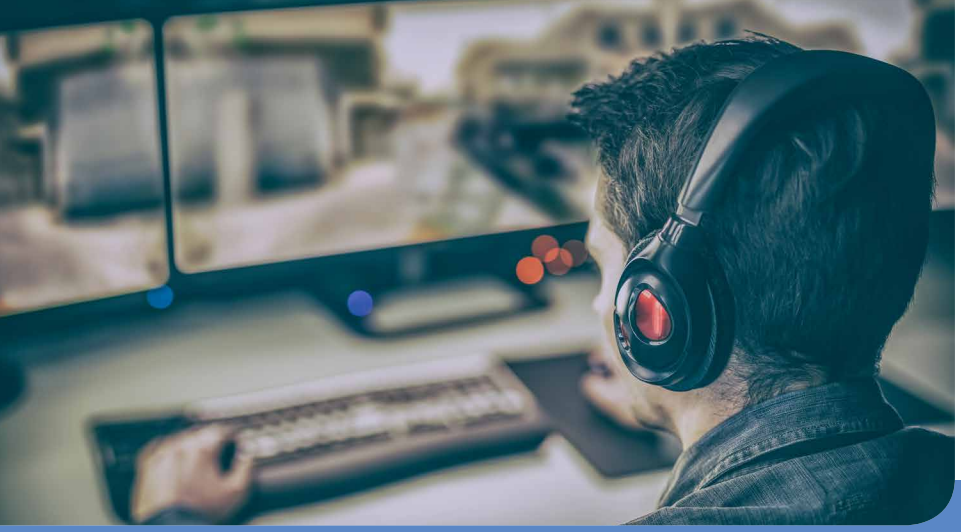


Enabling secure and connected IoT applications and products

NxH3670 Bluetooth® Low Energy radio for wireless audio and data streaming

This ultra-low-power, single-chip wireless audio streaming solution is Bluetooth Low Energy 5.0 certified and optimized for both wireless audio and data communication. Besides the regular BLE discovery, pairing, security and data communication capabilities, this integrated device supports a proprietary audio streaming protocol targeting low latency applications such as gaming headphones and communication headsets.

KEY FEATURES

- Support for high quality, low latency (<20ms) wireless audio streaming
- Integral wireless audio streaming solution
  - Integrated ARM Cortex-M0 processor
  - Integrated CoolFlux DSP and HW accelerators for audio processing
- Ultra-low-power operation:
  - Stereo audio streaming with mono reverse channel at 7.2mW
- Packaged as bumped die <7.25 mm2
- Typical supply voltage: 1.2V

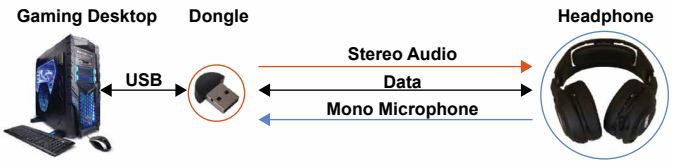
SUPPORT

- Development boards
- MCUXpresso firmware environment
- Software development kit

APPLICATIONS

- Gaming headphones
- Communication headsets

The MiGLO NxH3670 BLE device supports the typical gaming headphone use case illustrated in the figure below. In this use case, high-quality stereo 48kHz audio is streamed from a USB dongle to the gaming headphone at less than 20ms latency. At the same time, a microphone 16kHz reverse channel audio channel is supported for game chat, as well as a data channel for exchanging commands and status.



PROPRIETARY AUDIO STREAMING PROTOCOL

The NxH3670 device simultaneously runs both the standard BLE protocol as well as NXP's proprietary audio protocol. This audio streaming protocol is configured to support audio streaming between a dongle device and a headphone with the following audio configuration:

- Forward audio path
  - Stereo
  - 48kHz sampling rate, 16 bit resolution
  - Audio BW > 20kHz
  - SBC HQ codec
  - Latency < 20ms
- Simultaneous return audio path
  - Mono
  - 16kHz sampling rate, 16 bit resolution
  - Audio BW> 6kHz
  - G.722 codec

Power consumption at the headphone side during audio streaming is an industry-record of only 7.2mW, enabling extended play time and reduced battery size.

During audio streaming, a simultaneous, bi-directional data connection between audio source and audio sink is available as well with up to 8kbps of throughput.

HIGHLY INTEGRATED

The NxH3670 is packaged as a bumped die of <7.25 mm2. Only a few small external components such as balun, crystal and decoupling capacitors are needed.

STARTER KIT

To simplify development and reduce time-to-market, NXP offers a MiGLO NXH3670 starter kit which includes a hardware development board, the MCUXpresso firmware development environment, and a complete SDK for prototyping a wireless audio streaming application with the MiGLO NxH3670 BLE radio.

The application board includes the following features:

- NxH3670
- KL27 host microcontroller
- Audio codec supporting A-to-D and D-to-A conversion
- Connectors for the KL27 Serial Wire Debug Interface
- Micro USB connector for audio interface and recharging LiPo battery
- Peripherals for user interface: buttons, switches
- Battery-powered operation

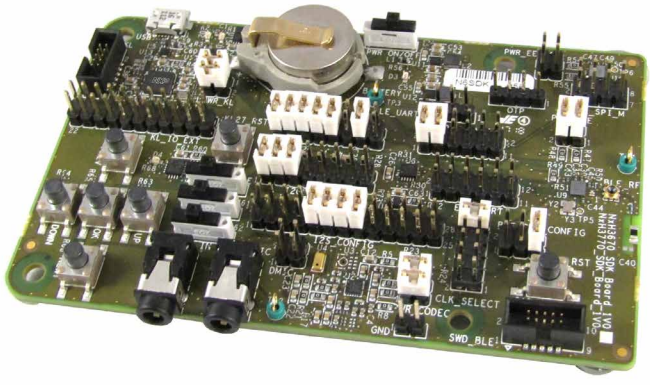
STARTER KIT CONTENTS

Item	Qty
NxH3670 development boards	2
LPC-Link2 debug probe	1
Micro USB cable	2
Mini USB cable	1

The SDK's demonstration use cases show audio streaming. Additionally, various tools such as a Bit Error Rate analyzer, are available to evaluate link distance and to assist in antenna and product design and optimization. The SDK is accompanied by the free MCUXpresso development environment.

More information on NxH3670 and the SDK can be found on http://bit.ly/2f63uTs

HARDWARE DEVELOPMENT BOARD



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