Transmitter Header

7.4V
RF Transmitter
U100
FS1000A
VCC
DATA — RF_DATA
GND
C100 1u
C101 100n
GND

Program Header

5V USART header P? SWD header 5V
MCU_TX 1 2 SWDIO
MCU_RX 3 4 SWCLK
5 6
7 8
GND   8 Pos Vertical Pin Header   GND

LEDs

5V
R103 200R D10_ Red
GND
DBG_LED R104 200R D101 Green
GND

MCU

U101A
STM32F103C6T6A
JOY_SEL 10 PA0   PB0 18 SW_L
JOY_H 11 PA1   PB1 19 SW_R
JOY_V 12 PA2   PB2/BOOT1 20
RF_DATA 13 PA3   JTDO 39
14 PA4   JNTRST 40
15 PA5   PB5 41
16 PA6   PB6 42
PA7   I2C1_SDA 43 D_SDA
MCU_TX 29 PA8   I2C1_SCL 45 D_SCL
MCU_RX 30 USART1_TX PB9 46
31 USART1_RX PB10 21 DBG_LED
USB_D_N USBDM PB11 22
USB_D_P USBDP PB12 25
SWDIO 34 JTMS/SWDIO PB13 26
SWCLK 37 JTCK/SWCLK PB14 27
38 JTDI PB15 28
2 PC13 BOOT0 44
PC14 NRST 7 EN
PC15
5 OSC_IN
OSC_OUT
Xtal100
C115 15p   C116 15p
GND

USB-C

VBUS
J100 USB4085-GF-A
B9 VBUS   VBUS A4
B4 VBUS   VBUS A9
D100 SP0503BAHT
B8 SBU2   SBU1 A8
R100 5.1k B5 CC2   CC1 A5 R101 5.1k
USB_D_P B6 Dp2   Dp1 A6 USB_D_P
USB_D_N B7 Dn2   Dn1 A7 USB_D_N
B1 GND   GND A1
12 GND   GND A12
SHIELD   SHIELD 3
R102 1M C106 1n SHIELD   SHIELD 4
GND   GND

Power

5V
U101B STM32F103C6T6A
1 VBAT
24 VDD_1   VSS_1 23
36 VDD_2   VSS_2 35
48 VDD_3   VSS_3 47
9 VDDA   VSSA 8
C105 4.7u C102 100n C103 100n C104 100n
GND   GND

7.4V
U102 AMS1117-5.0
3 VIN VOUT 2 5V
GND VOUT 4
C107 10u   C108 22µF
GND

P102 S2B-PH-K-S(LF)(SN)
1
2 BAT_+
GND

Switches

SW100 TL2201EEXB
5V
2 1 R105 10k R106 100R SW_L
COMMON 3
C109 100n
5 4
6
GND   GND

SW101 JS202011CQN
7.4V
BAT_+ 2 1
COMMON 3
BAT_+ 5 4
6
GND

SW102 TL2201EEXB
5V
2 1 R113 10k R114 100R SW_R
COMMON 3
C113 100n
5 4
6
GND   GND

S101 USLPT2819DT4TR
5V
R115 10k R116 100R EN
C114 100n
GND

Joystick

5V
S100 THB001P
V1 V+
V3 V-   V V2
H1 H+
H3 H-   H H2
B1A B1B CS-C CS-NO B2A B2B
SHIELD SHIELD SHIELD
S1 S2 S3 S4
R107 10k R108 10k R109 10k
R110 100R JOY_V
R111 100R JOY_H
R112 100R JOY_SEL
C110 100n C111 100n C112 100n
GND

Comment	Description	Designator	Footprint	LibRef	Quantity
1u	MLCC, 0603, 1u, 10%, 50V, X5R	C100	MLCC_0603_M	CMP-001-0565-1	1
100n	MLCC, 0603, 100n, 10%, 50V, X7R	C101, C102, C103, C104, C109, C110, C111, C112, C113, C114	MLCC_0603_M	CMP-001-0815-1	10
4.7u	MLCC, 0805, 4.7u, 20%, 50V, X5R	C105	MLCC_0805_M	CMP-001-1830-1	1
1n	MLCC, 0603, 1n, 10%, 50V, X7R	C106	MLCC_0603_M	CMP-001-0786-1	1
10u	MLCC, 0805, 10u, 10%, 50V, X5R	C107	MLCC_0805_M	CMP-001-0829-2	1
TCJB226M025R0150	Cap Tant Solid 22uF 25V B CASE 20% (3.5 X 2.8 X 1.9mm) SMD 3528-21 0.15 Ohm 105°C T/R	C108	1210_Tantalum	CMP-0001-00036-4	1
15p	MLCC, 0402, 15p, 10%, 25V, C0G/NP0	C115, C116	MLCC_0402_M	CMP-001-1853-1	2
SP0503BAHT	SP050xBA Series 8.5 V 30 pF Triple Uni-Directional TVS Avalanche Diode-SOT143-4	D100	LFUS-SOT143-4_V	CMP-ROOT-01259-1	1
Green	Generic green 0603 LED	D101	0603 LED	CMP-ROOT-00024-1	1
Red	Generic red 0603 LED	D102	0603 RED LED	CMP-ROOT-00025-2	1
USB4085-GF-A	USB Connector, 16 Contact(s), Female, Right Angle, Solder Terminal, Locking, Receptacle	J100	FP-USB4085-GF-A-MFG	CMP-001-1800-1	1
S2B-PH-K-S(LF)(SN)	Conn Shrouded Header (4 Sides) HDR 2 POS 2mm Solder RA Thru-Hole Box	P102	B5B-PH-K-S(LF)(SN)	CMP-ROOT-00728-2	1
8 Pos Vertical Pin Header	Connector Header Through Hole 8 position 0.100" (2.54mm)	P?	8 POS Vertical Pin Header	CMP-ROOT-00235-2	1
5.1k	Resistor, 0603, 5.1k, 1%, 1/10W	R100, R101	Resistor_0603_M	CMP-001-0094-2	2
1M	Resistor, 1206, 1M, 1%, 1/4W	R102	Resistor_1206_M	CMP-0001-00051-1	1
200R	Resistor, 0603, 200R, 1%, 1/10W	R103, R104	Resistor_0603_M	CMP-001-0060-2	2
10k	Resistor, 0603, 10k, 1%, 1/10W	R105, R107, R108, R109, R113, R115	Resistor_0603_M	CMP-001-0101-2	6
100R	Resistor, 0603, 100R, 1%, 1/10W	R106, R110, R111, R112, R114, R116	Resistor_0603_M	CMP-001-0054-5	6
THB001P	Multi-Directional Thumbstick, 2 Axis, Center Momentary Switch, 12VDC, THB Series	S100	THB001P	CMPL-001-A00000-7	1
USLPT2819DT4TR	Keypad Switch, SPST, 0.05A, 1.96N, Solder Terminal, Panel Mount	S101	USLPT2819DT4TR-Footprint-1	CMP-ROOT-01290-1	1
TL2201EEXB	Pushbutton Switch, DPDT, ON-ON, 100 mA, 30V DC, PC Pin, TL2201 Series	SW100, SW102	TL2201EEXB-Footprint-1	CMP-ROOT-01258-1	2
JS202011CQN	Slide Switch, 1 Positions, Dpdt, Latched, 0.3A, 6Vdc, 6 Pcb Hole Cnt, Solder Terminal, Through	SW101	FP-JS202011CQN-MFG	CMP-ROOT-01260-1	1
FS1000A	FS1000A 433MHZ RF transmitter & XY-MK-5V Receiver Module	U100	2.54mm 3-pin horizontal	CMP-ROOT-01261-2	1
STM32F103C6T6A	MCU 32-bit STM32F ARM Cortex M3 RISC 32KB Flash 2.5V/3.3V 48-Pin LQFP Tray	U101	STM-LQFP48_M	CMP-00012-1	1
AMS1117-5.0	LDO Regulator Pos 5V 1A 4-Pin(3+Tab) SOT-223 / 1A LOW DROPOUT VOLTAGE REGULATOR	U102	SOT230P700X180-4N	CMP-00014-1	1
ABM11-16.000MHZ-12N1G-T	Crystal 16MHz ±10ppm (Tol) ±15ppm (Stability) 12pF FUND 150Ohm 4-Pin Ultra Mini-CSMD T/R	Xtal100	FP-ABM11-MFG	CMP-ROOT-01254-3	1