

# TX-NR646 7.2-Channel Network A/V Receiver

BLACK



## Home Theater at the Cutting Edge

Experience the cutting edge of home theater with the 7.2-channel TX-NR646 Network A/V Receiver, the first in its class to feature the revolutionary DTS:X™ and Dolby Atmos® multi-dimensional audio formats. Onkyo's high-current amplification system drives your speakers to reproduce soundtracks with maximum impact and fidelity at 170 W/Ch. UltraHD video capability is equally impressive, with eight latest spec HDMI® terminals including dedicated HDCP 2.2 compatible inputs for premium 4K video content and two HDMI outputs for video in separate rooms. The TX-NR646's high-grade 384 kHz/32-bit AKM DAC not only brings movies to life, but your Hi-Res and streamed music as well. Conveniently stream music over built-in Wi-Fi®, Bluetooth, AirPlay, or internet music services including Spotify Connect and Pandora. Use the free Onkyo Remote app to stream audio stored on your mobile device, browse and select tracks from online services, and control playback in two zones. Plus, for fans of vinyl, the TX-NR646 has a phono equalizer input to connect a turntable.

### HIGHLIGHTS

- DTS:X™ Compatible
- Supports Dolby Atmos® up to 5.1.2 Channels
- 170 W per Channel
- Hi-Current Amp Design for Authentic Sound Reproduction
- HDMI® 8 In / 2 Out Including 1 Front (4K UltraHD / HDCP 2.2 / 4:4:4 Color)
- Bluetooth Audio / Wi-Fi® with Pandora, Spotify, and AirPlay
- DSD 5.6 MHz, FLAC 192 kHz/24-bit Hi-Res Audio Capable
- 384 kHz/32-bit Hi-Grade DAC
- AccuEQ Room Acoustic Calibration

### ADVANCED FEATURES

- New DTS:X™ New Generation Sound Format Ready
- Supports Dolby Atmos® Format for Exciting Multidimensional Sound
- 4K/60 Hz-Capable HDMI® Terminals for UltraHD Entertainment<sup>\*1</sup>, including HDR & 4:4:4 Color Space
- Supports HDCP 2.2 for Future 4K/Full HD Video Streaming and Broadcast<sup>\*2</sup>
- Built-in Wi-Fi® Certified Wireless LAN Capability
- Bluetooth Version 2.1 + EDR Capability (Compatible Profile: A2DP v1.2, AVRCP v1.3) with Advanced Music Optimizer DSP Technology
- Internet Radio and Music Streaming Subscription Services Included (TuneIn Radio, Pandora®, Slacker™, SiriusXM Internet Radio®, Spotify, and Deezer)<sup>\*3</sup>
- Playback Compressed, Lossless, and Hi-Res Audio via Local Network (MP3, WMA, WMA Lossless, FLAC, WAV, Ogg Vorbis, AAC, Apple Lossless, DSD 5.6 MHz, LPCM<sup>\*4</sup>, and Dolby® TrueHD)
- Proprietary AccuEQ Room Calibration with Mic Included
- Advanced Music Optimizer to Improve Compressed Digital Audio Quality (Bluetooth Audio Included)
- Control and Stream with Free Onkyo Remote Streaming Apps for iPod touch®/iPhone®<sup>\*5</sup> and Android™ Devices<sup>\*6</sup>

- Phase Matching Bass Boost for Deep Bass and Clear Mid-Range
- Powered Zone 2 and Zone 2 Line-Out for Distributed Audio Playback in Another Room
- Bi-Amping Capability for Front Channels

\*1 6G video is supported on HDMI inputs 1/2/3, Main Out, and Sub Out. \*2 HDCP 2.2 is supported on HDMI inputs 1/2/3, Main Out, and Sub Out. \*3 Availability of services depends on region. Some services may require a paid subscription and firmware update. Availability of third-party services advertised here is accurate at the time of publication, but may be subject to change without notice. \*4 LPCM is supported via DLNA only. \*5 Compatible with iPod touch (3rd generation or later) and iPhone 3GS or later. All models require iOS 4.2 or later. \*6 Requires Android 2.1 or later.

### AMPLIFIER FEATURES

- 170 W/Ch (6 Ohms, 1 kHz, 0.9% THD, 1 Channel Driven, FTC); 100 W/Ch (8 Ohms, 20 Hz–20 kHz, 0.08% THD, 2 Channels Driven, FTC)
- WRAT (Wide Range Amplifier Technology)
- H.C.P.S. (High Current Power Supply) Massive High Power Transformer
- Discrete Output Stage Circuitry
- Optimum Gain Volume Circuitry
- PLL (Phase Locked Loop) Jitter-Cleaning Circuit Technology for S/PDIF Audio

### PROCESSING FEATURES

- HDMI® Support for 4K/60 Hz and 4:4:4 Color Space, 3D, Audio Return Channel, DeepColor™, x.v.Color™, LipSync, Dolby Atmos®, Dolby® TrueHD, DTS:X™, DTS-HD Master Audio™, DVD-Audio, Super Audio CD, Multichannel PCM, and CEC
- AK4458 384 kHz/32-bit DAC (8 Channels x 1)
- Dual 32-bit Digital Signal Processing Engines
- 4 DSP Modes for: Gaming; Rock, Sports, Action, and RPG
- Theater-Dimensional Virtual Surround Function
- CinemaFILTER™
- Direct Mode
- Double Bass Function
- Non-Scaling Configuration
- A-Form Listening Mode Memory

### CONNECTION FEATURES

- 8 HDMI® Inputs (1 Front/ 7 Rear) and 2 Outputs
- USB Port (Rear) (5V, 1 A)
- Mass Storage Class USB Memory Playback Capability
- 2 Component Inputs
- 3 Composite Video Inputs
- 3 Digital Audio Inputs (2 Optical and 1 Coaxial)
- 8 Analog Audio Inputs
- Phono Input for Turntable Connection
- 2 Parallel Subwoofer Pre-Outs
- Location Numbered Speaker Terminal
- 1/4" Headphone Jack

### OTHER FEATURES

- Crossover Adjustment for Each Channel (40/50/60/70/80/90/100/120/150/200 Hz)
- A/V Sync Control (Up to 500 ms in 10 ms Steps at 48 kHz)
- Graphical Overlaid On-Screen Display (OSD) via HDMI with Quick Set-Up
- Hybrid Standby Function with HDMI Passthrough
- Tone Control (Bass/Treble)
- 3-Mode Display Dimmer (Normal/Dim/Dimmer)
- 40 FM/AM Random Presets
- Certified with DLNA Version 1.5
- Firmware Updates via Ethernet and USB
- RIHD (Remote Interactive Over HDMI) for System Control
- Preprogrammed RI (Remote Interactive) Remote Control

# TX-NR646 7.2-Channel Network A/V Receiver

## DTS:X™ Compatible

DTS:X is a next-generation object-based surround sound technology that includes height to deliver a fully-immersive listening experience to your living room. DTS:X provides listeners the ultimate in flexibility, immersion, and interactivity.



## Supports Dolby Atmos® Up to 5.1.2 Channels

Dolby Atmos transports you from an ordinary moment into an extraordinary experience with captivating, multidimensional sound that fills your room and flows all around you to move your mind, body, and soul.



## High-Current Amp Design for Authentic Sound Reproduction

High instantaneous current enhances speaker control for accurate and dynamic audio reproduction. It's the cornerstone of Onkyo's amplification philosophy.



## HDMI® 8 In / 2 Out Including 1 Front (4K UltraHD / 4:4:4 / HDCP 2.2)

The latest HDMI specification and HDCP 2.2 compatibility support the latest formats and technologies planned for Hollywood content. This latest HDMI spec offers a significant increase in bandwidth (up to 18Gbps) to support new features such as 4K@50/60 (2160p), which is 4 times the clarity of 1080p/60 video resolution, and 4:4:4 color space.

This Onkyo AVR enables transmission of High Dynamic Range (HDR) formats, and provides enhanced picture quality by simultaneously enabling greater detail for both the dark and bright parts of an image.



HDCP2.2

## Bluetooth Audio / Wi-Fi® with Pandora, Spotify, and AirPlay

Stream virtually any audio from your smartphone, tablet, or PC to your home theater for clear and powerful sound. Available internet radio and music subscription services include Pandora, Spotify, and more.



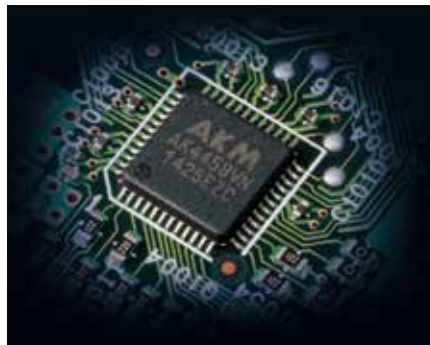
## DSD 5.6 MHz, FLAC 192 kHz/24-bit Hi-Res Audio Capable

Onkyo A/V receivers are engineered for universal Hi-Res compatibility and ease of use. Use the remote app to locate your 192/24 and 96/24 albums (including 5.6 MHz DSD playback) on PC or NAS and bask in the clarity, depth, and detail of high-resolution music.



## 384 kHz/32-bit Hi-Grade DAC

A premium-quality AK4458 digital-to-analog converter from Asahi Kasei unlocks the full potential of any audio format, thanks to unique low-distortion filtering technologies for clear sound.



## SPECIFICATIONS

### Amplifier Section

<b>Power Output</b>	170 W/Ch (6 Ohms, 1 kHz, 0.9% THD, 1 Channel Driven, FTC)
	100 W/Ch (8 Ohms, 20 Hz–20 kHz, 0.08% THD, 2 Channels Driven, FTC)
<b>Dynamic Power</b>	240 W (3 Ohms, Front)
	210 W (4 Ohms, Front)
	120 W (8 Ohms, Front)
<b>THD+N (Total Harmonic Distortion + Noise)</b>	0.08% (20 Hz–20 kHz, Half Power)
<b>Damping Factor</b>	60 (Front, 1 kHz, 8 Ohms)
<b>Input Sensitivity and Impedance</b>	200 mV/47 k-ohms (Line)
	3.5 mV/47 k-ohms (Phono MM)
<b>Rated RCA Output Level and Impedance</b>	100 mV/2.2 k-ohms (Zone 2 Line Out)
	200 mV/470 Ohms (Subwoofer Pre Out)
<b>Maximum RCA Output Level and Impedance</b>	1.0V/2.2 k-ohms (Zone 2 Line Out)
	200mV/470 Ohms (Subwoofer Pre Out)
<b>Phono Overload</b>	70 mV (MM, 1 kHz, 0.5%)
<b>Frequency Response</b>	10 Hz–100 kHz/±1 dB, -3 dB (Direct Mode)
<b>Tone Control</b>	±10 dB, 20 Hz (Bass)
	±10 dB, 20 kHz (Treble)
<b>Signal-to-Noise Ratio</b>	100 dB (Line, IHF-A)
	80 dB (Phono MM, IHF-A)
<b>Speaker Impedance</b>	6 Ohms–16 Ohms

### Video Section

<b>Input Sensitivity/Output Level and Impedance</b>	
Video	1.0Vp-p/75 Ohms (Component Y)
	0.7Vp-p/75 Ohms (Component PB/CB, PR/CR)
	1.0Vp-p/75 Ohms (Composite)
<b>Component Video Frequency Response</b>	5 Hz–13.5 MHz/±0 dB, -3 dB

### Tuner Section

<b>Tuning Frequency Range</b>	
FM	87.5 MHz–107.9 MHz
AM	530 kHz–1,710 kHz
<b>FM/AM Preset Memory</b>	40 Stations

### General

<b>Power Supply</b>	AC 120V~, 60 Hz
<b>Power Consumption</b>	6.4 A
<b>No-Sound Power Consumption</b>	70 W
<b>Standby Power Consumption</b>	0.1 W
<b>Dimensions (W x H x D)</b>	17 1/16" x 6 13/16" x 12 15/16" (435 x 173.5 x 329 mm)
<b>Weight</b>	20.7 lbs. (9.4 kg)

### CARTON

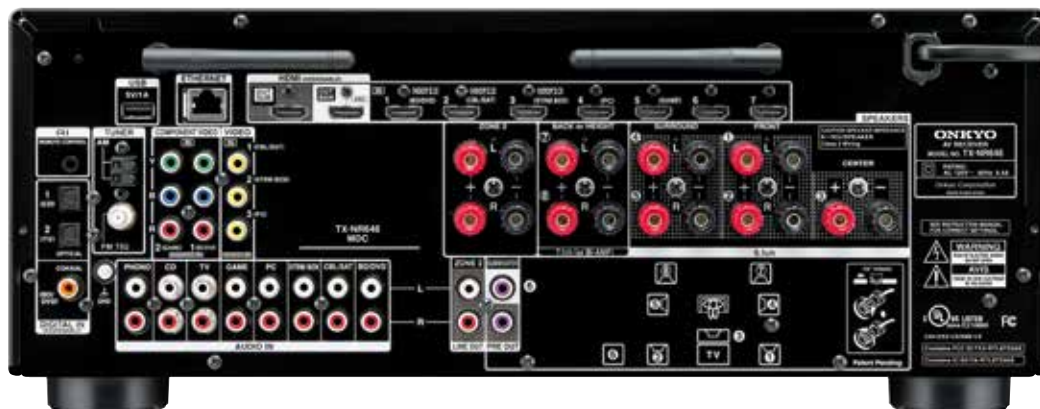
<b>Dimensions (W x H x D)</b>	22 7/16" x 11 3/16" x 16 5/8" (570 x 287 x 423 mm)
<b>Weight</b>	27.6 lbs. (12.5 kg)

### UPC CODE

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### Supplied Accessories

- Indoor FM antenna • AM loop antenna
- Speaker set-up microphone • Instruction manual
- Remote controller • AA (R6) batteries x 2



Text on receiver may vary with region.

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