

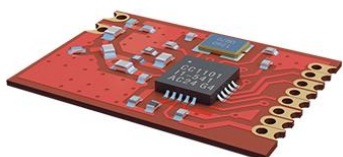


成都亿佰特电子科技有限公司

Chengdu Ebyte Electronic Technology Co.,Ltd.

E07-868MS10 Datasheet v1.0

1. Introduction E07-868MS10



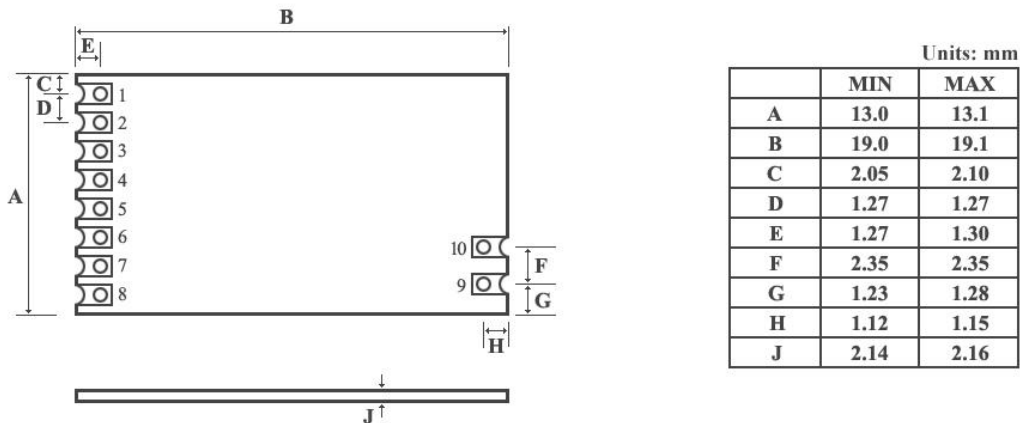
E07-868MS10 is a SMD wireless transceiver module, operates at 868MHz with small-size and 10mW transmitting power. Supporting low power consumption development and have stable batch production, which make the module suitable for various applications.

E07-868MS10 is based on original imported RF chip CC1101 from TI in American. Imported industrial components, lead-free process, stable performance, strong diffraction ability and small-size by professional hardware design. Which are all convenient for all kinds of embedded development.

2. Electrical parameter E07-868MS10

No.	Parameter item	Parameter details	Description
1	RF IC	CC1101	TI
2	Size	13 * 19mm	Without antenna
3	Weight	0.8g	Without antenna
4	Production process	Machine	Lead-free
5	Connector	1 * 8 * 1.27mm	SMD
6	Supply voltage	1.9 ~ 3.6V DC	Notes: the voltage higher than 3.6V is forbidden
7	Frequency Band	850 ~ 880.5MHz	Adjustable
8	Communication level	0.7 ~ 3.6V DC	VCC refers to the supply voltage
9	Operation Range	1000m	Test condition: Clear and open area, 10dBm ,antenna gain: 5dBi ,height: 2m , Air data rate: 1.2kbps
10	Transmitting power	Maximum 10dbm	About 10mW
11	Air data rate	0.6 ~ 500kbps	1.2k~20kbps is recommended
12	Sleep current	0.6uA	
13	Transmitting current	38mA@10dBm	The proposed power supply capacity is greater than 100mA
14	Receiving current	20mA	3.3V
15	Communication interface	SPI	Data rate: up to 10Mbps
16	Transmitting length	1~64 bytes	For one package
17	Receiving length	1~64 bytes	For one package
18	RSSI support	Usable	
19	Antenna type	Stamp hole	50Ω characteristic impedance
20	Sensitivity	-112dBm	0.6kbps
21	Operating temperature	-40 ~ +85°C	Industrial-grade
22	Operating humidity	10% ~ 90%	Relative humidity, without condensation
23	Storage temperature	-40 ~ +125°C	Industrial-grade

3. Pin definition

E07-868MS10


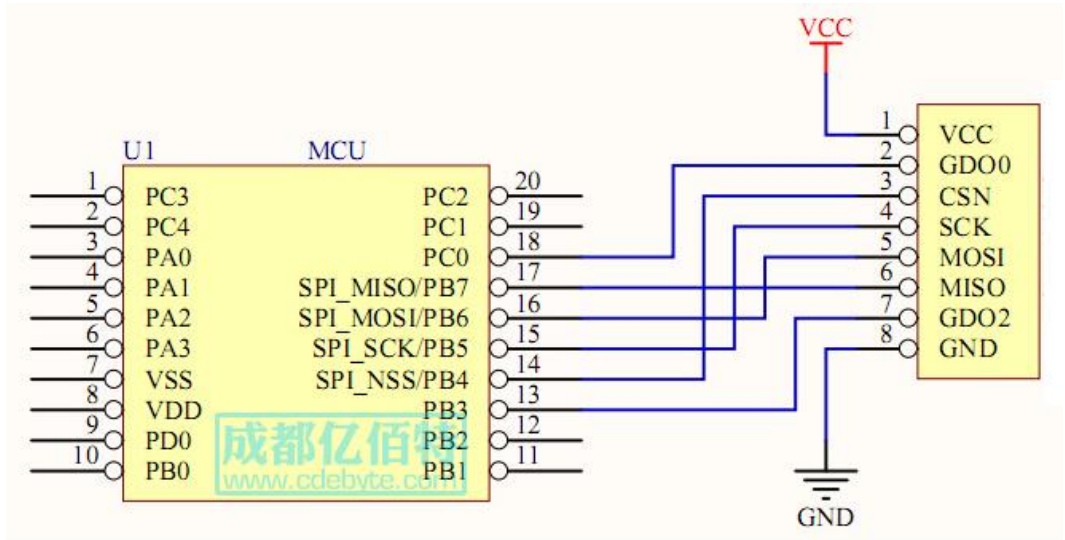
Pin No.	Pin item	Pin direction	Pin application
1	GND		Ground
2	VCC		Power supply 1.8V ~ 3.6V DC
3	GDO0	Output	Output pin
4	CSN	Input	SPI Chip select
5	SCK	Input	SPI clock
6	MOSI	Input	SPI Chip select
7	MISO/GDO1	Output	SPI master input slave output
8	GDO2	Output	Output pin
9	ANT		Antenna
10	GND		Ground

4. Note

E07-868MS10

No.	Item	Attention
1	Static electricity	Please try not to touch the electronic components with bare hands.
2	Welding	When welding, soldering iron needs grounding. The producer needs to wear cable electrostatic bracelet which is grounding when mass production.
3	Power supply	Power quality has a great impact on the performance of the module, please make sure the power supply has small ripple and avoid the frequent and large jitter. π filter is recommended(Ceramic capacitor // tantalum capacitor + inductance).
4	Ground	Single-point grounding is recommended. 0 ohm resistor or 10mH inductance are recommended.
5	Antenna	How to install antenna has a great impact on the performance of the module, please make sure the antenna is exposed and vertical upward. It will lead to the transmitting distance greatly weakened if the antenna installs in the interior of housing. When the module is installed in the interior of the housing, high-quality antenna extension line can be used to extend the antenna to the outside of the housing.
6	Interference	If there are different modules work in other frequency band in the same product, the user need to plan rationally and take measures to shield, in case the harmonic interference and intermodulation interference exist.

5. USAGE **E07-868MS10**



No.	Brief introduction of connection between module and MCU (STM8)
1	GDO0 is generally purpose I/O, please check CC1101 manual for more details
2	GDO2 is generally configured as IRQ function, it is possible to get the interrupt status through SPI, floating is allowed. It is recommended to use GDO2 to connect the MCU as external interrupt
3	Make sure the grounding is good, with low power ripple, also should increase filter capacitor and as close as possible to the VCC and GND pins.

6. Software programming **E07-868MS10**

No.	Note
1	The user should not close to the transceiver module when testing, the data cannot be received due to the receiver is in saturated mode
2	SPI communication rate should not be set too high, usually around 1M
3	It is recommended to reinitialize the power configuration table when CC1101 restore to IDLE mode or configure to sleep mode

7. Series of products **E07-868MS10**

Model	RF chip	Frequency Hz	Power dBm	Range km	Package	Antenna Type
E07-M1101D-SMA	CC1101	433M	10	0.6	DIP	SMA-K
E07-M1101D-TH	CC1101	433M	10	0.5	DIP	Spring
E07-M1101S	CC1101	433M	10	0.4	SMD	Stamp hole
E07-868MS10	CC1101	868M	10	1.0	SMD	Stamp hole
E07-915MS10	CC1101	915M	10	1.2	SMD	Stamp hole

8. FAQ

E07-868MS10

★ Operation Range is too short to reach the ideal distance		
1	Barrier	It has deep influence on the operation range when there are barriers.
2	Interference resource	Temperature, humidity, same frequency interference can increase the packet loss rate of the communication
3	Metal	Metal objects around the antenna, antenna placed inside metal case, which cause the signal attenuation badly.
4	Parameter values	Wrong parameter setting. Setting the air data rate too high, which lead to the shorter distance.
5	Low voltage	When the voltage below 3.3V, the lower the voltage is, the lower the transmitting power can be.

9. About us

E07-868MS10



Chengdu Ebyte Electronic Technology Co., Ltd is a high-tech company, focus on wireless transmission. Our company owns a number of independent research & development products and obtain unanimously approved customers. With powerful R&D team, our company can provide customers with perfect After-sales service and technical assistance.



成都亿佰特电子科技有限公司
Chengdu Ebyte Electronic Technology Co.,Ltd.

【Website】 : www.cdebyte.com

【Technical support】 : support@cdebyte.com

【Ebay】 : stores.ebay.com/cdebyte

【Alibaba】 : cdebyte.en.alibaba.com

【Address】 : Innovation Center D347,4# XI-XIN road, High-tech district(West),Chengdu, Sichuan, China

【Contact person】 : chenfang@cdebyte.com Elaine

【Contact person】 : fanjuan@cdebyte.com Maggie