

客户宝号: \_\_\_\_\_  
Travelling Merchant

# DATASHEET

品名规格: **RM-7200**  
Standard \_\_\_\_\_

编号: **15-0828**  
P/N \_\_\_\_\_

出图 Plot			承认印 The Label
制图 Drew	审核 Audited	核准 Approved	请于承认签章 谢谢! Stamp, please! Thanks!
日期: Date:			

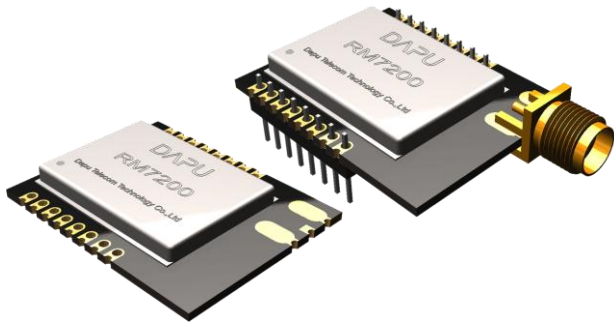
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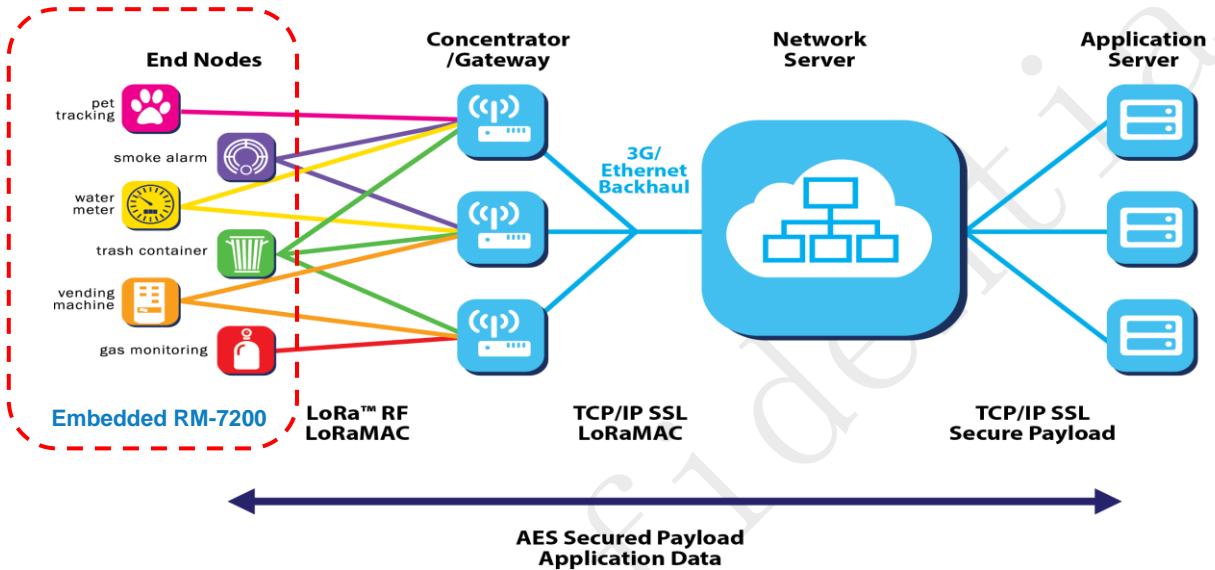


# RM-7200

Long Range & Low Power

868/915MHz

LoRa™ Module



## INTRODUCTION

The RM-7200 is a secure, CE/FCC certified, low-power RF module, that provides long-range, low bit rate transmitting data to RF applications.

With Class A functionality implemented, the RM-7200 is LoRaWAN™ 1.0 compliant. By using sub-GHz ISM bands, the RM-7200 providing bi-directional data communication up to 15 km line-of-sight and over 2 km into harsh environment.

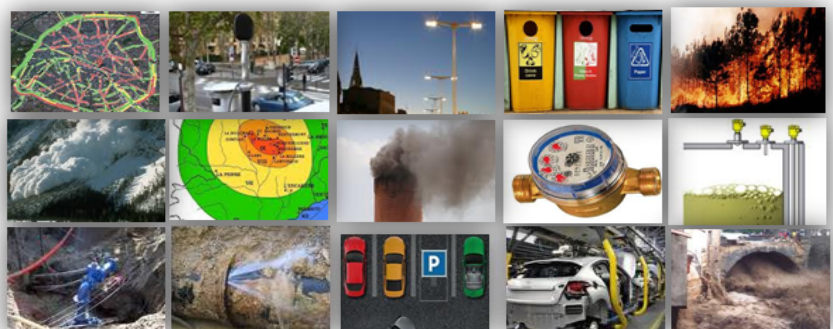
The secure transmission with security protocols such as 'Packet engine up to 256 bytes with CRC', the long battery by fitting with ultra low power consumption transceiver, the easier connectivity with superior transmit power and receive sensitivity.

## FEATURES

- ◇ LoRa™ Modem
- ◇ 157 dB maximum link budget
- ◇ +20 dBm- 100 mW constant RF output vs. V supply
- ◇ +14 dBm high efficiency PA
- ◇ Programmable bit rate up to 300 kbps
- ◇ High sensitivity: down to -137 dBm
- ◇ Bullet-proof front end: IIP3 = -12.5 dBm
- ◇ 89dB blocking immunity
- ◇ Low RX current of 10 mA, 100 nA register retention
- ◇ Fully integrated synthesizer with a resolution of 61 Hz
- ◇ FSK, GFSK, MSK, GMSK, LoRa™ and OOK modulation
- ◇ Built-in bit synchronizer for clock recovery
- ◇ Preamble detection
- ◇ 127 dB Dynamic Range RSSI
- ◇ Automatic RF Sense and CAD with ultra-fast AFC
- ◇ Packet engine up to 256 bytes with CRC

## APPLICATIONS

- Automated Meter Reading
- Home and Building Automation
- Wireless Alarm and Security Systems
- Industrial Monitoring and Control
- Long range Irrigation Systems
- Other M2M Systems





## 1. 工作参数 Running Parameters

型号 MODEL : RM-7200					
指标描述 Description	指标 Parameters			单位 Unit	测试条件 Test Condition
	最小值 Min.	典型值 Typ.	最大值 Max.		
供电电压 Supply voltage	1.8	3.3	3.7	V	
工作温度 Operational temperature range	-40	XX	85	°C	
电流特性 Power consumption	休眠模式 Sleep Idle	XX	2	XX	uA
	待机模式 Standby	XX	2	XX	mA
	接收 Receive Mode	XX	12	XX	mA
	发射 Transmit Mode	XX	110	XX	mA
晶振频率 Crystal oscillator frequency	XX	32	XX	MHz	
制式 Modulation	FSK/LoRa				
通信芯片 Transceiver	SX1272				
MCU	NA				

## 2. 性能指标 Performance Parameters

指标描述 Description	指标 Parameters	单位 Unit
工作频率 Frequency Range	860~1020	MHz
扩频 Spread Frequency	6~12	
带宽 Bandwidth	125~500	KHz
有效波特率 Effective Bitrate	0.24~37.5	kbps
灵敏度 Est. sensitivity	-117~-137	dBm
发射功率 RF output	10~19	dBm
数据包传输 Packet engine	256 bytes with CRC	



### 3. PIN 示意图及外观图 Pin Diagram & Package Marking

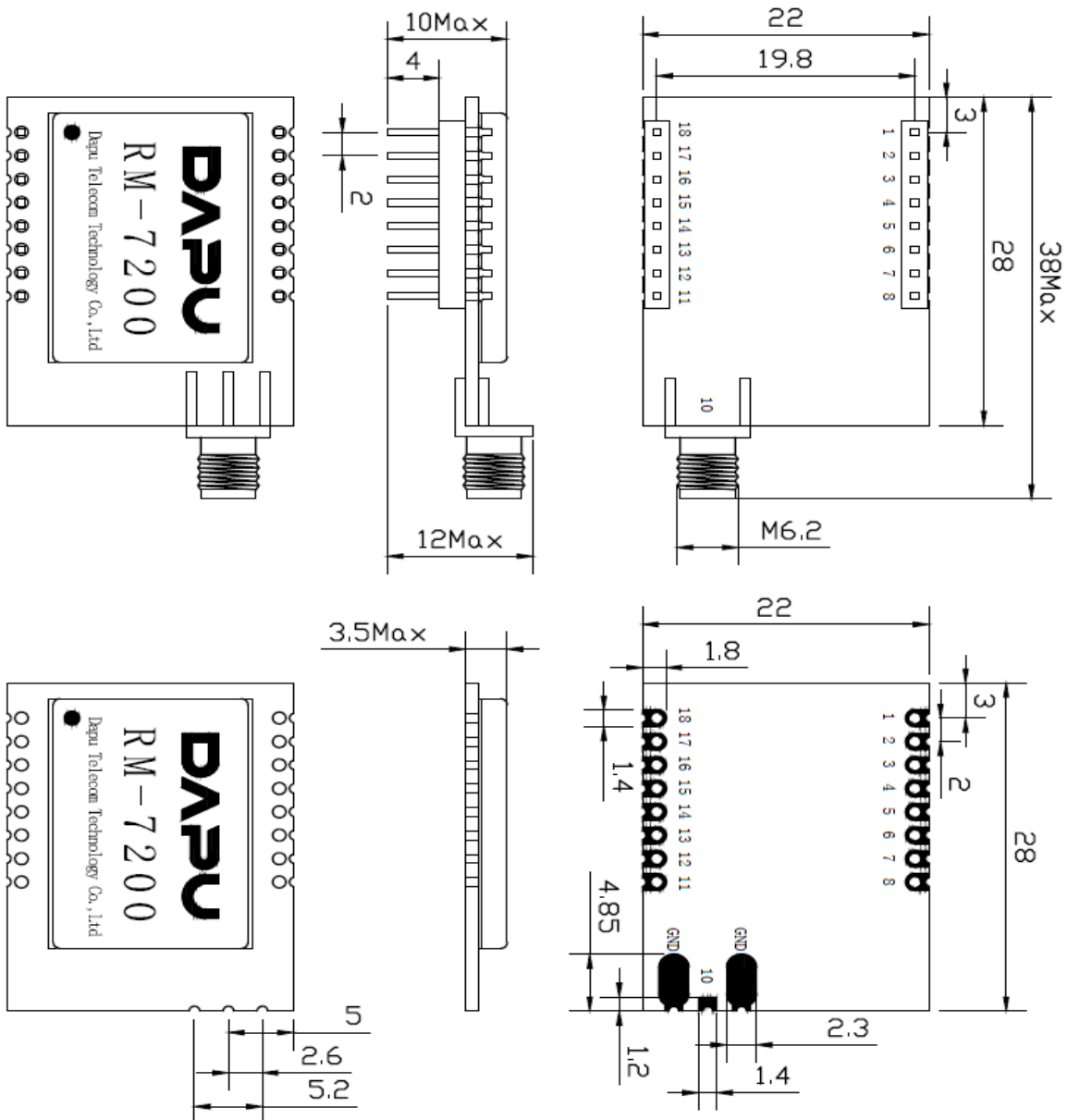
相连引脚号/ Connected pin No.			
RF 板/Board	SX1272	引脚定义/Pin definition	说明/Description
1	17	SCK	SPI Clock input
2	18	MISO	SPI Data output
3	19	MOSI	SPI Data input
4	20	NSS	SPI Chip select input
5	21	RXTX	Rx/Tx switch :high in Tx
6	6	ESET	Reset trigger input
7	0/7/8/16/22/26	GND	GND
8	1/15	VDD	VDD_3.3V
9		NC	NC
10		ANT_HF	ANT_HF
11		NC	NC
12		CPS	射频收发开关/ Tx&Rx Switch, High in Tx
13	14	DI05	Digital I/O
14	13	DI04	Digital I/O
15	12	DI03	Digital I/O
16	11	DI02	Digital I/O
17	10	DI01	Digital I/O
18	9	DI00	Digital I/O



引脚示意图/ Pin Diagram

Number	Name
1	SCK
2	MISO
3	MOSI
4	NSS
5	RXTX
6	ESET
7	GND
8	VDD
10	ANT_HF
11	NC
12	GPS
13	DI05
14	DI04
15	DI03
16	DI02
17	DI01
18	DI00

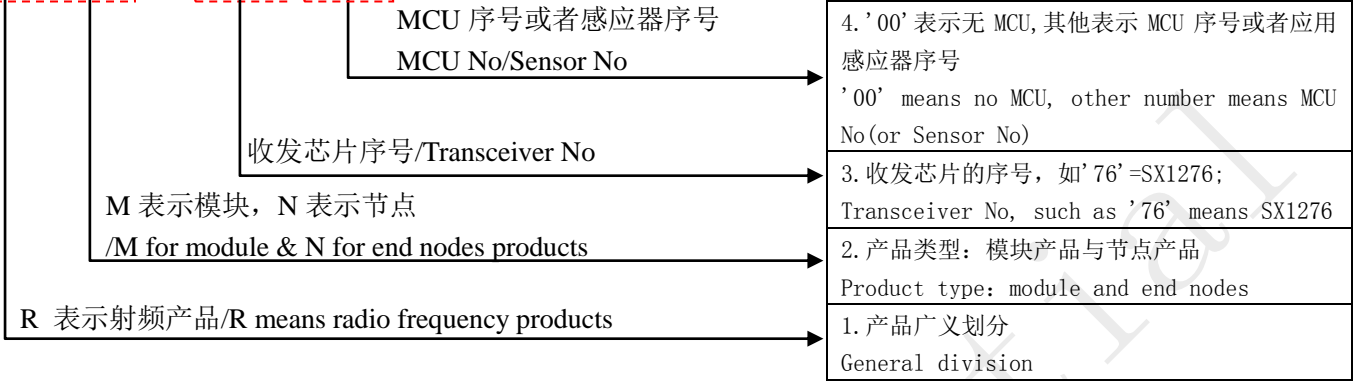
Not marked tolerance : ±0.2mm





4. 产品型号说明/ Product model description:

**R M - 72 00**



5. 抽样测试结果表/ Sample test results table

发射测试/TX Test					接收测试/RX Test						
工作频点 /Frequency	发射功率设置 /Setting	实测发射功率 /Transmit Power	实测发射电流 /Transmit Current	扩频实测/Spread Frequency MHz					接收灵敏度 /Sens.	扩频因子 /SF	接收工作电流 /cur.
868MHz	15 dBm	14.16 dBm	38 mA	1736	2604	3472	4340	5208	-136dBm	SF=12	10.8mA
				-35	-45	-34.5	-65	-70			
915MHz	15 dBm	14.08 dBm	39 mA	1830	2745	3660	4575	5490	-135dBm	SF=12	11.9mA
				-33	-52	-38	-70	-70			
待机/standby current			2mA	频率误差/Frq error			+4KHz				