

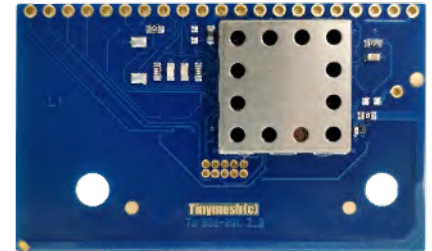
Tinymesh

CONNECT · COMMUNICATE · CONTROL

TM4070 Mesh Plug-in Board

Unique Technology Features

- ▶ Ready to use plug-in board with Tinymesh application stack
- ▶ Up to 8 GPIOs; Analog, digital and pulse counter inputs; dimmer and digital outputs
- ▶ No external components required
- ▶ RF frequency - license free 865-867, 868-870 or 902-927 MHz
- ▶ Tx Power: Up to 11dBm
- ▶ Serial Port, 256-byte buffer, hardware or software handshake
- ▶ Clustered node detection
- ▶ Network congestion avoidance
- ▶ RF tamper detection and alarm
- ▶ Network busy detection for ad-hoc Gateways (CMRI)
- ▶ Performance optimized on-board PCB antenna
- ▶ Immunity support for 35kV and jammer test
- ▶ Provision for RSSI and connect LED for deployment assistance
- ▶ Power Supply Tx: 37 mA, Rx: 24 mA, sleep: 0.3 uA
- ▶ Supply voltage 2.0V - 3.6V



TM4070-000 -Size: 33x55mm (21-pin Through Hole)

TM4070-210 -Size: 22x35mm (12-pin Through Hole)

TM4070-310 -Size: 19x36mm (16-pin SMT)

Tinymesh Stack Highlights

- ▶ Mesh network: Self-forming, self-healing and self-optimizing
- ▶ Mesh - RPL type routing
- ▶ Multiple gateway support
- ▶ Wireless OTA configuration
- ▶ AES 128 encryption
- ▶ Listen before talk (EN 300 220-2)
- ▶ Link level and application level acknowledgement
- ▶ IEEE 802.15.4.g compatible PHY mode

Key Applications

- ▶ Smart Energy Meters
- ▶ Smart Water Meters
- ▶ Smart Gas Meters
- ▶ Smart Street Lighting
- ▶ Smart Cities
- ▶ Smart Buildings
- ▶ Industrial M2M
- ▶ Wireless Sensor Networks

Tinymesh Cloud

- ▶ Open source, REST API for application development
- ▶ Mesh connectors for GPRS, Ethernet, UNIX, Windows, Apple
- ▶ On-line workbench for remote configuration and support
- ▶ Supports redundancy, retry, buffering and data storage
- ▶ Built in end-to-end security



Parameter	TM4070-XXX	TM4080-XXX	TM4090-XXX	Units
Frequency	865-867	868-870	902-927	MHz
Channels	15	18	50	
Data rate	1.2-100	1.2-100	1.2-250	kbit/s
Max TX Power	11	11	11	dBm
Sensitivity @ 1.2/100 kbit/s	-110 / -97	-110 / -97	-110 / -97	dBm
Supply voltage	2.0 - 3.6	2.0 - 3.6	2.0 - 3.6	Volt
RX/TX Current	24/37	24/37	24/37	mA
SLEEP Current	0.3	0.3	0.3	uA
Temp. range	-40 to +85	-40 to +85	-40 to +85	C

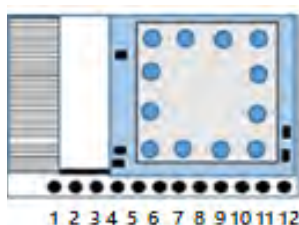
TM4070 Mesh Plug-in Board

Pin Description

TM4070-000



TM4070-210



TM4070-310



Pin Name	Pin No.			Pin Type	Description
	4070-000	4070-210	4070-310		
VDD	1, 11	3	8	Power Supply	Supply voltage input. Internally regulated.
GND	2, 17	4	1,2,3,4,5,9	Power Supply	System Ground.
RESET	3	9	14	Input	Main reset (active low). Should normally be left open.
PULSE INPUT	4	NA	NA	Digital	Pulse counter input with selectable pull -up. Counting on Hi - Low transition.
GPIO 0	21	NA	NA	Digital In/out or Analogue In	Individually configurable as Digital Input or Output or as Analogue input.
GPIO 1	20	NA	NA	Digital In/out or Analogue In	Individually configurable as Digital Input or Output or as Analogue input.
GPIO 2/DC*	19	12	17	Digital In/Out	Configurable as Digital input or output.
GPIO 3/DD*	18	11	16	Digital In/Out	Configurable as Digital input or output.
GPIO 4	8	NA	NA	Digital In/Out	Configurable as Digital input or output.
GPIO 5	7	NA	NA	Digital In/Out	Configurable as Digital input or output.
GPIO 6	5	NA	NA	Digital In/Out	Configurable as Digital input or output.
GPIO 7	6	NA	NA	Digital In/Out	Configurable as PWM output.
RSSI/TX LED	9	1	7	Output	Direct LED drive output. Refer Data Sheet
CONNECT/RX LED	10	2	6	Output	Direct LED drive output. Refer Data Sheet Alternate function - PWM Output.
CTS/RXTX	12	6	11	Output	UART CTS or RTX Active Low.
RTS/SLEEP	13	5	10	Input	UART RTS or Sleep.
CONFIG	14	10	15	Input	Configuration Enable.Active low. Should normally be set high.
TXD	15	8	13	Output	UART TX Data
RXD	16	7	12	Input	UART RX Data

*Pins 11,12 of 4070-210 and pins 16,17 of 4070-310 are used for device programming.

Tinymesh

EASIER & SMARTER

DOC TM4070-IN001

India Office:
Tinymesh Radiocrafts India
The Atrium - Quark City
A-45, Industrial Area 8-B
Mohali-160059, Punjab, India

Tel.: +91-172-5096234
E-mail: sales@tmrcindia.com
Homepage: tinymesh.com

Norway Office:
Tiny Mesh AS
c/o CWi Moss AS
M:6, Elisabeth von Hübschs gate 6
1534 Moss, Norway

Tel:+47-92268419
E-mail: support@tinymesh.com
Homepage: tinymesh.com