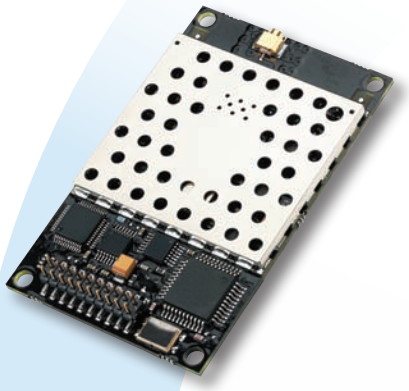
Laird TECHNOLOGIES®

Innovative **Technology**
for a **Connected** World

AC4424
2.4GHz Radio Module



THE FASTEST WAY TO WIRELESS

Laird Technologies' AC4424 is a 2.4GHz FHSS digital radio module that represents a breakthrough in industrial RF communication. Comprised of a complete, agency-certified radio and sophisticated RF232® protocol, the AC4424 simplifies the OEM's design effort and assures successful field operation.

The RF232 protocol makes the AC4424 a drop-in solution for seamless integration, easy operation, and fast time-to-market. It manages all aspects of the over-the-air radio protocol to assure successful transmission, so users are not concerned with the intricacies of headers, data packet length, and CRCs. The entire radio connection is transparent to the OEM.

AC4424 modules are socket-compatible with Laird Technologies' 900MHz AC4490 radio modules, enabling OEMs to design once and subsequently interchange radios to accommodate new markets, regulations, and environments*. Developer tools and technical support make wireless integration fast and trouble free. Let Laird Technologies help you find the best fit for your application.

* Although AC4424s will not talk to AC4490s, socket-compatibility allows for seamlessly interchanging the modules network-wide.

FEATURES

- FCC, IC, and ETSI/CE certified
- Flexible protocol allows various configurations
- Small form factor: 2.65 x 1.65 inches
- Operates in –40°C to +80°C temp. range
- Low-power sleep mode with continuous sync
- Output Power up to 200mW
- Ranges up to 2 miles

MARKETS

- Industrial Control
- Fleet Telemetry
- Automotive
- Field Surveillance
- Home Automation

global solutions: local support™

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FLEXIBLE RF PROTOCOL

Laird Technologies' embedded transparent protocol simplifies the OEM's integration process by utilizing drop-in installation. As each radio module receives raw data, it manages the over-the-air protocol to assure successful communication. Headers, data packet length, and CRCs are not required. The RF232 supports simple cable-replacement to complex peer-to-peer configuration. It allows you to broadcast to all radio modules or address packets to a specific destination using unique MAC addresses embedded in each module.

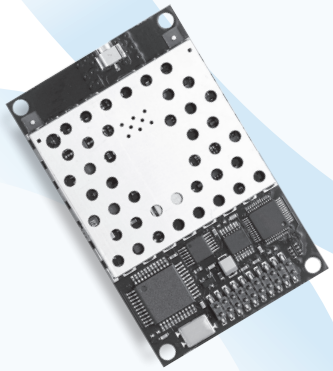
SPECIFICATIONS

Parameter	AC4424–10	AC4424–100	AC4424–200
Interface	20-pin mini connector	20-pin mini connector	20-pin mini connector
Frequency	2.402 - 2.478 GHz	2.402 - 2.478 GHz	2.402 - 2.478 GHz
Modulation	FHSS FSK	FHSS FSK	FHSS FSK
Serial interface options	3V or 5V TTL	3V or 5V TTL	3V or 5V TTL
Serial interface data rate	Up to 192 kbps	Up to 192 kbps	Up to 192 kbps
Output power	10mW	100mW	200mW
Current consumption** (Tx/Rx)	115/85 mA	160/85 mA	235/85 mA
Channels	88 channels U.S./Canada;	88 channels U.S./Canada;	88 channels U.S./Canada;
	40 channels Europe	40 channels Europe	40 channels Europe
Security	One-byte system ID	One-byte system ID	One-byte system ID
Voltage	5 V nominal +/- 2%	5 V nominal +/- 2%	5 V nominal +/- 2%
	+/- 50 mV ripple	+/- 50 mV ripple	+/- 50 mV ripple
Sensitivity	-90 dB @ full RF data rate	-90 dB @ full RF data rate	-90 dB @ full RF data rate
Range	Up to 0.5 mile (1 km)	Up to 1 mile (1.6 km)	Up to 2 miles (3.2 km)
Temperature	-40° to +80°C	-40° to +80°C	-40° to +80°C
Humidity (non-condensing)	10% to 90%	10% to 90%	10% to 90%
Dimensions	1.65 x 2.65 x 0.20 inches	1.65 x 2.65 x 0.20 inches	1.65 x 2.65 x 0.20 inches
	(4.2 x 6.7 x 0.5 cm)	(4.2 x 6.7 x 0.5 cm)	(4.2 x 6.7 x 0.5 cm)
Weight	< 0.7 oz (< 20 g)	< 0.7 oz (< 20 g)	< 0.7 oz (< 20 g)
Antenna	MMCX receptacle or Integrated Ceramic	MMCX receptacle	MMCX receptacl

** Current consumption assumes 50% transmitter-on time.

PROTOCOL MODES

- Communication
  - Unicast (one-to-one addressing)
  - Broadcast (one-to-multiple addressing)
- Module configuration:
  - Destination address
  - Co-located servers
  - RF channel
  - Broadcast/addressed
- Variable baud rate
- RF packet size, timeout control
- Handshaking, CTS/RTS
- In-range indicator
- Auto-channel
- Error detection:
  - Onboard CRC
  - Duplicate packet filtering
- Random back-off



The details contained within the document are subject to change. Download the product specification from www.lairdtech.com/wireless for the most current specification.

LWS-SPEC-AC4424 0209

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