

The schematic diagram illustrates the U-Blox ZED-F9P module's connections to a Raspberry Pi 4B. The module is a red PCB with various pins and components. Key connections include:

- Power:** 3.3V_SW is connected to pin 33 (VCC) and pin 36 (V_BKCP). GND is connected to pin 56 (GND).
- I2C:** SDA/CS is connected to pin 44 (ESP21/SDA/1) and pin 45 (ESP22/SCL/1). SCL/CLK is connected to pin 46 (ESP22/SCL/1).
- UART:** TX2 is connected to pin 27 (TX2) and pin 33 (RX2). RX2 is connected to pin 33 (RX2) and pin 33 (TX2).
- Other Signals:** GNSS_RESET/1 is connected to pin 49 (GNSS_RESET/1). ZED_EXTINT/1 is connected to pin 33 (ZED_EXTINT/1). ZED_TXO is connected to pin 42 (ZED_TXO). ZED_RXI is connected to pin 43 (ZED_RXI).
- Components:** Resistors R4 (10k), R7 (27), R8 (27), R27 (33), R28 (10k), R71 (2.2k), and R72 (2.2k) are shown. Capacitors C29 (2.2uF), C30 (0.1uF), C24 (1.0uF), and C58 (0.1uF) are also present.

VCC Range: 3.0 – 3.6V

3.3V_SW

U5

VCC RESET 8

V_BKCP EXT_INT 17

GNSS_RESET/I

11 18

23 22

RF_IN SDA/C5

9 19

VCC_RF SCL/SCK

ESP21/SDA/I

ESP22/SCL/I

14 3

15 4

ANT_OFF TXD2

16 4

ANT_DETECT RXD2

17 4

ANT_SHORT TXD1/POCI

20 21

TX-RX

TXD1/POCI RXD1/PICO

21 21

RX-TX

7 2

TX-RX

6 1

SAFEBOOT

SAFEBOOT_NEO

U-BLOX_NEO-D9S-00B

7-bit unshifted I2C address: 0x43

3.3V_SW

3.3V_SW

3.3V_SW

C5

2.2uF

GND

C62

0.1uF

GND

C12

1.0uF

GND

The schematic diagram illustrates the internal circuitry of the LARA-R6001D module. It features a central LARA-R6001D chip (U8) which is a multi-functional IC. The chip's pins are connected to various external components and power sources. Key connections include:

- Power and Ground:** The chip is powered by VCCIO (pin 1) and VCCB (pin 16), both connected to a 3.3V SW2 source. Ground connections are provided for pins 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.
- Signal Processing:** The chip's DIR1, DIR2, DIR3, and DIR4 pins are connected to a SN74AVC4T774PW (U6) buffer. The buffer's output is connected to the LARA_18_NI, LARA_18_RXDO, and LARA_18_TXDI pins. The chip's DSR_O, RI_O, DCD_O, DTR_I, RTS_I, CTS_O, TXD_I, and RXD_O pins are connected to the LARA_18_TXDI, LARA_18_RXDO, and LARA_18_NI pins.
- Control and Status:** The chip's PWR_ON, GPIO1, VUSB_DET, RESET_N, GPIO6, GPIO2, GPIO3, GPIO4, SDA, SCL, USB_D-, and USB_D+ pins are connected to the LARA_PWR_ON, LARA_18_NI, LARA_RESET, and LARA_18_TXDI pins.
- Passive Components:** The circuit includes several capacitors (C69, C70, C76, C77, C78, C81, C79, C80) and inductors (L2, L3) for filtering and impedance matching. A 3.3V SW2 source is used for power, and a 100uF capacitor (C76) is used for decoupling.

The schematic diagram illustrates the connection of the USB2514B module to an ESP22/21 module. The power supply section includes V_USB_2 and 3.3V_SW inputs, with decoupling capacitors (C63-C68) and pull-up resistors (R20-R25). The I2C interface is shown with SCL and SDA lines, and the USB pins (D+, D-, VBUS_DET, etc.) are connected to the module's pins. A table on the right lists the module's pins and their functions.

Pin	Function
1	VBUS_DET
2	VBUS_DET
3	VBUS_DET
4	VBUS_DET
5	VBUS_DET
6	VBUS_DET
7	VBUS_DET
8	VBUS_DET
9	VBUS_DET
10	VBUS_DET
11	VBUS_DET
12	VBUS_DET
13	VBUS_DET
14	VBUS_DET
15	VBUS_DET
16	VBUS_DET
17	VBUS_DET
18	VBUS_DET
19	VBUS_DET
20	VBUS_DET
21	VBUS_DET
22	VBUS_DET
23	VBUS_DET
24	VBUS_DET
25	VBUS_DET
26	VBUS_DET
27	VBUS_DET
28	VBUS_DET
29	VBUS_DET
30	VBUS_DET
31	VBUS_DET
32	VBUS_DET
33	VBUS_DET
34	VBUS_DET
35	VBUS_DET
36	VBUS_DET
37	VBUS_DET
38	VBUS_DET
39	VBUS_DET
40	VBUS_DET

GNSS_Rf

50Ω

47pF

D1

GND

C11

47pF

600Ω

FB1

V_ANT

ANT

U14

S 1

GND 2

BP2G1+_POWER_SPLITTER

50Ω

ANT_ZED

50Ω

ANT_NEO

NO PASTE

ANT

BYPASS1

50Ω

NO PASTE

ANT_ZED

BYPASS2

For non-L-Band products:
Do Not Populate U14
Change BYPASS1 & BYPASS2 to PASTE
(Or solder closed manually)

Sheet: 2/2