M1402
IOCAST Endpoint Transceiver

Preliminary Product Brief

All measurement specified in millimeters
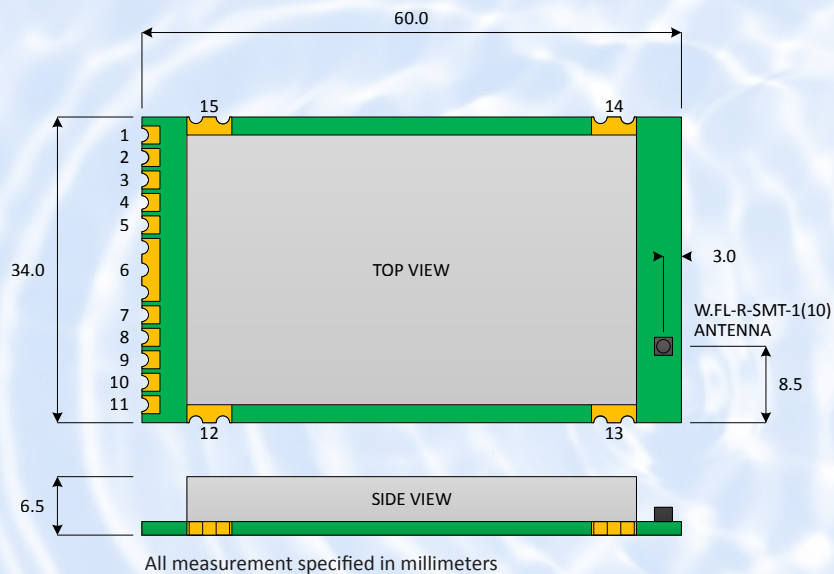
Pin	Name	Dir	Description
1	SDA	I/O	I^2C Data Line
2	SCL	I	I^2C Clock
3	CREQ	I	Communications Request
4	CACK	O	Communications Ack
5	ATTN	O	Attention
6	VCC	I	Power
7	/RESET	I	Module Reset
8	S0	O	Status Bit 0
9	S1	I/O	Status Bit 1
10	S2	I/O	Status Bit 2
11	SSEL	I	Status Select
12-15	GROUND	I	Ground

The **M1402 Endpoint Transceiver** enables OEM objects to connect to an IOCAST cloud and communicate with backend applications.

The M1402 includes the full IOCAST stack on board. It solders directly to a controller PCB using castellated pads, and interfaces with a host CPU using the **Endpoint Transciver Interface** with 1.8V logic and a 3-3.6VDC supply. The M1402 can communicate reliably with an IOCAST coverage cloud even at ranges of 15-20 miles to the nearest base station.

Compared to other IoT approaches, IOCAST systems use dedicated narrowband radio channels and a carrier grade media access (MAC) layer. **The M1402** thereby reduces cost and energy consumption, improves performance, and delivers proven, mission-critical reliability in urban, rural, and industrial environments.

Applications

- Automated Meter Reading
- Building Automation and HVAC
- Alarm and Security Systems
- Industrial Monitoring and Control
- Long range Irrigation Systems
- Agriculture
- Transportation and Energy
- Asset Tracking
- Automatic Vehicle Location
- Vending
- Retail and Commercial Refrigeration
- General Purpose, Low-Energy M2M and IoT

iocast

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PCB Land Pattern
All measurement specified in millimeters
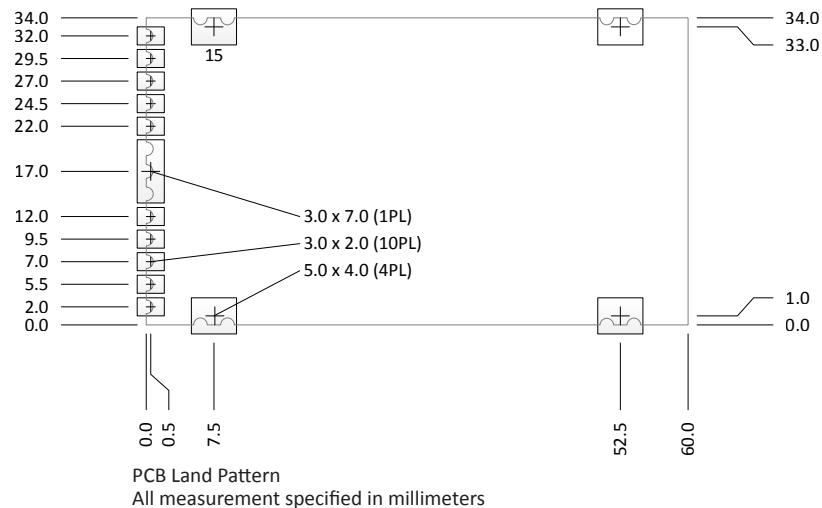
Transmitter

Frequency Range: 896 - 902MHz
Emissions: FCC Part 90, 24D (11K0F1D)
Power: +14dBm - +30dBm Into Antenna port

Receiver

Frequency: 929 - 942MHz
Image Rejection: 40dBc, Typical
1MHz Blocking 80dBc, Typical
Selectivity 22dBc @ ±10KHz, Typical
Sensitivity 90% CMR @ -116dBm (conducted)

Capabilities

Point address plus 16 group addresses
Over-the-Air configuration and key management
Physical module security
Datagrams from 14 bits to 2048 bytes
Precise network time

Air Protocol

IOCAST v 1.1
2FSK and 4FSK modulation
12.5KHz an 10KHz channel width
800, 1600, 3200, 6400, 9600 bits per second
Flexible energy/performance optimizaiton
128-bit AES encryption with key management

Power Consumption

Deep Sleep: < 1uA
Sleep: 8uA
Receive: 11mA
Transmit: 50mA - 490mA

Host Interface

Power Supply: 3.0 - 3.6VDC
Logic Level: 1.8V
Interface: Endpoint Transceiver Interface