M1493
Iocast 900MHz Node Transceiver

Preliminary Product Brief

40.0

4.0 MAX

TOP

SIDE

ALL DIMENSIONS IN MM

UMCC
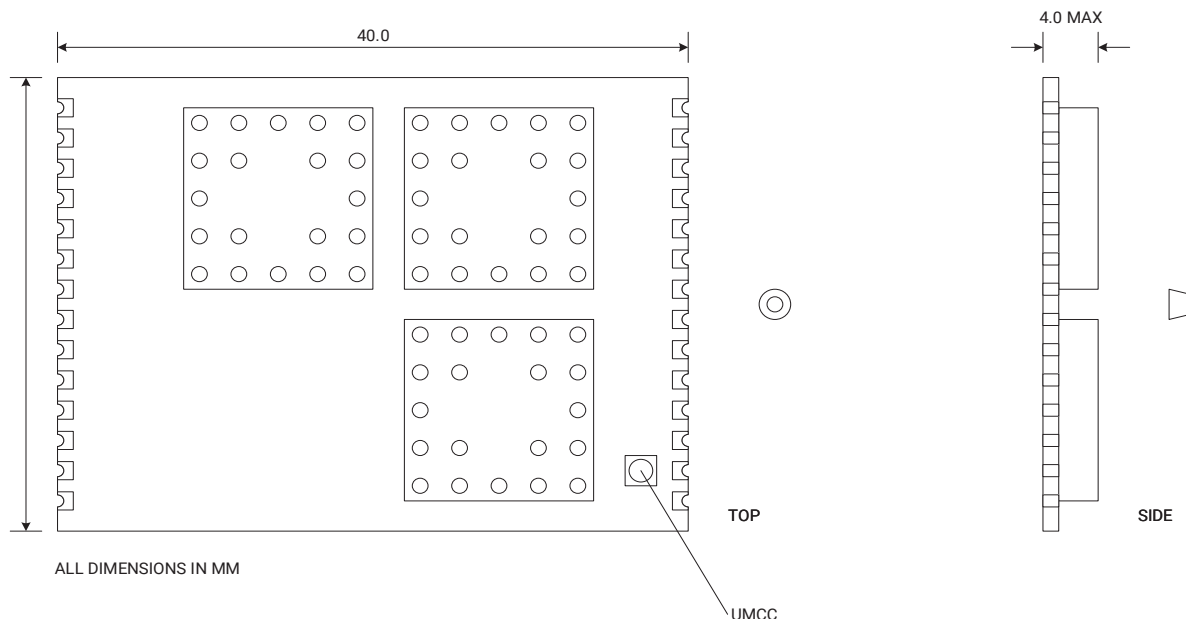
Overview

The **M1493 Node Transceiver** connects an OEM device to an Iocast network. It supports fixed and mobile nodes, bidirectional communications, and all **node availability** values. The M1493 enables a wide range of applications ranging from sensors requiring a multi-year battery life to mobile alerting units requiring sub-second latency.

The M1493 is a complete Iocast node transceiver, soldering directly to a host PCB and interfacing with a local microcontroller using NXI. The unit requires a 1.8V logic interface, a 2.1 - 4.2 VDC supply, and an antenna. The M1493 autonomously performs all network related tasks and can roam between systems. Its RF and DSP performance enable sector connection and reliable communication even when the nearest base transceiver is 15-20 miles away.

For mission-critical IoT, the M1493 delivers high value, low energy consumption, and mission-critical reliability in urban, rural, and industrial environments.

Applications

- Patient Monitoring and Clinical Alarms
- Public Safety Dispatch and Alerting
- Public Works and Utilities
- Fleet Vehicle and Asset Tracking
- Public Transportation Systems
- Perimeter Security
- Environmental and Water Monitoring
- Mining and Pipeline Management
- Oil Field Monitoring
- Radiation Monitoring
- Rail and Shipping Container Tracking
- Animal Tracking
- Agriculture

PCB Footprint and Pinout
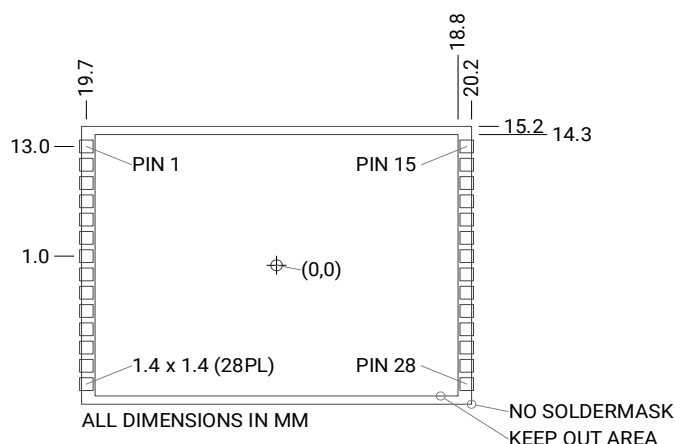
Pin	Name	Direction	Description
1	GND	GND	Ground
2	VCC	VCC	2.1 - 4.2 VDC
3	SDA	I/O	NXI I^{2}C Data
4	SCL	I	NXI I^{2}C Clock
5	CREQ	I	NXI Request
6	CACK	O	NXI Acknowledge
7	ATTN	O	NXI Attention
8	/RESET	I	NXI Module Reset
9	TMARK	O	NXI Time Mark
10	S1	O	Status Bit 0
11	S2	O	Status Bit 1
12	S3	O	Status Bit 2
13	VCC	VCC	2.1 - 4.2 VDC
14	GND	GND	Ground
15	GND	GND	Ground
16	VCC	VCC	2.1 - 4.2 VDC
17	VCC	VCC	2.1 - 4.2 VDC
18	N/C	N/C	No Internal Connection
19	N/C	N/C	No Internal Connection
20	N/C	N/C	No Internal Connection
21	N/C	N/C	No Internal Connection
22	N/C	N/C	No Internal Connection
23	N/C	N/C	No Internal Connection
24	N/C	N/C	No Internal Connection
25	GND	GND	Ground
26	GND	GND	Ground
27	ANT	I/O	Antenna
28	GND	GND	Ground

Transmitter

Frequency Range: 896 to 902MHz
Emissions: 7K60FXD
Transmission Mask: Parts 22, 24(D), 90, and 101
Power: Variable, +14dBm to +30dBm (at port)

Receiver

Frequency: 929 to 942MHz
Selectivity 30dBc @ ±12.5KHz, Typical
Sensitivity: -120dBm

Capabilities

8128 byte maximum datagram size
Precise network time (NXI TMARK ±21 µS)
Primary address plus 16 multicast addresses
Secure over-the-air configuration
Mobility and Secure Roaming

Interface

Air: Iocast v3
Host: NXI v3 (1.8V CMOS)
Antenna: UMCC (EFJ 128-0711-201)

Physical

Size: 30 x 40 x 4mm
Weight: 15g

Electrical

VCC: 2.1 to 4.2VDC
Static Current: < 0.1 µA
Idle Current: 8 µA
Receive Current: 11mA
Transmit Current: 120mA - 490mA

Environmental

Temperature: −40°C to +85°C
Humidity: 10 to 90% Non Condensing

CriticalResponse