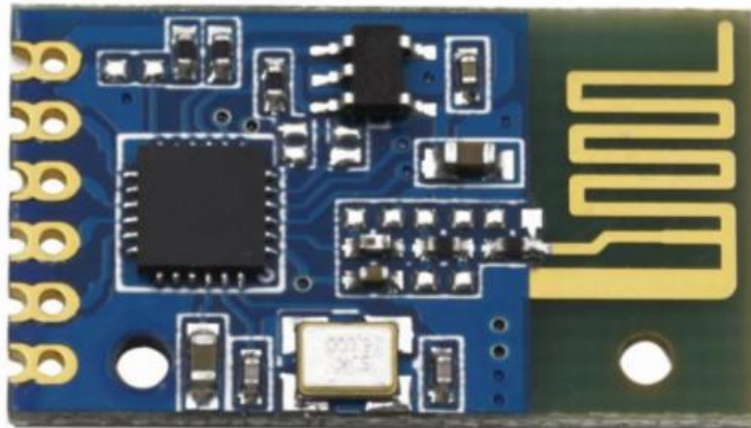


LCS12 2.4G Module Manual



H-2 Technik UG (haftungsbeschränkt)

www.h-2technik.com

Version Information

Version	Date	Modified By	Introduction
1.1	09.2017	Kim	Release

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1. Overview

LCS12S is designed and produced by using the latest 2.4G SoC technology, is characterized by free development, 120 m transmission in visual range, transceiver without switching, serial transparent transmission. LCS12 can be debugged quickly without complexity of wireless communication knowledge. There is no packet size limit. Transmission delay is short.

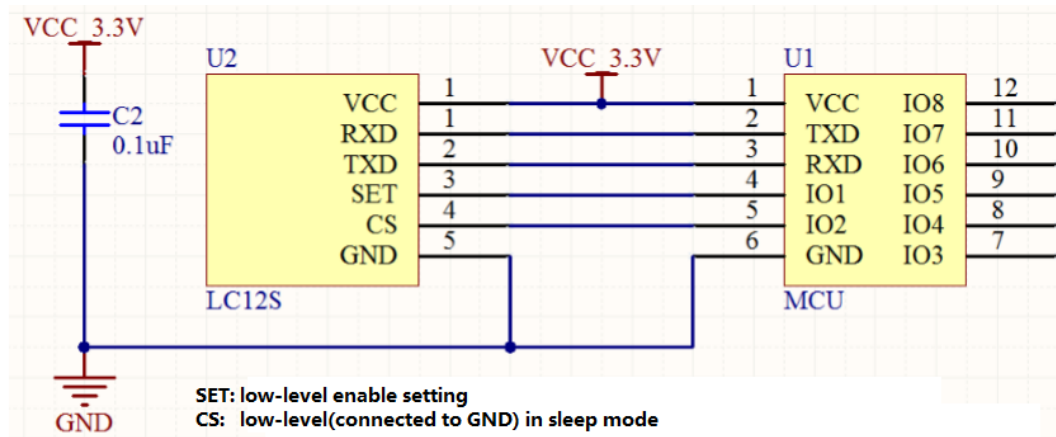


2. Features

- Half-duplex communication, strong anti-interference ability
- 2.4GHz ISM band
- Maximum output power 12dBm
- Receiver sensitivity -95dBm
- Transmit operating current 40mA @ 12dBm
- Received operating current 24mA
- Sleep current 3.5uA
- Standard TTL level UART serial port
- Operating frequency can be set, multiple modules are frequency-multiplexed, do not interfere with each other
- Communication protocol conversion and RF transceiver switching automatically, user does not need to intervene, easy to use
- Transmission rate 0.6kbps -38.4kbps, user can set through AT Instruction configuration
- Transmission 120m in visual range
- SMD (stamp hole), easy installation

3. Interface

Pin	Name	Function	Description
1	Vcc	Power	DC 2.2~3.6V (3.3v recommended)
2	RXD	TTL level	Serial data reception
3	TXD	TTL level	Serial data transmission
4	SET	Set bit	Enable setting (low level enabled, not-connected is high level)
5	CS	Sleep	Sleep mode in low level, not-connected is high level)
6	GND	Ground	Ground



4 Parameter Setting

Pos	Setting
1	0xaa (command byte)
2	0x5a (command byte)
3,4	Module(self) ID 2 Bytes (Module-ID)
5,6	Network ID 2 Bytes (<i>please notice: transparent data transmission can be achieved with same Network ID between modules</i>)
7	NC (reserved) must be 0x00
8	RF Power 1 Byte (0-14)
9	NC (reserved) must be 0x00
10	Baud Rate 1 Byte (0-6)
11	NC (reserved) must be 0x00
12	RF Channel 1 Byte (0-127)
13,14	NC (reserved) must be 0x00
15	NC (reserved) must be 0x00
16	Length 1 Byte (0x12)
17	NC (reserved) must be 0x00
18	Check Sum 1 Byte (All the above bytes are added, leaving the lower 8 bits)

Example:

Host sending: 0xaa + 0x5a + module(self) ID + network ID (ID must be the same) + 0x00 (RF transmit power) + 0x00 (serial port rate) + 0x00 (RF channel selection) + 0x00 + 0x00 + 0x12 (byte length) + 0x00 (check sum byte)

AA5A22331122000000040064000000120006

Notice: Check Sum = All the above bytes are added, leaving the lower 8 bits

Description of parameter:

0x00(RF transmit power): 12 dbm

0x04(Baud rate): 9600bps

0x64(RF Channel): 100

0x2233(Module ID): 0x2233

If module is set successfully, the return data should be

“AA5B22331122000000040064000000120007”

Notice: with the same network ID different modules can communicate (transparent transmission) with each another.

Configuration: After power-on, when the CS (Power-down) pin is connected to low level, the SET pin is flag pin to configure module, pulled low or shorted to ground to switch to the parameter configuration.

Serial Setting: if module is in setting mode, serial communication must be 8 Data Bit, 9600 Baud rate, no-parity Bit, 1 Stop Bit, 1 Mbps air-transmission.

RF transmission power setting:

0-14 transmission levels can be set in 1 Byte

Value(Hex)	Setting(dbm)
0	12
1	10
2	9
3	8
4	6
5	3
6	0
7	-2
8	-5
9	-10
10	-15
11	-20
12	-25
13	-30
14	-35

Serial baud rate setting:

Serial baud rate 600, 1200, 2400, 4800, 9600, 19200, 38400 can be set in 1 Byte

Value(Hex)	Setting (bps)
0	600
1	1200
2	2400
3	4800
4	9600

5	19200
6	38400