

# STR-AV67/AV650

## SERVICE MANUAL

A

STR-AV67/AV650  
 US Model  
 STR-AV650  
 Canadian Model



Photo: STR-AV650

### SPECIFICATIONS

#### AUDIO OUTPUT AND TOTAL HARMONIC DISTORTION:

With 8-ohm load, both channels driven, from 20—20,000 Hz, rated 65 watts per channel minimum RMS power, with no more than 0.008% total harmonic distortion from 250 milliwatts to rated output.

#### Amplifier section

Dynamic power output

90 watts + 90 watts (8 ohms, at 1 kHz IHF)  
 110 watts + 110 watts (6 ohms, at 1 kHz IHF)  
 120 watts + 120 watts (4 ohms, at 1 kHz IHF)

Harmonic distortion Less than 0.008% at rated output

Intermodulation (IM) distortion

(60 Hz : 7kHz = 4 : 1) Less than 0.008% at rated output

Frequency response

PHONO: RIAA equalization curve  $\pm 0.5$  dB  
 CD/AUX  
 VIDEO 1, 2 (audio)  
 TV (audio)  
 TAPE 1/DAT, TAPE 2

10 Hz - 70 kHz  $\pm 0$  dB

Residual noise Less than 70  $\mu$ V (8 ohms, network A)

Damping factor 40 (8 ohms, 1 kHz)

Inputs

	Sensitivity	Impedance	S/N (weighting network, input level)
PHONO	2.5 mV	50 kilohms	77 dB 75 dB* (A, 2.5 mV)
CD/AUX VIDEO 1, 2 (audio) TAPE 1/DAT, TAPE 2 TV	150 mV	50 kilohms	100 dB 80 dB* (A, 150 mV)

\*78 IHF

— Continued on page 2 —

#### SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK  $\triangle$  ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET UNE MARQUE  $\triangle$  SUR LES DIAGRAMMES SCHEMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

FM STEREO/FM-AM RECEIVER

# SONY®

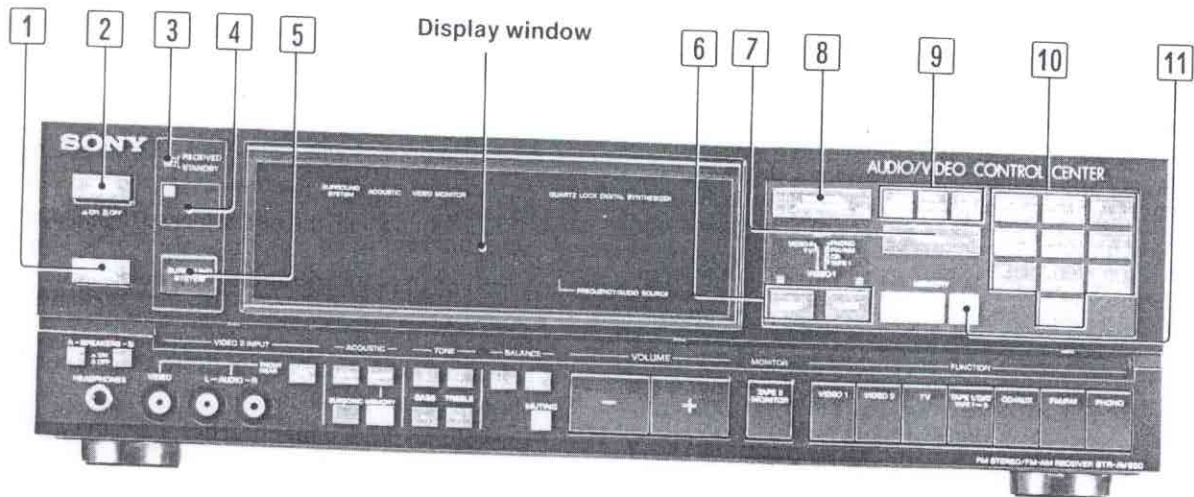
AUD



MICROFILM

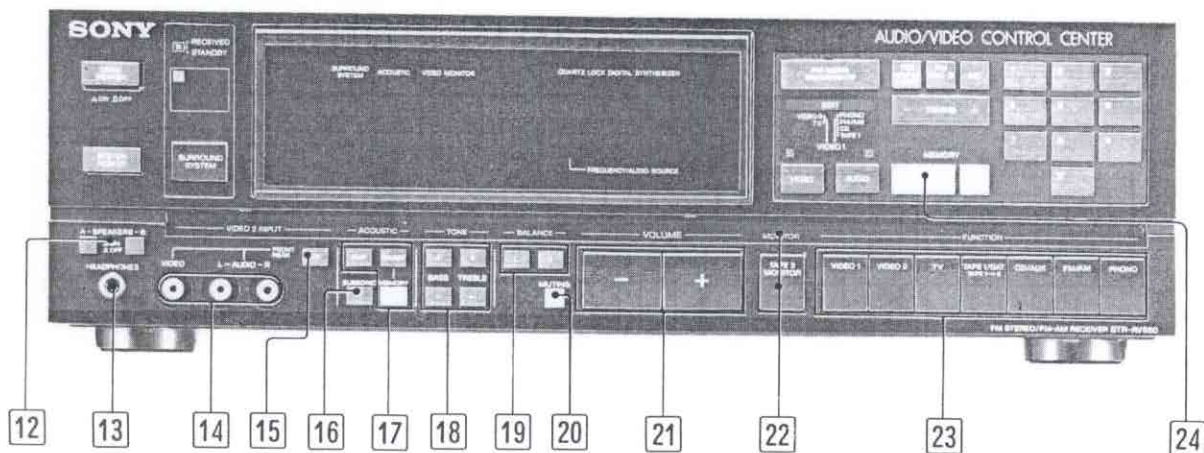
## 1-2. LOCATION AND FUNCTION OF CONTROLS

### Front/Panneau avant



(PHOTO: STR-AV650)

- 1 SYSTEM POWER switch**  
First turn the MAIN POWER switch on, and then press this switch to turn the receiver and the equipment connected to the AC outlet of the receiver on and off.
- 2 MAIN POWER switch**  
Depress to turn the main power on.
- 3 RECEIVED/STANDBY indicator**  
Lights when the main power is turned on and the system power is turned off.  
Blinks when the receiver received the signal from the remote commander.
- 4 Remote control sensor**
- 5 SURROUND SYSTEM button (STR-AV650)**  
When listening to a stereo source, press to enhance stereophonic effect. Press again to disengage the system.
- 6 EDIT buttons**  
AUDIO: For recording an audio program source on a video tape or adding sound on a video tape during video tape editing.  
VIDEO: For recording TV programs on a video tape or video tape editing. (VCR 2 to VCR 1)
- 7 TUNING button**  
Press to scan the frequency coverage.
- 8 FM MODE button**  
Press to stabilize the reception and reduce the noise when receiving a weak FM station or a noisy FM program. The MONO indicator is displayed and there is no stereo effect. Press it again to resume the stereo mode. The FM stereo mode will be resumed automatically when the receiving frequency is changed.
- 9 Band/antenna select buttons**  
**FM ANT-A (CATV):** For FM broadcast when the FM antenna is connected to the CATV ANT-A connector, or for FM simulcast CATV programs when the CATV cable is connected.  
**FM ANT-B:** For FM broadcast when the FM antenna is connected to the FM ANT-B connector.  
**AM:** For AM broadcast.
- 10 Number buttons**  
Press to enter the frequency of the desired station, or to memorize a station and call it up.
- 11 MEMORY PRESET button**  
Press to memorize the frequency of a station.



(PHOTO: STR-AV650)

**12 SPEAKERS selectors**

Depress to select which speaker system to drive. For both speaker systems, depress A and B. For headphones, keep both buttons released.

**13 HEADPHONES jack (stereo phone jack)****14 Front VIDEO 2 INPUT jacks (phono jack)**

Connect a portable VCR for playback or TV tuner.

**15 F/R (front/rear) VIDEO 2 INPUT select button**

When using the VCR other than that connected to the VIDEO 1 inputs, press it to select which VCR to use, after pressing the VIDEO 2 FUNCTION button.

F: VCR connected to the front VIDEO 2 inputs

R: VCR connected to the rear VIDEO 2 inputs

**16 SUBSONIC filter button**

Press to reduce unwanted subsonic noise components created by warped records, etc. To disengage the filter, press it again.

**17 ACOUSTIC buttons**

**FLAT:** Press to disengage the acoustic setting.

**SELECT:** Press to memorize or to recall the acoustic setting.

**MEMORY:** Press to memorize an acoustic setting.

**18 BASS and TREBLE TONE control buttons**

Control the prominence of bass and treble response.

**19 BALANCE control buttons**

**R:** Press to decrease the volume of the left channel or to resume the volume of the right channel.

**L:** Press to decrease the volume of the right channel or to resume the volume of the left channel.

**20 MUTING button**

Press to momentarily mute the sound. Press again to restore the same sound level as before.

**21 VOLUME control buttons****22 TAPE 2 MONITOR button and indicator**

Press the button to listen to taped programs of the tape deck connected to the TAPE 2 inputs. To listen to the other program sources, press it again.

**23 FUNCTION buttons**

**PHONO:** For record programs

**FM/AM:** For broadcasting programs

**CD/AUX:** For compact disc or auxiliary program sources.

**TAPE 1/DAT (TAPE 1 → 2):** For taped programs of the tape deck connected to the TAPE 1/DAT inputs, or for audio tape dubbing.

**TV :** For TV programs from the TV tuner connected to the TV inputs

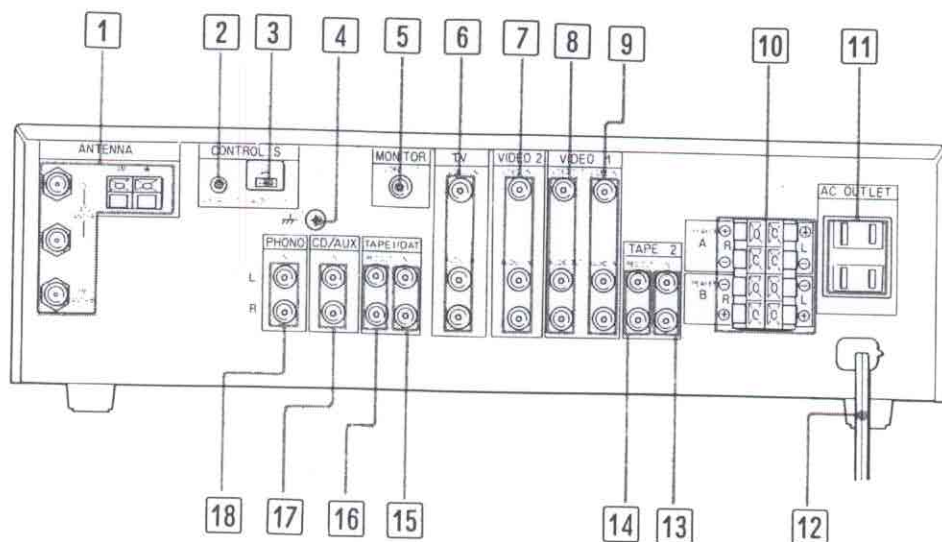
**VIDEO 2:** For video programs of the VCR connected to the front or rear VIDEO 2 inputs

**VIDEO 1:** For video programs of the VCR connected to the VIDEO 1 inputs

**24 MEMORY SCAN button**

Press to scan automatically the preset stations.

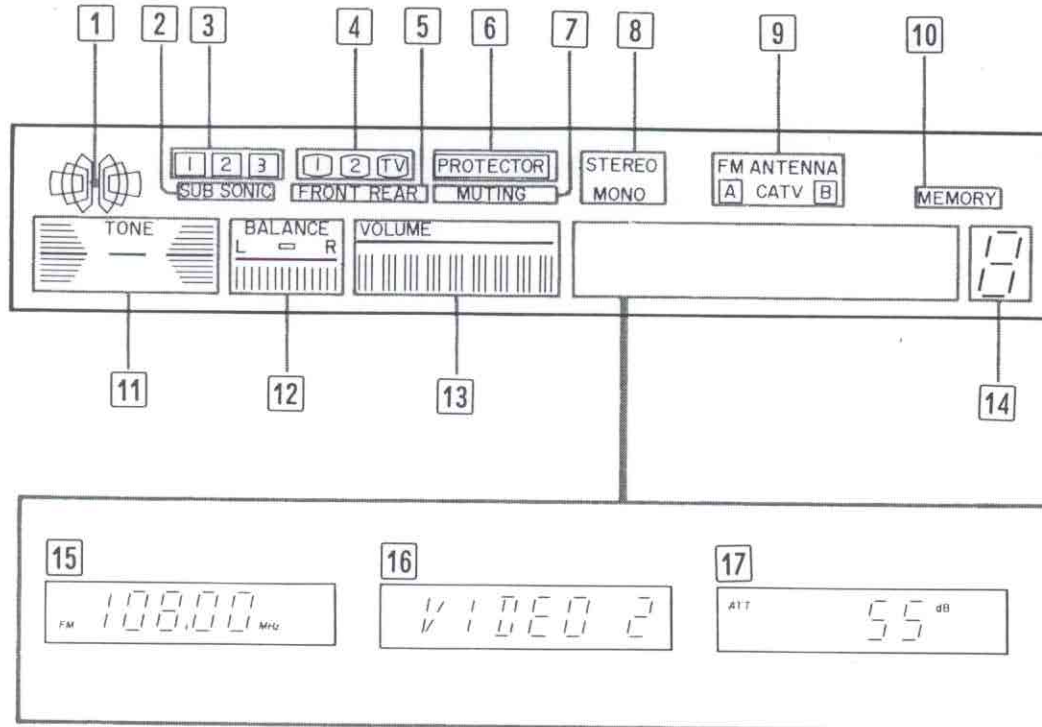
Rear/Panneau arrière



- 1 ANTENNA terminals**

STR-AV650  
**AM and  $\overline{m}$  (antenna ground):** Connect an AM antenna.  
**CATV ANT-A IN (F-type):** Connect an FM antenna or CATV cable.  
**CATV ANT-A OUT (F-type):** This connector supplies the signals connected to the CATV ANT-A IN connector to a VCR, TV tuner or another FM tuner.  
**FM ANT-B (F-type):** Connect an FM antenna.
- 2 CONTROL S VISUAL OUT jack (minijack)**  
 Used to extend the utility of this unit by providing for the connection of optional Sony video equipment which has CONTROL S IN jack.
- 3 CONTROL S AUDIO OUT connector (4-pin)**  
 Connect to the CONTROL S IN or REMOTE IN connector of other Sony equipment using a 4-pin flat remote control cord in order to control the audio system using the supplied remote commander.
- 4  $\overline{m}$  (phono ground) terminal**  
 Connect the ground wire of a turntable system.
- 5 MONITOR VIDEO OUT jack (phono jack)**  
 Connect to the video input of a component TV. The video signal selected by the button described below is put out from here.  
 STR-AV650: TV, VIDEO 1 or VIDEO 2 button and F/R button
- 6 TV VIDEO IN/AUDIO IN jacks (phono jack) (STR-AV650 only)**  
 Connect to the VIDEO/AUDIO OUT jacks of the TV tuner.
- 7 VIDEO 2 VIDEO IN/AUDIO IN jacks (phono jack)**  
 Connect to the VIDEO/AUDIO OUT jacks of the VCR 2 (for playback only).
- 8 VIDEO 1 VIDEO OUT/AUDIO OUT jacks (phono jack)**  
 Connect to the VIDEO/AUDIO IN jacks of the VCR 1 (for recording).
- 9 VIDEO 1 VIDEO IN/AUDIO IN jacks (phono jack)**  
 Connect to the VIDEO/AUDIO OUT jacks of the VCR 1 (for playback).
- 10 SPEAKER A, B connectors**
- 11 AC OUTLETS (SWITCHED)**  
 These are used to power other audio components whose power consumption is less than 100W.  
 These outlets are controlled by the front panel SYSTEM POWER switch.
- 12 AC power cord**
- 13 TAPE 2 IN jacks (phono jack)**  
 Connect to the LINE OUT jacks of the tape deck 2.
- 14 TAPE 2 REC OUT jacks (phono jack)**  
 Connect to the LINE IN jacks of the tape deck 2.
- 15 TAPE 1/DAT IN jacks (phono jack)**  
 Connect to the LINE OUT jacks of the tape deck 1 or a digital audio tape recorder.
- 16 TAPE 1/DAT REC OUT jacks (phono jack)**  
 Connect to the LINE IN jacks of the tape deck 1 or a digital audio tape recorder.
- 17 CD/AUX (compact disc/auxiliary) IN jacks (phono jack)**  
 Connect to the output jacks of a compact disc player or a tape deck for playback.
- 18 PHONO IN jacks (phono jack)**  
 Connect to the LINE OUT jacks of the turntable system.

## Display window/Fenetre d'affichage



- 1 Surround system indicator (STR-AV650)**  
Appears when the SURROUND SYSTEM button is pressed.
- 2 SUBSONIC indicator**  
Appears when the SUBSONIC button is pressed.
- 3 Acoustic memory number indicator**  
Shows the number of the acoustic setting memory 1, 2 or 3.
- 4 Video monitor indicator**  
Shows the picture source monitored on the TV connected to the MONITOR VIDEO OUT.  
1: VCR connected to the VIDEO 1 inputs  
2: VCR connected to the front or rear VIDEO 2 inputs  
TV: TV program
- 5 Video 2 input indicator**  
Indicates the selected VIDEO 2 input; FRONT or REAR.
- 6 PROTECTOR indicator**  
Appears when the protection circuit against a short-circuit is activated.
- 7 MUTING indicator**  
Appears when the MUTING button is pressed.
- 8 FM mode indicator**  
Indicates the selected FM mode; STEREO or MONO (monaural).
- 9 FM ANTENNA indicator**  
**A-CATV:** Appears when the FM ANT-A (CATV) button is pressed.  
**B:** Appears when the FM ANT-B button is pressed.
- 10 MEMORY indicator**  
Appears when the MEMORY PRESET button is pressed.
- 11 TONE indicator**  
Graphically shows the tone control characteristics. A straight bar graph indicates a flat frequency response.
- 12 BALANCE indicator**  
Indicates the relative strength of the volume at the left and right speakers.
- 13 VOLUME indicator**
- 14 Preset number indicator**  
Indicates the preset channel of the FM/AM stations.
- 15 Band/frequency display**  
Indicates the tuned FM/AM station.
- 16 Function indicator**  
Indicates the selected function.
- 17 ATT (attenuator) indicator**  
When the VOLUME button is pressed, the attenuation level is displayed in dB.

# STR-AV67/AV650

## ACCESSORY & PACKING MATERIAL

<u>Part No.</u>	<u>Description</u>
1-417-141-11	MATCHING TRANSFORMER, ANTENNA
1-463-831-12	REMOTE COMMANDER (RM-U70 II)
1-501-224-00	ANTENNA, FEEDER
1-501-291-00	ANTENNA, FEEDER
1-501-349-11	ANTENNA, LOOP
3-701-630-00	BAG, POLYETHYLENE
3-703-390-01	(US).....INSTRUCTION
3-703-710-41	STICKER, SONY SYMBOL (12)
3-765-934-21	(AV650)....MANUAL, INSTRUCTION
3-765-934-31	(Canadian)(AV650)..MANUAL, INSTRUCTION
3-765-935-21	(AV67).....MANUAL, INSTRUCTION
3-764-736-51	(Canadian)(AV650)..MANUAL, INSTRUCTION
3-795-433-31	(Canadian)(AV650)...INSTRUCTION
3-764-736-41	MANUAL, INSTRUCTION
4-919-127-01	(AV650)...INDIVIDUAL CARTON
4-919-127-11	(AV67)....INDIVIDUAL CARTON
4-919-128-01	CUSHION
4-919-129-01	CUSHION
4-858-078-00	SHEET, PROTECTION
4-919-126-01	REINFORCEMENT

## TROUBLESHOOTING

Before proceeding through the checklist below, examine the connections and the procedures outlined in the manual.

Should any problem persist after you have checked the following items, consult your nearest Sony dealer.

	PROBLEM	CAUSE	SOLUTION
Broadcast program	STEREO indicator flickers or does not appear when receiving stereo programs.	A very weak FM station or a noisy FM program is received.	Adjust the antenna or connect an external FM antenna. Press the FM MODE button to disengage the stereo mode.
	The figures in the display window do not stop at the desired station during sweep tuning.	The signal strength is too weak for sweep tuning.	Adjust the antenna. Tune in the station with the direct access tuning system.
	Stations cannot be tuned in correctly when the number button is pressed.	The frequency has not been memorized correctly.	Memorize the frequency correctly.
	AM stations cannot be tuned in.	The AM tuning interval is set incorrectly.	Change the tuning interval according to the AM frequency allocation system of your country.
Video program	Picture does not appear.	VCR, TV tuner or TV connection is not correct.	Connect the equipment correctly.
		The function switch on the VCR is not set correctly.	Set the switch appropriately.
		The TV is not turned on.	Turn the TV on.

	PROBLEM	CAUSE	SOLUTION
Amplifier	Sound is not heard.	The speaker or program source equipment is not connected correctly.	Connect the equipment correctly.
		The SPEAKERS selectors are not set correctly.	Set the selectors correctly.
		The MONITOR button has been pressed for a program source other than tape deck 2.	Press to disengage it.
		The correct FUNCTION button is not pressed.	Press the correct FUNCTION button.
		The function switch on the VCR is not set correctly.	Set the switch appropriately.
		The volume is set to minimum.	Increase the volume.
	One channel does not transmit audio, or the volume from the left and right speakers is unbalanced.	The BALANCE control buttons are not set appropriately.	Adjust the BALANCE control buttons.
		The speaker or program source is not connected correctly.	Connect the equipment correctly.
	There is an abrupt loss of sound from one or both of the speakers, and the PROTECTOR indication flickers in the display window.	A short-circuit problem activates the protective circuit.	Turn off the receiver, eliminate the short-circuit problem and turn on the power again. If there is no short-circuit, consult your nearest Sony dealer.
	Sound transmitted from the speakers is reversed.	The speakers are not connected correctly.	Connect the right speaker to the R SPEAKER terminals and the left speaker to the L SPEAKER terminals.
	There is lack of bass sound or the instrument position is obscure.	The speaker is connected with the polarities reversed.	Connect the speaker with the correct ⊕ ⊖ polarities.
	Severe hum or noise is heard.	The connecting cords are not of shielded type.	Use shielded type cords.
		A transformer, motor, TV or fluorescent light affects the connecting cord.	Place the connecting cords in a location away from a transformer or motor, and at least 3 meters (10 feet) from a TV set or a fluorescent light.
		The audio components are too close to a TV set.	If both are used at the same time, separate the TV from the audio components.
		The receiver is not grounded.	Connect the ground wire to the antenna ground terminal.
		The connections are loose.	Make secure connections.
		The plugs and jacks are dirty.	Wipe the plugs and jacks with a cloth lightly dampened with alcohol.
	The Remote Commander does not operate.	The batteries are exhausted.	Replace the batteries with new ones.
		The MAIN POWER switch on the receiver is not depressed.	Depress the MAIN POWER switch.