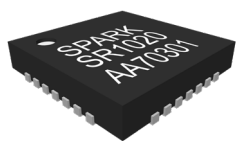




REDEFINING WIRELESS AUDIO!

Low Latency Uncompressed High-quality Audio Wireless Headset Reference Design

SPARK Microsystem's low latency uncompressed high quality audio wireless headset reference design takes full advantage of the SR1020 ultra-wideband (UWB) wireless transceiver capabilities, delivering phenomenal audio quality that is equivalent to wired headsets. Its high quality and low latency make it ideal for pro-consumer, gaming, conferencing, and professional applications.



SR1020 6.0 GHz to 9.3 GHz

SPARK ULTRA-WIDEBAND TRANSCEIVER

Symbol rates up to 20.48 Mbits / sec

Single 32.768 kHz external XTAL

Programmable channel bandwidth

Ultra-low power

- 1.8 V – 3.3 V supply voltage
- 0.34 mA per Mbit / sec active Rx
- 0.10 mA per Mbit / sec active Tx
- 920 nA deep sleep
- 55 nA shutdown mode
- 28 pin QFN (4 x 4 mm)

Ultra-low latency

- ≤ 5 ms stereo main channel
- ≤ 15 ms mic back channel

High quality uncompressed stereo audio

- Up to 96 kHz sample rate
- Up to 24-bit precision

High quality uncompressed mic

- Up to 32 kHz sample rate
- Up to 16-bit precision

Low power

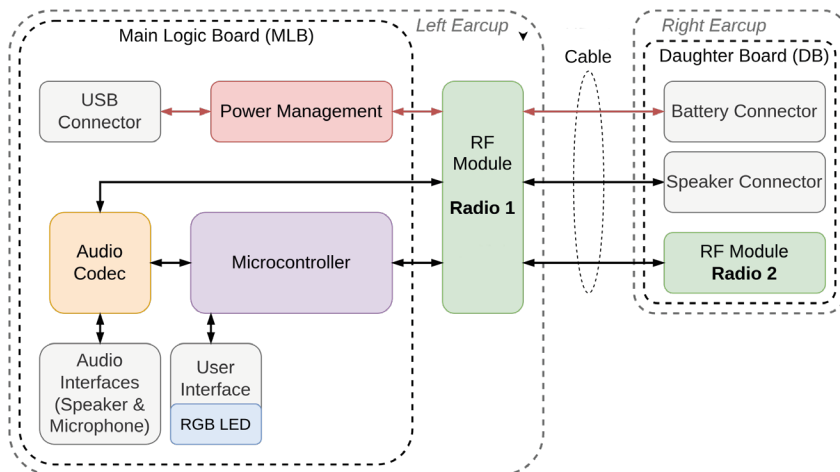
LOW LATENCY HIGH QUALITY HEADSET REFERENCE DESIGN

UTILIZING SPARK SR1020 LOW LATENCY UWB TRANSCEIVER



The reference design kit demonstrates the low latency and high data rate capabilities of SPARK's SR1020 UWB transceiver to deliver pristine uncompressed audio. The design features a dual receiver configuration for increased robustness and body block mitigation. It comes complete with a USB-C dongle and all design files to simplify application specific implementations.

DUAL RECEIVER DESIGN



MODES OF OPERATION

MAIN (STEREO)

- 96 kHz 16-bit uncompressed
- 96 kHz ADPCM
- 48 kHz 24-bit uncompressed
- 48 kHz 16-bit uncompressed
- 48 kHz ADPCM

MIC (MONO)

- 32 kHz 16-bit uncompressed
- 32 kHz 16-bit ADPCM
- 24 kHz 16-bit ADPCM



USB-C DONGLE

- SR1020 SPARK UWB transceiver
- NXP LPC55S28 microcontroller
- NXP debug connector



DESIGN FILES

- SPARK SDK
- Headset & Dongle firmware
- Schematics, PCB layout, BoM

ABOUT SPARK UWB

SPARK Microsystems is building next generation short-range wireless communication devices. SPARK UWB provides high data rate and very low latency wireless communication links at an ultra-low power profile, making it ideal for personal area networks (PANs) used in mobile, consumer and IoT-connected products. Leveraging patented technologies, SPARK Microsystems strives to minimize and ultimately eliminate wires and batteries from a wide range of applications. For more information, please visit sparkmicro.com.



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