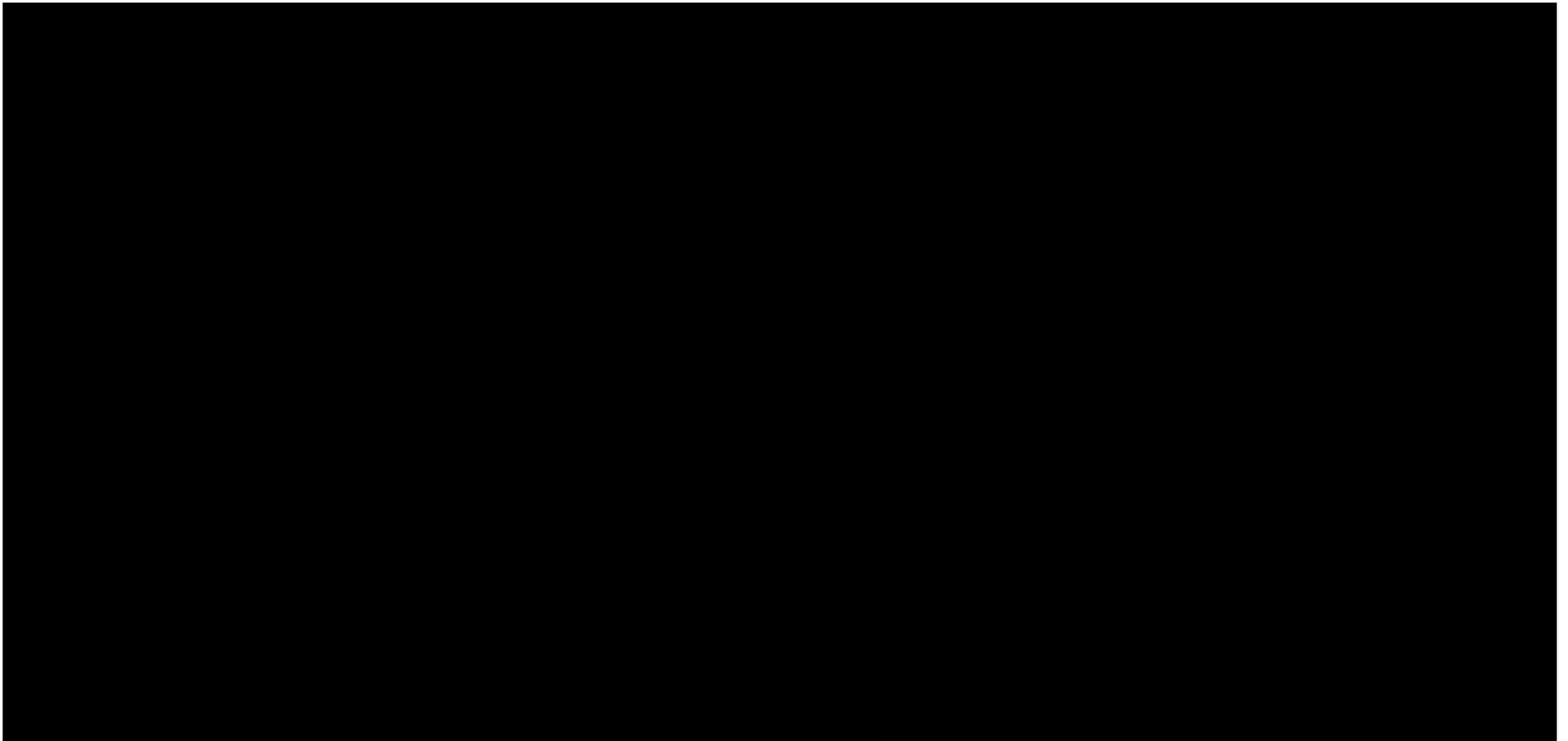


Owner's Manual

*AM/FM STEREO RADIO
WITH AUTO REVERSE CASSETTE PLAYER*

**Designed Specifically for
the Marine Environment**

MS-306



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1. POWER ON/OFF VOLUME

Rotate knob clockwise past detent to turn radio "ON". Further rotation increases the volume. Rotate knob counter-clockwise past detent to turn the radio "OFF". Counter-clockwise rotation decreases the volume.

2. FADER CONTROL

Clockwise rotation shifts the signal to the Left/Right front speakers. Counter-clockwise rotation shifts the signal to the Left/Right rear speakers.

3. EJECT BUTTON

Press this button to stop the tape playback and resume radio operation; at the same time cassette tape will be ejected from the cassette slot.

4. CASSETTE SLOT

Hold the cassette with the exposed tape edge to the right and insert into the cassette slot. Depress fully until the tape is engaged. Tape will enter Play immediately.

5. FAST FORWARD/REWIND BUTTONS

These buttons cause the tape to move rapidly in the direction indicated by the tape direction arrows. For example, if the ">>" button is pushed when the tape is playing from left to right, the tape will fast forward. If pushed when the tape is moving from right to left, the tape will rewind. The direction of tape movement is shown by the PROGRAM INDICATORS (7). To stop fast tape movement, lightly push the opposite button. If the tape is allowed to fast forward or rewind all the way to the end, play will automatically begin from that point.

6. TUNING KNOB

Rotate the tuning knob clockwise or counter-clockwise to tune in the station of your choice. Adjust the knob until the station is received with the best possible reception.

7. PROGRAM INDICATORS

Indicates tape direction for reference to the fast forward/reverse buttons. Further indicates the direction (side) of the tape currently playing. To reverse the tape direction and play the other side of the cassette, lightly press both << and >> (5) buttons at the same time. The change of direction will be shown by the indicators.

8. MUTE SWITCH

Press the switch "IN" to activate the audio mute circuit. Press the switch again to return to the previous output level.

9. BALANCE CONTROL

Clockwise rotation shifts balance to the right speakers and counter-clockwise shifts balance to the left speakers. Detent position in the center balances the left and right speakers.

10. LO/DX SWITCH

Press the switch to the "IN" position, local reception is gained and by pressing once more to "OUT" position, the antenna will be able to work on distant reception.

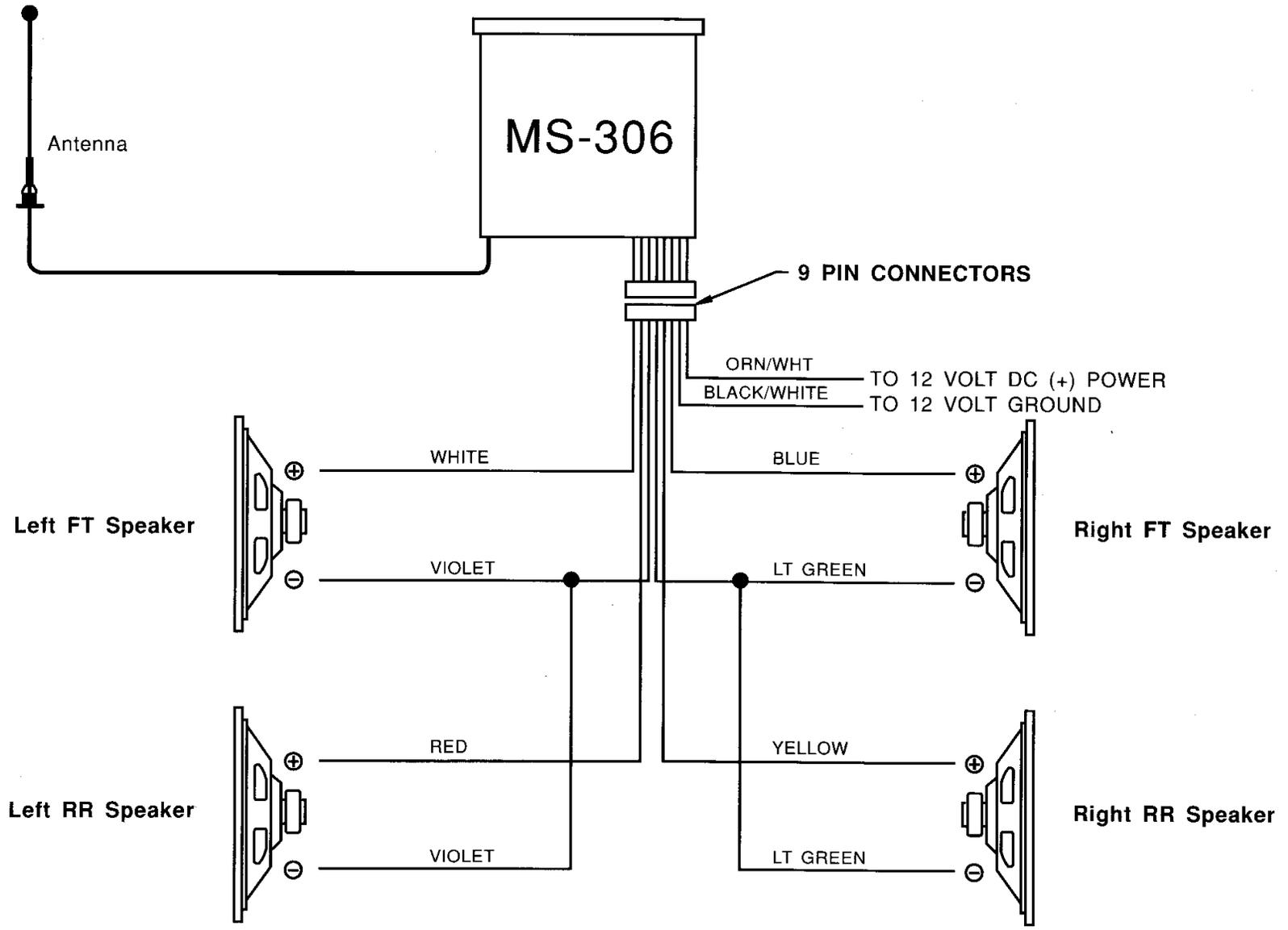
11. MONO/STEREO SWITCH

The Mono position of the switch is used when the FM stereo signal has become weak and begins to switch the stereo light ON and OFF. For normal operation set the switch in the "IN" position for FM stereo.

12. LOUDNESS SWITCH

This control compensates for the loss of high and low frequencies when the volume control is adjusted to a low level.

WIRING DIAGRAM



13. AM/FM BAND SELECTOR

Press this button to the "IN" position for FM band. Press and release it to the "OUT" position for the AM band.

14. BASS CONTROL

According to individual taste, Bass Sound can be boosted or cut by tuning this knob clockwise or counter-clockwise respectively.

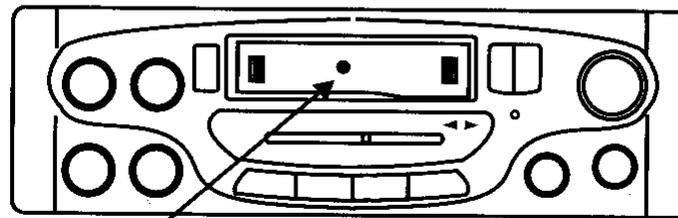
15. TREBLE CONTROL

According to individual taste, Treble Sound can be boosted or cut by tuning this knob clockwise or counter-clockwise respectively.

AM ANTENNA TRIMMER ADJUSTMENT

The antenna trimmer can be accessed through the small hole inside the cassette door (See diagram below) Tune radio to a weak station between 1200 and 1400 KHz AM. (If you cannot find a weak station in this range, tune to any strong station, and adjust tuning slightly off station). Adjust trimmer for maximum volume.

FRONT VIEW OF RADIO



ANTENNA TRIMMER (NOTE: OPEN CASSETTE DOOR TO SEE THE ADJUSTMENT SCREW)

CARE & MAINTENANCE

Cassette

Always check that the tape is tightly wound inside the take-up spool on the cassette. If the tape is loose, wind it with a six-sided pencil. Never use C-120 (120 minute) cassettes in this player. Never use cassette player when the vehicle temperature is near or below freezing.

Cleaning of Tape Head & Capstan

Since tapes contain oxides, you will find a black residue builds up on the head and drive capstan (inside cassette door). These residues should be cleaned after 50-100 hours of accumulated tape operation. You can use cassette cleaning cartridges available where ever stereos are sold.

DE-MAGNITIZING

The movement of the magnetic tape across the tape head and metal parts causes a magnetic field to develop. We recommend you have the tape player demagnetized at least twice annually. You can purchase an inexpensive tape head demagnetizing tool to do this yourself.

SPECIFICATIONS

Size:	7" (W) x 2" (H) x 6 5/8" (D) 178mm x 50mm x 168mm
Operating Voltage:	12V DC, Negative ground
Output Power:	50 Watts max. Stereo power
Output Wiring:	Floating ground type designed for 4 speaker use. May also be used with 2 speakers.
Output Impedance:	Compatible with 4 or 8 Ω Speakers
Tuning range:	(AM) 530 – 1710 KHz (FM) 88 – 108 MHz
Sensitivity:	(AM) less than 25uV (FM) less than 5uV
FM Stereo Separation:	More than 23 dB
Frequency Response:	50 –10000 Hz
Wow & Flutter:	Less than 0.3%

AM/FM RADIOS

Symptom	Cause	Possible Solution
No Power	No 12VDC	<p>Check circuit fuse at source</p> <p>Check in-line fuse on power lead (wall mount units are located in rear cabinet)</p> <p>Power lead disconnected</p> <p>Ground connection</p>
Power indicated; No audio output	No 12VDC to memory lead (electronically tuned units only)	<p>Circuit fuse at source</p> <p>In-line memory lead fuse</p>
	Speaker Output shorted	Check continuity of speaker leads to ground
	Speaker out cross channeled	Check for proper speaker wiring. Note: Radios have a sticker on them explaining wiring color code.

Only one channel (right or left side)	Radio Balance	Check radio function
	Speaker Disconnected	Check speaker connection at radio and/or speaker
	Speaker lead shorted or grounded	Check speaker wiring continuity to ground w/tester or meter
Popping in one or both channels	Speaker wiring shorted or positive lead grounded	Leads from speaker cone to terminal touching metal basket or speaker
	Speaker terminals grounded or shorted	
No AM Reception	Antenna disconnected	Connect antenna
	Antenna mast grounded or shorted	Check antenna or substitute with antenna known to be good
	Antenna center lead broken	Check antenna or substitute with antenna known to be good
	Note: Antenna leads can be tested with continuity or multi-tester. Some may have electronic component (capacitor) built-in which will not allow it to be tested.	

TECHNICAL BULLETIN

AM/FM RECEPTION

Many vans and RV's have more than one AM/FM radio. The best way to insure good reception is to supply a separate antenna for each radio. Other options available to supply adequate AM/FM reception to these radios are listed below, along with some general information in regards to radio reception.

“Y” ADAPTERS

The “Y” adapters used to connect one antenna to two radios will only provide AM reception to one of the radios and will compromise both AM and FM reception.

AMPLIFIED AM/FM ANTENNA

A popular second antenna that can be used is our AB-100 amplified AM/FM antenna. It is small and has a retractable mast that can be mounted vertically or horizontally. This antenna provides good FM reception, but the AM reception will be compromised to some degree because of the length of the mast.

MAST LENGTH

AM/FM antennas compromise AM reception by design. The optimum mast length for FM is approximately 30 inches which is standard for most automotive antennas. The optimum mast length for AM reception is over 100 inches which is not practical for mobile applications.

Special circuitry in electronic tuned radios or AM trimmers in mechanically tuned radios, make up for some of this difference in optimum mast length for AM reception.

ANTENNA CABLE

Increasing the antenna lead cable (adding extensions) will reduce sensitivity of AM with electronic tuned radios.

GROUND PLANES

Ground planes are also important when considering antenna performance. Most automotive antennas are designed to be mounted on the metal body of the vehicle.

The metal body reflects the signal interference generated by the vehicle's electrical system while it also provides the ground for the antenna lead shield. All this is necessary in order to maintain a good signal, especially AM.

FM RECEPTION

FM reception can be received with a very limited antenna and strong local FM stations can be received without an antenna, depending on the circumstances.

CONCLUSION

AM/FM reception is subject to the choice of an antenna and it's application. There can also be a variety of methods used to supply signal to both primary and secondary radios, but AM performance is the ultimate "test".

It appears that consumers or end users are becoming much more critical when it comes to acceptable antenna performance. It may be necessary for manufacturers to re-evaluate what was once considered acceptable.

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Audiovox Specialized Applications, LLC

TECHNICAL BULLETIN

This bulletin will discuss DC Power sources and how they relate to 12 volt DC video products.

DC (Direct Current) Power

A large number of our products are designed for 12 volt DC applications. The power is supplied by a variety of sources i.e., the battery, converters, ignition systems and solar power.

General Specifications

Our general specification for the voltage range of operation is 10 to 16 volts DC. TV's and VCP's (video cassette players) require slightly more than 10 volts to function properly. Normally this 10.5 to 11 voltage requirement does not create a problem, but keep in mind the following points:

Voltage

The voltage of a fully charged battery (engine not running) is approximately 12.5 VDC. Once a load (items being powered represent the "load") is applied, the voltage will drop. How much the voltage is reduced will depend on the following:

1. Current draw (amount of amperage); the higher the draw the greater the voltage will drop.
2. This size and length of the conductor (wire) supplying power.

Amperage

A TV will draw considerably more amperage than a VCP. For instance, a 14" TV will draw approximately 3.5 amps compared to a VCP that draws 1 amp while the tape is being loaded or ejected. Checking the voltage of a TV while it is playing shows an approximate 1 volt drop, (11.5 VDC). The voltage at the VCP can be another .5VDC (11 VDC) less than the TV.

Ignition Systems

In conclusion, operating these video products without the engine running will drain the battery to the point where these products will perform unacceptably in a short period of time.

Converters

Many RV OEM's incorporate converters as a source of 12VDC when connected to shore power (110-120 VAC). Some models put out a very clean DC supply where others may have a considerable amount of AC ripple under maximum load.

This AC ripple is filtered by the coach battery when connected into the circuit, but when the battery is removed or disconnected the amount of AC ripple can create major problems for audio and video products. Noise may result and the line fuse may fail.

ACCESSORY LIST

Description	Part Number
AVT-988 9" Color Television with Remote (12V)	AVT988
AVT-597 5" Color Television with Remote (12V)	AVT597
AVT-1498 13" Color Television with Remote (12V)	AVT1498
AVP-7000 Video Cassette Player (12V)	AVP7000
AVP-7285 Video Cassette Player (12V)	AVP7285
Wireless Headphone Kit: Includes 2 sets Wireless Headphones and Transmitter	WRFKIT1
BPA-501-12 4 Amp Adapter for use with AVT-988 9" and AVT-1498 13" Televisions	0891412
AC2A- 2 Amp Adapter for use with AVT-597 5" TV and AVP-7000 Video Cassette Player	0891436
Unified Remote Control	0892325
VAC-21- 12 Volt Corded Vacuum	VAC21
AVF-1 12 Volt Rechargeable Flashlight	AVF1
HP-175 Headphones with Pivoting Ear Cup	HP175
HP-275 Headphones with Volume Control on Cord	HP275
HP-375 Studio Quality Headphones	HP375

Unlike household electronics, all of our products have been specifically designed and tested for the mobile environment and are only available through ASA. To order any of these products, please contact Audiovox Specialized Applications at www.asaelectronics.com or 800-688-3135.

88-00236-00