

PRODUCT SUMMARY

SKY76360-22 Cognitive Wireless Gaming Arbiter 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 eight channels of uncompressed OTA audio
 - Up to 40 kHz OTA audio bandwidth
 - Low and fixed audio 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
- Complete, highly integrated power system
- Full-speed USB interface
- Digital IO peripherals: JTAG, SPI, I²C, and UART
- Digital audio interface: I²S and USB
- Integrated RF switch drive
- Package: 88 pin, aQFN
7 mm x 7 mm x 0.8 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 SKY76360-22 is an ultra-low-power, high performance wireless gaming SoC that operates in the 2.4 GHz ISM band. It provides 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 SKY76360-22 is an arbiter in the embedded wireless communication system known as UL2X and supports 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 a multitude of possible interference sources in the 2.4 GHz band. The link can provide up to 138 dB dynamic range and up to 40 kHz audio bandwidth. Audio is inherently synchronized between network clients with < 1 μ s latency difference.

The UL2X wireless communication system also provides a wireless data link for low latency data transport applications. The SKY76360-22 SoC is designed to provide a streamlined system solution with minimal external components. It includes digital I/O peripherals, power management, and I²S audio interfaces. The digital audio interface over I²S supports up to 24-bit, 96 kHz PCM digital audio.

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

1. Subject to constraints for specific usage scenarios.

Ordering Information

Part Number	Description	Evaluation Board Part Number
SKY76360-22	Cognitive Wireless Gaming Arbiter System on a Chip (SOC), aQFN Package	SKY76360-22REK1

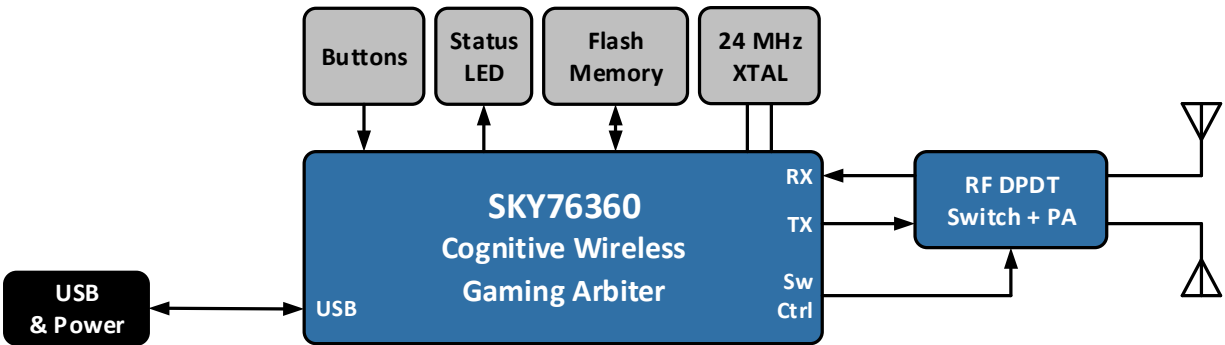


Figure 1. Typical SKY76360 Cognitive Wireless Gaming Arbiter Application Diagram

Copyright © 2025, Skyworks Solutions, Inc. All Rights Reserved.

Information in this document is provided in connection with Skyworks Solutions, Inc., and its subsidiaries (“Skyworks”) products or services. These materials, including the information contained herein, are provided by Skyworks as a service to its customers and may be used for informational purposes only by the customer. Skyworks assumes no responsibility for errors or omissions in these materials or the information contained herein. Skyworks may change its documentation, products, services, specifications or product descriptions at any time, without notice. Skyworks makes no commitment to update the materials or information and shall have no responsibility whatsoever for conflicts, incompatibilities, or other difficulties arising from any future changes.

No license, whether express, implied, by estoppel or otherwise, is granted to any intellectual property rights by this document. Skyworks assumes no liability for any materials, products or information provided hereunder, including the sale, distribution, reproduction or use of Skyworks products, information or materials, except as may be provided in Skyworks’ Terms and Conditions of Sale.

THE INFORMATION IN THIS DOCUMENT AND THE MATERIALS AND PRODUCTS DESCRIBED THEREIN ARE PROVIDED “AS IS” WITHOUT WARRANTY OF ANY KIND, WHETHER EXPRESS, IMPLIED, STATUTORY, OR OTHERWISE, INCLUDING FITNESS FOR A PARTICULAR PURPOSE OR USE, MERCHANTABILITY, PERFORMANCE, QUALITY OR NON-INFRINGEMENT OF ANY INTELLECTUAL PROPERTY RIGHT; ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED. SKYWORKS DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. SKYWORKS SHALL NOT BE LIABLE FOR ANY DAMAGES, INCLUDING BUT NOT LIMITED TO ANY SPECIAL, INDIRECT, INCIDENTAL, STATUTORY, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS THAT MAY RESULT FROM THE USE OF THE MATERIALS OR INFORMATION, WHETHER OR NOT THE RECIPIENT OF MATERIALS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

Skyworks products are not designed, intended, authorized, or warranted for use or inclusion in life support or life endangering applications, devices, or systems where failure or inaccuracy might cause death or personal injury. Skyworks customers agree not to use or sell the Skyworks products for such applications, and further agree to, without limitation, fully defend, indemnify, and hold harmless Skyworks and its agents from and against any and all actions, suits, proceedings, costs, expenses, damages, and liabilities including attorneys’ fees arising out of or in connection with such improper use or sale.

Skyworks assumes no liability for applications assistance, customer product design, or damage to any equipment resulting from the use of Skyworks products outside of Skyworks’ published specifications or parameters. Customers are solely responsible for their products and applications using the Skyworks products.

“Skyworks” and the Skyworks Starburst logo are registered trademarks of Skyworks Solutions, Inc., in the United States and other countries. Third-party brands and names are for identification purposes only and are the property of their respective owners. Additional information, including relevant terms and conditions, posted at www.skyworksinc.com, are incorporated by reference.