PAN4570 SNAP®

The PAN4570 is a short range, low power, 2.4 GHz ISM band transceiver using the Ember EM250 single chip solution for mesh networking. With IEEE 802.15.4 compliance, 16-bit ZAP2b micro-processor, on-board reference oscillators, and optimized RF front-end circuitry, the PAN4570 provides everything needed for a full mesh network solution. A reliable application programming interface and Ember's EmberZNet stack can easily create application profiles.

Product Performance:

- 128k Flash And 5k SRAM Memory
- 3 Antenna Options: Plug, 50 Ω SMD Port Or Ceramic Antenna
- 16 Selectable Channels With 250 kBps In The 2.4 Ghz Band
- 3 Different Power Modes For Increased Battery Life
- High Sensitivity Of -97 dBm Typical At A 1% Packet Error Rate
- +3 dBm Output Power (+5 dBm In Boost Mode)
- Low Supply Voltage: 2.1 V To 3.6 V, 3.0 V Typical
- Small Size: 20.0mm X 26.5mm X 3.0mm
- Onboard Low Power Regulator
- Operating Temperature Range: -40°C To +85°C
- Link Quality And Clear Channel Assessment Capability
- All Of The 17 GPIO Of EM250 Are Available At The Module Pads, Which Are Multiplexed To GPIO, UART, SPI, I^2C Or Up To Four Analog Inputs To An ADC And Two Timer Waveform Outputs
- Critical Portions Of IEEE 802.15.4-2003 Plus A First-line Filter For Non-Intended Packets Are Realized In Hardware, Thus Reducing The Workload On The μc
- FCC Certified

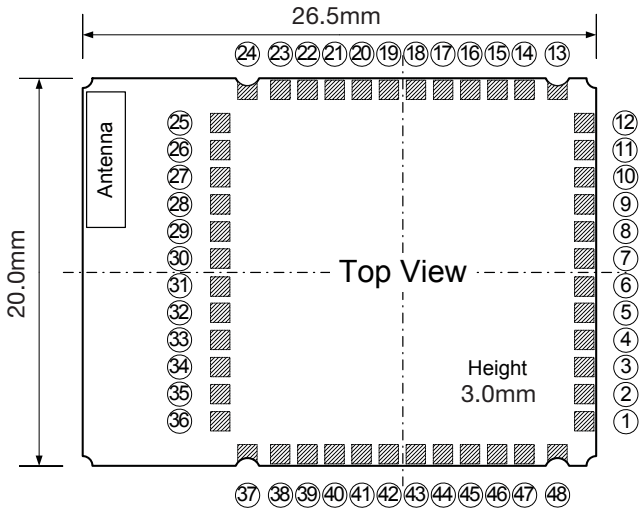
Applications:

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

Part Numbers:

Part Number	Description
ENWC9A02A3E	PAN4570, Mesh Networking Module With Ceramic Antenna
ENWC9A03N2E	PAN4570, With U.FL Antenna Connector
ENWC9A04N4E	PAN4570, With RF Out On SMD Pads
EVAL_PAN4570	Evaluation Kit For The PAN4570 Module

Dimensions & Pin Layout:



Pin No.	Pin Name
1	VBAT
2	REG_out
3	Reset
4	OSC32A
5	OSC32B
6 to 12	GPIO 0 to 6
13,24	GND
14 to 23	GPIO 7 to 16
25	SIF_CLK
26	SIF_MISO

Pin No.	Pin Name
27	SIF_MOSI
28	SIF_LOADB
29	n.c.
30 to 37	GND
38	RF
39, 48	GND
40	VC1
41 to 45	n.c.
46	Reg_EN
47	Reg_IN

Note:
Access to the programming interface pins 25, 26, 27, 28, 1, and 3 has to be provided on the application board.

Technical Specifications:

Parameter	Value	Condition / Notes
Receiver Sensitivity	-96 dBm typ. - Normal -97 dBm typ. - Boost	For 1% packet error rate
Output Power	3 dBm 5 dBm	Normal Boost Mode On
Power Supply	2.1 V to 3.6 V	3.0 V typical
Error Vector Magnitude	15% Typical 35% Boost	Typical as defined by IEEE802.15.4-2003
Maximum Data Rate	250 kbps	Over The Air
Current Consumption Total Rx Current Total TX Current Deep Sleep Mode Deep Sleep Mode	 35.5 mA typ. 35.5 (41.5) mA typ. 1.5 μA 1.0 μA	 @ max Tx power, boost mode off (on) max, with 32.768KHz osc running max, with internal RC osc running
Operating Temperature Range	-40°C to +85°C	

Notes:
All parameters are valid for VDD = 3.0V and Tamb = 25°C.
The data stated above is preliminary data.