



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

E07-M1101D-SMA Datasheet V1.0

1. Introduction

E07-M1101D-SMA



E07-M1101D-SMA is a wireless transceiver module, operates at 433MHz with small-size and 10mW transmitting power. With SMA thread hole RF interface, operating in the ISM bands, supporting low power consumption development and have stable batch production, which make the module suitable for various applications (especially for the electronic door lock in hotel).

E07-M1101D-SMA is based on original imported RF chip CC1101 form TI in American. Imported industrial components, lead-free process, with location hole, stable performance, strong diffraction ability and small-size by professional hardware design.

Which are all convenient for all kinds of embedded development.

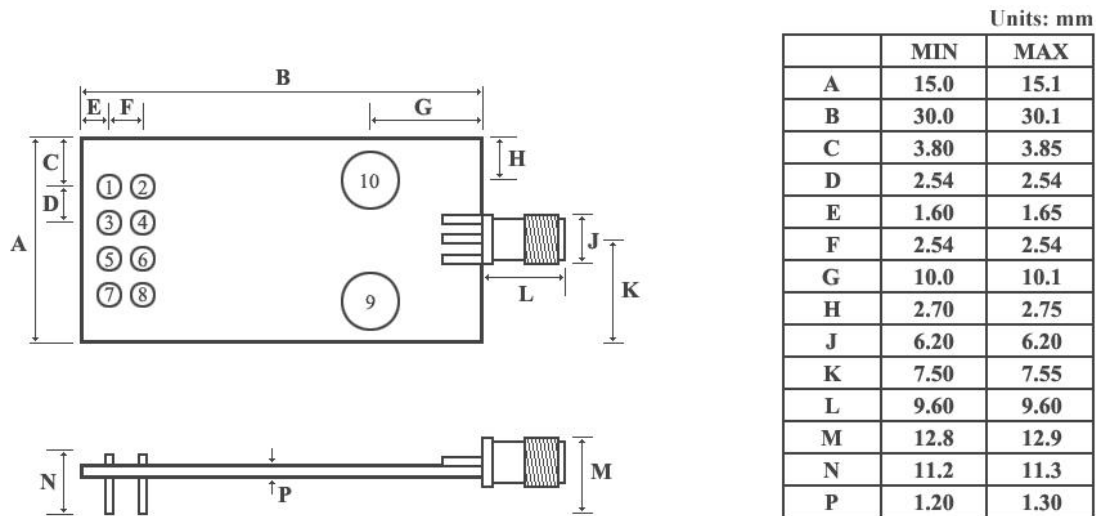
2. Electrical parameter

E07-M1101D-SMA

No.	Parameter item	Parameter details	Description
1	RF IC	CC1101	TI
2	Size	15 * 30mm	Without antenna & SMA
3	Production process	Machine	Lead-free
4	Connector	2 * 4 * 2.54mm	Plug-in
5	Supply voltage	1.9 ~ 3.6V DC	Notes: the voltage higher than 3.6V is forbidden
6	Frequency Band	387 ~ 464MHz	Adjustable
7	Communication level	0.7VCC ~ 3.6V DC	VCC refers to the supply voltage
8	Operation Range	About 520m	Test condition: Clear and open area, 10dBm ,antenna gain: 5dBi , height: 2m , Air date rate: 1.2kbps
9	Transmitting power	Maximum 10dbm	About 10mW
10	Air data rate	0.6kbps~500kbps	1.2k~20kbps is recommended
11	Sleep current	0.6uA	
12	Transmitting current	29.6mA@10dBm	The largest emission current
13	Receiving current	18mA	Receives an average current
14	Communication interface	SPI	Data rate: up to 10Mbps
15	Transmitting length	1~64 bytes	For one package
16	Receiving length	1~64 bytes	For one package
17	RSSI support	Usable	
18	Antenna type	SMA-K	50 ohm characteristic impedance
19	Sensitivity	-116dBm	0.6kbps
20	Operating temperature	-40 ~ +85°C	Industrial-grade
21	Operating humidity	10% ~ 90%	Relative humidity, without condensation
22	Storage temperature	-40 ~ +125°C	Industrial-grade

3. Pin definition

E07-M1101D-SMA



Pin No.	Pin item	Pin direction	Pin application
1	GND		Ground
2	VCC		Power supply 1.9V~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

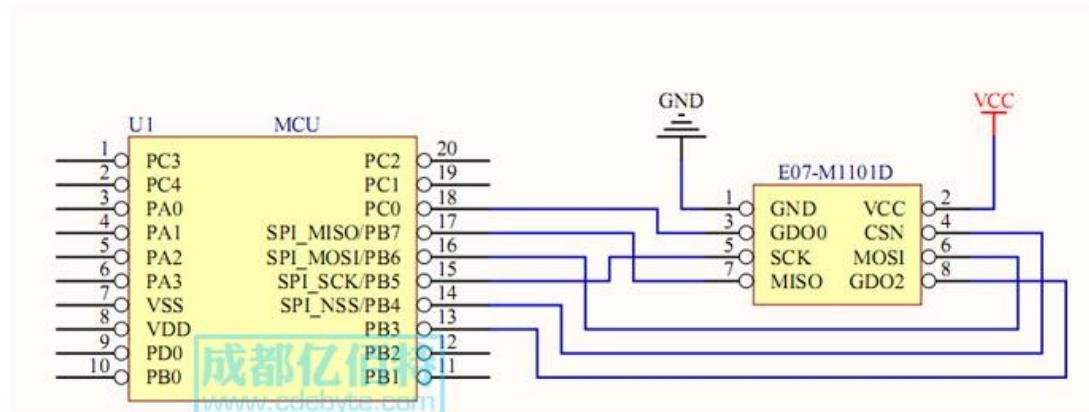
4. Note

E07-M1101D-SMA

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-M1101D-SMA



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-M1101D-SMA

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-M1101D-SMA

Model	RF IC	Package	Power	Range	Antenna Type
E07-M1101D-SMA	CC1101	Plug-in	10dBm	520m	SMA-K
E07-M1101D-TH	CC1101	Plug-in	10dBm	500m	Spring
E07-M1101S	CC1101	SMD	10dBm	350m	N/A
E09-M1110A	CC1110	Plug-in	10dBm	400m	SMA-K

8. FAQ**E07-M1101D-SMA****★ Operation Range is too short to reach the ideal distance**

1	Barrier	2.4G frequency features with poor penetration due to its physical properties, 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-M1101D-SMA**

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.



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Chengdu Ebyte Electronic Technology Co.,Ltd.

【Website】: www.cdebyte.com

【Aliexpress】: <http://www.aliexpress.com/store/2077046>

【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

【Technical support】: support@cdebyte.com