AC4490-200M   PCB   24

The fastest way to wireless.

Compact AC4490 900MHz transceivers can replace miles of cable in harsh industrial environments. Using field-proven FHSS technology that needs no additional site licensing*, AC4490s reject interference, enable co-located system operation, increase output power and maintain data integrity.

AC4490s feature drop-in installation and a number of on-the-fly control commands, providing OEMs with a versatile interface for any application. They can be used as direct wire replacements, requiring no special host software for communication. All frequency hopping, synchronization and RF system data transmission/reception is performed by the transceiver.

AC4490 modules are socket-compatible with AeroComm's 2.4GHz AC4424 transceivers, enabling OEMs to design once and subsequently interchange radios to accommodate new markets, regulations and environments. Developer tools and integration support back every transceiver line. Let AeroComm help you find the best fit for your application.
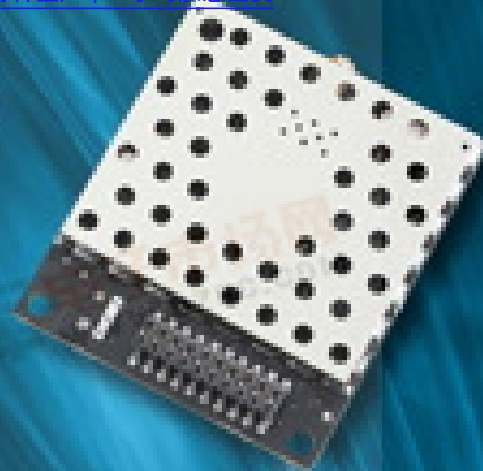
AC4490 Highlights

· **Lowest cost** one-watt module available.
· **"Long range" mode** enables 40 miles.
· High 900MHz data rate: **115.2 Kbps.**
· Small form factor: **1.65 x 1.9 inches.**
· Operates in **–40ºC to +80ºC** temperatures.
· Variable output power: **5mW to 1000mW**.
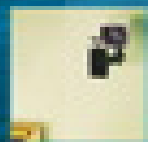
Applications

Recreation Areas
· Golf cart tracking
· Score keeping
· Order entry
· Irrigation systems
· Grounds maintenance

Utilities Management
· Automatic meter reading
· Load profiling, forecasting
· Data management
· Tampering alerts
· Real-time support

Commercial Buildings
· Security & fire alarms
· Lighting controls
· Surveillance
· Building automation
· HVAC controls

Fleet Telemetry
· Vehicle tracking
· Cargo data
· Weigh scales
· Maintenance logs
· Mapping

Field Surveillance
· SCADA
· Oil & gas
· Water & wastewater
· Tank monitoring
· Activity alarms

Specifications

PARAMETER	AC4490–200	AC4490–1000
Interface	20-pin mini connector	20-pin mini connector
Frequency (software selectable)	902-928 MHz (U.S)**	902-928 MHz (U.S)**
Modulation	FHSS FSK	FHSS FSK
Serial interface options	3V or 5V TTL	3V TTL
Serial interface data rate	Up to 115.2 Kbps	Up to 115.2 Kbps
Output power (w/ 3dBi antenna)	5mW-200mW variable	5mW-1000mW variable
Power consumption††	68 mA typical	650 mA typical
Channels	Up to 48 (U.S.)**	Up to 32 (U.S.)**
Security	One-byte system ID, DES	One-byte system ID, DES
Voltage	3.3V-5.5V	pin 10: 3.3V-5.5V pin 11: 3.3V +/-3%
Sensitivity	-110 dB in "long range" mode	-110 dB in "long range" mode
Range	Up to 4 miles (6.5 km)	Up to 20 miles (32 km)
Temperature	-40º to +80ºC	-40º to +80ºC
Humidity (non-condensing)	10% to 90%	10% to 90%
Dimensions	1.90 x 1.65 x 0.20 inches (49 x 42 x 5 mm)	1.90 x 1.65 x 0.20 inches (49 x 42 x 5 mm)
Weight	< 0.75 oz (< 21 g)	< 0.75 oz (< 21 g)
Antenna	Integral and external dipole	External dipole

* The 900MHz frequency band is approved in the Americas and Australia as an unlicensed spectrum subject to approval by device.
** For products and specifications suited to non-U.S. countries (e.g. Australia and Europe), please contact AeroComm directly.
† Although AC4490 radios will not talk to AC4424 radios, socket-compatibility allows for interchanging the modules network-wide.
†† Power consumption assumes 50% transmitter on-time.

Flexible RF 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.

RF232 supports simple cable-replacement to complex peer-to-peer configurations. Broadcast communication to all transceivers or address packets to a specific destination using unique MAC addresses embedded in each transceiver.

AC4490, Actual Size
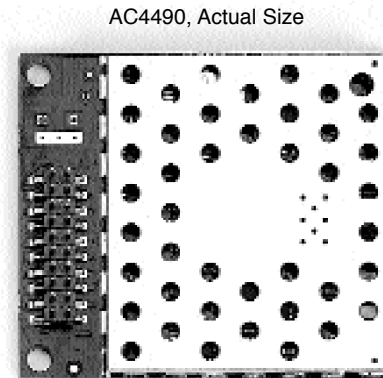
Protocol Features

RF PROTOCOL MODES

a) Communication
Unicast (one-to-one addressing)
Broadcast (one-to-many addressing)

b) Acknowledgement mode (ACK)
API with hardware and/or software ACK indication

c) One-beacon mode

d) Dynamic radio data table
Retains data from up to 12 transceivers

INTERFACE PROTOCOL

a) On-the-fly transceiver configuration
Destination address
RF transmit power
Co-located servers
RF Channel
Broadcast/addressed

b) Raw data or transmit/receive API

c) 9-bit serial interface mode

d) Long range mode
Enables sensitivity control

e) Generic A/D, D/A generic I/Os

f) Variable baud rate

g) RF packet size, timeout control

h) Onboard temperature sensor

i) Handshaking
CTS/RTS
Full modem-mode available

j) In-range indicator

k) Error detection
Onboard CRC
Duplicate packet filtering

l) Data encryption standard (DES)

RF Architectures

Point-to-point

Point-to-multipoint

Multipoint-to-multipoint

Peer-to-peer
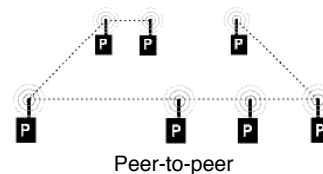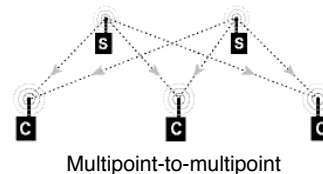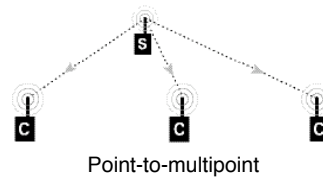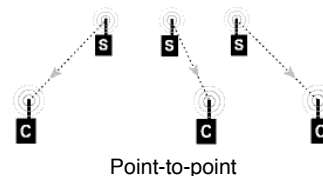
Placing Orders

Select features from the list below to identify the appropriate part number. More product lines are available for industrial & commercial applications. Contact AeroComm Sales for details: toll-free 1-800-492-2320, email sales@aerocomm.com.

PART NUMBERS

AC4490-200M
900MHz transceiver, 3.3V-5.5V, TTL serial*, 5–200mW, –40º to +80º C, MMCX antenna

AC4490-200A
900MHz transceiver, 3.3V-5.5V, TTL serial*, 5–200mW, –40º to +80º C, integral antenna

AC4490-1000M
900MHz transceiver, 3.3V, TTL serial*, 5–1000mW, –40º to +80º C, MMCX antenna

AC4490-1x1
See AC4490-1x1 datasheet

* RS485 interface available.