1PPS SMA

VBUS to 3.3V Buck

VBUS_+5V
C1 4u7F
U1
VIN_SW SW
VIN_A VO/VFB
VINH GND
Thermal Pad
ST1S06PU33R
L1 3u3H
DVDD_33
C2 22uF
GND

VBUS_+5V
R14 4k7
U3
1PPS
1PPS_LED
1PPS_BUFF
VCC
GND
NC7WV125K8X
C29 100nF
R15 0 Ohm
DNP
R13 4k7
D1 APT1608ZGCK
J1
1PPS_BUFF
MNT 1
MNT 2
MNT 3
MNT 4
142-0701-201

USB 3.0 Connector

J3
VBUS
D-
D+
GND
STDA_SSRX-
STDA_SSRX+
GND_DRAIN
STDA_SSTX-
STDA_SSTX+
SHIELD
SHIELD
GSB316441CEU
USB3.0_SSTX_N
USB3.0_SSTX_P
C3 100nF
C5 100nF
SSTX_N
SSTX_P
D_N
D_P
SSRX_N
SSRX_P
R4 1M
DNP

AX88179B

DVDD_33
R1 4k7
U2
USB
VBUS
USB_DP
USB_DM
SSUSB_TXA
SSUSB_TXB
SSUSB_RXA
SSUSB_RXB
GPHY MDI
MDIP0
MDIN0
MDIP1
MDIN1
MDIP2
MDIN2
MDIP3
MDIN3
Clock
XTAL_IN
XTAL_OUT
Misc Pins
GPIO_2
GPIO_3
GPIO_4
GPIO_8/PME
LED_0
LED_1
RST_N
RSET
Power and Ground
AVDD33_USB
AVDD33_SSUSB
AVDD11_SSUSB
DVDD11
AVDD33_XTAL
AVDD33_GBE
DVDD33
LX
AVDD33_BUCK
AVSS33_BUCK
AVDD11_GBE
PAD
AX88179B
MDI0_P
MDI0_N
MDI1_P
MDI1_N
MDI2_P
MDI2_N
MDI3_P
MDI3_N
XTL20P
XTL20N
TP1
TP2
R5 4k7
R6 10k
1PPS
LED0
LED1
R2 4k7
R3 4k7
RESET_N
R8 24k
AVDD_33
DVDD11
LX
GND

RJ45 Jack

J2
VCC
MX0-
MX0+
MX1-
MX1+
MX2-
MX2+
MX3-
MX3+
SHIELD
SHIELD
GND
2250015-2
R7 330
R9 330
LED0
LED1
GREEN
GRN
YLW
S1
S2
R10 1M
DNP
CHASSIS_GND

20MHz +/- 10ppm Crystal

XTL20P
R22 0 Ohm
Y1
ABM3B-20.000MHZ-10-1-U-T
C6 15pF
C7 15pF
R11 200
XTL20N
GND

20MHz DCTCXO

U4
NC
NC
OE
GND
NC
NC
VCC
NC
NC or Filter
OUT
TG5032CGN 40.0000M-CAGHNA0
R19 10k
R20 0 Ohm
DNP
C30 100nF
C31 15pF
DVDD_33
XTL20P

X1
VDD
CLK
OE/NC
SDA/NC
A1/NC
SCL/NC
A0/NC
GND
NC_1
NC_2
SIT5501AI-WUG33JT-10.000000
R21 0 Ohm
DNP
R16 10k
R17 10k
R18 10k
C4 100nF
TP3
TP4

SW1
NO
COM
R12 10k
C26 100nF
RESET_N

L2 2u2H
FB1 BLM15PD800SN1D
FB2 BLM15PD800SN1D
C8 10uF
C9 100nF
C10 10uF
C11 100nF
C12 100nF
C13 100nF
C14 100nF
C15 100nF
C16 100nF
C17 100nF
C18 4u7F
C19 10uF
C20 100nF
C21 100nF
C22 100nF
C23 100nF
C24 100nF
C25 100nF
C27 100nF
C28 100nF
AVDD11
AVDD_33

2023-01-28: Stackup from JLCPCB (JLC04161H-7628)

Title		
Size A3	Number	Revision
Date: 2/08/2024		Sheet of
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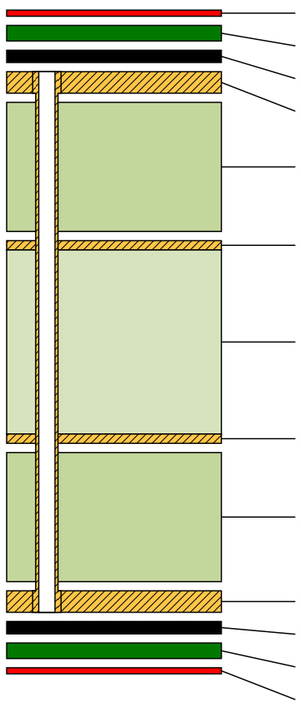
Transmission Line Structure Table

Impedance Id	Transmission Line	Target Impedance	Calculated Impedance	Trace layer	Wide Trace Width	Narrow Trace Width	Gap	Reference layers	Substack	Clearance	Target Tolerance
1	Edge-Coupled Coated Microstrip	90	88.55	Top Layer	0.17mm	0.17mm	0.10mm	Int1 (GND)	Board Layer Stack	0.13mm	10%
2	Edge-Coupled Coated Microstrip	100	98.05	Top Layer	0.12mm	0.12mm	0.10mm	Int1 (GND)	Board Layer Stack	0.13mm	10%
3	Coated Microstrip	50	49.93	Top Layer	0.35mm	0.35mm		Int1 (GND)	Board Layer Stack	0.13mm	10%
4	Offset Stripline	50	49.52	Int1 (GND)	0.28mm	0.28mm		Top Layer,Int2 (PWR)	Board Layer Stack	0.13mm	10%
5	Offset Stripline	50	49.52	Int2 (PWR)	0.28mm	0.28mm		Int1 (GND),Bottom Layer	Board Layer Stack	0.13mm	10%
6	Edge-Coupled Coated Microstrip	90	88.55	Bottom Layer	0.17mm	0.17mm	0.10mm	Int2 (PWR)	Board Layer Stack	0.13mm	10%
7	Edge-Coupled Coated Microstrip	100	98.05	Bottom Layer	0.12mm	0.12mm	0.10mm	Int2 (PWR)	Board Layer Stack	0.13mm	10%
8	Coated Microstrip	50	49.93	Bottom Layer	0.35mm	0.35mm		Int2 (PWR)	Board Layer Stack	0.13mm	10%

Layer Stack Legend



Material	Layer	Thickness	Dielectric Material	Type	Gerber
	Top Overlay			Legend	GTO
Surface Material	Top Solder	0.03mm	SM-001	Solder Mask	GTS
PbSn	Top Surface Finish	0.02mm		Surface Finish	
CF-004	**Top Layer**	**0.04mm**		**Signal**	**GTL**
Prepreg		*0.21mm*	*PP-017*	*Dielectric*	
CF-004	**Int1 (GND)**	**0.02mm**		**Signal**	**G1**
Core		*1.06mm*	*Core-039*	*Dielectric*	
CF-004	**Int2 (PWR)**	**0.02mm**		**Signal**	**G2**
Prepreg		*0.21mm*	*PP-017*	*Dielectric*	
CF-004	**Bottom Layer**	**0.04mm**		**Signal**	**GBL**
PbSn	Bottom Surface Finish	0.02mm		Surface Finish	
Surface Material	Bottom Solder	0.03mm	SM-001	Solder Mask	GBS
	Bottom Overlay			Legend	GBO

Total thickness: 1.68mm

Drill Table

Symbol	Count	Hole Size	Plated	Hole Tolerance
▽	28	0.15mm	Plated	
⧈	2	0.20mm	Plated	
◎	88	0.30mm	Plated	
◇	2	0.95mm	Plated	
▽	10	0.97mm	Plated	
✱	4	1.10mm	Plated	
⊠	2	1.25mm	Non-Plated	
○	1	1.57mm	Plated	
✱	2	1.65mm	Plated	
□	4	1.70mm	Plated	
⌖	2	3.25mm	Non-Plated	
	145 Total			