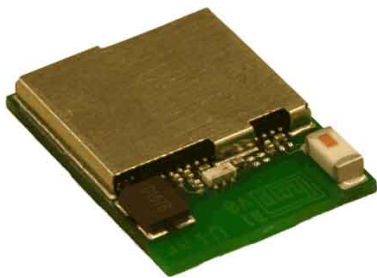


# ZigBee™ ready - Modem PAN4555



## **OUTLINES - ENWC9A08xxEF**

The PAN4555 module is a short range, low power, 2.4 GHz ISM band transceiver which includes a complete 802.15.4 physical layer (PHY) modem, designed for the IEEE 802.15.4 wireless standard and an appropriate microcontroller (MCU) with reference oscillator which provides a cost effective solution for short-range data links and networks.

The software is included and can be scaled to fit the application from simple point to point proprietary systems to ZigBee™ networking.

This module complies to EN300328, FCC CFR Part 15 and ARIB STD-T66

## **FEATURES**

- Very small size (12.2mm x 16.4mm x 2.2mm)
- 2 antenna options: Single port 50Ω or ceramic antenna
- 16 selectable Channels with 250 kbps in the 2.4 GHz band
- Low power modes for increased battery life
- High sensitivity of -92 dBm typ. at 1% Packet Error Rate
- 0 dBm typ. output power programmable over a 30 dB range
- Low supply voltage (2.0 V to 3.4 V, 2.7 V typ.)
- Operating temperature range -40°C to +85°C
- Link Quality and Clear Channel Assessment capability
- 60k Flash and 4k RAM memory
- 4 channel A/D converter with 10 Bit for fast and easy conversion from analog inputs -such as temperature, pressure and fluid levels- to digital values.
- 3 channel 16 Bit timer/pulse width modulation (TPM) outputs
- BDM port for direct download programming
- In total 20 digital I/O lines with programmable pull-ups and few with high-current driver.

## **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**

Dipl.-Ing.

**Heino Kähler**

Manager  
Module Business

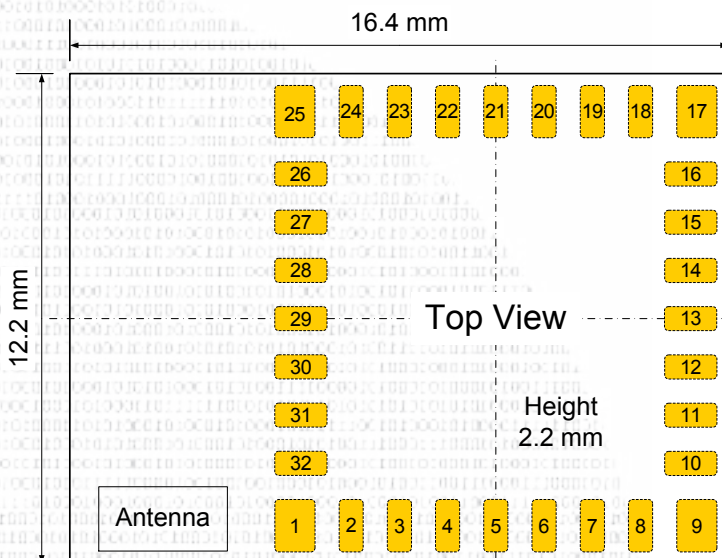
Panasonic Electronic Devices Europe GmbH  
Zeppelinstrasse 19  
21337 Lüneburg, Germany

Tel. (49)-4131-899-304

Fax (49)-4131-899-108

Heino.Kaehler@eu.panasonic.com

## DIMENSIONS



Pin no.	Pin name	Pin no.	Pin name
1, 9, 17, 25, 31	GND	18	PTC5
		19	PTC3
2 to 4	PTB0 to 2	20	PTC2
5	PTB7	21 to 22	PTE0 to 1
6	VREFH	23	VDDA
7	PTA7	24	Vcc
8	PTA5	26	Vcc
10	PTA6	27	RESET
11	PTG0/BKGD	28	PTD6
12 to 13	PTG1 to 2	29	PTD4
14	CLKO	30	PTD2
15 to 16	PTC0 to 1	32	EXTANT

Note:

The pin names of the module and the internal MC1321x fit to each other.

## TECHNICAL CHARACTERISTICS

Parameter	Value	Condition / Note
Receiver Sensitivity	-92 dBm typ.	for 1% packet error rate
Output Power	0 dBm	maximal
Power Supply	2.0 V to 3.4 V	single supply, 2.7 V typ.
Power Control Range	30 dB	
Maximum Data Rate	250kbps	over the air
Current Consumption	37 mA typ. 30 mA typ. 500 µA typ. 35 µA typ. 1 µA typ. <1 µA	output power nominal value no CLKO
Operating Temperature Range	-40°C to +85°C	

Notes:

All parameters are valid for  $V_{DD} = 2.7V$  and  $T_{amb} = 25^{\circ}C$ .

Freescale's MC13214 incl. ZigBee Z-Stack (or ZigBee Bee-Stack as successor) is included.

Mode Definitions and Transition Times for saving battery life can be seen in the data sheet MC1321x.