

Supplementary New Product Information (SNPI)

**NR-7CD** Network CD Player/Integrated Amplifier



**Our devotion to sound quality, recognized by professionals the world over, started in the era of reel-to-reel tape. Today, we have fused our passion for sound with the latest network audio features and state of the art audio technology. TEAC presents the New Vintage...**

■ **Main Features**

- Flagship all-in-One solution incorporating Amplifier, Network Player and CD Player
- NEW VINTAGE design with dual peak level meters in A3-size footprint
- OpenHome network supporting DSD5.6MHz and PCM384kHz/32-bit streaming
- Built-in Bluetooth® receiver supporting LDAC™ and Qualcomm® aptX™ codec
- Dual VERITA AK4490 D/A converters and RDOT-NEO supporting up-conversion to DSD
- Full balance, dual monaural circuit design
- Free control app TEAC HR Streamer for smartphone/tablet



Brand	TEAC
Series	Reference 7
Model No.	NR-7CD
Color	Silver
EAN Code	4907034221295
Main Unit Dimensions / NW	442 x 152 x 345mm (W x H x D) / 13.4kg
Package Dimensions / GW	561 x 350 x 446mm (W x H x D) / 16.5kg
Qty. per Master Carton	1

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### ■ Overview

As the first model in the Reference 7 Series, we invested the NR-7CD Network CD player/Integrated amplifier with all the high-resolution playback expertise that TEAC has accumulated over the decades through the development of high-end and pro audio equipment.

From high-resolution master audio sources, including DSD 5.6MHz and PCM 384kHz/32-bit, to the classic albums sleeping in the corner of your CD library, and from the vast collections of music provided by premium "loss-less quality" on-line music subscription services such as TIDAL and qobuz on Internet, to high-quality wireless music streaming via Bluetooth®, this unit can handle them all in style.

Despite being multifunctional in nature, this is a no-compromise device. Every stage, from the D/A converters to the power amplifier section, it employs a dual monaural circuit design, and every audio signal is processed on fully-balanced circuit from the beginning to the end. The RDOT-NEO is remarkable, that up-converts incoming digital audio signal including conventional CD to DSD12.2MHz or PCM 384kHz which is Hi-Res audio quality, while free control app TEAC HR Streamer provides look-and-feel operation on your smartphone/tablet.

Highly-experienced craftsmen undertake the entire process from soldering to assembly. With a "Made in Japan" label comes immense attention to detail, as well as a level of sound quality that's appropriate for the flagship of our Reference Series.

The TEAC sound, which has been recognized in professional audio environments over the decades, and a design that embraces this accumulated history, have been successfully fused into this all-in-one Network CD player/Integrated amplifier for a new era.

### ■ Versatilities – Supporting a wide range of sources

#### ● Streaming from NAS and USB flash drives

Hi-Res audio playback is supported from NAS and high-capacity USB storage devices. (\*1) As well as 2.8/5.6MHz DSD and 384kHz/32-bit PCM(\*2), numerous other formats (DSF, DSDIFF, FLAC, Apple Lossless, WAV, AIFF, MP3, AAC) are supported. In addition, gapless playback is supported for every lossless format, allowing uninterrupted playback of live performances that span multiple tracks.

\*1 Hi-Res audio playback from NAS requires a compatible audio NAS.

\*2 PCM 384kHz or 352.8kHz will be down-converted to half, while 32-bit will be reduced to 24-bit.

#### ● TEAC HR Streamer control app offers excellent usability

The TEAC HR Streamer app is not only compatible with the OpenHome standard, it is also an App for network playback control that has been purpose-designed for ease of use. (\*)

Because a cache system in the app captures tag information and images for the tracks on the NAS and USB storage in advance, you can zoom in and out and scroll through album art instantaneously. You can also freely re-arrange your library by recording year, composer, category or other criteria. You can choose tracks on the iPad and create and play playlists as you wish. The operation buttons and various screens, including the playlist



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and the library, are all designed to be visually clear so that even new users can operate them intuitively.

\* iOS version is available. Android version will be released in **late-2017**. (as of November 2017)

Wi-Fi is necessary to use the app, and the NR-7CD must be connected to the same network via LAN cable.

### ● Full support for TIDAL and Qobuz

There's comprehensive support for the TIDAL and Qobuz subscription music streaming services. These enable you to enjoy huge collections of music of high-resolution (or CD-equivalent lossless quality) over a network.



Owners can use the TEAC HR Streamer to select and enjoy tracks seamlessly from their own NAS and USB storage as well as from Tidal/Qobuz's vast collections in the cloud. (TIDAL and Qobuz were not available in Japan as of November 2016.)

TIDAL is available in most European countries. (as of November 2017)

Qobuz is available in Germany, France, United Kingdom and the Netherlands (as of November 2017)

### ● LDAC-compatible Bluetooth® receiver

In addition to LDAC™, which enables high-resolution audio transmission, the NR-7CD's Bluetooth® receiver also supports Qualcomm® aptX™, AAC and SBC codecs. Using a compatible device, you can easily enjoy wireless high-quality audio listening.



LDAC™ can transfer data at rates about three times greater than existing technologies.\* You can thereby enjoy high-quality sound wirelessly from devices that support LDAC™, including high-resolution and CD-quality audio sources.

\*Bluetooth A2DP SBC (when 328kbps, 44.1kHz) (See <http://www.sony.net/Products/LDAC/>)

### ● Optical/coaxial digital inputs enable DSD transmission

Two optical digital inputs and one coaxial digital input allow you to enjoy high-quality audio from TVs, universal players, portable audio players and many other digital sources. Transmission of high-resolution signals is supported, and PCM signals up to 192kHz/24-bit and 2.8MHz DSD signals can be input.\*

\*The DoP (DSD Audio over PCM Frames) format is used for transmission.

### ● TEAC-made CD drive mechanism, provides high performance and reliability

The audio CD drive mechanism used, one that we have designed and manufactured ourselves, has a proven track record, having been used in many professional CD players. You can easily continue to enjoy your CD collection together with that format's traditional ease of use.

In addition, upconversion with RDOT-NEO interpolates analogous data for frequencies above 20 kHz, which is not recorded on CDs, allowing you to enjoy smooth and rich sound that is closer to the original source.

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### ■ Design – New Vintage design evokes classic and contemporary styles

#### ● New Vintage design

Vintage audio design has been appreciated over the decades because the universal appeal of classic audio components is timeless. Using classic but functional audio equipment as a design guide, we re-interpreted it to take account of modern sensibilities and to sit well in modern living spaces.

#### ● Large peak level meters

Large peak level meters are located on the front panel. The movement of the meter needles allows you to see and visibly 'feel' the dynamics of the music. The meter lighting can be adjusted via a dimmer function and set to three levels of brightness or turned off altogether. The meters emit a warm light, allowing the amplifier's presence to act as an interior lighting accent.



#### ● Side panels with a rounded design

The side panels, a key visual feature of the Reference Series design, are fabricated from 12mm thick aluminum. These thick panels increase the rigidity and vibration resistance of the chassis. Viewed from the front, the panels have rounded forms that draw gentle arcs in a design that simultaneously evokes a sense of both solidity and elegance.



#### ● Presenting a new A3 size

Many full-size components are significantly deep, requiring users to consider placement space before installation. Even though the NR-7CD is full-size, it occupies approximately the same footprint as a piece of A3 paper, with a depth of just 30 cm, making it relatively easy to locate. This enables placement on shallow shelves, in racks and other convenient locations. This also leaves plenty of space for attaching cables to the back.

#### ● Display

The display uses organic EL technology. Large numerals are used to indicate volume control and are shown on as much of the display area as possible, making them easy to see and allowing comfortable operation even from a distance. The display also shows the sampling frequency of the song being played back (supported for network and digital inputs). The track number, playback time and other information messages are shown during CD playback. The dimmer function allows the display to be set to three brightness levels or turned off. (Song data during network playback is only shown in the control app.)



#### ● Precision-cut aluminum knobs use high-precision bearings

Precision-cut aluminum knobs are used for the volume and selector controls. They are attached using high-precision bearings, giving a luxurious feeling to the touch.

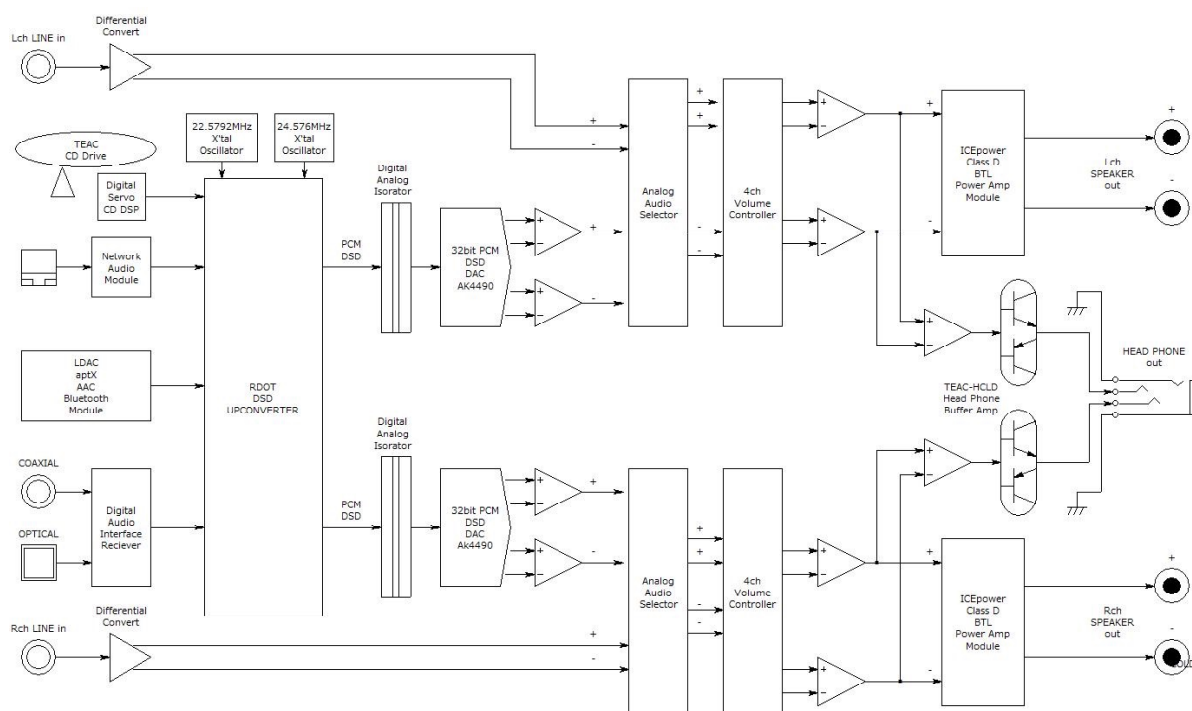


## Supplementary New Product Information (SNPI)

### ■ Technologies – A quest for high quality sound

#### ● Full Stage Dual Mono Differential Circuit

Transmission is fully balanced at every stage in the preamp and power amplifier sections, minimizing and eliminating common-mode noise. As a result, audio signals are transmitted with as little noise as possible and possess outstanding S/N ratios. What's more, the left and right channel circuits are completely independent from the D/A converter to the power amplifier. Using this dual mono configuration minimizes interference between the two channels and achieves outstanding channel separation. This allows you to enjoy a realistic soundstage that makes you feel as if you are right next to the performers. It also makes moments of silence feel truly still.



#### ● Dual monaural D/A converters

Quality DAC chips are crucial for digital audio. For this dual mono configuration, two VERITA AK4490 DACs are employed for the left and right channels. These DACs are designed and made by Asahi Kasei Microdevices Corporation and have an excellent reputation when used in high-end audio equipment. By keeping channels independent from the DAC section, high channel separation is maintained.



#### ● Power amplifier with independent left and right channels

In a BTL configuration, one highly-regarded 50ASX2 Class-D stereo power amplifier made by ICEpower is used in each of the left and right channels. This achieves a maximum output of 140 W + 140 W (at 4 Ω). With high linearity and high speed, sound is beautifully delivered with power to spare.





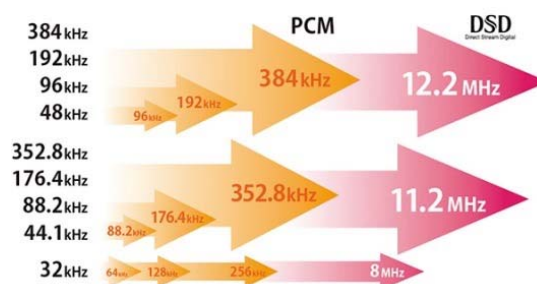
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### ● TEAC-OVCS (Octa Volume Control System)

Our TEAC-OVCS volume control method is optimized for pure signal routing. Turning the volume knob simultaneously operates a total of eight switched resistor-ladder volume controls, including two independent parallel circuits each with a positive and negative for both left and right channels. This arrangement retains audio signal left, right, positive and negative independence, achieving a clear sound with outstanding channel separation and phase performance. Moreover, by eliminating wiring to volume components from the audio circuit board, the audio signal path has been greatly shortened, preventing the degradation of audio quality.

### ● RDOT-NEO for refined digital audio processing and up-conversion

The FPGA (programmable IC), an original TEAC design, uses a fluency algorithm that smoothly augments digital audio signals. This enables up-conversion of PCM digital signals 2, 4 or even 8 times as well as DSD up-conversion. Using this function, you can easily experience the dense sense of air that DSD files have when playing back your own CD archives. During CD playback, signals are up-converted to the 11.2MHz DSD format, which contains about 256 times more data than standard CD audio. This method is truly outstanding at recreating natural tone and a soundstage that resembles live performance. You can hear the music reverberate naturally and feel the differences in resolution and reverberations, especially so when instruments overlap. 48kHz PCM audio sources can also be played back at 384kHz PCM or 12.2MHz DSD.



RDOT-NEO (Refined Digital audio Output Technology), which applies an analogous interpolation method using fluency logic, is a technology that was developed to enable the playback of the frequencies higher than 20kHz that are lost by the 44.1kHz/16-bit CD format. Based on the information read from the CD, analogous data is generated between the waveform samples. As a result, data above 20kHz is also generated. RDOT-NEO doesn't just work for PCM up-conversion, it also enables conversion to the DSD format.

RDOT-NEO is a refined up-conversion circuit that supports high-resolution formats up to 12.2MHz DSD and is based on TEAC's original RDOT (Refined Digital Output Technology) circuit, which applies a fluency function.

### ● Chassis construction designed for high rigidity

A double deck structure is employed, one that separates analog and digital sections into top and bottom. The middle chassis is welded to the side panels, increasing the rigidity of the entire chassis and reducing the vibration of parts and minimizing unwanted vibrations from outside. This also provides a very effective shield that prevents interference between the analog and digital sections.

### ● AMAC (Aluminum-Block Mounted Amplifier Construction)

The DAC and the preamp are mounted on one side of a very-rigid 10mm-thick aluminum block, and the power amplifier module is mounted on the other side. This structure transmits analog signals



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by the shortest route possible and increases the shielding effect to suppress the influence of noise while also enhancing heat dispersion from the power amplifier.

- **TEAC-HCLD headphone amplifier**

A TEAC-HCLD (High-Current Line Driver) buffer amplifier is used for the headphone amplifier. This is also used in our UD-503, which has an established reputation as a DAC/headphone amplifier. It enables 500mW+500mW maximum output (into 32Ω load, THD 1%). This headphone amp can even drive 600Ω high-impedance headphones, which are difficult to power, with ease.

- **3.5mm 4-pole headphone jack supports separate grounding**

L/R ground separation is supported by the 3.5mm 4-pole separate ground jack. Connecting compatible headphones or earphones with a 3.5mm 4-pole plug will increase left and right channel separation, allowing you to enjoy outstanding stereo imaging when listening with headphones. (You can also use headphones with standard 3.5mm 3-pole plugs as is.)



- **Custom EI core transformer with separate left and right windings**

The digital, preamp and power amplifier sections each have independent power transformer taps. A dual mode structure has been implemented in the power supply by using a custom EI core transformer with separate left and right windings especially for the preamp section.

- **Current stabilization circuit**

A shunt regulator, also known as an A-class drive, in the power supply stabilizes the current of the D/A converter and preamp sections. In addition to suppressing fluctuations in ground potential, it also achieves close tracking of current fluctuations in the circuit.

- **Four types of digital filters and an OFF mode**

Four types of digital filters are available for PCM signal processing. In addition to two types of FIR digital filters, which have a long established reputation for audio quality, there are also two short delay digital filters that eliminate pre-echo included in impulse waveforms and make the beginnings of sounds seem even more natural. An OFF mode that disables the digital filter can also be used. You can select these as you prefer.

### FIR digital filter settings

These filters have a very well established reputation. They offer a quality that allows reverberation that is both dense and rich while also crisp.

### SDLY digital filter settings

The key characteristic of these filters is that there is no pre-echo in their impulse responses and the beginnings of sounds and their reverberations are natural, making the sound close to the original.

- **44.1kHz and 48kHz internal master clocks**

Separate dedicated 44.1kHz and 48kHz master clocks are built in. The effect of jitter on audio quality is greatly suppressed and the original sound is reproduced faithfully by using audio grade, high-precision crystal oscillators, featuring low phase noise, on input signals with sampling frequencies that are whole number multiples.

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### ● Digital/analog isolation

Interference from the digital section on signals in the analog section can cause various types of noise. In order to eliminate as much of this as possible, the analog circuit, after the digital section and the D/A converter, is separated by an isolator and the purity of the analog signal is maintained by electrical isolation.

### ● 3-position pin-point feet

Support legs arranged at three points enable stable placement of the unit so that it is not affected by slight irregularities in the placement surface. We use an original construction method, with a spike-shaped foot connected to a basin-shaped base. Although pinpoint feet are said to be ideal for audio equipment, they have often been difficult to place. Our design makes placement easy.



Supporting the unit on pinpoint feet reduces unwanted vibration, greatly eliminating heaviness and muddiness in low and medium frequencies. This method also improves the resolution and stereo imaging, which contributes to defining individual sounds.

## ■ List of features

- All-in-One solution incorporating Integrated Amplifier, Network Player and CD Player
- OpenHome network supporting DSD5.6MHz and PCM384kHz/32-bit via LAN
- Supporting premium music subscription services, TIDAL and qobuz on Internet (\*1)
- Built-in Bluetooth® receiver with LDAC™, Qualcomm® aptX™, AAC and SBC codec
- Centre-mounted TEAC-made CD mechanism
- Coaxial and optical digital inputs supporting DSD input (DoP format)
- Hi-Res audio playback from USB flash memory
- NEW VINTAGE design in A3-size footprint
- Dual peak meters and an organic EL display
- Precision machined aluminum knobs with high-precision bearings
- Full stage dual monaural circuit design
- Dual D/A converters for left and right channels by VERITA AK4490
- Up-convert from conventional CD to DSD11.2MHz/PCM352.8kHz (DSD 12.2M/PCM384kHz for 48kHz incoming signal)
- RDOT-NEO (Refined Digital Output Technology NEO) employing Fluency algorithm
- TEAC-OVCS (Octa Volume Control System) for precise volume control
- Robust chassis design and construction
- Dual power amplifier modules by ICEpower deliver 230W + 230W
- AMAC (Aluminum-block Mounted Amplifier Construction) for simplified analog signal paths
- TEAC-HCLD headphone amplifier delivering 500mW+500mW
- 3.5mm 4-polar headphone jack supporting GND separate drive
- Custom EI-core power transformers with 2-way windings
- 4 digital filters
- Dual on-board clocks for 44.1kHz and 48kHz systems incoming digital signal
- Isolated Digital/Analog circuit design
- 3-position patent-registered Pin-point feet
- Large gold-plated binding-post speaker terminals
- Gold-plated RCA jacks
- Detachable IEC power socket and OFC power cord



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- Wireless remote control with aluminum fascia
- Free control app TEAC HR Streamer for iOS/Android (\*2)

\*1 Services are available in selected countries.

\*2 Android version is schedule to launch in [late-2017](#)

### ■ Specifications

#### Amplifier section

Maximum output power	230 W + 230 W (4 Ω, 1 kHz, THD 10%) 130 W + 130 W (8 Ω, 1 kHz, THD 10%)
Rated output power	100 W + 100 W (4 Ω, 1 kHz, THD 0.07%) 60 W + 60 W (8 Ω, 1 kHz, THD 0.07%)
Allowable speaker impedance	4–8 Ω
Speaker terminals	1 set (Binding-post, gold-plated)
Total harmonic distortion	0.008% (1 kHz, 8 Ω, 50 W)
S/N ratio (LINE IN)	110dB (IHF-A/LPF 20 kHz, 1kHz/2V input)
Frequency response	5 Hz – 100 kHz (+1/–3 dB)

#### Headphone amplifier section

Connector	3.5mm (1/8") 4-polar mini jack x 1
Supported drives	Ground Separate, Unbalanced
Practical maximum output	500 mW + 500 mW (32Ω loaded)
Compatible impedance range	16–600 Ω

#### DAC section

D/A converter	VERITA 4490 x 2
Up-conversion	max. DSD 12.2MHz, PCM 384kHz (for 48kHz system signal) max. DSD 11.2MHz, PCM 352.8kHz (for 44.1kHz system signal)

#### CD section

Supported disc types	CD, CD-R, CD-RW (12cm, 8cm)
Supported disc format	CD-DA
Sampling frequency	44.1 kHz
Quantization bit depth	16-bit

#### Network section

LAN port	RJ-45 x 1 (1000Base-T)
USB port	USB Type-A x 1 (USB2.0 Standard)
Supported Audio formats	
PCM	32–384kHz, 16–32 bit (*1)
DSD	2.8M/5.6MHz
Supported File formats (*2)	WAV, AIFF, FLAC, ALAC (Apple Lossless), MP3, AAC (m4a container), DSF, DSDIFF (DFF)

\*1 PCM 384kHz is down-converted to 192kHz, as PCM 352.8kHz to 176.4kHz, and 32-bit to 24-bit.

\*2 The NAS must support a file format for it to be played back.

#### Bluetooth® section

Bluetooth® version	4.0
Output class	Class 2 (Range: approx. 10m)
Supported profiles	A2DP, AVRCP
A2DP content protection	SCMS-T
Supported A2DP codec	LDAC™, Qualcomm® aptX™, AAC, SBC
Number of saved pairings	8

#### Analogue audio input

Connector	RCA x 1 pair (gold-plated)
Input impedance	47 kΩ
Input sensitivity	30 mV

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### Coaxial digital audio input

Connector	RCA x 1 (gold-plated)
Input sensitivity	0.5 V <sub>pp</sub>
Input impedance	75 Ω
Supported audio formats	
Linear PCM	32–192kHz / 16–24bit
DSD	2.8 MHz (in DoP format)

### Optical digital audio input

Connector	TOS-link x 2
Input sensitivity	–24.0 to –14.5dBm peak
Supported audio formats	
Linear PCM	32–192kHz / 16–24bit
DSD	2.8 MHz (in DoP format)

### General

Operation Power	AC 220–240 V, 50/60 Hz
Power consumption	130 W
Standby power	less than 0.5 W (in standby mode)
Overall Dimensions (W × H × D)	442 × 152 × 345mm
Weight	13.4 kg
Operating temperature	+5°C to +35°C
Operating humidity range	5% to 85% (no condensation)
Storage temperature range	–20°C to +55°C

### Included items

OFC Power cord × 1  
Remote control (RC-1328) × 1  
Batteries for remote control (AAA) × 2  
Felt pads for Pin-point feet × 3  
Owner's manual (including warranty) × 1

### Related Product

TEAC HR Streamer (Free Download)

## ■ Rear Panel

