

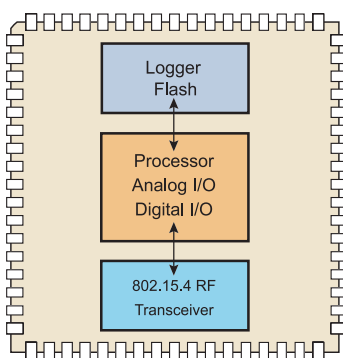
IRIS OEM EDITION

ADVANCED OEM MESH NETWORK RADIO MODULE

- OEM Module for Battery-Powered Mesh Network Sensor Nodes
- Postage Stamp Form Factor
- IEEE 802.15.4, 2.4 GHz Radio for up to 250 kbps Data Rate
- XMesh™ – Reliable, Self-forming, Self-healing Mesh Networking Protocol
- Analog and Digital I/O Interface for Easy Sensor Integration

Applications

- Battery-Powered Wireless Mesh Networking Devices
- 802.15.4 Compliant Wireless Mesh Networking Nodes
- Industrial, Structural and Security Monitoring
- Environmental, Physical, Health Maintenance
- Asset Management



M2110CA Block Diagram

Questi prodotti sono distribuiti e supportati in Italia da:



Actual Size

IRIS OEM EDITION

MEMSIC's IRIS OEM Edition module, the M2110, provides users with high-level functional integration designed to optimize the addition of wireless mesh networking technology to a wide variety of both new and existing custom sensing applications.

Powerful new design features include:

- The IRIS OEM Edition is an advanced module with up to three times improved radio range and twice the program memory over previous generations of MICA Modules.
- Optimized processor/radio module integration based on MEMSIC's extensive Mote development and deployment.
- Flexible onboard hardware interface for both standard and custom sensing devices.
- Comprehensive software support, including sensor board drivers and algorithms, via MEMSIC's industry leading XMesh™ software technology.
- The IRIS OEM Edition is offered in a 68-pin LCC form factor for high-volume surface-mount integration.

By utilizing open-platform, standards based interfaces the OEM Module offer users an attractive value proposition consisting of easily differentiated, low-power 2.4 GHz IEEE 802.15.4 compliant radio modules that can be rapidly designed and built.

Processor and Radio Platform

- IEEE 802.15.4 compliant/ZigBee capable RF transceiver
- 2.4 GHz globally compatible ISM band
- Direct sequence spread spectrum radio for RF interference resistance and inherent data security
- 250 kbps high data rate radio.
- 68-pin package designed for easy sensor integration including light, temperature, RH, barometric pressure, acoustic, magnetic, acceleration/seismic, etc.

Software Support

- Optimized, industry proven, XMesh™ networking stack for low-power, self-forming, high reliability wireless networks
- Open interfaces for integration and customization of sensor node applications

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Processor/Radio Module	M2110CA	Remarks
Processor Performance		
Program Flash Memory	128K bytes	
Measurement Serial Flash	512K bytes	>100,000 measurements
Configuration EEPROM	4K bytes	
RAM	8K bytes	
Serial Communications	UART	0-3V transmission levels
Analog to Digital Converter	10 bit ADC	8 channels, 0-3V input
Other Interfaces	Digital I/O,I2C,SPI	
Current Draw	8 mA	Active mode
	8 μ A	Sleep mode (total)
RF Transceiver		
Frequency Band ¹	2405 MHz to 2480 MHz	ISM band
Transmit (TX) Data Rate	250 kbps	
RF Power	3 dBm (typ)	
Receive Sensitivity	-101 dBm (typ)	
Adjacent Channel Rejection	36 dB	+ 5 MHz channel spacing
	34 dB	- 5 MHz channel spacing
Current Draw	16 mA	Receive mode
	10 mA	TX, -17 dBm
	13 mA	TX, -3 dBm
	17 mA	TX, 3 dBm
Electromechanical		
External Power	1.8V - 3.6V	
Size (in)	0.95 x 0.95 x 0.18	LCC68
(mm)	24.23 x 24.23 x 7.5	
Weight	0.11 oz, 3g	
Temperature Range	- 40 to 85°C	

Notes

¹5 MHz steps for compliance with IEEE 802.15.4/D18-2003.
Specifications subject to change without notice

OEM Design Kit

For prototyping and development, MEMSIC provides MoteWorks™, a fully integrated software platform and a complete OEM design kit, consisting of pre-programmed OEM Edition Reference Designs, OEM Edition Modules, sensor/data acquisition boards and an Ethernet base station. The MoteWorks™ software platform is optimized for low-power battery-operated networks providing an end-to-end platform across all tiers of wireless sensor networking applications.



OEM Design Kit

Ordering Information

Model	Description
M2110CA	2.4 GHz IRIS OEM Edition Module
Availability Q3	IRIS OEM Design Kit

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