

ARF2498 PRODUCT BRIEF

Ultra-Low-Power Protocol-Integrated 2.4GHz RF Transceiver IC

The ARF2498 RF transceiver IC is a very cost effective and extremely low power 2.4GHz RF IC with integrated protocol, enabling flexible bi-directional wireless connectivity for a wide range of consumer, industrial and commercial applications. This all-CMOS 2.4GHz transceiver IC employs GFSK technology for classic modulation scheme and programmable frequency synthesizer for multi-channel capability.

ARF2498's integrated protocol supports the complicated communication task such as ACK/NAK handshaking, automatic retransmission with or without a lag period, dynamic and variable length of payload, CRC checking, pipelines for up to 8 devices communicating to one host, and on-chip FIFOs, thus reduces the external MCU loading to a minimum, making it the ideal solution for wireless portable applications.

Requiring only a few external components and with data rate of 2Mbps/250Kbps, the ARF2498 transceiver IC enables cost effective, low power consumption, multi-channel and easy-to-implement 2-way wireless communication links. In turn, reducing R&D schedules, expenses and uncertainties, while accelerating time to market for wireless applications.

ARF2498 Key Benefits

Integrated Protocol reduces the MCU effort and makes user's design task much more easily to implement

ACK/NAK handshaking & Automatic Retransmission offload the job of the MCU and make it possible to choose a more cost-effective MCU

On-chip FIFOs & PIPELINES make 8 Devices communicating to 1 Host possible

CRC Error Checking ensures high integrity of the RF transmission

External fine-tuning is NOT required, saving production cost and improving yield

Programmable Output Power Level offering flexibility in applications

Only a few external components are required

Digital RSSI enables dynamic clean RF channel audit & selection

Image Rejection greatly improves interference immunity

Wake on RF cyclically wakes up ARF2498 by itself to detect coming packets

16MHz Clock Output shares clock with external MCU, thus saving another Xtal's cost

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Applications

- Wireless Mice
- Wireless Keyboards
- Wireless Game Pads
- Wireless Audio/Voice
- Remote Controls
- Home Automation
- Home Security
- Automotive Networks
- Industrial Networks
- Remote Sensing
- Remote Metering
- Interactive Toys

ARF2498 Specifications

Frequency Range	2.4GHz ~ 2.525GHz
Power Supply Voltage	1.9V ~ 3.6V
Data Rate	250Kbps / 2Mbps
Receiver Sensitivity	-93dBm@10 ⁻³ BER (250Kbps) -82dBm@10 ⁻³ BER (2Mbps)
Number of Channels	126
Modulation/Demodulation Scheme	GFSK
Current Consumption (Tx Mode)	12mA@0dBm
Current Consumption (Rx Mode)	15mA
Current Consumption (Power Down Mode)	900nA
Adjustable Tx Output Power Level	+4dBm, 0dBm, -6dBm, -12dBm, -18dBm
RF Channel Switching Time	130μs
Operating Temperature	-40°C ~ +85°C
Package	QFN24

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