

Yamaha takes receiver evolution to a new peak with an enormous range of exciting capabilities.



Unprecedented Audio Performance

- Triateral Sound Development for the HD Audio era
- Discrete 11-channel amplifier configuration delivering a total of 1,180W (140W x 7 + 50W x 4)
- Digital ToP-ART and High Current Amplification with high quality and custom-built audio-grade parts and devices used throughout
- Super Stable Chassis design

High Sound Quality

Preamplifier Stage

- New Pure Direct for lossless audio formats also
- Pure Ground DAC Concept
- High quality preamplifier block design
- Low-Jitter PLL and Digital Clock Circuits
- High quality headphone amplifier circuit

Power Amplifier Stage

- All-Channel Current Feedback Circuit
- Hybrid Low Noise Power Supply
- Symmetrical Layout and New Power Circuit Layout
- Low-impedance, minimum loop print pattern
- Thick aluminum panels and large, heavy feet

High Picture Quality

- Latest HDMI 1.3a specification supports Deep Color (30/36 bit) transmission, xvYCC color space, 120Hz and 24Hz Refresh Rates and Auto Lip-Sync compensation
- Analog and HDMI digital video signal upscaling to Full HD 1080p and downscaling to 480p format

- Analog video to HDMI digital video upconversion capability
 - 4 Component Video in and 2 monitor outs

Advanced Features

- Network Receiver Capabilities
 - Network port to connect a PC and Yamaha MCX-2000 or access the Internet Radio via LAN
 - Compatible with Windows Vista & Windows Media Player 11 as well as Windows Media Connect
 - PlaysForSure network device support
 - 2 USB ports (1 on front, 1 on rear) to connect USB memory devices or portable audio players
 - Supports MTP devices and Mass Storage Class devices
 - Supports 500mA power from USB port
 - Supports USB HDD (FAT32 format, up to 2TB)
- iPod compatibility via optional Yamaha Universal Dock YDS-10
- Advanced YPAO (Yamaha Parametric Room Acoustic Optimizer) for automatic speaker setup
 - Multiple point measurement feature for multiple listening positions
 - Specialized parametric equalizer for standing wave reduction
 - Speaker angle measurement feature for optimized CINEMA DSP
 - YPAO Easy Starter
- HD Radio™ digital broadcast reception capability

- XM ready with XM HD Surround powered by Neural-THX Surround Decoder
- Multiple Subwoofer connection capability
 - 6 or 8-channel additional input jacks for discrete multi-channel inputs
- 10 System Memories for Main Zone and 4 System Memories for other each Zone
- GUI on-screen display of six languages: English, French, German, Spanish, Russian and Japanese

Versatile Zone Control

- Intelligent assignable amplifiers: bi-amping and multi-zone control (Zone 2/Zone 3/Zone 4)
- Preamplifier Mode
- Zone 2 video output (component and composite) with OSD capability
- Zone 2 digital audio output (coaxial)
- Party Mode
- Display of song data and radio information on zone OSDs
- Sleep timer and mute level for all zones
- Zone Mono
- Flexible and assignable dual +12V trigger outs

Surround Realism

- New CINEMA DSP HD³ creates lush, dense, accurate sound field
- THX Ultra2 Plus surround modes
- Improved Compressed Music Enhancer
- Adaptive DRC (Dynamic Range Control) and DSP effect level controlling capability
 - SILENT CINEMA and Virtual CINEMA DSP

Unprecedented Audio Performance

Trilateral Sound Development

Yamaha set ambitious goals for the sound performance of the RX-Z11, and succeeded in achieving them through a trilateral sound development program. The three aspects of the program were technology, engineering and artistic sensitivity.

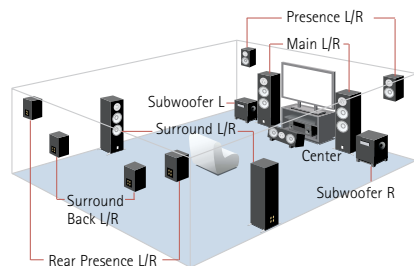
Technology refers to the technologies that enable us to create the level of sound quality suitable for total audio enjoyment in the present digital audio era. Engineering refers to upgrading functions and specifications, which are the foundation of the overall quality. And of equal or perhaps even greater importance is artistic sensitivity, which is how we go beyond the specifications to create, tune and refine the sound based on the musical acuteness of our most experienced audio technicians.

The result is that the RX-Z11 achieves an unprecedented level of audio performance. Sound that is not only clear and high resolution, but finely textured. Able, for example, to realistically convey the sound of light rain, rustling cloth or breaking glass. Surround sound that is not only spacious but has a sense of magnificence. Sound that is not only well localized, but sharply focused in every area of the immense CINEMA DSP HD³ sound field. And finally, sound with an optimum balance among the three key elements of resonance, deep bass and responsiveness, for best compatibility with all types of sources.

11.2-Channel High Density Surround Sound (140W x 7 + 50W x 4)

The RX-Z11 delivers 140W x 7 channels plus 50W to the four presence and rear presence channels. It also allows the simultaneous use of two subwoofers (hence 11.2 channels). In addition to Yamaha's latest CINEMA DSP HD3 technology for high density, incredibly detailed surround sound, it provides extensive zone customization functions, enabling the 11 amp channels to be allocated to zones 2, 3 and 4 in various configurations.

RX-Z11 11.2-Channel Speaker Configuration



Digital ToP-ART and High Current Amplification

Yamaha's Digital ToP-ART design concept ensures that the receiver is fully capable of handling the transmission of high volume digital sound data at speeds up to 192kHz. The interior layout thoroughly isolates the digital, analog and video sections and provides the shortest



- 1 Volume IC JRC NJM1194 (left), Burr Brown audio DAC (DSD1796, center) and Op amp LM4562 (right)
- 2 High efficiency heat sink
- 3 Custom-made 27,000µF block capacitors
- 4 Extra-large 22lbs. power transformer
- 5 Large-size speaker terminals
- 6 Schottky barrier diode

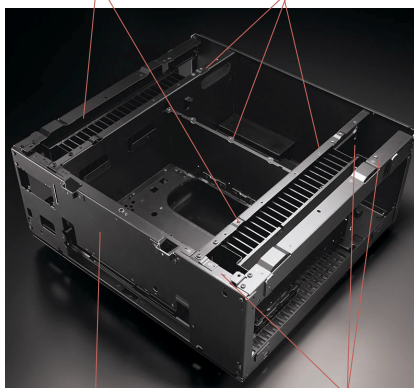
possible signal routes. To achieve the quality demanded by the latest lossless compression formats received via HDMI bitstream transmission, circuit board designs were radically revised and parts selection was reevaluated. The RX-Z11's superior parts include Burr-Brown DSD1796 DACs, an op amp, custom-made 27,000µF block capacitors and Schottky barrier diodes. A Variable Volume Control helps provide the best possible S/N ratio. High Current Amplification circuitry achieves high current power with low impedance for superior amplifier performance.

Super Stable Chassis Design

The internal chassis design uses an ultra-rigid Rahmen structure, which is a series of H-shaped frames. This rectangular structure secures and isolates the parts sections, while reducing vibration to a negligible amount. The external chassis walls are thick (5/8") and heavy.

High efficiency heat sinks

H-shape frames to hold heavy and big power transformer



5/8" super stable chassis

Rahmen structure (series of rectangle frames)

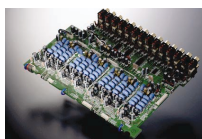
High Sound Quality: Preamplifier Stage

New Pure Direct Concept

For the RX-Z11, Yamaha has upgraded its popular Pure Direct feature. It now provides higher sound quality from lossless audio formats digitally transmitted via HDMI, while still ensuring optimum quality from CD and analog audio sources. It allows the enjoyment of two-channel CD output, multi-channel Super Audio CD and DVD-Audio output, and even Blu-ray, HD-DVD and other HD sources.

Pure Ground DAC Concept

The DACs, vital determinants of digital audio quality, are placed on the analog circuit board, preventing the large ground potential differences that can occur when the digital and analog sections are far apart. Furthermore, the DACs are connected directly to the power supply to avoid degradation of low level signals. This helps to maximize both two-channel and multi-channel audio performance.



Preamplifier Circuit Board

High Quality Preamplifier Block Design

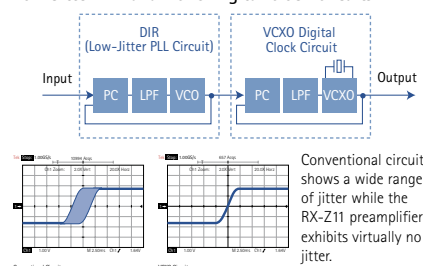
The printed circuit boards are located very close to each other. This has the advantages of minimizing signal paths, shortening signal loops and improving noise isolation from other circuits.



Low-Jitter PLL and Digital Clock Circuits

The preamplifier stage incorporates both a low-jitter PLL circuit and a VCXO digital clock circuit, significantly reducing jitter from digital inputs so sound processing can be accomplished without being affected by jitter. This is particularly effective in improving the sound quality of digital signals that are input via HDMI.

Low-Jitter PLL and VCXO Digital Clock Circuits

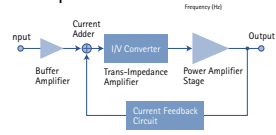
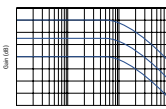


High Sound Quality: Power Amplifier Stage

All Channel Current Feedback Circuit

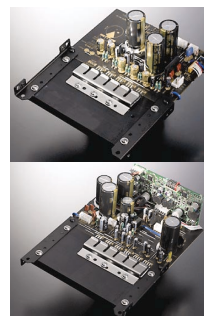
The power amplifier uses current rather than voltage for feedback in all channels. Because there is virtually no phase shift, phase compensation can be kept to a minimum. This contributes to the RX-Z11's excellent transient response, allows frequency response to remain unchanged even when the gain changes, and creates a warmer, texture-rich sound.

Current Feedback Frequency Response/ Principle



Hybrid Low Noise Power Supply

A highly efficient DC-DC converter and extra-large transformer is used for the digital circuit, which requires high current input, and a low noise power supply circuit for the analog audio circuit. An independent current power path is provided for the speaker relays and display.



Digital power circuit board (top) and analog power board (bottom)

Symmetrical Layout and New Power Circuit Layout

The heavy power transformer (over 22lbs.!) is in the center with the heat sinks on either side to ensure equal weight distribution. The power circuit layout separates the video and digital audio section from the analog audio section to eliminate adverse influences, and distances between circuits and power supplies were shortened to avoid high current loop problems.

Thick Aluminum Panels and Large, Heavy Feet

Thick aluminum panels are used throughout to prevent vibration and maintain high performance audio reproduction. The large, heavy feet also serve to dampen external vibrations.



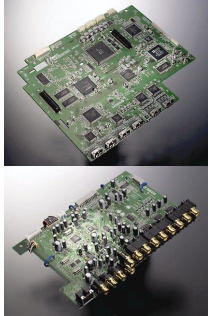
Ultra rigid feet and large twin-fan (3-5/8") cooling system

High Picture Quality

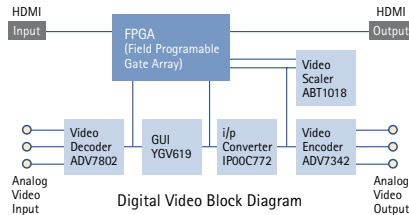
HDMI 1.3a Compatibility

The RX-Z11 is compatible with the newest version of the HDMI standard, 1.3a, providing the benefits of Deep Color (30/36bit) and the xvYCC color standard. Digital video and audio signals can be transmitted via a single HDMI cable and it accepts the lossless audio formats Dolby TrueHD and DTS Master Audio. There are five HDMI inputs, one of which is on the front panel, as well as two HDMI outputs that allow images to be simultaneously displayed from two devices, such as a flat panel monitor and a projector. HDMI 1.3a means the RX-Z11 can handle the high 1080p/24Hz resolution of Blu-ray Discs, and also provides an Auto Lip-Sync function that automatically adjusts the lag between video and audio and a double speed Refresh Rate of 120Hz.

HDMI™

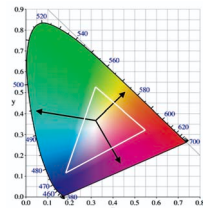


Digital video circuit board (top) and analog video board (bottom)



xvYCC Color Space

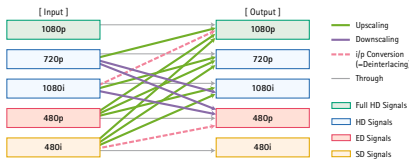
When you use the RX-Z11's HDMI outputs to transmit video signals, you enjoy spectacular color performance. One reason is that HDMI 1.3a uses a new color standard called xvYCC, which supports 1.8 times as many colors as previous HDTV signals. This expanded range of colors means that HDTVs can display images with colors that are far more natural and vivid than ever before.



Analog and HDMI Video Upscaling to Full HD 1080p

The RX-Z11 permits enjoyment of full HD video created by upscaling signals up to 1080i/720p

HDMI Video Upscaling (both analog and digital inputs)



that are input via analog video to 1080p; it can also downscale these signals to 480p, allowing the audio signal suited to the monitor to be output vertically without restriction. Digital signals input from HDMI can be similarly up and downsampled, so optimum images can be selected from the HD output from Blu-ray Disc players or HD-DVD players. It also performs high precision processing with two engines: a high performance i/p converter with 10bit calculation capability and a Scaler made by Anchor Bay Technologies.

Advanced Features

Network Receiver Capabilities

Like other Yamaha network receivers, the RX-Z11 can be connected to a PC or Yamaha MCX-2000, and can access Internet Radio via a LAN. It supports the LAN standby mode, allowing an external controller to send commands via an ethernet link. Two USB ports are provided, on the front and rear, with 500mA power support. It is compatible with PlaysForSure devices, Windows Vista, Yamaha Music CAST and various audio Codecs such as MP3, WMA, WAV and MPEG4 AAC.



Advanced YPAO Sound Optimization Auto Setup

Yamaha's YPAO Sound Optimization system analyzes the room acoustics and various system factors, then makes adjustments to provide optimum sound quality. In addition to the previous adjustments for speaker size, distance and wiring, plus equalization and level, this Advanced YPAO has four new capabilities. The first is measurement at multiple locations (up to eight). It does not average the results but performs analysis weighted in accordance with the state of each location to calculate compensation values. This results in a larger "sweet spot" at the listening position. The second is the use of parametric equalization to cancel the effects of standing waves, which degrade low range response. The third is speaker angle measurements to optimize CINEMA DSP effects. And the fourth is an Easy Starter feature that activates YPAO when the microphone is inserted and the Enter button is pressed, with information shown on the display.

YPAO



Oil-Damped Hidden Control Panel includes HDMI interface, USB port, Aux input terminals with S-Video and optical digital, Main/Zone 2/Zone 3/Zone 4 power on/off switches, rec out/Zone 2 selector, YPAO optimized microphone jack, and more.

38 Programs

Compatible Decoder Straight

- Dolby Digital
- Dolby Digital EX
- Dolby Digital Plus
- Dolby Digital TrueHD
- DTS Digital Surround
- DTS 96/24
- DTS-ES Matrix 6.1
- DTS-ES Discrete 6.1
- DTS-HD High Resolution Audio
- DTS-HD Master Audio
- 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
- Neural-THX
- Circle Surround II Music
- Circle Surround II Cinema

HiFi DSP Programs 20

- Hall in Munich A
- Hall in Munich B
- Hall in Frankfurt
- Hall in Stuttgart
- Hall in Vienna
- Hall in Amsterdam
- Hall in USA A
- Hall in USA B
- Chamber
- Church in Tokyo
- Church in Freiburg
- Church in Royaumont
- Village Gate
- Village Vanguard
- The Bottom Line
- Cellar Club
- The Roxy Theatre
- Warehouse Loft
- Arena

LIVE/CLUB

STEREO 11 Channel Stereo

CINEMA DSP Programs 13

- Standard
- Spectacle
- Sci-Fi
- Adventure
- Drama
- Mono Movie
- Sports
- Music Video
- Recital/Opera
- Pavilion
- Disco
- Action Game
- Roleplaying Game

DSP Program Total 33

THX Programs 5

- Ultra2 Cinema
- Cinema
- Surround EX
- Music
- Game

Surround Program Total 38

YDS-10 Universal Dock for iPod

The optional YDS-10 Universal Dock lets you connect your iPod to the receiver.

iPod not included



HD Radio™ Tuner

The RX-Z11 is equipped with an HD Radio™ tuner. HD Radio, the only digital broadcast system in America approved by the FCC, offers crystal-clear, CD-quality sound via existing AM/FM bands. In addition, it provides program-associated data and the ability to tune to multiple programs at the same dial position. The RX-Z11 can display HD Radio information on the front panel and on a monitor.

**XM Satellite Radio Ready with XM HD Surround**

The RX-Z11 is XM Satellite Radio ready, for reception of digital music, news, sports, talk and entertainment stations. It is also capable of receiving XM Satellite Radio with XM HD Surround powered by Neural-THX Surround, which also supports gaming and movies with 7.1-channel sound. To receive XM Satellite Radio, the XM Mini-Tuner and Home Dock including home antenna are required (sold separately).

**Main Remote Unit**

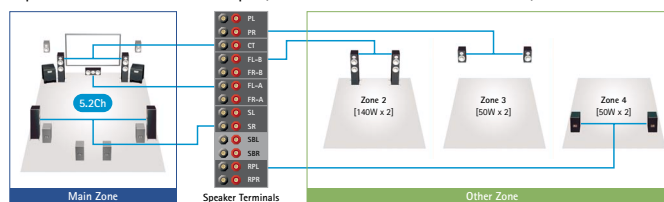
The remote unit has shock-sensor illuminated keys for easy operation in dim lighting — just pick it up and the keys light up. It features an improved key layout and an LCD window: the layout setup buttons (zone selector, macro mode, remote ID, remote setup and input select) are grouped around the LCD window. It also provides easy access to the System Memory.



Direct-access (macro-command, learning and preset capable) remote unit with shock sensor illuminated buttons (top) and simplified remote unit (bottom)

Versatile Zone Control**Super-Versatile Zone Control**

The RX-Z11 has extensive zone control capabilities, which are too numerous to explain

Super-Versatile Zone Control Example (5.2-Channel Main Zone + 3 Other Zone)

here. The most important point is that the 11.2 channels can be assigned in a wide variety of configurations to four zones. The presence, rear presence and EXT (by surround back amp) speaker terminals can be assigned to each zone. It provides Intelligent Power Amplifier Assignability (surround back amp assignment) and Independent Zone Amplifier Assignment with 7.2-channel main zone playback.

Also important is that Zone 2 can accept bitstream signals and also offers component video output and upconversion of composite and S-Video signals.

Some other convenient zone functions include: a Party Mode that permits audio BGM and video BGV play of the same input source in the main room and other three zones with one-button operation, a Zone OSD function that lets you browse information about the songs or AM/FM/XM/HD radio broadcasts that are playing, Zone Mono that provides compatibility with one-speaker or three-speaker installation environments, and a Preamplifier Mode that permits the entire 11-channel amplifier to be allotted for three-zone use (main zone powered by an external amp).

Dual +12V Trigger Outs

The GUI menu can be used to help set up two +12V trigger outs to synchronize zone power status and zone input source. This makes setting the +12V triggers easy for anyone.

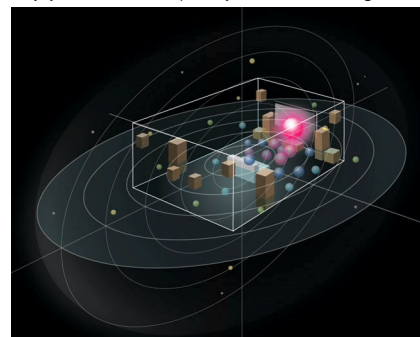
**Surround Realism****CINEMA DSP HD³**

The RX-Z11 introduces Yamaha's latest digital sound field processing refinement: CINEMA DSP



DSP board

HD³. As amazing as the systems on the RX-Z9 and RX-V3800 were, this system marks a further evolution of CINEMA DSP. It utilizes four Quad CINEMA DSP engines and permits lossless decoding of 192kHz signals, while providing 3D processing that gives the sound field an extra vertical dimension. In its full 11-channel configuration setting it adds two presence and two rear presence speakers, offering the enjoyment of a completely new sound stage.

**THX Ultra2 Plus Surround Mode**

THX Ultra2 Plus includes the newest THX Loudness Plus technology. It lets you enjoy five THX programs in the optimum condition, delivering a more accurate listening experience at any volume level.

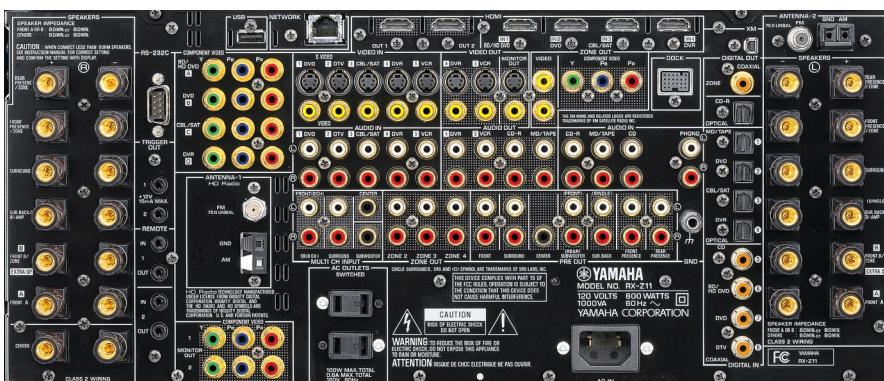
**Improved Compressed Music Enhancer**

This popular feature restores the sound of the original music from digitally compressed formats such as MP3. The RX-Z11 offers an improved version that processes multi-channel signals with a DSP algorithm, so all channels (rather than just two) are enhanced, for more accurate reproduction and a more expansive sound.

**Main Specifications**

Min. RMS Output Power (8 ohms, 20 Hz–20 kHz, 0.015% THD)	
Front Channels	140 W + 140 W
Center Channel	140 W
Surround Channels	140 W + 140 W
Surround Back Channels	140 W + 140 W
Presence Channels	50 W + 50 W
Rear Presence Channels	50 W + 50 W
Dimensions (W x H x D)	17-1/8" x 8-5/16" x 18-7/16"
Weight	79.3 lbs.

• HD Radio™ technology manufactured under license from iBiquity Digital Corporation. • The XM Satellite Radio service is only available in the 48 contiguous United States (not available in Alaska and Hawaii) and Canada. • XM name, XM Ready and related logos are registered trademarks of XM Satellite Radio, Inc. • Neural Surround is a trademark owned by Neural Audio Corporation, THX is a trademark of THX Ltd. • iPod is a trademark of Apple Computer, Inc., registered in the U.S. and other countries. • HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC. • Burr-Brown products are trademarks of Texas Instruments, Inc. • Simplay HD and Simplay HD logo are trademarks of Simplay Co. Ltd. • Powered by ABT™ is a trademark of Anchor Bay Technologies Inc. • Dolby and the double-D symbol are registered trademarks of Dolby Laboratories. • DTS is a registered trademark and the DTS logos, Symbols, DTS-HD and DTS-HD Master Audio are trademark of DTS, Inc. • Product designs and specifications are subject to change without notice.



Inputs	
HDMI*	5
USB*	2
XM Connect-and-Play	1
Dock Terminal for YDS-10	1
Optical Digital (Fixed and Assignable)*	5
Coaxial Digital (Fixed and Assignable)	4
S-Video*	6
Analog A/V / Audio*	6 / 4
Component Video (Fixed & Assignable)	4
Radio Antenna (HD/AM/FM)	1 / 1 / 1
Multi-Channel External Decoder	8ch

* Including front panel terminals.

Outputs	
HDMI	2
Optical Digital (Fixed and Assignable)	1
Coaxial Digital (Fixed and Assignable)	1
Analog A/V / Audio	2 / 2
S-Video	2
Component Video Monitor	1
S-Video / Composite Monitor	2
Speaker (without subwoofer)	11ch / 22 ter.
Subwoofer	2
Zone 2 Video Out (Component/Composite)	1 / 2
Zone 2 Audio Out (Optical/Coaxial)	1 / 1
Zone 3 Audio Out	1
Zone 4 Audio Out	1
Remote In/Out	2 / 2
Trigger Out	2
RS-232C	1

Others

"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.