

BCRA August Meeting

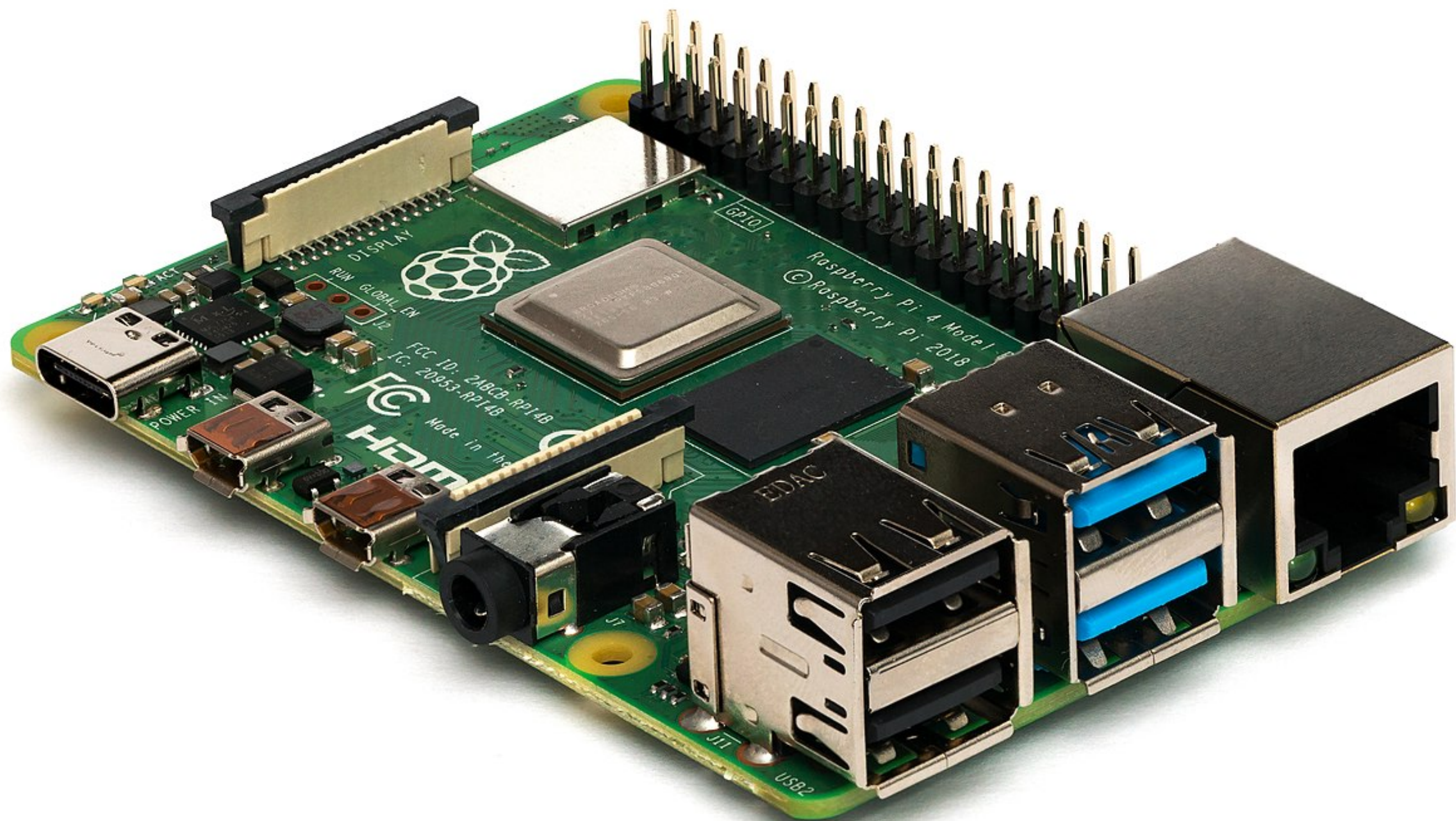
Amateur Radio, Allstar, and Raspberry Pi

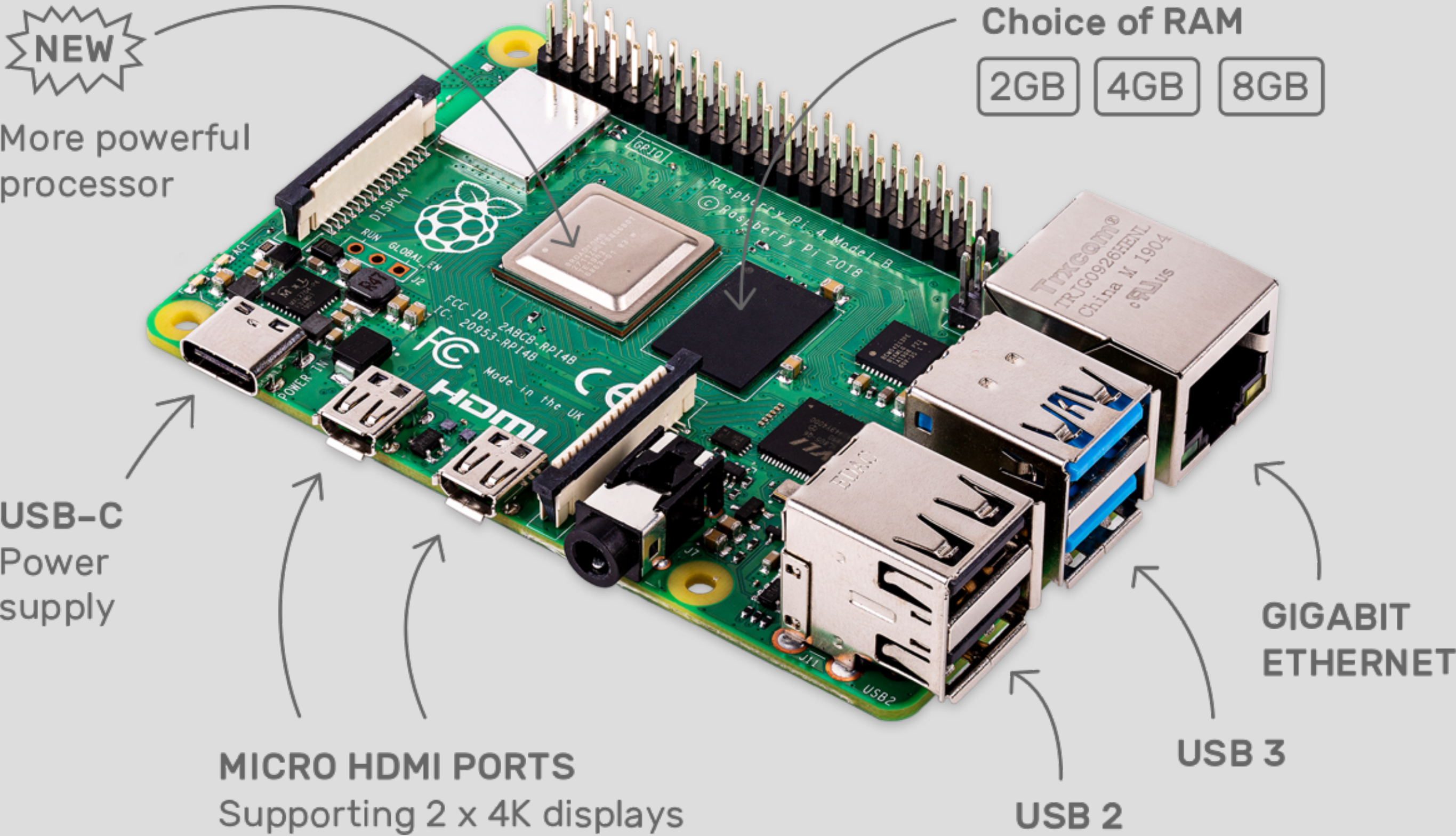
(a beginner's guide)

Questions on the fly?

What is a Raspberry Pi?

It's an SBC or “single board
computer”





NEW

More powerful
processor

Choice of RAM

2GB

4GB

8GB

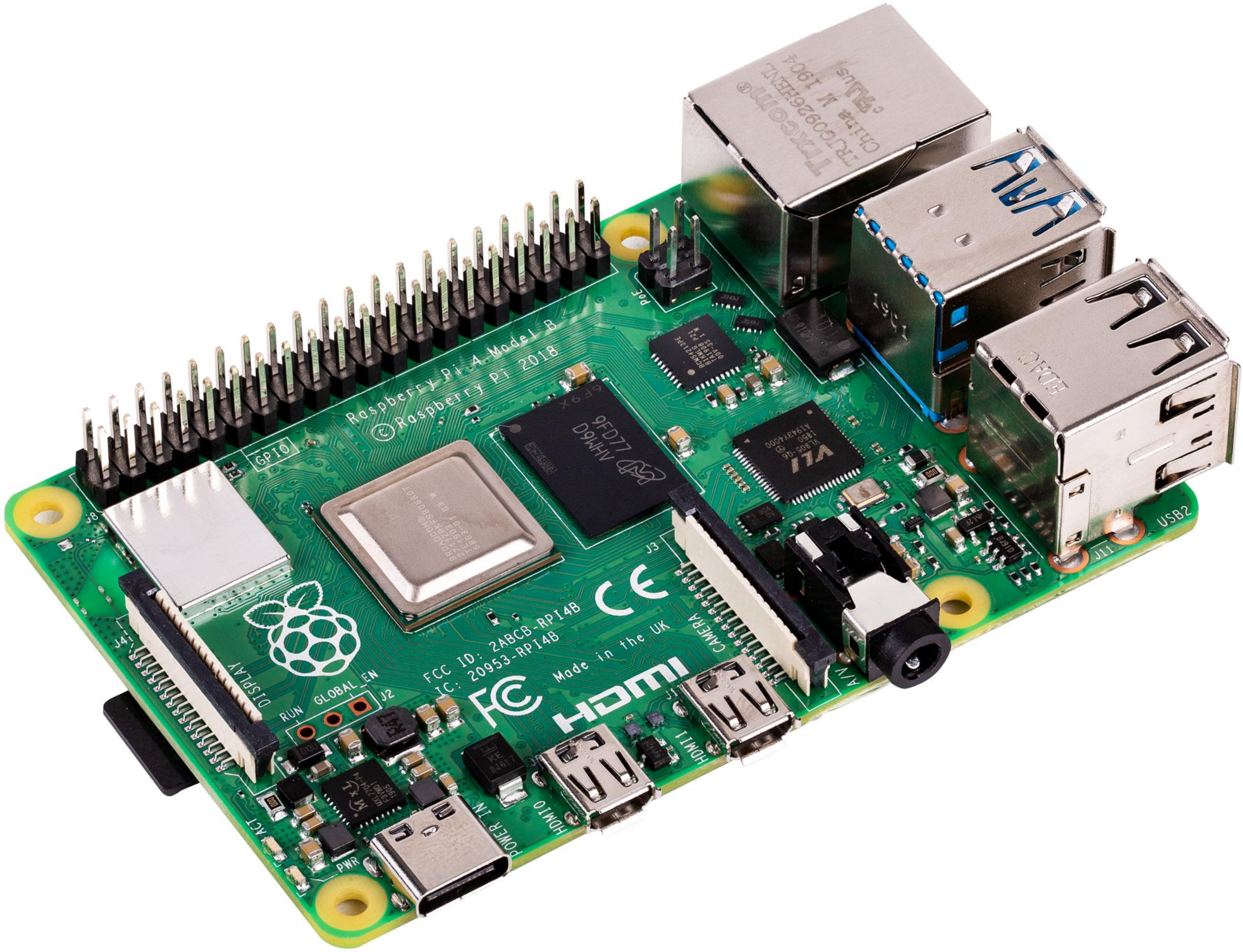
USB-C
Power
supply

MICRO HDMI PORTS
Supporting 2 x 4K displays

USB 2

USB 3

**GIGABIT
ETHERNET**



What do you need to “make it go”?

You need the Pi

A Power Supply & SD card

An OS or Application Image

Then Possibly...

Keyboard / Mouse / Monitor / Case

OS or Application Images

Raspberry Pi OS (Raspbian)

Linux

Windows (if you feel adventurous)

AllStar Image

Pi-Star

Octo-Pi

1. Select a Windows computer to be used as the setup and control computer for the Raspberry Pi node and do the following steps. The computer you choose needs to be capable of reading and writing microSD memory cards.
2. Click on the following link (or type it into your browser

https://www2.hamvoip.org/RPi2/RPi2-3-4_V1.6-01_Allstar.exe

This will start a download process by opening File Manager on your PC. Save the file in a well know directory – suggest - /My Documents/Allstar.

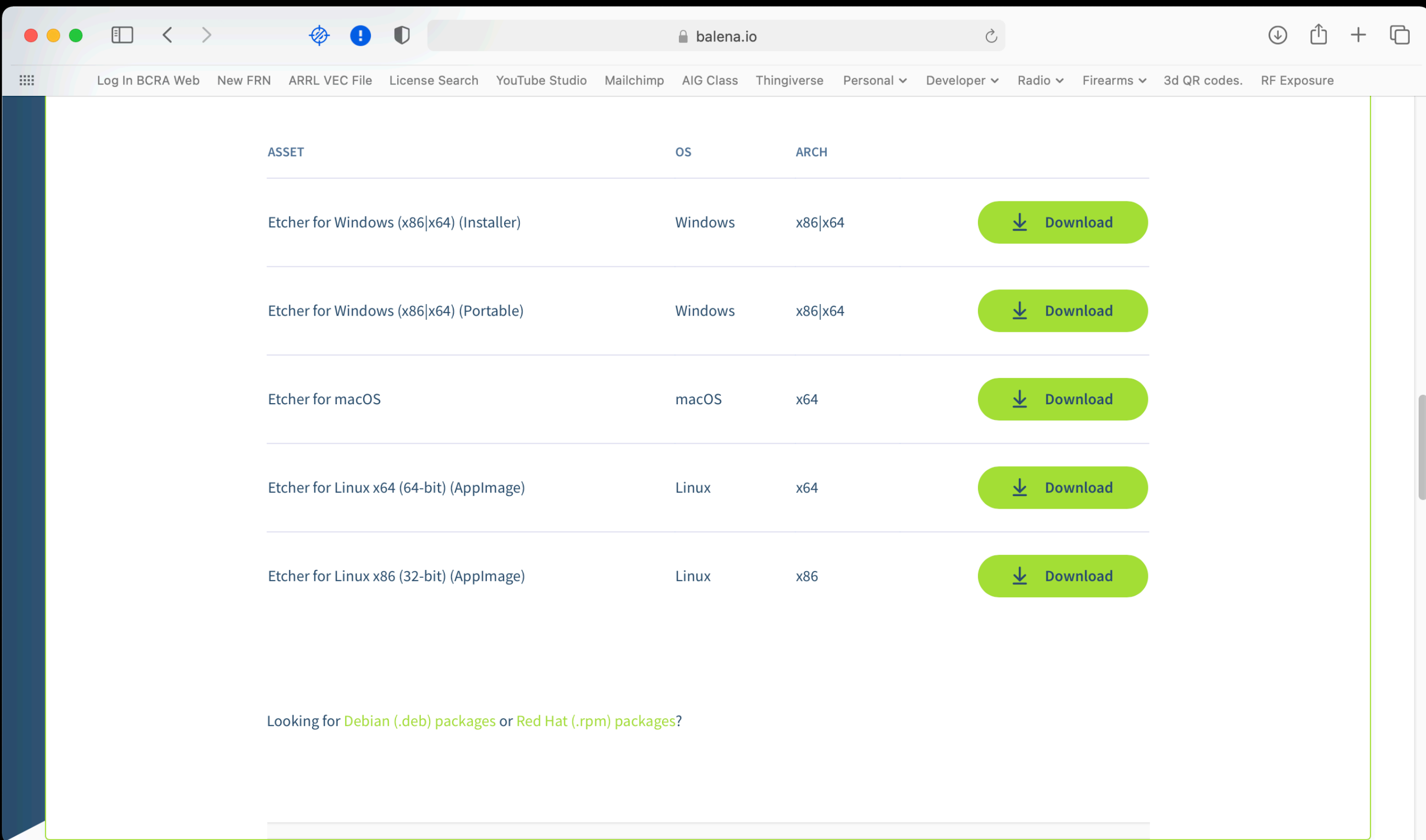
3. Open the directory where the downloaded file was saved. Double click on the file. Depending on your virus protection, you may be presented with a warning notice about an unrecognized app. It is OK to continue the installation. (For Windows Defender, click on **more info** and select **Run Anyway**. The file is a self-extracting executable that will yield the following files:

PuTTY.exe - SSH terminal software.

RPi2-3_V1.6-01_Allstar.img - Rasp Pi image for micro SD card

Win32diskimager-1.0.0-install.exe - Software to write the SD card
WinSCP-5.13.7-Setup.exe – SFTP/FTP Client

Balena Etcher - balena.io





RPi2-3-4_...lstar.img

[Change](#)

4.09 GB

Select target

Flash!



balenaEtcher

is an open source project by



balena

1.5.63



RPi2-3-4_...lstar.img

[Change](#)

4.09 GB

Generic- ...-SD Media

[Change](#)

15.64 GB

Flash!



balenaEtcher

is an open source project by



balena

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Connect to a WiFi network

wpa_supplicant.conf

Be careful that it's a real text file

my favorite editor is Atom

Copy to the SD card - it will disappear

Project

- Wpa_suppliants
 - wpa_supplicant_DRIFT2.conf
 - wpa_supplicant_RADIOHS copy.conf
 - wpa_supplicant_RADIOHS.conf
 - wpa_supplicant_SSBC.conf
 - wpa_supplicant.conf

wpa_supplicant_SSBC.conf

```
1 ctrl_interface=DIR=/var/run/wpa_supplicant GROUP=netdev
2 update_config=1
3 ap_scan=1
4 fast_reauth=1
5 country=US
6
7 network={
8     ssid="SSBC_NET"
9     psk="john3"
10    id_str="0"
11    priority=100
12 }
13
```

wpa_supplicant.conf

```
ctrl_interface=DIR=/var/run/wpa_supplicant GROUP=netdev
update_config=1
ap_scan=1
fast_reauth=1
country=US

network={
    ssid="RADIOHS"
    psk="4b4231434e42647269666740001"
    id_str="0"
    priority=100
}
```

R-Pi Models

Pi 4 - various memory - built in WiFi

Pi 3 - cheaper, but no WiFi

Zero - W

Pico - Arduino

A practical application or two

Allstar node controller

DMR / D-Star / Fusion Hotspot

Monitor a 3D printer

Pi-Star Digital Voice Dashboard for MW0MWZ

[Dashboard](#) | [Admin](#) | [Config](#)

Modes Enabled

D-Star	DMR
YSF	P25

Network Status

D-Star Net	DMR Net
YSF Net	P25 Net
Internet	

Radio Info

Trx	Listening
Tx	431.187500 MHz
Rx	431.187500 MHz
FW	ZumLibre:20170414

D-Star Repeater

RPT1	MW0MWZ B
RPT2	MW0MWZ G

D-Star Network

APRS	uk.aprs2.net
IRC	rr.openquad.net
Linked to REF001 C (DPlus Outgoing)	

DMR Repeater

DMR ID	2353150
DMR CC	1
TS1	disabled
TS2	enabled
TG 91/not linked	
DMR Master	
bm-dmr.uk	

Active Starnet Groups

Callsign	LogOff	Info	UTOT	GTOT
PISTAR B	PISTAR U	Pi-Star User Group on D-Star	30	30
GW6GM B	GW6GM U	Blackwood Club Members Group	30	30

Last 20 calls heard via this Gateway

Time (BST)	Mode	Callsign	Target	Src	Dur(s)	Loss	BER
2017-05-30 16:30:19	D-Star	M0VDM/DAVE	CQCQCQ via REF001 C	Net	0.8	0%	0.2%
2017-05-30 16:27:55	DMR Slot 2	KE4CWN	TG 91	Net	0.5	0%	0.1%
2017-05-30 16:25:15	DMR Slot 2	GBCAS	TG 91	Net	10.5	8%	0.0%
2017-05-30 16:24:52	DMR Slot 2	TNGORH	TG 91	Net	18.1	0%	0.0%
2017-05-30 16:19:35	DMR Slot 2	EA3HSP	TG 91	Net	1.6	0%	0.0%
2017-05-30 16:17:56	D-Star	M0W1Q/5100	CQCQCQ via REF001 C	Net	11.8	0%	0.0%
2017-05-30 16:17:23	D-Star	G8000/DNGL	CQCQCQ via REF001 C	Net	1.4	0%	0.0%
2017-05-30 16:16:36	D-Star	N2WA	CQCQCQ via REF001 C	Net	0.7	0%	0.0%
2017-05-30 16:11:39	D-Star	I23LCE/d74	CQCQCQ via REF001 C	Net	1.9	0%	0.5%
2017-05-30 16:10:44	D-Star	M0W0WZ/INFO	CQCQCQ via REF001 C	Net	7.1	0%	0.0%
2017-05-30 16:10:42	D-Star	M0W0WZ/M	I	RF	0.7		0.0%
2017-05-30 16:09:28	D-Star	BA4SSG/WIN	CQCQCQ via REF001 C	Net	1.2	0%	0.0%
2017-05-30 16:05:55	D-Star	Z10HQ/NEIL	CQCQCQ	Net	7.9	0%	0.0%
2017-05-30 15:56:09	D-Star	K8BOM/DVAP	CQCQCQ	Net	0.1	0%	10.3%
2017-05-30 15:54:49	D-Star	M0NEU/ID51	CQCQCQ	Net	1.2	96%	0.0%
2017-05-30 15:49:35	D-Star	G6IQL	CQCQCQ	Net	0.0	0%	0.0%
2017-05-30 15:48:20	D-Star	KE4N1A/RSNC	CQCQCQ	Net	0.4	0%	0.0%
2017-05-30 15:47:01	D-Star	SQ0F18/ID31	CQCQCQ	Net	0.2	0%	0.0%
2017-05-30 15:40:50	D-Star	D5SPXJ/SUN	CQCQCQ	Net	0.4	0%	0.0%
2017-05-30 15:36:33	D-Star	M0W0WZ/DNGL	CQCQCQ	Net	6.8	0%	0.0%

Last 20 calls that accessed this Gateway

Time (BST)	Mode	Callsign	Target	Src	Dur(s)	BER
2017-05-30 16:10:42	D-Star	M0W0WZ/M	I	RF	0.7	0.0%



X/Y

Z

Tool (E)

General

What about Allstar?

The Clear Node

The Shari Node -

- assembled or kit?

Clear Node



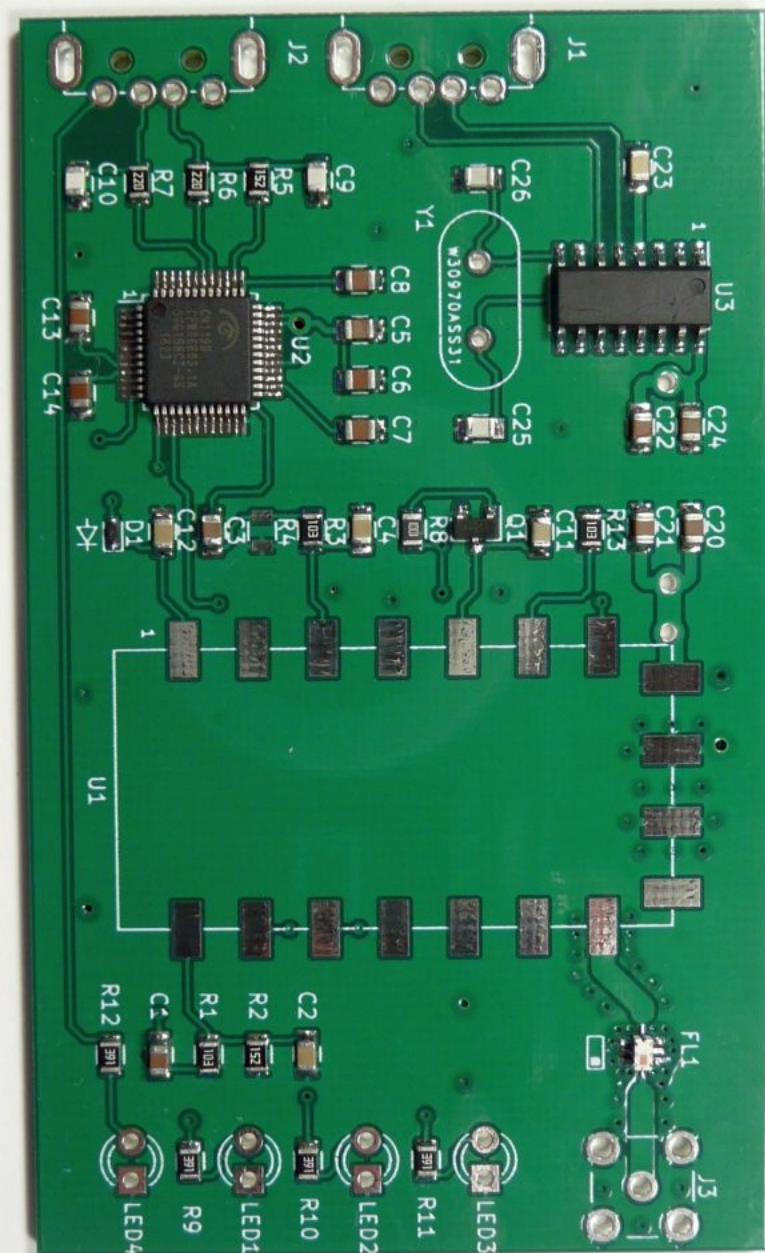
SHARI Pi4U

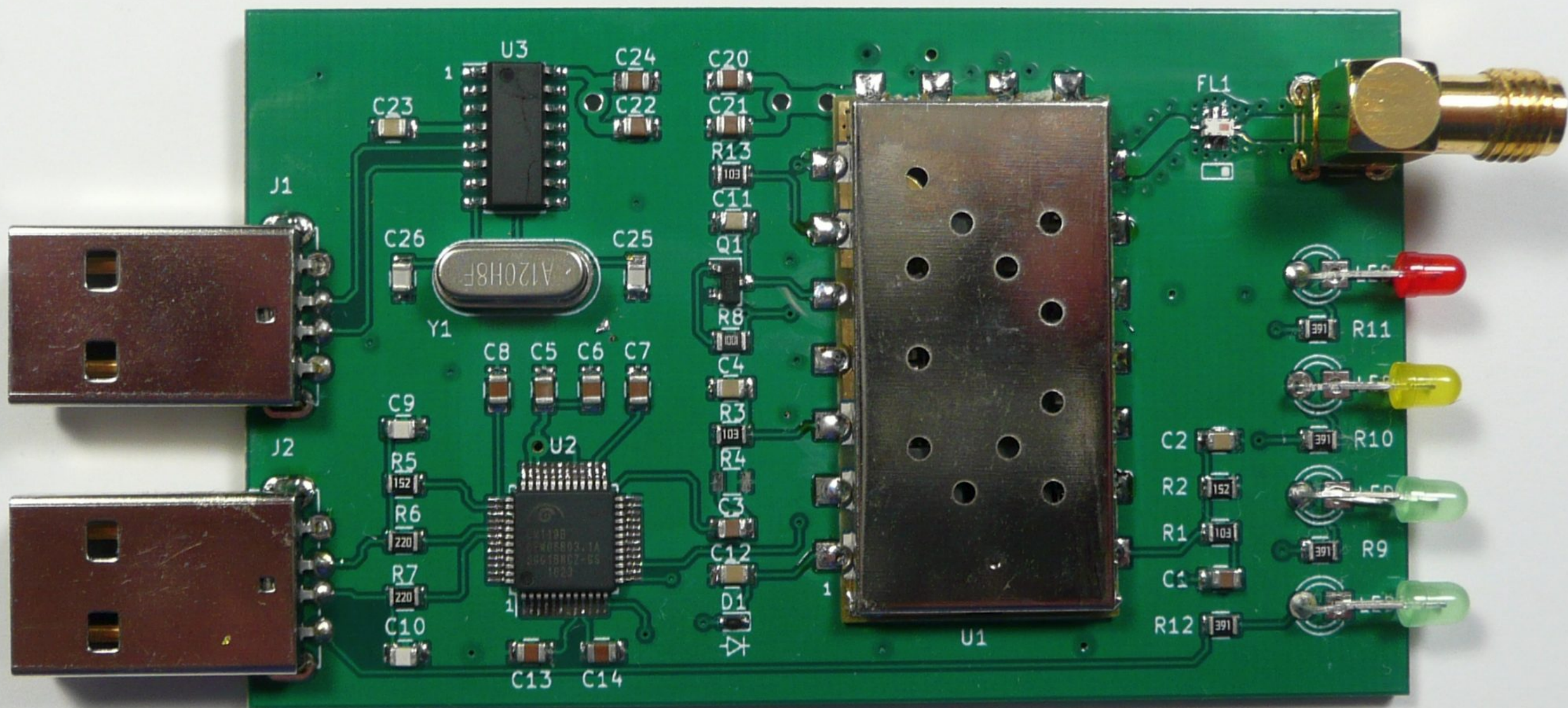


kitsforhams@gmail.com

POWER ● COMMS ● COS ● PTT ●










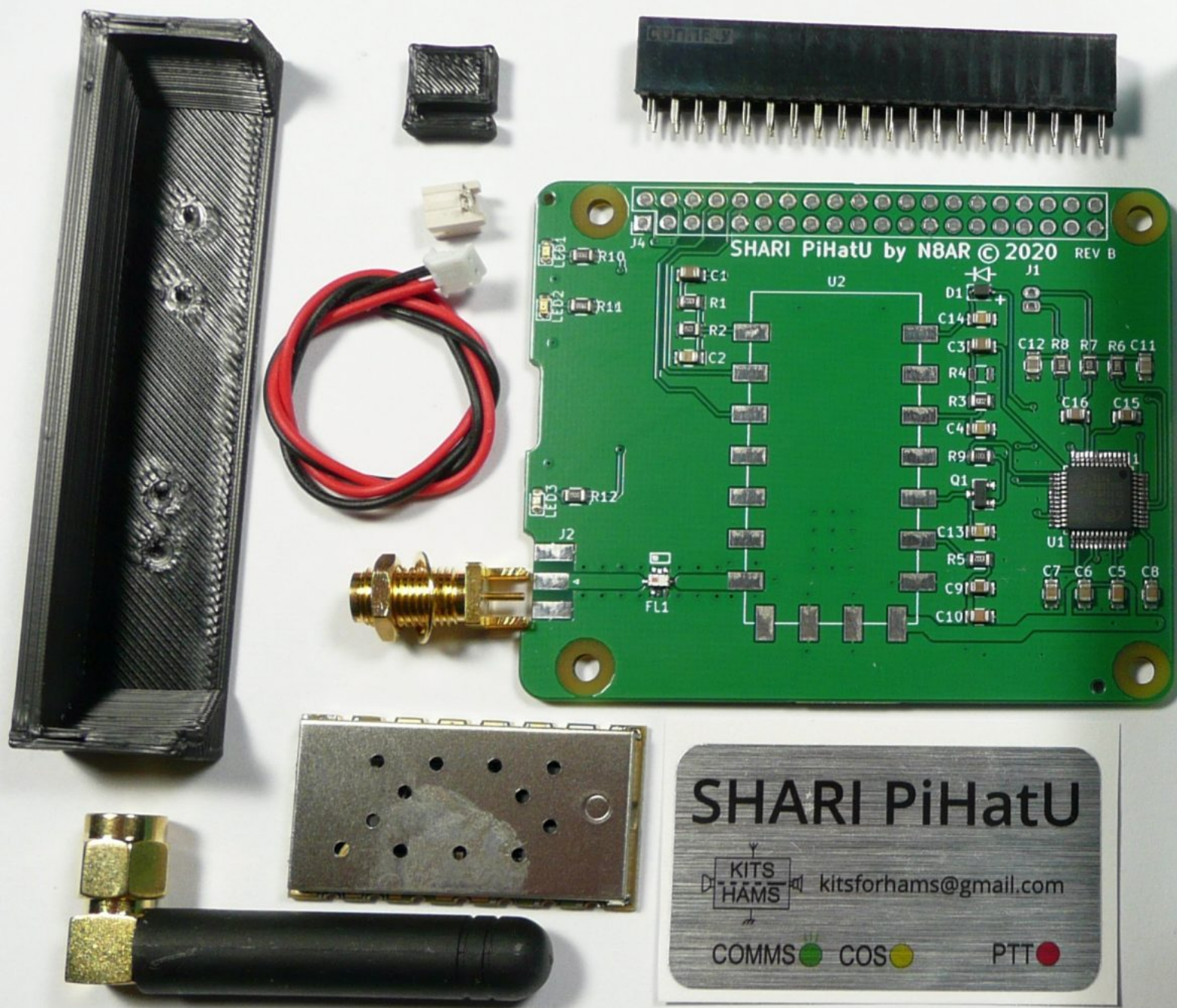


SHARI PiHatU



kitsforhams@gmail.com

COMMS  COS  PTT 



SHARI PiHatU

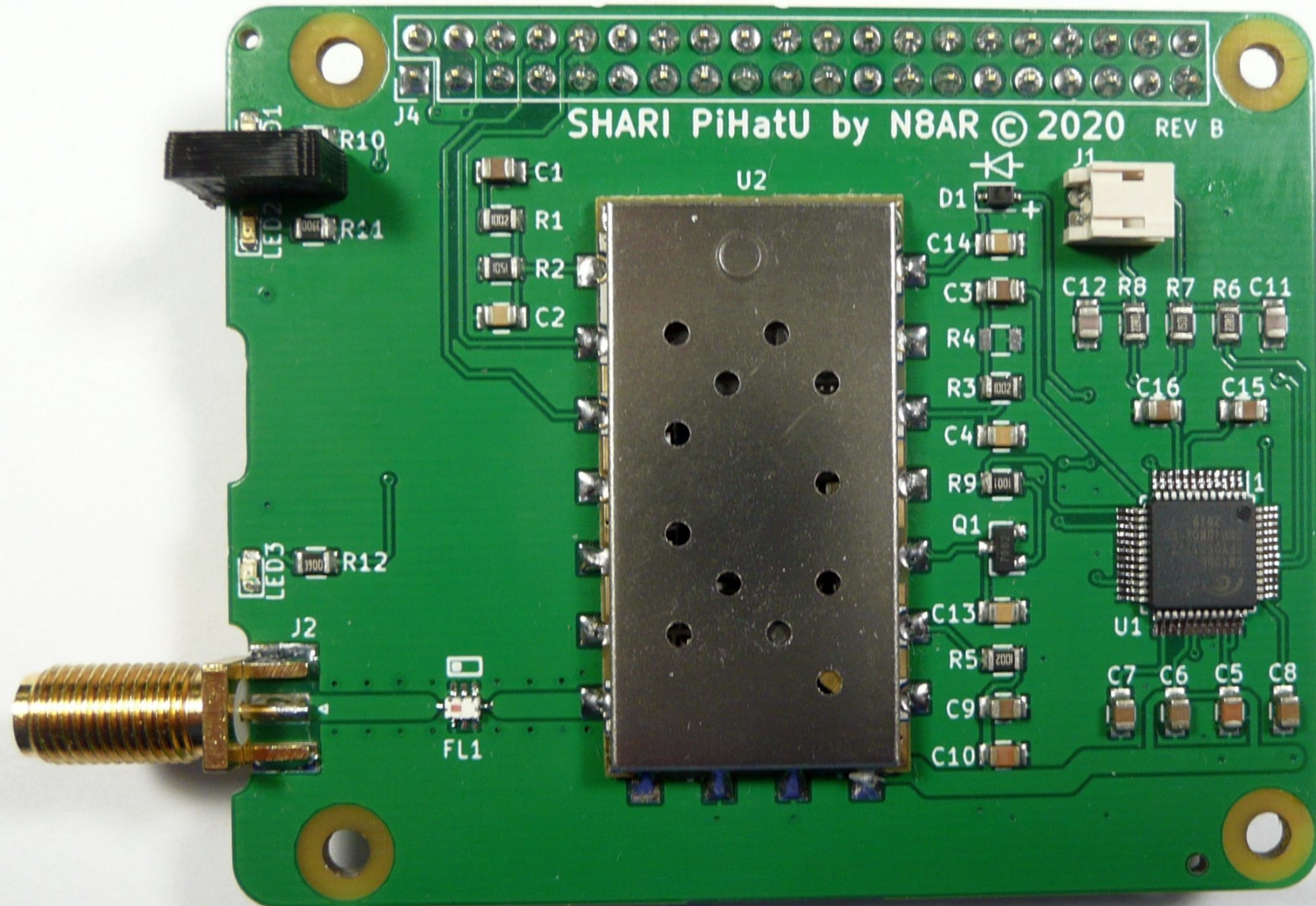
KITS
HAMS

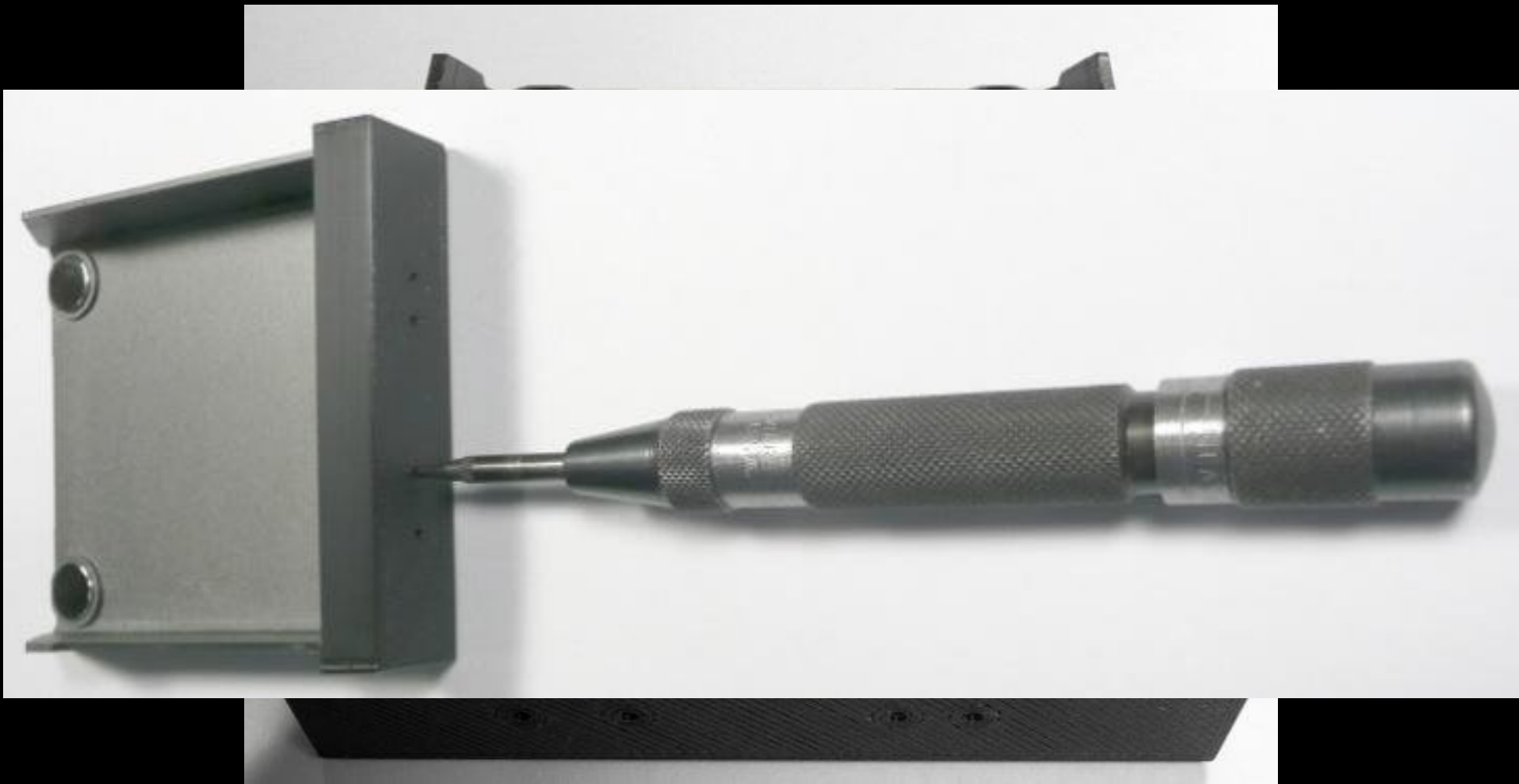
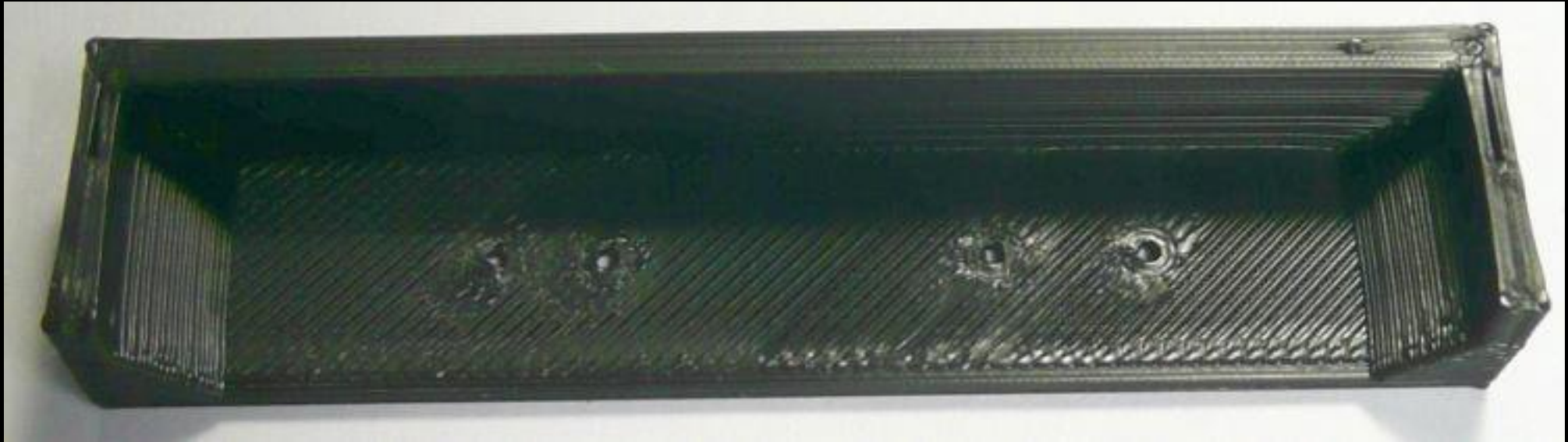
kitsforhams@gmail.com

COMMS COS PTT



SHARI PiHatU by N8AR © 2020 REV B







PI CAMERA
MOUNT

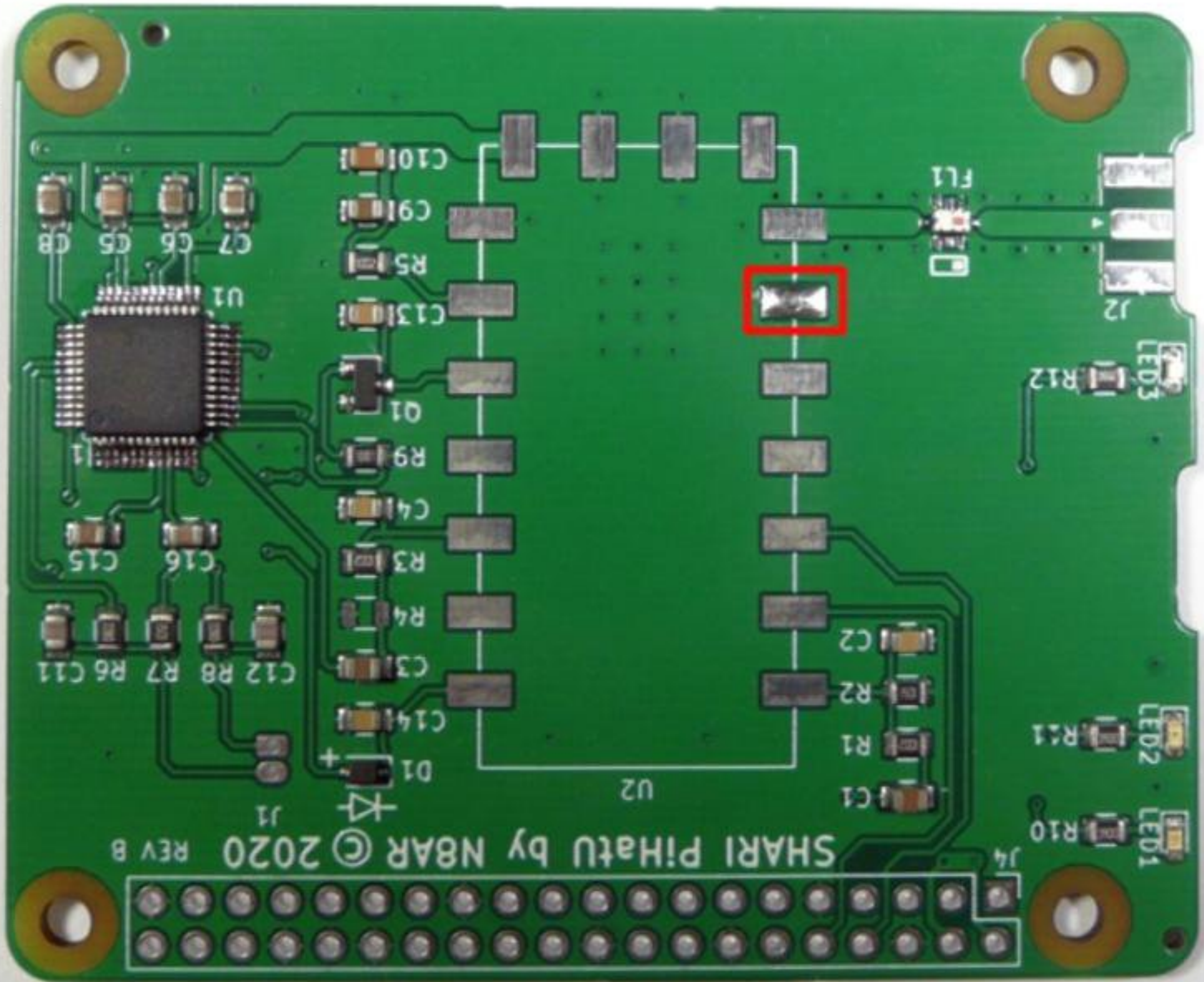
#21
#16
GND
#12
GND
ID_SC
CE1
CE0
#25
GND
#24
#23
GND
#18
RXD
TXD
GND
5V
5V

GND
#26
#19
#13
#6
#5
ID_SD
GND
SCLK
MISO
MOSI
3.3V
#22
#27
#17
GND
#4
SCL
SDA
3.3V

DISPLAY
PORT

PI CAMERA
PORT

Argon
COMPUTING

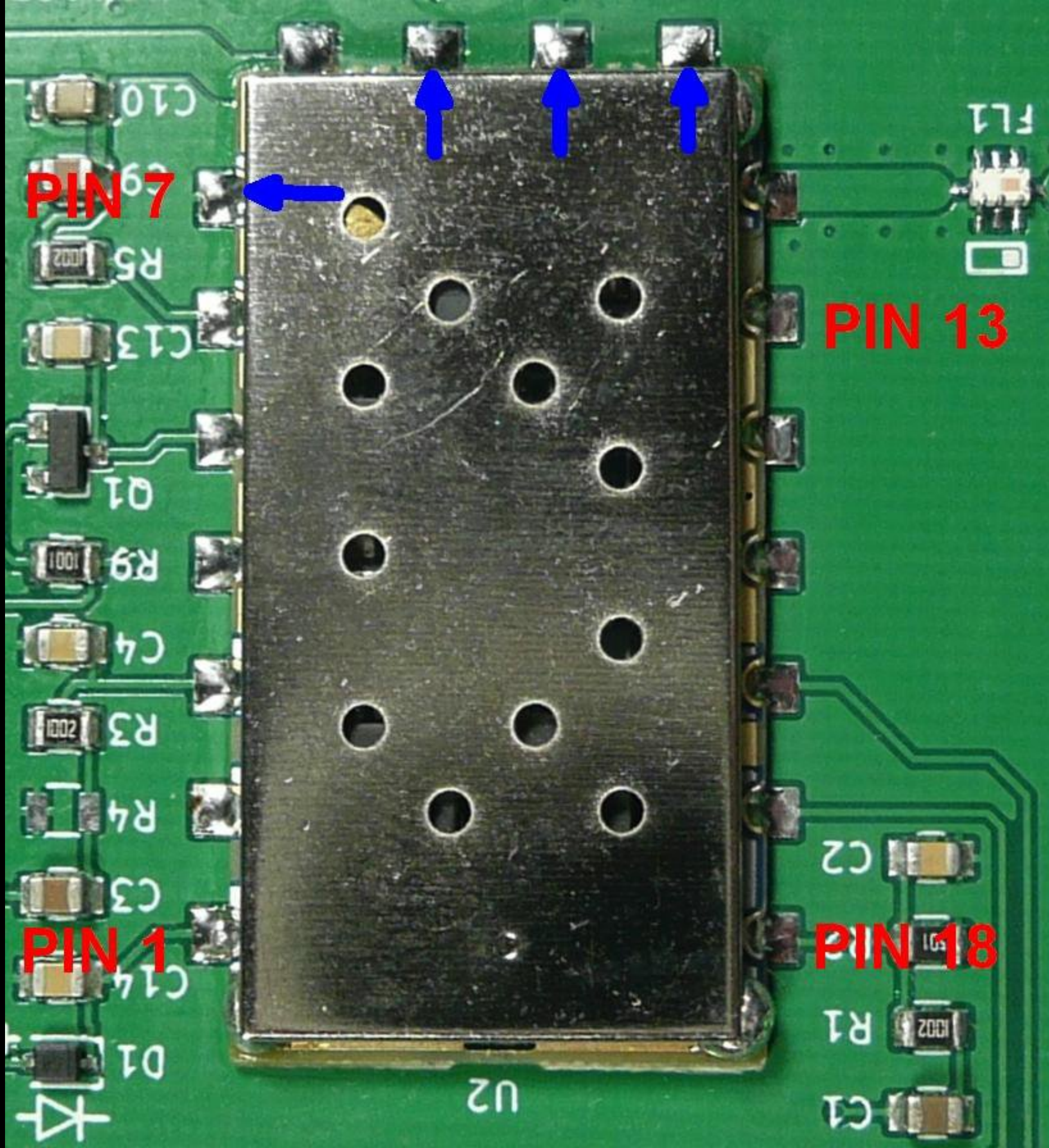


PIN 7

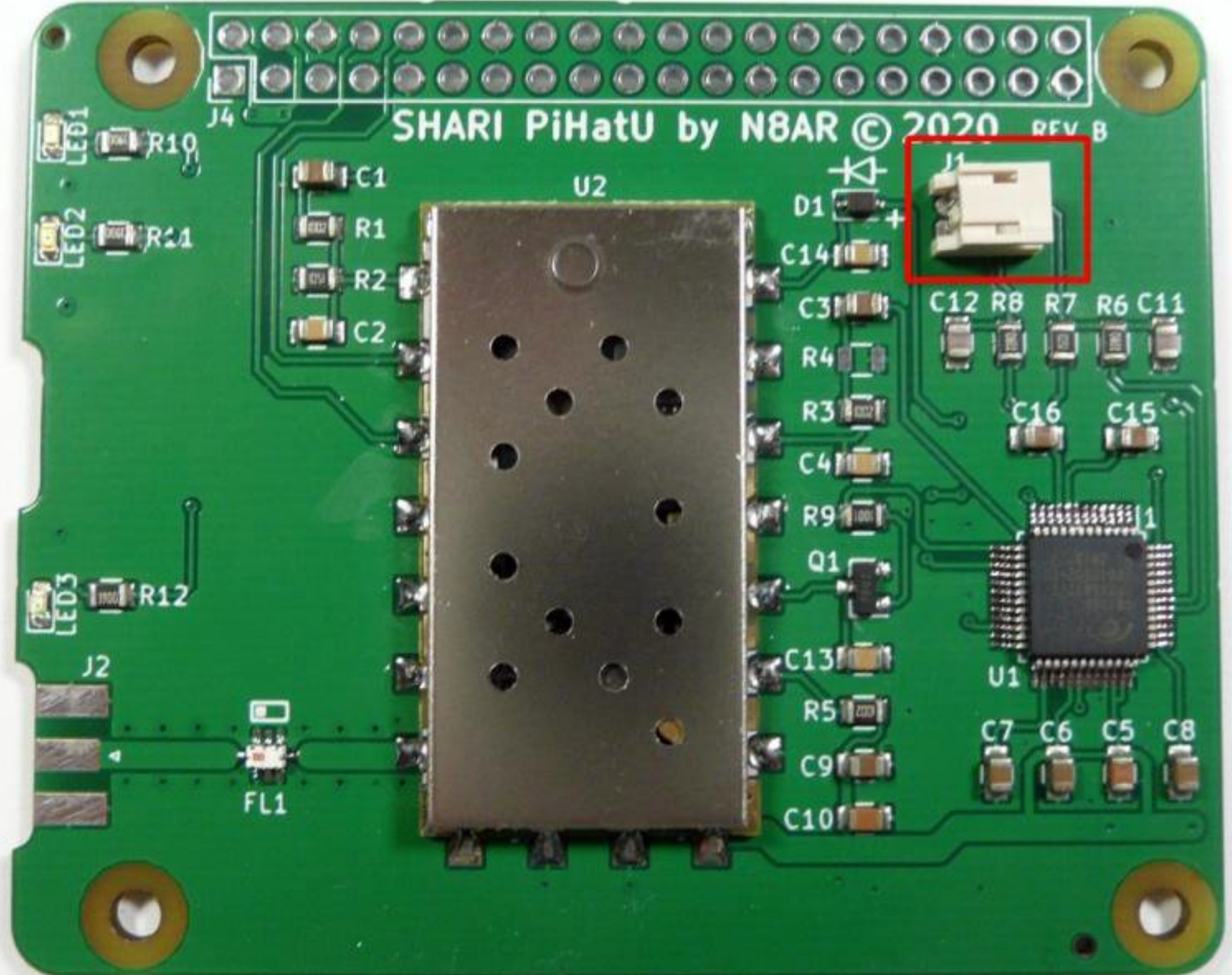
PIN 13

PIN 1

PIN 18



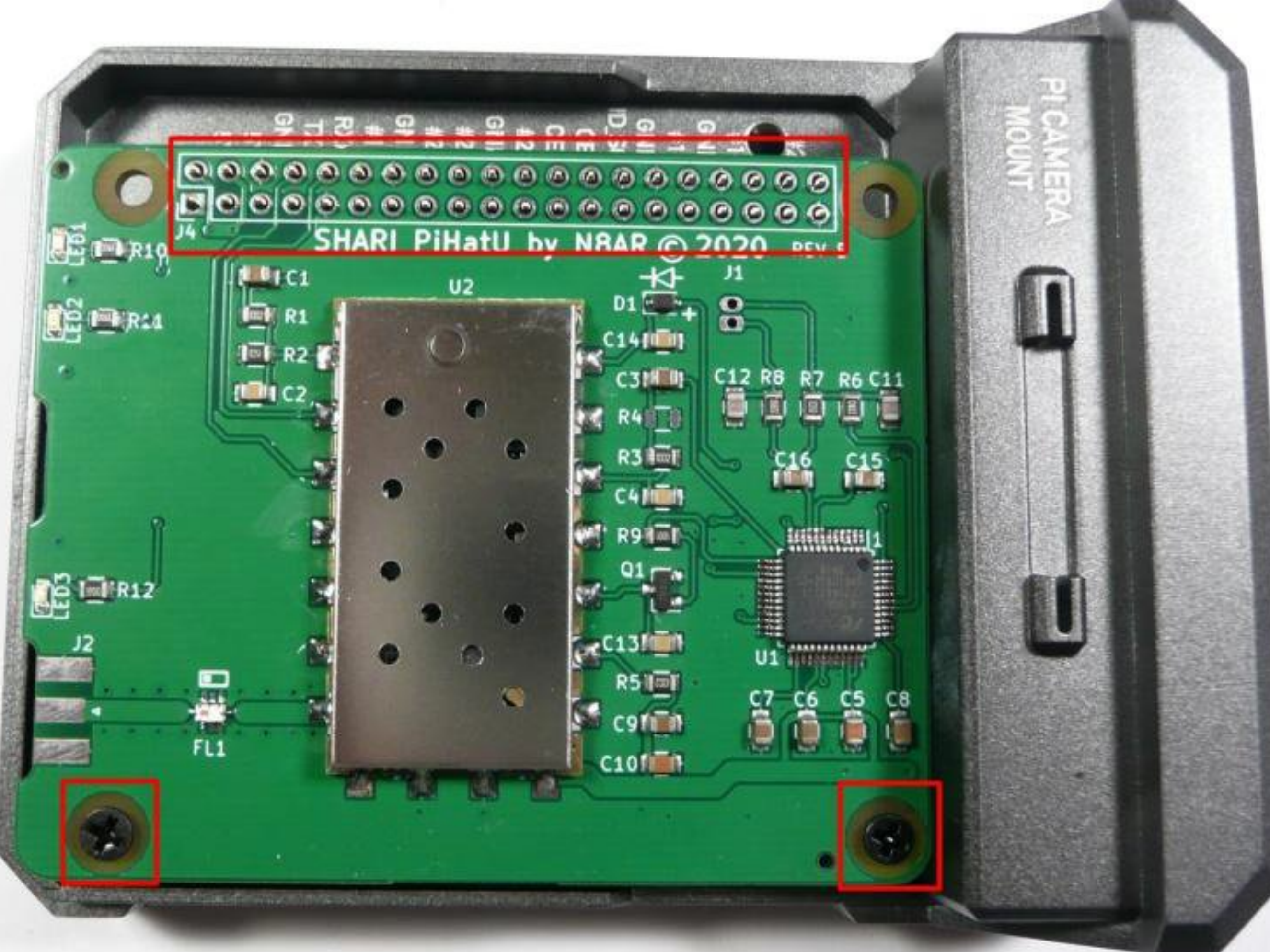
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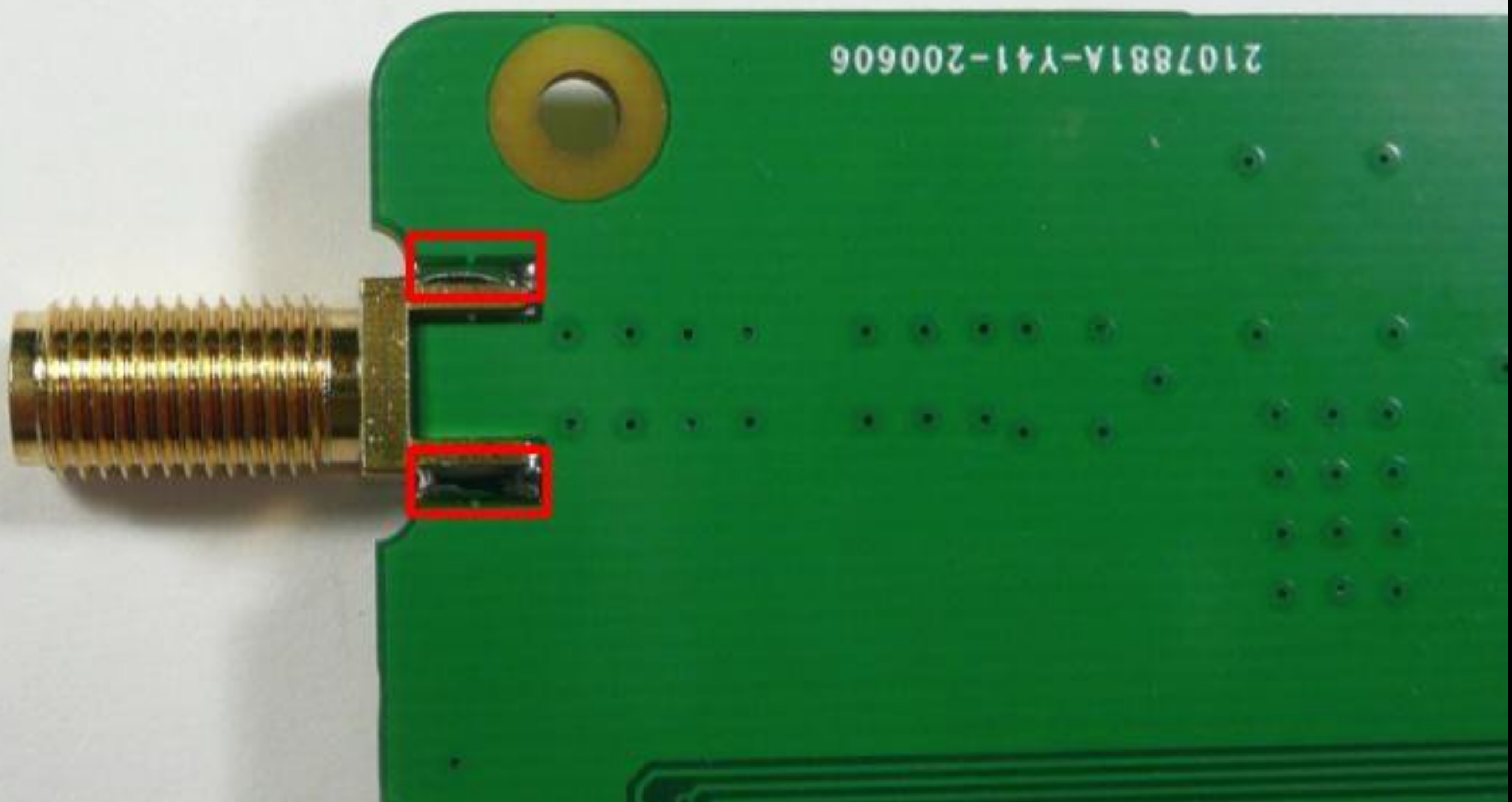


PI CAMERA
MOUNT

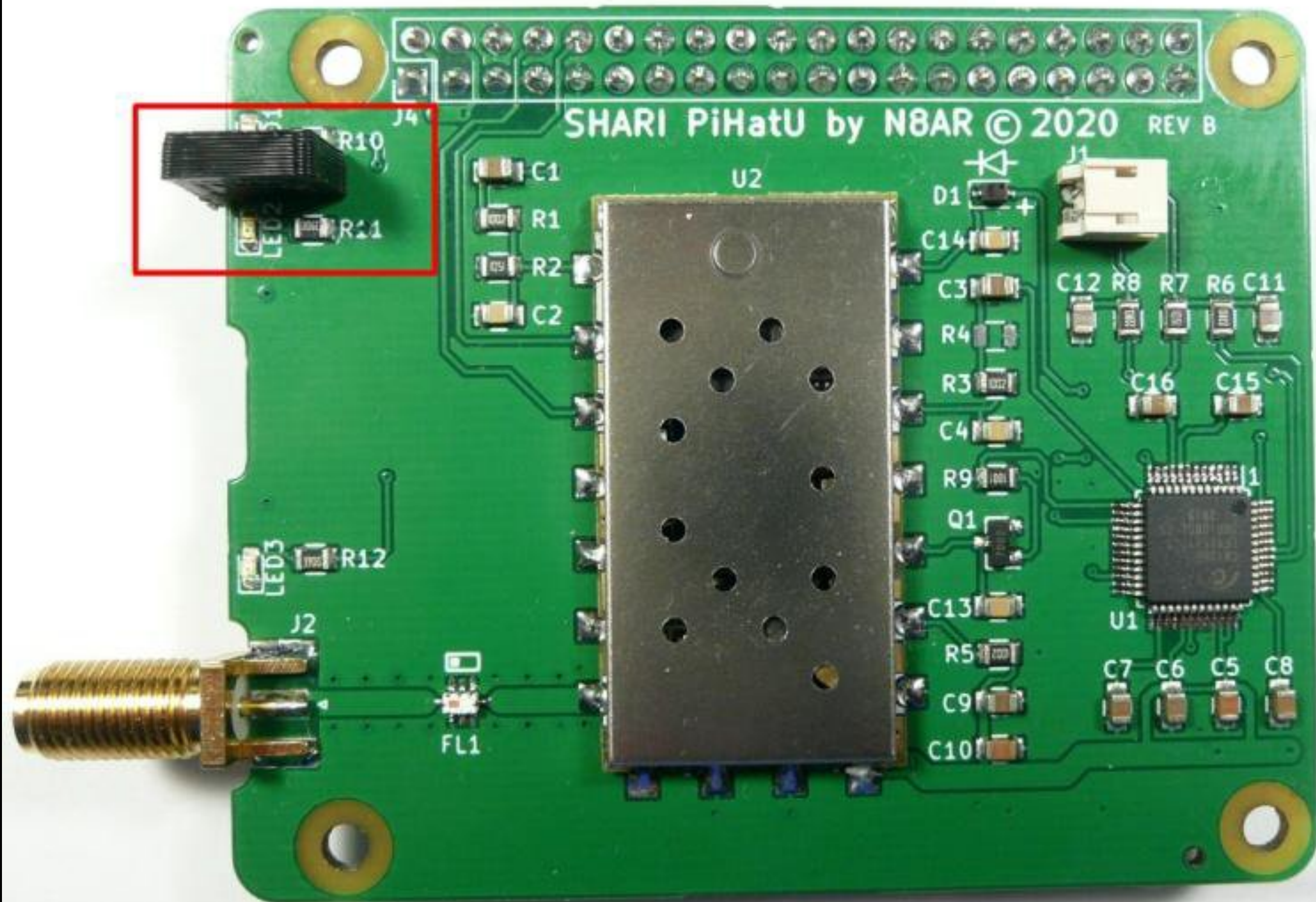


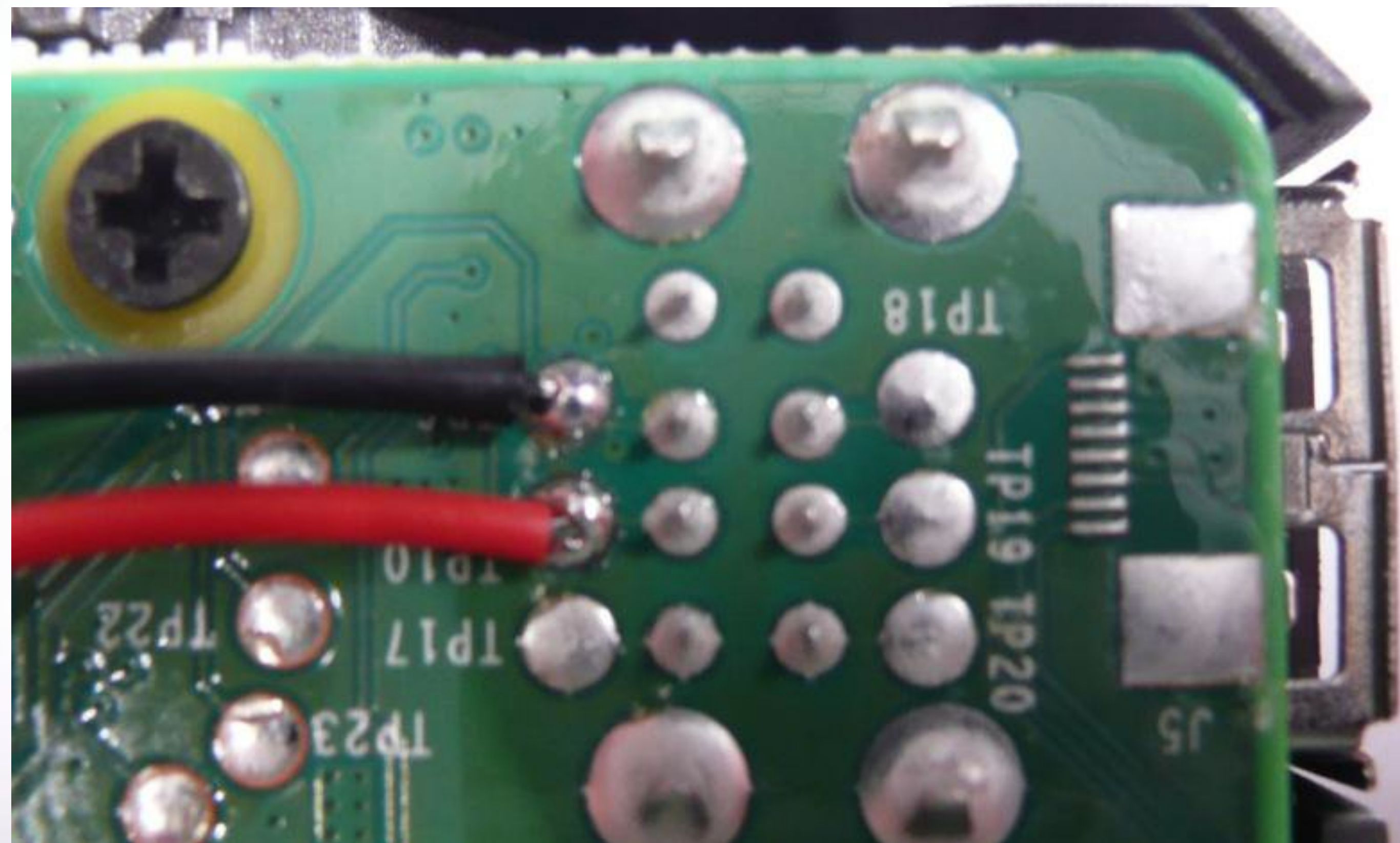
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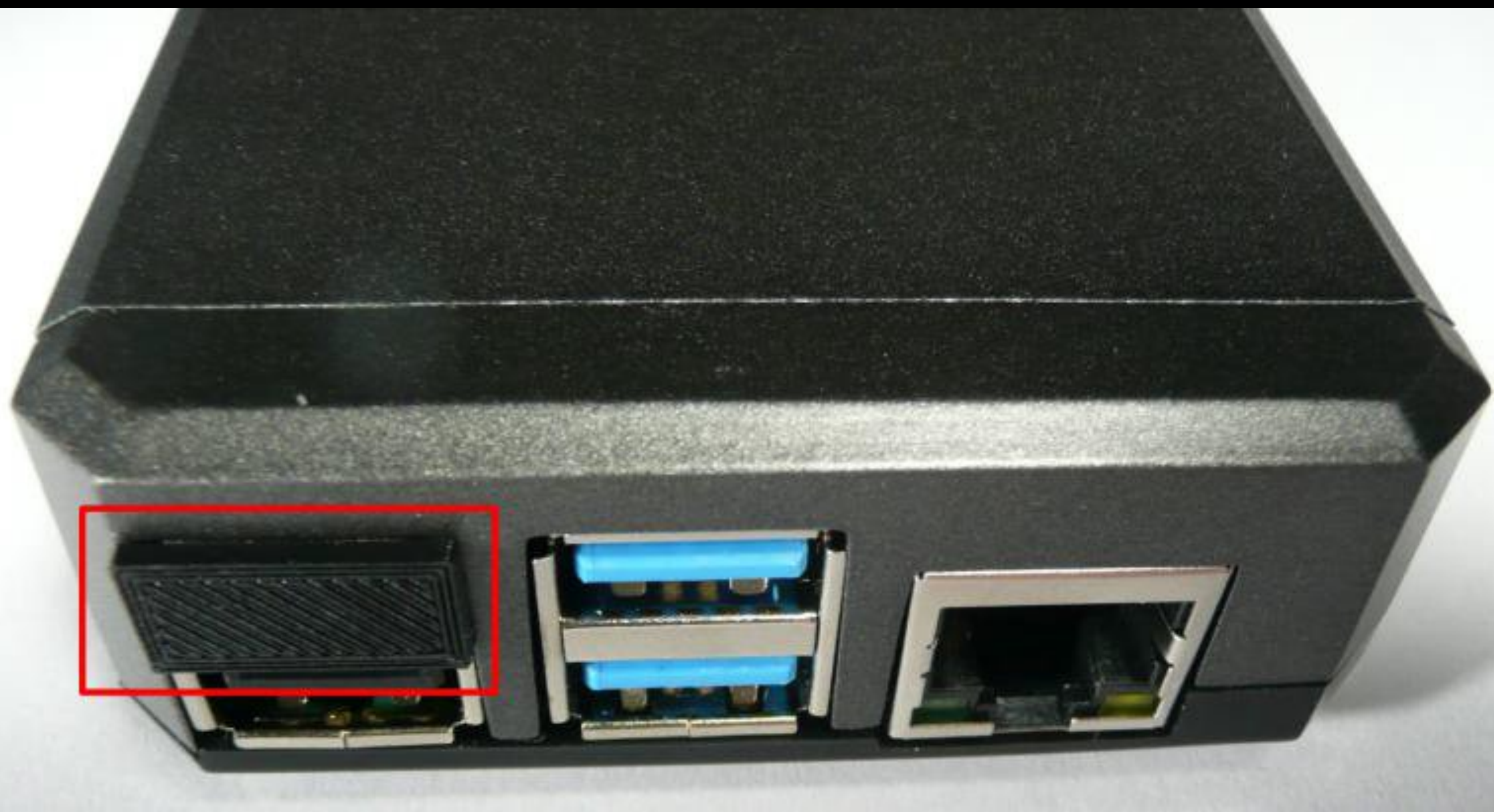




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kitsforhams@gmail.com

COMMS



COS



PTT



Questions?

Comments?

