

Cap CC1101

SKU:U219

WIRELESS

CAP

CC1101

MIC ID: 219-269336

FCC ID: 2AN3WM5CAPCC1101

M5STACK

433 MHz

868 MHz

315 MHz

RP-SMA FEMALE

M2 HOLE

GPIO EXT

ST25R3916

NFC - A / B / F / V

Card Reading / Writing / Emulation

CC1101 Sub-1 GHz RF Transceiver

315 / 433 / 868 / 915 MHz

I2C

PORT A

SCL

SDA

5V

G

NFC

GPIO EXT

SCL

SDA

5V

GND

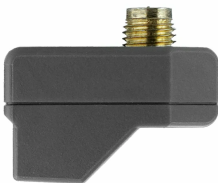
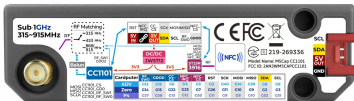
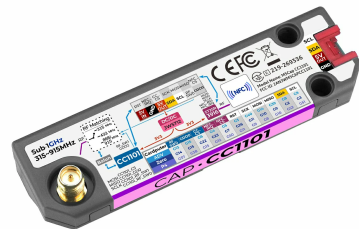
ST25R3916

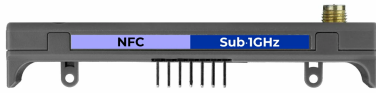
NFC - A / B / F / V

Card Reading / Writing / Emulation

CC1101 Sub-1 GHz RF Transceiver

315 / 433 / 868 / 915 MHz





Description

Cap **CC1101** is a wireless expansion module integrating Sub-1 GHz RF and NFC functions, compatible with **Cardputer-Adv** and **CardputerZero**. The RF section is based on the TI CC1101 transceiver. Built-in dual single-pole triple-throw (SP3T) RF switches and multi-band RF matching circuits multiplex the **315MHz, 433MHz, 868MHz/915MHz** bands to one RP-SMA antenna interface, supporting 2-FSK, 4-FSK, GFSK, MSK, ASK, OOK, and other modulation schemes.

The NFC section uses the ST25R3916 chip and supports **ISO14443A/B, FeliCa™, and ISO15693 protocols**. It can operate in reader/writer and card emulation modes. The module communicates via SPI, includes an onboard DC-DC buck circuit, and provides a standard HY2.0-4P Grove interface for easy sensor expansion. It is suitable for wireless remote control, access-control identification, device communication, and IoT prototyping.

Features

- SPI serial communication protocol
- CC1101 low-power Sub-1 GHz RF transceiver
 - Operating frequency: 315/433/868/915 MHz
 - Supports 2-FSK, 4-FSK, GFSK, MSK, ASK, and OOK modulation schemes
 - Independent 64-byte RF RX FIFO and TX FIFO
 - Built-in dual SP3T RF switches and multi-band RF matching network for dynamic band switching
 - External RP-SMA antenna interface
- ST25R3916 high-performance NFC front end
 - Supports reader/writer mode and card emulation mode
 - Compatible with NFC-A, NFC-B, NFC-F, and NFC-V standards
 - 512-byte NFC FIFO
- HY2.0-4P Grove expansion interface
 - Supports sensor module expansion
- Development Platform:
 - Arduino
 - UiFlow2

Includes

- 1 x Cap CC1101
- 1 x 315 MHz RP-SMA rubber antenna
- 1 x 433 MHz RP-SMA rubber antenna
- 1 x 868 MHz RP-SMA rubber antenna (for 868MHz and 915MHz bands)

Applications

- Wireless remote control
- Access-control identification
- Device communication
- IoT prototyping

Specifications

Specification	Parameter
RF chip	CC1101
Operating frequency band	315 / 433 / 868 / 915 MHz
Communication range (FSK modulation, 58kbps air rate)	315MHz: 435m 433 / 868 / 915MHz: 441m
TX power	+10 dBm
Rubber antenna type	315 MHz RP-SMA rubber antenna: 108mm long, RP-SMA connector (internal thread, female pin), 315 MHz operating band 433 MHz RP-SMA rubber antenna: 108mm long, RP-SMA connector (internal thread, female pin), 433 MHz operating band 868 MHz RP-SMA rubber antenna: 108mm long, RP-SMA connector (internal thread, female pin), 868MHz and 915MHz operating bands
Antenna connector	RP-SMA female connector
RX sensitivity	Up to -99.5 dBm
NFC chip	ST25R3916
NFC protocol	Reader/Writer Mode: NFC-A/B (compatible with ISO14443A/B), NFC-F (FeliCa™), NFC-V (ISO15693) Card Emulation Mode: NFC-A / NFC-F
NFC Working Frequency	13.56MHz
Communication interface	SPI
Sleep power consumption	DC 5V@140.87uA (CC1101 and NFC both asleep)
Operating power consumption	DC 5V@96mA (CC1101 continuously transmitting at maximum power, NFC continuously reading cards)
Product size	84.0 x 24.0 x 19.7mm
Product weight	14.9g
Package size	170.0 x 120.0 x 17.0mm
Gross Weight	37.5g

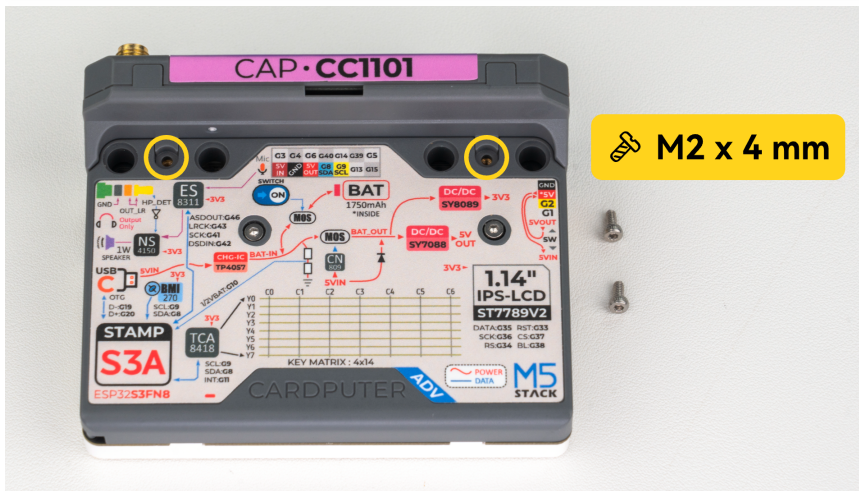
Learn

Cap Expansion Notice

When **Cap CC1101** is used with **CardputerZero**, **hot-swapping is not supported**. Hot-swapping may cause the device to malfunction. Power off the device before inserting or removing the Cap CC1101 module.

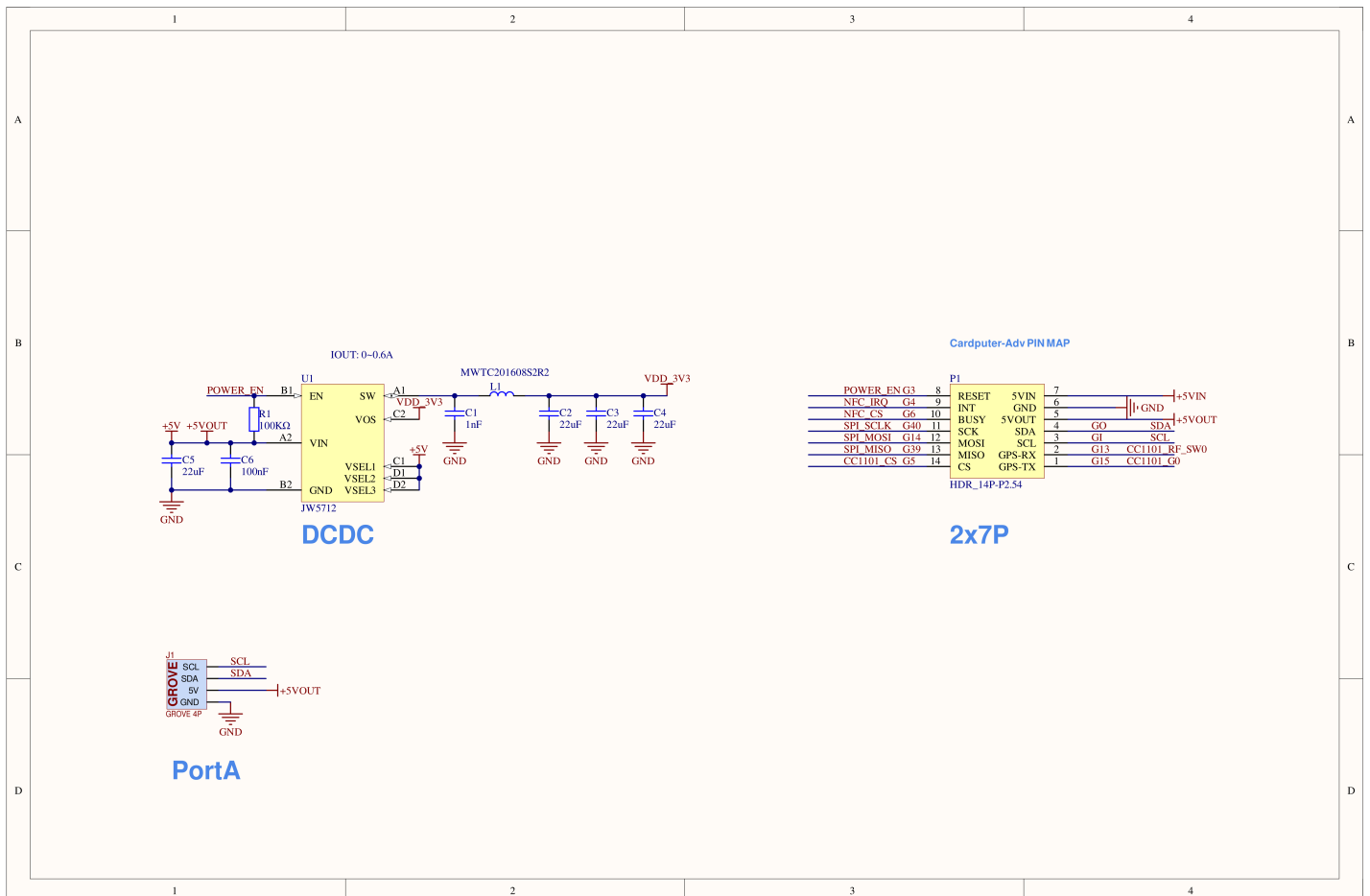
Cap CC1101 Extension Connection

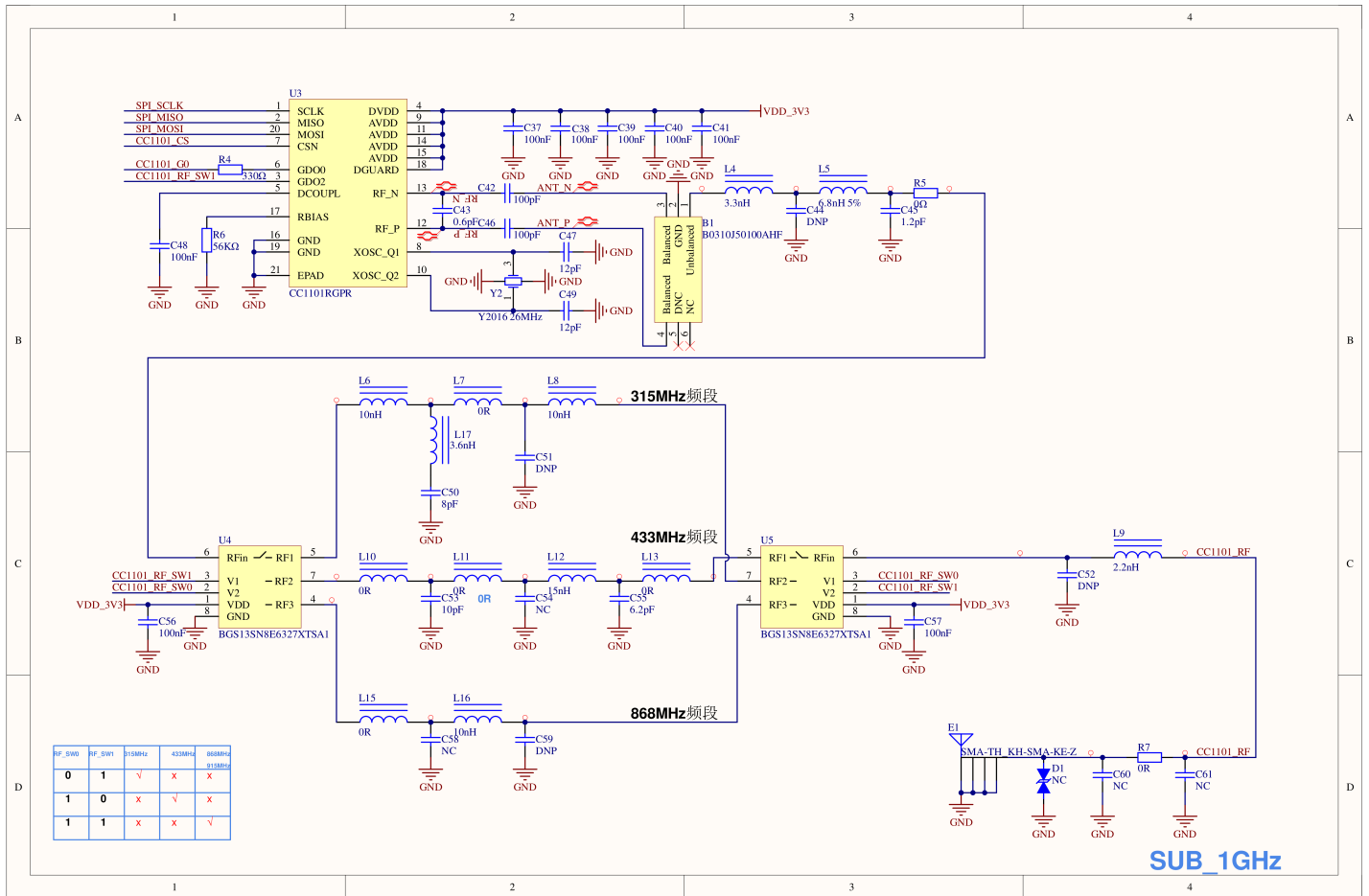
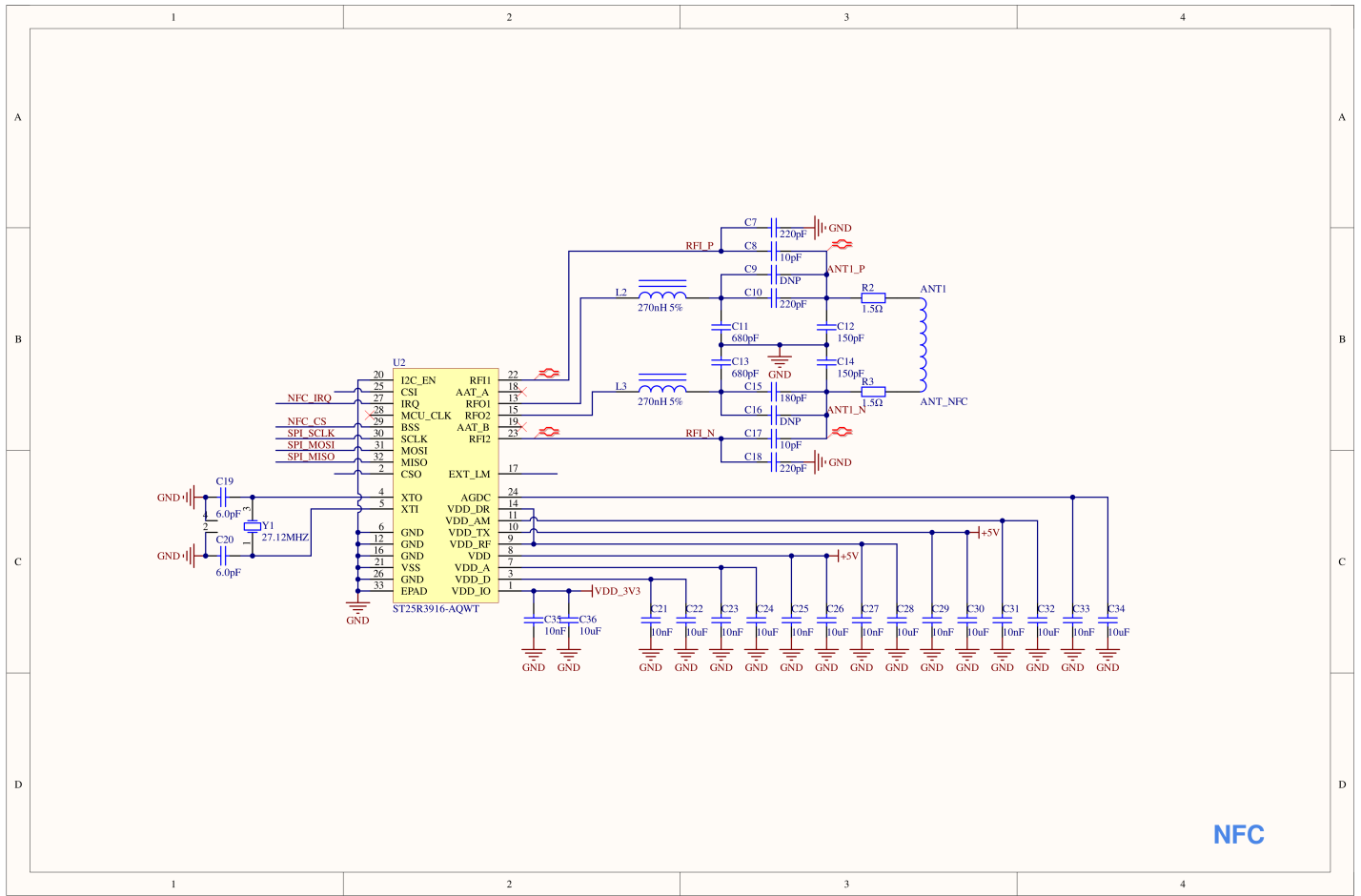
The Cap CC1101 expansion accessory provides two screw mounting holes that match the Cardputer-Adv / Zero for mounting and secure installation. It is recommended to use **M2 x 4mm** screws. Please note: if the screws are too long, they may interfere with the internal PCB and cause damage.



Schematics

- Cap CC1101 Schematic PDF





Cap-Bus

PIN	LEFT	RIGHT	PIN
CC1101_G0	1	14	CC1101_CS
CC1101_RF_SW0	2	13	SPI_MISO
SCL	3	12	SPI_MOSI
SDA	4	11	SPI_SCLK
5V_OUT	5	10	NFC_CS
GND	6	9	NFC_IRQ
	7	8	POWER_EN

Cardputer-Adv	G5	G13	G15	G40	G14	G39
Cap CC1101 (CC1101)	CC1101_CS	CC1101_RF_SW0	CC1101_G0	SPI_SCLK	SPI_MOSI	SPI_MISO

Cardputer-Adv	G4	G6	G40	G14	G39
Cap CC1101 (ST25R3916)	NFC_IRQ	NFC_CS	SPI_SCLK	SPI_MOSI	SPI_MISO

RF Switch Control Truth Table

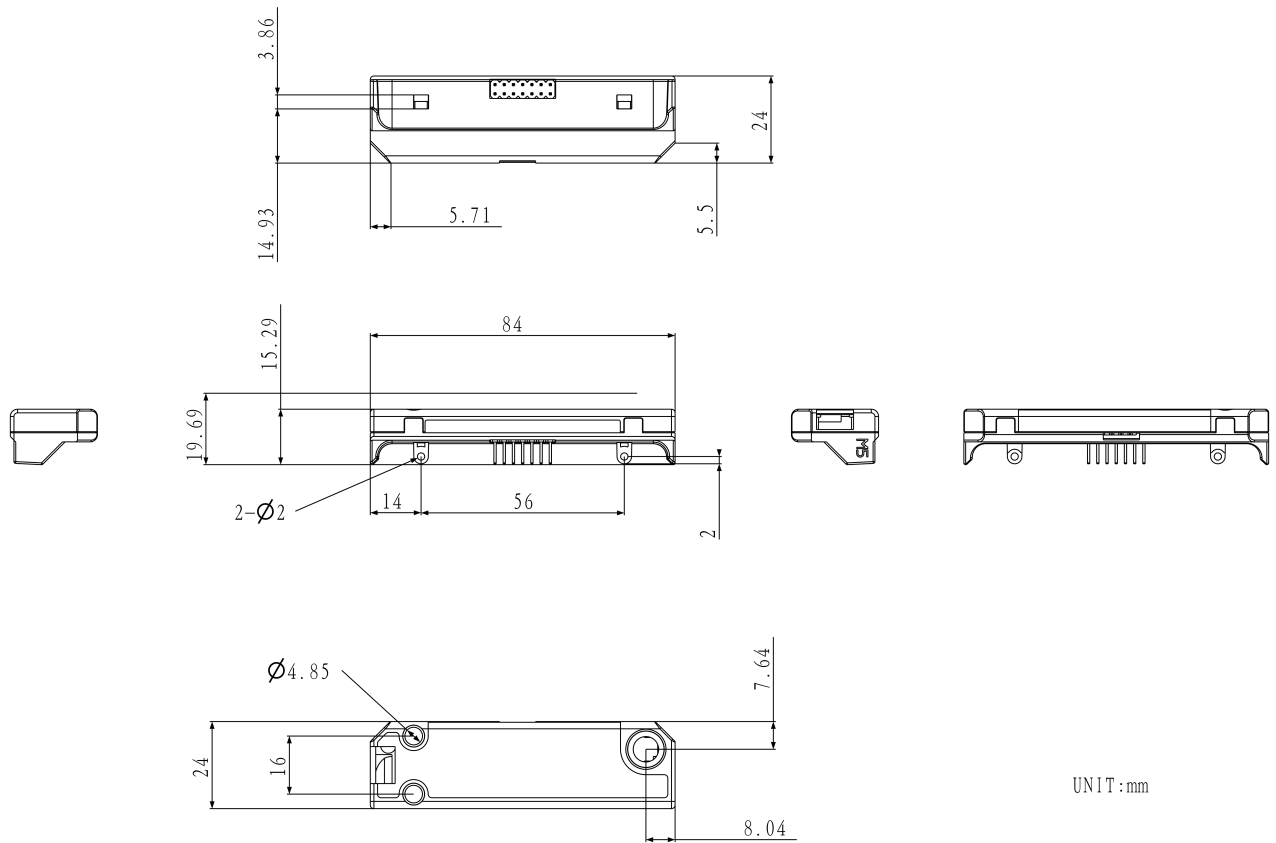
RF_SW0	RF_SW1	Frequency band
0	0	315MHz
0	1	433MHz
1	1	868MHz/915MHz

Cap CC1101

HY2.0-4P	Black	Red	Yellow	White
PORT.A	GND	5V	SDA	SCL

Model Size

- Cap CC1101 Model Size PDF



Datasheets

- [CC1101](#)
- [ST25R3916](#)

Softwares

Arduino

- [Cap CC1101 Arduino Quick Start](#)
- [Cap CC1101 Arduino CC1101 Driver Library](#)
- [Cap CC1101 Arduino NFC Driver Library](#)

UiFlow2

- [Cap CC1101 UiFlow2 Documentation](#)

Video