

A background image showing a crowd of people at a concert with their hands raised in the air, and a performer on stage in the distance under bright stage lights.

Make Ultra-Low Latency Wireless Audio work using LiveOnAir™

Product Brief

**Wireless Microphone Evaluation Kit
VIR-LOA-0052-x-DK**



For Ultra-Low Latency Wireless Audio go LiveOnAir™

LiveOnAir™ by Virscient is a new digital wireless audio technology that enables transport of single- or multi-channel high-definition audio with ultra-low analogue-to-analogue latency less than 5 milliseconds, using low-cost, standards-based transceivers.

Designed to meet the needs of professional live performance equipment, LiveOnAir provides for audio sample bit-widths up to 24-bit, and sample rates up to 96 kHz. With various narrow- and wide-band RF transceiver options, LiveOnAir can support short range (up to 10 metres or 30 feet) or long range (up to multiple kilometres/miles) applications in globally available unlicensed spectrum.

LiveOnAir supports point-to-point, point-to-multipoint, and multipoint-to-point topologies, and includes industry-standard security mechanisms based on the NIST-approved Advanced Encryption Standard (AES) with Elliptic-Curve Diffie-Hellman (ECDH). Options are available to enable standards-based interoperability modes through fallback to Bluetooth or LE Audio transports.

Using advanced codecs including Skylark by Audio Codecs, and LC3/LC3plus by Fraunhofer IIS, along with a configurable wireless link layer, LiveOnAir provides a flexible and high-performance connectivity solution that can be optimised to meet the specific needs of a wide range of professional and consumer audio applications.

LiveOnAir is the result of Virscient's years of experience delivering differentiated wireless connectivity solutions for professional and consumer audio OEMs. Let us accelerate your path to market with differentiated wireless audio products.

Innovative Products that are Born to Perform

Virscient's LiveOnAir Wireless Microphone Evaluation Kit is specifically designed for OEMs who are creating wearable and hand-held wireless microphones, and instrument wireless systems. The kit can also support the evaluation and development of solutions for various other in-ear monitoring (IEM) and gaming applications.

Integrating high-quality low-latency audio ADC/DACs, a Nordic nRF5340 dual-core Bluetooth 5.4 SoC, a flexible RF front-end, and a wearables-optimised antenna, this reference platform delivers high-definition wireless audio with analog-to-analog latency as low as 3.5 milliseconds, and a transmission range of up to 50 metres.

The kit contains two transceiver PCBAs with pre-configured firmware for demonstration and evaluation of point-to-point ultra-low latency audio links. Evaluation firmware supporting other topologies may be available on inquiry, subject to customer qualification.

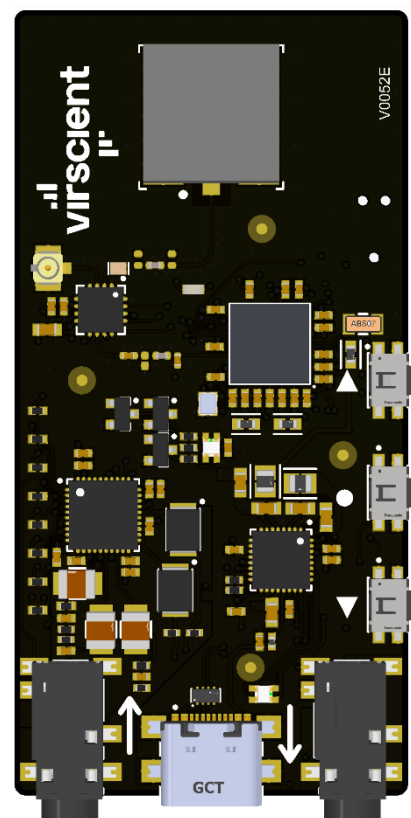
With a small form-factor of just 35x70mm, and manufacturing-friendly PCB design rules, the platform is optimised to ease path to production. Design files and integration/customisation support are available to LiveOnAir licensees, allowing innovative OEMs to dramatically decrease their development costs and time-to-market for next-generation products.

For information on LiveOnAir evaluation kits for other applications or custom requirements, please contact your Virscient sales representative.



Key Features

- Optimised BoM for wireless microphone and instrument applications, with architecture centred on the Nordic nRF5340 Bluetooth 5.4 SoC
- High-definition wireless audio transmission with latency as low as 3.5 milliseconds using Skylark codec and 24-bit/48 kHz mono
- Analog Devices ADAU1772 low-power low-latency I²S stereo ADC/DACs deliver better than 102/107 dB SNR (ADC/DAC), and < 0.01% THD
- Nordic nRF21540 RF front-end module provides range extension with up to 20 dBm transmit power
- Integrated high-performance AntennaWare BodyWave™ antenna optimised for wearable applications minimises body blocking effects
- Nordic nPM1300 power management IC (PMIC) including Lithium-Ion battery charge and fuel gauge monitoring
- Audio in/out via independent 3.5mm TRS jacks, or I²S digital interface
- USB-C device interface, and Flash programming/debug via SWD/Tag-Connect™
- Simple/flexible UI with tri-colour LED for status/mode indication, independent charge mode LED, and three micro-miniature tactile buttons for volume control and mode select
- Small form factor 35mm x 70mm PCB
- Highly accessible test pads for validation, monitoring, and evaluation



Ordering Information

Product Description	Part Number
LiveOnAir™ Wireless Microphone Evaluation Kit comprising 2 pcs transceiver board with 3.5mm line in/out. Board integrates Nordic nRF5340 BLE SoC, with ADAU1772 low-power, low-latency I ² S ADC/DACs, and AntennaWare BodyWave™ high-performance wearable antenna. Pre-configured with LiveOnAir + Skylark to deliver sub-5 ms analog-to-analog latency for 48 kHz/24-bit mono audio.	VIR-LOA-0052-0-DK

To learn more or secure your kit, contact sales@virscient.com.