



Waves WNX7000

in Partnership with Realtek

VR AUDIO & AUDIO INTERFACE SoC



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ALL-IN-ONE AUDIO SOLUTION WITH STATE OF THE ART VR AUDIO CAPABILITIES

Today's entertainment is on a mission to recreate the real world. Just as VR makes us feel like we are walking in a 3D environment, 3D audio recreates real-world sound in a way that surrounds you with the music, the movie, the game, or the VR world.

Waves developed WNX7000 in partnership with Realtek Semiconductor Corp. (Taiwan Stock Exchange: 2379.TW) WNX7000, embedded with Waves Nx, is the ultimate solution for enabling 3D audio and surround over regular headphones.

Any digital headset designed around the WNX7000 with embedded Waves Nx can allow listeners to experience fully immersive highest quality 7.1 surround sound with no additional components or setup!

The WNX7000 audio SoC can also be used as an audio interface for Laptops and Mobile devices, allowing them to playback surround sound and 3D audio over regular headphones.

AUDIOPHILE SOUND QUALITY

Created by Waves, the Technical-Grammy® Award winning innovator of state-of-the-art audio DSP algorithms and software, and Realtek Semiconductor, a world-leading manufacturer of connectivity, multimedia, and audio components, the WNX7000 featuring Waves Nx meets the highest standards of audio performance and delivers uncompromising audiophile sound quality.



WHAT IS WAVES Nx AND HOW DOES IT WORK?

The perception of spatial sound in the real world is a complex phenomenon. It combines the interactions between the acoustic sound waves (both direct or reflected from the room or space), the interaction with our head and ears, the reaction between our middle and inner ear and the audio nerve, and finally our brain's cognition and interpretation of the acoustic scene.

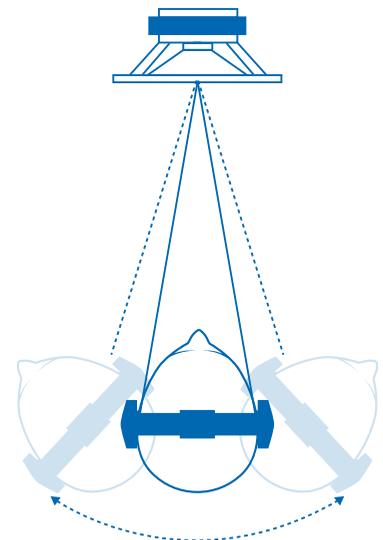
All of these complexities are lost when reproducing audio content using headphones because the drivers are mounted directly on top of our ears and the acoustic vibrations are transmitted directly into the ear drums. This eliminates the crosstalk between the channels, the effects of the listener's head, and the effects of the room upon the audio signal. Most importantly, it impairs our brain's ability to extrapolate the spatial image based on our own head movements. Waves Nx rectifies all of these problems.

Waves Nx simulates the effects of the user's head, the acoustic space, the physical properties of the sound source, and the user's head orientation by using the highest quality digital audio processors available. Waves Nx creates a sonically rich and fully authentic 3D audio experience that immerses the listener in a virtual audio reality.

THE IMPORTANCE OF HEAD TRACKING

Even the slightest nudge to our head causes the complete audio scene to shift in the opposite direction. Our brain, being highly sensitive to change, remembers where the sound used to be and where it is now relative to our head. It combines this with the knowledge that it itself (and not the source) has moved, and uses this information to locate the static external source.

Waves Nx on the WNX7000 delivers an inertial sensory suite that can be integrated within the headset itself, delivering lifelike audio realism.



APPLICATIONS



3D & SURROUND
EMBEDDED HEADPHONES



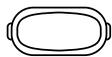
STREAMERS



LAPTOPS, DESKTOPS
AND HTPC



SMARTPHONES



HEAD MOUNTED
VR & AR DISPLAYS



END USER BENEFITS



With Waves Nx on the WNX7000, headphones will deliver the same listening experience a GREAT speaker system does.

Reduces the discomfort caused by listening through headphones over extended periods of time.

Waves Nx is the ideal framework Virtual Reality Audio. It delivers convincing 3D soundscapes and a degree auditory immersion never before experienced.

Games, Movies, Live Concerts, and Music all sound more authentic with Waves Nx! Experience all of your favorite content the way it was meant to be heard!

The WNX7000 will enable 5.1 & 7.1 streaming over regular Stereo Headphones, when combined with a multi-channel audio connection. Enjoy fully immersive surround sound anywhere!



VR

FOR VIRTUAL REALITY

Waves Nx takes the VR experience to the next level with fully realistic 3D sound that makes the virtual world feel tangible. The pinpoint accuracy and total auditory immersion brought forth by Nx enhances any VR experience and creates a real sense of space.



FOR GAMING

Give your customers the ability hear and not just see the exact location of all the elements within the game: the car creeping in from behind or the ball bouncing off the wall just outside the field of sight. Waves Nx finally puts players right inside the game.

END USER BENEFITS



FOR MOVIES

Waves Nx turns headphones into a top-of-the-line movie theater sound system, creating an immersive real surround sound experience. No longer are special headphones or costly surround speaker setups necessary to experience movies the way they are meant to be heard.



FOR MUSIC

When listening over headphones, music is typically experienced through an incredibly narrow and fixed soundscape. Waves Nx produces an expansive soundstage, making music sound the way it was intended to be heard with every sonic detail reproduced in three-dimensional clarity.



FOR VOICE AND COMMUNICATION

Experience the benefits of Waves Nx in VOIP and Conferencing scenarios; Waves Nx can be used to position speakers in the virtual space around the user. This greatly enhances the comfort and intelligibility of VOIP conversations.



WNX7000 KEY FEATURES

HIGH PERFORMANCE DUAL CORE DSP

- 300 MIPS Cadence® Tensilica® HiFi3 DSPsCore (32-bit)
- 50 MIPS Cadence® Tensilica® HiFi Mini DSP Core (24-bit)
- 568KB total embedded RAM
- SPI/I2C/UART/Flash controller I/Fs

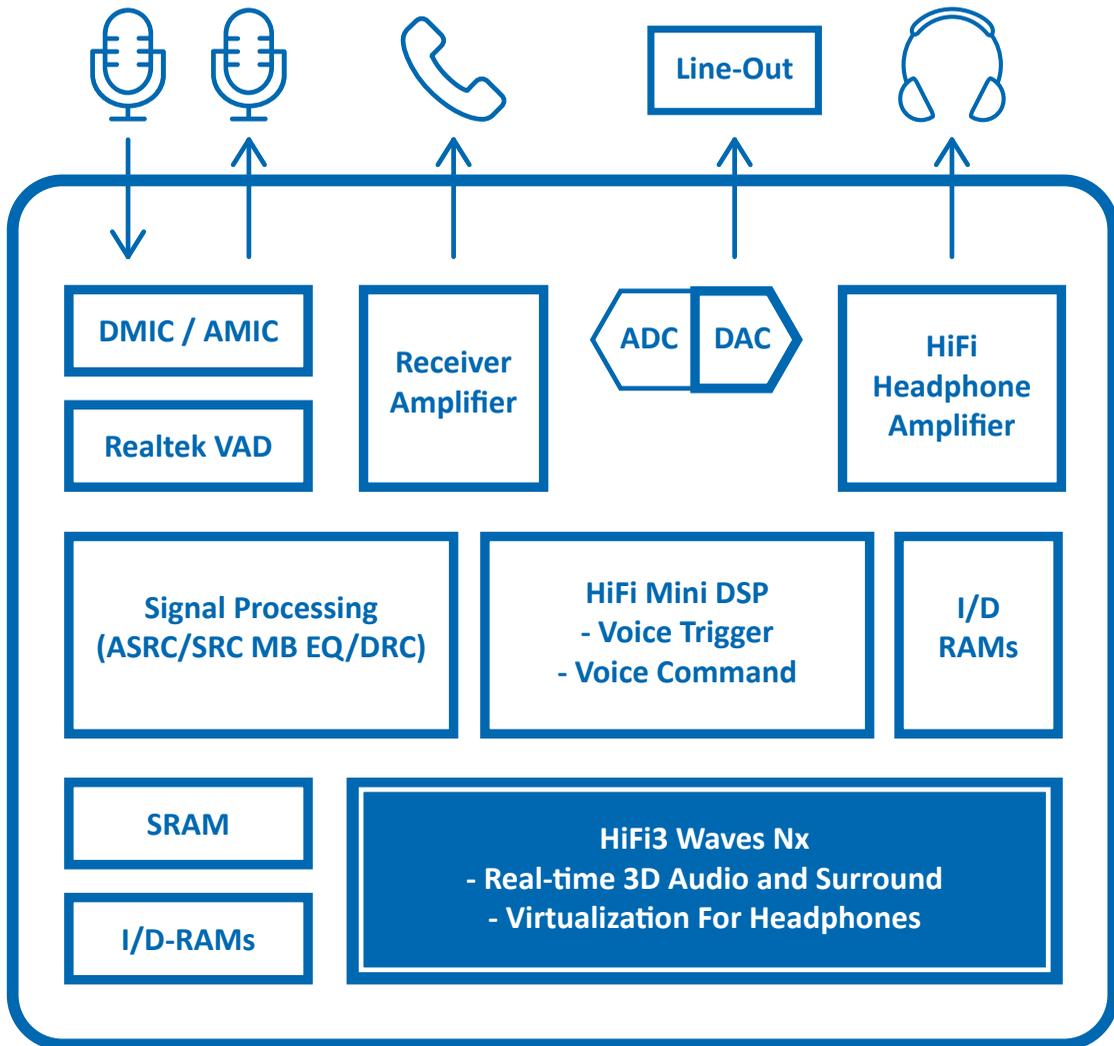
HIGH QUALITY CODEC & MULTI I/O

- 120dB DNR/-100dB THD+N headphone out
- 103dB A-MIC Inputs
- 110 dB DNR Receiver-out
- I2S(32-bits)/SLIMBus/D-MIC I/Fs

FEATURES HIGHLIGHT

- Waves Nx - Virtual Reality Audio for Headphones
- Realtek Gen.3 VAD
- MB DRC and EQ
- Smart Headphone Detection
- Multi-button Detect
- Multi-section Impedance Sensing

W NX7000 BLOCK DIAGRAM:



consumer@waves.com | waves.com | maxx.com

WAVES CONSUMER AUDIO

WAVES USA

2800 Merchants Drive
Knoxville, TN 37912, USA
Phone: +1-865-909-9200

WAVES ISRAEL

Azrieli Center
Triangle Tower, 32nd Floor
132 Begin Rd
Tel Aviv, 6701101, ISRAEL
Phone: +972-3-608-4000

WAVES TAIWAN

Taipei International
Building A of Cathay
Room A1, 17th Floor, No. 216
Sec. 2 Dun Hua South Road
Taipei, TAIWAN
Phone: +886-2-23220100

