO," "RX75," "Laser," "Ka-band," "K-band," "X-band," from the start-up sequence.

Turn bands "ON" or "OFF" by holding down the VOL/MUTE button

X	ON	or	OFF
K	ON	or	OFF
Ka	ON	or	OFF
LSR	ON	or	OFF or BLCK
SWS	ON	or	OFF

Signal Strength Meter

MeterSTD (Standard meter)

The meter displays the band, and bar graph showing signal strength. (factory default)

MeterTHI (Threat Display™)

The meter simultaneously tracks multiple radar signals and provides the relative signal strength for each signal received.

MeterTEC (TechDisplay)

The meter displays the actual numeric frequency of the radar signal being received.

Note: See more details on page 8.

AutoMute

aMuteON (AutoMute on)

In this setting, the RX75 PLUS's audio alerts will initially be at the volume you set, but after a few seconds, the RX75 PLUS will automatically reduce the volume level, to keep you informed, but not annoyed. (factory default)

aMuteOFF (AutoMute off)

With AutoMute off, the RX75 PLUS's audio alerts will remain at the volume you set for the duration of the radar encounter.

Voice Alerts

VoiceON (Voice announcements on)

In this setting, all radar and laser alerts, including SWS messages, will be announced in a digital voice, followed by the normal tone. (factory default)

VoiceOff (Voice announcements off)

In this setting, the standard tones will be used.

City Mode Sensitivity

CitySTD (Standard)

In this setting, when you put the RX75 PLUS in the City mode, X-band sensitivity is significantly reduced, to minimize annoyance from X-band intrusion alarms and motion sensors. (factory default)

CityLoX (Low X-band sensitivity)

In this setting, when you put the RX75 PLUS in the City mode, X-band sensitivity is reduced more than the standard setting. This will reduce X-band alarms from other sources even further, but also significantly reduces range to X-band traffic radar.

CityNoX (No X-band sensitivity)

In this setting, when you put the RX75 PLUS in the City mode, the RX75 PLUS will not respond to any X-band signals.

WARNING: Only choose this setting if you are absolutely certain that there are no X-band traffic radar units where you drive.

Note: These settings only apply when the RX75 PLUS is operated in City mode. X-band sensitivity is not affected when used in "Auto" or "Highway" modes.

Brightness

BrtAUTO (Auto)

Display brightness automatically adjusted to suit the ambient lighting in your vehicle.

BrtMIN (Minimum)

Sets display to minimum brightness.

BrtMED (Medium)

Sets display to medium brightness.

BrtMAX (Maximum)

Sets display to maximum brightness.

BrtDARK (Dark)

In this setting, the RX75 PLUS will only display a very dim HD, AD, or CD for the power-on indication, and will not show any visual alerts when signals are detected.

Bands

BandsALL

In this setting, all radar, laser, and SWS frequencies are monitored. This is the factory default setting, and it is highly recommended that you use your RX75 PLUS in this mode.

BandsMOD

In this setting, the RX75 PLUS will warn you with an audible alert and a text message, that one or more bands have been turned off in programming (i.e. "SWS OFF"). This warning is displayed during the start-up sequence (standard or fast).

WARNING: Do not disable a radar or laser band unless you are certain it is not used for speed measurement in your area.

Interpreting Alerts

Although the RX75 PLUS has a comprehensive warning system and this handbook is as complete as we can make it, only experience will teach you what to expect from your RX75 PLUS and how to interpret what it “tells” you. The radar alerts you receive are affected by the specific type

of radar being used, the type of transmission (continuous or instant-on) and the location of the radar source.

The following examples will give you an introduction to understanding the RX75 PLUS’s warning system for radar, laser and safety alerts.

Alert

The RX75 PLUS begins to sound slowly, then the rate of alert increases until the alert becomes a solid tone. The Signal Meter ramps accordingly.

The RX75 PLUS emits short alerts for a few seconds and then falls silent only to briefly alert and fall silent again.

The RX75 PLUS suddenly sounds a continuous tone for the appropriate band received. All segments in the Signal Strength Meter are lit.

A brief laser alert.

The RX75 PLUS receives weak signals. These signals may be a little stronger as you pass large, roadside objects. The signals increase in frequency.

Explanation

You are approaching a continuous radar source aimed in your direction.

An instant-on radar source is being used ahead of you and out of your view.

An instant-on radar source or laser source is being used nearby. This kind of alert requires immediate attention!

Laser is being used in the area. Because laser is inherently difficult to detect, any laser alert may indicate a source very close by.

A moving patrol car with continuous radar is overtaking you from behind. Because these signals are reflected (reflections are increased by large objects), they may or may not eventually blend into a solid tone even when the patrol car is directly behind you.

Interpreting Alerts

Alert

The RX75 PLUS alerts slowly for awhile and then abruptly jumps to a strong alert.

The RX75 PLUS alerts intermittently. Rate and strength of alerts may be consistent or vary wildly.

The RX75 PLUS alerts intermittently. Rate and strength of signal increases with each alert.

The RX75 PLUS gives an X-band alert intermittently.

Explanation

You are approaching a radar unit concealed by a hill or an obstructed curve.

A patrol car is travelling in front of you with a radar source aimed forward. Because signals are sometimes reflected off of large objects and sometimes not, the alerts may seem inconsistent.

A patrol car is approaching from the other direction, sampling traffic with instant-on radar. Such alerts should be taken seriously.

You are driving through an area populated with radar motion sensors (door openers, burglar alarms, etc.). Since these transmitters are usually contained inside buildings or aimed toward OR away from you, they are typically not as strong or lasting as a real radar encounter.

CAUTION: Since the characteristics of these alerts may be similar to some of the preceding examples, over confidence in an unfamiliar area can be dangerous. Likewise, if an alert in a commonly traveled area is suddenly stronger or on a different band than usual, speed radar may be set up nearby.

How Radar Works

How Radar Works

Traffic radar, which consists of microwaves, travels in straight lines and is easily reflected by objects such as cars, trucks, even guardrails and overpasses. Radar works by directing its microwave beam down the road. As your vehicle travels into range, the microwave beam bounces off your car, and the radar antenna looks for the reflections. Using the Doppler Principle, the radar equipment then calculates your speed by comparing the frequency of the reflection of your car to the original frequency of the beam sent out.

Traffic radar has limitations, the most significant of these being that it typically can monitor only one target at a time. If there is more than one vehicle within range, it is up to the radar operator to decide which target is producing the strongest reflection. Since the strength of the reflection is affected by both the size of the vehicle and its proximity to the antenna, it is difficult for the radar operator to determine if the signal is from a sports car nearby or a semi-truck several hundred feet away.

Radar range also depends on the power of the radar equipment itself. The strength of the radar unit's beam diminishes with distance. The farther the radar has to travel, the less energy it has for speed detection. Because intrusion alarms and motion sensors often operate on the same frequency as X-Band radar, your The RX75 PLUS will occasionally receive non-police radar signals. Since these X-Band transmitters are usually contained inside of buildings or aimed toward the ground, they will generally produce much weaker readings than will a true radar encounter. As you become familiar with the sources of these pseudo alarms in your daily driving, they will serve as confirmation that your The RX75 PLUS's radar detection abilities are fully operational.

How Laser Works

How Laser (Lidar) Works

Laser speed detection is actually LIDAR (Light Detection And Ranging). LIDAR guns project a beam of invisible infrared light. The signal is a series of very short infrared light energy pulses which move in a straight line, reflecting off your car and returning to the gun. LIDAR uses these light pulses to measure the distance to a vehicle. Speed is then calculated by measuring how quickly these pulses are reflected given the known speed of light.

LIDAR (or laser) is a newer technology and is not as widespread as conventional radar; therefore, you may not encounter laser on a daily basis. And unlike radar detection, laser detection is not prone to "false" alarms. Because LIDAR transmits a much narrower beam than does radar, it is much more accurate in its ability to distinguish between targets and is also more difficult to detect. ***As a result, even the briefest laser alert should be taken seriously.***

There are limitations to LIDAR equipment. LIDAR is much more sensitive to weather conditions than RADAR, and a LIDAR gun's range will be decreased by anything affecting visibility such as rain, fog, or smoke. A LIDAR gun cannot operate through glass and it must be stationary in order to get an accurate reading.

Because LIDAR must have a clear line of sight and is subject to cosine error (an inaccuracy which increases as the angle between the gun and the vehicle increases) police typically use LIDAR equipment parallel to the road or from an overpass. LIDAR can be used day or night.

How Safety Radar Works

How Safety Warning Systems Works

Safety Warning Systems, or SWS, is a modified K-band radar signal used to transmit important driving related information.

From the factory, your RX75 PLUS is programmed with SWS turned ON. If SWS is not used in your area, you can simply turn SWS reception OFF by using the RX75 PLUS's Programming feature.

The SWS system has 64 possible messages (60 allocated). The SWS messages your RX75 PLUS can decode and display are listed on the facing page.

Note: Some of the safety messages have been condensed, so each message can be displayed on one or two screens on the RX75 PLUS's eight character display.

Since Safety radar technology is relatively new and the number of transmitters in operation is not yet widespread, you will not receive Safety signals on a daily basis and should not be surprised to encounter emergency vehicles, road hazards and railroad crossings that are unequipped with these transmitters and, therefore, fail to provide a signal. As Safety transmitters become more prevalent (the number of operating transmitters is growing every day), these Safety radar signals will become more common.

For more information and details about SWS safety radar, visit their web site at www.swslc.com.

SWS Safety Radar Text Messages

SWS Text Messages

1	WorkZone	33	HighWind
2	Road Closed	34	Severe Weather
3	Bridge Closed	35	HeavyFog
4	WorkCrew Highway	36	Flooding
5	WorkCrew Utility	37	BridgIce
6	Detour	38	RoadIce
7	Truck Detour	39	Dust Blowing
8	MustExit	40	Sand Blowing
9	Rtlane Closed	41	Blinding Snow
10	CntrLane Closed	42	Future Use
11	LeftLane Closed	43	RestArea
12	Future Use	44	RestArea w/servic
13	Police	45	24hrFuel
14	Train	46	Insp Stn Open
15	Low Overpass	47	Insp Stn Closed
16	BridgeUp	48	Reduced Speed
17	Bridge Wt Limit	49	Speed Enforced
18	RockSlid Area	50	HazMatls Exit
19	School Zone	51	Expect Delay
20	Road Narrows	52	10 Min Delay
21	Sharp Curve	53	20 Min Delay
22	Crosswalk	54	30 Min Delay
23	Deer Crossing	55	1 Hour Delay
24	Blind or Deaf Kid	56	Traffic TunRadio
25	SteepUse LowGear	57	Pay Toll
26	Accident	58	Trucks ExitRight
27	PoorRoad Surface	59	Trucks ExitLeft
28	Loading ScholBus	60	Future Use
29	DontPass	61	Emerg Veh Mvng
30	Dangrous Intrsect	62	Police Pursuit
31	Emergncy Vehicle	63	Oversize Vehicle
32	Future Use	64	SloMovng Vehicle

Troubleshooting

Problem

The RX75 PLUS beeps briefly at the same location every day, but no radar source is in sight.

The RX75 PLUS does not seem sensitive to radar or laser.

The RX75 PLUS did not alert when a police car was in view.

The RX75 PLUS did not provide a Safety signal while within range of an emergency vehicle.

The RX75 PLUS's audible alerts are less loud after the first few alerts.

The RX75 PLUS's power-on sequence reoccurs while you are driving.

Your 14-year old son has changed all 8 of the Programming options.

The RX75 PLUS will not turn on.

The RX75 PLUS's Display feels warm.

Solution

- An X-band motion sensor or intrusion alarm is located within range of your route. With time, you will learn predictable patterns of these signals.

- The RX75 PLUS may be in City Mode.
- Radar band(s) are turned off in programming.

- VASCAR, (Visual Average Speed Computer And Recorder) a stopwatch method of speed detection, may be in use. Officer may not have radar or laser unit turned on.

- Safety transmitters may not be commonly used in your area.

- The RX75 PLUS is in AutoMute Mode. See page 5 for details.

- A loose power connection can cause the RX75 PLUS to be briefly disconnected, and will retrigger the power-on sequence.

- You can return all of the programming options to the factory defaults by holding down the City and Mute buttons while you turn the RX75 PLUS on.

- Check that volume control is ON.
- Check that vehicle ignition is ON.
- Check all connections.

- It is normal for the RX75 PLUS to feel warm.

Troubleshooting

Explanation of Displays

LsrF ERR There is a problem with the front Laser Receiver. There could be an unplugged connection, damaged wiring, or a problem with the front Laser Receiver. After the RX75 PLUS alerts you to this, it will then resume operation with the front radar receiver and rear laser only.

LsrR N/A There is a problem with the rear Laser Receiver. It could be an unplugged connection, damaged wiring, or a problem within the rear Laser Receiver itself. After the RX75 PLUS alerts you to this, it will then resume operation with the front radar and Laser Receiver only.

Check Receiver Wiring There is a problem with the front receiver. It could be an unplugged connection, damaged wiring, or a problem within the front receiver itself. The RX75 PLUS will continue to display this message, and will not operate until the problem has been repaired.

HD Sensitivity control is in Highway mode, display is in Dark Mode (page 13)
AD Sensitivity control is in Auto mode, display is in Dark Mode (page 13)
CD Sensitivity control is in City mode, display is in Dark Mode (page 13)

PilotHWY One of the many programming messages (pages 9-13)

WorkZone One of the many Safety Radar messages (page 19)

X2, or K9, or KA7, etc. The RX75 PLUS has been programmed in the Threat Display™ Mode (page 8)

Self Cal The RX75 PLUS is running a self-calibration test.

Rcvr ERR The RX75 PLUS's radar receiver has failed to calibrate. Contact your Dealer for repair.

Blck OFF Laser Blockers were manually shut off during a laser alert.

Comm ERR Serial communications between the interface and the display have been interrupted. Contact your dealer for repair.

Service Procedure

If your RX75 PLUS ever needs service, please follow these steps:

- 1 Check the troubleshooting section of this manual. It may have a solution to your problem.
- 2 Contact your installing dealer. They will evaluate your unit and arrange repairs if necessary.

Parts

Replacement parts are available from your installing dealer.

Accessories

The following accessories are available through your local dealer:

- 12-volt Amplified External Speaker.

BELTRONICS One Year Limited Warranty

BELTRONICS warrants your RX75 PLUS against all defects in materials and workmanship for a period of one (1) year from the date of the original purchase, subject to the following terms and conditions:

The sole responsibility of BELTRONICS under this Warranty is limited to either repair or, at the option of BELTRONICS, replacement of the RX75 PLUS detector. There are no expressed or implied warranties, including those of fitness for a particular purpose or merchantability, which extend beyond the face hereof. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.

This warranty does not cover installation, removal or reinstallation charges. BELTRONICS is not liable for any incidental or consequential damages arising from the use, misuse, installation, or mounting of the RX75 PLUS. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This Warranty gives you specific rights. You may have other legal rights which vary from state to state. This Warranty does not apply if the serial number on the housing of the RX75 PLUS has been removed, or if your RX75 PLUS has been subjected to physical abuse, improper installation, or modification.

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Address _____
City _____ State _____ ZIP _____
Phone Number (In case we have a question) _____
2. Product Purchased _____ Model _____ Serial Number _____
3. Place of Purchase _____ Date _____ Price _____
4. Primary reason for purchasing this BELTRONICS product _____

Features and Specifications

Operating Bands

- X-band 10.525 GHz ± 25 MHz
- K-band 24.150 GHz ± 100 MHz
- Ka-band 34.700 GHz ± 1300 MHz
- Laser 900nm, 33 MHz bandwidth

Radar Receiver / Detector Type

- Superheterodyne, GaAs FET VCO
- Scanning Frequency Discriminator
- Digital Signal Processing (DSP)
- 4-bit High-Resolution A-to-D Converter

Laser Detection

- Quantum Limited Video Receiver
- Multiple Laser Sensor Diodes (6F, 3R)

Display Type

- Text/Matrix 280 AlGaAs LED
- Bar Graph or Threat Display
- Automatic Brightness Control

Power Requirement

- 12VDC, Negative Ground

Programmable Features

- Power-On Indication
- Power-On Sequence
- Signal Strength Meter
- AutoMute
- Voice Alerts
- City Mode Sensitivity
- Display Brightness
- Bands

Sensitivity Control

- AutoScan
- Highway
- City

Auto Calibration Circuitry

Complete VG2 Immunity

Dimensions (Inches)

- Display/Controller: 4.2 x 1.4 x .55
- Radar Receiver: 3.75 x 3.15 x 1.75
- Front Laser Receiver: 4.65 x 1.8 x 0.8
- Rear Laser Receiver: 6.0 x 1.0 x .65

Patented Technology

The RX75 PLUS is covered by one or more of the following US patents.

6,400,305 6,249,218 6,069,580 5,600,132
 5,587,916 5,668,554 5,559,508 5,365,055
 5,347,120 5,446,923 5,402,087 5,305,007
 5,206,500 5,164,729 5,134,406 5,111,207
 5,079,553 5,049,885 5,049,884 4,961,074
 4,954,828 4,952,937 4,952,936 4,939,521
 4,896,855 4,887,753 4,862,175 4,750,215
 4,686,499 4,631,542 4,630,054 4,625,210
 4,613,989 4,604,529 4,583,057 4,581,769
 4,571,593 4,313,216 D314,178 D313,365
 D310,167 D308,837 D296,771 D288,418
 D253,752

The RX75 PLUS is also covered by one or more of the following Canadian patents:

1,295,715 1,295,714 1,187,602 1,187,586
 Other patents pending.

Remove card along perforations



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