

THE FASTEST WAY TO WIRELESS.

ConnexRF™ AC4486

PRODUCT DETAILS

AeroComm's compact, low-cost 868 MHz transceivers can replace miles of cable in harsh environments. Using field-proven FHSS technology which needs no additional ETSI (Europe) licensing, OEMs can easily make existing systems wireless with little or no previous RF experience.

AC4486 radios feature a number of on-the-fly control commands, providing OEMs with a very versatile interface for any application. The modules operate in a point-to-point or point-to-multipoint, client/server or peer-to-peer architecture.

868 MHz AC4490s are socket-compatible with 2.4 GHz AC4424 models*, preserving OEMs' hardware/software investments while providing solutions that meet different market, regulatory and environmental needs.

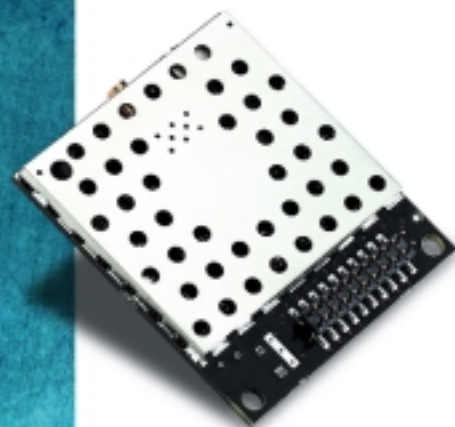
HIGHLIGHTS

As a key component in creating RF networks for local control and monitoring, AC4486 is *the* solution for integrating wireless capability into industrial applications. Breakthrough benefits include:

- *Highest 868 MHz data rate: 115.2 Kbps.*
- *Smallest form factor: 1.65 x 1.9 inches.*
- *Operates in -40°C to +80°C temp range.*
- *Variable output power: 5mW to 500mW.*
- *Socket-compatible* with 2.4 GHz models.

DEVELOPER TOOLS

OEMs can benefit from our full integration tools and technical expertise in the complex field of RF design. Call AeroComm Sales for kit specifications and prices.



APPLICATION IDEAS



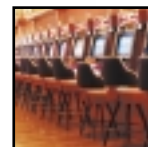
Recreation Areas

- Irrigation systems
- Golf cart tracking
- Score keeping
- Order entry
- Grounds maintenance



Pool & Spa Control

- Temperature monitoring
- Pump activation
- Illumination
- Environmental controls
- Access & activity alerts



Gaming Devices

- Lottery machines
- Portable bingo
- Bar trivia
- Casino slots
- Game kiosks



Point of Sale

- Inventory tracking
- Order processing
- Credit card verification
- Merchandise vending
- Portable registers

Visit us online for a full list of RF applications!

SPECIFICATIONS

AC4486-5

AC4486-500

Interface	20-pin mini connector	20-pin mini connector
Frequency (software selectable)	869.7 MHz – 870.0 MHz	869.40 MHz – 869.65 MHz
Modulation	FSK	FSK
Serial interface options	3V TTL or 5V TTL	3V TTL or 5V TTL
Serial interface data rate	Up to 115.2 Kbps	Up to 115.2 Kbps
Output power (w/ 3dBi antenna)	5 mW fixed (100% duty cycle)	5 mW – 500 mW variable (10% duty cycle)
Power consumption (TX/RX)**	35/30 mA typical	200/30 mA typical (@ 500 mW)
Channels	Up to 2	Up to 2
Security	One-byte system ID	One-byte system ID
Voltage	3.3V nominal +/-2%, +/-30mV; 4.5V–5.5V unregulated	3.3V nominal +/-2%, +/-30mV; 4.5V–5.5V unregulated
Sensitivity	-96 dB @ full RF data rate	-96 dB @ full RF data rate
Range (typical, actual range depends on antenna and area)	Up to 3,000 feet (914 m)	Up to 20 miles (32 km)
Temperature	0° to +60°C (commercial) -40° to +80°C (industrial)	0° to +60°C (commercial) -40° to +80°C (industrial)
Humidity (non-condensing)	10% to 90%	10% to 90% 10% to 90%

* Although AC4486 radios will not talk to AC4424 radios, socket-compatibility allows for interchanging the modules network-wide.

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



FORM FACTOR

Dimensions

1.90 x 1.65 x 0.20 inches
(48.1 x 41.9 x 5.1 mm)

Weight

< 0.75 oz (< 21 g)

Antenna

Various antenna options include integrated, external or soldered pad.

www.aerocomm.com

Ordering information is listed on the back of this page. Call AeroComm Sales for prices & volume discounts.

RF-232™ TRANSPARENT PROTOCOL

AeroComm's embedded transparent protocol simplifies the OEM's integration process by allowing for drop-in installation. As each transceiver receives raw data, it manages over-the-air protocol to assure successful communication. Headers, data packet length, and CRCs are not needed. RF-232 supports point-to-point or point-to-multipoint, client/server or peer-to-peer configurations. Broadcast communication to all transceivers or address packets to a specific destination using unique MAC addresses embedded in each transceiver.

RF PROTOCOL MODES

Acknowledgment mode (ACK)

Transmitted packets are successfully acknowledged. If not, they are resent until successful (user-selectable number of retries). Error detection is used and duplicate data is filtered out before sending to the host interface. Optional *full duplex control* setting allows equal time for transmitting and receiving data at the RF level, keeping a single transmitter from dominating the system bandwidth.

Streaming mode (STRM)

STRM is useful for audio or other applications where continuous data is needed. STRM mode enables high speed, continuous transmission of data without the delay of waiting for ACK from the recipient. Data is transferred to the host without error-detection.

RF ADDRESSING MODES

Client/server or peer-to-peer

Unicast (one-to-one addressing)

Broadcast (one-to-many addressing)

ERROR HANDLING

Forward error correction (FEC)

Selectable in both ACK and STRM mode, FEC utilizes the radio's fast RF rate to analyze and correct errors by way of a two-out-of-three voting mechanism on a single byte of the raw data.

Error detection

Multi-stage error detection with transmitter retries in ACK mode for RF system and OEM's raw data. Duplicate packets are filtered out when the same data is received more than once due to retries and missed ACKs.

INTERFACE PROTOCOL

Change configuration commands

The AC4486's configuration can be changed through a command/data interface signal. Change-on-the-fly parameters include client or server designation, destination MAC address, channel number (to communicate with a different server), enter/exit low-power modes, etc. Custom configurations are available by user request.

Auto-configuration control

Allows for the selection of optimized protocol parameters based on ACK, STRM, and FEC selections. This allows very simple configuration.

CTS with optional RTS flow control

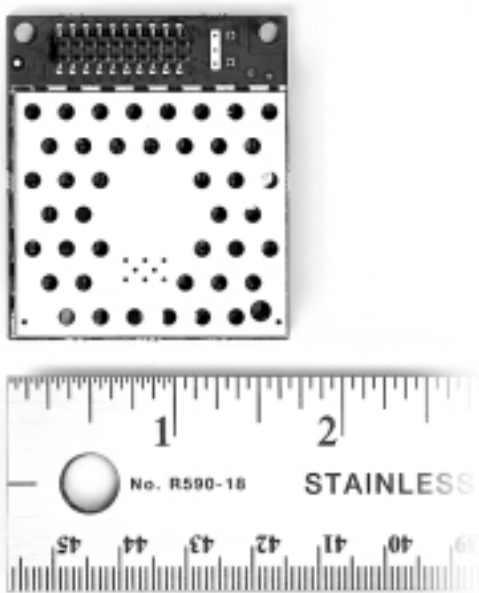
CTS to hold-off the host; RTS to hold off the transceiver.

In-range indicator

Hardware link indication of a client in range of a server.

ORDERING INFORMATION:

Select features from the list below to identify the appropriate ConnexRF part number. Additional ConnexRF product lines for OEMs and end-users are available. Please contact your AeroComm OEM Sales Representative directly for more information.



AC44XX—XXX—X

Supply Voltage 3 = 3.3 Vdc 5 = 4.5 Vdc to 5.5 Vdc
Antenna Option A = Integral Antenna M = MMCX Connector P = Solder Pad
Output Power 005 = 5 mW 200 = 200 mW (U.S. & Canada only) 500 = 500 mW
Temperature C = Commercial (0°C to 60°C) I = Industrial (−40°C to +80°C)
Frequency Band 90 = 902 – 928 MHz (U.S. & Canada) 86 = 868 – 870 MHz (Europe)