

Yamaha RX-A1010

MSRP: \$1,099.95



The RX-A1010 AVENTAGE AV Receiver features a large Two Line Front Panel display, with networking capabilities, DLNA 1.5 and Windows 7 certification, iPhone App compatibility, HD Radio with iTunes tagging, 8-HDMI inputs (one on front panel) and 2-HDMI simultaneous outputs with 3D and Audio Return Channel. Front panel USB direct digital connection for iPhone/iPod, on-screen GUI, HD Audio decoding with Cinema DSP 3D surround with or without Front Presence Speakers, Multi-point YPAO, SCENE PLUS, Zone 2 Video output (component, S-Video and composite), Receiver Manager software and RS-232C interface for custom installation.



- AVENTAGE AV Receivers: Designed to Deliver the Highest Levels of Audio Performance
- Aluminum Front Panel Offers Visual and Aural Benefits
- A.R.T. Wedge and symmetrical power amplifier layout
- Rigid chassis with additional bottom frames
- 7-channel powerful surround sound, 110W per Channel (8 ohms, 20 Hz-20 kHz, 0.06 % THD, 2 ch driven)
- Access to Internet Radio, Streaming Services and music files on PC
- AV Controller app for iPhone and iPad, etc and Android app available in the coming months
- 1080p-compatible HDMI: 8 inputs (1 on front) and 2 outputs
- Front panel USB Digital Connection for iPod and iPhone
- Advanced multi-language GUI on-screen display with album art
- YPAO sound optimization with multi-point measurement
- HDMI CEC with versatile control from AV Receiver remote control
- HD Audio decoding with CINEMA DSP 3D (17 DSP programs)
- Versatile Zone control

Specs

Extensive Connection	Multi-Channel Input	8ch
Amplifier Section	Rated Output Power (20Hz-20kHz, 2ch driven)	110W (8ohms, 0.06% THD)
Surround Sound Processing	Compressed Music Enhancer	Yes
	SILENT CINEMA / Virtual CINEMA DSP	Yes
	Dolby Pro Logic IIx	Yes
Audio Features	Bi-amp capability	Yes
	192kHz/24-bit DACs for all channels	Yes (Burr-Brown)
Video Features	Component upconversion	Yes
Extensive Connection	HDMI Input/Output	8 (front 1) / 2 (Simultaneous)
	Network Port	Access to Pandora, Rhapsody, SIRIUS Internet Radio, Napster and vTuner Internet Radio services. Also DLNA 1.5 and Win 7 Compatible.
	Front AV Input	HDMI, USB, Analog Audio, Optical, Composite and S-video
	Digital Audio Input/Output: Optical	4 (front 1) / 1
	Component Video Input/Output	4 / 1
	Preout	7.2ch
	Headphone Output	1
Amplifier Section	Rated Output Power (1kHz, 2ch driven)	120W (8ohms, 0.9% THD)
	Dynamic Power per Channel (8/6/4/2 ohms)	135/165/210/280 W
Surround Sound Processing	Virtual Presence Speaker	Yes
	Dolby TrueHD	Yes
	DTS-HD Master Audio	Yes
Audio Features	Adaptive DRC (Dynamic Range Control)	Yes
Video Features	HDMI 3D passthrough	Yes
	HDMI upscaling	Yes (Analog to HDMI / HDMI to HDMI)
Extensive Connection	HDMI CEC	Yes (SCENE, Device control)
	USB Input	iPod/iPhone, USB Memory, Portable Audio Player
	Dock Port	1 (for optional YDS-12, YID-W10 or YBA-10)
	Digital Audio Input/Output: Coaxial	3 / 0
	Analog Audio Input/Output	10 (front 1) / 1
	Composite Video Input/Output	5 (front 1) / 1
Tuner Section	FM/AM Tuner	Yes
	SIRIUS Satellite Radio Ready	Yes
User Interface	On-screen display	Advanced Graphical User Interface with Status
Amplifier Section	Channel	7.2

Surround Sound Processing	CINEMA DSP	Yes (3D)
	DSP Programs	17
	Dialogue Lift	Yes
	Dolby Digital Plus	Yes
Audio Features	Pure Direct	Yes
	Initial Volume & Maximum Volume Setting	Yes
	Audio Delay	Yes (0-250 ms)
Video Features	HDMI Audio Return Channel	Yes
	Deep Color/x.v.Color/24Hz Refresh Rate /Auto Lip-Sync	Yes
User Interface	SCENE	SCENE PLUS (12 sets)
	iPhone App Control	Yes
	Web Browser Control	Yes
	Remote Control Unit	Yes (Preset)
Zone Control	Zone 2 Audio Output	Preout
	Powered Zone	Zone 2
	+12V Trigger Output	2
	Remote (IR) Input/Output	1 / 1
General	Dimensions (W x H x D)	17-1/8" x 7-1/8" x 17"
	Weight	33.3 lbs.
	Standby Power Consumption (IR only)	0.3 W
Audio Features	YPAO multi-point measurement	Yes
	A.R.T. Wedge	Yes
Extensive Connection	Phono Input	Yes
	S-Video Input/Output	5 (front 1) / 1
Tuner Section	HD Radio Compatibility	Yes
Zone Control	Zone Video Output	Component/S/Composite
	RS-232C Interface	Yes
	Party Mode	Yes
General	Auto Power Down	Yes
	Shipping Dimensions (W x H x D)	20" x 11-1/4" x 22-1/8"
	Shipping Weight (lbs.)	39.68 lbs.
Detachable Power Cord		Yes
Front Panel		Aluminum Front Panel

Features

AVENTAGE AV Receivers: Designed to Deliver the Highest Levels of Audio Performance

The AVENTAGE line of high-performance AV receivers is based on the audio design concept of providing a massive, full-bodied sound for movie sound effects and the accurate reproduction of music sources. By expertly harmonizing traditional and advanced technologies, every factor that affects sound quality, from materials and parts to construction, layout, vibration damping (unique A.R.T. Wedge foot) and “fine-tuning” the sound, is handled with no other thought than to achieve the best possible audio quality. As a result, every AVENTAGE model has the ability to reproduce the most subtle details of high-definition sound, so that listeners can enjoy a truly high-class sound studio experience at home.

A.R.T. Wedge Helps to Ensure that Vibrations Do Not Affect Sound Quality



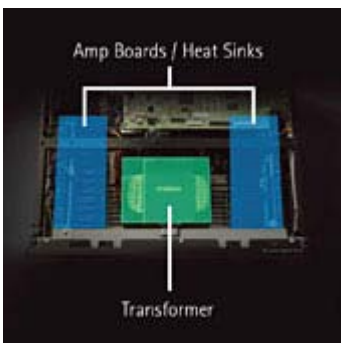
The A.R.T. (Anti-Resonance Technology) Wedge is a fifth foot in the center of the unit. It dampens vibrations from the power transformer, power transistors and heat sinks, as well as vibrations that might be caused by the sound from the speakers. This elimination or reduction of vibration provides an audible increase in sound quality throughout the AVENTAGE Series.

Aluminum Front Panel Offers Visual and Aural Benefits



All of the AVENTAGE components feature the same sleek, clean design, with an elegant aluminum front panel and silky touch volume/selector knobs. The aluminum front panel is used to effectively shield sensitive circuitry from external noise and electronic energy generated by dimmer switches, fluorescent lighting, video monitors and so on. This ensures optimum sonic performance in the widest range of installation environments.

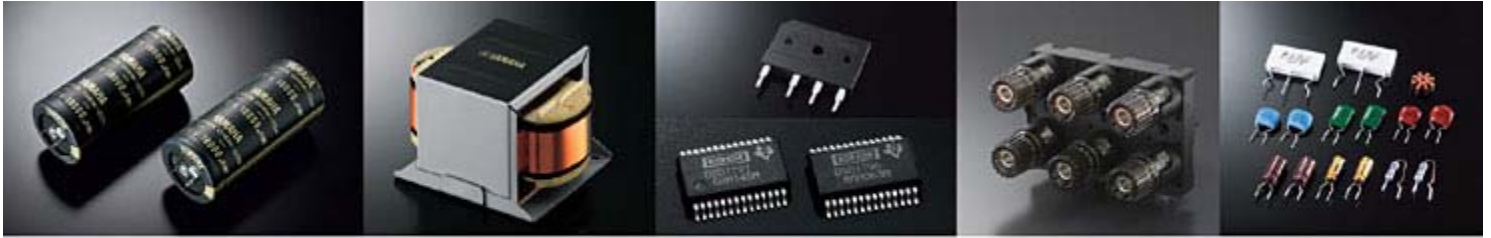
Symmetrical Power Amplifier Layout



This is just one of the many design details that all combine to create a superior receiver. The interior of the unit has been precisely planned, circuit-routed and built so that the left and right channels are physically and electrically isolated. This naturally maximizes channel separation, but also greatly improves signal to noise ratio and helps to achieve a wide, open sound stage.

High Quality Parts Allow Sound Tuning for Optimum Performance

Each part inside of an AV receiver affects the sound quality. For the AVENTAGE models, extra time was spent to find and develop optimized parts, which were then extensively tested in prototype units. This testing process allowed our sound technicians to effectively “tune” the receiver’s sound to achieve the highest performance possible.



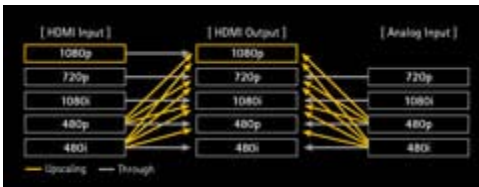
High Grade Parts (left to right): Custom-made extra large block capacitors [RX-A3010/RX-A2010], extra-large power transformer, schottky barrier diode and Burr Brown DACs (DSD1791/DSD1796) [RX-A3010], large-size speaker terminals, and high quality parts.
* Some of the parts shown are not used in this model.

HDMI with 3D and Audio Return Channel



3D means the receiver can handle 3D signal data. The Audio Return Channel function enables data to be sent and received via the same HDMI cable, so you can hear the sound from the TV via a single HDMI cable, with no need for an extra optical cable.

Analog and HDMI Video Upscaling to Full HD 1080p



This AV Receiver will upscale video signals up to 1080p. HDTVs capable of 720p, 1080i or 1080p resolution can provide more detailed picture.

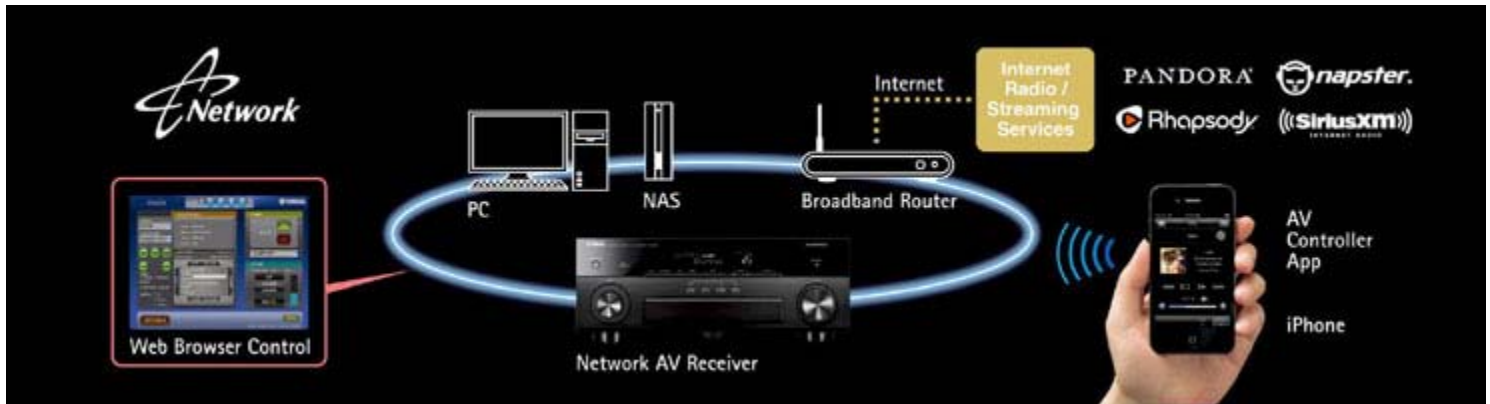
High Quality Video Processing with Edge Adaptive Deinterlacing



In ordinary deinterlacing, pixels in areas of movement are interpolated by upper and lower ranges. This causes jaggies in diagonal lines. Edge adaptive deinterlacing detects the direction of the line and interpolates the pixels optimally.

Network Functions

This AV receiver provides a variety of network functions that enable you to access more sources and also enhance operation. You can connect the receiver to a PC to enjoy Internet Radio, Pandora, Rhapsody, Sirius XM and Napster, and use a Web Browser Control. The AV Controller app lets you control various functions from your iPhone or iPad, etc.

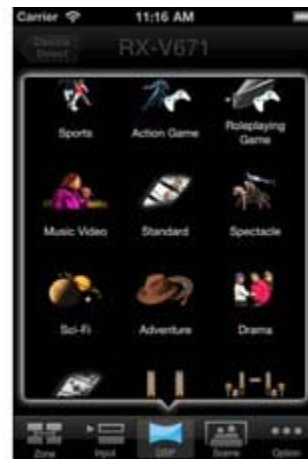


AV Controller App for Easy, Convenient Operation

The AVENTAGE AV Receivers let you use the Yamaha AV Controller app, a free download from the iTunes App Store to control power on/off and volume, select input and DSP modes and operate other functions from an iPhone, iPad and other devices. An Android app will be available in the coming months.



Input Select



DSP Mode Select



AV Receiver Control

USB Digital Connection for iPod and iPhone on the Front Panel



A USB port on the front panel allows convenient connection of an iPod/iPhone, which also charges when connected. Because the digital signal from the iPod/iPhone is transmitted directly to the AV receiver, there is no signal loss or interference, so you enjoy the best possible sound quality. In addition, you can use the receiver's remote control unit to operate the iPod/iPhone music playback functions.

YPAO Sound Optimization with Multi-Point Measurement



YPAO analyzes the room acoustics and adjusts various audio parameters for optimum sound from your listening position, and lets you set up to eight positions. It's like having a professional installer calibrate your system.

SCENE PLUS for Extra-convenience



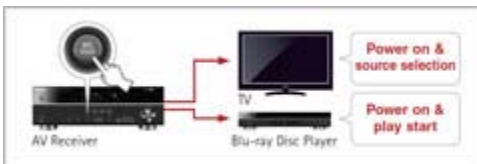
SCENE Button on Remote Unit



SCENE Menu on GUI

The SCENE PLUS function simplifies operation by providing one touch power-on along with selection of the desired source and the appropriate DSP programs. SCENE PLUS offers a choice of 12 SCENE selections, four of which can be assigned to the second zone in a multi-zone system. SCENE PLUS can be selected from the front panel, remote control, on-screen GUI and even from the iPhone app.

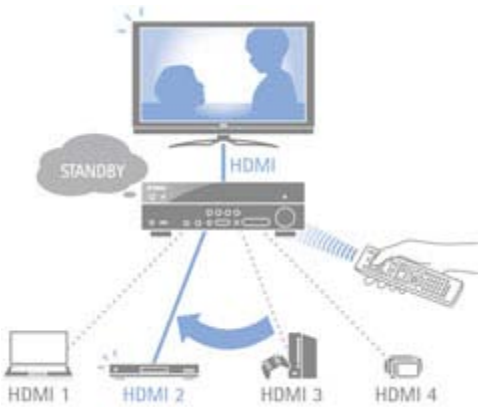
HDMI CEC for Easy Operation



Another benefit of HDMI is the availability of CEC (Consumer Electronics Control) functionality. When the unit is connected to a CEC compatible TV, it will turn on and off together with the TV, and you can use the TV remote to control the volume. CEC also provides advanced functionality with other components. For example, you can use the receiver's remote unit to control player functions like Skip and Stop.

*All connected devices must be HDMI CEC compatible. Some CEC compatible TVs/players may not work.

Input Selection in HDMI Standby Through Mode



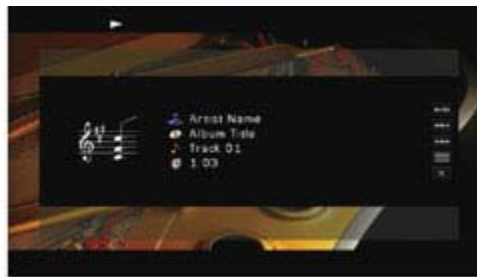
When the AV receiver is in HDMI Standby Through mode, the input source (Blu-ray™ Disc player, game console, etc.) for viewing on the monitor can be changed via the remote control. There's no need to turn on the AV receiver in order to switch sources.

Advanced On-Screen GUI

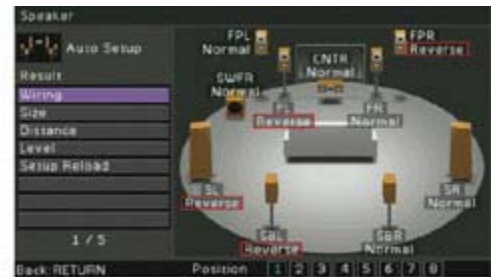
Yamaha's latest Graphical User Interface (GUI) has a high resolution display with clear, easy-to-use menus and also includes a selectable Status Bar that shows input source, volume level, DSP mode and audio format. The GUI provides a choice of six languages: English, French, German, Japanese, Russian and Spanish, and can be displayed over both normal and 3D pictures.



On Screen Menu



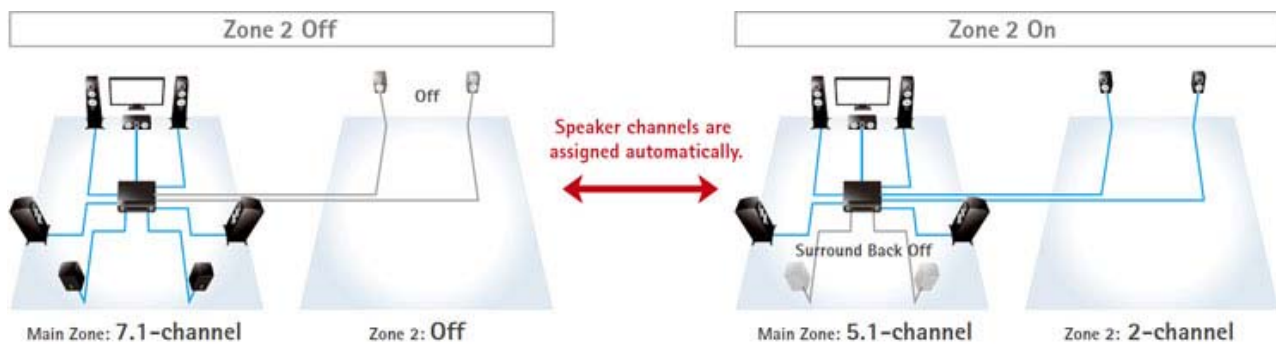
Content Window



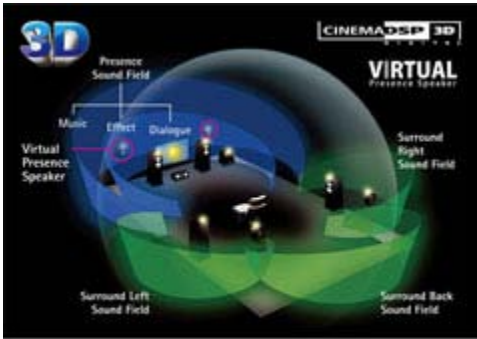
Speaker Setup

Intelligent Amp Assign

Intelligent Amp Assign automatically assigns amplifier channels to certain speakers, depending on what functions are selected. For example, in a 7.1-channel system, when Zone 2 is off, all 7.1 channels will be used in the Main Zone. However, when Zone 2 is on, power to the two Surround Back channels will be directed to the two speakers in Zone 2, and the Main Zone will receive 5.1 channels of power. Similarly, when CINEMA DSP 3D is on, the two Front Presence speakers will be powered and not the two Surround Back speakers. When CINEMA DSP 3D is off, this situation is reversed. Thanks to Intelligent Amp Assign, there's no need to switch the speaker cables on the rear of the receiver—one more way Yamaha makes your life a little easier.

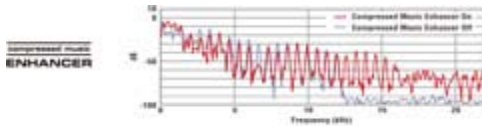


HD Audio with CINEMA DSP 3D and Virtual Presence Speaker



CINEMA DSP 3D provides a wide, high and dense sound field. HD Audio format decoding lets you enjoy HD Audio sources. Virtual Presence Speaker delivers 3-dimensional sound without actual use of presence speakers. The actually measured sound field data contain the information of the height of the sound images. CINEMA DSP 3D mode achieves the reproduction of the accurate height of the sound images so that it creates the accurate and intensive stereoscopic sound fields in a listening room.

Compressed Music Enhancer



When music is encoded into a digitally compressed format like MP3, the frequency response suffers. Yamaha's Compressed Music Enhancer employs sophisticated digital signal processing using exclusive algorithms to restore what was lost, so the music always sounds the way it should.

Adaptive DRC (Dynamic Range Control)



Adaptive DRC automatically adjusts the dynamic range of the sound according to the volume level. This ensures that you hear clear dialogue and vocals, and all sound effects at comfortable levels. There is no need to adjust the volume level as you listen; everything from whispers to big explosions will be heard clearly and comfortably at the same volume setting. It also tones down loud TV commercials, and is ideal for low-volume, late-night listening, when you do not want to disturb others.

Versatile Zone Control

- Zone 2 on/off and control on front panel
- Zone 2 video assign (Component, S-Video, Composite)
- System Backup / Recovery function
- Multi-channel output in main Zone plus 2-channel HDMI output in a second Zone
- Zone mono, Zone volume, tone controls and balance
- Party mode

Low Standby Power Consumption



Yamaha makes its receivers eco-friendly with a low standby power consumption of 0.3W (2W in HDMI Standby Through mode).

Eco-Friendly Design with Selectable Auto Power Down



Auto Power Down lets you save energy by selecting to turn off the power after 4, 8 or 12 hours.

Optional Accessories for Added Convenience



Yamaha optional docks make it easy to enjoy your favorite music from your iPod or iPhone, with or without cables. Select from of the following models:

yAired Wireless Dock System YID-W10

Universal Dock for iPod/iPhone YDS-12

Bluetooth® Wireless Audio Receiver YBA-10

Notable Audio Features

- 7-channel powerful surround sound
 - 110W per Channel (8 ohms, 20 Hz-20 kHz, 0.06 % THD, 2 ch driven)
 - 120W per Channel (8 ohms, 1 kHz, 0.9 % THD, 2 ch driven)
- HD Audio format decoding: Dolby TrueHD and DTS-HD Master Audio; Dolby Digital Plus and DTS-HD High Resolution Audio
- Heat sink with anti-vibration and anti-thermal properties
- Rigid chassis with additional bottom frames
- DAC on Pure Ground circuitry • High speed thermal feedback power amplifier
- Low jitter PLL circuitry helps optimize sound imaging
- Detachable Power Cable for easier installation (also allows cable upgrade)
- Assignable amplifiers for bi-amp connection
- Intelligent assignable amplifiers for Surround Back - Front Presence or Zone 2

Notable Video Features

- 1080p-compatible HDMI: 8 inputs (1 on front) and 2 outputs (simultaneous)
- Supports Deep Color (30/36 bit), x.v.Color, 24Hz Refresh Rate and Auto Lip-Sync compensation
- Multi-cadence (incl. 3-2 pull-down) detection

Notable Advanced Features

- HDMI front panel input for devices such as camcorders and digital cameras
- DLNA 1.5 certified
- HD Radio™ with iTunes tagging
- SIRIUS Satellite Radio ready
- Flexibly assignable component video and optical/coaxial (except Video Aux) inputs allow a wide range of source components
- iPod/iPhone compatibility with optional YDS-12 Universal Dock
- iPod/iPhone song titles displayed in English and Western European languages on the front panel and on-screen display
- Wireless connection for iPod/iPhone with optional YID-W10
- Dialogue Lift
- Preset remote unit
- Background video feature (for tuner, Net, USB and SIRIUS Satellite Radio)

Notable Surround Realism Features

- Channel expandability with external amplifier (7-channel expandability, bi-amping)
- Adaptive DSP Level

Technology

3D



Yamaha receivers displaying this icon support 3D HDMI pass-through on HDMI from 3D-compatible Blu-ray, games and broadcast devices to 3D-compatible HDTVs. 3D provides a more engaging audio and video consumer experience when using a 3D-capable products and 3D media content. Note that special eyewear may be required for viewing 3D content.

Pandora Internet Radio



With Pandora you can explore a vast trove of music to your heart's content. Just drop the name of one of your favorite songs or artists into Pandora and let it go. It will quickly scan its entire world of analyzed music, almost a century of popular recordings - new and old, well known and completely obscure - to find songs with interesting musical similarities to your choice. Then sit back and enjoy as it creates a listening experience full of current and soon-to-be favorite songs for you.

Network



Yamaha AV Receivers are the perfect control centers for a home entertainment network. Their network functions include support for FLAC 96/24 (high quality lossless format), compatibility with Windows7 and DLNA 1.5 (for finding and playing digital sources) and web browser control from a PC or PDA.

DLNA CERTIFIED



DLNA certification ensures a device has been tested and proven compatible with various CE, PC and mobile devices designed according to the DLNA Interoperability Guidelines. Products certified by DLNA will bear a logo that will give consumers peace of mind that the device they are purchasing has undergone rigorous testing and conforms to the Interoperability Guidelines.

Windows7



The Microsoft Windows certification program independently confirms that products meet or exceed a standard set of design specifications for program compatibility with the Windows operating system. Certified programs are proven to be designed and implemented according to a common set of design criteria, thereby ensuring the end user an experience consistent with other Windows designed applications.

Rhapsody



Listen all you want. A Rhapsody subscription lets you listen to anything and everything in the catalog — currently over 10 million songs. With a subscription, you don't have to worry about paying for individual songs, ripping CDs or managing files. You can just sign in and start listening.

SiriusXM InternetRadio



Don't miss a minute of SiriusXM's unmatched lineup of original, exclusive programming with the perfect out-of-vehicle companion to SiriusXM in your car. At home, in the office, at the airport, or in the gym, SiriusXM Internet Radio makes it easy to take over 120 channels of the best commercial-free music and biggest talk personalities everywhere you go.

NAPSTER



Napster is a streaming digital music service that allows you to listen instantly to your choice of over 13 million full-length songs. With a Napster subscription plan, you can play unlimited full-length songs online from any connected computer and an increasing number of Internet-connected devices including this Yamaha product. You get near-limitless choice, and new music is automatically added every week. Think record store in your house, without having to store it all.

Dolby TrueHD



Dolby® TrueHD is Dolby's next-generation lossless technology developed for high-definition disc-based media. Dolby TrueHD delivers tantalizing sound that is bit-for-bit identical to the studio master, unlocking the true high-definition entertainment experience on next-generation discs. When coupled with high-definition video, Dolby TrueHD offers an unprecedented home theater experience that lets you enjoy sound as stunning as the high-definition picture.

DTS HD Master Audio



DTS HD-Master Audio: DTS-HD Audio delivers sound quality that matches the clear and vivid images of high-definition video. Blu-ray and HD-DVD discs deliver five times the video resolution of standard DVD and produce images with stunning realism. But that's only half of the story. You need incredible sound to complete the high definition experience and DTS-HD Audio provides the highest quality multi-channel sound possible. Movies come alive with sound as lifelike as the picture, and music becomes as real as a live performance.

HD Radio



HD Radio, the only digital broadcast system in America approved by the FCC, offers you crystal-clear, CD-quality sound via existing AM/FM radio bands. In addition, it gives you program-associated data and the ability to tune to multiple programs at the same dial position. Over 2,500 radio stations are in the fast lane upgrading to HD Radio broadcasting to reach 95% of America's population, and more than 230 stations are onair now.

SIRIUS READY



A Sirius-Ready audio system lets you access your favorite SIRIUS Satellite Radio entertainment, including 100% commercial-free music, plus sports, uncensored talk, comedy, exclusive entertainment, world-class news and more, directly through your audio system with the use of an optional SIRIUS Connect Home Tuner kit. This product has a simple connector that allows you to plug the SIRIUS Connect kit and use the controls of this system to access all the content you want. Subscription and SIRIUS Connect Home Tuner (SC-H1) are required and sold separately.

HDMI



HDMI (High-Definition Multimedia Interface) is the first and only industry-supported, uncompressed, all-digital audio/video interface. With the ability to deliver crystal-clear, all-digital audio and video via a single cable, HDMI dramatically simplifies cabling and helps provide consumers with the highest-quality home theater experience. HDMI can provide an interface between most audio/video sources, such as a set-top box, Blu-ray player, DVD player, or A/V receiver and a video monitor, such as a High Definition Television (HDTV), over a single cable.

Depending on the model of product, HDMI can support standard, enhanced, or high-definition video, plus multi-channel digital audio on a single cable. It can support all currently-available compressed audio formats (such as Dolby Digital and DTS) and most newer HDMI devices can support lossless digital audio formats like Dolby® TrueHD and DTS-HD Master Audio™.

(view the Specifications of each product for details on HDMI compatibility)

Zone2



This unit allows you to configure a multi-zone audio system. The Zone2 feature allows you to set this unit to reproduce separate input sources in the main zone and the second zone (Zone2). You can control this unit from the second zone using the supplied remote control.

USB



This unit is equipped with a USB port that allows you to enjoy WAV (PCM format only), MP3 and WMA audio files from a USB memory device (USB flash drive).

iPod Digital Connection



iPod digital connection capability.

iPod digital connection means that the digital signal from the iPod is transmitted directly to the system, minimising noise interference and allowing use of the DAC not in the iPod, but in the system. This results in more precise sound reproduction.

Made for iPod and iPhone



Look for the "Made for iPod and iPhone" logo to find electronic accessories designed to connect specifically to an iPod or iPhone and certified by the developer to meet Apple performance standards.

Made for iPod and iPhone (Docking Station)



The "Made for iPod and iPhone" combination logo indicates that the product is equipped to use an optional Yamaha Universal iPod/iPhone Dock that lets you connect your iPod or iPhone to this product. With the optional dock you can listen to your music and operate the iPod/iPhone via the product's remote control while at the same time charging the battery. Depending on your product's specifications, some will allow you to use the On-Screen Display feature on your video monitor to navigate your music. Some products can even allow you to view your photos and movies from your iPod/iPhone on your video monitor (view the Specifications of each product for iPod/iPhone playback compatibility)...

Bluetooth



The Bluetooth® logo indicates that the product is equipped to use the optional YBA-10 Bluetooth® Wireless Audio Receiver that lets you connect the dock to the receiver and supports A2DP audio streaming. With the optional YBA-10 Bluetooth dock, you can enjoy music wirelessly from Bluetooth enabled mobile phones, portable devices, or personal computers. (view the Specifications of each product for Bluetooth® dock compatibility)

CINEMA DSP 3D mode



The actually measured sound field data contain the information of the height of the sound images. CINEMA DSP 3D mode achieves the reproduction of the accurate height of the sound images so that it creates the accurate and intensive stereoscopic sound fields in a listening room.

VIRTUAL Presence Speaker



Virtual Presence Speaker mode provides the 3D sound without front presence speakers. Tell customers that the best way to enjoy 3D movies at home is with sound from a Yamaha AV Receiver equipped with CINEMA DSP 3D.

SILENT CINEMA



SILENT CINEMA makes it possible to hear large-scale surround sound through ordinary headphones! This is a variation of CINEMA DSP technology that Yamaha developed to let you listen in private to movies and other multi-channel sources for hours without listening fatigue. Virtual CINEMA DSP lets you enjoy the effects of CINEMA DSP surround sound without using surround speakers (handy for use in custom installations where some rooms don't have surround speakers). It can be used with the front / center / presence speakers or even with just the two front left and right speakers.

Compressed Music Enhancer



Yamaha employs sophisticated digital signal processing with exclusive algorithms to enable playback that improves the performance of compressed music formats, including MP3 and WMA. With the Compressed Music Enhancer, highs and especially lows are richer and smoother, bringing music back to life to be as close to the original as possible.

SCENE – A NEW LEVEL OF OPERATING EASE



Four SCENE buttons make operating the receiver easier than ever. They are initially set to default settings for DVD Viewing, Disc Listening, TV Viewing and Radio Listening. Pressing a SCENE button automatically launches a number of operations that initiate play of the source controlled by that button. Other SCENE settings are also available, such as iPod Listening, XM Listening, TV Sports Viewing and Action Game Playing. Browsing and selecting the settings is quickly accomplished by changing Input via the front panel and watching the on-screen display. The settings can be selected for one-time use, or they can replace the original default settings. The SCENE names can be changed also.

YPAO Automatic System Calibration



Yamaha's YPAO system uses a small microphone and sophisticated equalization to automatically set the best sound for any room, no matter where the speakers are. First it checks the speaker connections and phase of each speaker. Then it sends out tones which are captured by the microphone to analyze the room acoustics and sets a variety of parameters, such as the speaker size, the distance of the speakers and even the sound pressure level, etc. Until it achieves the best sound conditions for your room and you don't have to do anything!