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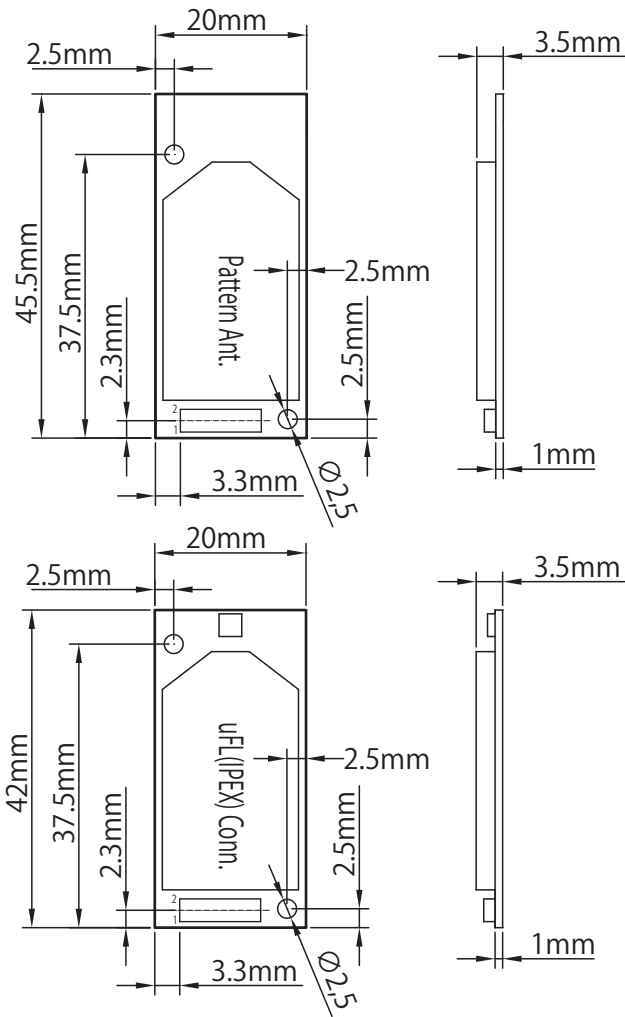
# Wireless Engine TWE-001 **STRONG**

ZigBee/IEEE 802.15.4 Wireless 32bit-MCU

Very Low Power Tx:28mA, Rx:23.5mA Ultra Long Range up to 3110m



**SIZE**



**SPECIFICATION**

Part Number	TWE-001 STRONG
Size	20x45.5x3.5mm (pattern ant.), 20x42x3.5mm(uFL)
Weight	4.6g
Working Temp.	-40~85°C (Industrial)
Antennae	chosen between Pattern Ant or IPEX u.FL connector
Connector	0.4mm pitch 2x20pins header (AXT440124)

Standard	IEEE 802.15.4
Frequency	2.4GHz
Channels	16 channels
Modulation	O-QPSK, DSSS
Data Rate	250kbps(IEEE802.15.4)/500kbps/667kbps
Tx Power	+9.08dBm (25°C,3V,typ,SWG connector)
Rx Sensitivity	-100dBm (25°C,3V,typ,SWG connector)
Supply Voltage	2.0 ~ 3.6V (>2.3V on flash access)
Tx Current	28.0mA (25°C,3V,typ)
Rx Current	23.5mA (25°C,3V,typ)
Standby Cu.	1.36uA (25°C,3V,typ,deep standby)
Certification	ARIB-STD-T66(JAPAN), FCC(planned), CE(planned)
Green	RoHS compliance

MCU	32bit RISC CPU (32MHz, can be at 16/8/4MHz)
Memory	ROM 128KiB / RAM 128KiB
Non-volatile Memory	FLASH 4Mibit / (optional I2C EEPROM)
Interface	12bit ADCs(4)/12bitDACs(2)/Comparators(2)
	Timer/Counters (3) ... 5 modes as PWM, $\Delta \Sigma$
	Pulse counters(2) ... can work at sleep state
	UART(2)
	3 select SPI master / SPI slave
	2 wires serial
Function	4 wires audio I2S
	Generic Digital IOs(19) ... shared with other I/Fs
	128bit AES enc/decryption
	Distance engine
	JTAG debugging
	Internal watchdog timer
	Random generator
	Sampling FIFO (for ADC/DAC/I2S)
	Vector interrupt with 15 priorities
	Wakeup timers(2)
Brown-out detection	
Supported N/W	ZigBee PRO, RF4CE

**PIN ASSIGN**

2	(n/a)	2	DIO10
4	DAC2	4	DIO9
6	DIO20	6	DIO16
8	(n/a)	8	DIO12
10	SWP	10	DIO13
12	SPIMISO	12	C1P
14	RESETN	14	DIO18
16	SSM	16	DIO19
18	DIO4	18	DIO19
20	DIO5	20	DIO19
22	DIO6	22	DIO19
24	DIO15	24	DIO19
26	SPICLK	26	DIO19
28	DIO14	28	DIO19
30	SPIMOSI	30	DIO19
32	DIO11	32	DIO19
34	DIO12	34	DIO19
36	DIO13	36	DIO19
38	C1P	38	DIO19
40	C1M	40	DIO19
1	VCC	1	DIO19
3	DIO0	3	DIO19
5	DIO1	5	DIO19
7	SSZ	7	DIO19
9	GND	9	DIO19
11	DAC1	11	DIO19
13	C2P	13	DIO19
15	C2M	15	DIO19
17	ADC4	17	DIO19
19	ADC3	19	DIO19
21	DIO7	21	DIO19
23	DIO8	23	DIO19
25	ADC2	25	DIO19
27	ADC1	27	DIO19
29	DIO10	29	DIO19
31	DIO9	31	DIO19
33	DIO16	33	DIO19
35	DIO12	35	DIO19
37	DIO13	37	DIO19
39	DIO18	39	DIO19

HEADER (on module) : Panasonic Electric Works AXT440124

SOCKET : Panasonic Electric Works AXT340124 or AXT340224

SCREW HOLES: 2.5Φ x 2

Note: wire SSZ and SSM to activate internal flash boot.

Spec can be changed without a notice.

\* Power, Current consumption varies according to conditions (e.g. selected channel, voltage, temp.)

\* The max distance is measured at open space with 2dbi u.FL ant.