

The PAN2450 module is a low power UHF transceiver, with a completely integrated (autonomous) micro-controller and a highly efficient power amplifier. It is designed for ISM and SRD band frequencies. It can be easily programmed for operations at other frequencies. The modem complies with EN 300-220 and FCC CFR47 part 15 and offers a low cost solution for many ISM-applications. It's an optimal solution for all applications where a narrow band and wide band bidirectional data transfer function is required. It can be customized for various power levels, channel spacing and frequency needs.



## Product Performance:

- Maximum Data-rate:
  - Up to 153.6 kBaud (NRZ Mode, Wide Band Applications)
  - Up to 19.2k Baud (NRZ Mode, Narrow Band Applications)
- Low Power Consumption
- Frequency Range 868 - 915 MHz (std)
- High Sensitivity, Up To -114 dBm for a 12.5 kHz Channel
- Programmable Output Power From 0 To 14 dBm
- Low Supply Voltage: 2.3 V to 3.6 V Typ. 3.0 V
- Small Size: 20.0mm x 30.0mm x 3.7mm
- Operating Temperature Range: -10°C to +55°C
- Digital RSSI And Carrier Sense Indicator
- Suitable For Frequency Hopping Systems
- Single Port Antenna Connection
- Complies With ETSI EN 300 220 And FCC CFR47 Part 15 And ARIB STD-T67

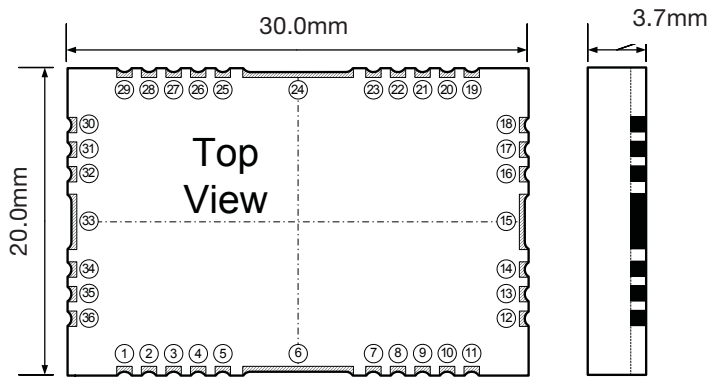
## Applications:

- Wireless Alarm and Security Systems
- RKE - Two-way Remote Keyless Entry
- Home Automation Systems
- Automated Meter Reading
- Low Power Telemetry
- Toys
- Remote Control Systems

## Part Numbers:

Part Number	Description
ENW59602ND1	PAN2450, 868~915MHZ, 4.8KBPS, Tx 14dBm
EVAL_PAN2450	Evaluation Kit For The PAN2450 Module

## Dimensions & Pin Layout:



Pin No.	Pin Name	Pin No.	Pin Name
1,3,4,6,15, 24,26,28-36	GND	14	RST/NMI
2	VCC	16	P2.1
5	P1.6	17	P2.2
7	P1.7	18	P3.0
8	P1.5	19	P3.3
9	P1.4	20	P3.2
10	P1.2	21	P3.1
11	P1.1	22	P2.4
12	TEST	23	P3.4
13	P2.5	25	P3.5
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## Technical Specifications:

Parameter	Value	Condition / Notes
Receiver Sensitivity, (BER=10 <sup>-3</sup> ) 868 MHz	-114 dBm	12.5 kHz channel width, FSK@2kHz, 2.4 kBaud, Manchester coded
Output Power 868 MHz	-0 to +14 dBm	Delivered to 50 Ω load. The output power is programmable.
RSSI Dynamic Range	63 dBm range	Digital output
PLL Lock Time (Rx/Tx turn time) 25 kHz channel width, 868 MHz	1.1 ms	Up to 1 MHz frequency step to within ±1kHz
PLL turn-on time, From power down mode with crystal oscillator running, 25 KHz channel width, 868 MHz	2.5 ms	Time from writing to registers to PLL lock
Power Down Mode	802 μA typ.	Oscillator core off, depends on the power down mode from the μC MSP430. Can be reduced with a new layout.
Current Consumption (Receive Mode 868 MHz)	18 mA typ.	25 kHz channel width
Current Consumption (Transmit Mode) 868 MHz P=25mW (14dBm)	50 mA typ.	Delivered to 50 Ω load. The output power is programmable.
Operating Temperature Range	-10°C to +55°C	

### Notes:

All parameters belong to Vcc = 3V and Tamb = 25°C.

Texas Instruments μC MSP430F1232, Chipcon's CC1020 and a small Power Amplifier are used in this module.