

The PAN4566 is the latest addition to Panasonic's family of mesh networking modules. This third generation platform combines a 32 bit ARM7 core micro-controller with a 2.4GHz transceiver. The PAN4566 has both low noise and power amplifiers for long range applications. To maximize efficiency, Tx power is programmable over a 30dB range. With a maximum output power of 20dB and a receive sensitivity of -112dB, this module has a link margin of 132dB, giving it the best range in its class.

Multiple antenna options are available including, ceramic antenna, SMT pad output, and U.FL connector. This module will comply to EN300328, FCC CFR Part 15 and ARIB STD-T66. FCC and IC certifications are pending.



Product Performance:

- Small Size: 35mm X 15mm X 3.5mm
- 128k Flash, 80k ROM And 96k RAM Memory
- Powerful 32-bit AR7TDMI-S Core
- 2 Antenna Options: Single Port 50Ω Or Ceramic Antenna
- 16 Selectable Channels With 250/2000 Kbps In 2.4 Ghz Band
- Low Power Modes For Increased Battery Life
- High Sensitivity: -112 dBm Typical At 1% Packet Error Rate
- 20 dBm Typical Output Power Programmable Over A 30 dB Range
- Low Supply Voltage: 2.7v To 3.3v, 3.0v Typ. - 2.0 To 3.6v Without PA/INA
Optional: On-board Buck-converter
- Operating Temperature Range: -40°C To +85°C
- Link Quality And Clear Channel Assessment Capability
- Two Full UARTs With Flow Control, SPI And I²C
- 4 Channel A/D Converter With 12 Bit For Fast And Easy Conversion From Analog Inputs
- 4 Channel 16 Bit Timer/pulse Width Modulation Outputs
- JTAG Port For Debugging
- Flash Memory Access Over UART/SPI
- 40 Digital I/O Lines With Programmable Pull-Ups, Partially With High-Current Drivers

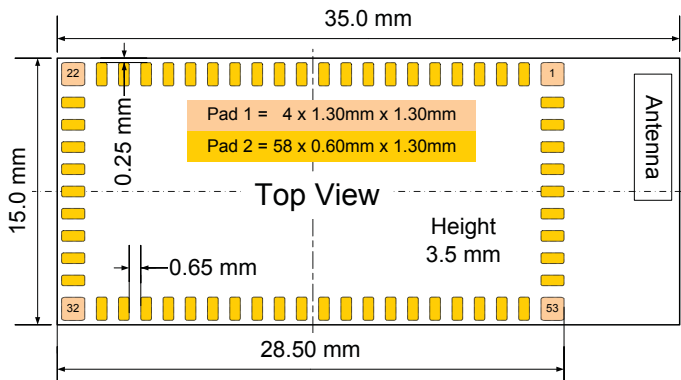
Applications:

- Factory Automation
- Home Automation
- Motor/Lighting Control
- Inventory Management
- Remote Control And Wire Replacement For Industrial Systems (Wireless Sensor Networks)
- RFID Tagging
- Automated Meter Reading
- Monitoring (Environmental, Patient, Fitness)

Part Numbers:

Part Number	Description
ENWC9A24A3EF	PAN4566, 32 bit, LNA, PA, With Ceramic Antenna
ENWC9A24N4EF	PAN4566, 32 bit, LNA, PA, With RF Out On SMD Pads
ENWC9A24N2EF	PAN4566, 32 bit, LNA, PA, With U.FL Antenna Connector
EVAL_PAN4566	Evaluation Kit For The PAN4566 Module

Dimensions & Pin Layout:



Note: The pin names of the module and the internal transceiver names are equivalent.

Pin No.	Pin Name	Pin No.	Pin Name
1, 22, 32, 56 to 62	GND	27	/Reset
2 to 5	Timer0-3 GPIO8-11	28 to 31	JTAG GPIO46-49
6 to 9	UART 2 GPIO21-19	33	NC
10 / 11	I ² C GPIO13-12	34 to 41	KBI7-0 GPIO29-22
12 to 15	SSI GPIO0-3	42 to 45	SPI GPIO4-7
16 to 19	ADC3-0 GPIO33-30	46 to 49	UART 1 GPIO14-17
20	ADC Ref. H	50	Ant2 GPIO43
21	ADC Ref. L	51	Ant1 GPIO42
23 / 24	Vcc	52	/PA_PwrDn
25 / 26	32 kHz Xtal	53 to 54	GND
		55	50 Ohm RF

Technical Specifications:

Parameter	Value	Condition / Notes
Receiver Sensitivity	-112 dBm typ.	For 1% Packet Error Rate
Output Power	20 dBm	Maximal
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, Proprietary 2 Mbps Optional
Current Consumption		Output Power Nominal Value
Receive Mode	33 mA typ.	
Transmit Mode	189 mA typ.	
Idle Mode	770 μ A typ.	
Doze Mode	74 μ A typ.	
Hibernate Mode	19 μ A typ.	
Off Mode	2 μ A	
Operating Temperature Range	-40°C to +85°C	

Note:

All parameters are valid for VDD = 3.0V and Tamb = 25°C.

Samples available summer 2009.