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New Product Introduction

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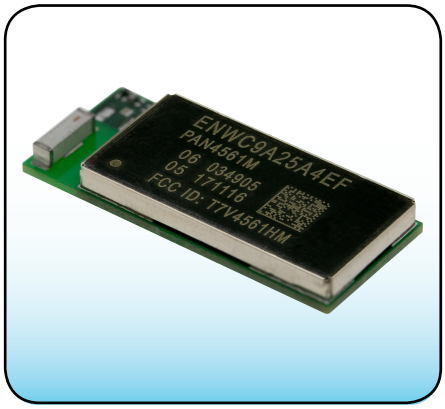
NEW! PAN4561M Mesh Networking RF Modules

Designed For Medium Range Applications of up to 800 Feet



Panasonic, a worldwide leader in Wireless Products introduces the NEW PAN4561M Series of Mesh Networking RF Modules. These cost engineered modules are designed for applications up to 800 feet in range and are optimized to deliver longer range while conserving power consumption, using both a noise amplifier and 10db power amplifier. PAN4561M modules are medium range alternatives to Panasonic's original extended range PAN4561 Series devices.

The PAN4561M Series can be transformed from simple point-to-point proprietary devices to complex mesh networks by choosing from an array of simple firmware options. Fully featured with 39 I/O lines, sharing a common 62-pin footprint and software, each model hosts the FreeScale MC13213 Software-on-a-chip (SOC), using the same eight-bit GT60 processor as Panasonic's popular PAN4555 and making the product family application-compatible. Optional Synapse SNAP® firmware provides a highly flexible, industry-leading solution for mesh networking with a complete network development environment. Multiple antenna options are available. The Series has FCC, IC, and ETSI certifications.

Product Performance:

- Small Size: 35mm x 15mm x 3.5mm
- 3 Antenna Options: Single Port 50Ω, Ceramic Antenna or SMD Output
- Low Power Modes for Increased Battery Life
- 16 Selectable Channels w/ 250 Kbps (2.4 GHz)
- High Sensitivity: -105 dBm Typical at 1% Packet Error Rate
- +10 dBm Typical Output Power Programmable Over a 30 dB Range
- Low Supply Voltage: 2.7 V to 3.3 V (3.0 V Typ.)
- Operating Temperature Range: -40°C to +85°C
- Link Quality & Clear Channel Assessment Capability
- 60k Flash and 4k RAM Memory
- Two UARTs and One I^2C Bus
- 8 Channel A/D Converter with 10 Bit for Fast and Easy Analog Input Conversion (Temperature, Pressure and Fluid Levels) to Digital Values
- 5 Channel 16-Bit Timer/Pulse Width Modulation (Tpm) Outputs
- BDM Port for Direct Download Programming
- 39 Digital I/O Lines with Programmable Pull-Ups and Several with High-Current Driver

PAN4561M Part Numbers:

Part Numbers	Description (all parts 802.15.4, 10 db PA)	Part Numbers	Description (all parts 802.15.4, 10 db PA)
ENW-C9A25A1EF	Antenna-w/o-Firmware	ENW-C9A25A4EF	Antenna-SNAP-Firmware
ENW-C9A25B1EF	UF.L Connector-w/o-Firmware	ENW-C9A25B4EF	UF.L Connector-SNAP-Firmware
ENW-C9A25C1EF	50ohm-Pad-w/o-Firmware	ENW-C9A25C4EF	50 ohm-Pad-SNAP-Firmware
EVAL_PAN4561	Evaluation Kit for the PAN4561	ENW-C9A30A4EF	Eval Module w/ Ceramic Antenna, SNAP-FW
ENW-C9A30B4EF	Eval Module w/ UFL Connector, SNAP-FW	ENW-C9A30D4EF	Eval Module with SMD RF Out, SNAP-FW

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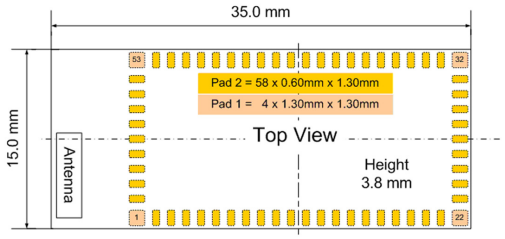
PAN4561MNPI, FY10-045-XXX

Dimensions & Pin Layout:



Pin No.	Pin
1, 22, 32, 53~54, 56~62	GND
2	PTD4 / TPM2CH1
3	PTD5 / TPM2CH2
4	PTD6 / TPM2CH3
5	PTD7 / TPM2CH4
6	PTD2 / TPM1CH2
7, 51~52	NC
8	PTC0 / TXD2
9	PTC1 / RXD2
10	PTC2 / SDA1
11	PTC3 / SCL1
12 - 19	PTB(0~7) / AD1P(0~7)
20	VREFH
21	VREFL
23-24	Vcc

Pin No.	Pin
25	PTG1 / XTAL
26	PTG2 / EXTAL
27	RESET
28	CLKO
29	GPIO2
30	PTG0 / BKGND / MS
31	GPIO1
33	VDDA
34 - 41	PTA(7~0) / KBI1P(7~0)
42	PTC7 / GPIO
43	PTC6 / GPIO
44	PTC5 / GPIO
45	PTC4 / GPIO
46	PTE0 / TXD1
47	PTE1 / RXD1
48-50	GPIO(5~7)
55	EXANT

Applications:

- Factory Automation and Control
- Home Gateways/Home Automation and Control
- Motor/Lighting Control
- Inventory and Logistics Management
- HID (Human Interface Devices)
- Toys
- Remote Control and Wire Replacement for Industrial Systems (Wireless Sensor Networks)
- RFID Tagging
- Automated Meter Reading
- Monitoring (Environmental, Patient, Fitness)
- Proprietary Networking Solutions Using IEEE802.15.4

Technical Specifications for PAN4561M:

Parameter	Value	Condition / Notes
Receiver Sensitivity	-105 dBm typ.	For 1% Packet Error Rate
Output Power	10 dBm	
Power Supply	2.7 V ~ 3.3 V	Single Supply, 3.0 V Typ.
Power Control Range	30 dB	
Maximum Data Rate	250 kbps	Over The Air
Current Consumption		
Receive Mode	47 mA typ.	
Transmit Mode	72 mA typ.	At 10 dBm
Idle Mode	1.6 mA typ.	
Doze Mode	36.3 µA typ.	No CLKO
Hibernate Mode	2.2 µA typ.	
Off Mode	0.5 µA typ.	
Operating Temperature Range	-40˚C to +85˚C	

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