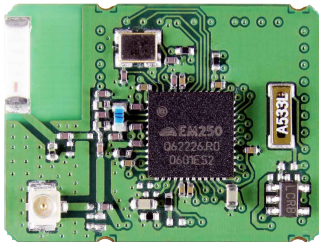# Panasonic
ideas for life

Cut the Cable™

ZigBee™ready -Modem PAN4570

OUTLINES

The PAN4570 module is a short range, low power, 2,4GHz ISM band transceiver using the Ember™ EM250 single chip solution for ZigBee™, a IEEE802.15.4- compliant transceiver with a 16-bit XAP2b microprocessor.

With added onboard reference oscillators and optimized RF frontend circuitry PAN4570 provides the complete hardware needed for a ZigBee™ solution. PAN4570 comprises EmberZNet, the Ember™ ZigBee–compliant software stack, which is a ZigBee™ profile-ready platform compliant solution. A reliable Application Programming Interface based on the ZigBee™ specification is provided for the ease of the creation of application profiles.

Additional regulator and 32kHz crystal can be mounted in addition on cutomer demand.
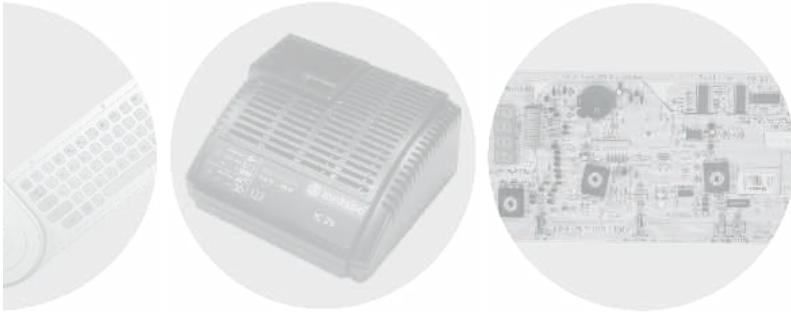
FEATURES

- 3 antenna options: Plug, single port 50Ω 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 -98 dBm typ. at 1% Packet Error Rate
- +3dBm output power (+5dBm in boost mode)
- Low supply voltage (2.1 V to 3.6 V, 3.0 V typ.)
- Small size (20.0mm x 26.5mm x 3.0mm)
- onboard low power regulator
- Operating temperature range -40°C to +85°C
- 128k Flash and 5k SRAM memory
- 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, I2C or up to four analog inputs to an ADC and two timer waveform outputs
- Critical portions of IEEE802.15.4-2003 plus a first-line filter for non-intended packets are realized in hardware, thus reducing the workload on the µC

APPLICATIONS

- Remote control and wire replacement in industrial systems such as wireless sensor networks
- Factory / home automation and motor / lighting control
- Inventory management and RF ID tagging and AMR
- Monitoring (environmental, patient or fitness)

MODULES   Panasonic   Electronic Devices Europe GmbH   WIRELESS

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Hardware Status:
Engineering Samples available

Panasonic ideas for life

CONTACT

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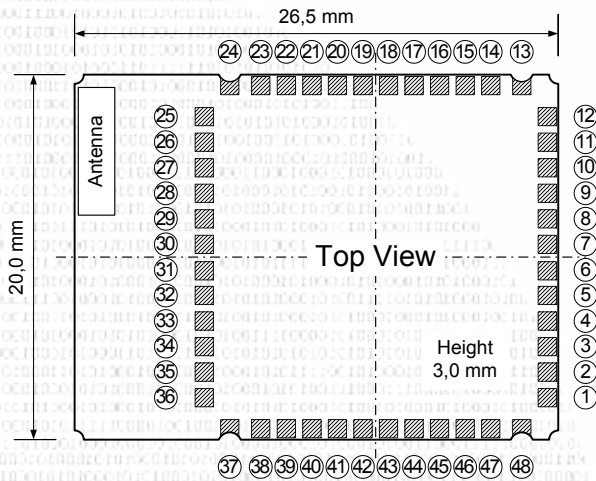## Heino Kähler
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DIMENSIONS

Pin no.	Pin name	Pin no.	Pin name
1	VBAT	27	SIF_MOSI
2	REG_out	28	SIF_LOADB
3	Reset	29	n.c.
4	OSC32A	30 to 37	GND
5	OSC32B	38	RF
6 to 12	GPIO 0 to 6	39, 48	GND
13,24	GND	40	VC1
14 to 23	GPIO 7 to 16	41 to 45	n.c.
25	SIF_CLK	46	Reg_EN
26	SIF_MISO	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 CHARACTERISTICS

Parameter	Value	Condition / Note
Receiver Sensitivity	-98 dBm typ.	for 1% packet error rate
Output Power	3 dBm 5 dBm	nominal boost mode on
Power Supply	2.1 V to 3.6 V	3.0 V typ.
Error Vector Magnitude	15 (25) %	typical (maximum), as defined by IEEE802.15.4-2003
Maximum Data Rate	250kbps	over the air
Current Consumption total Rx current total Tx current total TX current DEEP SLEEP mode DEEP SLEEP mode	35.5 mA typ. 32.8 mA typ. 35.5 (41.5) mA 1.5µA 1.0µA	@ 0 dBm rf output power @ 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 V_{DD} = 3.0V and Tamb = 25°C.
The data stated above is preliminary data.

Hardware Status:
Engineering Samples available