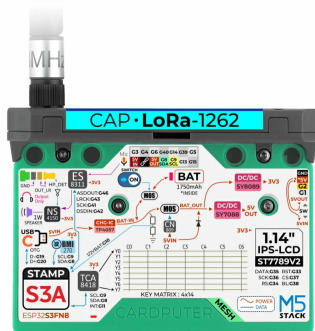
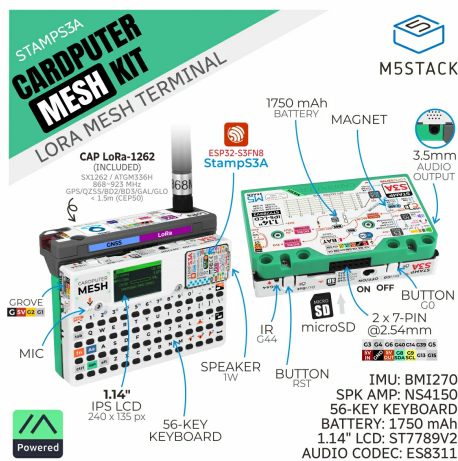


Cardputer Mesh Kit

SKU:K152





Description

Cardputer Mesh Kit is a portable communication terminal kit that integrates LoRa Mesh networking with global positioning capabilities. The kit centers around the **Cardputer-Adv** core controller and the **Cap LoRa-1262** communication expansion module.

Cardputer-Adv is a card-sized portable programmable controller built on the Stamp-S3A module (based on ESP32-S3FN8). It features a 1.14" LCD screen and a 56-key compact keyboard for convenient on-site information display and command input. A built-in 1750mAh lithium battery ensures extended standalone operation. The device integrates an ES8311 audio codec, MEMS microphone, 1W speaker, and 3.5mm audio jack for voice interaction and audio output. Additional features include a 6-axis IMU BMI270, an infrared emitter, a microSD card slot, an HY2.0-4P Grove interface, and an EXT 2.54-14P expansion bus. The chassis supports magnetic attachment and is compatible with LEGO mounting holes.

Cap LoRa-1262 serves as the communication expansion module of the kit. It connects to the Cardputer-Adv via the EXT 2.54-14P interface, drawing power and control signals directly from the host — plug-and-play with no additional configuration required. The module is built around the SX1262 LoRa solution, supporting the 868 ~ 923 MHz band with a receive sensitivity of -147 dBm and a transmit power of +22 dBm. An RP-SMA external antenna and RF shielding ensure reliable long-range communication with strong interference immunity. An integrated AT6668 GNSS module with a built-in ceramic antenna supports multi-constellation positioning including GPS, BeiDou, GLONASS, and Galileo. The module also includes an HY2.0-4P interface for connecting external sensors.

Cardputer Mesh Kit comes pre-installed with Meshtastic firmware, making it ready to use out of the box — no complex development required to join a LoRa Mesh network. The Cardputer-Adv and Cap LoRa-1262 work seamlessly together for easy configuration and intuitive positioning, making the kit well-suited for outdoor communications, node deployment, location tracking, and industrial inspection.

Tutorial



Meshtastic Tutorial

This tutorial explains how to use Meshtastic with the Cardputer Mesh Kit.



UiFlow2

This tutorial introduces how to program and control the Cardputer-Adv using the UiFlow2 graphical programming platform.



Arduino IDE

This tutorial introduces how to program and control the Cardputer-Adv using Arduino IDE.

Features

Core Controller (Cardputer-Adv):

- Stamp-S3A core module (ESP32-S3FN8)
- 56-key keyboard with 160gf comfortable key actuation
- 1.14" LCD screen (240 x 135px)
- ES8311 audio codec + NS4150B amplifier + 1W speaker + MEMS microphone
- 3.5mm audio output jack
- 6-axis IMU BMI270
- Infrared emitter
- microSD card slot
- Built-in 1750mAh lithium battery
- HY2.0-4P Grove interface + EXT 2.54-14P expansion bus
- Magnetic attachment on the back, compatible with LEGO mounting holes

Communication Expansion Module (Cap LoRa-1262):

- LoRa modulation technology + GNSS global positioning system
- Operating frequency: 868 ~ 923 MHz
- Receive sensitivity as low as -147 dBm, transmit power +22 dBm
- External RP-SMA antenna interface with built-in ceramic GPS antenna
- Supports GPS / QZSS / BD2 / BD3 / GAL / GLO multi-constellation positioning
- HY2.0-4P expansion interface (for external sensor connection)
- Development Platform
 - Arduino
 - UiFlow2
 - ESP-IDF
 - PlatformIO

| Includes

- 1 x Cardputer-Adv (Green Back Shell Version)
- 1 x Cap LoRa-1262
- 1 x LoRa Rubber Duck Antenna (RP-SMA Connector)
- 2 x M2 * 4mm cap head machine screw
- 1 x Hex Key L-Shape 1.5mm (For M2 Screw)
- 1 x Safety Warning Sticker

| Applications

- Remote GPS Tracker
- Outdoor Mesh Networking
- Rapid Prototyping and Functional Verification
- Industrial Control and Automation
- Smart City / Smart Home
- In-Vehicle Positioning and Navigation
- Embedded System Development and Learning

| Specifications

Specification	Parameter
SoC	ESP32-S3FN8 @ Xtensa® 32-bit LX7 dual-core processor, clock frequency 240MHz
Flash	8MB
External Storage	microSD
Display	ST7789V2 @ 1.14", 240 x 135px
Keyboard	56 keys (4 x 14), 160gf actuation force
Expansion Interface	HY2.0-4P + EXT 2.54-14P
IR	1 x Infrared Emitter
Audio Codec	ES8311
Speaker	NS4150B amplifier + 8Ω @ 1W speaker
Microphone	MEMS microphone, SNR: 65 dB
IMU	BMI270
Battery Capacity	1750mAh
Operating Temperature	0 ~ 40°C
Operating Current	DC 4.2V @ 120.2mA
LoRa Module	SX1262
LoRa Frequency Range	868 ~ 923 MHz
LoRa Programmable Bit Rate	Up to 300kbps
LoRa Antenna	Size: 108 x 9.3mm, Connector: RP-SMA (female), Gain: 3dBi
LoRa Transmit Power	+22dBm
LoRa Receive Sensitivity	-147dBm (low data rate mode)
LoRa Operating Current	DC 5V @ 163.4mA
Supported Modulation	FSK / GFSK / MSK / LoRa / OOK
GPS Module	ATGM336H-6N @ AT6668
GPS Communication Interface	UART, default 115200bps @ 8N1
Supported GNSS Systems	GPS / QZSS / BD2 / BD3 / GAL / GLO
GPS Channels	50 channels
GPS Positioning Accuracy	<1.5m (CEP50)

Specification	Parameter
GPS Update Rate	Up to 10Hz
GPS Time to First Fix	Cold start: 23s, Hot start: 1s
Product Size	Cardputer-Adv: 84.0 x 54.0 x 19.6mm Cap LoRa-1262: 84.0 x 24.0 x 15.2mm
Product Weight	77.2g
Package Size	103.0 x 90.0 x 25.0mm
Gross Weight	127.2g

Learn

Cardputer-Adv Download Mode

Set the side power switch on the Cardputer-Adv to **OFF**. Hold down the **G0** key, then power on the device. Release the key and the device will enter download mode.



RGB LED Power Supply

RGB LED Power Supply Instructions

The device uses **Stamp-S3A** as its main controller. To optimize overall power consumption, Stamp-S3A adds an independent electronic switch for the RGB LED power supply compared with the previous Stamp-S3. Before controlling the RGB LED in software, set GPIO38, which controls this switch, to a high level.

Charging Notes

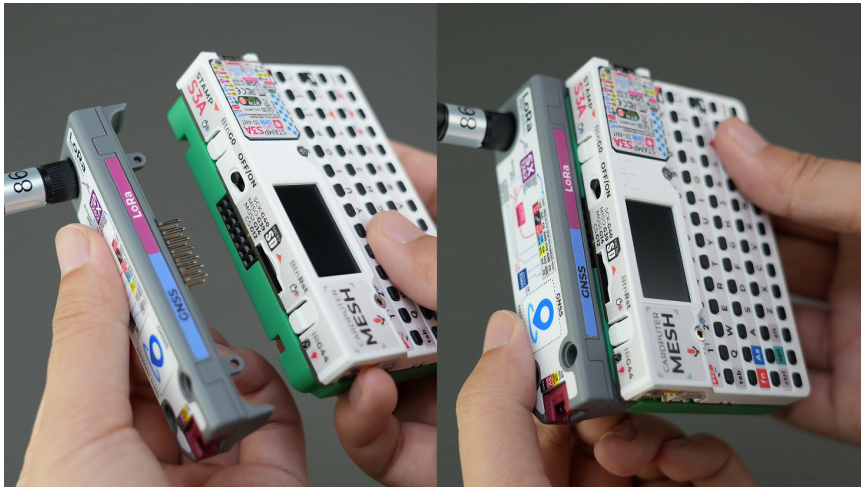
Switch the power switch to **ON** before charging.



Assembly Instructions

The Cap LoRa-1262 connects to the Cardputer-Adv via the EXT 2.54-14P interface:

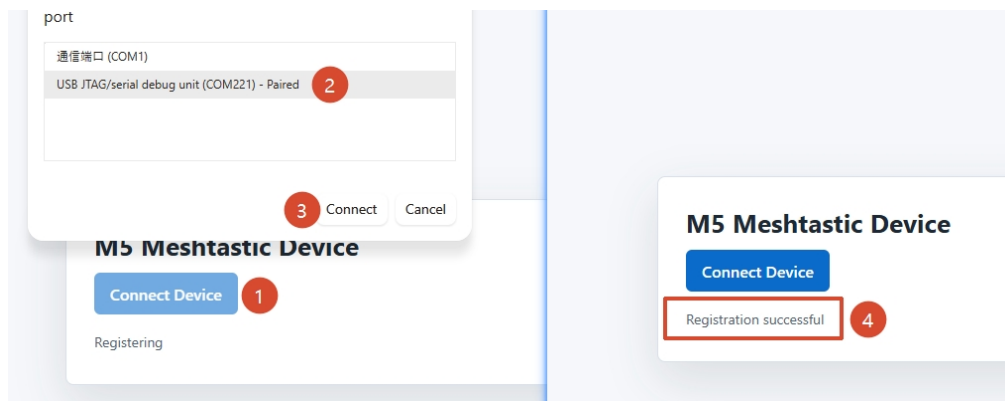
1. Turn the Cardputer-Adv upside down and locate the **EXT 2.54-14P** interface (14-pin female header).
2. Align the corresponding male header pins of the Cap LoRa-1262 with the interface and gently press until fully seated.
3. Screw the LoRa rubber duck antenna into the RP-SMA antenna connector on the Cap LoRa-1262.



Device Registration

The Cardputer Mesh Kit has been officially licensed by Meshtastic. You can register it as an authorized device by following the steps below:

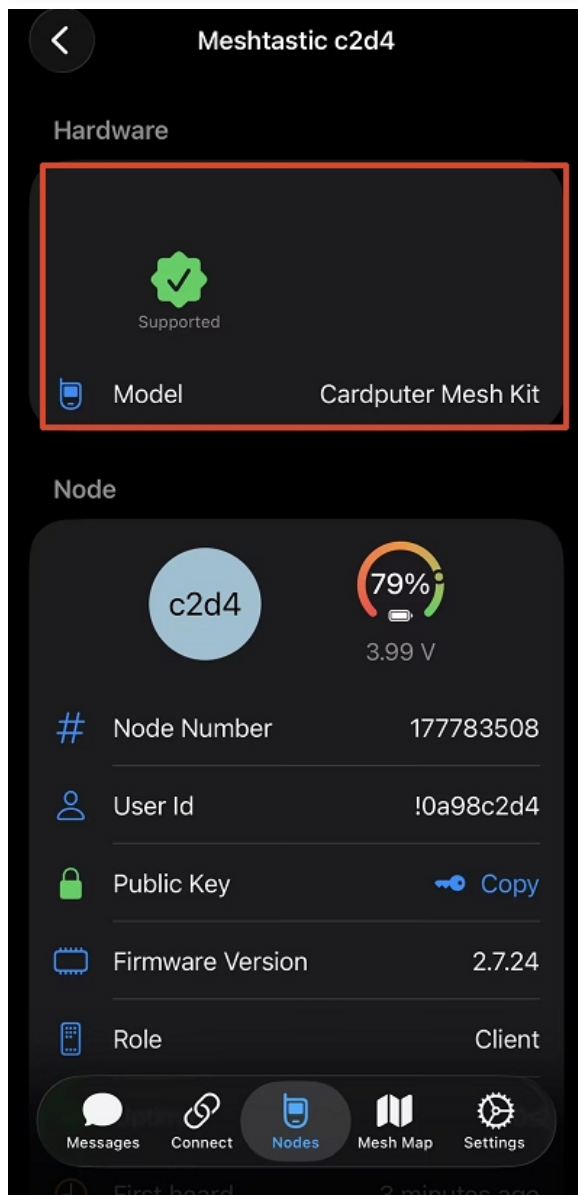
1. Ensure that the device has been flashed with the Meshtastic firmware by referring to the [Flashing Tutorial](#) (the factory firmware is already pre-flashed).
2. Ensure that the Cardputer-Adv is properly connected to the Cap LoRa-1262 expansion.
3. Connect the Cardputer Mesh Kit to your computer via a USB Type-C cable, and visit the [M5 Meshtastic Device](#) registration page.
4. On the registration webpage, click the **Connect Device** option, select the device port, then click **Connect**, and wait for the prompt indicating that the registration is complete.



After successful device registration, the Meshtastic app page will display the device model and authorization mark:

Note

Only devices in the Cardputer Mesh Kit set can be registered. Other Cardputer/-Adv devices are not eligible for Meshtastic authorization registration. If registration fails, please contact M5Stack official after-sales support.



PinMap

| Cardputer-Adv EXT 2.54-14P

FUNC	PIN	LEFT	RIGHT	PIN	FUNC
RESET	G3	1	2	5VIN	
INT	G4	3	4	GND	
BUSY	G6	5	6	5VOUT	
SCK	G40	7	8	G8	I2C_SDA
MOSI	G14	9	10	G9	I2C_SCL
MISO	G39	11	12	G13	UART_RX
CS	G5	13	14	G15	UART_TX

| Cardputer-Adv LCD

Stamp-S3A	G38	G33	G34	G35	G36	G37
ST7789V2	DISP_BL	RST	RS	DAT	SCK	CS
RGB LED	PWR_EN					

| Cardputer-Adv Audio

Stamp-S3A	G8	G9	G41	G46	G43	G42
ES8311	SDA	SCL	SCLK	ASDOUT	LRCK	DSDIN

| Cardputer-Adv IMU

Stamp-S3A	G8	G9
BMI270	SDA	SCL

| Cardputer-Adv IR

Stamp-S3A	G44
IR TX	TX

| Cardputer-Adv Battery

Stamp-S3A	G10
Battery	ADC

Cardputer-Adv Keyboard

Stamp-S3A	G8	G9	G11
TCA8418RTWR	SDA	SCL	INT

Cardputer-Adv microSD

Stamp-S3A	G12	G14	G40	G39
microSD	CS	MOSI	CLK	MISO

Cardputer-Adv HY2.0-4P

HY2.0-4P	Black	Red	Yellow	White
PORT.CUSTOM	GND	5V	G2	G1

Cap LoRa-1262 Cap-Bus

PIN	LEFT	RIGHT	PIN
GPS_TX	1	14	LoRa_NSS
GPS_RX	2	13	LoRa_MISO
SCL	3	12	LoRa_MOSI
SDA	4	11	LoRa_SCK
5V_OUT	5	10	LoRa_BUSY
GND	6	9	LoRa_IRQ
5V_IN	7	8	LoRa_RST

Cardputer-Adv	G3	G4	G6	G40	G14	G39	G5
Cap LoRa-1262 (LoRa)	RST	IRQ	BUSY	SCK	MOSI	MISO	NSS

Cardputer-Adv	G13	G15
Cap LoRa-1262 (GPS)	GPS-RX	GPS-TX

Cardputer-Adv	G8	G9
Cap LoRa-1262 (PI4IOE5V6408)	SDA	SCL
Cap LoRa-1262 (HY2.0-4P)	SDA	SCL

PI4IOE5V6408	P0
FM8625H	SX_ANT_SW

The following steps are required to initialize the LoRa module:

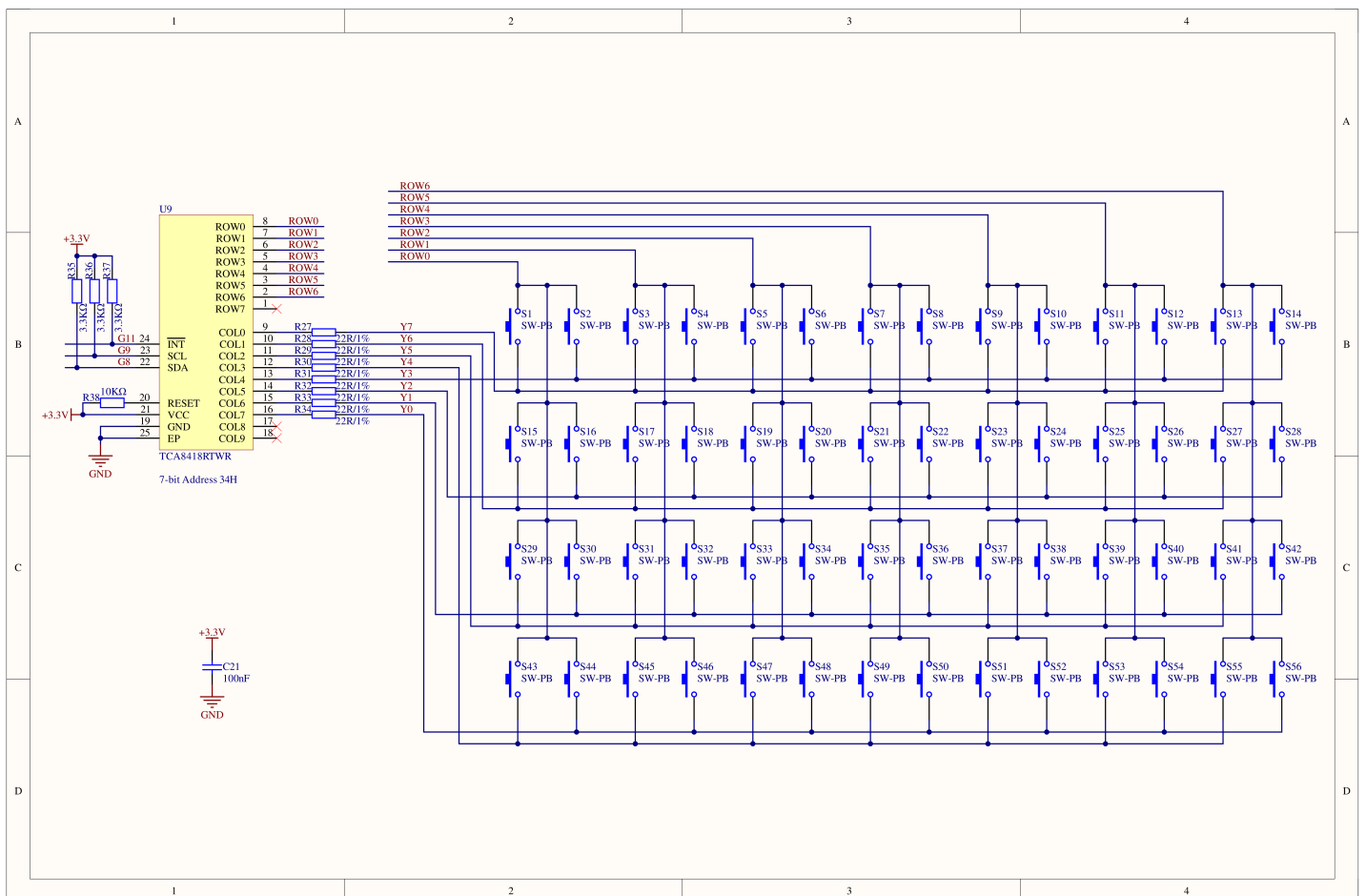
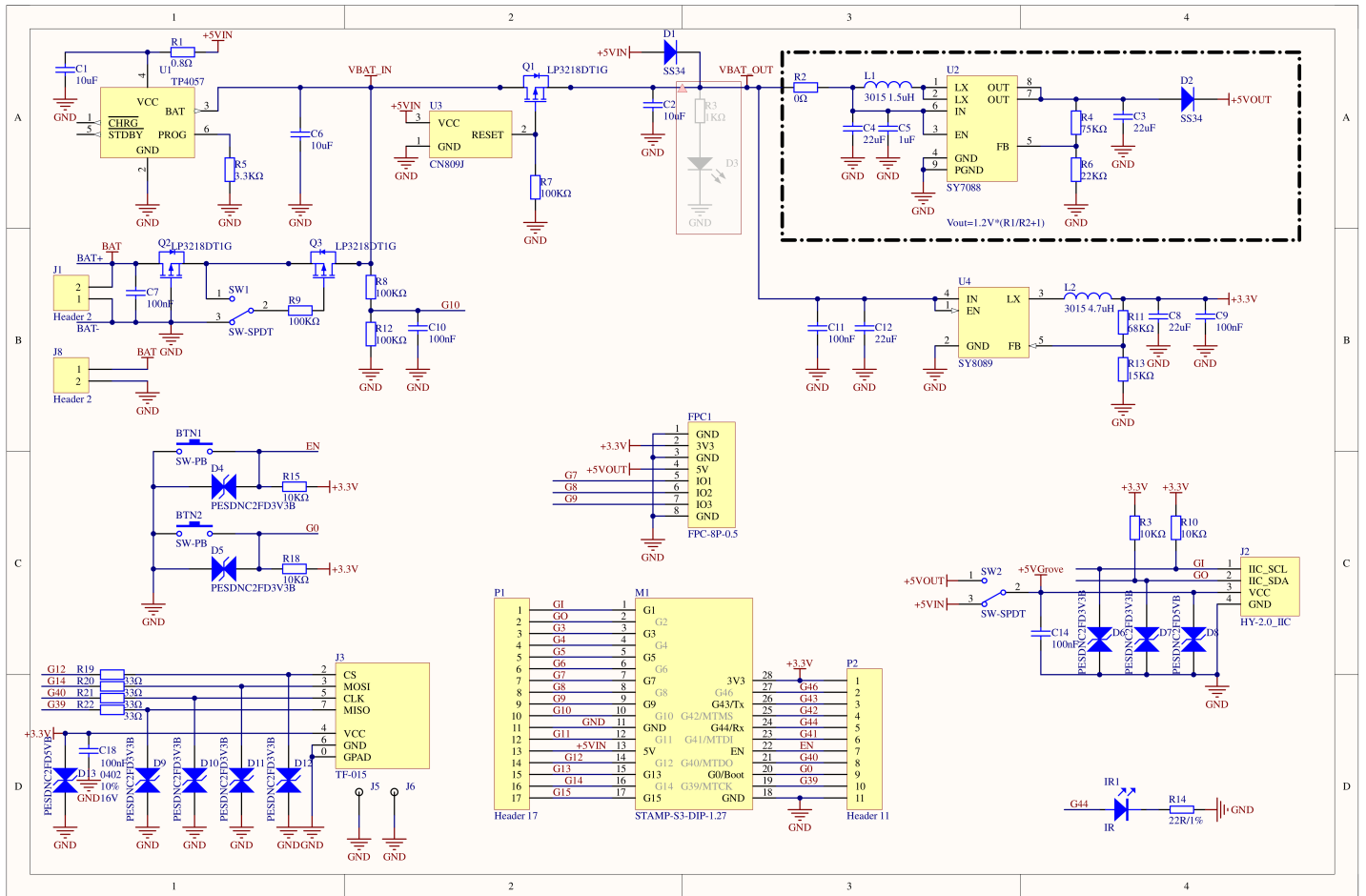
- Enable the RF antenna switch: set P0 of the PI4IOE I/O expander to HIGH

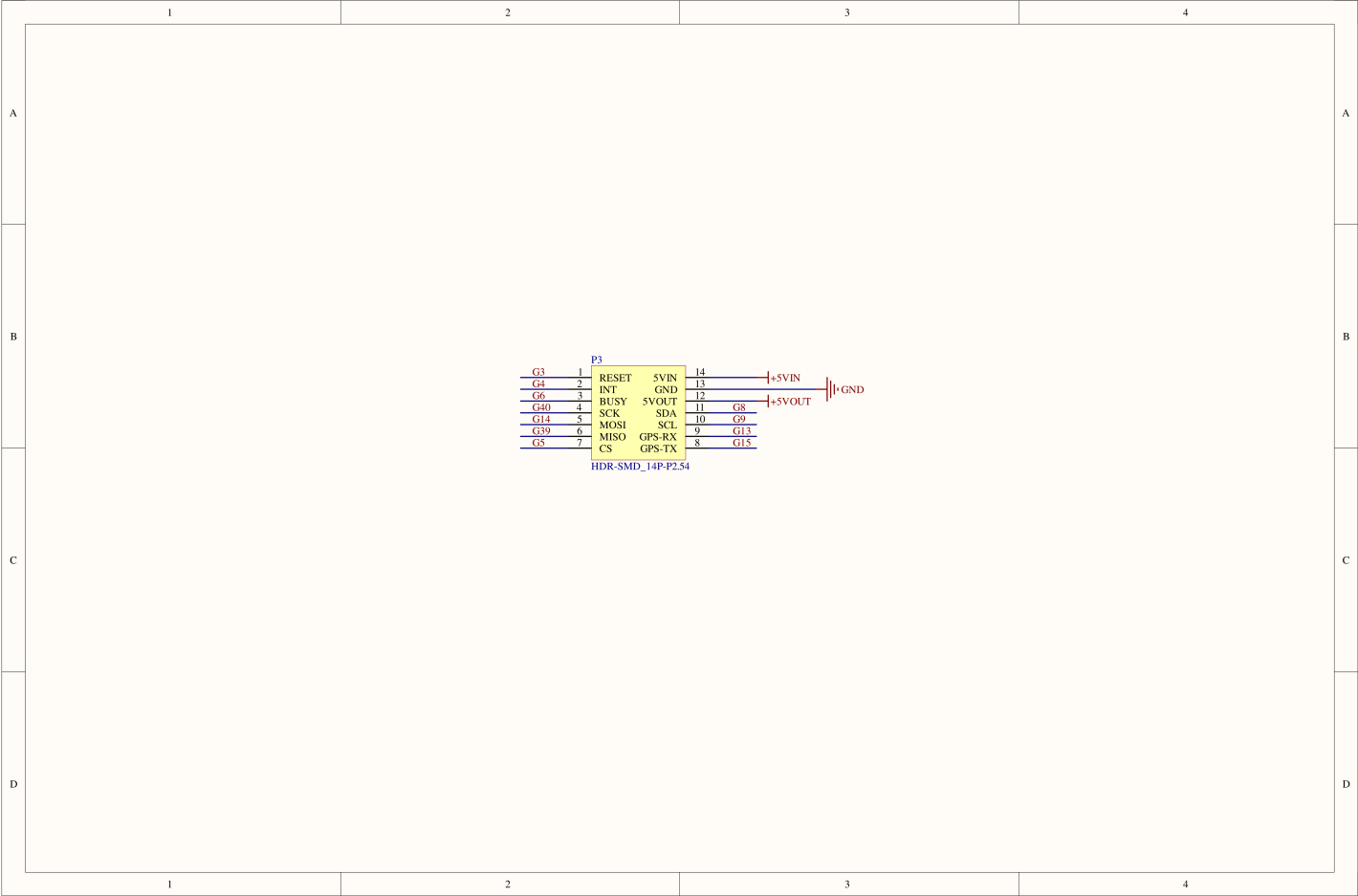
Cap LoRa-1262 HY2.0-4P

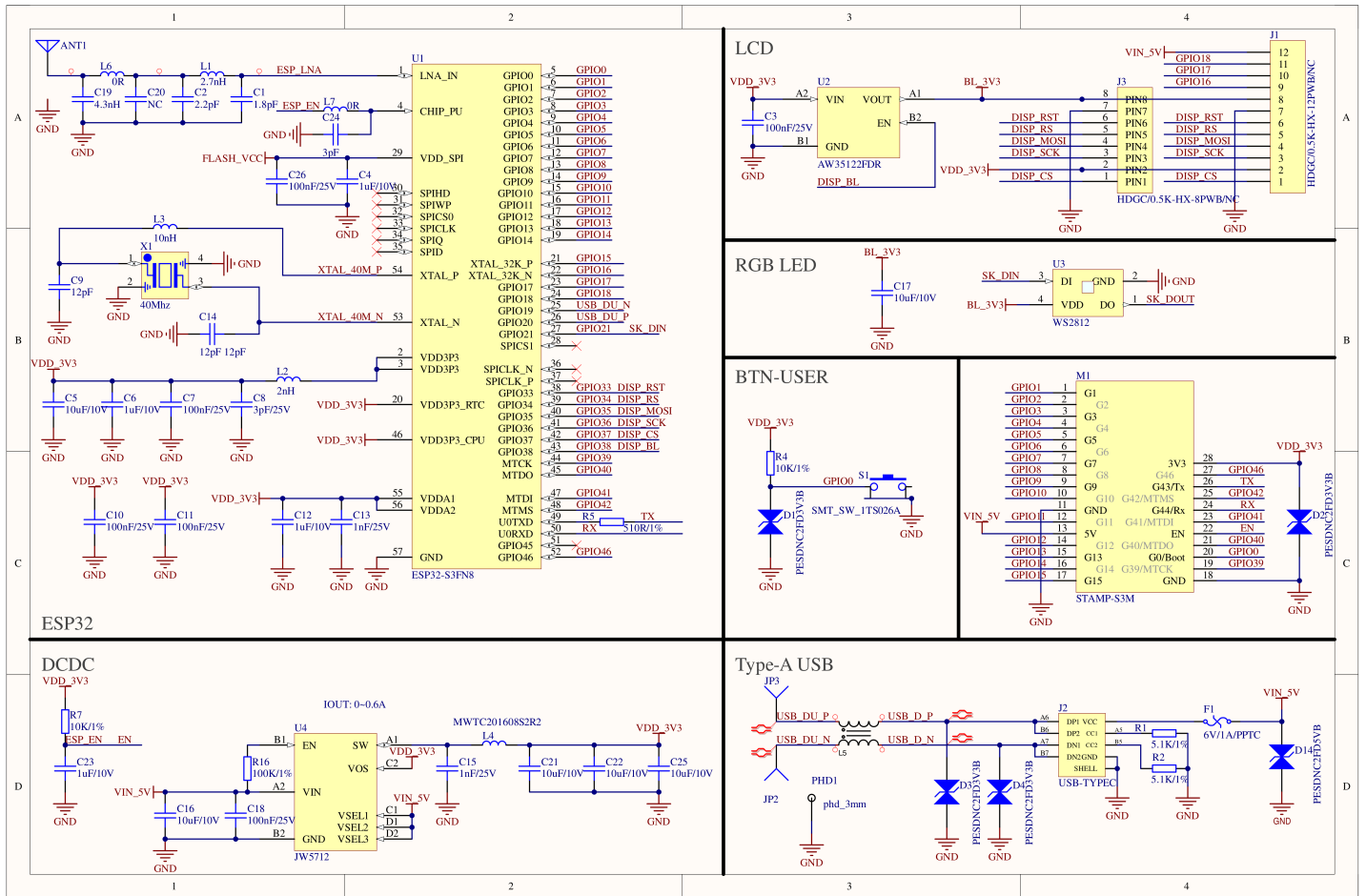
HY2.0-4P	Black	Red	Yellow	White
PORT.A	GND	5V	SDA	SCL

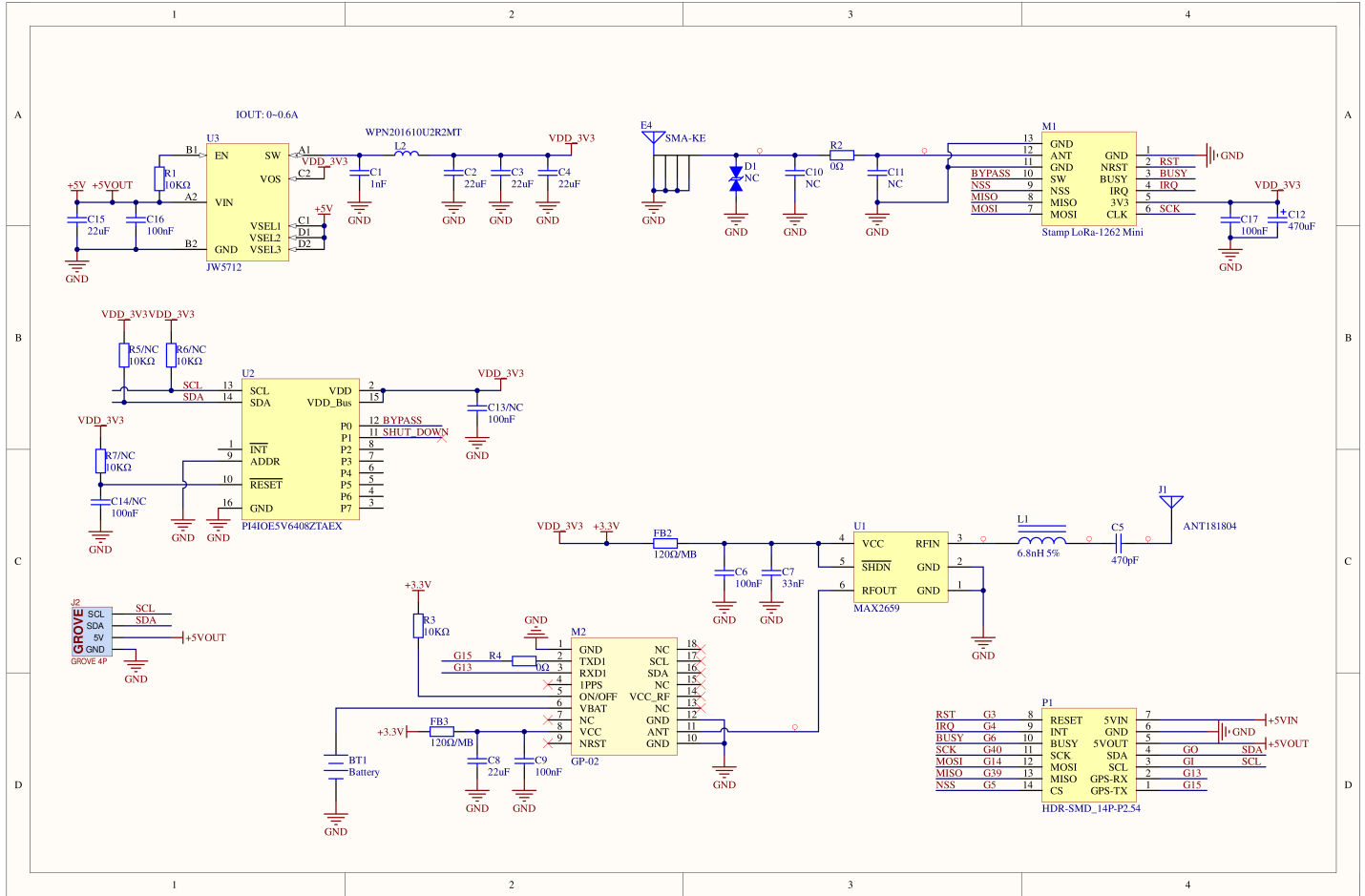
Schematics

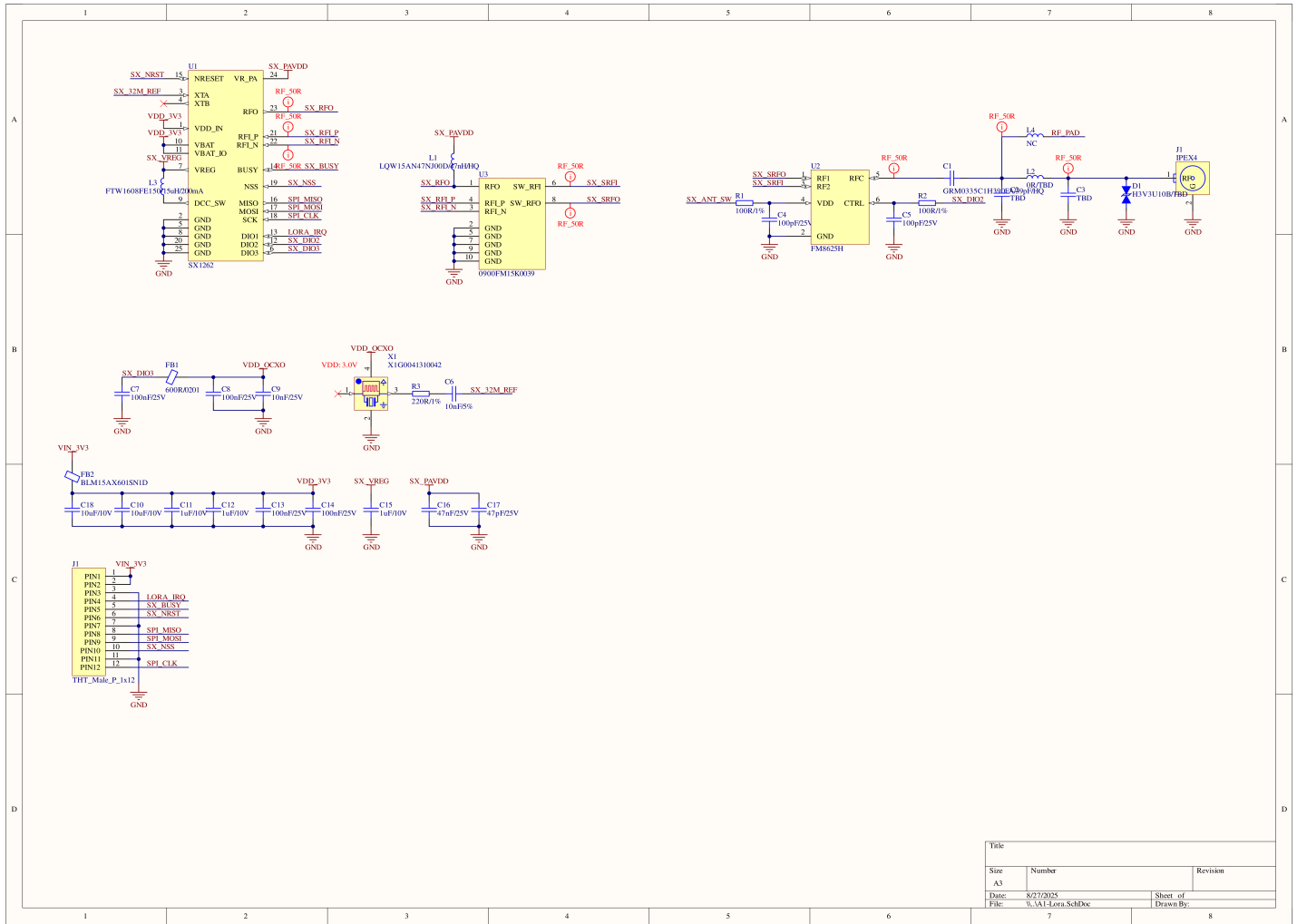
- [Cardputer-Adv Schematics PDF](#)
- [Stamp-S3A Schematics PDF](#)
- [Cap LoRa-1262 Schematics PDF](#)
- [Stamp LoRa-1262 Mini Schematics PDF](#)





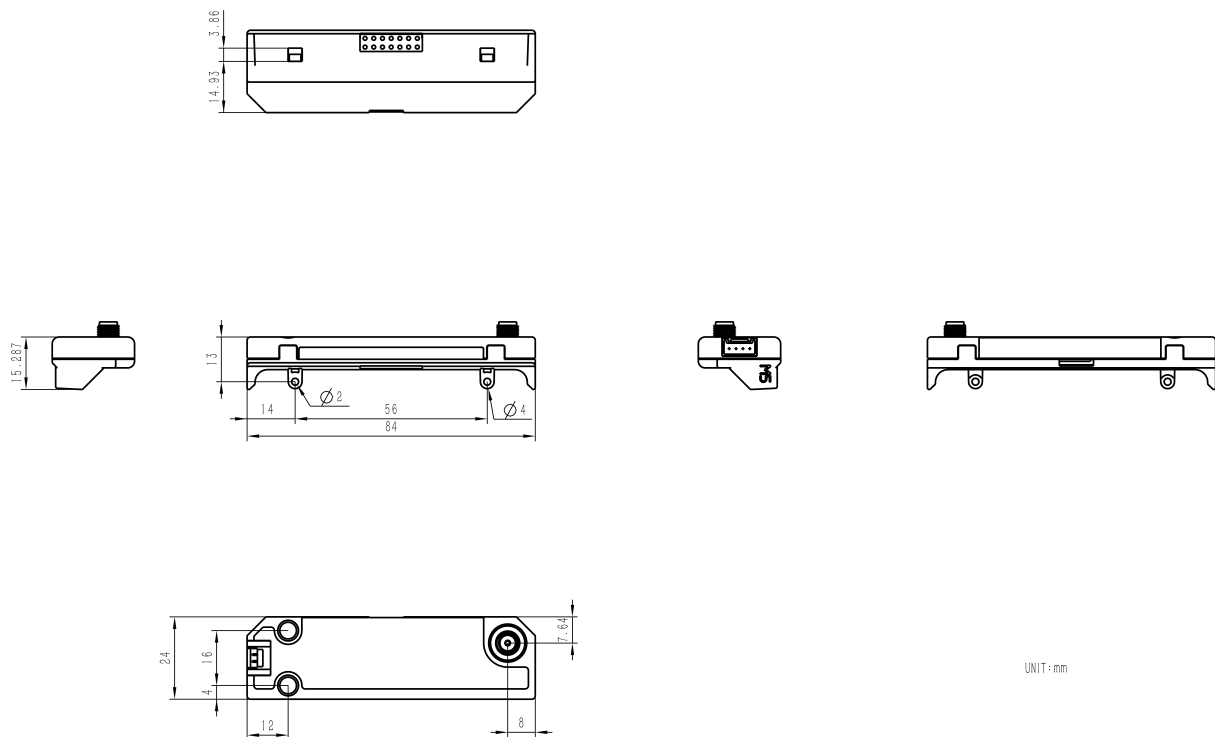
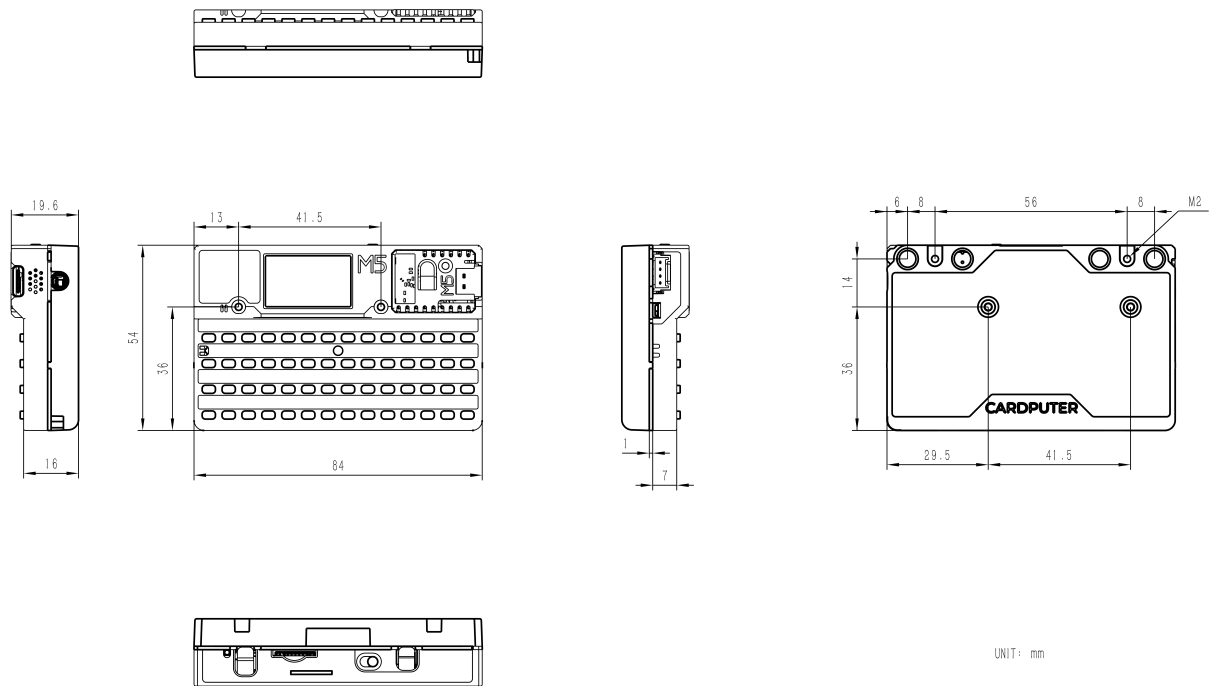






Model Size

- Cardputer-Adv Model Size PDF
- Cap LoRa-1262 Model Size PDF



| PCB

- [Cardputer-Adv Structure Files](#)

| Datasheets

- [ESP32-S3](#)
- [ST7789V2](#)
- [ES8311](#)
- [NS4150B](#)
- [BMI270](#)
- [SX1262](#)
- [ATGM336H-6N](#)
- [CASIC Multi-Constellation GNSS Receiver Protocol Specification](#)

| Softwares

| Arduino

- [Cardputer-Adv Arduino Quick Start](#)
- [Cap LoRa-1262 Arduino Quick Start](#)
- [Cardputer-Adv Arduino Library](#)
- [Cap LoRa-1262 LoRa Library \(RadioLib\)](#)
- [Cap LoRa-1262 GPS Library \(TinyGPSPlus\)](#)

| UiFlow2

- [Cardputer-Adv UiFlow2 Quick Start](#)
- [Cap LoRa-1262 UiFlow2 Docs](#)

| PlatformIO

```
[env:m5stack-cardputer-mesh-kit]
platform = espressif32@6.12.0
board = esp32-s3-devkitc-1
framework = arduino
upload_speed = 1500000
build_flags =
    -DESP32S3
    -DCORE_DEBUG_LEVEL=5
    -DARDUINO_USB_CDC_ON_BOOT=1
    -DARDUINO_USB_MODE=1

lib_deps =
    M5Cardputer=https://github.com/m5stack/M5Cardputer
    RadioLib=https://github.com/jgromes/RadioLib
    TinyGPSPlus=https://github.com/m5stack/TinyGPSPlus
```

Easyloader	Download
Cardputer-Adv Factory Firmware Easyloader	download

| Video

- Cardputer Mesh Kit Product Introduction and Use Cases

[K152-Cardpute-Mes-Kit-video-EN.mp4](#)