

DENON

Dolby Digital and DTS A/V Receiver

AVR-684

DTS-ES Discrete 6.1 and Dolby Digital EX with Power Amps for 6 Channels



■ DENON's Basic Design for High-Quality Sound Reproduction

• Power Transformer for High Power Driven

The chassis that supports the large transformer has been designed to absorb vibration, and the transformer is housed inside a highly rigid frame to secure it more solidly to the chassis. In addition, a cushioning material has been placed around the core of the transformer to minimize interference on the signal and enable more faithful reproduction of the original sound. The AVR-684 inherits these low-noise design from higher-end models not to mention the use of short ring.



• Twin Drive Rectifier

DENON's Twin Drive Rectifier design uses two rectifying diodes in parallel to bring out the maximum potential of the large transformer. Since the rectifiers recharge the large block capacitors at low impedance, they are able to supply ample current to reproduce deep basses as well as sudden bursts of sound from percussion or other musical instruments.

• Large Aluminum Extruded Heatsink

DENON uses large heatsink made of extruded aluminum. They have been placed in a design that ensures mostly uniform temperatures throughout the heatsink so that the output transistors for all channels can be driven under uniform conditions. This in turn ensures that all channels respond with equal performance to the demands of the audio signals.



■ Fully Discrete, Equal Power Six Amplifier Channels, 110 Watts Each

Front	110 W + 110 W	(6 ohms, 1 kHz, 0.7 % THD)
Center	110 W	(6 ohms, 1 kHz, 0.7 % THD)
Surround	110 W + 110 W	(6 ohms, 1 kHz, 0.7 % THD)
Surround Back	110 W	(6 ohms, 1 kHz, 0.7 % THD)

For optimum Dolby Digital and DTS reproduction, the AVR-684 features high quality, wideband audio amplification, providing 110 watts power output for each of the six main channels.

A large capacity power supply includes a high current power transformer along with discrete power output devices on all six amplifier channels for highest dynamic range and superb reproduction clarity.

■ 32 bit High Quality DSP

A high-quality 32-bit DSP "MELODY 32" from Analog Devices has been used in the DSP processor, placing the AVR-684 at a higher rank than other models of this class in its ability to accurately decode and reproduce the superior quality of surround sources.

■ 24 bit, 96 kHz High Resolution D/A Conversion

■ Wide-Range Play Capability for DVD-Audio and Super Audio CD

The power amp circuits of the AVR-684 have been meticulously designed to reproduce the exceptionally high sound quality with wide frequency response from 10 Hz to 100 kHz.

■ Cinema Equalizer

The sound from movie sources recorded in Dolby Digital, DTS or other formats emphasizes high-frequency range due to a theater's front speakers being placed behind the movie screen. If this sound is reproduced in the home theater without correction, the high-frequency range is too strong. The AVR-684 features a Cinema Equalizer to correct these high-frequency components so that the sound is clearer and easier to listen to. (For Dolby Digital, Dolby Pro Logic II, Dolby Digital EX and DTS surround modes)

■ Personal Memory Plus, for Easy Operation

The AVR-684 includes the Personal Memory Plus function that automatically remembers the surround mode you last used for each program source, so that you do not need to select the mode again for that program.

■ Acclaimed Customization Feature

As with all of DENON's high-grade A/V receiver, the AVR-684 lets you adjust delay times and other parameters so that you can customize the performance of the AVR-684 to suit your own home theater and enhance operating ease. The adjustments are easy to make via a dialog format on the fluorescent display on the front panel. These customized features are then stored, for each source input and surround mode, in Personal Memory Plus so constant readjustments are not required.

■ Multi-Function Preset Memory Remote Controller with Glo-keys

The supplied system remote controller features a large selection of remote control codes to operate other components in your home theater system, including codes for selected DENON models, along with remote control codes from other manufacturers. The most frequently used buttons are laid out separately for TV, VCR and DVD, for maximum ease-of-use.

* Remote control codes cannot be used with the products of other manufacturers and some DENON products.

■ DTS-ES (Discrete 6.1 / Matrix 6.1) and DTS NEO:6 Decoder

■ Dolby Digital, Dolby Pro Logic II and Dolby Digital EX Decoder

■ 6 Channel Stereo Mode

DENON's popular 6 Channel Stereo mode transforms your favorite 2-channel sources such as CD, tape, stereo radio and stereo video sources into exciting surround sound, free of delay effects and unnatural artifacts, from all six speakers. This 6 Channel Stereo mode was originally developed by DENON to enhance music lovers' enjoyment of home theater ambience.

■ Virtual Surround Mode

Surround yourself with sensational 3D soundfield envelopment using just one pair of speakers. The AVR-684's Virtual Surround mode provides a dramatic psychoacoustic surround sound effect, using two speakers with all sources.

■ DENON DSP Surround Modes Add Listening Excitement

Put yourself in the middle of your favorite concert hall and music environments with DENON's DSP acoustic environment simulation modes. These DSP modes add spacious surround sound enhancements to your favorite music and video sources, and include these distinctly different sounding effects:

- | | |
|-------------------------|---------------|
| 1. 5 / 6 Channel Stereo | 5. Video Game |
| 2. Virtual Surround | 6. Matrix |
| 3. Rock Arena | 7. Mono Movie |
| 4. Jazz Club | |

■ Adjustable Cross-Over Switching

The AVR-684 supports subwoofer cross-over switching with a choice of 4 cross-over frequencies: 80, 100, 120 and 150. This lets you more accurately match the performance characteristics of the subwoofer to the main speaker system.

■ Digital Optical Output

■ Front Panel Inputs (with Optical Input)

■ Front A/B Speaker Terminals

■ High-grade Speaker Terminals (except speakers B)

■ Frequency Synthesis Tuning

- 40-Station AM/FM Random Preset Memory Tuning
- Auto Preset Memory

Specifications

■ Input/Output Terminals For Every A/V System

• Audio Inputs

8 Analog Inputs.....	CD, TUNER, DVD/VDP, TV/DBS, AUX VCR, CDR/TAPE, V.AUX(FRONT)
6 Analog EXT. Input	FRONT L/R, CENTER, SURROUND L/R, SUBWOOFER
3 Digital (Optical) Input	OPTICAL X 3
1 Digital (Coaxial) Input	COAXIAL X 1

• Audio Outputs

1 Analog PRE OUT Terminals.....	SUBWOOFER
2 Analog REC OUT Terminals.....	VCR, CDR/TAPE
1 Digital (Optical) Output	Optical X 1

• Video Inputs

4 Composite Inputs.....	DVD/VDP, TV/DBS, VCR, V.AUX(FRONT)
3 S-Video Inputs	DVD/VDP, TV/DBS, VCR
2 Component Inputs	DVD/VDP, TV/DBS

• Video Outputs

2 Composite Outputs.....	VCR, MONITOR
2 S-Video Outputs	VCR, MONITOR
1 Component Output	MONITOR

■ Power Amplifier Section

Rated output	*THD figures are power amp stage values.	
Front.....	75 W + 75 W	(8 ohms, 20 Hz - 20 kHz, 0.08 % THD)
	110 W + 110 W	(6 ohms, 1 kHz, 0.7 % THD)
Center	75 W	(8 ohms, 20 Hz - 20 kHz, 0.08 % THD)
	110 W	(6 ohms, 1 kHz, 0.7 % THD)
Surround.....	75 W + 75 W	(8 ohms, 20 Hz - 20 kHz, 0.08 % THD)
	110 W + 110 W	(6 ohms, 1 kHz, 0.7 % THD)
Surround Back	75 W	(8 ohms, 20 Hz - 20 kHz, 0.08 % THD)
	110 W	(6 ohms, 1 kHz, 0.7 % THD)

■ Preamplifier Section

Input sensitivity/Impedance	CD, DVD/VDP, TV/DBS, VCR, CDR/TAPE, AUX V.AUX(FRONT).....	200 mV/47 kohms
Output level/Load impedance	SUBWOOFER.....	1.2 V/10 kohms
	CDR/TAPE, VCR	200 mV/47 kohms
Frequency response	10 Hz - 100 kHz (+1, -3 dB) (Tone Defeat On)	
Signal-to-noise ratio	98 dB (IHF-A weighted) (Tone Defeat On)	
Tone control	Treble: ±12 dB at 10 kHz Bass: ±12 dB at 100 Hz	

■ FM Section

Tuning frequency range.....	87.5 - 107.9 MHz
Usable sensitivity	1.0 µV (11.2 dBf)

■ AM Section

Tuning frequency range.....	520 - 1710 kHz
Usable sensitivity	18 µV

■ General

Power supply	AC 120 V, 60 Hz
Power consumption	4.0 A
Dimensions	434 (W) x 147 (H) x 417 (D) mm 17.1" (W) x 5.8" (H) x 1.4" (D)
Weight.....	10.8 kg, 23.8 lbs



Front panel with terminal cover.



*Design and specifications are subject to change without notice.

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*DTS is registered trademarks of DTS Technology.

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