

AVM70LH

INSTALLATION/OWNER'S MANUAL

Multimedia Receiver with Bluetooth and DualMirror featuring a 6.2" Touch Screen Display





2-Way DualMirror™

MP3



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Safety Information

Please read all instructions carefully before attempting to install or operate.

Due to its technical nature, it is highly recommended that your Axxera AVM70LH is installed by a professional installer or an authorized dealer. This product is only for use in vehicles with 12VDC negative ground only.

To prevent damage or injury:

- · Make sure to ground the unit securely to the vehicle chassis ground.
- . Do not remove the top or bottom covers of the unit.
- · Do not install the unit in a spot exposed to direct sunlight or excessive heat or the possibility of water splashing.
- · Do not subject the unit to excessive shock.
- When replacing a fuse, only use a new one with the prescribed rating. Using a fuse with the wrong rating may
 cause the unit to malfunction.
- To prevent short circuits when replacing a fuse, disconnect the wiring harness first.
- · Use only the provided hardware and wire harness.
- · You cannot view video while the vehicle is moving. Find a safe place to park and engage the parking brake.
- If you experience problems during installation, consult your nearest Axxera dealer.
- If the unit malfunctions, reset the unit as described on page 10 first. If the problem still persists, consult your nearest Axxera dealer or call tech assistance @ 1-866-382-5476.
- To clean the monitor, wipe only with a dry silicone cloth or soft cloth. Do not use a stiff cloth, or volatile solvents such as paint thinner and alcohol. They can scratch the surface of the panel and/or remove the printing.
- When the temperature of the unit falls (as in winter), the liquid crystal inside the screen will become darker than
 usual. Normal brightness will return after using the monitor for a while.
- When extending the ignition, battery or ground cables, make sure to use automotive-grade cables or other cables with an area of 0.75mm (AWG 18) or more to prevent voltage drops.
- Do not touch the liquid crystal fluid if the LCD is damaged or broken. The liquid crystal fluid may be hazardous to
 your health or fatal. If the liquid crystal fluid from the LCD contacts your body or clothing, wash it off with soap
 immediately.

FCC Compliance

This device complies with Part 15 of the 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.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's 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.



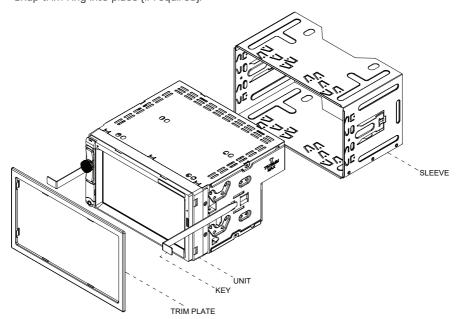
Preparation

Before You Start

- Disconnect negative battery terminal. Consult a qualified technician for instructions.
- Avoid installing the unit where it would be subject to high temperatures, such as from direct sunlight, or where it would be subject to dust, dirt or excessive vibration.

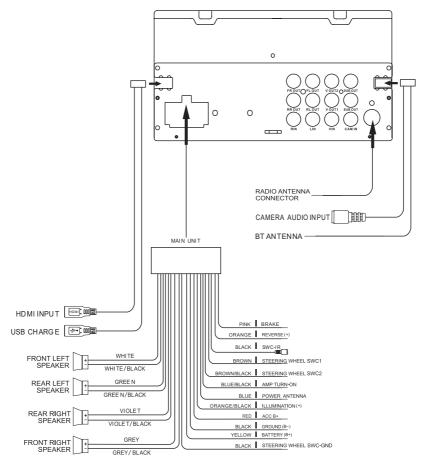
Getting Started

- Insert the supplied keys into the slots as shown.
- Connect wiring harness as shown on page 6. Consult a qualified technician if you are unsure.
- Certain vehicles may require an installation kit and/or wiring harness adapter (sold separately).
- Reconnect negative battery terminal, and test for correct operation.
- Snap trim ring into place (if required).



TYPICAL FRONT-LOAD DIN MOUNTING METHOD

Wiring Diagram - Inputs/Outputs



Note:

When replacing a fuse, make sure to use the correct type and amperage. Using an incorrect fuse could cause damage. The unit uses (1) 10 amp blade-type fuse located on the back of the unit.

Wiring Notes:

Rear camera input

A rear view camera (not included) can be used with the Camera input.

Connecting a device

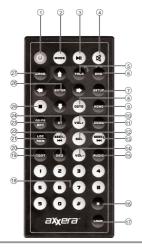
DualMirror technology allows you to mirror the screen of select Android smartphones as well as iPhone, iPod and iPad devices.

AXXELA AVM70LH OPERATION

Control Locations



- (1) Reset
- (2) Mode
- (3) Tune / Track Up
- 4 Power / Volume / Mute
- (5) Tune / Track Down
- 6 USB Port
- (7) Auxiliary Input
- (8) MicroSD Slot
- (9) Microphone
- (10) IR Sensor



- (1) Power
- (2) Mode
- (3) Play / Pause
- (4) Mute
- (5) Talk
- 6 End Call
- 7 Setup
- 9 Home
- (10) Volume Up
- (11) Zoom
- (12) Select
- (13) Tune/Track Up
- Volume Down

- (15) Audio
- * Key
- (17) Loudness
- (18) Number Keys
- (19) Root
- (20) OSD (On Screen Display)
- (21) Local / Random
- (22) Tune/Track Down
- 23) AS/PS / Repeat
- (24) Stereo
- (25) Stop
- (26) Enter
- (27) Band



Remote Control Preparation

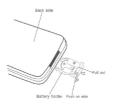
Remove battery insulation tape .



Notes:

- The remote control uses one 3 volt Lithium CR2025 battery. Remove the battery if the remote will not be used for a month or longer.
- Remove and dispose of battery properly.
- Do not store battery with metallic objects or materials.

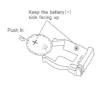
To insert or replace the battery, remove the battery holder.



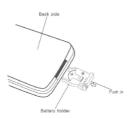
Remove the battery from the battery holder.



Install the new battery. Make sure to keep the (+) side up.



Insert the battery holder.







General Operation

Power On/Off

Press \bullet to turn the unit on. Press and hold \bullet to turn the unit off.

Mode

Press **MODE** to access available input modes: Radio, DualMirror, USB, SD Card, Bluetooth Phone, Bluetooth Music, Rear Camera, Auxiliary Input and AV In. Modes of operation are indicated on the display and/or the monitor. USB device or SD card must be connected/inserted to appear in the mode selection string.

Volume

Rotate the volume knob to increase or decrease the volume level.

Mute

Momentarily press \circ to silence the audio. Momentarily press \circ again to return to the previously selected volume. Rotating the **volume knob** while the muted will also cancel the mute function.

Auxiliary Input

Connect external audio devices to the 3.5mm auxiliary input on the front panel.

USB Port

Connect a USB device to the USB port on the front panel to play MP3 files or view AVI, MP4 video files or JPG photos.

MicroSD Slot

Insert a MicroSD card into the MicroSD slot on the front panel to play MP3 files or view AVI, MP4 video files of JPG photos.

Main Menu

From any operational mode, press the house icon in the top left corner to access the Main Menu screen.



- 1. Adjust screen brightness or put the monitor into standby mode.
- 2. Access audio setting such as EQ, Surround Sound Settings and Field Settings (Balance and Fader).

AVM70LH OPERATION **AXXEL**

General Operation

Setup Menu

From the Main Menu screen, press **Settings** in the bottom right corner to access the Setup Menu and select from the following categories: General, Audio, Video and Bluetooth.



General:

- OSD Language Select English as the language for the on-screen display.
- Wallpaper Select between three available wallpaper options.
- · Panel Adust Select to calibrate the touch screen.
- Radio Area Select your current geographic area: Europe, USA, South America, Russia and Asia.
- Time Setting Adjust the current time (hours and minutes) and choose between a 12-hour and 24-hour clock.
- **SWC** Select to program steering wheel controls.
- Beep Select to turn the audible beep On or Off.
- · Camera Select to turn the rear camera On or Off.
- Version- Select to view information about the unit.
- Restore Default- Select to restore the unit to default settings.

Audio:

- Sound Effect Select to access the three sound effect sub-menus.
 - **EQ** Select from any preset equalization curve (Classic, Rock, Pop, Jazz, Beat, Flat) or use custom settings (User).
 - Subwoofer Select the desired Subwoofer frequency and volume.
 - Loudness Turn the Loudness setting On or Off.
 - **Loudness Cutoff Frequency** Select the desired frequency as a cutoff for the Loudness setting.

Video:

- Aspect Ratio Select the desired aspect ratio: 4:3PS, 4:3LB or 16:9.
- Adjust Select to adjust levels of Brghtness, Contrast, Hue, Saturation and Sharpness.
- Panel Select to choose backlight settings: 10s, 20s, 30s or Off.

Bluetooth:

- · Auto Connect Turn auto connect feature On or Off.
- Auto Answer Turn auto answer feature On or Off.

AM/FM/RDS Tuner Operation



Radio Operation

Select the Radio icon from the Main Menu screen.

Main Menu (1)

Press to return to Main Menu screen.

Current Mode Indicator (2)

Displays current mode of operation.

Tune Frequency Down (3)

Press momentarily to tune the unit down one step at a time. Press and hold to tune down by seeking the next strong station.

Preset Stations (4)

To store a preset station, tune unit to desired station, then press and hold the desired preset button to store the current station in that preset spot. Up to 18 FM and 12 AM stations can be stored in memory. Momentarily press any preset station to play it instantly.

Screen 5

Press to adjust screen brightness or put the monitor into standby mode.

Band (6)

Press to select between three FM and two AM bands

Local / Distance (7)

Press to toggle between LOCAL and DX (distance) tuning.

Audio (8)

Press to access audio setting such as EQ, Surround Sound Settings and Field Settings (Balance and Fader).

Stereo / Mono (9)

Press to toggle between Stereo and Mono tuning.

AM/FM/RDS Tuner Operation



- AS/PS 10
- Press and hold to automatically store the six strongest stations in the current band as presets. Press briefly for a preset scan, which will scan all preset stations and play 10 seconds of each. Press again to cancel the scan and continue playing the current station.
- Settings (1)
- Press to access the Settings Menu.
- Tune Frequency Up 📵
- Press momentarily to tune the unit up one step at a time. Press and hold to tune up by seeking the next strong station.

USB/SD Operation



CD/MP3 or JPG Operation

To play MP3 files from a USB device or SD card, insert device and playback will begin automatically. To return to USB or SD playback from another mode of operation, select the corresponding icon from the Main Menu.

- USB Playback Insert a USB device into the USB slot on the front of the unit.
- SD Playback Insert MicroSD card into the MicroSD slot on the front of the unit.
- Main Menu 1
- Press to return to Main Menu screen.
- Current Mode Indicator (2)
- Displays current mode of operation.
- File Information (3)
- Displays information about the current file.
- Screen 4
- Press to adjust screen brightness or put the monitor into standby mode.
- Tune / Track Down (5)
- Press momentarily to tune the unit down one step at a time. Press and hold to tune down by seeking the next strong station.
- Play / Pause 6
- Press to play or pause playback.
- Audio (7)
- Press to access audio setting such as EQ, Surround Sound Settings and Field Settings (Balance and Fader).
- Tune / Track Up (8)
- Press momentarily to tune the unit up one step at a time. Press and hold to tune up by seeking the next strong station.

USB/SD Operation



Folder Search (9)

Press to access the directory of folders and files. Use the up/down arrows to scroll through the folder list, then press on the name of the desired folder to access it. Use the up/down arrows to scroll through the file list, then press on the name of the desired file to access it.

Settings 10

Press to access the Setting Menu.

Repeat (11)

Press to turn Repeat feature on.

Random (12)

Press to turn Random feature on.



Media Compatibility - USB/SD Card

File Type			MP3
File System	FAT	FAT 12	Х
		FAT 16/FAT 32	1
File	.mp3/.MP3/.Mp3/.mP3		✓
Extension	.rmp/.m4a		Х
	MPEG 1		✓
MPEG Format	MPEG 2		✓
Format	MPEG 2.5		✓
	MPEG 1		32/44.1/48kHz
Sampling Frequency	MPEG 2		12/16/22.05/24kHz
rroquency	MPEG 2.5		8/11.025/12kHz
	MPEG 1		32 ~ 320kbps
Bitrate	MPEG 2		8 ~ 160kbps
	MPEG 2.5		8 ~ 160kbps
Other Information	Directory Depth		Unlimited
	File Name Length		32 bytes
	Total File Number		2000 files
	Total Folder Number		200 folders
	File Number via Folder		2000 files
	MP3 ID3 TAG	ver:1.x	✓
		ver.2.x	✓
		Title, Artist, Album	✓

Notes:

- For USB mode, it is not possible to view JPG files on the in-dash monitor while the vehicle is moving. This is a safety feature to prevent driver distraction.
- The JPG image viewer function will only operate when vehicle is in park and the parking brake is engaged.
- Due to ongoing technological advancement, some USB flash drives and/or SD cards may



Media Compatibility

Media Compatibility

The following types of discs/files are compatible:

- AVI Max video resolution: 720x480, Max video bit rate: 5000 kbps
- Mpeg2: Max video resolution: 720x480, Max video bit rate: 5000 kbps
- Mpeg4: Max video resolution: 720x480, Max video bit rate: 5000 kbps
- DivX/Xvid: Max video resolution: 720x480, Max video bit rate: 5000 kbps
- SD/USB format type: FAT32/FAT

The following types of discs/files are not compatible:

- MP3 PR0 format, MP3 playlists
- RMP format.
- WAV format
- WMV format.
- WMA format
- AAC, protected AAC, M4A format

Playback Order

MP3 playback sequence begins in the root folder of the USB flash drive or SD card. Any empty folders or folders that do not include MP3/JPG files are skipped.

Compatible Recording Formats

ISO9660 standards:

- · Maximum nested folder depth is 8 (including the root folder).
- Valid characters for folder/file names are letters A-Z (all caps), numbers
 0-9, and "_" (underscore). Some characters may not be displayed correctly, depending on the character type.
- This device can play back files in Joliet and other standards that conform to ISO9660. MP3 written in the formats other than the above may not play and/or their file names or folder names may not be displayed properly.

Notes

Some files may not play or be displayed correctly, depending on sampling rates and bit rates.

For best results, use the following settings when ripping MP3 files: 128kbps or higher constant bit rate 44.1kHz or higher sampling frequency

AXXELS AVM70LH OPERATION

2-Way DualMirror™ Operation

The DualMirror™ technology allows you to mirror the screen of select Android smartphones as well as iPhone, iPod and IPad devices onto the receiver's screen and to charge your mobile device through the front USB port. Simply plug in your device to the front HDMI and USB inputs, and you are ready to view your favorite navigation or music apps directly on the receiver's screen. The DualMirror™ technology requires the following cables which are sold separately.





Cable Number	Devices	Product Description Wire Ler	
SL55A	Android	5-pin microUSB connector to HDMI + USB	5 ft
SL113A	Android	11-pin microUSB connector to HDMI + USB	3 ft
SL115A	Android	11-pin microUSB connector to HDMI + USB	5 ft
DL5i	iOS	HDMI cable & USB cable	5 ft
DMH25	DualMirror Dongle	HDMI adapter with WiFi connection	
DMC15	DualMirror Dongle	HDMI or AV out(RCA) adapter with WiFi connection	

For the 2-way control feature, here is how to setup and connect your Android device.

*. Currently IOS is not compatible for 2-way control.

MIRROR LINK

- 1. Download DualMirror.apk from Google Play Store.
- 2. When the download is complete, the DualMirror APP icon is created on main menu.
- 3. Select DualMirror App installed in the Android phone.
- 4. Tap OPEN BT SETTING to move to Bluetooth setting mode
- 5. Pair the Android phone with the DualMirror Function unit via Bluetooth.
- 6. Connect Android phone to the DualMirror Function using Dual St. cable.
- 7. Select DualMirror Mode.
- 8. Tap ACCEPT on Warning screeen.

Remark:

If 2 way control does not work, check if DualMirror APK works or Bluetooth is paired or not.

*. Note:

If the 2-way control is not working, verify that the DualMirror app is running prior to connecting the phone to the unit and make sure that the Bluetooth is paired/connected and the status on the app also says "Connected"





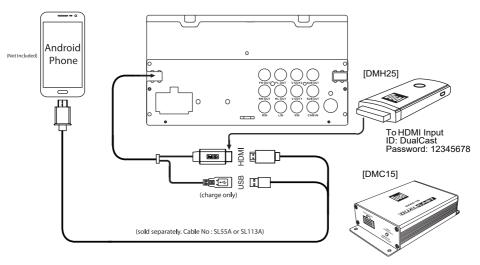




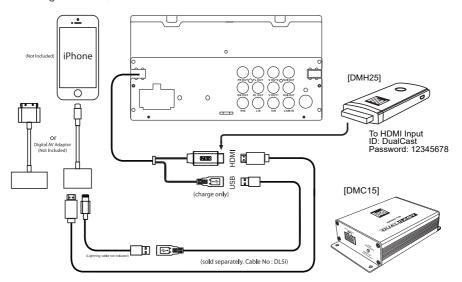


2-Way DualMirror™ Operation

Connecting an Android device



Connecting an iPhone, iPod or iPad device





Bluetooth Operation



Preparation

Before you can use a Bluetooth device, it must be paired and connected. Make sure that Bluetooth is activated on your device before you begin the pairing process.

Pairing a New Device

The unit broadcasts the pairing signal constantly when no devices are currently connected. Complete the pairing sequence from your Bluetooth device. Refer to the owner's manual for your device for more details. The device name is "Axxera AVM70LH". The Bluetooth passcode "0000". The unit can be in any mode of operation when pairing is performed.

Note: On certain phones, pairing may need to be done more than once if there are connectivity issues.

Connecting a Paired Device

Most Bluetooth devices support the auto-connect feature and will connect automatically if the device is in range when the unit is powered-on. If your device was previously paired but does not connect, enter the Bluetooth setup menu and ensure that Auto Connect is On.

Bluetooth Phone

To access the phone, select Bluetooth Phone from the Main Menu

Main Menu (1)

Press to return to the Main Menu screen.

Current Mode Indicator (2)

Displays current mode of operation.

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Phone Keypad (3)

Use the phone keypad to dial the desired phone number. Alternately, numbers can be dialed directly from the phone.

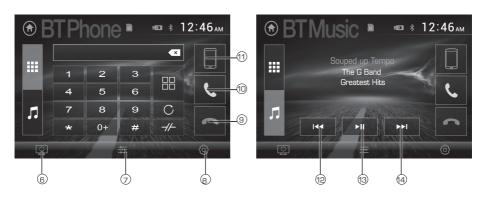
Phone 4

Press to display keypad and dial a number.

Music 5

Press to play music using the Bluetooth connection.

Bluetooth Operation



- **Screen** (6) Press to adjust screen brightness or put the monitor into standby mode.
- Audio 7 Press to access audio setting such as EQ, Surround Sound Settings and Field Settings (Balance and Fader).
- **Settings** (8) Press to access the Settings Menu.
- **End Call** (9) Press the end the current call.
- Make a Call 10 Press to connect or answer a call.
- Bluetooth Music (1) To use your Bluetooth connection to play music from your device, press #5 or select Bluetooth Music from the Main Menu.
- **Previous File/Track** (12) Press to go back to the previous file or track.
 - Play / Pause (13) Press to pause or resume playback.
 - **Next File/Track** (14) Press to advance to the next file or track.



Front 3.5mm Aux Input & Rear RCA A/V Input

Auxiliary Input

Connect an optional audio source into the 3.5mm (front panel) input.

Select auxiliary input from the Main Menu to listen to audio.

Adjust volume on the external audio source as needed (if connected to the headphone output of the device).

Using AV Input

Connect an optional audio/video source to the rear auxiliary input [Red/White/Yellow RCA connectors]. Refer to page 6 for details.

Select AV Input from the Main Menu to listen to audio.

Engage parking brake to watch video.

Rear Camera Operation - (Optional)

Using Rear Camera

Connect an optional rear camera to the Camera Input (Black RCA connector). Refer to the wiring diagram for details.

Manual selection - Touch CAMERA icon from the Main Menu or from any operational mode (when enabled) to select camera mode. Touch the top left area on the screen to exit camera mode.

Note: The manual mode is for dedicated cameras that are ALWAYS on while driving, it is not meant for cameras that are connected to the vehicle's reverse light.

Auto Selection

The unit will automatically select camera mode when connected to the reverse lamp circuitry.

Note: The external video output is not active when using the rear camera input.



Limited One Year Warranty

This warranty gives you specific legal rights. You may also have other rights which vary from state to state

Dual Electronics Corp. warrants this product to the original purchaser to be free from defects in material and workmanship for a period of one year from the date of the original purchase.

Dual Electronics Corp. agrees, at our option, during the warranty period, to repair any defect in material or workmanship or to furnish an equal new, renewed or comparable product (whichever is deemed necessary) in exchange without charges, subject to verification of the defect or malfunction and proof of the date of purchase. Subsequent replacement products are warranted for the balance of the original warranty period.

Who is covered? This warranty is extended to the original retail purchaser for products purchased from an authorized Dual dealer and used in the U.S.A.

What is covered? This warranty covers all defects in material and workmanship in this product. The following are not covered: software, installation/removal costs, damage resulting from accident, misuse, abuse, neglect, product modification, improper installation, incorrect line voltage, unauthorized repair or failure to follow instructions supplied with the product, or damage occurring during return shipment of the product. Specific license conditions and copyright notices for the software can be found via www.dualay.com.

What to do?

- Before you call for service, check the troubleshooting guide in your owner's manual. A slight adjustment of any custom controls may save you a service call.
- 2. If you require service during the warranty period, you must carefully pack the product (preferably in the original package) and ship it by prepaid transportation with a copy of the original receipt from the retailer to an authorized service center.
- Please describe your problem in writing and include your name, a return UPS shipping address (P.O. Box not acceptable), and a daytime phone number with your shipment.
- 4. For more information and for the location of the nearest authorized service center please contact us by one of the following methods:
 - Call us toll-free at 1-866-382-5476
 - · E-mail us at cs@dualav.com

Exclusion of Certain Damages: This warranty is exclusive and in lieu of any and all other warranties, expressed or implied, including without limitation the implied warranties of merchantability and fitness for a particular purpose and any obligation, liability, right, claim or remedy in contract or tort, whether or not arising from the company's negligence, actual or imputed. No person or representative is authorized to assume for the company any other liability in connection with the sale of this product. In no event shall the company be liable for indirect, incidental or consequential damages.



Specifications

FM Tuner Tuning range: 87.5MHz-107.9MHz

Usable sensitivity: 10dBf

50dB quieting sensitivity: **20dBf** Stereo separation @ 1kHz: **38dB** Frequency response: **30Hz-13kHz**

AM Tuner Tuning range: 530kHz-1710kHz

Usable sensitivity: 24uV

Frequency response: 30Hz-2.3kHz

Front USB Compatibility: High Speed USB 2.0

USB Class: Mass storage class

Monitor Panel size: 6.2" diagonal measurement

View angle (up/down/left/right): 50/70/70/70Resolution: 800 (H) x 480 (V)

Brightness (cd/m²): **250** Contrast ratio: **500:1** Pixels: **1,152,000**

General Speaker output impedance: 4 ohms

Line output voltage: 4 volt RMS
Line output impedance: 200 ohms

Chassis dimensions: 7" x 7" x 2" (W x D x H)

Design and specifications subject to change without notice.

Parts List

Part Name	Part Number	Pieces
Trim Ring	40-042502-0002	1
Removal Key	44-042218-0100	2
Remote control	74-010101-1001	1
SWI Guide	60-C16169-01-01	1



CEA-2006 Power Standard Specifications [reference: 14.4VDC +/- 0.2V, 20Hz~20kHz]

Power Output: 16 Watts RMS x 4 channels at 4 ohms and $\leq 1\%$ THD+N

IHD+IV

Signal to Noise Ratio: 80dBA (reference: 1 watt into 4 ohms)



Troubleshooting

General				
Problem	Cause	Action		
Unit will not turn on	Yellow wire not connected or incorrect voltage Red wire not connected or incorrect voltage	Check connections for proper voltage (11~16VDC)		
(no power)	Black wire not connected	Check connection to ground		
	Fuse blown	Replace fuse(s)		
Hala haa aasaa	Speaker wires not connected	Check connections at speakers		
Unit has power (but no sound)	One or more speaker wires touching each other or touching chassis ground	Insulate all bare speaker wires from each other and chassis ground		
Unit blows fuse(s)	Yellow or red wire touching chassis ground	Check for pinched wire		
	Speaker wires touching chassis ground	Check for pinched wire		
	Incorrect fuse rating	Use fuses with correct rating		
Unit has audio (but no video)	Parking brake safety circuit not connected Parking brake not applied	Check connections at parking brake Apply parking brake as described on page 26		
No video display (when in reverse)	Reverse circuit not connected Vehicle is not in reverse	Check connections at reverse lamp Select reverse gear		
IR remote does not work	Dead battery	Replace battery		

For Your Records	Please keep your original sales receipt and be prepared to provide this receipt in the event you require service, as your original receipt is considered the best proof of purchase and indicates the date you purchased your Axxera product.	
	Dealer Name Dealer Phone Purchase Date	
Register Your Product	Register your product online at www.dualav.com.	



Dual Electronics Corp. Toll Free: 1-866-382-5476 Monday-Friday, 9AM-5PM EST

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