Denon heos user manual

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The Denon AVC-X4700H uses two Griffin Lite dual core SHARC DSP chipsets that were previously introduced on the AVC-X8500H, and have a combined processing power of 10.8 billion floating point numerical computations per a second. It also has nine channels of built-in amplification that can deliver 200W (6 ohm, 1 kHz, THD 1%, 1ch Driven) or 125W (8 ohm, 20Hz-20kHz, THD 0.08%, 2chs Driven). It can also decode 11.2-channels, with two independent subs. The X4700 supports Dolby Atmos, DTS:X, Auro-3D, and IMAX Enhanced, and 11.2 for Auro-3D. There's Dolby Atmos Height Virtualisation, DTS Neural:X, DTS Virtual:X, and Auro-3D Auro-Matic up-mixers, all of which allow for cross up-mixing. Finally, there's D.D.S.C. HD Digital (32-bit), AL32 Multichannel Alpha Processing, Clock Jitter Reducer, and Compressed Audio Restorer. There's nine channels built-in with 11.2-channel processing for Dolby Atmos, DTS:X, Auro-3D and IMAX EnhancedThe X4700H features the Audyssey MultEQ XT32 room acoustic measurement system, with Audyssey MultEQ Editor App allows more advanced users to further customise their setup, including checking the speaker detection and room correction results, along with target options, midrange compensation, curve editor, MultEQ Filter Frequency range and Audyssey settings. Denon HEOS and AVR appsThe X4700 supports Denon's HEOS multi-room system, which means you can enjoy your favourite music anywhere around your home. You can share music stored on your home network, via Internet radio or from streaming services with HEOS wireless speakers, or even other HEOS-capable receivers, throughout the house. The system can be controlled using the free HEOS app (iOS and Android) and supports a wide range of streaming services including TuneIn, Internet Radio, Spotify Connect, Soundcloud, Tidal, Napster and Deezer. The X4700H supports Denon's HEOS multi-room system, has AirPlay 2, and works with Amazon Alexa and Google AssistantThe amplifier is DLNA certified, has gapless playback, and supports MP3, WMA, and AAC lossy formats, along with FLAC (192/24), WAV (192/24), ALAC (192/24), and DSD (5.6) lossless formats. There's support for Apple's AirPlay 2, which providing smart capabilities and limited voice control. There's Spotify Connect, TuneIn Internet Radio, and the X4700 has been Roon Tested. Finally, there's support for Bluetooth headphones, which can either be set for single or simultaneous use. More: Audio Formats How do I contact Denon Customer Support at no charge. Our phone Support team can be reached by calling 800-497-8921 Monday-Friday, 10:00 AM to 7:00 PM EST. To save time, you can utilize our live Chat Support by clicking the "Chat Live" widget on our Support site. Chat Support site. Chat Support site. Chat Support site. Chat Support site. Network & Tuner Functions AirPlay/Bluetooth/USB Integration Multiroom Audio/Video Playback Remote, App, & Voice Control Convenience Features Audio Section High Performance Discrete Amplification: The Denon AVR-X4700H AV receiver features a powerful Class AB power amplifier section equipped with discrete high current power transistors. This discrete amplifier design delivers optimum realism and stunning dynamic range. By using high current, high power discrete power devices, the amplifier is able to easily drive high quality speakers. The AV receiver's nine channel Class AB amplifier is rated at 125 watts (into 8-ohm, @ 20-20kHz, with 0.05% THD, driving 2 channels). Amplifier Assignment: The AVR-X4700H's nine discrete amplifier channels can be configured to accommodate your type of home theater setup. Its powerful DSP is even capable of up to 11.2 channel processing, allowing you to extend the system with an additional power amplifier. to the receiver's main zone and using an external 2ch amplifier for either the Front or Height 2 channels. Up to nine speakers are powered by an external amplifier. This amplifier configuration is compatible with up to 11.2ch and 7.2.4ch applications. 9ch: Assigns all nine amplifiers within the receiver for the Main Zone to power the Front, Center, Surround, Surround Back, and Height speakers. You can connect up to eleven speakers at a time. This amplifier configuration will automatically switch between 9.2ch and 7.2.2ch / 5.2.4 applications. 7ch Bi-Amp: Assigns all nine amplifiers of the receiver to the Main Zone with the front speakers bi-amped. Up to nine total speakers. The receiver will automatically switch for playback between 7.2ch and 5.2.2ch applications. The receiver's Height 2 amplifier channels are assigned to bi-amp the front speakers. A bi-amplification connected to the woofer section of a loudspeaker while the other is connected to the combined midrange and tweeter section. With this arrangement each amplifier operates over a limited frequency range, making its job easier. 7ch + Zone 2 or Zone 3: The nine amplifier channels of the receiver are assigned to power a 7ch speakers in either Zone 2 or Zone 3 (not both). Up to nine total speakers can be connected in the Main Zone - including Front, Center, Surround, Surround Back and Height speakers. The receiver will automatically switch for playback between 7.2ch and 5.2.2ch applications. The receiver's Height 2 amplifier channels are assigned to power Zone 2. 7ch + Zone2/3-Mono: Assigns seven of the amplifier channels of the AV receiver for 7ch playback in the main zone and one amplifier each to Zone 2 and Zone 3 for mono audio in each zone. Up to nine total speakers can be connected in the Main Zone - including Front, Center, Surround, Surround Back and Height speakers. The receiver will automatically switch for playback between 7.2ch and 5.2.2ch applications. The receiver's Height 2 amplifier channels are assigned to power both Zone 2 and Zone 3 for mono sound. 7ch + Front B: Assigns seven amplifier channels of the receiver to the Main Zone for up to 7ch playback and two amplifier channels to power another pair of 2ch speakers, in addition to your home theater speakers. If you choose to play the Front A and Front B speakers at the same time, Front B will play the same exact audio source and audio signal as Front A without down-mixing. Up to eleven total speakers. The receiver can automatically switch for playback between 7.2ch and 5.2.2ch application. The receiver's Height 2 amplifier channels are assigned to power a pair of speakers in another room. The 5ch speaker system will consists of Front, Center, and Surround. The receiver's Height channels are reassigned to bi-amp the front speaker system will consist of Front, Center, and Surround. The receiver's Height channels are not available in this mode. This amplifier configuration is not compatible with Dolby Atmos. 5ch + Zone 2/3: Assigns five amplifier channels to the main zone for 5ch playback and four amplifiers to Zone 2 and Zone 3 for stereo playback in each zone. The 5ch speaker system will consists of Front, Center, and Surround Back and Height amplifier channels are reassigned to power both Zone 2 and Zone 3. This amplifier sto Zone 2 and Zone 3 for stereo playback in each zone. Dolby Atmos. Note: The receiver's Height 1 & 2 amplifier speaker channels in a 9ch or 7ch amplifier configuration can be configured as Top Front, Top Middle, Top Rear, Front Dolby, or Surround Dolby for Dolby Atmos or DTS:X. Advanced Sound Processing: The Denon AVR-X4700H AV receiver offers advanced sound processing so you can experience extraordinary sound quality from both music and movies. D.D.S.C (Dynamic Discrete Surround Circuit) HD 32-Bit DSP: Inherited from the Denon flagship AVR-X8500H, a sophisticated digital audio processing system (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP: Inherited from the Denon flagship AVR-X8500H, a sophisticated digital audio processing system (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP: Inherited from the Denon flagship AVR-X8500H, a sophisticated digital audio processing system (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP: Inherited from the Denon flagship AVR-X8500H, a sophisticated digital audio processing system (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP: Inherited from the Denon flagship AVR-X8500H, a sophisticated digital audio processing system (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP: Inherited from the Denon flagship AVR-X8500H, a sophisticated digital audio processing system (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (D.D.S.C) that incorporates two dual SHARC+ core 32-Bit DSP character (channel audio processing and decoding capability at ease. AL32 Processing: AL32 Processing Multi-channel provides ultra-high-resolution digital audio filtering and precision for all audio channels, to deliver a natural soundstage with enhanced imaging. You'll enjoy outstanding high-frequency detail, along with smooth midrange and accurate bass. 32-Bit/192kHz DACs: For optimum fidelity and the widest dynamic range with lowest distortion, the AVR-X4700H features advanced reference-class 32-bit/192kHz digital-to-analog converters (DACs) on all channels. This ensures consistent high fidelity and precise channel matching across all channels for the ultimate listening experience. Clock Jitter Reducer The AVR-X4700H is equipped with a "Clock Jitter Reducer" that is capable of reducing jitter and phase noise that negatively affect sound localization, reproducing a natural sound field that is closer to the original soundtrack. Compatible Digital Audio Formats: The AV receiver supports the following stereo & multichannel digital audio formats through its HDMI jacks and optical/coax digital inputs. Digital Audio Connector Audio Signal Format HDMI (8 Inputs/3 Outputs) High Definition Audio Entry of the following stereo and optical/coax digital inputs. Resolution, DTS Express Bitstream Dolby Digital, Dolby Digital EX, DTS, DTS ES, DTS 96/24 DSD 2ch to 6ch (32-96kHz, 16/20/24-bit) Immersive Surround Dolby Digital, Dolby Digital EX, DTS, DTS ES, DTS 96/24 PCM 2ch to 6ch (32-96kHz, 16/20/24-bit) Immersive Surround Sound: The Denon AVR-X4700H AV receiver goes beyond regular surround with the latest immersive surround sound formats from Dolby Atmos, DTS:X, and AURO-3D. The AVR-X4700H offers 9-channels of amplification with support for up to 11.2 channel speaker system. A 7.1.4* and 9.1.2* channel speaker system will require an additional 2ch amplifier (sold separately). Dolby Atmos surround sound technology dispenses with channel-based coding, giving the soundtrack designer the ability to precisely place sounds anywhere in the 3-dimensional space. Now you can enjoy this same award-winning technology at home with the AVR-X4700H that lets you configure a Dolby Surround offers an enhanced cinema experience to your 2ch or multichannel movie soundtracks using your existing 5.1ch, 7.1ch, or Dolby Atmos speaker setup. Dolby Surround enhances audio definition by improving the spatial dimension and overall audio definition of movie soundtracks. It does this by using four distinct surround zones that provide greater control over the exact placement of each detail in a movie sound track, so audio can be matched more accurately to the video on screen; this means more depth and greater realism for your movies. As a result, individual sounds are clearer and more distinct. It also improves the surround sound experience across the entire theater by widening the listening "sweet spot". Dolby Atmos Height Virtualization: Dolby Atmos Height Virtualization provides immersive audio without height-channel or overhead speakers, creating virtual height effects in a 5.1ch, 7.1ch or 2.1ch speaker arrangement. Dolby Atmos Height Virtualization applies carefully designed "height-cue" filters to the overhead audio components of your content's soundtrack before they are mixed into your loudspeakers to create the sensation of sound above you. DTS:X: The latest immersive surround sound system, DTS:X features object-based audio coding that lets the soundtrack designer place sonic elements anywhere in the 3D acoustic soundspace, and provides for overhead speakers to deliver a stunning surround sound system. HD Master Audio decoding and other DTS audio technologies. DTS Neural:X: DTS Neural:X: DTS Neural:X is an advanced spatial remapping technology from DTS, which provides a fully immersive output for all types of source content; this includes DTS bitstreams and non-encoded (PCM) data. DTS Neural:X delivers a thrilling sense of immersive sound to your speaker layout regardless of the original source format. DTS Virtual:X: DTS Virtual:X: DTS Virtual:X can be used with any content (from 2ch to 7.1.4ch soundtracks), while delivering virtual height & virtual surround processing based on psychoacoustics (not reflective surfaces). AURO-3D: This receiver is equipped with an Auro-3D, Front Height, Surround Height and Top Surround are added to a conventional 5.1-channel system to achieve a natural and realistic soundfield that is threedimensional and fully immersive. You will be able to fully enjoy Auro-3D playback if you properly place the speakers for Auro-3D. Auro-3D does not support a Dolby Atmos configuration using Top Front, Top Middle, Top Rear, or any Dolby Atmos Enabled speakers. But it is possible to support both an Auro-3D and Dolby Atmos by adding Front Height and Rear Height speakers to a 5.1 configuration. For an optimum Auro-3D experience Surround Height speakers are strongly recommended. IMAX Enhanced; the latest technology program from IMAX that sets a new standard for image, sound, scale and content quality. This new certification and licensing program combines IMAX digitally re-mastered 4K HDR content and DTS audio technologies to offer a new level of quality in immersive sight and sound experiences in the home. IMAX Enhanced lets you experience premium content digitally re-mastered 4K HDR content and DTS audio technologies to offer a new level of quality in immersive sight and sound experiences in the home. 4K movies with immersive audio delivered by DTS. Not only will IMAX Enhanced content look and sound amazing, but other audio/video content will also look and sound great too. Remastered 4K/HDR Video: It utilizes a sophisticated, advanced algorithm designed to produce the highest-quality, sharpest 4K HDR images. This advanced process accurately reduces noise and grain under the filmmaker's guidance to best optimize the content for a much higher quality, higher brightness 4K HDR display format. Select IMAX theatres will also include an expanded aspect ratio for the film's home release to show your more picture on your TV. IMAX Enhanced certified TVs must be at least 65" with support for HDR10 and dynamic, as well as special variant of its DTS:X codec technology integrated in home audio equipment to deliver an IMAX signature sound experience that is dynamic, immersive, theatrical, and powerful. IMAX Enhanced system is 7.2.4 with seven horizontal speakers, two subwoofers and four height speakers; 5.1.4 is the minimum layout for IMAX Enhanced. However, due to various constraints you may opt to install only a 5.1ch speaker system. In such cases, DTS Virtual:X is required to properly render and remap audio to the available speakers; 5.1.4 is the minimum layout for IMAX Enhanced. However, due to various constraints you may opt to install only a 5.1ch speaker system. In such cases, DTS Virtual:X is required to properly render and remap audio to the available speakers. partners to build a steady stream of IMAX Enhanced versions of movies and other programming using the newest, proprietary post-production process developed by IMAX. IMAX will be announcing and releasing IMAX Enhanced versions of a wide range of films both for 4K/HDR streaming and Ultra HD Blu-ray Discs. Notes: To take full advantage of IMAX Enhanced, you need an IMAX Enhanced certified 4K/HDR TV (65"-up) or Projector and an IMAX Enhanced program out of their decades of combined expertise in image and sound science to make it easier for consumers to select the products and content that will deliver the highest-quality, sharpest 4K HDR images and powerful, immersive sound at home. To qualify and carry the IMAX Enhanced logo, the highest-end TVs, AV receivers, projectors, and soundbars must meet stringent performance standards established by IMAX, DTS and Hollywood's leading colorists in order to create a consistent and higher bar for image and sound performance on premium devices. Audyssey Suite with Dual Presets: The AVR-X4700H features + including MultEQ XT32, Sub EQ HT, LFC (Low Frequency Containment), Dynamic Volume, and Dynamic EQ. The newly adopted Dual Audyssey Preset function allows you to store and instantly switch between two Audyssey configurations. For example, you can store both the Audyssey Calibration result straight from the receiver and a customized MultEQ editor app on the receiver and a customized MultEQ editor app on the receiver and a customized MultEQ editor. select your preference. You can also perform Audyssey measurements for two different speakers in your home theater during setup, including the subwoofer, and then generates multiple high precision DSP room acoustic correction filters, which together provide smoothest and most natural tonal balance, regardless of the brand or model of the various speakers. Audyssey MultEQ32 incorporates more than ten thousand individual control points allowing finer details of the room's problems to be captured and corrected. Up to eight listening positions can be measured, configured, and recorded. MultEQ XT32 compensates for both time and frequency characteristics of the listening area based on "Audyssey Setup" measurement results. Selection is done from three types of compensation curves - Reference (default and recommended, L/R Bypass, Flat, and Off). Sub EQ HT: Audyssey Sub EQ HT provides individual DSP tailoring of each subwoofer configuration. LFC (Low Frequency Containment): Audyssey Low Frequency Containment uses advanced psychoacoustic algorithms to deliver a full range tonal balance, including deep bass, but without disturbing close-by neighbors or family members in other rooms, and features a multi-step adjustment that lets you dial in the amount of containment to your preference. Dynamic Volume features advanced psycho-acoustic processing to deliver clear dialog and wide range sound at reduced volume levels so that you can enjoy theater-level clarity at whatever listening level you choose. Dynamic EQ also features advanced DSP processing to deliver full range wide-band response, even at reduced volume levels. Dynamic EQ also features advanced DSP processing to deliver full range wide-band response, even at reduced volume levels. 15 dB) that can be selected when the mix level of the content is not within the standard. Listening Modes: The Denon AVR-X4700H features a variety of Listening modes to choose from, so you can enjoy your movie or music soundtrack the way you want to hear it. Auto Detection: In Auto Mode, the Listening Mode switches automatically to the corresponding type of audio input signal (Dolby Digital, Dolby Digital, Dolby Digital, Dolby Digital, Dolby Digital, Dolby Digital, Plus, DTS, DTS-HD, or multichannel PCM) that is detected. If the input signal is analog or PCM (2-channel), stereo playback is used. Denon Original Sound: Denon's Original Listening Modes, combined with Dolby Digital/DTS processing, produce more realistic, powerful sound effects for your movie and music sound tracks based on the type of content and your home theater setup. Choose between Rock Arena, Jazz Club, Matrix, Video Game, Mono Movie, Multichannel Stereo, or Virtual (surround from only front speakers or headphones). Stereo Playback: Sound is output from the front left and right of 2ch or Multichannel audio in its original form, without any surround or tone processing. Pure Direct Mode goes a step further by turning off the receiver's display and analog video circuitry to minimize the possibility of any noise being added to the audio signal. Audio Enhancements: The Denon AVR-X4700H receiver provides various audio enhancements to deliver a high-quality listening experience every time. CINEMA EQ (Cinema Equalizer): The Cinema EQ function gently decreases the level of the extreme high frequencies, compensating for overly-bright sounding motion picture soundtracks. works in the Dolby Digital & DTS modes. Compressed Audio Restorer: Compressed audio formats such as MP3, WMA (Windows Media Audio), and MPEG-4 AAC reduce the amount of data by eliminated upon compression, restoring the sound to conditions near those of the original sound before compression. It also corrects the sense of volume of the bass to obtain richer soundtracks have tremendous dynamic range (the contrast between very soft and very loud sounds). For listening late at night, or whenever the maximum sound level is lower than usual, Compressing the dynamic range allows you to hear all of the sounds in the sounds in the sounds in the sounds in the sound level is lower than usual, Compressing the dynamic range. DRC works when playing program sources recorded in Dolby Digital or DTS. Room Size: The receiver's audio output can be set to simulate the acoustics of a Small, Medium Small, Medium (default), Medium Large, or Large room environment. This setting is not an indication of the actual size of your listening area. Center Spread & Dialog Control: Center Spread expands the center channel signal to left and right front speakers to create a wider front and indication of the actual size of your listening area. Dialog Control adjusts the volume of dialog in movies and vocals in music so they can be heard more easily, when in DTS:X mode. LFE + Main setting boosts the bass sound by feeding the low-frequency signal to both the loudspeakers and the powered subwoofer, regardless of audio format or listening mode. Volume & Level Settings: The AVR-X4700H offers the following volume scale (-79.5 to 18dB). You can also set a maximum volume level of 0 (80), -10 (70), or -20 (60) dB to limit the receiver's total volume output. In addition, you can define the volume setting that is active when the power is turned on; select "Mute", -79 to +18dB (1-98), or Last. These settings can be set independently for the audio muting circuit; -40dB or -20dB below current volume, or full mute (sound turned off entirely). The Mute Level can be set independently for the Main Zone, Zone 2, and Zone 2, Channel, Center, & Subwoofer Level: The volume level (-12 to +12dB) of each channel volume level (-12 to +12dB) independently from the channel level to clarify the dialog for all sources. In addition, you can adjust the subwoofer channel level (-12 to +12dB) independently from the channel level to emphasize low frequencies for all input source's audio input. Use this feature if there are differences in the input volume levels to emphasize low frequencies for all input source's audio input. between different sources. You can correct the playback level of the audio input from -12 to +12dB. eARC (Enhanced Audio and video to your compatible TV to the receiver through the same HDMI cable already being used to send audio and video to your TV. This eliminates the need for extra cables connected to your television. eARC (Enhanced Audio Return Channel) will support uncompressed audio formats like Dolby TrueHD, Dolby Digital, Dolby Digital Plus, DTS, DTS HD, and PCM. Note: Supported content will be dependent on whether your TV features a HDMI eARC or ARC jack. Pre-Amplifier Mode with 11.2ch Pre-Outs: With the latest HDMI connectivity to upgrade and modernize your AV separate system. Pre-Amplifier Mode provides a cleaner signal path and more tolerance in clipping level by disconnecting the AV receiver's internal amplifiers. The AVR-X4700H receiver features 11.2ch variable pre-amp outputs (Front L/R, Center, Surround Back L/R, Height 1 L/R, Height 2 L/R, and Dual Subs) for connection to external power amplifiers. For compatibility with dual subwoofer home theater systems, the AVR-X4700H features two discrete subwoofer outputs. Color-Coded Speaker Terminals: The receiver has binding-post terminals for all speaker terminals for all speaker connections. The binding-post terminals can accept bare wire, pin connectors, and banana plugs (single/dual). The receiver will accept speaker impedances of 4 to 16-ohm. The AV receiver comes with color-coded labels to easily identify which channel a speaker cable should be connectors on the AVR-X4700H's rear panel, there's no longer any confusion about which terminals they should be connected to. Headphone Jack: When headphones are plugged into the full-size 1/4" jack on the front panel, all the speaker outputs and pre-outs are automatically muted. Phono Input: The Denon AVR-X4700H is outfitted with a Phono input (MM), so you can connect your turntable and listen to your vinyl records with high-guality sound. Video Section HDMI 2.1: Featuring eight HDMI outputs, the AVR-X4700H incorporates an advanced video section that features some of the latest HDMI 2.1 specifications; including support for 8K/60Hz and 4K/120 Hz video pass-through (up to 40Gbps), HDCF 2.3 compatibility, BT.2020 Wide Color Gamut, and 4:4:4 Pure Color sub-sampling. 4K/120 Hz + 8K/60Hz Pass-Through: All of the AVR-X4700H's HDMI inputs (Main & Monitor 2) also support 8K (7680 x 4320) and two HDMI inputs (Main & Monitor 2) also support 8K (7680 x 4320) video @ 60 frames per second, as well as 4K video @ 120 frames per second (both up to 40Gbps). In addition, the receiver will pass 1080p/i, 720p, and 480p/i video signals via HDMI. HDCP 2.3 Compliant: All of the AV receiver's HDMI inputs and outputs support HDCP 2.3, which fully complies with the latest copyright protection standard for 4K/HDF video transmission. 4:4:4 Color Subsampling: The HDMI inputs and monitor outputs support RGB, YCbCr 4:2:2, and YCbCr 4:2:2, and YCbCr 4:2:2, and YCbCr 4:2:2, and YCbCr 4:2:0, a video sampling rate for a video image with more colors, plus greater color accuracy and detail. The front-panel HDMI only supports 4K 60/50Hz using format YCbCr 4:2:0 only. Wide Color Samut (BT.2020): The BT.2020 color standard delivers a much wider color gamut and represents about 75% of the total visual color spectrum, while the current Rec. 709 color standard selected as the color space for HDTVs and early generation 4K Ultra HDTVs covers only 35% of the total visual color spectrum. Notes: Use a premium High Speed 48Gbps HDMI cable for the best 4K/HDR performance. Use a premium High Speed 18Gbps HDMI cable for the best 4K/HDR performance. "8K Enhanced" in the menu to enjoy 8K/60Hz or 4K/120Hz video. HDR (High Dynamic Range): The Denon AVR-X4700H supports HDR (high dynamic range) Video - including HDR10, HDR 10+, Hybrid Log-Gamma, Dolby Vision, and now Dynamic HDR. HDR provides enhanced picture quality by simultaneously enabling greater detail for both the dark and bright parts of an image. HDR reproduces a greater dynamic range of luminosity or brightness levels, creating greater contrast. This increased contrast reveals the subtle nuances of the image, from detailed blacks and shadows to the brightest whites and colors, plus greater depth. HDR10: HDR10 is an open standard and currently the most popular HDR format on the market. It uses static metadata at the start of a movie to tell the receiver and your TV that the video content is encoded using HDR. HDR10+ is a new open standard that leverages dynamic metadata to produce enhanced contrast and colors on an expanded range of televisions. HDR10+ incorporates dynamic metadata that allows the adjustment of brightness levels on a scene-by-scene or even frame-by-frame basis. By applying individualized tone mapping to each scene, HDR10+ delivers an incredible viewing experience. The picture quality offers an enhanced visual experience with more detailed expressions, brighter shadow areas and more accurate color renderings that stay true to the creator's original intent. Hybrid-Log Gamma: HLG (Hybrid-Log Gamma) is primarily designed for live video feed and over-the-air broadcasts. It uses no pre-encoded metadata and is backwards compatible with SDR. HLG's native compatibility allows much of today's existing SDR infrastructure to be re-used for HDR in the future. Dolby Vision: Unlike HDR 10 which contains static metadata and HLG which uses no metadata technology which sets individual color and brightness levels for each and every scene. Dolby works directly with filmmakers at major HDR video masters of the sets individual color and brightness levels for each and every scene. blockbuster movies. Dynamic HDR: Dynamic HDR enables a noticeable progression in overall video image quality from SDR to static HDR, and now static HDR, and now static HDR to dynamic HDR. Dynamic HDR support ensures every moment of a video is displayed at its ideal values for depth, detail, brightness, contrast, and wider color gamuts on a scene-by-scene or even a frame-by-frame basis. Dynamic HDR enhanced content is available for movies, video and PC games and VR. 4K & 8K Video upconversion & Upscaling: The Denon AV receiver's sophisticated video processor provides upscaling from standard definition (720p/1080i/1080p) sources to 4K or 8K Ultra HD, as well as 4K video sources to 8K picture quality. By supporting video upconversion, you can connect to your TV with just a single HDMI cable. Only the receiver's main HDMI output supports video upconversion (the HDMI Monitor 20ut and HDMI Zone 2 out do not support video upconversion). Note: When composite or component video signals are used, only 480i video signals are used, only 480i video signals are converted to HDMI (up to 8K). Three HDMI outputs: The two parallel HDMI outputs: The two parallel HDMI outputs distribute the same HDMI (up to 8K) simultaneously to two separate displays, while the discrete displays, while the discrete displays. HDMI output allows you to play a different HDMI audio/video source (up to 4K) in another zone (Zone 2). Optimized Gaming: Showcased in the AVR-X4700H are new HDMI features like Variable Refresh Rate (VRR), Quick Frame Transport (QFT), and Auto Low Latency Mode (ALLM) - which reduce or eliminate lag and frame tearing to offer a smoother, lag-free gaming experience. Variable Refresh Rate (VRR): Support for Variable Refresh Rate (VRR) allows the TV to adapt to certain Game console's frame rate. This helps to reduce or eliminate lag, stutter and frame tearing for more fluid and better detailed gameplay. Auto Low Latency Mode (ALLM): The receiver will enter ALLM (Auto Low Latency Mode) when it detects a gaming signal from a compatible device (such as a Xbox One) and allows for a smooth, lag-free gaming experience. During ALLM, the receiver disables the i/p scaler and Auto Lip Sync function. Quick Frame Transport (QFT): Quick Frame Transport (QFT): Quick Frame Transport (QFT) transmits each frame at a higher rate to decrease "display latency", which is the amount of time between a frame being ready for transmission in the GPU and that frame being completely displayed. Enjoy reduced latency for smoother, tear-free entertainment experience. Other HDMI Features: The Denon AVR-X4700H AV receiver's HDMI connectivity also offers Quick Media Switching (QMS), 3D video passthrough, and auto LipSync function. Quick Media Switching: A new HDMI feature called Quick Media Switching (QMS) allows a HDMI video source to instantly switch the resolution or frame rate to eliminate screen blackout. 3D Ready: The AVR-X4700H AV receiver supports 3D video pass-through (720p/1080p only) from connected 3D-compatible Blu-ray, games and broadcast devices to 3D-compatible HDTVs (all 3D components must be connected via HDMI). Special eyewear will be required for viewing 3D content. LipSync: This function adjusts the delay between audio and video output. You can do this manually or have the receiver set the LipSync function automatically. When connected to a TV via HDMI the receiver automatically adjusts audio output timing, if the TV supports an automatic LipSync function. You can also manually delay the sound output timing, if the TV supports and the HDMI Standby Pass-Through function is enabled both audio/video streams from the receiver's HDMI input to your television, via the AV receiver's HDMI monitor output. Once the receiver's speaker outputs. HDMI Input: Selects the HDMI Input for which the HDMI Input for which the HDMI is directed to the receiver's speaker outputs. Standby Pass-Through function is enabled. Last: The HDMI Standby-Through function is activated on the input source selected at the time of setting the AV receiver features three composite video output, as well as a Zone 2 composite video output. There are also two component video inputs and one component video output that can be assigned as a monitor output or Zone 2 output. Both the composite and component video jacks only support up to 480i (not compatible with 480p, 720p, or 1080i/p). Advanced ISFccc Video Calibration: The AVR-X4700H issue and component video jacks only support up to 480i (not compatible with 480p, 720p, or 1080i/p). certified by the Imaging Science Foundation to deliver top video quality, and the unit also features advanced ISFccc video calibration controls that allow for precision fine-tuning of the connected HDTV, even if it's not an ISF certified set. You can choose from a variety of Picture Modes - Standard, Movie, Vivid, Streaming, ISF Day, ISF Night, Custom or Off. The Custom mode lets you manually adjust Contrast, Brightness, Saturation, Noise Reduction, and Enhancer (sharpness). Video Modes: You can set the video processing method to match the type of video content. Choose from Movie, Game, or Auto. Video Select Function: This receiver can display video from a different source on your connected TV during audio playback from CD (analog input only), Tuner, HEOS, or Phono. Network & Tuner Functions Wireless network connection. Either network connection gives the receiver access to HEOS music apps (like Pandora, Amazon, or Tidal), TuneIn Internet Radio, Spotify Connect, your music library on your Apple iOS or Android device, as well as music content on your Windows PC or DLNA music server. Ethernet (LAN) port to make a wired connection from the receiver to your home network. Built-in WiFi: The receiver also offers built-in WiFi (IEEE 802.11 a/b/g/n; 2.4/5GHz) for a wireless network connection; WPS, WEP, WPA-PSK (AES), WPA2-PSK (AES setup requires that the receiver be connected to your TV via HDMI for display of the on-screen menu. The receiver's network setup cannot be access to more than 100,000 free internet radio streams from all corners of the globe via the built-in TuneIn online music service. Simply select TuneIn from the receiver's on-screen menu using the included remote and browse among the 100,000 stations neatly organized into popular categories and select a station that appeals to you. stream Spotify to the Denon AV receiver. Spotify is a digital music service that gives you on-demand access to one of the largest music libraries in the world (over 15 million tracks and counting). Spotify makes it easier than ever to discover, manage, and share music with your friends. You can browse music by artist, album, track, or most popular; and create your own music library with customized playlists. HEOS Music Apps: With built-in HEOS technology and the HEOS app (for Apple iOS or Android OS 5.0+) on your compatible Apple iOS or Android device, you'll be able to stream a wide variety of online music services (fees may apply), plus the music library of your mobile device, you'll be able to stream a wide variety of online music services (fees may apply), plus the music library of your mobile device, you'll be able to stream a wide variety of online music services (fees may apply), plus the music library of your mobile device, you'll be able to stream a wide variety of online music services (fees may apply), plus the music library of your mobile device, you'll be able to stream a wide variety of online music services (fees may apply), plus the music library of your mobile device, you'll be able to stream a wide variety of online music services (fees may apply), plus the music library of your mobile device, you'll be able to stream a wide variety of online music services (fees may apply), plus the music library of your mobile device, you'll be able to stream a wide variety of online music services (fees may apply), plus the music library of your mobile device, you'll be able to stream a wide variety of online music services (fees may apply), plus the music library of your mobile device, you'll be able to stream a wide variety of online music services (fees may apply). through the Denon AV receiver. Online Music Services: Using the HEOS app, you'll be able to stream your favorite online music services like Amazon Music (including HD), Pandora, TIDAL, iHeart Radio, SiriusXM, Napster, TuneIn, & Spotify (some services will require a paid subscription, purchases, and/or other fees). The HEOS app on your Apple iOS or Android device will serve as the controller for these apps and provide song/artist information with Album Art. You can create a "Favorite" station list, so you can quickly access your favorite internet radio stations and online music channels. Mobile Device Streaming: Using the HEOS app on your Apple iOS or Android mobile device, you are able to stream your device's music library to the Denon AV receiver. You'll be able to browse your music library by Artist, Album, Genre, and Song; control music playback functions like Play/Pause and Previous/Next Track; and view song/artist info with Album Art from the app on your compatible mobile device. You can even type in an artist name or song title to find music in your mobile device's library. Notes: Prior to using the HEOS system, you'll need to setup up your free HEOS account. Your HEOS account remembers all your system, you only need to sign in to each new device with your HEOS user name and password. Instantly all your music services and HEOS playlists are available in the new controller too. If you prefer, HEOS supports multiple accounts in a single household. This way, each family member can enjoy their own personalized Pandora, Spotify, or other online music account settings and still share all the same speakers in the home. DLNA 1.5 Certified: The AVR-X4700H is DLNA (Digital Living Network Alliance) 1.5 and Windows 7/8 compliant for audio and photo networking. This means it's easier for you to access and enjoy digital music and still-images (JPEG) stored on your Windows PC. You can use your PC to play high-bit rate music content through the A/V receiver and view still-images on your connected TV, or use the AVR-X4700H's remote control to browse music & photo files on your hard drive. The receiver also supports ID3-Tag (ver.2) and META tag information; so song title, artist name, and album name can be displayed the unit's front-panel display or on-screen menu. In addition the unit will display Album Art on a connected television. The Denon AVR-X4700H supports the following audio formats, sampling Frequencies, and bit rates via its wired network connection. Resolution Compatible Audio Formats Sampling Frequencies Bit-Rate/Bit-Depth Extension Hi-Res WAV (PCM) 32/44.1/48/88.2/96/176.4/192 kHz 16/24-bit .m4A DSD 2.8/5.6 MHz 1-bit .dsf/.dff Compressed MP3 (MPEG-1 Audio Layer-3) 32/44.1/48 kHz 32-320 kbps .mp3 WMA (Windows Media Audio) 48-192 kbps .wma AAC (MPEG-4) 16-320 kbps .ac/.m4a Note: Your computer must meet the following system requirements - Windows Media Player (ver.11/12). Roon Tested: Roon is a feature rich music library and playback application that compiles all the music files available to your network and makes them easily available to play on the Denon receiver and any other Roon enabled audio devices. Roon manages digital music files (including FLAC, WAV, AIFF, ALAC, and DSD) collected on hard drives and networked storage devices. It can also integrate your iTunes library, and optionally merge with the Tidal and Qobuz music streaming services. Roon software can be installed on your Windows or Mac computer, while a Roon Remote app, it will display your complete audio library together with its metadata and artwork along with the available Denon receiver and other Roon enabled devices. Simply select the music you wish to play and the Denon receiver or Roon device in which you want to hear it on. Notes: To use Roon you will need a Roon Core running on the same network as the Denon receiver. The Core is media server software that runs on your computer, NAS, or component (like Nucleus or ROCK as the Denon receiver). sold separately), located on the network within your home. Make sure your Denon product has the latest firmware/software update installed. AM/FM tuner with 56 station auto-preset memory tuning. You can create an 8-character name for each preset station. You can even directly enter a station number using the receiver's on-screen menu and remote control. AirPlay 2 is an advanced and easy-to-use wireless multiroom audio from for iTunes, Apple Music, and other compatible Apple iOS apps. With AirPlay 2 you can play any audio from your Apple iOS device (running iOS 11.4 or later) or Mac computer (running OS X 10.13.2) on the AV receiver and other compatible AirPlay 2 speakers throughout your home. You can even play audio in one room, play the same audio in grouped rooms, or play the same audio in grouped rooms, or play the same audio in grouped rooms. different music in different rooms (you can control and group directly from Apple's Music App and Home app on your Apple iOS device). You'll be able to ask Siri-enabled devices (like your Apple iPhone, iPad, or Watch) to control playback of your Apple iOS device). album art via the receiver's on-screen menu (via HDMI). You can even watch videos and movies from YouTube and Netflix on your compatible Apple iOS device or Mac computer with perfectly synced audio on the AV receiver. Built-in Bluetooth: The Denon AVR-X4700H is equipped with built-in Bluetooth (version 4.2) for wireless communication between Bluetooth-enabled audio source devices and headphones. The AVR-X4700H can act as a Bluetooth transmitter in order to wirelessly stream music from an audio device, or a Bluetooth transmitter in order to wirelessly stream music from an audio device. Receiver Mode: In BT Receiver mode, you'll be able to wirelessly stream stored music, music apps, and other audio content from your Bluetooth-enabled source device (such as your smartphone, tablet, computer, or laptop) to the Denon receiver. The receiver supports the Bluetooth SBC codec only. You will also be able to control basic playback functions (Play/Pause, FF/RW, Skip) using the receiver's remote control. Advanced music operation will still need to be handled from your Bluetooth device's screen to view song/artist info. Up to eight Bluetooth source devices can be remembered by the AVR-X4700H, so family members as well as friends can enjoy their favorite tracks (only one devices, as well as turn on automatically when you start streaming audio from a Bluetooth source device. Bluetooth Transmitter Mode: The Denon AVR-X4700H can also act as a Bluetooth transmitter and stream its non-Bluetooth headphone set. You can even have the same source playing from the main speakers and a Bluetooth headphone simultaneously (with little noticeable delay). Volume control of your Bluetooth headphones will be controlled via the Bluetooth device and not the receiver, but only one set of headphones can be paired with the receiver, but only one set of headphones can be connected and used at a time. Notes: You cannot use the Bluetooth Transmitter and Receiver modes simultaneously. The Bluetooth Transmitter mode is not available when the Bluetooth setting "Transmitter" is set to Bluetooth and vice-versa; Bluetooth and vice-versa; Bluetooth receiver and Bluetooth headphones. You cannot connect Bluetooth headphones when the Denon receiver is grouped within the HEOS app. Remove the receiver is equipped with a front-panel USB (type-A) port that allows you to enjoy a variety of music files from a USB mass storage class memory device; such as a USB thumbdrive or portable digital audio player. Compatible USB storage devices must be formatted in FAT 16 or FAT32. The unit can recognize up to 500 folders/5,000 files. You can use the receiver's on-screen menu (via HDMI) and remote control to navigate your stored music files on your connected USB memory device. Song/artist information will display on your HDMI-connected TV and the receiver's USB port (5V/1A); even in standby mode. Resolution Compatible Audio Formats Sampling Frequencies Bit rate Extension Hi-Res WAV (PCM) 32/44.1/48/88.2/96/176.4/192 kHz 16/24-bit .m4A DSD 2.8/5.6 MHz 1-bit .dsf/.dff Compressed MP3 (MPEG-1 Audio Layer-3) 32/44.1/48 kHz 32-320 kbps .mp3 WMA (Windows Media Audio) 48-192 kbps .wma AAC (MPEG-4) 16-320 kbps .aac/.m4a Note: The receiver's USB port is not compatible with Apple iOS and Android devices. Multiroom Audio/Video distribution for Zone 2 with the inclusion of its HDMI matrix switching functionality. The receiver can send two different HDMI audio/video feeds to two displays at the same time directly from the receiver. The HDMI Zone 2 supports up to 4K video and 2ch PCM audio from the HDMI Zone 2 is controlled from the TV or additional receiver. in Zone 2. HDMI Zone 2 is not compatible with the HDMI Input 7 or HDMI Input 8, and does not support the output of analog audio/video signals. HDMI Zone 2 does not support audio (limited to 2ch stereo). If the receiver's Main Zone and HDMI Zone 2 are set to the same HDMI input source, the Main Zone audio. Zone 2 (Audio/Video): Zone 2 allows stereo audio/video playback of another source connected to the receiver in another room of your home via RCA line-level output, as well as composite or component video. To enjoy a video source in Zone 2, you must connect the same video connection to your second display monitor as connected to your receiver for that particular source (there is no video-conversion for Zone 2). When using the AVR-X4700H to power speakers in a second room of your home, the main zone is restricted to 7.2-channels. When using the receiver's line output terminals for the second room you need an additional amplifier to power your Zone 2 speakers; the main Zone of the receiver using either configuration or from your add-on amplifier when using the line-output. Compatible Sources: HDMI audio (2ch PCM) only) Optical/Coaxial digital inputs (2ch PCM only) Analog audio/video (including Composite, Component, & Phono) AM/FM Tuner (cannot select different HEOS Music Apps (including Pandora, Tidal, Amazon, and more); cannot select different HEOS music apps for each zone Network Sources (including TuneIn Internet Radio, Spotify Connect, AirPlay, & DLNA); cannot select two different network sources for Zone 1 and Zone 2 Incompatible Sources: HDMI video DSD audio files Note: Unfortunately, you cannot select USB, Bluetooth and Network sources exclusively for each Zone. For example, if you select a network source for Zone 2 when a USB source is selected for the Main Zone, the input source in the Main Zone 3 allows you to play a different stereo audio source connected to the receiver in a third room of your house. Zone 3 features pre-outs or speaker outputs, so you can use this amp or a separate amp to power speakers in another room. When using the AVR-X4700H to power speakers in a second and third room of your home, Zone 2 and 3 are limited to 7.2 channels. When using the receiver's pre-outs for the 2nd & 3rd Zone, you need additional amplifiers in those rooms to power those speakers; the Main Zone of the receiver remains 9.2-channel. The volume of Zone 3 can be controlled by the Denon receiver using either configuration or from your add-on amplifier when using the line-output. Compatible Sources: Optical/Coaxial digital inputs (2ch PCM only) Analog Audio Inputs (including Phono) AM/FM Tuner (cannot select different stations for each zone) USB & Bluetooth Audio (cannot select USB & Bluetooth in separate zones) HEOS Music Apps (including TuneIn Internet Radio, Spotify Connect, AirPlay, & DLNA); cannot select two different network sources in multiple zone. Incompatible Sources: HDMI Audio/Video Analog Video DSD audio files Note: Unfortunately, you cannot select USB, Bluetooth and Network sources exclusively for each Zone. For example, if you select a network source for Zone 3 when a USB source is selected for the Main Zone, the input source in the Main Zone also switches to the same network source as Zone 3. All Zone TV Audio feature lets you play the same audio source as your TV in the Main Zone in Zone 2 and/or Zone 3 without losing fully discrete surround sound in the Main Zone. Enjoy fully discrete surround sound in the Main Zone. Enjoy fully discrete surround sound in the Main Zone. digital optical/coaxial sources for your second or third zone When "All Zone TV Audio" is active. All Zone Stereo: The All Zone Stereo: Zone Stereo mode, only the "Multi Ch Stereo" and "Stereo" and "Stereo the AVR-X4700H to become part of the HEOS wireless multi-room audio eco-system, allowing you to stream and control all of your local and online music effortlessly from anywhere in your compatible Apple iOS or Android mobile device over a wireless WiFi network connection. The HEOS system is a true multi-room audio system that automatically synchronizes audio playback between multiple HEOS devices so that your music (up to 24-bit/192kHz Hi-Res audio) coming from different rooms is perfectly in sync and always sounds amazing. You can play the same audio source in every room or any combination of rooms you choose, including a different song in every room. Systems & Groups: The HEOS wireless multi-room sound system by Denon can support up to 32 HEOS speakers, receivers, amplifiers, and/or pre-amplifiers, and/or pre-amplifiers (all sold separately) on a single wireless network (IEEE 802.11 g/n; 2.4/5GHz). You can join or group up to eight individual Heos devices into a group that function as if they were a single source. The HEOS eco-system is flexible enough where you can create up to 16 Groups (2 Heos devices per Group). You can easily group 16 rooms together with Party Mode by simply using a "pinch" gesture. Compatible Sources: The receiver's input sources, HEOS music apps, and local network content can be distributed through a HEOS multi-room audio system. However, you cannot distribute an input source (analog, HDMI, optical/coax, USB, Bluetooth, tuner) that is different than the main zone of the AV receiver (this is a change from previous HEOS enabled AV receiver). Receiver's analog inputs & AM/FM Tuner HDMI (including eARC) and optical/coax digital inputs; will downmix multi-channel audio sources to 2ch (receiver's main zone will retain multi-channel audio decoding) TuneIn Internet Radio & Spotify Connect HEOS music apps (including Amazon, Pandora, Tidal, and more) Windows PC & DLNA music servers Bluetooth & USB audio Music libraries stored on your Apple iOS or Android mobile device. Notes: The Denon AV receiver only supports a single HEOS music stream. If you desire a second HEOS music stream through the receiver's analog inputs. HEOS wireless multiroom audio distribution does not support AirPlay/AirPlay 2. HDMI Monitor 2: The receiver's analog inputs. HDMI monitor 2 output lets you send the same HDMI audio/video input signal that is being played in the main zone to a second zone (video is output does not offer HDMI monitor 2 does not support the output of analog video inputs. App, Voice, & Remote Control Multibrand IR Remote: The Denon AVR-X4700H comes with an IR remote for wireless operation of the AV receiver. When preset codes are registered in the included remote control unit, it can then be used to operate devices you may have, such as a Blu-ray player or TV made by a different manufacturer. The AVR-X4700H's can also be used to control select external audio/video components connected via HDMI control. The receiver can even be controlled by your HDMI control. The receiver with other audio/video components (like your TV, Blu-ray player, or satellite/cable box) that are connected via HDMI. Linked functions include Power On/Off, which turns the receiver on or off an HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the input of the HDMI CEC connected component; and Source Switching, which automatically switches the receiver to the receiver to the receiver to the receiv CEC compatible devices will function in the same way. Smart TV Control: You can even control the Denon AVR-X4700H with your Smart TV. Simply set "HDMI Control" to ON in the receiver, then set "Smart Menu" to ON and begin controlling the AVR-X4700H with your TV's remote. The Smart Menu home screen provides you quick access to source and surround mode selections, the AVR's setup menu and four Smart Selects (or "Quick Selects"). HEOS App: You'll need to download the HEOS App (for Apple iOS 9.0+ and Android OS 5.0) onto your compatible Apple iOS or Android mobile device to enjoy HEOS functionality through the AVR-X4700H receiver. Using your compatible mobile device and the HEOS app, you can setup, browse, explore, and control HEOS system right in the palm of your hand, from anywhere in your home. Your compatible Apple iOS or Android device must be connected to the same home wireless (WiFi) network as the AV receiver and your entire HEOS system. The HEOS app consists of 4 control screens. Settings: The "Settings" screen enables you to connect one or more HEOS speakers, receivers, amplifiers, and/or pre-amplifiers to your home's wireless network. Rooms: From the app on your Apple iOS or Android device, you can select which rooms you want playing. You can play the same music in multiple rooms by grouping rooms together, or you can listen to a different source in each room. Music/Sources: You can select what music and which source you want to listen to from the app. Choose from online music services like Pandora, Spotify, TuneIn, Tidal, etc.; your music library on your Apple iOS or Android device, Windows PC/DLNA server, or USB thumbdrive; analog, digital, and HDMI inputs; as well as Bluetooth. You can also select music from Playing: The "Now Playing" screen displays song, artist, and album information; along with Album Art. You also get basic playback controls like Play/Pause and Previous/Next Track, plus Volume controls Up/Down and Mute. In addition the "Now Playing" screen functions unique to the selected online music service or music library. Alexa compatible: HEOS and Amazon Alexa customers can now enjoy the convenience of Alexa voice control plus high-quality wireless home audio. In addition to controlling your HEOS components with the HEOS app on your mobile device or tablet, you can now control them with Amazon Alexa device (such as the Echo or Echo Dot, sold separately). Your HEOS components and the Alexa-enabled devices must be on the same network. Voice control features include - Alexa voice commands include Volume (up/down, specific volume number, & mute); Playback (Play, Pause, Stop, Next, Previous, Resume); and Power on/off. And thanks to the latest firmware update, you can even use Alexa to switch inputs on HEOS enabled AV receivers and soundbars. You can group your HEOSenabled devices using the HEOS app with an Alexa-friendly name. Once they are grouped, Alexa voice commands will control the group, you must ungroup the device within the HEOS app. You are able use voice commands to search for songs, albums and artists and even podcasts and internet stations from HEOS & Alexa compatible music apps - like Amazon Music, Pandora, TuneIn, iHeartRadio, Spotify Connect, & SiriusXM. Notes: You will need to download the Alexa app (for Apple iOS 11.0+ or Android OS 6.0+) onto your compatible Apple iOS or Android device. For a list of current Alexa voice commands supported by the HEOS HomeEntertainment Skill, click here. For setup instructions, click here the HEOS app, you can ask the Google Assistant to control volume, play, pause, skip tracks, and more. Once you have grouped your HEOS enabled devices as a whole. Make sure the unit has the latest HEOS software and firmware update installed. Notes: A future firmware update (no ETA) will allow you to use the Google Assistant and your voice to gueue up music services, power on/off devices, switch inputs and more. Click here for more info on Google Assistant for HEOS. Josh.ai Smart Home Voice Automation: An elevated voice agent for the high-end smart home. Josh.ai offers flexible voice control for nearly any aspect of your day-to-day experience and entertainment environment. Use voice commands to control the Denon AV receiver, thermostat, lights, home appliances, powered speakers, and more. Josh.ai is installed by custom integrators and accessed through the Josh - Home Automation app on your Apple iOS 12.1+ or Android OS 4.4+ device. AVR Remote App: The new Denon AVR Remote App (for Apple iOS or Android OS 4.0+) lets you control the Denon AV receiver's basic functions; such as power, volume, input, surround modes, and other settings. You'll also be able to control separate Zones of the receiver's network and Internet content from the app. In addition, you get unique features likes a landscape orientation control screen for tablet devices, the ability to create playlists, and control over a Denon Blu-ray player. Landscape Orientation Control Screen: With a landscape orientation control screen for tablet devices, you can easily browse and navigate through your network music services or personal digital music collection with ease, and at the same time view now-playing information and cover art all on a single screen. Create Playlists: The app's playback screen allows you to easily build your own personal music playlists on the fly with the ability to Drag & Drop files into your queue, or tap to "Play Next", "Play The app allows control over Denon Blu-ray (DBT-xx13 series) that are connected to the AV receiver via HDMI. Note: This AV receiver v iOS or Android device for further sound customization and detailed tuning to more precisely tailor the sound to your room and personal preferences. This app lets you view the speaker detection results to check correct installation, view before and after results of the Audyssey calibration making it easy to identify room problems, edit the Audyssey target curve for each channel pair to suit your tastes, adjust the EQ frequency adjustment range for each channel pair, switch between two high frequency roll-off target curves, enable/disable midrange compensation to make the vocal region brighter or smoother, as well as save and load calibration results. Custom Integration: The AVR-X4700H is part of Denon's IN-Command series line-up of receiver, which is Denon's certification to custom installers that the receiver has advanced connectivity and control features include IP control, a RS232C jack for use with whole house

control systems, remote in/out IR command control, and 12V trigger outputs. RS-232C Port: The RS-232C port is used for connection to an external whole-house control system, from companies such as AMX, Crestron, etc. Remote Jacks: The minijack input and output jacks are to be used with an optional IR repeater system (sold separately). 12V Trigger Outputs: The AVR-X4700H has two minijack outputs to send a 12-Volt DC turn-on signal to another component that accepts a 12V trigger, such as a power amplifiers in Zone 2 and Zone 3. The conditions under which the trigger output activates is programmable. IP Control: The receiver can be set up and operated by a home computer on the network via IP control, either via wired LAN connection or Wi-Fi, and also features Control4 SDDP (Simple Device Detection Protocol) certification for quick and easy integration with Control4 home automation equipment. Crestron Connect Intelligence: By embedding Crestron Connect intelligence in the Denon AVR-X4700H, it allows for seamless communication with Crestron home automation solutions, giving installers a simplified home theater solution and homeowners complete control of their home entertainment, it's critical for integrators to provide quick, reliable assistance and service to their clients, even after the install is complete. To support this effort, the Denon AVR-X4700H AV receiver features "OvrC" and "Domotz Pro" remote system monitoring and management technology. These programs allow custom integrators to monitor the status of connected products and troubleshoot remotely from the office or on the go, reducing the time it takes to address the issue. Convenience Features Advanced OSD w/ Setup Assistant (via HDMI): Once you connect your TV to the AVR-X4700H via HDMI, the exclusive Denon Setup Assistant appears on your TV screen to walk you through setup, step-by-step. With Denon's advanced on-screen menu and setup assistant, you can connect, configure, and use your home theater system with ease. The OSD and setup assistant features clear on-screen menu and setup assistant is required for initial setup and is only available through the receiver's HDMI output. The on-screen menu is only supported by the main HDMI monitor output (not the Monitor 2 output or Zone 2 monitor out). The video being played will not appear in the background of the menu is operated during playback of 4K, 8K, HDR, or 3D video; or if the video aspect ratio is not 16:9 or 4:3. Performing operations on this unit during playback of a Dolby Vision signal may cause variance in the color display of the menu screen and operations content. Quick Select: On the AVR-X4700H's front-panel and remote, you'll find four Quick Select buttons that let you quickly choose from the most popular input sources (including HEOS Music). With Quick Select, the AVR-X4700H remembers not only your preferred inputs but also your preferred audio settings, so you can enjoy precisely tailored sound with each one. Input Rename & Delete: The AV receiver will automatically rename its HDMI CEC (the HDMI Control function must be enabled). You can also manually change the display names (up to 16 characters) of analog, HDMI, and optical/coaxial digital input sources. If an input isn't being used, you can delete it from the display so you don't have to scroll past it when you change sources. Lock Functions: To prevent accidental operation of the AV receiver, you can disable operation of the buttons on the front-panel. You can also disable the receiver's IR sensor to prevent accidental operation of the receiver from the remote control. You can even disable operation of only Zone 2 from the remote control. Sleep Timer and Auto Standby: The Denon AV receiver features a programmable Sleep Timer and Auto Standby function. The Sleep Timer and Auto Standby: predetermined amount of time has passed; set the sleep timer up to 120 minutes in 10 minute increments. The unit enters Standby mode automatically when no commands are sent to the unit for the set time (15/30/60 minutes). Before it enters the standby mode, "Auto Standby" is displayed on the front-panel display of this unit and the on-screen menu. ECO Mode: This receiver is equipped with an ECO Mode function that allows you to enjoy music and movies while reducing the power consumption during use, Eco mode adjusts the maximum power available according to the volume level selected to reduce power consumption. Personal Memory Plus: For each input, the receiver automatically memorizes the settings for input mode, surround mode, HDMI output mode, audio delay, etc. When the input source is switched, the settings, and playback levels for the different output channels are memorized for each surround mode. Protection Circuit: This is a function to prevent damage to components within the power supply when an abnormality such as an overload, excess voltage, or over-heating occurs. In this unit, the power indicator blinks and the unit enters standby mode when an abnormality occurs. Software Updates: Using the receiver's network/internet connection, you can check for and update the latest firmware from the online Denon server. You can also set the receiver to automatically download the latest firmware and software updates when it is in standby mode. Visit Denon's Support Site for to check out the newest firmware and software updates. 9-channel amplifier; 125 watts per channel with 2 channels driven Dolby Atmos ® and DTS:X[™] for immersive surround sound HEOS Built-in technology offers internet music streaming and wireless whole home audio with compatible components

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