AMERICAN RADAR

AR9970BT User Manual

www. american-radar.com

What's included

1 x AR9970BT
1 x USB Data Cable
1 x 12V Vehicle Power Adapter
1 x 12V Hardwire Cable
1 x Windshield Bracket
1 x Micro SD Card
1 x User Guide

Product overview

1. Windshield Bracket - detachable bracket with suction cup
2. MENU - radar/laser detector user settings
3. DIM – three selectable display brightness modes
4. MUTE – during an alert, press to mute the audio
5. CITY - switch between four sensitivity modes
6. Micro SD Card Slot - supports up to 64 GB
7. 1.25" Multi-Colored OLED Display for radar/laser detector
8. 1.5" LCD Display for dash camera
9. REC - start or stop dash camera video recording
   (long press to enter into settings menu)
10. Down Arrow – toggles microphone on and off
    (in menu setting, use to scroll down)
11. Up Arrow – toggles dash camera display on and off
    (in menu setting, use to scroll up)
12. MODE - long press to access the video files and photos
13. USB Power Port – connect the 12V vehicle power adapter

1. High-fidelity speaker
2. Windshield bracket mounting slot
3. Built-in laser detector
4. Built-in radar detector
5. 170 degree wide-angle lens for the dash camera
6. On/Off and Volume Control - push the thumbwheel to turn device on and off; rotate the dial to control the volume
7. Micro USB Port (covered) - use when updating the software for the dash camera (do not use to power the device)
8. Mini HDMI Port (covered) - playback video directly from the device to an external HDMI TV or monitor
9. Mini USB Port - use the provided data cable when updating the speed trap database and radar-detector's software.
10. Built-in Ambarella A7L HD video processor

Installation

Attach the suction cup mount to the unit by sliding it into the windshield bracket slot on the top of the unit. Afterwards, mount the unit where it has an unobstructed view of the road and has a clear view of the sky. Once you have chosen a suitable location, press the suction cup bracket firmly to the windshield with the lever in the unlock position. Then turn the lever 90 degrees to lock position to seal the suction cup to the windshield. Finally, loosen the nut slightly and adjust the bracket so that the unit is horizontal to the road.

Attach the power cable to the 12V mini USB port located on the lever of the windshield bracket. Insert the other end into an appropriate cigarette lighter receptacle.

To hardwire your unit for a neater installation look, please contact an automobile electrician or your local car dealer.

Use the supplied 12V auxiliary power cord or the 12V hardwire to power the unit. Other third-party USB cables may not provide sufficient power to the unit.

Safety Warnings

WARNING:
To guard against injury, basic safety precautions should be observed:

Do not allow the unit to obstruct the driver's view.

Do not place the unit in front of the air bags such that it would interfere with the inflation of the air bag.

Do not place the unit unsecured on the dashboard or elsewhere, as it could be propelled inside the vehicle, causing injury to occupants. Some state laws prohibit mounts or restrict mounting to specific areas of the windshield. Please check your local laws for restrictions.

Radar/Laser Detector and Dash Camera Operation

AR9970BT combines a high performance GPS, radar, laser, speed trap detector, and Super HD dash camera in one unit.

Radar/Laser Detector Buttons

[MENU] On/Off and Menu Access
A long press on the MENU button will power the unit on or off.
A short press to the MENU button will open the settings menu.
See the "Radar/Laser Settings Menu" section for a detailed explanation of the menu options.

[DIM] Brightness Control
Press to change the brightness of the display. There are three settings to choose from: Bright, dim and dark. The factory setting is set to bright.

[MUTE] Mute Incoming Audio Alerts
Press MUTE to instantly silence the audio alert during a radar or laser encounter. Once your device has passed the radar or laser source location and the alert ceases, the mute will be lifted, and the device will be ready to provide audio alerts for future encounters.

[CITY] Highway/City Mode
The unit is equipped with four different sensitivity modes that the user can select from for an optimal driving experience. Choose between these sensitivity modes in order to reduce the number of false alerts caused by non-police radar sources (i.e. automatic doors, microwave towers, blind spot monitoring systems, traffic-flow radar, etc).

Along with audio alerts, the unit provides a visual alert displaying the band detected and a bar graph showing the signal strength ranging from 1 to 6. Press the CITY button to select between different sensitivity modes:

CITY1 – X-band and K-band alerts will be suppressed until they reach a signal strength level of 3. All other laser/radar signals will sound alerts at every sensitivity level.

CITY2 – X-band and K-band alerts will be suppressed until they reach signal

strength level 4. Ka-band alerts will be suppressed until they reach signal strength level 3. All other laser/radar signals will sound alerts at every sensitivity level.

HIGHWAY – All laser/radar signals will sound alerts at every sensitivity level.

Radar/Laser Settings Menu

Menu – Changing the Settings
To access the user settings, press the MENU button.

Navigating inside the menu:
1) Press the DIM or MUTE button to scroll left or right in the menu list.
2) Press the CITY button to change the selected value.
   a) If there are more than two options, use DIM and MUTE buttons to scroll through the options, and then press MENU to confirm your selection and to return to the top menu.
3) To exit the menu, press MENU.

Safety Warning

WARNING : Do not attempt to access or change the settings while driving. If you need to change any of the settings, please ask a fellow passenger, or wait until you are safely parked.

Radar/Laser Settings Menu Options

[Quick Start] At startup, the current settings are briefly displayed for several seconds. When the Quick Start menu item selected, this startup sequence will be skipped.

[OLED Display Themes] Choose from three different screen themes: Orange, Blue, and All Color.

[Voice] Enable or disable voice alerts.

[Auto Mute] When Auto-mute is on, the device will automatically reduce the audio volume of all alerts after 3 seconds. When Auto-mute is off, the alerts will sound at full volume for as long as the signal is detected.

[Speed limit] It will alert if the driver exceed their self-selected driving speed limit. Disable option also available.

UTC

The unit automatically adjusts the time zone based on the location. The user can also manually set the device's current time zone. The standard time zones are defined in terms of hourly offsets from UTC. The following table lists the time zone offsets relevant to the US.

United States time zones

Time Zone	Standard Time	Daylight Time
Hawaii–Aleutian Time Zone	HAST (−10)	HADT (-9) Aleutian Islands only
Alaska Time Zone	AKST (−9)	AKDT (-8)
Pacific Time Zone	PST (-8)	PDT (-7)
Mountain Time Zone	MST (-7)	MDT (-6)
Central Time Zone	CST (-6)	CDT (-5)
Eastern Time Zone	EST (-5)	EDT (-4)

24-hour time / 12-hour time
Choose between 12 hour and 24 hour clock formats

Speed unit - KMH/MPH
Select between MPH (miles per hour) and KMH (kilometers per hour).

Factory reset
Select to reset the device to factory settings.

Bluetooth DB Update
The unit is preinstalled with the latest firmware and a database of "points of interest" (i.e. red light camera locations, speed camera locations, dangerous intersections, etc.). American Radar will provide free updates to the firmware and the "points of interest" database for the lifetime of the unit. To update the device via a Bluetooth connection:

1) Enter the AR-9970BT GPS detector menu and select the Bluetooth DB update.
2) Download the AmericanRadar BT App on Google Play or Apple App Store.
3) Run the application "American Radar DB Updater" on your mobile device.

4) Press the 'Connect' button
5) Select the device name 'AR BT' from the "Device List"
6) Select the checkbox next to the corresponding country database (i.e. USA) and click "OK"
7) Press Download to begin updating the data to your unit.
8) Close the mobile app when finished.

Update Mode

In addition to updating the unit over Bluetooth, users can directly connect the unit to a PC via a USB cable, and perform software updates and "points of interest" databases updates.

For more information on how to perform updates over a USB cable, please visit our website at *www.american-radar.com* for download links and more installation instructions.

Software Ver.

View the software version installed on the unit.

Dash Camera Settings Menu

To access the dash camera user settings, long press the REC button.

Navigating inside the menu:
1) Press the down arrow button▼or the up arrow button ▲to scroll through the menu list.
2) Press the REC button to select individual options.
 a) If there are more than two options, use ▼ and ▲ to scroll through the sub-list
3) Press the REC button to confirm selection and return to top menu.
4) From the top menu, long press the REC button to close the menu.

Dash Camera Settings Menu Options

[Resolution]
This setting allows the user to choose from six available video recording resolutions. The available resolutions are as follows:

• 2304 x 1296/30fps
• 2560 x 1080/30fps
• 1920 x 1080/30fps with HDR

• 1920 x 1080/30fps
• 1280 x 720/60fps
• 1280 x 720/30fps

[Video Quality]
Change the video capture quality. The available options are as follows:
• Super Fine   • Fine   • Normal

[Record Loop Time]
The looping video recording function captures video continuously and automatically manages space on the SD card by overwriting the oldest footage when the card fills up. By default, the unit creates consecutive video files that are 3 minutes in length, and removes the oldest files first. This setting allows the video file length to be changed to 1, 2, 3, or 5 minutes.

[Motion Detection]
When this setting is enabled, recording will start when motion is detected. This feature is particularly useful if the device is hardwired to

power, and the vehicle is left unattended (for example, parked overnight and street parked).

[MIC]
Use this feature to switch the microphone on or off during video recording.

[Time Lapse]
As an alternative to continuous loop recording, this setting allows the user to select time-lapse style photographs, where a series of photographs are taken over a several second interval. Choose between the following time-lapse interval options:

- 1 sec
- 5 sec
- 30 sec
- Off

[Language]
Select the language option. Please note that this will only change the language within the dash camera settings and will not change the language used in the radar/laser detector interface.

[TV Type]
Set which color encoding format to use: NTSC or PAL. NTSC is the default.

[Format (Erase the SD Card)]
Format the microSD card. All video recordings and photographs previously saved on the SD card will be deleted during the format process.

[Stamp]
Add an informational speed, GPS coordinate, or timestamp overlay onto the bottom of your video recordings.
Available options are as follows:

- Speed / GPS / Datetime
- Speed / GPS
- GPS / Datetime
- Speed / Datetime
- Speed
- GPS
- Datetime
- American Radar – "American Radar" text

[Car Number Set]
Add a custom text overlay (embedded text into the recorded video), of up to 9 alphanumeric characters in length. Press the ▼and ▲ arrows to select a character and press the MODE button to confirm the selection and move the cursor to the right.

[Auto LCD Off]
Sets the dash camera's LCD to automatically turn off after a specific duration of time. Choose between the following:

• Off - select and the LCD will stay on permanently
• 30 secs - the LCD will switch off after 30 seconds
• 60 secs - the LCD will switch off after 60 seconds
• 3 mins - the LCD will turn off after 3 minutes
• 5 mins - the LCD will turn off after 5 minutes

[Default setting]
Select to return all dash camera settings back to their original factory default settings.

[Flicker – adjust Hz rate]
Adjust the refresh rate of the recorded videos. The following options are available:

• 50 Hz
• 60 Hz
• auto (default)

[Contrast]
Set the display contrast of the recorded videos:
• Standard (default)
• Hard
• Soft

[Sharpness]
Set the sharpness of the recorded videos
• Standard (default)
• Hard
• Soft

[White Balance]
Set the white balance for the recorded videos
• Auto (default)
• Sunny
• Cloudy
• Fluorescent
• Incandescent

[G-Sensor Set]
When enabled, the 3-axis accelerometer senses sudden movement or impacts and automatically protects video footage surrounding the incident. Choose from 4 impact sensitivity options:
• Off
• Low (default)
• Medium
• High

[GMT (UTC) Setup]
Set the dash camera's current time zone. The standard time zones are defined in terms of hourly offsets from UTC. The following table lists the time zone offsets relevant to the US.

United States time zones

Time Zone	Standard Time	Daylight Time
Hawaii–Aleutian Time Zone	HAST (−10)	HADT (-9) Aleutian Islands only
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Central Time Zone	CST (-6)	CDT (-5)
Eastern Time Zone	EST (-5)	EDT (-4)

WDR – Wide Dynamic Range
The advanced image processor can handle a wide range of lighting conditions: it flawlessly resolves both dark and bright areas in a scene, and delivers clear videos in low-light situations. Enable this feature to record greater scene details, from shadows to highlights.

LCD Contrast
This setting sets the contrast of the dash cam LCD display on a range from 1 (low) to 7 (high). 4 is the default.

Lane Departure Warning System (LDWS) Detect
When the LDWS is enabled, it will notify the driver when the unit detects the vehicle drifting out of the lane.
• Off (default)   • On

Forward Collision Warning System (FCWS) Detect
When FCWS is enabled, the unit will alert the driver if they are fast approaching a vehicle ahead.
• Off (default)   • On

Low Light Detect (LLWS)
Enable this feature to receive alerts when there is not enough light (i.e. if the car's headlights are off.)

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FCWS/LDWS Calibration

For the LDWS and FCWS functions to operate correctly, the user must calibrate the unit when the car is parked on a flat surface with a clear view of the horizon. Please see the image below:

Press the MODE button to select between the red and purple lines needed for adjustment. Use the ▼ and ▲ arrow to adjust the lines. Align the red line so that is parallel to the front edge of the hood. Align the purple line so that it is parallel to the horizon on the road.

Video Playback

Playback on Device

To playback video or still photos on the device, long press the MODE button to enter the playback menu.

Use the ▼ and ▲ to select the folder to review. Press REC to confirm the selected folder.

Use the ▼ and ▲ to navigate through the files. Press REC to view the file.

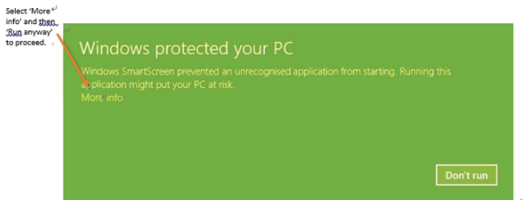Press REC to play the file. Use the ▼ and ▲ to rewind or fast forward through the footage.

Playback on TV

To view the recorded videos and photos, connect your device to an HDMI-capable TV via a mini HDMI cable (not supplied). See the "Playback on Device" section for information on how to navigate and play content.

Playback via American Radar DVR Player

Please visit our website, ***www.american-radar.com*** to download the American Radar DVR Player. Install the media player following the installation instructions onscreen.

Depending on your version of Windows, you may see the following message:

Select 'More info' and then, 'Run anyway' to proceed.

Windows protected your PC

Windows SmartScreen prevented an unrecognised application from starting. Running this application might put your PC at risk.
More info

Don't run

Select 'More info' and then 'Run anyway' to continue the installation.

Follow the on-screen instructions to install the video software. Once complete, you should see American Radar DVR Player icon on your computer's desktop.

Using American Radar DVR Player

1) Launch the player by double-clicking on the downloaded app.
2) Remove the microSD card from the unit and insert in to your PC using a suitable SD card reader.
3) When prompted with the message, 'SD card detected. Do you want to load the DVR recordings?', press 'OK' to proceed.

Note: If the computer or American Radar DVR Player does not automatically recognize the SD card, open the file from the File menu and retrieve your media files.

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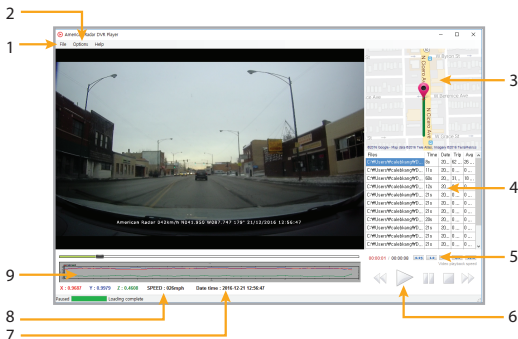
1. Go to File and open the video file to review
2. Click the options menu to switch between MPH and KMH, and KM to Miles.
3. GPS map of the journey that corresponds to the video footage being played.
4. Displays file name, time, date, and tip information of the displayed files.
5 and 6. Playback navigation and controls.
7. Date and time stamp of video.
8. Displays the speed of the traveling vehicle.
9. G-Sensor data.

Please note we do not support the Apple OS at this time. If you have a Mac, please use QuickTime media software or similar to review the video footage recorded on the device.

Appendix A: Factory Default Settings or the unit

For optimal performance, your unit comes in the following default setting for your radar/laser detector and red light and speed camera alerts.

User Setting	Factory Default
X-Band	On
K-Band	On
Ka-Band	On
Laser	On
Red Light	On
Speed Camera	On
High Risk Zone	On
Dangerous Intersection	On
Speed Trap	On
City Mode	Setting #1

Appendix B: Electrical and Electronic Conditions and Specifications

Standard Test Environmental:
- Temperature: +25 C +/-5 C
- Humidity: 20% to 60%
- Operating Voltage: 13.6V +/-1.0V

Electrical Specifications:
- Operating Voltage Range: 16V~12.5V
- Max DC Current
- Standby: 330 mA
- Alert: 500 mA (Full audio volume, full brightness on display for X SS6 alert)

Microwave Radar Specification

Detectable Bands

The following microwave-frequency guns, transmitters, and Radar Detector Detectors (RDDs) are to be detected:

Band	Modulation	Center Freq	Min. Dev	Units
X	none	10.525	+/-0.050	GHz
K	none	24.125	+/-0.125	GHz
Ka	none	34.700	+/-1.300	GHz

Undetectable Bands

VG-2   Swept   11.500   +/-0.250   GHz
Spectre1 Swept   13.300   +/-0.200   GHz
Spectre I/Elite Stepped 12.650   +/-0.025   GHz
                                         13.150   +/-0.025   GHz

Radar/Laser Sensitivity

10.525 GHz : -90 (+/-3) dBm
24.150 GHz : -115 (+/-2) dBm
33.800 GHz : -115 (+/-2) dBm
34.300 GHz : -115 (+/-2) dBm

34.700 GHz : -115 (+/-2) dBm
34.940 GHz : -115 (+/-2) dBm
35.500 GHz : -120 (+/-2) dBm
Laser   : -128 dBJ/cm2

Super HD Dash camera Specifications

- 170 degree ultra-wide angle lens / Ambarella A7L video processor
- Super HD high quality resolution
- Advanced H.264 video compression technology
- 3 mega pixels / 1.5 inch high resolution LCD
- Support HDMI high quality video transmission
- 30 frames per second for smooth video flow
- WDR function - optimizes brightness in dark or overcast conditions
- G-Sensor - Auto sense event and lock video file.
- Seamless continuous video recording
- Automatic video recording function
- Includes 8GB Micro SD card. Supports up to 64GB Micro SD card.

LIMITED WARRANTY

American Radar, Inc. ("American Radar" or "we") warrants your product against defects in materials and workmanship for a period of one year from the date of the original purchase ("Warranty Period"). Except where prohibited by applicable law, this warranty is nontransferable and is limited to the original purchaser.

American Radar does not warrant that the operation of the product will be uninterrupted or error-free. American Radar is not responsible for damage arising from failure to follow instructions relating to the product's use.

Remedies

If the product is determined to be materially defective during the Warranty Period, American Radar will provide the following remedy (at its option) to:

(1) Use new or refurbished parts to repair or

(2) Replace the product with the same or similar valued item.

Any replacement product will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer.

This warranty does not cover damage resulting from (1) improper operation or maintenance; (2) unauthorized repair or modification; (3) if the serial number or housing of the product has been removed; or (4) other causes that are not defects in material and workmanship except where such restriction is prohibited by applicable law. Additionally, this warranty does not cover products marked as "sample" or sold "As Is".

How to get Warranty Support

Before submitting a warranty claim, we recommend you visit our website at https:// www.american-radar.com for current mailing address and customer service contact information. The product must be returned, insured and shipping prepaid, to American Radar in its original packaging or a similar protective box, along with a written description of the problem, and a copy of the original purchase receipt.

Limitation of Liability

We strive to provide great products to our customers and we hope that you will enjoy your purchase. But there are certain things that we do not promise about our device(s).

OTHER THAN AS EXPRESSLY SET OUT IN THESE TERMS, AMERICAN RADAR MAKES NO WARRANTIES, EXPRESSED OR IMPLIED; INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR ANY PARTICULAR PURPOSES WHATSOEVER, AND NO OTHER REMEDY SHALL BE AVAILABLE (INCLUDING WITHOUT LIMITATION, INCIDENTAL OR CONSEQUENTIAL DAMAGES). ANY RECOVERY IS LIMITED TO REPAIR OR REPLACEMENT AS DESCRIBED ABOVE. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES OF HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. IF IT TURNS OUT THAT A PARTICULAR TERM IS NOT ENFORECEABLE, THIS WILL NOT AFFECT ANY OTHER TERMS.

Customer Assistance

For Assistance in the United States

Monday through Friday (except holidays)
9:00 am to 5:00 pm CST
Toll free: 855.694.7873
support@american-radar.com

For Assistance Outside the United States
Contact your local dealer

For product registration, FAQ, and other information, please visit our website at *www.american-radar.com.*

FC Federal
Communications
Commission

COMPLIANCE & ADVISORY STATEMENT

This device complies with part 15 of Federal Communications Commission Rules. Operation is subject to the following two conditions : (1) This device may not cause harmful interference, and (2) this device must accept any interference received including interference that may cause undesired operation.

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

Note : This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules.
These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

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

Disposal of Old Electrical & Electronic Equipment

This product may contain hazardous substances that could impact health and the environment if not disposed of properly.

If you see this symbol on any product or packaging it should be handed over to an applicable collection point for the recycling of electrical equipment. By ensuring that this product is disposed of correctly you will help prevent a potentially negative impact on the environment. In addition the recycling of materials will help to conserve natural resources.

For further information about recycling please contact your local civic office or recycling center.

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