

The PAN4555ETU Easy-To-Use (ETU) module is the easiest way to make the first step into the mesh networking world. It provides pinned I/O for testing and prototyping with a 0.1" (2.5mm) perf or stripboard. No special designs are needed to get this module working. This 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 independent micro-controller (MCU) with a reference oscillator to provide a cost effective solution for short-range data links and networks. Software is included.



## Product Performance:

- Pin Pitch: 2.54mm / 0.1"
- 16 Selectable Channels With 250 Kbps In The 2.4 GHz Band
- Low Power Modes For Increased Battery Life
- High Sensitivity Of -92 dBm Typical 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 Typical
- 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 Adc For Fast And Easy Conversion From Analog Inputs (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
- FCC, ETSI, IC Approved

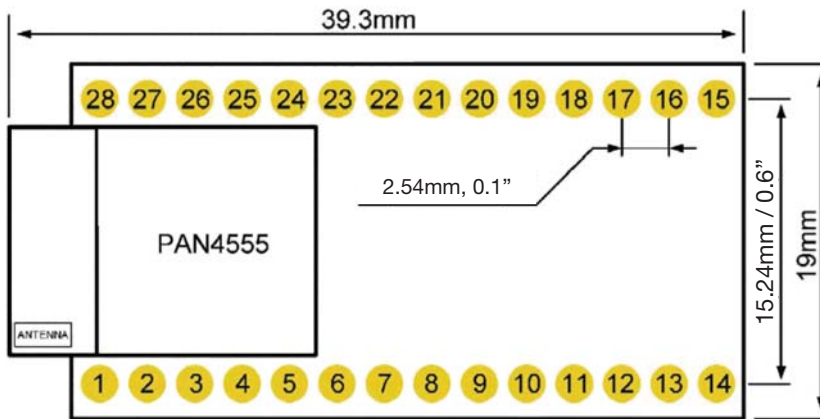
## Applications:

- 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
Eval_PAN4555ETU	PAN4555 Development Module, 2.4 GHz

## Dimensions & Pin Layout:



Top View

Fits into normal 2.54mm / 0.1" pitch

Pin No.	Pin Name	Pin No.	Pin Name
1 to 3	PTB0 to 2	17	PTD4
4	PTB7	18	PTD6
5	VREFH	19	RESET
6	PTA7	20	PTC5
7	PTA5	21 to 22	PTC0 to 1
8	PTA6	23	PTC3
9	PTG0/BKGD	24	PTC2
10 to 11	PTG1 to 2	25 to 26	PTE0 to 1
12	CLKO	27	VDDA
13 to 15	GND	28	Vcc
16	PTD2		

**Note:** The pin names of the module and the internal MC13213 are equivalent.

## Technical Specifications:

Parameter	Value	Condition / Notes
Receiver Sensitivity	-92 dBm typical	For 1% Packet Error Rate
Output Power	0 dBm	Maximal
Power Supply	2.0 V to 3.4 V	Single Supply, 2.7 V Typical
Power Control Range	30 dB	
Maximum Data Rate	250 kbps	Over The Air
Current Consumption		Output Power Nominal Value
Receive Mode	37 mA typ.	No CLKO
Transmit Mode	30 mA typ.	
Idle Mode	500 $\mu$ A typ.	
Doze Mode	35 $\mu$ A typ.	
Hibernate Mode	1 $\mu$ A typ.	
Off Mode	<1 $\mu$ A typ.	
Operating Temperature Range	-40°C to +85°C	

### Notes:

All parameters are valid for VDD = 2.7V and Tamb = 25°C.  
 Freescale's MC13213 is used in the module. SMAC, MAC or Freescale Bee-Stack.  
 Mode definitions and transition times for saving battery life can be seen in the data sheet MC1321X.  
 Also the derivative MC13212 and MC13211 are available on request.