YAMAHA

Designed for Digital

The Ideal Receiver for Digital Home Theater Entertainment

Digital Home Theater Receiver

RX-V4600

d-cinema
Yamaha takes cinema digital

The RX-V4600 makes the most of all digital sources, giving you new possibilities for audio and video entertainment.

The RX-V4600 is a receiver designed for the digital era. It sets the standard for a new generation of receivers that will increase home theater enjoyment with more vivid images and richly detailed sound, plus greater versatility and convenience. With CD-quality digital HD Radio, digital data links and advanced digital processing circuitry, it takes full advantage of the latest digital sources. It also has a new front panel design whose elegance matches its capabilities. For movies and music, multi-channel surround sound and stereo, the RX-V4600 will ensure that your entertainment is totally enjoyable.

HD Radio
Pure Digital. Clear Radio.

Radio Goes Digital!

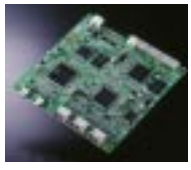
For maximum radio enjoyment, the RX-V4600 is capable of receiving HD Radio broadcasts. The only terrestrial digital broadcast system, HD Radio delivers crystal-clear sound via the normal AM/FM bands. This greatly improved digital quality means that FM broadcasts have CD-quality sound and AM is as good as present FM stereo, with no static hiss. It also provides a variety of program-associated data such as song titles and artist names, as well as the ability to tune to multiple programs at the same dial position. Already available from hundreds of stations, more than 2,500 stations are planning to upgrade to HD Radio. And because this is public broadcasting, it is completely free.

Designed for Digital

HDMI™ HIGH DEFINITION MULTIMEDIA INTERFACE

HDMI Interface for Video and Audio

The HDMI interface is the most advanced, highest quality connection for delivering video sources to your home theater system. Extremely high speed digital transmission of the video signal ensures that there is no deterioration in quality, so you can enjoy High Definition TV, DVD movies and satellite broadcasts with the best possible resolution. As an additional benefit, the RX-V4600 is compatible with the latest HDMI format, Ver. 1.1, meaning it can also handle digital audio signals, including DVD-Audio, CD, Dolby Digital and DTS. The RX-V4600 provides two-in/one-out HDMI switching, letting you connect two digital sources, with each connection requiring only a single cable! HDMI is compatible with copyright protection technology as well, and is expected to be the standard digital transmission format in the future.



Just connect Yamaha's digital cinema projector and DVD-S2500 via HDMI, you can fully enjoy highest quality video and audio.

** When connecting DVI compatible equipment, confirm HDCP compatibility.*

Dual i.LINK Terminals

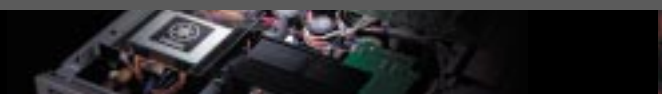
You can also select a second means of digital connection, called i.LINK. This is the name for the international IEEE1394 standard that provides high quality, two-way transmission of digital audio signals. It can handle the DVD-Audio, Super Audio CD, Dolby Digital and DTS formats, and offers full copyright protection. i.LINK provides greater convenience also, as only a single cable is required.

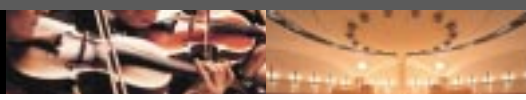
** i.LINK handles digital audio data only.*

RX-V4600 Digital Home Theater Receiver

Superb Audio Quality

DIGITAL ToP·ART





Digital ToP-ART and High Current Amplification

Digital ToP-ART (Total Purity Audio Reproduction Technology) is Yamaha's design philosophy whose goal is to maximize the sound quality and functionality of the digital section by directly connecting it to the wide-range power amplifier. The culmination of the best digital engineering and design possible today, it combines high performance digital circuitry, high density CINEMA DSP circuitry and a high quality, wide dynamic range power amplifier. You can be sure that this receiver will deliver the full impact and dynamism of movies, with generous amounts of power.

Yamaha's High Current Amplification uses superior components to achieve low impedance, high current power from input (power supply circuit) to output (speaker terminals). This drives the speakers much more smoothly and dynamically, for better sound from all sources, including 2-channel audio.

Supporting all this are the Yamaha ToP-ART base and dual-bottom construction, which provide stability and further vibration damping.

Design Focused on High Sound Quality

All circuits employ carefully selected parts that are utilized in the best of thousands of possible combinations to achieve highest sound quality. Especially noteworthy is the power supply, which has a much larger capacity than previous units, for power output that is clean and stable down to the lowest bass frequencies.

Extra-large 11.9 lbs. transformer

Custom-made 18,000 µF block electrolytic capacitors

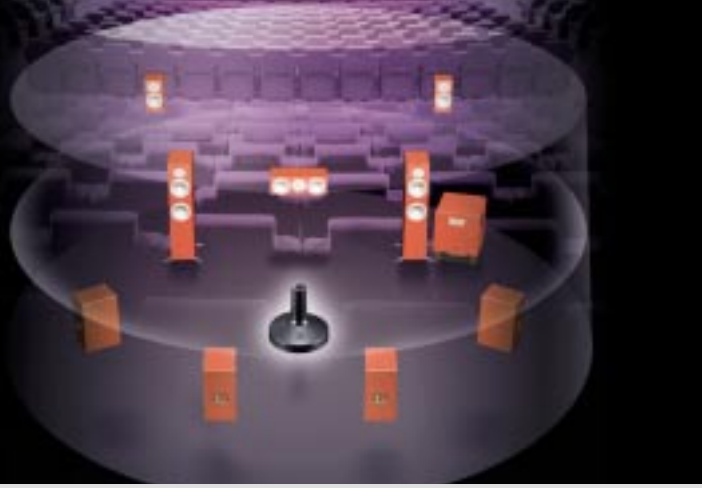
Highest quality parts, including custom-made parts, are used throughout. Top: power amp section. Bottom: power supply section.

Pure Direct

Pure Direct is a special Yamaha function that configures the receiver to achieve the highest possible sound quality for enjoying music from stereo analog, multi-channel and digital sources. Engaging the Pure Direct mode turns off the power to all noise-producing circuits that are not in use and makes the signal flow as direct as possible by bypassing certain circuitry, maximizing sound purity. As a result, this A/V receiver achieves better sound quality than many high-end stereo amplifiers.

Also Contributing to High Sound Quality

- 192kHz/24-bit DACs for all channels
- Digital tone controls for front, center, surround and subwoofer



More Convenience and Flexibility

YPAO

YPAO Automatically Sets the Best Sound for Any Room, Any Speaker Placement

Yamaha's YPAO system uses a small microphone and sophisticated equalization techniques to automatically set the best sound for any room, no matter where the speakers are. All you do is place the microphone, hit a button and wait for three minutes. YPAO is faster and more accurate than other systems of this type, and it automatically optimizes settings that are very difficult to adjust manually. A Trim function lets you control three parameters to tailor the sound to your own preferences. You can store six YPAO settings in the memory, making it easy to switch input/output sources and listening positions.

Optimizer Microphone

On-Screen Display with GUI

Even though the receiver offers a wide selection of functions, operating it is easy and intuitive. You get clear menus and instructions via a GUI (Graphical User Interface) display that appears on your TV or monitor. Colorful and easy to navigate, the GUI lets you do everything from choosing inputs and surround programs to detailed sound adjustments. Menus can be displayed in English, French or German.

** On-screen display does not function with HDMI.*

Component Video Up Conversion

One way of ensuring the highest video quality for your home theater system is to use the best possible video signal. The RX-V4600 automatically upgrades the input signal to the best one that your monitor or TV can accept (composite to S-Video or component, S-Video to component). You never have a problem if your monitor or TV doesn't accept a certain signal, and even if it accepts all three, system connections are easier when conversion is handled inside the receiver. In short, you simply use the best possible cable between the receiver and the monitor/TV, and then whatever the source is, you are assured of getting the highest possible quality.

Subwoofer Crossover and Phase Selection

The RX-V4600 provides a choice of nine subwoofer crossover frequencies for maximum efficiency and performance, plus phase switching for best bass sound.

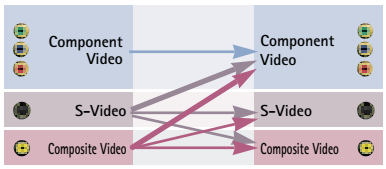
Direct Access Remote Control

The remote control can "learn" the functions of other components, so you can use it as a single remote for the entire system. You can also set Macro commands, enabling the remote to initialize a chain of functions at the touch of a single button. Input sources are shown in the LCD window, and you can change their names. Frequency used functions are easily accessible on the front, while others are located under the sliding panel. Main buttons are illuminated.

English GUI display

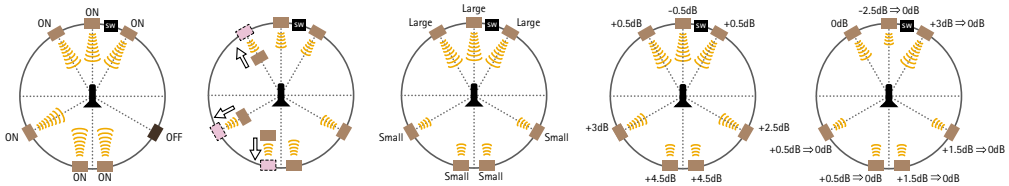
French GUI display

German GUI display



Full Video Up Conversion upgrades the input signal to the best type that the monitor can handle.

YPAO Acoustic Customization: 5 Tuning Factors



1) Speaker Connections
Checks for missing connections and subwoofer phase control (here the right surround speaker is not connected).

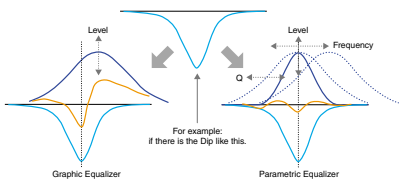
2) Speaker Distance
Measures speaker distances from the listening point and corrects for differences down to 5cm.

3) Speaker Size
Checks speaker sizes (large or small) and subwoofer crossover frequency.

4) Speaker Frequency Response
Measures and optimizes each speaker's frequency response using the parametric equalizer.

5) Sound Pressure Level
Measures and aligns the sound pressure levels of all speakers.

YPAO provides frequency response compensation of all channels via a 7-band parametric equalizer.



Graphic equalizers adjust only the level, while parametric equalizers adjust gain, frequency and Q factor, thus providing more detailed and effective sound equalization.

The RX-V4600 makes it possible to enjoy watching a DVD in the living room, watching satellite TV in the kitchen and listening to the radio in the bedroom all at the same time, each with its own volume and status control.

Extensive Flexibility for Multi-Zone Custom Installations

The RX-V4600 provides an extensive range of functions that make it ideal for a multi-room, custom installation. It lets you select and enjoy three different sound sources in three rooms (called zones). In addition, people in Zone 2 can watch a different video than the one playing in the main zone. You can even have sound in a fourth room by using the Speaker B output for an additional set of speakers. When Speaker A is off in the main zone, the Zone B signal becomes Virtual CINEMA DSP.

Dedicated Remote Control

The receiver comes supplied with a dedicated Zone Remote Unit. You can use this in Zone 2 or 3 for power on/off, volume control, input source selection, preset radio station selection and mute. If you use it with an extended remote control receiving/emitter unit,* you can even command the RX-V4600 (located in the main zone) from another zone.

** Extended remote control receiving/emitter units are not available from Yamaha.*

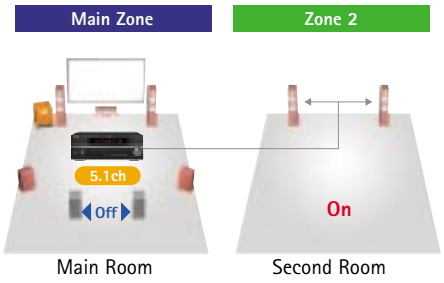
Front Panel Controls

You can turn the power to the Main Zone, Zone 2 and Zone 3 on and off via switches on the front panel. A Zone Control button is also provided on the front, which enables you to adjust the volume and select the sources for Zone 2 and Zone 3.

Amplifier Assignability

Although the amplifier has seven channels, it has speakers terminals for nine channels, so if you connect the Surround Back and Zone 2* speakers to separate terminals, you can easily switch between them. You can assign two channels of amplifier power to drive the speakers in Zone 2. As a result, you don't need a separate amplifier for the speakers in that zone, but it is fully independent with its own 2-channel power. At the same time, people in the main zone can still enjoy 5.1-channel sound.

** Cannot be used at the same time as the Presence speakers.*



Dual Remote Ports, Dual Trigger Outputs and RS-232C Interface

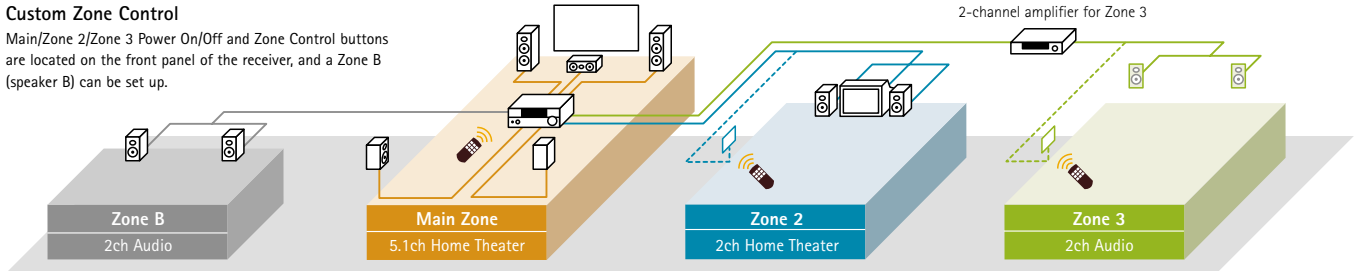
The RX-V4600 offers dual remote input/output ports for remote control capability in Zone 2 and 3, and dual +12V trigger outputs for automatic power-on of Zone 2/3 amps. In the Main Zone, a projector, curtains, etc. can also be controlled. An RS-232C interface provides a link to a Creatron or AMX touch panel controller.

Other Advanced Functionalities

- Rec Out/Zone 2 selector
- Speaker A, B, A+B selection via remote unit and front panel

Custom Zone Control

Main/Zone 2/Zone 3 Power On/Off and Zone Control buttons are located on the front panel of the receiver, and a Zone B (speaker B) can be set up.

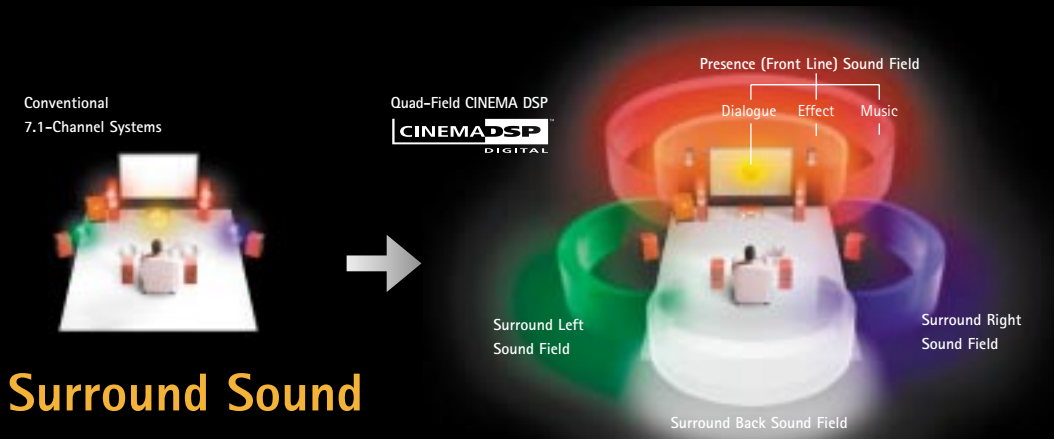


Zone B
You can hear 2-channel audio (same source as in Main Zone).

Main Zone
You can enjoy 7.1-channel home theater, or 5.1-channel home theater when using two channels for zones 2/3.

Zone 2
You can enjoy video plus 2-channel audio from the same or a different source than that in the main zone.

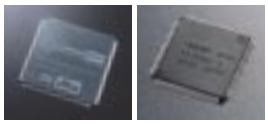
Zone 3
You can hear 2-channel audio from the same or a different source than that in the main zone.



Truly Realistic Surround Sound

Yamaha's Unique CINEMA DSP

The RX-V4600 delivers a surround sound experience that is not only theater-like, it actually sounds better than many theaters. The reason is CINEMA DSP, a unique technology that enables movies to be heard with the same degree of realism and impact that the directors and sound engineers intended. It creates a deep, expansive and rich surround sound field, without the need for precise speaker placement. CINEMA DSP brings out the full potential of all movie sound formats, including the newest ones. Extensive listening tests have confirmed that it is simply the best system for enjoying home theater sound.

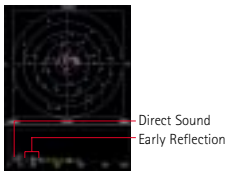


32/64-bit floating point quantization LSI for format decoding and two Yamaha original YSS-930 LSIs for DSP processing and audio delay

Use of Actual Sound Field Data

The sensational sound that CINEMA DSP provides is due in great part to Yamaha's advanced sound field data and processing techniques. The overwhelming sense of realism is made possible by the use of data from actual acoustic venues around the world including dubbing stages in film studios where sound directors use, stored and processed by powerful and sophisticated LSIs. Therefore, listeners can hear movies as the director intended them to be heard, and music as it would sound in famous places like the Bottom Line or in locations like churches and stadiums.

The Bottom Line
A world famous jazz club in New York. With an extremely wide floor, the 300-seat club has a realistically live sound field.



Imaginary Sound Source Distribution of Sound Field Data
Sound source distribution with listening position at center. Each circle represents an actual or reflected sound source, showing strength and position.

Quad-Field CINEMA DSP

Quad-Field CINEMA DSP, projects four sound fields into the home theater: a presence sound field in the front, two surround sound fields on the sides, and a surround back sound field. This results in a surround sound environment with highly accurate localization, smooth movement, exceptional clarity and richness, and startlingly realistic presence.

22 Surround Programs and Latest Surround Format Compatibility

You have the extremely enjoyable choice of 22 surround programs in three categories: CINEMA DSP, HiFi DSP and THX. The movie programs include Spectacle, SciFi and Adventure, while the music programs feature the sound fields of actual venues. The RX-V4600 is capable of decoding all of the Dolby and DTS formats, including Dolby Digital EX, DTS-ES, Dolby Pro Logic IIx and DTS Neo:6. It also offers latest THX Select2 processing.

Circle Surround II

The RX-V4600 offers full function of Circle Surround II, a matrix surround sound decoder (from SRS Lab) that provides up to 6.1 multi-channel surround sound playback from mono, stereo, Dolby Surround and Circle Surround II-encoded sources such as HD Radio and cable/satellite TV programs.

9-Channel Output and Dialogue Lift

The presence speakers in the upper front provide the front sound field with an overwhelming sense of solidity. With 6.1-channel or 7.1-channel decoding, a surround back sound field with smoother and

RX-V4600 Digital Home Theater Receiver

more natural expansion can be obtained from the surround back speaker. Yamaha utilizes both benefits to provide speaker terminals for nine channels so that nine speakers can be used. The amplifier has seven channels, but it is possible to selectively use the presence speakers and the surround back speaker according to the sound source and the surround program without changing the wiring. In addition, the presence speakers allow use of a Dialogue Lift function.

When the center speaker is below a large screen, the sound image of the dialogue is oriented below the picture, which sounds strange. Dialogue Lift performs signal processing on the center channel signal and presence channels signals (located higher than the center channel), orienting the sound image of the dialogue to the proper position. This ensures natural reproduction that matches the location of the dialogue to the screen image.

** Because the selectable presence and Zone 2 speakers use the same terminals, they cannot be used together.*

Night Listening Enhancer and SILENT CINEMA

During low-volume listening, such as late at night, dynamic range suffers and you may miss some sounds. The Night Listening Enhancer offers two modes, Cinema and Music, with three-level selectability, which will ensure that you don't miss movie dialogue or quiet passages, or lose overall surround spaciousness. It works for all surround programs, including Dolby Pro Logic IIx.

SILENT ™ CINEMA

The SILENT CINEMA mode allows private listening enjoyment of multi-channel music or movies, with an accurate simulation of surround sound, through ordinary headphones.

Audio/Video Synchronization

The latest display devices perform complex internal processing, causing a slight time lag to occur between the time the video signal is received and when it is output to the screen. The sound thus arrives a fraction of a second sooner, which can be perceptible enough to cause a strange sensation. The Audio Delay function (0-240ms) matches the audio to the timing of the output of the video on the screen, correcting the audio – video time lag.

22 Surround Program	
Compatible Decoding Format	
	● Dolby Digital
	● Dolby Digital EX
	● DTS Digital Surround
	● DTS 96/24
	● DTS-ES Matrix 6.1
	● DTS-ES Discrete 6.1
	● Dolby Pro Logic
	● Dolby Pro Logic II Music
	● Dolby Pro Logic II Movie
	● Dolby Pro Logic II Game
	● Dolby Pro Logic IIx Music
	● Dolby Pro Logic IIx Movie
	● Dolby Pro Logic IIx Game
	● DTS Neo:6 Music
	● DTS Neo:6 Cinema
	● Circle Surround II Music
	● Circle Surround II Cinema
HiFi DSP Programs	
MUSIC	● Hall in Munich
	● Hall in Vienna
	● Freiburg
	● Bottom Line
	● Roxy Theatre
ENTERTAINMENT	● Disco
STEREO	● 7 Channel Stereo
Program Subtotal	7
CINEMA DSP Programs	
ENTERTAINMENT	● Game
	● Mono Movie
	● Variety/Sports
MUSIC	● Pop/Rock
	● Classic/Opera
MOVIE THEATER	● Spectacle
	● Sci-Fi
	● Adventure
	● General
ENHANCED	● Enhanced
Program Subtotal	10
THX Programs	
	● Cinema
	● Select2 Cinema
	● Music Mode
	● Game Mode
	● THX Surround EX
Program Subtotal	5
Program Total	**22**

●: HiFi DSP Programs ●: THX Programs ●: CINEMA DSP
●: Tri-Field CINEMA DSP ●: Quad-Field CINEMA DSP

RX-V4600 Extensive Connections: • HDMI (2 In/1 Out) Interface • Dual i.LINK (IEEE1394) Terminals • 5 Optical* and 3 Coaxial Digital Inputs, and 2 Optical Digital Outputs (fixed and assignable) • 7 A/V* (with S-Video) and Audio Inputs, and 2 A/V (with S-Video) and 2 Audio Outputs • 3 Component Video Inputs (fixed and assignable) and 1 HDTV Compatible Component Video Monitor Output • RS-232C Interface • Dual Remote Ports • Dual Trigger Outputs (+12V, 15mA) • Zone 2 Audio and Video (with S-Video) Outputs, and Zone 3 Audio Output • 6-Channel External Decoder Input (8-Channel Compatible) • Front L/R, Center, Surround L/R and Surround Back Preout, and Subwoofer Output Terminals • S-Video and Composite Monitor Outputs • 9-Channel Speaker Terminals including Zone 2/Presence Speaker Terminals (power assignable) • 2-Way Binding Post Speaker Terminals (Banana-Plug Compatible, Except Presence/Zone2) ** Including Video Aux terminals on front panel*

RX-V4600 Main Specifications

AUDIO SECTION

Minimum RMS Output Power (8 ohms, 20 Hz–20 kHz, 0.04% THD)		
Front Channels		130 W + 130 W
Center Channel		130 W
Surround Channels		130 W + 130 W
Surround Back Channel		130 W + 130 W
High Dynamic Power, Low-Impedance Drive Capability		Yes
Dynamic Power/Channel	8 ohms	165 W
	6 ohms	205 W
	4 ohms	260 W
	2 ohms	340 W
Linear Damping		Yes
Damping Factor (8 ohms, 20 Hz–20 kHz)		140 (speaker A)
Input Sensitivity/Impedance	Phono (MM)	3.5 mV/47 k-ohms
	CD	200 mV/47 k-ohms
Frequency Response		10 Hz–100 kHz +0, -3 dB
Total Harmonic Distortion (20 Hz–20 kHz)		
CD (Front Sp Out)		0.04%
Signal-to-Noise Ratio (CD, 250 mV)		100 dB
Filter Characteristics		
Front, Center, Surround, Surround Back (Small, fc=)		40,60, 80, 90, 100, 110, 120,
[High Pass Filter, Variable Crossover]		160 and 200 Hz (12 dB/oct.)
Subwoofer (fc=)		40,60, 80, 90, 100, 110, 120,
[Low Pass Filter, Variable Crossover]		160 and 200 Hz (24 dB/oct.)

VIDEO SECTION

Video Signal Level		1 Vp-p/75 ohms
S-Video Signal Level	Y	1 Vp-p/75 ohms
	C	0.286 Vp-p/75 ohms
Component Video Signal Level	Y	1 Vp-p/75 ohms
	Pb/Cb, Pr/Cr	0.7 Vp-p/75 ohms
Signal-to-Noise Ratio		60 dB
Monitor Out Frequency Response		
Composite/S-Video Signal		5 Hz–10MHz -3 dB
Component video Signal		5 Hz-60MHz -3 dB

TUNER SECTION

FM	50dB Quieting Sensitivity (1 kHz, 100% Modulation)		
		Mono	2 µV (17.3 dBf)
		Stereo	25 µV (39.2 dBf)
FM	Selectivity	400 kHz	70 dB
FM	Signal-to-Noise Ratio	Mono/Stereo/HD Radio	76/70/80 dB
FM	Harmonic Distortion (1 kHz)	Mono/Stereo/HD Radio	0.2/0.3/0.03%
FM	Stereo Separation (1 kHz)	Stereo/HD Radio	42/70 dB
FM	Frequency Response	Mono/Stereo	20 Hz–15 kHz +0.5/–2 dB
		HD Radio	20 Hz–18 kHz +0.5/–3 dB

GENERAL

Standby Power Consumption		Less than 0.2 W
Dimensions	(W x H x D)	17-1/8" x 6-3/4" x 17-1/4"
Weight		39.7 lbs.

RX-V4600 7.1-Channel Digital Home Theater Receiver

d-cinema Yamaha takes cinema digital.

CINEMA DSP DIGITAL

SILENT ™ CINEMA

• "d-cinema" is the slogan of Yamaha A/V products and technology, reflecting our focus on digital technology and our leadership in creating and refining digital home theater.

• Yamaha's unique technology for the creation of sound fields is capable of powerfully reproducing the three-dimensional environment that movie sound engineers aim to convey, in any audio format from monaural to the latest 6.1-channel digital surround. It is compatible with DVD and all other A/V sources.

Yamaha CINEMA DSP technology has received a patent in the U.S. (Patent No. 5,261,005).

• "Silent" is a trademark of Yamaha Corporation.

• Product designs and specifications are subject to change without notice.

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CREATING 'KANDO' TOGETHER

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