



## LOW COST ISM DESIGN USING CMT2300AW

### STEP 1:

#### CHOOSE A TRANSCEIVER

CMT2300AW – Ultra Low Power, High Performance RF Transceiver



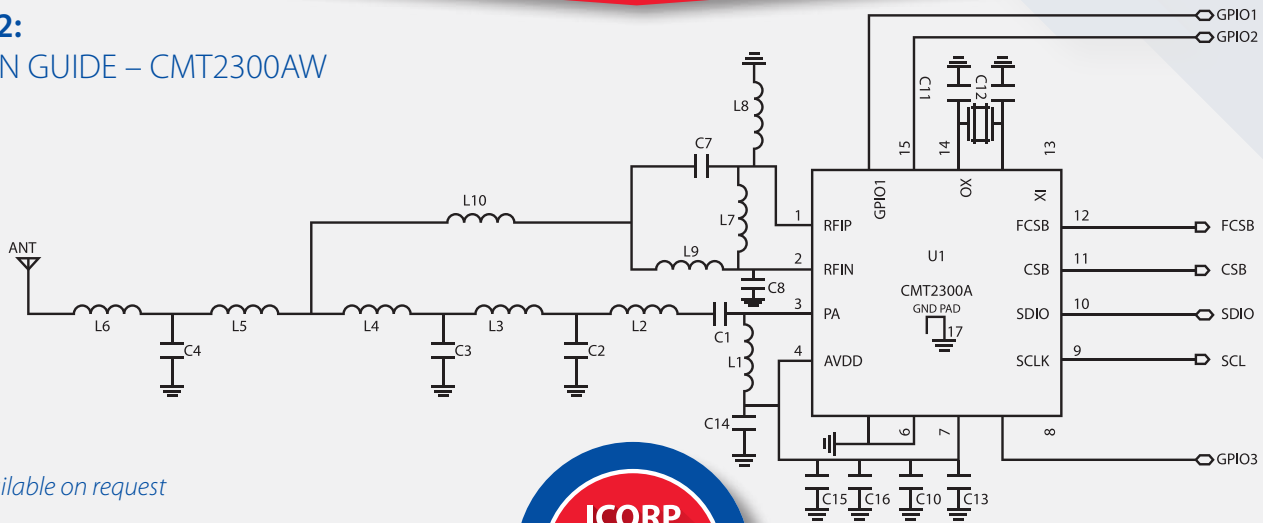
The CMT2300A is an ultra-low power, high performance, OOK, FSK, MSK, GFSK and GMSK transceiver for various 213 MHz to 960 MHz wireless applications. It is part of the CMOSTEK NextGenRFTM family, which includes a complete line of transmitters, receivers and transceivers.

With the high level integration, CMT2300A simplify the external BOM. Up to +20 dBm Tx Power and -120 dBm sensitivity optimize the RF link performance. It supports multiple data packet formats and data encode/decode engines, meets the data format requirements of different applications. CMT2300A supports 64-byte Tx/Rx FIFO, rich GPIO and interruption sources, Duty Cycle Operation Mode, Carrier Sensing, high accuracy RSSI, Low Battery Detection, Power Up Reset, Low Frequency Oscillator Clock Output, Fast Frequency Hopping and Muting Functions, making the application design more flexible, differentiating the end product.

The CMT2300A operates from a supply voltage of 1.8 to 3.6 V. It consumes only 6.9 mA current while achieving 120 dBm receiving sensitivity and consumes only 300 nA in sleep state, which makes it an ideal solution for battery powered application. Transmitting at 13 dBm only consumes 27 mA.

### STEP 2:

#### DESIGN GUIDE – CMT2300AW



BOM available on request

ICORP  
OF  
THINGS

### STEP 4: CHOOSE AN ANTENNA

Unictron – AA187 - ISM Embedded Antenna



Unictron's AA187 ceramic chip antenna is designed for ISM 433MHz band applications, covering frequencies 433,05 to 434,79 MHz. Fabricated with proprietary design and processes, AA187 shows excellent performance and is fully compatible with SMT processes which can decrease the assembly cost and improve device's quality and consistency.

### STEP 4: CHOOSE A BATTERY

Vinnic L1028 12V Battery



- Type: Alkaline
- Voltage: 12V
- Length: 28.9 mm
- Diameter: 10.3 mm
- Terminals: Flat Terminals

R1,95  
(MOQ 1K)

LOW  
COST



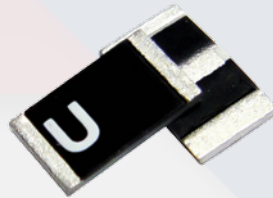
**QUECTEL L80**



- **L80 is an ultra compact GPS POT (Patch on Top) module with an embedded 15.0 x 15.0 x 4.0mm patch antenna.**
- This space-saving design makes L80 the perfect module for the miniature devices.
- Adopted by LCC package and integrated with patch antenna, L80 has exceptional performance both in acquisition and tracking.



**UNICTRON AA701 SIGFOX ANTENNA**



- **Outline Dimensions 5.0 x 3.0 x 0.5 mm**
- Ground Plane 80x40 mm
- Working Frequency 863~870 MHz VSWR (@center frequency)\* 2 Max
- Characteristic Impedance 50 Ω
- Polarization Linear Polarization
- Peak Gain ( @868 MHz) -0.9 (typical) dBi
- Efficiency 52 (typical) %



**REDPINE WISEMOTE WM2-20**



- **Multi-mode operation**
- CCX compatible beaconing
- Motion detector
- Wi-Fi based choke-point support
- Alarm button and LEDs
- Fully configurable wirelessly
- Over-the-air Firmware Upgrade capable
- Battery life of over 4 years
- Battery replaceable



**WISOL SFM10R1**



- **Dimensions 13.0 x 15.0 x 2.21mm**
- Weight: 0.85 gr
- Power Supply: From 1.8V to 3.6V
- Power Consumption: Tx: 54 mA, Rx: 15 mA, Idle: 2 μA
- RF: Max Tx Radiated Power +14 dBm
- Rx Sensitivity: -127 dBm
- SDK: No



**ROSON 26 MHZ SMD 32 x 25MM CRYSTAL**



- **Nominal Frequency Range: 1.000MHz to 125.000MHz**
- Frequency Stability: ± 50PPM(Standard)at 25 ? ± 3 ?, ± 15ppm to ± 100ppm available
- Operating Temperature: -10 ? to +70 ? (Standard), -40 ? to +85 ? available
- Storage Temperature: -55 ? to +125 ?
- Supply Voltage: 3.3V ± 10% 5.0V ± 10%



**SMD TACTILE SWITCH**



- **Rating: 50mA 12V DC**
- Travel: 0,25 +-1mm
- Contact Resistance: 100mE
- Operating Force: 160+- 30g

**HOT SELLERS**



**QUECTEL MC60-E**



- **Ultra Compact size: 18.7 x 16.0 x 2.1mm**
- Multi navigation constellation: GPS/ GLONASS/ QZSS
- Built-in LNA for better GNSS sensitivity.
- Enhanced GNSS features
- GSM quad-band: 850/ 900/ 1800/ 1900MHz
- Supports Bluetooth V4.0 BLE



**ESP-WROOM-02**



- **802.11 b/g/n**
- Adaptive radio biasing
- Integrated low power 32-bit MCU.
- Integrated TCP/IP protocol stack
- Integrated TR switch, balun, LNA, power amplifier.
- Integrated PLL, regulators and power management unit.