

## **ATTACHMENT E.**

### **- USER MANUAL -**

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# MTM-CM3300MSP manual

## ◆ Main Feature

- IEEE 802.15.4 compliant 2.4GHz to 2.4835GHz, a globally compatible ISM band
- 250kbps, High data Rate Ratio
- TI MSP430F1611 Microcontroller with 10KB RAM
- Various antenna
- TinyOS, Open-source Operating system
- Plug and play
- Operation temperature : -20℃ ~ 60℃

## ◆ CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.

DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS

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## ◆ Applications

MTM-CM3300MSP are wireless sensor network module

We can monitor environmental information by using temperature/humidity/tilt/  
luminous intensity/air quality/water quality/... sensor applied MTM series

MTM series in local area sense the environmental information  
and transmit the information to the base station

Base station is composed of MTM series and monitoring tool like as P.C

MTM series in Base station is connected to P.C by using serial cable like as USB cable

MTM series use the wireless communication among MTM series

The major application field of MTM series are agriculture, construction, safety, security



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ITEM	Specification	Remark
Model No.	MTM-CM3300MSP	
Processor	MSP430F1611	
External Power Amp	PA2423L	
External LNA	SGL-0622Z	
memory	48KB	program flash
	10K Byte	Data RAM
	16KB	External EEPROM
Current Draw	120mA	Tx mode
	30mA	Rx mode
ADC	12bit resolution	8 channels
Interface	UART, SPI, I <sub>2</sub> C	Serial interfaces
Connector	SMA type 12P male R/A	External system interface (ERNI)
	51 pin connector	External sensor interface
Freq. band	2.4G ~2.485GHZ	IEEE 802.15.4 compliant
Sensitivity	-103 dBm typ.	Receive sensitivity
Transfer rate	250Kbps	
RF power	-25dBm ~ -15 dBm	
Range	800m(open space)	
Power supply	3.3 V	
Battery	3.6V Lithium Battery * 2ea	XL-060F (XENOENERGY CO LTD ), AA size
Antenna	Dipole antenna	3dBi, 5dBi

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum 20 cm between the radiator and your body. This transmitter must not be collocated or operating in conjunction with any other antenna or transmitter unless authorized to do so by the FCC.