

# MICROCHIP RF Wireless Products



Wireless Solutions

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## IEEE STD. 802.11 WI-FI® MODULES

Microchip has added 802.11 wireless communications to its lineup of wireless technologies for the embedded market. Microchip has a Wi-Fi PICTail development board that adds 802.11 capabilities to Microchip's development platforms for the PIC18, PIC24, PIC32, and dsPIC family of microcontrollers. The PICTail development board contains the MRF24WB0MA FCC and Wi-Fi certified module. The Wi-Fi PICTail allows designers to quickly create a direct connection to the Internet by seamlessly connecting to standard 802.11b/g access points. In managing the connection, the MRF24WB0MA module controls the MAC and baseband layers and is connected to the host MCU via an SPI port. The 8/16 or 32-bit Microchip MCU that resides on the Microchip development board controls the TCP/IP networking stack and runs the system application.

### Features:

- Compatible with PIC18, PIC24, PIC32 and dsPIC microcontrollers
- IEEE 802.11b compliant wireless solution compatible with b/g/n routers
- Supports infrastructure and Adhoc networks
- MRF24WB0MA small footprint module integrated antenna, MAC, Baseband, RF and power amplifier
- MRF24WB0MA/B module is FCC, IC, Wi-Fi certified, and ROHS, CE and ETSI compliant, providing considerable cost savings and quick time-to-market
- License Free TCP/IP stack supporting standard suite of Internet Protocols
- Built-in EZConfig application to facilitate network provisioning without a keyboard or display
- Built-in ZeroConf (Bonjour, Avahi) application to simplify human interaction
- Supports WEP, WPA, and WPA2 security protocols on module
- Solutions as simple as a single PIC plus WiFi module with power and passives.

MOUSER STOCK NO.	Microchip Part No.	Description	Price Each
579-MRF24WB0MARM	MRF24WB0MA/RM	2.4GHz IEEE 802.11b™ Transceiver Module w/PCB Antenna	29.40
579-MRF24WB0BMRM	MRF24WB0MB/RM	2.4GHz IEEE 802.11b™ Transceiver Module w/uFL Connector	29.40

## STAND-ALONE LIN 2.1/SAE J2602 TRANSCEIVERS

### Features:

- Compliant with LIN Bus Specifications 1.3, 2.0 and 2.1 and are compliant to SAE J2602
- Support Baud Rates up to 20 Kbaud with LIN-compatible output driver
- 43V load dump protected
- Very low EMI meets stringent OEM requirements
- Very high immunity to RF disturbances meets stringent OEM requirements
- Wide supply voltage, 6.0V-27.0V continuous
- Extended Temperature Range: -40 to +125°C
- Interface to PIC® MCU EUSART and standard USARTs

MOUSER STOCK NO.	Microchip Part No.	Package Type	Description	Price Each			
				1	10	25	100
579-MCP2003EMD	MCP2003-E/MD	DFN-8	Stand Alone LIN Transceiver WAKE pins	1.02	.93	.77	.70
579-MCP2004EMD	MCP2004-E/MD	DFN-8	Stand Alone LIN Transceiver FAULT/TXE pins	1.02	.93	.77	.70
579-MCP2003EP	MCP2003-E/P	PDIP-8	Stand Alone LIN Transceiver WAKE pins	.96	.88	.73	.67
579-MCP2004EP	MCP2004-E/P	PDIP-8	Stand Alone LIN Transceiver FAULT/TXE pins	.96	.88	.73	.67

## 2.4 GHZ IEEE STD. 802.15.4™ RF TRANSCEIVER MODULES

IEEE Std 802.15.4™ is created to address low-cost, low-data rate, and low-power design application for short-range Wireless Personal Area Networks (WPAN). The IEEE 802.15.4 defined standard for wireless connectivity among fixed, portable, and moving devices in a WPAN environment is the foundation for network protocols such as standard based ZigBee® and Microchip's Wireless proprietary MiWi™ and MiWi P2P.

The AC164134 PICTail Plus 2.4GHz RF card includes the Microchip MRF24J40MA transceiver module. The MRF24J40MA is an agency certified module with an integrated PCB antenna mounted on a PICTail Plus edge connector board for the Explorer 16 Development environment.

### Features (MRF24J40):

- 2.4GHz IEEE 802.15.4 compliant
- Supports MiWi™, MiWi P2P & ZigBee
- In-line/stand-alone encryption
- Automatic MAC retransmit
- 18 mA(RX)/22 mA(TX)/2 µA(Sleep)

### Features (MRF24J40MA & MRF24J40MB):

- Microchip's MRF24J40 2.4 GHz transceiver
- Integrated PCB antenna
- FCC (U.S.A.), IC (Canada), and ETSI (Europe) certified

MOUSER STOCK NO.	Microchip Part No.	Description	Price Each
579-MRF24J40-I/ML	MRF24J40-I/ML	2.4GHz IEEE 802.15.4 Transceiver	3.88
579-MRF24J40MA-I/RM	MRF24J40MA-I/RM	2.4GHz IEEE 802.15.4 +0dBm Transceiver Module	9.95
579-MRF24J40MB-I/RM	MRF24J40MB-I/RM	2.4 GHz IEEE 802.15.4 Ext. Range +20 dBm Transceiver Module	17.37
579-AC164134	AC164134	MRF24J40MA PICTail Plus 2.4GHz RF Card	18.95
579-AC182015-1	AC182015-1	ZENA Wireless Adapter is a USB wireless adaptor that connects computers with Microchip wireless products for development	49.95
579-DM182015-1	DM182015-1	8-Bit 2.4GHz Development Kit is an easy-to-use platform for IEEE 802.15.4 application designers	299.00

## BLUETOOTH EVALUATION KIT

The Microchip Bluetooth® Evaluation Kit is an expansion board used for evaluating and adding Bluetooth® wireless technology on 16/32-bit PIC MCUs and dsPIC DSCs. The evaluation kit consists of the Microchip Bluetooth® PICTail™ Plus Daughter Board, and the PIC24FJ256GB110 and PIC32MX795 USB Plug-in Modules, both of which come pre-programmed with the dotstack™ Bluetooth® demonstration Stack and SPP (Serial Protocol Profile). This kit requires an Explorer-16 Development Board to complete the board configuration.



MOUSER STOCK NO.	Microchip Part No.	Description	Price Each
579-DM183036	DM183036	Bluetooth evaluation board supports a wide range of PIC24, dsPIC and PIC32 devices	109.99

## SUB-GHZ TRANSCEIVER RADIO AND PICTAIL PLUS DAUGHTER BOARDS

The Industrial, Scientific and Medical (ISM) unlicensed Sub-GHz radio frequency bands are used for many short-range, low data-rate, and low-power wireless applications. Microchip provides stand alone transceivers and receiver products along with our family of rPIC transmitter with embedded PIC® microcontroller. These radio solutions are ideal for AMR Metering, Consumer Electronics, Home, Business, Industrial Automation, Automotive and Medical applications.

The MRF49XA is a fully integrated Sub-GHz RF transceiver supporting the 434/868/915MHz ISM frequency band. The MRF49XA supports FSK modulation with FHSS capability is ideal for two-way, short-range wireless applications.

The MRF89XA is a single chip FSK/OOK transceiver capable of operating in the 863-970 MHz and 902-928 MHz license-free ISM frequency bands, as well as the 950-960 MHz frequency band. The low-cost MRF89XA is optimized for very lowpower consumption (3 mA in Receiver mode). It incorporates a baseband modem with data rates up to 200 kb/s. Data handling features include a 64-byte FIFO, packet handling, automatic CRC generation and data scrambling. Its highly integrated architecture allows for minimum external component count while still maintaining design flexibility.

Each of the MRF49XA PICTail/PICTail Plus Daughter Boards (579-AC164137-1 and 579-AC164137-2) are a demonstration and development daughter board for the MRF49XA ISM Band Sub-GHz RF Transceiver. The daughter board can plug into multiple Microchip Technology demonstration and development boards. For example, for 8-bit microcontroller development using the PIC18 Explorer Board (DM183032) or 16-bit microcontroller development using the Explorer 16 Development Board (DM240001).

MOUSER STOCK NO.	Microchip Part No.	Description	Price Each			
			1	10	25	100
579-MRF49XA-I/ST	MRF49XA-I/ST	433-930MHz Transceiver	2.82	2.35	2.16	1.95
579-MRF89XA-I/MQ	MRF89XA-I/MQ	863-960MHz Transceiver	2.92	2.44	2.22	2.02
579-AC164137-1	AC164137-1	434MHz Daughter Board	39.99	-	-	-
579-AC164137-2	AC164137-2	868/915MHz Daughter Board	39.99	-	-	-

