

PRODUCT SUMMARY

SKY76361-32/SKY76361-52 Cognitive Wireless Gaming Client System on a Chip (SoC)

Applications

- Wireless gaming headsets and gaming accessories
 - Controllers
 - Mice
 - Keyboards
 - Wireless headphones

Features

- Ultra-low-power 2.4 GHz radio transceiver:
 - 30-meter indoor line-of-sight range
- Skyworks UL2X Cognitive Wireless Audio Communication System¹
 - 3/6 Mbps over-the-air (OTA) data rate
 - Up to 8 channels of uncompressed OTA audio
 - Up to 40 kHz OTA audio bandwidth
 - Low and fixed latency < 9 ms
 - Synchronized client audio (< 1 μ s latency diff.)
 - Robust wireless performance
 - Link has Signal to Noise Ratio (SNR) to 140 dB
- Low-latency and high bandwidth data transport
- 32-bit RISC processor subsystem
- Configurable Audio Processing Unit (APU)
- Complete, highly integrated power system
- Full-speed USB interface
- Digital IO peripherals: JTAG, SPI, I²C, and UART
- Digital audio interface: I²S, and PDM
- Flexible audio routing and serial interfaces
- Integrated RF switch drive
- Packages:
 - SKY76361-32: 88 pin, aQFN, 7 mm x 7 mm x 0.8 mm
 - SKY76361-52: 67 ball WLCSP, 2.775 mm x 2.775 mm x 0.427 mm
- Commercial temperature range of 0 °C to 70 °C
- For RoHS and other product compliance information, see the [Skyworks Certificate of Conformance](#).

Description

The SKY76361-32 and SKY76361-52 are ultra-low-power, high performance wireless gaming SoCs that operate in the 2.4 GHz ISM band. They provide a high dynamic range, uncompressed wireless digital audio/data link with robust interference rejection and excellent coexistence with other 2.4 GHz applications (such as Wi-Fi® devices).

The SKY76361-32 and SKY76361-52 are clients in the embedded wireless communication system known as UL2X and support multiple OTA usage scenarios with different numbers of channels, audio bandwidth, data bandwidth, and numbers of clients.

The OTA audio link features a low, fixed latency of < 9 ms while rejecting the multitude of possible interference sources in the 2.4 GHz band. The link can provide up to 138 dB dynamic range ratio and up to 40 kHz audio bandwidth. Audio is inherently synchronized between clients in the network with < 1 μ s latency difference.

The UL2X wireless communication system also provides a wireless data link for low latency data transport and a special ultra-low latency HID data link (~ 1 ms) for wireless game controller and gaming peripheral applications.

The SKY76361-32 and SKY76361-52 SoCs are designed to provide a streamlined system solution with minimal external components. It includes digital I/O peripherals, power management, PDM, and I²S audio interfaces. The digital audio interface over I²S supports up to 24-bit, 96 kHz PCM digital audio.

The SKY76361-32 and SKY76361-52 also include a configurable APU to support equalization, dynamic range control, feathering and mixing.

Figure 1 shows an application diagram of a typical cognitive wireless gaming client design. Blocks in blue represent Skyworks products.

1. Subject to constraints for specific usage scenarios.

Ordering Information

Part Number	Description	Evaluation Board Part Number
SKY76361-32	Cognitive Wireless Gaming Client System on a Chip (SOC), aQFN package	SKY76361-32NEK2
SKY76361-52	Cognitive Wireless Gaming Client System on a Chip (SOC), WLCSP package	

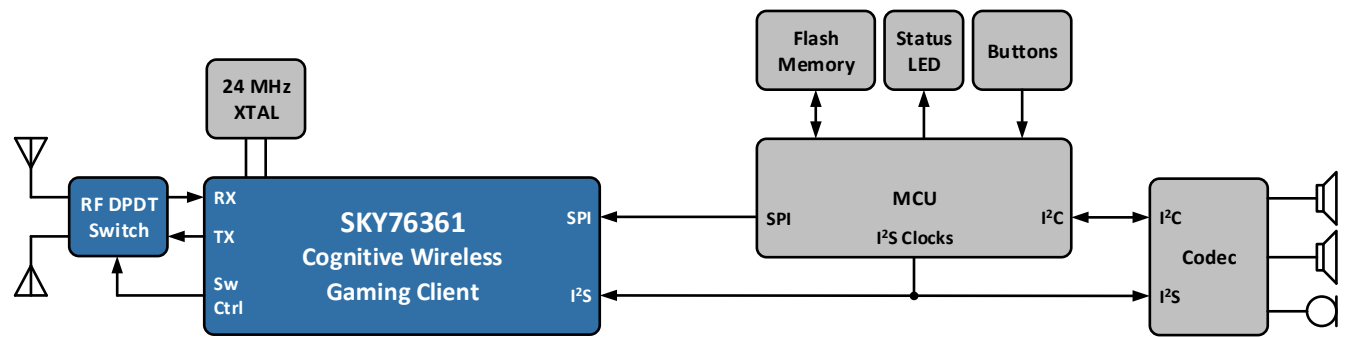


Figure 1. Typical SKY76361 Cognitive Wireless Gaming Client Application Diagram

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