AMPLIFIED HUMPRO™ SERIES LONG-RANGE RF TRANSCEIVER MODULE

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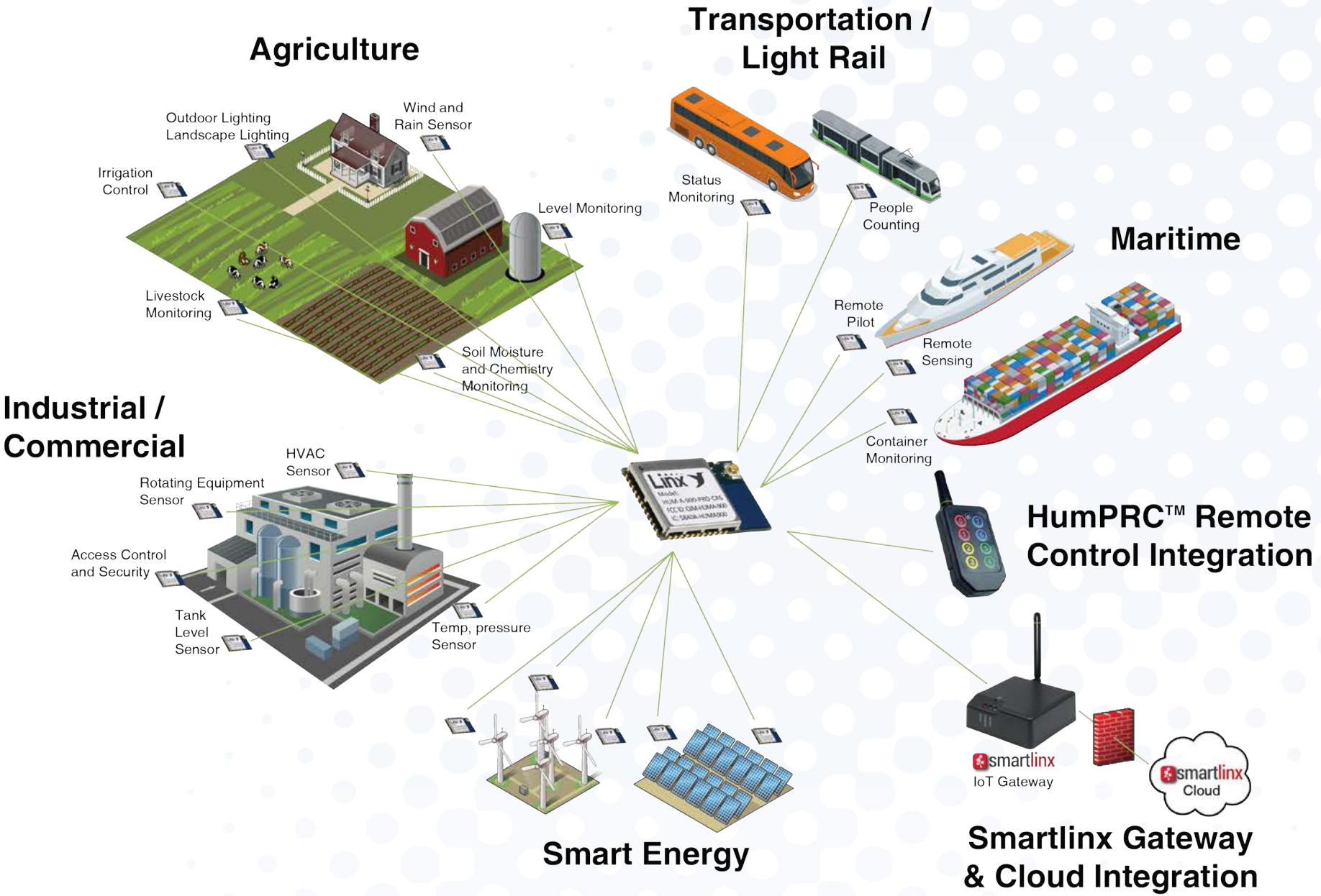
The Amplified HumPRO™ Series RF transceiver module is the easiest-to-implement solution for simple long range wireless connections. Unlike other pre-certified modules, it has a best-in-class real-world range of over 12.9km (8 miles) with sustained data rates 200 - 1,500 times higher than competing protocols. The Amplified HumPRO's pre-compiled software supports many common use cases out-of-the-box at 50% of the total cost of implementation of comparable solutions.

Designed to transmit digital data across a long-range wireless link, the module is a completely integrated RF transceiver and processor. With a built-in frequency hopping protocol that manages all of the transmission functions, no on-chip programming is required. Simply configure a few registers with a binary command set.

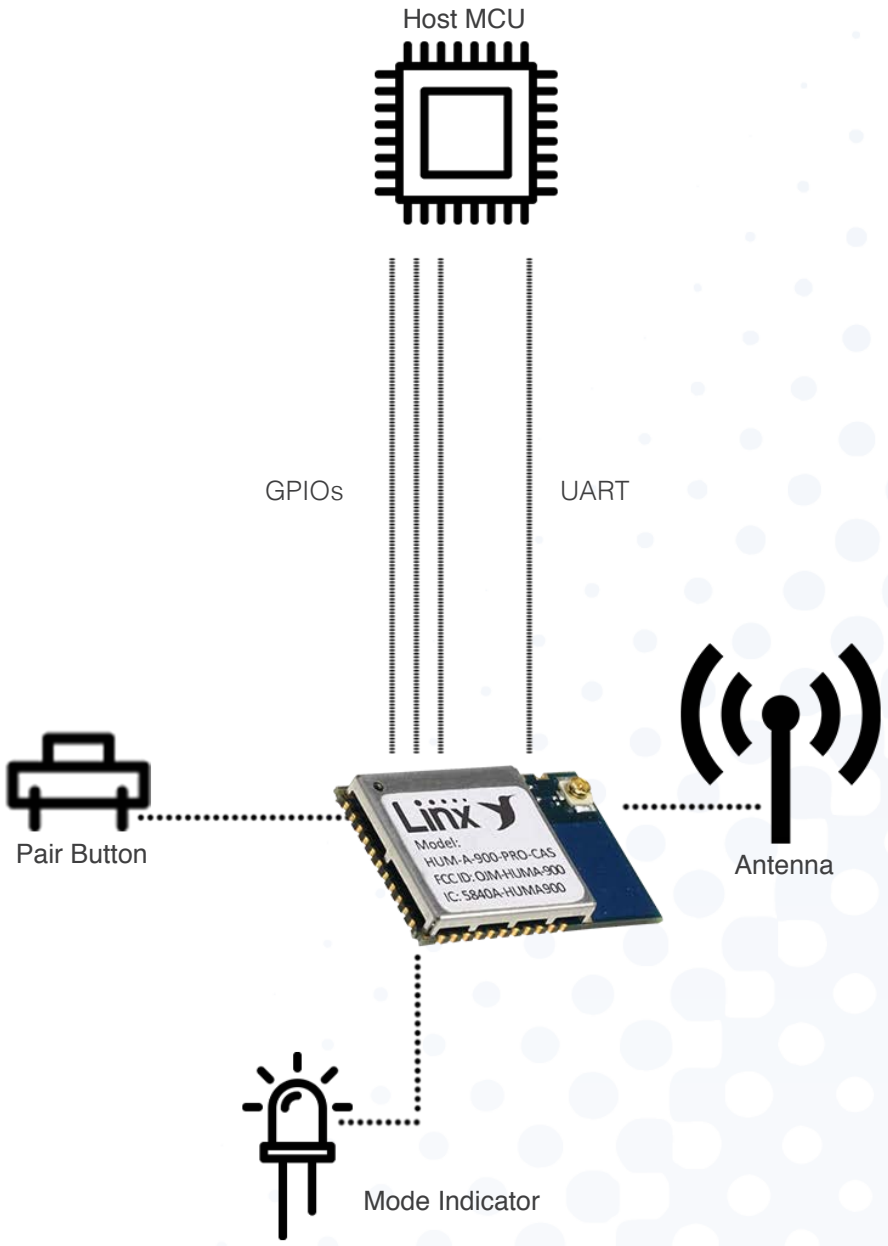
PERFECT FOR:

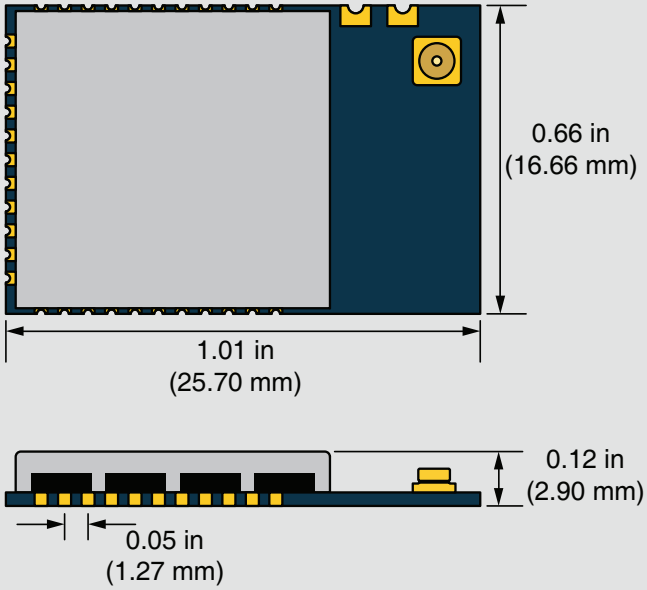
- ROBUST RANGE WITH NO INTERFERENCE
- INTERNET OF THINGS (IOT)
- MACHINE TO MACHINE
- WIRELESS SENSOR NETWORKS
- REMOTE CONTROL AND STATUS MONITORING
- INDUSTRIAL AUTOMATION

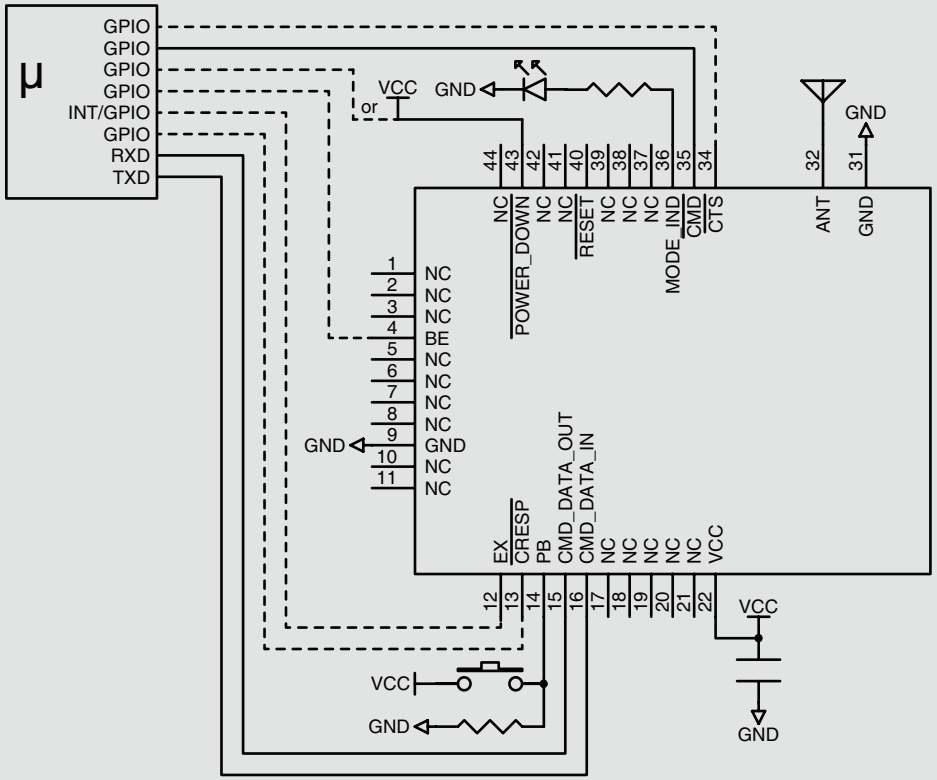
APPLICATION EXAMPLES



SCHEMATIC & DIMENSIONS







BENEFITS

EXTRAORDINARY RANGE

The Amplified HumPRO™ module includes a 25dBm transmitter power amplifier and receiver low noise amplifier. This gives the module an outstanding link budget of 133dB, supporting real-world ranges of over 12.9km (8 miles) even with small, 2dBi antennas, depending on the operating environment.

PRE-COMPILED SOFTWARE

The module's code is pre-compiled and installed on the module. There is no firmware to download and configure. There is no compiler or tools to purchase and learn, just a few commands from an external microcontroller sent through a standard UART.

STANDARD UART INTERFACE

A wide variety of settings can be configured through a standard UART interface. For point-to-point applications, the modules can be configured once, then send and receive data without need for further commands. For larger networks, the command set supports selective addressing, a polling system, and group broadcasting.

FULLY INTEROPERABLE WITH ALL HUMPRO™ & HUMPRC™ DEVICES

The Amplified HumPRO™ Series operates with the HumPRO™ Series of modules, gateways and remotes, enabling mixed systems for many different use cases. The amplified module improves range while the standard module has lower current consumption for battery-powered devices. It can also work with the HumPRC™ Series for remote control applications.

128-BIT AES ENCRYPTION

The module supports 128-bit AES encryption. It also provides a unique Join Process that makes setting up a network in the field as simple as a few button presses.

PRE-CERTIFIED

The module is pre-certified for the United States and Canada, reducing development risk and time-to-market.

Specifications	
Operating Voltage	2.7 to 3.6VDC
Dimensions	25.70 x 16.66 x 2.90 mm (1.01 x 0.66 x 0.12 in)
Max Output Power **@19.2kbps RF Rate** **@153.6kbps RF Rate**	 25dBm 22dBm
TX Supply Current **@25dBm** **@22dBm**	 380mA 260mA
RX Supply Current	39mA
Power Down Current	<1µA
RX Sensitivity **@19.2kbps RF Rate** **@153.6kbps RF Rate**	 -108dBm -101dBm
Operating Frequency Band	902 - 928MHz
Real-World Range	Up to 12.9km (8 miles)*
Operating Temperature Range	–40 to +85˚C
***Depending on implementation and environment**	

MASTER DEVELOPMENT SYSTEM

The Master Development System includes all the tools to effectively evaluate the module and begin incorporating it into a product. It contains two modules mounted on pinned daughter boards, two Programming Docks with a USB interface to included demonstration software, and two Prototype Boards that wire all the module pins to headers and have plated holes for circuit development. The system also includes antennas, extra modules for the first prototype, connectors and complete documentation to provide everything needed to evaluate the modules, from initial testing through final design.

- Includes everything needed to get up and running
- Includes free tech support and design review
- Serves as a design benchmark to compare against the performance of the product

ORDERING INFORMATION

Part Number	Description
HUM-A-900 PRO-CAS	Amplified HumPRO™ Series High Power Data Transceiver, Castellation Interface, External Antenna Connection
HUM-A-900 PRO-UFL	Amplified HumPRO™ Series High Power Data Transceiver, Castellation Interface, u.FL Connector
EVM-A-900 PRO-CAS	Amplified HumPRO™ Series Carrier Board, Thru-Hole Pin Interface, RPSMA Connector
EVM-A-900 PRO-UFL	Amplified HumPRO™ Series Carrier Board, Thru-Hole Pin Interface, u.FL Connector
MDEV-A-900-PRO	Amplified HumPRO™ Series Master Development System

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