

Overwhelming Performance Brings Out the True Nature of Sound for a Higher Class of Experience

The top-class HX-D2 brings together all the features demanded of today's main unit, including high-performance functions, high quality parts, body design and materials, for the faithful reproduction of sound. Numerous high-performance features, including 96kHz Sampling D/A Converter, 4-Way Crossover and 5-Band Parametric EQ, let you discover the finest nuances of sound and create a sound taste exactly as you want it. Moreover, the Glass Epoxy 4-Layer Circuit Board and large external power supply unit DC/DC converter deliver stable circuit driving and high quality sound, with a body construction that takes performance into consideration with every detail. This collection of high performance provides car audiophiles looking for the ultimate sound a high-class sound solution.



HX-D2

CD RECEIVER / CeNET CONTROL

- Dual 24Bit/96kHz Sampling DACs and DSP
- Burr-Brown DACs
- Plays CD-R & CD-RWs
- 4-Way Crossovers (Subwoofer/Low/Mid/High) Built-in
- 5-Band PEQ
- Digital Time Alignment for Each Line Level Output

- 4V/8ch Gold Plated Line Level Outputs (for SW/L/M/H or Front 2-Way/Rear/SW) with OFC Cables
- Copper Plated Chassis
- DC/DC Converter
- CeNET Control of Optional: TV Tuner, DVD Changer and 6-Disc CD Changer
- Multi-Changer Control
- Two 2ch Aux. Inputs
- Fibre Optic Input/Output
- Vacuum Florescent Display
- IR. Remote Control

- Line Level Output Only (Requires External Amplifier)
- Radio Tuner with 18FM/GAM Presets
- Ultra Precision Rotary Volume Control
- Zinc Diecast Faceplate
- CeNET iPod Interface Compatible



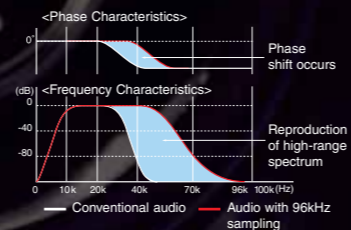
96kHz Sampling D/A Converter

Conventional CD players could only reproduce up to around 20kHz. Sampling takes place to convert digital signals to analog. In this process, digitized sound with a frequency range of up to about half the sampling frequency is reproduced. For example, in the case of CDs which are sampled at a frequency of 44.1kHz, playback is possible for up to half that, or 22.05 kHz. Sampling is set at 44.1kHz to achieve reproduction of highs in the neighborhood of 20kHz.

Harmonic elements included in high range add richness and depth to sound. The format specifications for CD deemed the high frequency elements above 20kHz as inaudible by the human ear, and thus they were not recorded. And even if such high frequencies were reproduced during playback, they would be detected as noise elements and removed by a digital filter. Not only that, but phase distortion was introduced as a result of noise cut-off by the filter, thereby inhibiting the accurate reproduction of high frequency sounds. Ironically, it is the harmonic elements contained in this high frequency range that affects the depth and nuance of sound.

96kHz sampling enables reproduction of sounds faithful to the original source. The 96kHz Sampling D/A Converter samples at a much higher rate than the usual 44.1kHz to offer reproduction frequencies as high as 48kHz (half the sampling frequency of 96kHz), surpassing the format specifications for CD as the first such D/A Converter for car audio use. By broadening the sampling range, it becomes possible to reproduce the subtle nuances and depth contained in harmonic elements while reducing phase distortion in the high frequency range, delivering the full expressiveness and natural resonance that is inherently present in sound.

Conceptual Diagram of Frequency/Phase Characteristics

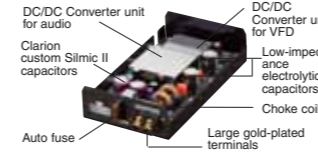


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Ready for iPod

Copper Plated Chassis Prevents Sound Deterioration
Uses a copper plated chassis to minimize the generation of spurious electrical current which can adversely affect sections that have a bearing on the signal, as well as noise interception caused by electrical shielding effect. By incorporating a zinc diecast panel, with its large specific gravity, high rigidity and low resonance, sound quality deterioration due to vibration is reduced. And by externally positioning noise generating parts such as the power supply, VFD devices for the display and drive mechanism, the sources of noise are eliminated.

DC/DC Converter Developed Specifically for Audio
This external power supply unit, veritably a collection of only the most carefully selected high spec parts, from wiring to fuses and chassis, was developed especially for car audio. Together with the six-sided shielded casing, this thoroughly shuts out noise even during high load bursts. By use of aluminum diecast casing and black finished copper chassis, it takes into consideration the effects



of vibration on sound quality. Noise from the car is eliminated and power loss is minimized thanks to the use of toroidal choke coils. Pure power input is achieved due to the combined use of large-capacity low-impedance condenser. And by adopting the gold-plated connection



terminal identical to those found on external amps, power loss from the battery is kept at bare minimum levels.

High-Sampling Conversion Circuit
The sampling conversion circuit upconverts the digital audio data read from a CD to fs96kHz and applies high-speed interpolation using a DSP by AKM Corporation, converting up to a maximum fs786kHz using a high-sampling compatible 8x FIR digital filter.

Burr Brown Advanced Segment Type 24-bit D/A Converter
After high sampling the data is processed by an advanced segment type Burr Brown 24-bit D/A Converter which offers superior dynamic characteristics and is resistant to clock jitter. Since the D/A Converter's internal structure is a 4DAC configuration which operates on L/R± differential, higher accuracy in D/A Conversion is afforded.

High-Performance Operational Amp Selected for Analog Section
High through rate operational amp for the voltage current conversion circuit which accepts the output signal from the D/A Converter, high-definition audio output is achieved. Moreover, for audio operational signal composing and active low-pass filter, a high-speed operational amp by Analog Devices Corporation offering superior sound quality is used.

Silver-Coated SK:6N (99.9999% Oxygen-Free) Copper RCA 8ch Output Cable
Uses silver-coated SK:6N (99.9999% Oxygen-Free) Copper RCA 8ch output cable which combines the clear low-resistance afforded by silver wiring with the dynamic capacity characteristics of 6N oxygen-free copper wiring, to send natural, high-quality sound to the power amplifier.

Glass Epoxy 4-Layer Circuit Board
Internal circuitry uses a glass epoxy 4-layer circuit board, with separate exclusive layers for ground and power supply, lowering the impedance for ground and power supply for stable circuit driving and high sound quality.

Display OFF Function
Turns off the display circuits when a CD or other source is being played, preventing pulse noise from the display section from affecting sound quality.

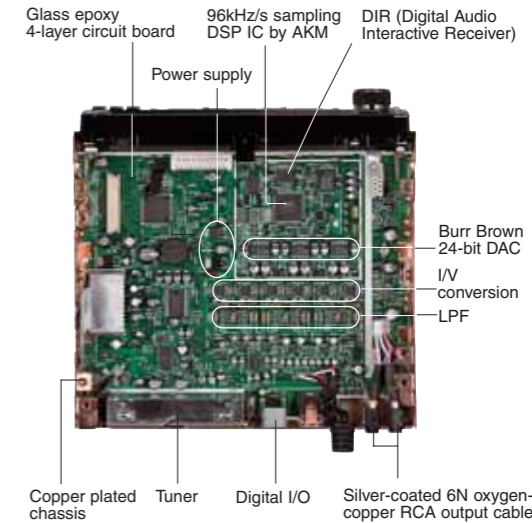
Specially Designed Mechanism Chassis with 3-Layer Coated Nickel Plating
By shielding the CD mechanism, it eliminates the effects of the moving servo motor and pickup from the audio circuits. In order to mitigate the noise and vibration generated by the mechanism, its weight was increased to improve stability, and a 3-layered coating process, where the base steel material is plated with copper followed by a nickel finish, was applied. Even minute signals will be reproduced with clarity.

Fluorescent Display (VFD) for Superior Visibility
Using a high-luminosity VFD, the display offers clear visibility even under direct sunlight. The heater circuit used to drive the fluo-

rescent tubes is a conventional exchange drive, but a DC drive system was adopted taking the sound quality degradation that may result from noise encroachment.

2 Sets of AUX Input Circuits
To broaden the interface possibilities with portable audio products, a 4-channel isolation amplifier AUX input circuit with two sets of stereo inputs is incorporated. Three levels of input sensitivity (HIGH MID LOW) are selectable.

Optical Digital Input enables Optical Cable Connection
When creating a system with a CD/DVD auto changer and components, optical digital connection enables high quality sound playback using a 96kHz Sampling D/A Converter or Burr Brown 24bit D/A Converter.



8-Channel 4-Way Crossover
With Multimode, it's possible to create a multi speaker system with each band (HIGH, MID, LOW, SUBWOOFER) driven by an exclusive amp. The Digital Crossover function lets you make fine and precise adjustments to each frequency range to bring out the full performance of each speaker and create an extremely natural transition. Setting of various types of systems, including 2-Way and 3-Way, is possible. And with adjustable settings for cut-off frequency (315Hz-), slope (-6dB, -12dB, -18dB), gain (-24-0dB step), phase (0°/180°), etc. for each band, it is possible to precisely adjust the sound as desired directly from the head unit. You even get all channel muting which can be helpful when adjusting the system.

MULTI MODE
Used for reproduction of 2-channel sources. Even if currently using a system with front and rear tweeters/woofers, you can create a new system with HIGH, MID, LOW, SUBWOOFER by adding an amp for tweeter, midrange, woofer, and subwoofer in the trunk.

STANDARD MODE
Can configure standard systems with front and rear plus subwoofer. It supports up to 8-channel systems with 2-Way front, rear speakers and subwoofer, where the front channel has HIGH, LOW, and a rear 1-channel and subwoofer.

DIRECT MODE
Provides front, rear, non-fader 3-channel output while avoiding digital circuitry such as DSP and memory as much as possible. This mode allows direct reproduction of sound sources based on the original concept of analog sound.

World's Finest 0.7cm Step Digital Time Alignment
This function lets you set each speaker in a maximum 8-channel system to deliver the same acoustic effects with pinpoint accuracy

regardless of the seating position of the listener, with FRONT-L, FRONT-R, FRONT, REAR, and FULL SEAT position selectable. The Front L/R, Rear L/R, Center speaker and Subwoofer work in harmony to create a seamless soundscape. It's possible to quickly and easily select the acoustic pattern you like, or choose different ones optimized according to the number of passengers or type of vehicle. (Adjustable range: 0-500cm, in 7mm steps)

5-Band Parametric EQ
In addition to conventional tone control (Bass, Treble), this enthusiast-oriented graphic equalizer divides the frequency range into 5 bands and allows adjustment of each individually. This 5-band L/R independent parametric equalizer (50-20kHz for bands 1/2/3, 630-20kHz for bands 4/5) lets you choose the band you wish to set and finely adjust the Q (0-12kHz, 0.5 step increments) and Gain (0.5dB step increments). It helps correct the frequency range balance in your car to make its acoustic characteristics as flat as possible.

World's First 0.5dB Step Electronic Volume Circuit
By incorporating the Burr Brown volume IC that is used in recording mixers and other professional audio equipment, it achieves fine adjustment in 0.5dB step increments. You can also adjust the step increments between -95.5dB and +6dB according to your preference. And since it is equipped with a zero crossing

detection function, there is no switching noise while the volume is being changed, thus providing smooth volume adjustment just as you would get with an analog volume control.



HX-D1 CD RECEIVER/CeNET CONTROL

- Clarion High Fidelity CD Player Without Built-in Amplifier
- CeNET Control of 6 Disc CD Changer
- Dual 24-Bit D/A Converter
- CD Text
- HDCD Disc Playback
- High-capacity DC/DC Converter (± 15 V)
- 4 Volt / 4ch RCA Output (Max 9V)
- High Purity OFC Cable
- 2ch AUX Input
- High Visibility Blue-White VF Display
- Copper Plated Chassis
- Optical Input Terminal for connection with DCZ625
- Aluminium Analogue Rotary Volume Control
- 18FM/GAM Presets
- FM Diversity
- CeNet iPod Interface Compatible



DRX9255EXL CD RECEIVER/C-BUS CONTROL

- Clarion Performance CD Player Without Built in Amplifier
- C-BUS CD Changer Control
- ALPHA Processor*
- Dual 20-bit D/A Converter
- 4Volt / 4ch RCA Output (Max 9V)
- High Visibility Blue VF Display
- Copper Plated Chassis
- High S/N Analogue Rotary Volume
- 18FM/GAM Presets
- FM Diversity

*The ALPHA processor was developed by Nippon Columbia Co., Ltd.