ESCORT®

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PASSPORT®
8500ci **Plus**

Designed in the USA

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PASSPORT

Highway²

⏻ MRK VOL•MUTE CRU SEN
                              PGM
                        ▲RVW • CHG▲

CUSTOM-INSTALLED PROTECTION

RADAR•LASER•SAFETY•CAMERA•DETECTOR

Owner's Manual

Your new PASSPORT 8500ci Plus is a complete, supercharged, custom-installed radar/laser detector with GPS-powered intelligence.

The 8500ci Plus includes full X, K, and SuperWide Ka radar capability, 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 ESCORT.

Its GPS features provide permanent relief from false alarms, including automatic door openers, motion sensors, and other radar-based sensors. And, it comes pre-loaded with thousands of red-light and fixed-position speed camera locations throughout North America.

The 8500ci Plus boasts the following state-of-the-art performance and features:
- Miniature display controller allows easy access to information and controls
- Ultra-bright alphanumeric display uses 280 LEDs for crystal-clear information
- Revolutionary AutoSensitivity™ mode provides real-time radar performance based on vehicle speed, plus Highway and Auto NoX settings

- Exclusive ExpertMeter™ tracks and displays up to eight radar signal
- Exclusive SpecDisplay™ provides actual numeric frequency for any radar signal
- Cruise Alert feature offers modified radar alerts within specified speeds
- New proprietary threat-signal ranking (TSR) software intelligently sorts, ranks, and rejects traffic-flow monitoring false alarms automatically
- DEFENDER™ Database stores thousands of red-light and fixed-position speed cameras and speed traps throughout North America
- Mark Location feature allows you to instantly "mark" known speed traps, cameras, and other places of interest
- Advanced Preferences feature lets you instantly set up to 11 customized features
- Fully compatible with ESCORT Laser Shifter™ Pack

If you've used a radar detector before, a review of the Quick Reference Guide on pages 4 and 5, and the Preferences section on pages 12 and 13 will briefly explain the new features.

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

Please drive safely.

IMPORTANT INSTALLATION WARNING:

Your new PASSPORT 8500ci Plus requires installation. Although this product is simple to install, ESCORT recommends you consult a 12-volt professional if you have no experience with 12-volt installations. If you would like professional installation, simply visit our Web site: www.EscortRadar.com.

Attempting to install the 8500ci Plus without expertise in automotive electronic installations can cause personal injury or damage to your device or your vehicle.

▼ *Remove card along perforations* ▼

PASSPORT 8500ci Plus Quick Reference Card

The 8500ci Plus offers 11 user-selectable options so you can customize it to your preferences. Pages 14-16 explain each option in more detail.

How to use Preferences
1 To access Preferences, press and hold both the CRU and SEN buttons for two seconds. The 8500ci Plus will beep and display `Prefs`. *Brightness will automatically change to maximum during this process.*

2 Press the CRU button to review the 11 preference categories. You can either tap the button to change from item to item or hold the button to scroll through all the categories.

3 Press the SEN button to change any setting within the selected category. You can either tap the button to change from setting to setting or hold the button to scroll through all the options.

4 To exit Preferences, simply wait 8 seconds without pressing a button. The unit will display `Complete`, accompanied by a voice confirmation, and return to normal operation.

Factory Default Settings
To reset the 8500ci Plus to its original factory settings, press and hold the "MRK" and "VOL•MUTE" buttons while turning the power on. The display will provide a `Reset` message, accompanied by an audible tone, acknowledging the reset.

An example
Here is how you would turn the 8500ci Plus's AutoMute feature off.

1 Enter Preferences by pressing and holding both the CRU and SEN buttons for 2 seconds. *The 8500ci Plus will beep and display* `Prefs`.

2 Press and hold the CRU button. *The 8500ci Plus will scroll through the categories, starting with Pilot Light (`Pilot`), then Signal Strength Meter (`Meter`), and then AutoMute (`aMute`).*

3 Release the CRU button when the display shows `aMute`. *Since the factory setting is for AutoMute to be on, the 8500ci Plus will display* `aMute ON`. *If you accidentally don't release the CRU button in time, and it goes to the next category, simply hold the CRU button down again until* `aMute` *is displayed.*

4 Press the SEN button to change from `aMute ON` to `aMute OFF`.

5 To complete this change, simply wait 8 seconds without pressing any button. *The unit will display* `Complete`, *accompanied by a voice confirmation. This is an indication that the 8500ci Plus has returned to its normal operation.*

▶ *Remove card along perforations* ▶

▼ *Remove card along perforations* ▼

PASSPORT 8500ci Plus Quick Reference Card

Press the CRU button to go from one category to the next		**Press the SEN button to change your setting within a category**
Pilot Light (Power-on indication)	Pilot HWY Pilot H.> Pilot Spd Comp Pilot Compass Pilot V	* Full word: Highway or Auto or AutoNoX Letter with scanning dot Speed and Compass Compass Vehicle voltage
Signal Strength Meter	Meter STD Meter EXP Meter SPC	* Standard bar-graph display Expert Meter (multiple signals) SpecDisplay (numeric frequency)
AutoMute	aMute ON aMute OFF	* AutoMute on AutoMute off
Voice	Voice ON Voice OFF	* Voice alerts on Voice alerts off
GPS Filter	GPS ON GPS OFF	* GPS features enabled GPS features disabled
Units	Units Eng Units Met	* Speed and distance in English Speed and distance in Metric
Brightness	BRT Auto BRT Dark BRT Min BRT Med BRT Max	* Automatically adjusts brightness Dark mode Minimum brightness Medium brightness Maximum brightness
Markers	Marks DEF Marks MOD rCam sCam sTrap Othr	* All markers are reported Markers have been modified Red light cameras *(default is ON)* Speed cameras *(default is ON)* Speed traps *(default is ON)* Other *(default is ON)*
Over-Speed Alert	OSpd 30-95 OSpd OFF	* Alerts when specified speed is reached (selectable range 30-95; 70mph is default) Over-Speed Alert off
Bluetooth	Blth OFF Blth ON	* Bluetooth disabled Bluetooth enabled (requires optional Bluetooth kit)
Bands	Bands DEF Bands MOD	* Factory default settings One or more bands have been modified
		Turn selected bands ON or OFF by holding the VOL•MUTE button
	X ON or OFF *(default is ON)* K ON or OFF *(default is ON)* Ka ON or OFF *(default is ON)* POP ON or OFF *(default is OFF)* SWS ON or OFF *(default is OFF)* LSR ON or OFF *(default is ON)* TSR ON or OFF *(default is ON)*	

*Factory Default Settings

◄ *Remove card along perforations* ◄

Quick Reference Guide

Power Button ⏻
To turn the 8500ci Plus on or off, simply press the power button located on the far left side of the display controller.
NOTE: ESCORT recommends wiring the 8500ci Plus to the vehicle's ignition switch so it turns on and off with the key.

Mark Location Button
The Mark Location (MRK) button allows you to mark a specific location and label it for future reference. Once marked, the 8500ci Plus will provide an alert before you reach this area again. This can be extremely useful when there are known speed traps or safety cameras in a particular location. *Page 8*

Volume Control/Mute Button
To set your volume level for alerts, press and hold the VOL•MUTE button located in the center of the display controller. Once you've reached your desired level of audio, simply release the button. The 8500ci Plus will remember this setting even when the power is turned off. To mute an audible alert, briefly press the VOL•MUTE button to silence the audio for a specific alert. The audio will alert you to the next encounter. *Page 6*
ESCORT's patented AutoMute automatically reduces the volume level of the audio alert. *Page 6*
If you prefer, you can turn AutoMute off. *Page 12*

PASSPORT

Highway

⏻ MRK VOL•MUTE CRU SEN
PGM
▲RVW • CHG▲

Matrix Display
The 8500ci Plus's display will show Highway as its standard power-on indication *Page 14*
If you prefer, you can choose other power-on indications. *Page 14*
During an alert, the display will show the radar band, along with a precise bar graph indicating the signal's strength. *Page 10*
You can program the 8500ci Plus for ExpertMeter mode, which displays up to eight radar signals at once, or choose our new SpecDisplay mode, which provides the actual numeric radar frequency. *Pages 10-11*
The display can also show Safety Radar text messages. *Pages 24-25*

GPS Signal Indicator ᴵᴵᴵ
The GPS icon indicates reception of GPS satellite signals and will rotate when a false alert is being rejected.

Sensitivity Button
The sensitivity (SEN) button toggles between sensitivity modes, including Highway, Auto (AutoSensitivity), and Auto NoX. In general, ESCORT recommends the Auto mode. *Page 7*

Cruise Alert Button
The Cruise Alert (CRU) button allows you to modify audible alerts when traveling within specified speeds (selectable options range from 30–95 mph). *Page 7*

Preferences
The 8500ci Plus is pre-programmed at the factory ready to go once it is installed—just turn it on. But you can also easily customize 11 features to your preferences. Press and hold both the CRU and SEN buttons to enter Preferences, then easily review or change your settings. *Pages 12-16*

Controls and Features

Power
The 8500ci Plus was designed to turn on and off with the ignition once it is installed. This is accomplished by connecting the 12-volt interface to a switched ACC connection at the fuse panel. (See Installation Manual for instructions.)

If you prefer, you may also turn the 8500ci Plus on and off by pressing the power button ⏻ located on the display controller.

Power-on indication
After PASSPORT's start-up sequence is complete, the matrix display will show "Highway", "Auto" or "Auto NoX" to show which sensitivity mode has been selected.

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

Volume Adjust/Mute
To adjust the 8500ci Plus to your preferred audio level for alerts, simply press and hold the VOL•MUTE button. The audio will increase/decrease while it is depressed. Once you reach the desired audio level, simply release the button. The 8500ci Plus will retain this setting in its memory, even if the system is turned off.

The VOL•MUTE button can also be used for:
• **Muting the audio during a single alert.** Press the VOL•MUTE button during the alert. After the radar encounter has passed, the mute will disengage, and the audio will return to your preset level.
• **Locking out false alarms.** See TrueLock feature for details page 9.

AutoMute
Your 8500ci Plus includes ESCORT's patented AutoMute feature. After the 8500ci Plus alerts you to a radar encounter at your selected volume level, it automatically reduces the volume more than 50%. 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 Preferences section for details pages 12-13.

Display Brightness
The 8500ci Plus's display brightness is automatically adjusted to suit ambient lighting conditions in your car. (The light sensor is located inside the display controller and may dim the display momentarily while you are accessing the buttons). (Maximum, Medium, Minimum, or Dark).

Dark Mode
If you select Dark mode on the 8500ci Plus, the display will not provide any indication that it is on.

NOTE: When the 8500ci Plus is in Dark mode, the display will not show visual alerts when it detects signals. Only the audible alert will notify you of detected signals.

Radar Sensitivity
The SEN button allows you to select the 8500ci Plus's radar sensitivity: Highway, Auto, or Auto NoX. In general, ESCORT recommends Auto for everyday driving.

Highway
In this setting, the 8500ci Plus will detect all radar signals on all bands at maximum range.

Auto
In this setting, the 8500ci Plus will automatically adjust its radar sensitivity based on the speed of your vehicle. At slower speeds (<25 mph), X- and K-band sensitivity is reduced to minimize alerts caused by automatic door openers, etc. At higher speeds (>45 mph), X- and K-band sensitivity is increased to maximum.

Auto NoX
Auto NoX works the same as Auto mode; however, X band is completely turned off.

WARNING: Do not use the 8500ci Plus in Auto NoX unless you are absolutely certain that there are no traffic radar guns using X band in your area.

Cruise Alert
The Cruise Alert feature allows you to minimize audio alerts received while traveling within a selected speed. To set the warning speed, simply press the CRU button. The display will read "Cruise 30." To change, simply hold the CRU button down to scroll through your choices. The range is 30–95 mph, in 5 mph increments. Once you reach your desired setting, simply release the button. To turn the Cruise Alert feature off, simply select "Cru-off" using the same process.

Over-Speed Alert

The Over-Speed Alert feature can provide voice alerts that you are traveling over a specified speed (selectable options range from 30–95 mph; 70 mph is factory default). Once the specified speed is reached, you will receive an audible alert and a warning message on the display.

GPS Indicator ▄▘

The GPS icon is visible on the right side of the 8500ci Plus display and indicates whether it is receiving GPS signals. At start-up, this icon will flash on and off until GPS data is received. Once the signals are received, the GPS icon will stop flashing and remain on the display. The GPS icon will rotate when a false alert is being rejected.

Safety Camera Database

Your 8500ci Plus comes pre-loaded with ESCORT's DEFENDER Database, which stores thousands of red-light and fixed-position speed cameras and speed traps throughout North America. The factory setting is for all markers in the database to be reported as you approach them. It is recommended that you use the 8500ci Plus in this mode. To modify which markers are reported, see "Markers" in the Preferences section.

Mark Location

The Mark Location feature allows you to mark any location for future reference. Once marked, the 8500ci Plus will provide an alert, accompanied by the label you assigned to it, on the display.

There are four different labels you can use when marking a location: speed trap (SPDTRAP), speed camera (SPDCAM), red-light camera (REDLGHT), and other (OTHER).

To mark a location, simply press the MRK button. The display will show, "MARK?" accompanied by a voice message. Press the MRK button again, and the labels appear, starting with "SPDTRAP." If this is not the label you want to use, simply press the VOL•MUTE button to scroll through the other options.

Once you reach the label you want, simply press the MRK button once more to confirm. The word "MARKED" will appear on the display, accompanied by a voice prompt confirming you have marked and labeled this location. Once marked, the 8500ci Plus will provide an alert as you approach this location the next time.

NOTE: When a location is marked the first time, you must travel at least 1 mile away from that location to receive an alert.

The warning distance for each label is:
• Red light camers: 250 ft. or 10 seconds
• Speed cameras: 500 ft. when traveling below 55 mph; 1,000 ft. when traveling above 55 mph
• Speed traps: 0.3 mi. or approximately 1,584 ft.
• Other: 500 ft. when traveling below 55 mph; 1,000 ft. when traveling above 55 mph

NOTE: GPS Filter must be "ON" in Preferences for the Mark Location feature to work.

TrueLock

To lock out a known false alarm (X band, K band, or laser), simply press the VOL•MUTE button three times during the false alert.

NOTE: It is important to visually look around to make certain no traffic radar is present before locking out a signal.

The first time you press the VOL•MUTE button, the audio will mute. The second time, the display will show "Lockout?" accompanied by a voice prompt asking if you want to lockout this signal. The third time you press the VOL•MUTE button, the location and frequency of that signal is stored in the 8500ci Plus's memory. The display will show "Stored" to acknowledge the information has been captured.

The next time you drive past the area and the signal is detected, the GPS icon will rotate clockwise, providing a visual indication of the rejected signal. The detector will not provide an audible alert.

To unlock a signal, press and hold the VOL•MUTE button while the icon is rotating. An "Unlock" message will be displayed. Press again to confirm and unlock that signal.

Clearing the Database

At some point, you may want to clear all of the data in the 8500ci Plus's database. This includes all markers and camera locations. In order to do this, simply press and hold the MRK, VOL•MUTE, and SEN buttons while powering the detector on. An "Erase?" message will appear on the screen. Press the CRU button to confirm.

Audible Alerts

For Radar signals:

The 8500ci Plus uses a Geiger counter-type sound to indicate the signal strength and type of radar signal being encountered.

When you encounter radar, a distinct audible alert will sound and will increase as the signal gets stronger. This allows you to judge the distance from the signal source without taking your eyes off of the road.

Each band has a distinct tone for easy identification:

X-band = beep tone
K-band = brap tone
Ka-band = double-brap tone

For Laser signals:

Since laser signals are a possible threat no matter how weak, the 8500ci Plus alerts you to all laser signals with a full laser alert.

For POP signals:

Since POP signals are extremely fast K or Ka bursts and a possible threat no matter how weak, the 8500ci Plus alerts you to these bands at full signal strength.

For Safety signals:

If you have turned on SWS detection within your Preferences for bands, the 8500ci Plus 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 25.

For Marked Locations:

The 8500ci Plus will alert you to marked locations with a double-beep tone and a corresponding text message. A complete list of marked location labels are on page 8.

Voice Alerts

The 8500ci Plus provides digital voice announcements for alerts and selection feedback. If you prefer, you can turn off the voice feature in Preferences. See the Preferences section for details.

Speed Alert

8500ci Plus's Speed Alert feature provides a visual indication of your vehicle speed during the first few seconds of an alert. This allows you to instantly check your speed without looking at your speedometer. Speed Alert is displayed regardless of your meter setting.

NOTE: When traveling 15 mph or less, your speed will not be displayed. If you prefer, you can turn the Speed Alert feature off. See Preferences for details.

Signal Strength Meter

The 8500ci Plus's matrix display consists of 280 individual LEDs to provide an intuitive ultra-bright display of signal strength and text messages. When it detects radar, it displays the band of the radar (X, K, or Ka) and a precise bar graph of the signal's strength.

ExpertMeter

ESCORT's exclusive ExpertMeter option is an advanced display for experienced detector users. Please use the 8500ci Plus for a few weeks to get fully familiar with its other features before using ExpertMeter.

To use the ExpertMeter instead of the standard bar graph meter, you must select MeterExp in the 8500ci Plus's Preferences. Page 13.

ExpertMeter simultaneously tracks up to eight radar signals: two Ka-band, two K-band, and four X-band signals. The ExpertMeter is actually a miniature spectrum analyzer. It shows what band each signal is, its relative frequency within the band, and its signal strength. ExpertMeter 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.

Above is the ExpertMeter display if the 8500ci Plus was detecting two strong Ka-band, two strong K-band and 4 strong X-band signals.

As you can see, there are vertical lines after each band designator. Each line shows a signal being detected. The height of each line shows the relative signal strength. The position of the line shows the relative frequency of the signal within the band.

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 vertical lines representing individual signals constantly change (several times a second) to give you a continuous view of the signal strength of all radar signals present.

A few more examples will help you better see how the ExpertMeter works.

Here ExpertMeter shows 1 strong K-band signal, and three X-band signals, two strong and one weak.

Here ExpertMeter shows 1 weak Ka-band signal and three weak X-band signals.

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

NOTE: If you use ExpertMeter, the brief signal shown in the power-on sequence when you turn on your 8500ci Plus will also be in ExpertMeter: an "X" with a single vertical line.

SpecDisplay

The 8500ci Plus's SpecDisplay option is also designed for the advanced detector user. In this mode, it will display the actual numeric radar frequency being received

Display shows a K-band signal at 24.150 GhZ.

Display shows a Ka-band signal at 34.700 GhZ.

Display shows a 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.

The 8500ci Plus offers 11 user-selectable options so you can customize it to your preferences. Pages 14-16 explain each option in more detail.

How To Customize Preferences
1 To access Preferences, press and hold both the CRU and SEN buttons for 2 seconds. The 8500ci Plus will beep and display `Prefs`. Brightness will automatically change to maximum during this process.

1 Then press the RVW 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.

2 Press the CRU button to review the 11 preference categories. You can either tap the button to change from setting to setting, or hold the button to scroll through all the options.

3 Press the SEN button to change any setting within the selected category. You can either tap the button to change from setting to setting or hold the button to scroll through all the options.

4 To exit Preferences, simply wait 8 seconds without pressing a button. The unit will display `Complete`, accompanied by a voice confirmation, and return to normal operation.

Example of Preferences
Here's how you would turn the 8500ci Plus's AutoMute feature off.

1 Enter Preferences by pressing and holding both the CRU and SEN buttons for 2 seconds. *The 8500ci Plus will beep and display* `Prefs`.

2 Press and hold the CRU button. *The 8500ci Plus will scroll through the categories, starting with Pilot Light (`Pilot`), then Signal Strength Meter (`Meter`), then AutoMute (`aMute`).*

3 Release the CRU button when the display shows `aMute`. *Since the factory setting is for AutoMute to be on, the 8500ci Plus will display* `aMute ON`.
If you accidentally don't release the CRU button in time, and it goes to the next category, simply hold the CRU button down again until `aMute` *is displayed.*

4 Press the SEN button to change from `aMute ON` to `aMute OFF`.

5 To complete this change, simply wait 8 seconds without pressing any button. *The unit will display* `Complete`, *accompanied by a voice confirmation. This is an indication that the 8500ci Plus has returned to its normal operation.*

Press the CRU button to go from one category to the next → **Press the SEN button to change your setting within a category**

Category	Setting	Description
Pilot Light (Power-on indication)	Pilot HWY	* Full word: Highway or Auto or AutoNoX
	Pilot H.>	Letter with scanning dot
	Pilot Spd Comp	Speed and Compass
	Pilot Compass	Compass
	Pilot V	Vehicle voltage
Signal Strength Meter	Meter STD	* Standard bar-graph display
	Meter EXP	ExpertMeter (multiple signals)
	Meter SPC	SpecDisplay (numeric frequency)
AutoMute	aMute ON	* AutoMute on
	aMute OFF	AutoMute off
Voice	Voice ON	* Voice alerts on
	Voice OFF	Voice alerts off
GPS Filter	GPS ON	* GPS features enabled
	GPS OFF	GPS features disabled
Units	Units Eng	* Speed and distance in English
	Units Met	Speed and distance in Metric
Brightness	BRT Auto	* Automatically adjusts brightness
	BRT Dark	Dark mode
	BRT Min	Minimum brightness
	BRT Med	Medium brightness
	BRT Max	Maximum brightness
Markers	Marks DEF	* All markers are reported
	Marks MOD	Markers have been reported
	rCam	Red light cameras *(default is ON)*
	sCam	Speed cameras *(default is ON)*
	sTrap	Speed traps *(default is ON)*
	Other	Other *(default is ON)*
Over-Speed Alert	OSpd 30-95	* Alerts when specified speed is reached (selectable options 30-95mph; 70mph is default)
	OSpd OFF	Over-Speed Alert off
Bluetooth	Blth OFF	* Bluetooth disabled
	Blth ON	Bluetooth enabled (requires optional Bluetooth kit)
Bands	Bands DFT	* Factory default settings
	Bands MOD	One or more bands have been modified

Turn selected bands ON or OFF by pressing and holding the VOL•MUTE button

X	ON *or* OFF	*(default is ON)*
K	ON *or* OFF	*(default is ON)*
Ka	ON *or* OFF	*(default is ON)*
POP	ON *or* OFF	*(default is OFF)*
SWS	ON *or* OFF	*(default is OFF)*
LSR	ON *or* OFF	*(default is ON)*
TSR	ON *or* OFF	*(default is ON)*

*Factory Default Settings
To reset the 8500ci Plus to its original factory settings, press and hold the MRK and VOL•MUTE buttons while turning the power on. The display will provide a `Reset` message, accompanied by an audible tone, acknowledging the reset.

Pilot Light (Power-on indication)

NOTE: When operating in Dark mode, the display will be completely dark.

`Pilot HWY` (factory default)
In this setting, the 8500ci Plus will display "Highway," "Auto," or "Auto NoX" as its power-on indication.

`Pilot H.>`
In this setting, the 8500ci Plus will display "H" for Highway, "A" for Auto and "ANX" for Auto No X plus a single dot that will continuously scroll across the display.

`Pilot Spd Comp`
In this setting, the 8500ci Plus will display your current speed and heading direction.

`Pilot Compass`
In this setting, the 8500ci Plus will display your heading direction.

`Pilot V`
In this setting, the 8500ci Plus will continually display "H" for Highway, "A" for Auto and "ANX" for Auto No X accompanied by the vehicle's battery voltage.

NOTE: 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 16.5 volts.

Signal Strength Meter

`MeterSTD` (factory default)
The standard meter displays the band, along with a bar graph indicating the signal strength.

`MeterEXP` (ExpertMeter)
ExpertMeter simultaneously tracks up to 2 Ka-band, 2 K-band, and 4 X-band signals, with accompanying bar graphs indicating the signal strengths.

`MeterSPC` (SpecDisplay)
SpecDisplay shows the actual numeric frequency of the radar signal being received.

AutoMute

`aMute ON` (factory default)
In this setting, the 8500ci Plus's audio alerts will initially be set to the volume level you selected. However, after a few seconds, the audio level will automatically be reduced to keep you informed but not annoyed.

`aMuteOFF`
When AutoMute is off, the audio alerts will remain at the volume you set for the duration of the encounter.

Voice Announcements

`VoiceON` (factory default)
In this setting, all alerts and instructions are communicated using a voice announcement.

`VoiceOFF`
With voice off, normal tones will be used for alerts.

GPS Filter

`GPS ON` (factory default)
In this setting, all GPS-related features are on.

`GPS OFF`
In this setting, all GPS features are off.

Units

`Units Eng` (factory default)
In this setting, all speed-related features are displayed in miles per hour.

`Units Met`
In this setting, all speed-related features are displayed in kilometers per hour.

Brightness

`BRT Auto` (factory default)
In this setting, the display brightness will automatically adjust based on the ambient light in the vehicle.

`BRT Dark`
In this setting, each time you turn on the 8500ci Plus, the display will be in the Dark mode. This is recommended only when using the hidden display LED option, so you still have a visual indication to confirm that the 8500ci Plus is operational.

`BRT Min`
In this setting, each time you turn on the 8500ci Plus, the display will be at the lowest brightness.

`BRT Med`
In this setting, each time you turn on the 8500ci Plus, the display will be at medium brightness.

`BRT Max`
In this setting, each time you turn on the 8500ci Plus, the display will be at maximum brightness.

Details of Preferences

Markers
`Mark DFT` (factory default)
In this setting, all safety cameras, red-light cameras, and speed traps are reported.

`Mark MOD`
In this setting, only the markers you've selected are reported.

Over-Speed Alert
`OSpd 30-95` (factory default)
In this setting, once a specified speed (selectable options range from 30–95 mph; 70 mph is factory default) is reached, you will receive an audible alert and a warning message.

`OSpd OFF`
In this setting, Over-Speed Alert is off.

Bluetooth
`Blth OFF` (factory default)
In this setting, Bluetooth is disabled.

`Blth ON`
In this setting, the optional Bluetooth Kit (sold separately) enables wireless connectivity between the 8500ci Plus and mobile devices or hands-free car systems.

Bands
`Bands DFT` (factory default)
The factory default settings for North America radar and laser are monitored. It is highly recommended that you use your 8500ci Plus in this mode.

`Bands MOD`
If the bands are changed from the factory default settings, the 8500ci Plus will warn you with an audible alert and associated text message that one or more bands have been turned off in Preferences (e.g. "X band OFF"). This warning is displayed during the start-up sequence.

WARNING: Only modify bands if you are absolutely certain that there are no traffic radar guns using that specific band in your area.

Specifications

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 904nm, 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

Display Type
- HP AlGaAs 280 LED Matrix/Text
- Bar Graph, ExpertMeter and SpecDisplay
- Automatic brightness control, plus four levels of fixed brightness, including Full Dark

Power Requirement
- 12VDC, Negative Ground

Programmable Features
- Power-On Indication
- Signal-Strength Meter
- AutoMute
- Voice
- GPS Filter
- Units
- Brightness
- Markers
- Over-Speed Alert
- Bluetooth (Requires Bluetooth Kit sold separately)
- Bands

Sensitivity Control
- Highway, AutoSensitivity and Auto NoX
- Auto Calibration Circuitry
- Complete VG2 Immunity

Dimensions (Inches)
- Display/Controller
  .59 H x 3.32 W x 1.06 D
- Interface
  .83 x 3.90 x 3.61 inches
- Receiver Unit
  1.78 x 3.14 x 4.18 inches

Interpreting Alerts

Although PASSPORT 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 PASSPORT 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 PASSPORT's warning system for radar, laser and safety alerts.

Alert	Explanation
PASSPORT begins to sound slowly, then the rate of alert increases until the alert becomes a solid tone. The Signal Meter ramps accordingly.	You are approaching a continuous radar source aimed in your direction.
PASSPORT emits short alerts for a few seconds and then falls silent only to briefly alert and fall silent again.	An instant-on radar source is being used ahead of you and out of your view.
PASSPORT suddenly sounds a continuous tone for the appropriate band received. All segments in the Signal Strength Meter are lit.	An instant-on radar source or laser source is being used nearby. This kind of alert requires immediate attention!
A brief laser alert.	Laser is being used in the area. Because laser is inherently difficult to detect, any laser alert may indicate a source very close by.
PASSPORT receives weak signals. These signals may be a little stronger as you pass large, roadside objects. The signals increase in frequency.	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 melt into a solid point even when the patrol car is directly behind you.
PASSPORT alerts slowly for awhile and then abruptly jumps to a strong alert.	You are approaching a radar unit concealed by a hill or an obstructed curve.

Alert	Explanation
PASSPORT alerts intermittently. Rate and strength of alerts may be consistent or vary wildly.	A patrol car is traveling 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.
PASSPORT alerts intermittently. Rate and strength of signal increases with each alert.	A patrol car is approaching from the other direction, "sampling" traffic with instant-on radar. Such alerts should be taken seriously.
PASSPORT gives an X-band alert intermittently.	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

Traffic radar, which consists of microwaves, travels in straight lines and is easily reflected by objects such as cars, trucks, and 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 detector will occasionally receive non-police radar signals. Since these X-Band transmitters are usually contained inside of a building, 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 8500ci Plus's radar detection abilities are fully operational.

How "POP" Works

POP mode is a relatively new feature for radar gun manufacturers. It works by transmitting an extremely short burst, within the allocated band, to identify speeding vehicles in traffic. Once the target is identified, or "POPPED," the gun is then turned to its normal operating mode to provide a vehicle tracking history, (required by law).

NOTE: According to the operator's manual from the radar gun manufacturer, tickets should not be issued in POP mode.

How Laser (Lidar) Works

Laser speed detection is actually light detection and ranging (LIDAR). LIDAR guns project a beam of invisible infrared light. The signal is a series of very short infrared-light energy pulses that 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 is a newer technology whose use is not as widespread as conventional radar; therefore, you may not encounter it on a daily basis. And unlike radar detection, LIDAR 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 (LIDAR) 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 that 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 TSR Works

The 8500ci Plus includes a new boost in anti-falsing software to eliminate excessive alerts from erroneous X- and K-band sources. One example is traffic-flow monitoring systems.

These systems, which are becoming more widely used in cities across the U.S., generate K-band signals to measure the flow of traffic on a given road. Unfortunately, most detectors see this as a real threat and will alert you to it unnecessarily. Our new proprietary Threat-Signal Ranking (TSR) software intelligently sorts, ranks, and rejects these types of false alarms automatically. The result is ultimate protection without excessive false alarms.

Since not all markets have this type of traffic-flow monitoring system, your detector has been pre-set with TSR turned off. For details on how to activate TSR, see the Preferences section.
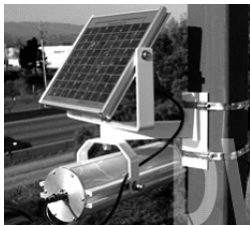
These sensors are fully self-contained and roadside-mounted.

How GPS Works

The global positioning system (GPS) is made up of 24 orbiting satellites and was developed by the U.S. military. There are at least four satellites visible at any given time every day.

A GPS receiver is designed to locate and receive data from four of these satellites. These data include the distance to your location from each of the satellites. Once the distance from each satellite is known, the receiver can calculate and pinpoint your exact location.

How TrueLock Works

TrueLock uses the exact position and actual frequency of a signal to eliminate it as a false alarm. Once a signal is locked out, a box is created around that location (approximately ½ mile radius) to lock it out from all directions. Automatic door openers use more than one source, so TrueLock will automatically lock out other X- and K-band sources in close proximity.

How Red Light Cameras Work

Red-light cameras use three basic things: a camera, a device to trigger the camera, and a computer.

An intersection may have more than one camera to monitor traffic from multiple directions. The trigger is typically a series of wires buried just beneath the surface of the road. These wires are separated by a pre-set distance to create a magnetic field or induction loop. Once a vehicle is in the intersection, the loop or circuit becomes closed and alerts the computer to take a picture.

In some states, tickets are issued to the car's owner, no matter who is actually driving. In this case, the red-light camera only needs to photograph the vehicle's rear license plate. In other states, the actual driver is responsible for paying the ticket. In this case, the system needs a second camera in front of the car to get a shot of the driver's face.

How Speed Cameras Work

There are several types of fixed-position speed cameras used, including radar, laser, induction-loop, and photo-based.

Radar-and laser-based cameras are typically mounted near the road and transmit a short-range signal across the lanes monitored. Since this signal is transmitted across the road instead of down the road like with many handheld systems, detecting them in time is critical.

Another technology used is an induction-loop system. This type of system utilizes wires buried just beneath the surface of the road to trigger a computer that calculates speed between the two points.

Photo-based systems take two sets of pictures of all passing vehicles between two separate fixed locations. Both sets of photographs are date and time stamped, which enables the system to calculate average speed between the two locations.

Fixed-speed cameras can also be set up to monitor one to four lanes of traffic in the same direction. To achieve this, a sensor is installed in each lane, and a wide-angle camera lens is used to photograph the vehicle that is speeding.

Software Updates

The 8500ci Plus's DEFENDER Database is easily updated using our exclusive detector software tools found on our Web site. Firmware, or the operating software for the detector, can also be updated using these tools.

In order to have access to these updates, you must register your 8500ci Plus at www.EscortRadar.com. Once registered, you will receive e-mail notifications that updates are now available for your Defender Database or firmware.

To update your 8500ci Plus's DEFENDER Database, which includes locations for speed cameras, red-light cameras, and the top speed traps in the U.S., please follow these simple steps:

1 Connect the USB data cable to the 8500ci Plus. (See Installation Manual for instructions.)
2 Plug the standard USB connector end of the cable into your computer.
3 Log on to www.EscortRadar.com/download.
4 Follow the instructions online.

How SWS Works

There are two separate safety radar systems in limited use today: Safety Alert and Safety Warning System (SWS). Both systems use modified K-band radar signals.

From the factory, your 8500ci Plus is programmed with safety radar decoding off. If safety radar is used in your area, your 8500ci Plus will display these signals as K-band radar signals instead of safety radar, unless you use the Preferences to turn safety radar decoding ON.

The Safety Alert safety radar system has three possible alerts:
• Safety Vehicle
• Road Hazard
• Train Nearby

The SWS safety radar system has 64 possible messages. The SWS messages your 8500ci Plus can display are listed on the facing page.

NOTE: Some of the safety messages have been condensed so they can fit on the 8500ci Plus's 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.

SWS Text Messages

Highway Construction or Maintenance

1 Work Zone Ahead
2 Road Closed Ahead/Follow Detour
3 Bridge Closed Ahead/Follow Detour
4 Highway Work Crews Ahead
5 Utility Work Crews Ahead
6 All Traffic Follow Detour Ahead
7 All Trucks Follow Detour Ahead
8 All Traffic Exit Ahead
9 Right Lane Closed Ahead
10 Center Lane Closed Ahead
11 Left Lane Closed Ahead
12 *For future use*

Highway Hazard Zone Advisory

13 Stationary Police Vehicle Ahead
14 Train Approaching/At Crossing
15 Low Overpass Ahead
16 Drawbridge Up
17 Observe Drawbridge Weight Limit
18 Rock Slide Area Ahead
19 School Zone Ahead
20 Road Narrows Ahead
21 Sharp Curve Ahead
22 Pedestrian Crossing Ahead
23 Deer/Moose Crossing
24 Blind/Deaf Child Area
25 Steep Grade Ahead/Truck Use Low Gear
26 Accident Ahead
27 Poor Road Surface Ahead
28 School Bus Loading/Unloading
29 No Passing Zone
30 Dangerous Intersection Ahead
31 Stationary Emergency Vehicle Ahead
32 *For future use*

Weather Related Hazards

33 High Wind Ahead
34 Severe Weather Ahead
35 Heavy Fog Ahead
36 High Water/Flooding Ahead
37 Ice On Bridge Ahead
38 Ice On Road Ahead
39 Blowing Dust Ahead
40 Blowing Sand Ahead
41 Blinding Snow Whiteout Ahead
42 *For future use*

Travel Information/Convenience

43 Rest Area Ahead
44 Rest Area With Service Ahead
45 24 Hour Fuel Service Ahead
46 Inspection Station Open
47 Inspection Station Closed
48 Reduced Speed Area Ahead
49 Speed Limit Enforced
50 Hazardous Materials Exit Ahead
51 Congestion Ahead/Expect Delay
52 Expect 10 Minute Delay
53 Expect 20 Minute Delay
54 Expect 30 Minute Delay
55 Expect 1 Hour Delay
56 Traffic Alert/Tune AM Radio
57 Pay Toll Ahead
58 Trucks Exit Right
59 Trucks Exit Left
60 *For future use*

Fast/Slow Moving Vehicles

61 Emergency Vehicle In Transit
62 Police In Pursuit
63 Oversize Vehicle In Transit
64 Slow Moving Vehicle

Troubleshooting

Problem	Solution
Detector beeps briefly at the same location every day, but no radar source is in sight.	• An X-band motion sensor or intrusion alarm is located within range of your route. See "TrueLock" in the Controls and Features section for details on how to lock out this alert.
Detector did not alert when a police car was in view.	• 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.
Detector did not provide a safety signal while within range of an emergency vehicle.	• Safety transmitters may not be commonly used in your area.
Detector's audible alerts become softer after the first few alerts.	• Detector is in AutoMute mode. See "AutoMute" in the Preferences section for details. Safety transmitters may not be commonly used in your area.
Detector only provides a double-beep during an alert.	• Cruise Alert is enabled. If you prefer full alerts regardless of your speed, see "Cruise Alert" in the Controls and Features section for details on how to turn this feature off.
The 8500ci Plus's power-on sequence reoccurs while you are driving.	• A loose power connection can cause the 8500ci Plus to be briefly disconnected and will retrigger the power-on sequence.
You wish to restore the factory default settings for Preferences.	• You can return all of the Preferences to the factory default settings by holding down the CRU and SEN buttons while you turn the 8500ci Plus on.
The 8500ci Plus will not turn on.	• Check that vehicle ignition is on. • Check all connections.
The 8500ci Plus's display feels warm.	• It is normal for the device to feel warm.

Explanation of Displays

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 8500ci Plus will continue to display this message and will not operate until the problem has been repaired.
WorkZone	One of the many safety radar messages (page 25)
Caution	The 8500ci Plus has detected a safety radar signal, but the signal isn't yet strong enough to decode the specific safety message (pages 24-25)
X|, or K|, or KA| etc.	The 8500ci Plus is in ExpertMeter mode (pages 10-11)
Receiver Error	The 8500ci Plus has failed to calibrate. Contact your dealer for repair.
GPS N/A	Not able to receive GPS signal. Check GPS antenna connection.

Service

Service Procedure
If your PASSPORT ever needs service, please follow these simple steps:

1 Check the Troubleshooting section of this manual. There may be a simple solution to your problem..

2 Contact your installer. They will evaluate your unit and arrange repairs if necessary.

If you installed it yourself, please contact our customer service team at 800-543-1608.

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

Warranty

ESCORT
One Year Limited Warranty
ESCORT warrants your PASSPORT 8500ci 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 ESCORT under this warranty is limited to either repair or, at the option of ESCORT, replacement of the PASSPORT 8500ci Plus. 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.

ESCORT is not liable for any incidental or consequential damages arising from the use, misuse, installation, or mounting of the PASSPORT 8500ci 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 PASSPORT 8500ci Plus has been removed or if your PASSPORT 8500ci Plus has been subjected to physical abuse, improper installation, or modification.

Accessories

Parts and Accessories
Replacement parts are available through your dealer.

SHIFTER PACK

Shifter Pack $249.95

ESCORT Extended Service Plan
ESCORT offers an optional extended service plan. Contact ESCORT Sales for details at 800-433-3487.

Register

online:

@www

EscortRadar.com

ESCORT®

ESCORT PRODUCT REGISTRATION CARD

▲ If you purchased your detector directly from ESCORT, you do not need to fill this out.

▲ If you did not purchase your detector directly from ESCORT, please fill out this section and return to us, or register online at our web address: **www.EscortRadar.com**

1. First Name:_____ Middle Initial_____ Last Name_____

   Address_____

   City_____ State_____ Zip_____

   Email and/or Phone (In case we have a question)_____

2. Product Purchased **PASSPORT 8500ci Plus**_____ Serial Number_____

3. Place of Purchase_____ Date_____ Price_____

4. Primary reason for purchasing this ESCORT product_____

   _____

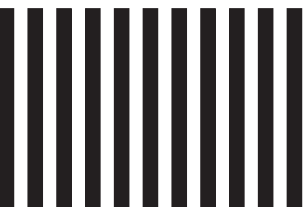5. Would you like to be added to our mailing list?   ☐ Yes ☐ No

6. Would you like us to e-mail you with updates?   ☐ Yes ☐ No

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