

Directed[®]
V I D E O

OWNER'S GUIDE
—
INSTALLATION GUIDE



Headrest Video Monitor

MODEL HVM500

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Limited Three-Year Warranty

For a period of THREE YEARS from the date of purchase, Directed Electronics, Inc. ("DIRECTED") promises to the original purchaser to repair or replace, free of cost, with a comparable reconditioned model any **VIDEO MONITOR** (hereafter the "UNIT"), which proves to be defective in workmanship or material defect under normal and reasonable use during the first 3 years after the purchase and installation of the unit provided the following conditions are met: the unit was purchased and installed by an authorized DIRECTED dealer; the unit remains in the vehicle in which the unit was originally installed; and the unit is returned to DIRECTED. The unit in question must be returned to DIRECTED postage paid and must be accompanied by a clear, legible copy of the bill of sale bearing the following information:

- Date of Purchase
- Your Full name and address
- Authorized dealer's company name and address
- Type of unit installed
- Year, make and model of the automobile
- Automobile license number
- Vehicle Identification number
- Installation receipts

All components and accessories other than the unit, including without limitation the remote control, cables and installation accessories carry a 60-day warranty from the date of purchase of the same.

This warranty is automatically void if the unit is bought from anyone other than an authorized dealer, the unit's date code or serial number is defaced, missing or altered; the unit has been modified or used in a manner contrary to its intended purpose; or the unit has been damaged by accident, unreasonable use, neglect, improper service, installation or other causes not arising out of defects in workmanship, materials or construction. This warranty is nontransferable and does not cover batteries. This warranty **does not cover labor costs** for the removal, diagnosis,

troubleshooting or reinstallation of the unit. For service on an out-of-warranty product a flat rate fee by model is charged. Contact your authorized dealer to obtain the service charge for your unit.

TO THE MAXIMUM EXTENT ALLOWED BY LAW, ALL WARRANTIES, INCLUDING BUT NOT LIMITED TO EXPRESS WARRANTY, IMPLIED WARRANTY, WARRANTY OF MERCHANTABILITY, FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF NON-INFRINGEMENT OF INTELLECTUAL PROPERTY, ARE EXPRESSLY EXCLUDED; AND DIRECTED NEITHER ASSUMES NOR AUTHORIZES ANY PERSON OR ENTITY TO ASSUME FOR IT ANY DUTY, OBLIGATION OR LIABILITY IN CONNECTION WITH ITS PRODUCTS. DIRECTED DISCLAIMS AND HAS ABSOLUTELY NO LIABILITY FOR ANY AND ALL ACTS OF THIRD PARTIES INCLUDING DEALERS OR INSTALLERS. IN THE EVENT OF A CLAIM OR A DISPUTE INVOLVING DIRECTED OR ITS SUBSIDIARY, THE PROPER VENUE SHALL BE SAN DIEGO COUNTY IN THE STATE OF CALIFORNIA. CALIFORNIA STATE LAWS AND APPLICABLE FEDERAL LAWS SHALL APPLY AND GOVERN THE DISPUTE. THE MAXIMUM RECOVERY UNDER ANY CLAIM AGAINST DIRECTED SHALL BE STRICTLY LIMITED TO THE AUTHORIZED DIRECTED DEALER'S PURCHASE PRICE OF THE UNIT. DIRECTED SHALL NOT BE RESPONSIBLE FOR ANY DAMAGES WHATSOEVER, INCLUDING BUT NOT LIMITED TO, ANY CONSEQUENTIAL DAMAGES, INCIDENTAL DAMAGES, DAMAGES FOR THE LOSS OF TIME, LOSS OF EARNINGS, COMMERCIAL LOSS, LOSS OF ECONOMIC OPPORTUNITY AND THE LIKE. NOTWITHSTANDING THE ABOVE, THE MANUFACTURER DOES OFFER A LIMITED WARRANTY TO REPLACE OR REPAIR THE CONTROL MODULE AS DESCRIBED ABOVE. Some states do not allow limitations on how long an implied warranty will last or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights and you may also have other rights that vary from State to State. DIRECTED does not and has not authorized any person or entity to create for it any other obligation, promise, duty or obligation in connection with this UNIT.

Safety Instructions

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE. TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK AND ANNOYING INTERFERENCE, USE ONLY THE INCLUDED HARDWARE.

THIS MONITOR IS ONLY DESIGNED FOR REAR SEAT PASSENGER VIEWING AND IS NOT INTENDED FOR VIEWING BY THE DRIVER WHILE THE VEHICLE IS IN MOTION. SUCH USE MAY DISTRACT THE DRIVER OR INTERFERE WITH THE SAFE OPERATION OF THE VEHICLE, AND MAY ALSO VIOLATE STATE LAW.

DIRECTED ELECTRONICS, INC. DISCLAIMS ANY LIABILITY FOR ANY BODILY INJURY, INCLUDING FATALITIES, OR PROPERTY DAMAGE THAT MAY RESULT FROM ANY IMPROPER OR UNINTENDED USES OF THIS PRODUCT.

- Only operate the monitor as described in this guide. Attempts to use or modify this monitor contrary to the descriptions in this guide may cause damage and void the warranty.
- Extremes in temperature can cause abnormal display operation. This monitor has an optimal operating temperature range between 35-115 degrees Fahrenheit. If the vehicle interior is outside this range, do NOT operate the monitor until the temperature is within its operating range.
- Exposure to moisture or dust can cause harmful damage to the internal electronics. Do not mount near cup holders or in areas where spills may occur.
- This monitor is designed for use in vehicles with standard (-) 12 volt ground electrical systems.
- Do not operate for an extended period of time without the engine running or the vehicle's battery voltage may drop to damaging levels.

Important Safeguards

WHEN CLEANING THE VEHICLE

Do not spray this unit with water or cleaning solutions. Moisture and the chemicals found in cleaning fluids could damage the consoles finish and interior electronics.

WHILE DRIVING

This unit is intended for use in the rear seat area only, and should not be installed in a location that would allow the driver to view it while driving.

PROPER USE

Do not touch the screen unless cleaning with a soft dry cloth. Do not pull or hang from the fold down monitor door.

REPAIRS

If the monitor stops working for any reason, discontinue use immediately and consult with your retailer about any necessary repairs.

Important Information

FCC NOTICE

This device complies with Part 15 of FCC 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.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this device.

YOUR WARRANTY

Your warranty registration must be completely filled out and returned within 10 days of purchase. Your product warranty will not be validated if your warranty registration is not returned. Make sure you receive the warranty registration from your dealer. It is also necessary to keep your proof of purchase, which reflects that the product was installed by an authorized dealer.

Features

FEATURES

- 5.0" LCD screen with pivot.
- RCA video inputs for system flexibility.
- Easy to use adjustment controls.
- Wireless IR remote control receiver built-in.
- Adjustable tilt trim bezel.
- Front panel headphone output jack.
- Front panel AV input jack.
- Custom mounting trim ring for installation flexibility.
- Active matrix color TFT LCD.
- Front panel controls.
- On-screen display/programming.

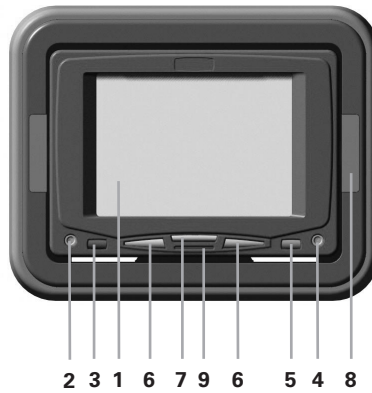
ACCESSORIES

- Mounting bezel.
- Trim ring.
- Din-to-RCA cable, 5 meter.
- Screws and other mounting hardware.

NOTE: This product requires specialized tools and installation techniques; Directed recommends that this monitor be installed by a retailer that employs MECP (Mobile Electronics Certification Program) installers. Contact your retailer for details.

Note: This manual makes reference to optional Directed Video parts not included with this product.

Basic Operation



MONITOR DESCRIPTION

1. **Screen** - TFT active matrix LCD screen.
2. **Input jack** - for audio/video source.
3. **Power/Source button** - press to turn the monitor on/off or change video source.
 - Press to turn the monitor on.
 - Press for more than three seconds to turn the monitor off.
 - Press for less than three seconds when on to change the source.
4. **Headphone jack** - insert the headphone plug to listen to audio.
5. **IR remote input** - for remote control operation.
6. **Up/down buttons** - volume and picture adjustment.
 - Default volume control.
 - Adjusts programming when MODE is pressed.
7. **Mode button** - changes up/down buttons functions.
8. **Monitor Insert Cover**

9. **LED indicator light** - when turned on the light is blue; when on standby the light is red.

VIEWING ANGLE

The picture viewing angle can be easily adjusted by pressing against the top or bottom of the monitor bezel.

MAINTENANCE

Keep the monitor clean and free of dust and moisture and it will provide years of trouble-free operation. Do not allow any cleaning fluids on the monitor screen or bezel; they may contain chemicals that can harm the finish and diminish the picture quality.

To clean the monitor, simply use a soft, dry cloth and gently wipe away any dirt. Avoid applying too much pressure to the screen when cleaning as it can result in damage.

On-Screen Menus

The Setup Menu is a list of programming selections that control system operation and screen settings.

Each selection has a list of settings that can be changed to optimize system operation.

Some settings may have additional settings. Notes that include any specific programming instructions for these are included under the selection heading.

SETUP MENU

	VOLUME
1	CHANNEL
	DIMMER
	PICTURE
	OSD COLOR
2	SECURITY
3	SETUP
	EXIT

1. **Channel** - only appears if the TVM300 TV tuner is connected and TV is the source.
2. **Security** - only applies when ESP/ESP2 security systems are connected; only ESP2 will display trigger zones.
3. **Setup** - only appears if the MCB 1000 Expanded Menu switch is on.

MAKING CHANGES TO SYSTEM SETTINGS

USING THE MONITOR CONTROL BUTTONS

NOTE: For a guide to monitor button locations refer to Basic Operation section of this guide.

1. Press **MODE** to enter the Setup Menu.
2. Press **UP** or **DOWN** to highlight the selection.
3. Press **MODE** to enter that selection menu.
4. Press **UP** or **DOWN** to highlight the setting.
5. Press **MODE** to change the setting, display additional settings menus, or toggle through a list of possible settings.

USING THE UNIVERSAL REMOTE CONTROL (Included with MCB1000)

NOTE: For a guide to remote control button locations refer to the MCB1000 guide.

1. Press **MENU** to enter the Setup Menu.
2. Press **(+)** or **(-)** to highlight the selection.
3. Press **MENU** to enter that selection menu.
4. Press **(+)** or **(-)** to highlight the setting.
5. Press **MENU** to change the setting, display additional setting menus, or toggle through a list of possible settings.

EXITING MENUS

After making setting changes, use the following steps to exit the menus.

1. Highlight **BACK**, press the monitor's **MODE** button or the remote's **MENU** button to return to the previous menu
2. Highlight **EXIT**, press the monitor's **MODE** button or the remote control's **MENU** button or make no entry for eight seconds, you will exit all menus and return to the current video source display.

SETUP MENU DESCRIPTIONS AND OPERATION

Following are explanations of the many settings that can be changed to customize the operation of your Rear Seat Entertainment system. To change the settings described, follow the directions in the on-screen menu's section or the special instructions in each menu.

SELECTION	DESCRIPTION AND OPERATION
VOLUME	<ul style="list-style-type: none"> ■ Adjust the volume of the headphone jack. ■ Use the monitors UP/DOWN or the remote's (+) (-) buttons to adjust the volume.
CHANNEL (TVM300 ONLY)	<ul style="list-style-type: none"> ■ Change TV channels. ■ Use CHDN/CHUP buttons to change channels
DIMMER	<ul style="list-style-type: none"> ■ Change illumination for day or night viewing. ■ HIGH - Sets illumination for viewing in daylight. ■ MEDIUM - Sets illumination for viewing in twilight. ■ LOW - Sets illumination for viewing at night.
PICTURE <i>Note: To adjust use the monitor's UP/DOWN buttons or the remote's (+)/(-) buttons.</i>	<ul style="list-style-type: none"> ■ Select to adjust picture. ■ BRIGHTNESS - Adjusts picture brightness. ■ COLOR - Adjusts picture color. ■ CONTRAST - Adjusts picture contrast. ■ HUE - Adjusts picture hue (NTSC only).
OSD COLOR	<ul style="list-style-type: none"> ■ Select to change the color of the on-screen display. ■ WHITE - Changes the OSD to White. ■ GREEN - Changes the OSD to Green. ■ BLUE - Changes the OSD to Blue.
SECURITY (ESP/ESP2 ONLY) <i>NOTE: This menu contains selections that have additional settings.</i>	<ul style="list-style-type: none"> ■ ESP/ESP2 programming and zone information. ■ TRIGGER INFORMATION - Displays ESP/ESP2 zone information. (Always displays the last zone triggered only.) See the Assign Trigger Names menu. ■ SYSTEM SETTINGS - Displays the System Settings menu. See the System Settings menu.
SETUP (MCB1000 ONLY) <i>NOTE: This menu contains selections that have additional settings. This menu is used for initial system setup only.</i>	<ul style="list-style-type: none"> ■ Change hardware settings and rename zones. ■ HARDWARE OPTIONS - Displays the Hardware Options menu. See the Hardware Options menu. ■ ASSIGN SOURCE NAMES - Displays the Source Names menu. See the Source Names menu for a list of names. ■ ASSIGN TRIGGER NAMES - Displays the Trigger Names menu. See the Trigger Names menu.

IMPORTANT!

Any changes in the following menus must be written into the MCB1000 and ESP/ESP2 software. Before the menu is exited the Write to System procedure must be completed.

SYSTEM SETTINGS MENU

SELECTION	DESCRIPTION AND OPERATION
PASSIVE/ACTIVE ARMING	Program the ESP/ESP2 security system to arm by itself (passive) or if its remote must be used for arming (active). For a full description of this setting refer to your ESP/ESP2 owner's guide.
CHIRPS ON/OFF	This feature will turn the arming and disarming chirps on/off. For a full description of this setting refer to the ESP/ESP2 owner's guide.
IGNITION LOCK ON/OFF	When turned on, the doors will lock three seconds after the ignition is turned on. For a full description of this setting refer to the ESP/ESP2 owner's guide.
IGNITION UNLOCK ON/OFF	When turned on, the doors will unlock when the ignition is turned off. For a full description of this setting refer to the ESP/ESP2 owner's guide.
PASSIVE/ACTIVE LOCKING	This feature controls whether the doors will lock when the ESP/ESP2 security system passively arms itself. For a full description of this setting refer to your ESP/ESP2 owner's guide.
WRITE TO SYSTEM	<ul style="list-style-type: none">■ Highlight WRITE TO SYSTEM, press the monitor's MODE button or the remote's MENU button to enter the system changes.■ WRITING TO SYSTEM will be displayed.■ WRITE SUCCESSFUL - Information entered successfully.■ WRITE FAILED - Information not entered successfully.

HARDWARE OPTIONS MENU

SELECTION	DESCRIPTION AND OPERATION
POWER AUTO OFF	<ul style="list-style-type: none">■ Select to choose POWER AUTO OFF or POWER LAST STATE.■ POWER AUTO OFF - When the key is turned on the system power will remain off, regardless of the system on/off state when the key was turned off.■ POWER LAST STATE - When the key is turned on the system will automatically return to the power on/off state it was in when the key was turned off.

FM MODULATOR	<ul style="list-style-type: none"> ■ Select to let the MCB1000 know an FM modulator is connected. ■ FM MODULATOR - allows the universal remote to turn the FM modulator on/off. ■ NO FM MODULATOR - FM modulator control is defeated. ■ This FM Modulator function only applies when the RFM100 is connected.
ANTENNA TV	<ul style="list-style-type: none"> ■ Select to choose Antenna or Cable input to TVM300. ■ Select ANTENNA TV when the TVA10 antenna is connected to the TVM300. ■ Select CATV when using a cable TV connection to the TVM300.
CATV STD	<ul style="list-style-type: none"> ■ Choose between three types of cable TV setups.
WRITE TO SYSTEM	<ul style="list-style-type: none"> ■ Highlight WRITE TO SYSTEM, press the monitor's MODE button or the remote's MENU button to enter the system changes. ■ WRITING TO SYSTEM will be displayed. ■ WRITE SUCCESSFUL - Information entered successfully. ■ WRITE FAILED - Information not entered successfully.

ASSIGN SOURCE NAMES MENU

NOTE: In this menu use the monitor's MODE button or the remote's MENU button to toggle through the available choices for source names.

SELECTION	DESCRIPTION AND OPERATION
SOURCE 1: AV1	Select to change the name of source 1 from the source names list at the end of this section.
SOURCE 2: AV2	Select to change the name of source 2 from the source names list at the end of this section.
SOURCE 3: AV3	Select to change the name of source 3 from the source names list at the end of this section.
WRITE TO SYSTEM	<ul style="list-style-type: none"> ■ Highlight WRITE TO SYSTEM, press the monitor's MODE button or the remote's MENU button to enter the system changes. ■ WRITING TO SYSTEM will be displayed. ■ WRITE SUCCESSFUL - Information entered successfully. ■ WRITE FAILED - Information not entered successfully.

ASSIGN TRIGGER NAMES MENU

NOTE: In this menu use the monitor's MODE button or the remote's MENU button to toggle through the available choices for zone names.

SELECTION	DESCRIPTION AND OPERATION
ZONE 1	Select to change the name of zone 1 from the zone names list at the end of this section.
ZONE 2	Shock sensor - Can not be changed.
ZONE 3	Door switch - Can not be changed.
ZONE 4	Select to change the name of zone 4 from the zone names list at the end of this section.
ZONE 5	Ignition - Can not be changed.
ZONE 6	Select to change the name of zone 6 from the zone names list at the end of this section.
ZONE 7	Select to change the name of zone 7 from the zone names list at the end of this section.
ZONE 8	Select to change the name of zone 8 from the zone names list at the end of this section.
WRITE TO SYSTEM	<ul style="list-style-type: none"> ■ Highlight WRITE TO SYSTEM, press the monitor's MODE button or the remote's MENU button to enter the system changes. ■ WRITING TO SYSTEM will be displayed. ■ WRITE SUCCESSFUL - Information entered successfully. ■ WRITE FAILED - Information not entered successfully.

SOURCE NAMES

- SOURCE X: VCR
- SOURCE X: DVD
- SOURCE X: GAME
- SOURCE X: CAMERA
- SOURCE X: REAR CAMERA
- SOURCE X: AUX INPUT PANEL

TRIGGER NAMES

- ZONE X: HOOD/TRUNK SWITCH
- ZONE X: HOOD SWITCH
- ZONE X: TRUNK SWITCH
- ZONE X: FIELD SENSOR
- ZONE X: MOTION/TILT SENSOR
- ZONE X: GLASS BREAK SENSOR
- ZONE X: SHOCK SENSOR 2

Installation

MONITOR SPECIFICATIONS

Screen size	5"
Resolution	74,880 pixels
View angle	Top 30 degrees Bottom 10 degrees Left 45 degrees Right 45 degrees
Video system	ntsc/pal
Osd language	English
Power requirements	10 - 15 vdc
Operating temp.	35 - 115 degrees fahrenheit

INSTALLATION OPTIONS

The Directed HVM 500 5" monitor comes with a mounting bezel designed for headrest installations.

INSTALLATION

1. Remove the headrest cover to determine if it has room in it for the monitor without structurally weakening it.
2. With the cover still removed, position the cutout template against the rear of the headrest and mark the area to be cut out.
3. Remove the material to a depth sufficient for the lip of the mounting bezel to fit flush against the rear of the headrest once installed.
4. Cut an access hole for the cable to exit next to the headrest adjustment bar.
5. Reinstall the headrest cover. Trim it to the size of the mounting bezel hole. When trimming, it is best to leave extra material that can be glued into the hole before installing the mounting bezel.

6. Route the cable through the headrest access hole and the rear opening of the mounting bezel. Leave enough slack in the cable for monitor installation.
7. Install the bezel. Some headrests have material that is strong enough to screw the bezel into. Others will require quality adhesive for mounting.
8. Route the cable through the seat cover and reinstall the headrest. Leave enough slack in the cable so the headrest still has full movement during adjustment.
9. Install the monitor into the mounting bezel and adjust to the proper angle.
10. Complete the cable routing to the video source.

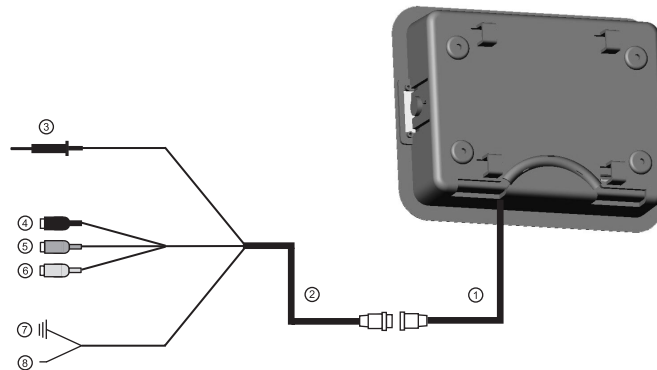
Wiring Guide

WIRING PRECAUTIONS

Read all wiring information before attempting to install this monitor.

- Use only solder and tape or quality solderless connectors when terminating wires. Incorrect or poor connections may cause damage to the monitor or the vehicle.
- Disconnect the ground wire from the battery or remove the fuses for any impacted circuits before making any connections.
- Route all wires and cables away from areas where they could be pinched, punctured, or chafe against sharp metal causing short circuits.
- All wires should be properly loomed and fused at the source.
- It is recommended that you have your authorized retailer install this monitor.

WIRE AND AV CONNECTORS



1. Monitor DIN Cable
2. DIN-to-RCA Cable
3. IR Remote Connector
4. Audio Input RCA (RED)
5. Audio Input RCA (WHITE)
6. Video Input RCA (YELLOW)
7. Black Wire - Connect to chassis ground.
8. Red Wire - Connect to a fused (+) 12 volt. ignition accessory wire that turns off with the key.

The company behind this system is Directed Electronics, Inc.

Since its inception, Directed has had one purpose, to provide consumers with the finest vehicle security, car stereo products, rear seat entertainment, and accessories available. The recipient of more than 20 patents in the field of advanced electronic technology, Directed is ISO 9001 registered.

Quality Directed Electronics products are sold and serviced throughout North America and around the world.

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Directed® is committed to delivering world-class quality products and services that excite and delight our customers.

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