

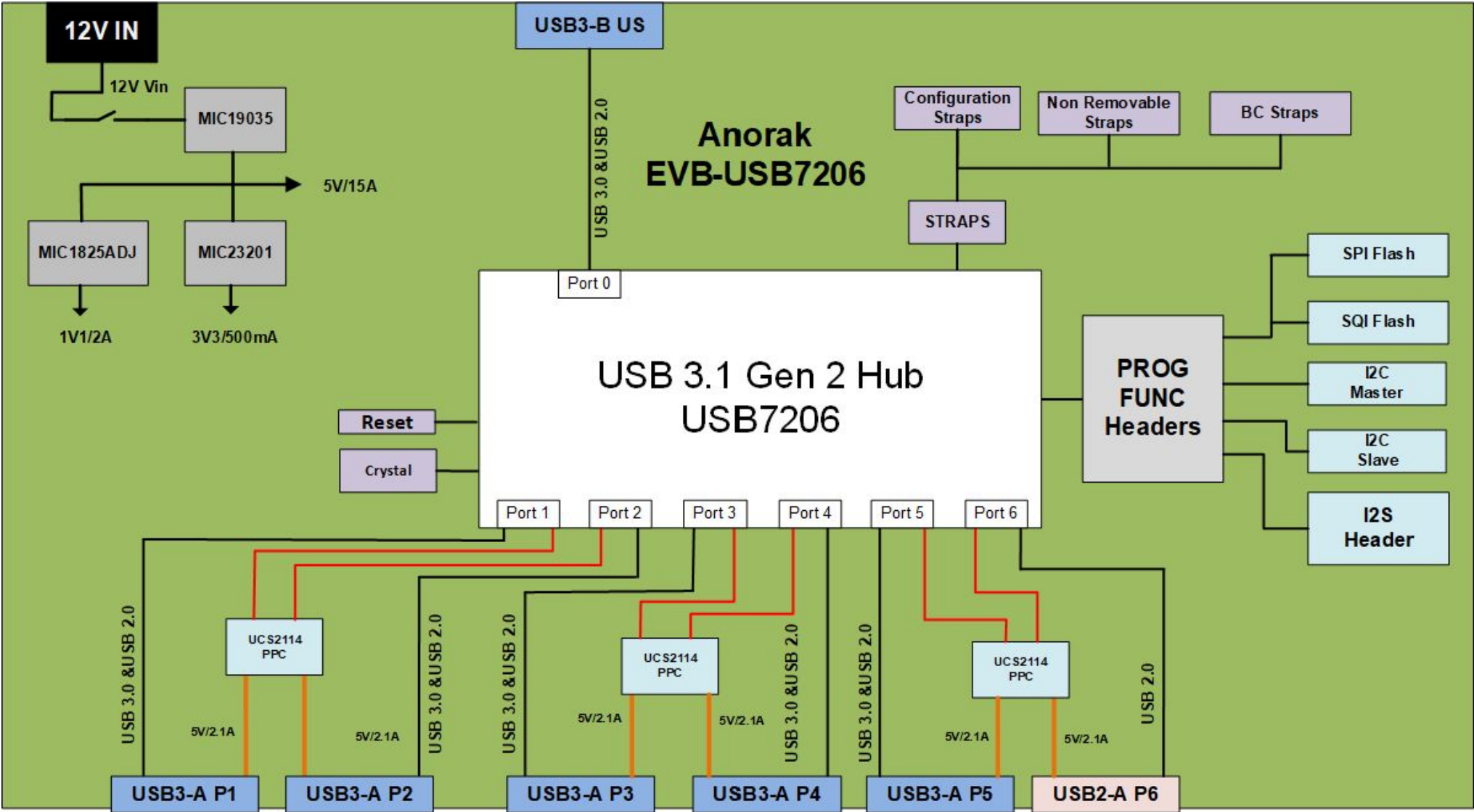
UNG8190 EVB-USB7206

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5	Downstream Ports 3 and 4
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7	Power Regulators

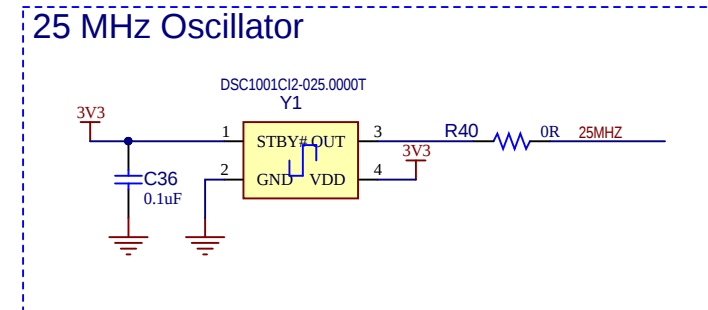
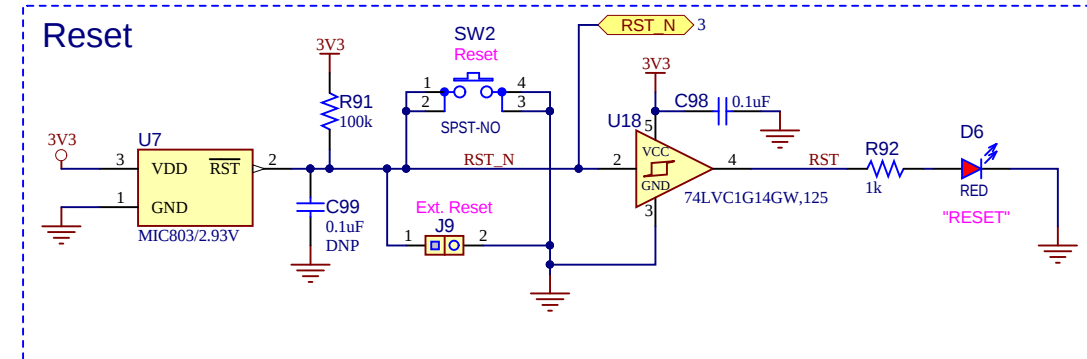
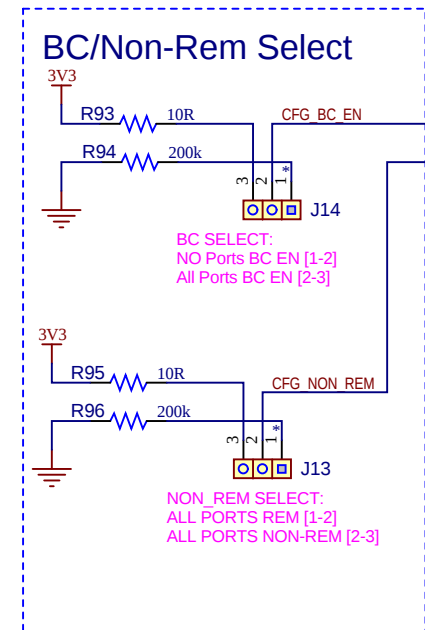
Revision History			
Revision	Date	Revision Summary	Author
A	8/6/2018	Initial release of design	Connor Chilton
A1	7/9/2019	BOM Update for 1.15V and UCS2114	Connor Chilton

Default Selections

1	Resistors are 1%, 100mW, 0603
2	Capacitors are X5R, X7R, or C0G, 50V, 0402

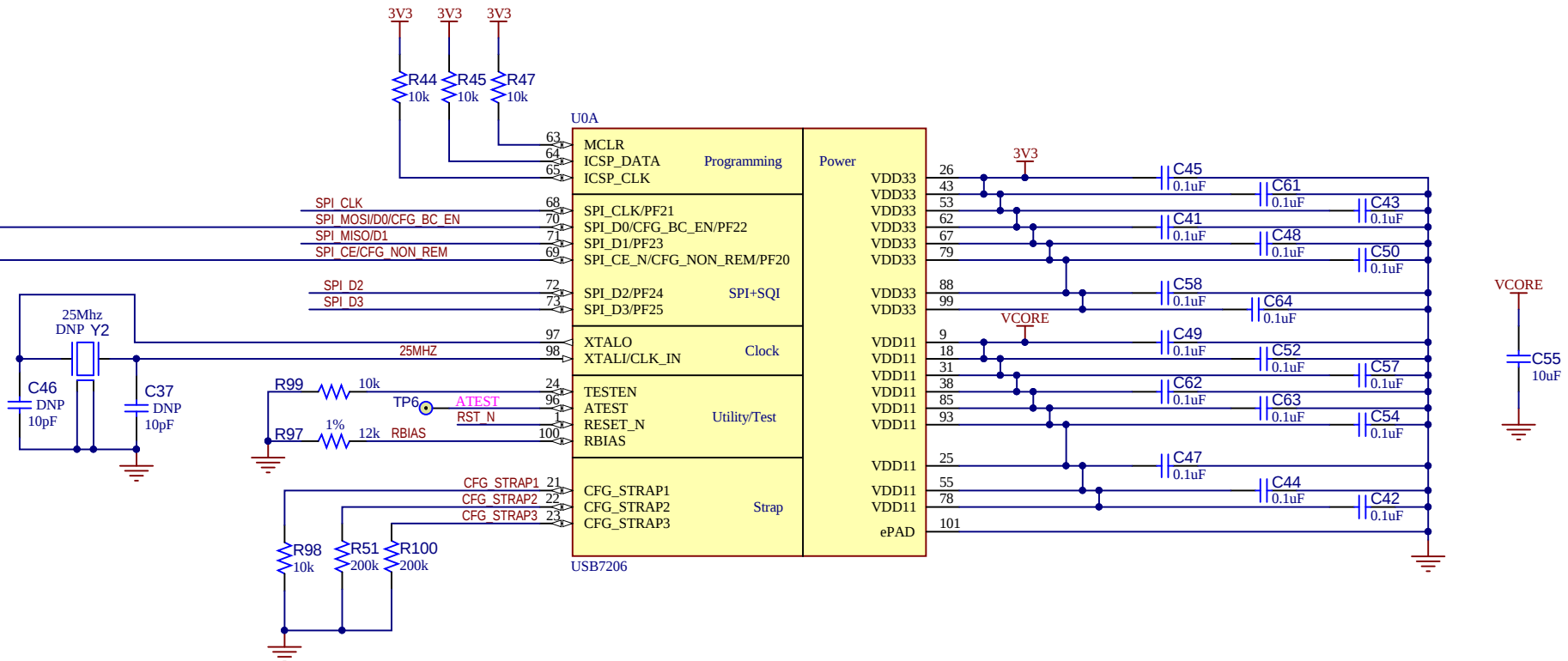


USB7206 Part 1, SPI, Reset

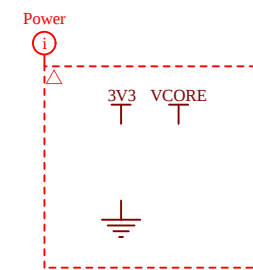
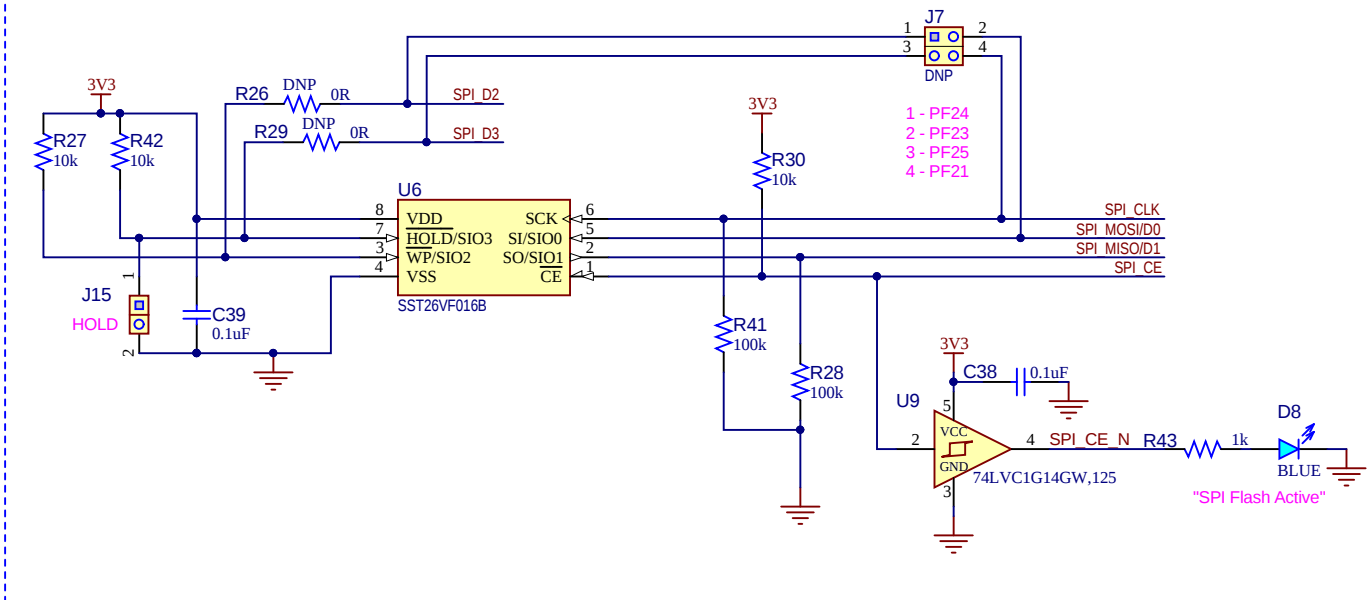


SPI_DI/CFG_BC_EN /
SPI_CEN/CFG_NON_REM
*Default Open
For SPI (1-2, 4-5)
For BC (2-3)
For NON_REM (5-6)

HDR-2.54 MALE 3X2

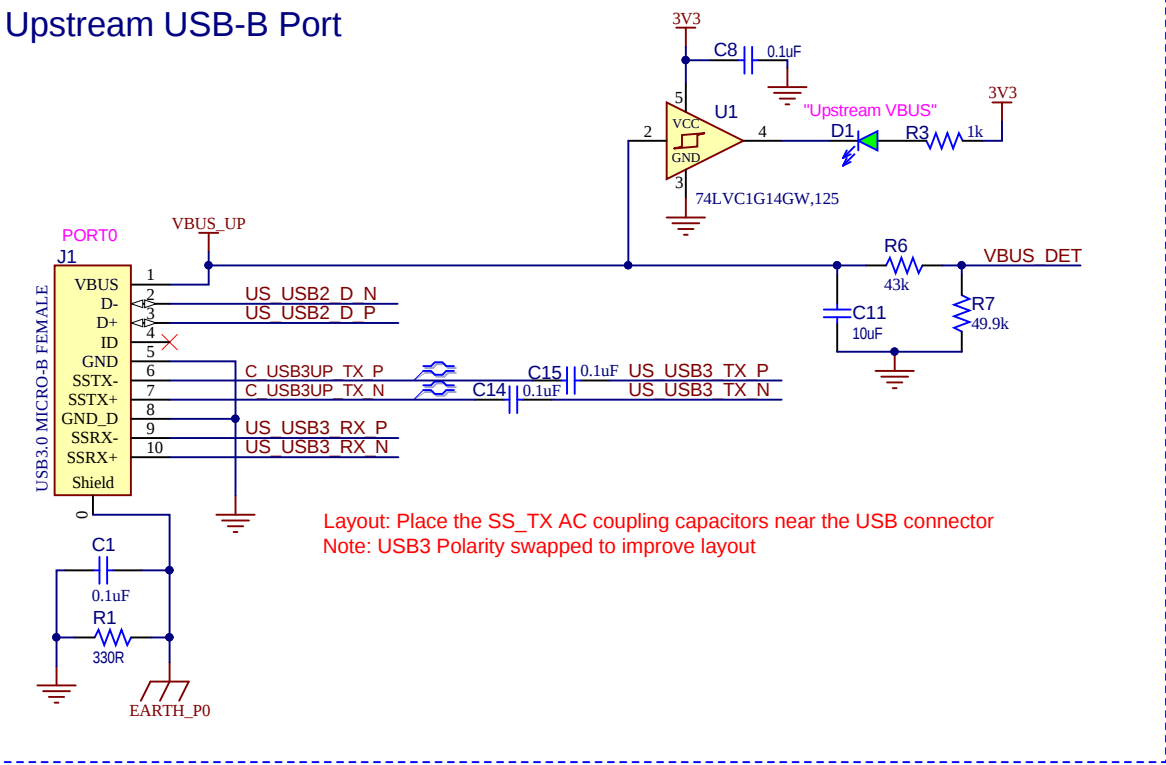


SPI Flash

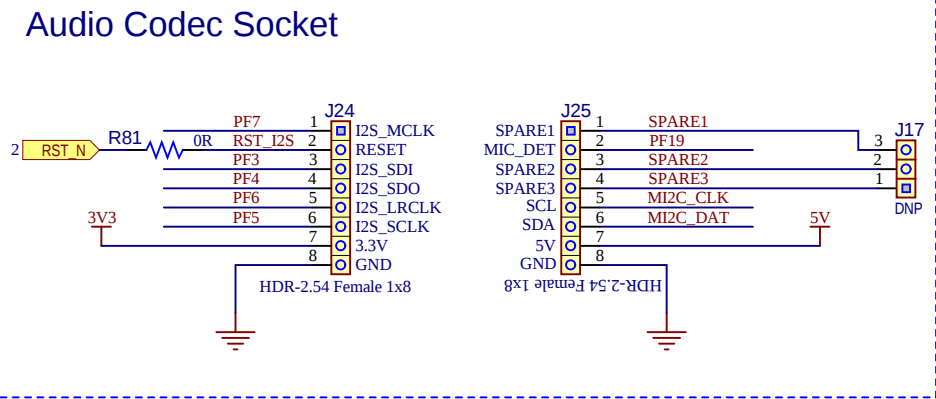


USB7206 Part 2. Upstream Port, Audio + I2C connectors

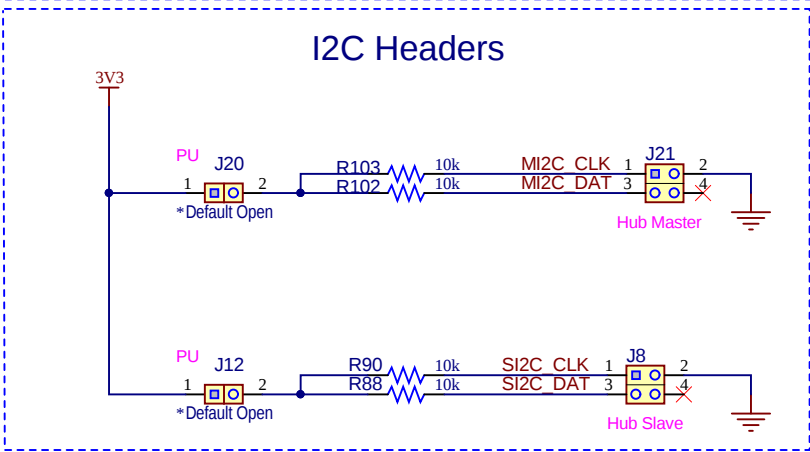
Upstream USB-B Port



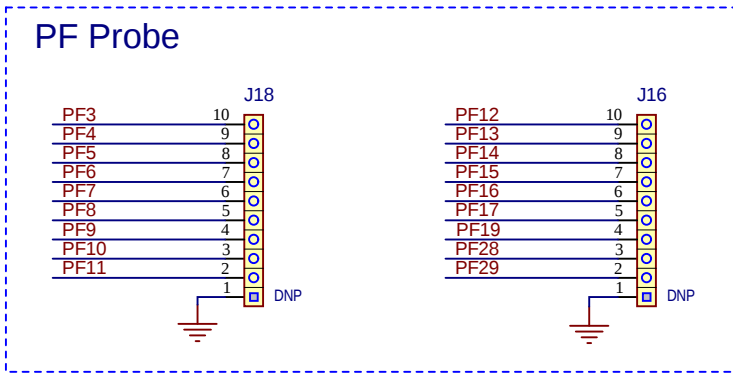
Audio Codec Socket



I2C Headers

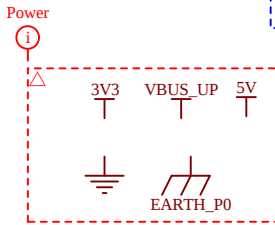


PF Probe



Default PF Functions

PF3	I2S_SDI	PF17	PRT_CTL1/OCS
PF4	I2S_SDO	PF18	MSTR_I2C_CLK
PF5	I2S_CLK	PF19	GPIO (MIC_DET)
PF6	I2S_LRCK	PF20	SPI_CE_N
PF7	I2S_MCLK	PF21	SPI_CLK
PF8	PF8	PF22	SPI_D0
PF9	PF9	PF23	SPI_D1
PF10	PRT_CTL3_U3	PF24	SPI_D2
PF11	PRT_CTL4_U3	PF25	SPI_D3
PF12	PRT_CTL5_U3	PF26	SLV_I2C_CLK
PF13	PRT_CTL5/OCS	PF27	SLV_I2C_DATA
PF14	PRT_CTL4/OCS	PF28	PRT_CTL6/OCS
PF15	PRT_CTL3/OCS	PF29	GPIO
PF16	PRT_CTL2/OCS	PF31	MSTR_I2C_DATA





Microchip Technology, Inc.
USB/Network Group - UNG
www.Microchip.com

Designed with


Description: **EVB-USB7206 Anorak**

Page Title: **USB7206 Part 2. Upstream Port, Audio + I2C connectors**

Project Name: **EVB-USB7206**PN: **UNG8190**

Size: B | Date: **9/28/2018** | Designer: **Connor Chilton** | Sheet 3 of 7 | Rev A1

A

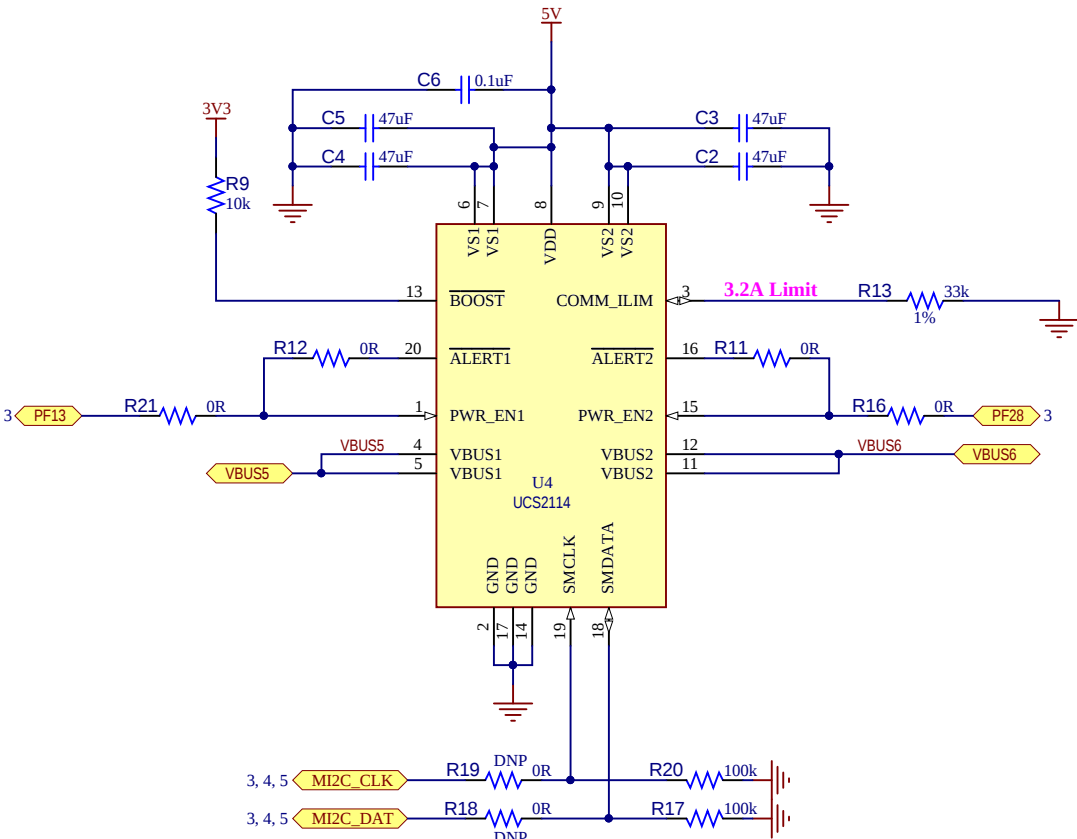


D

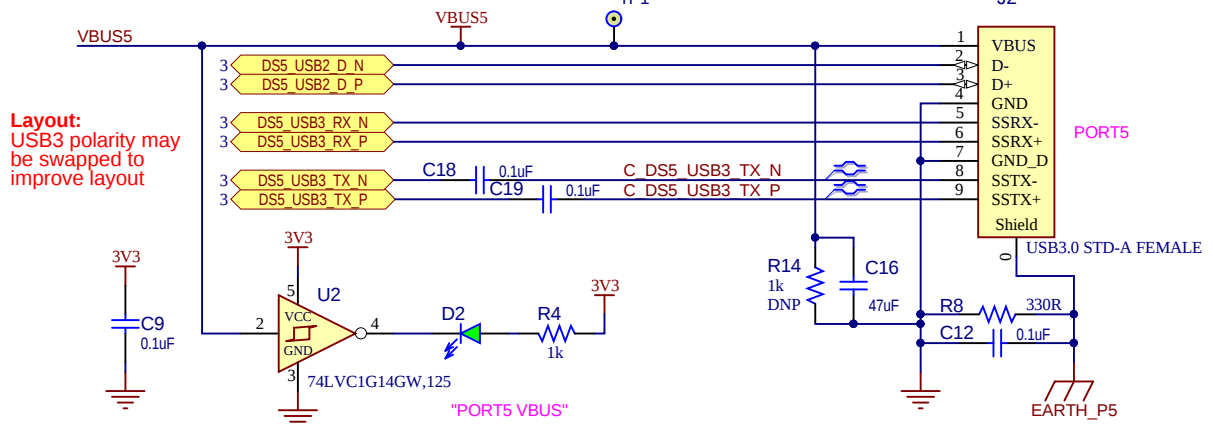


Downstream Ports 5 and 6

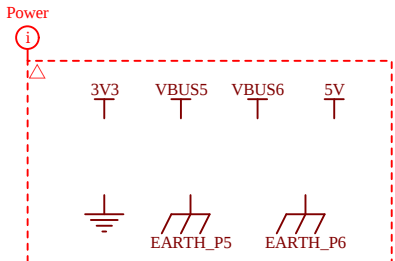
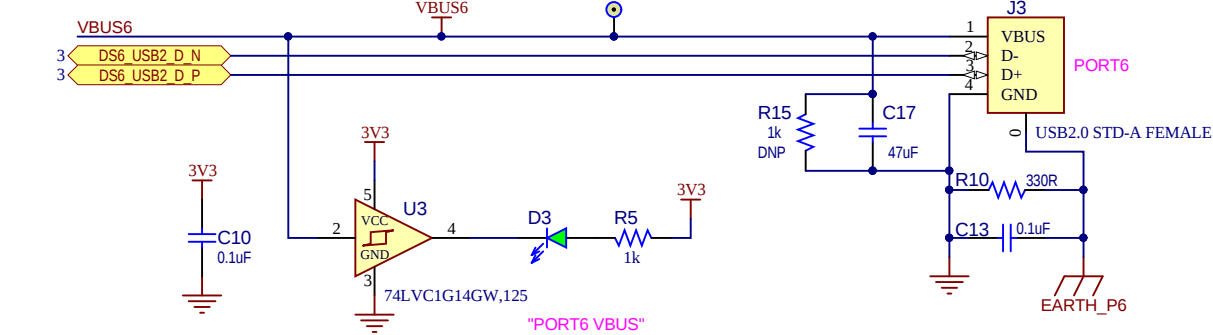
UCS2114 Power Switch For Port5 and Port6



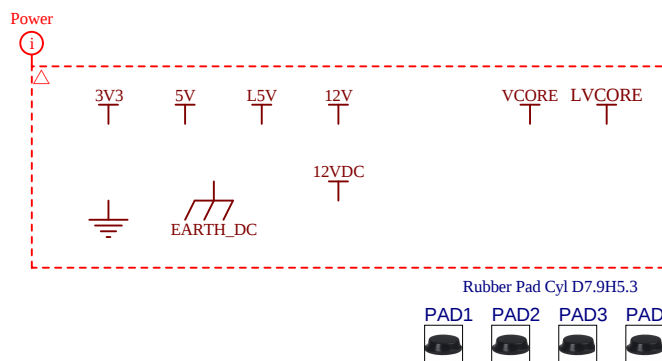
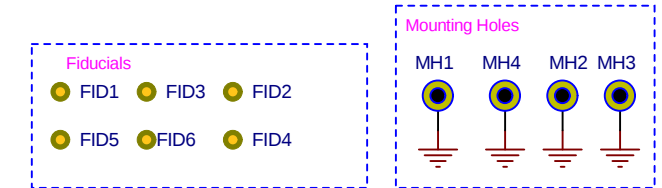
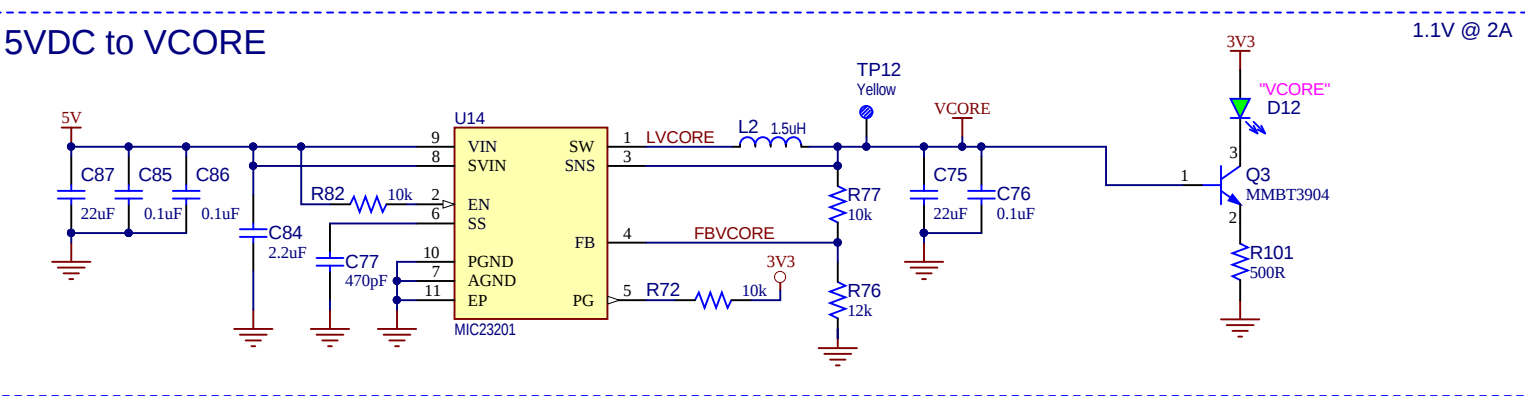
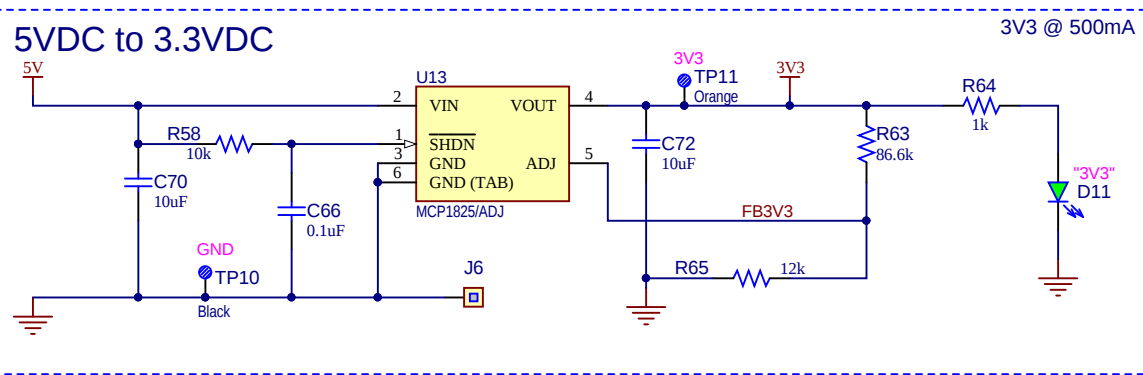
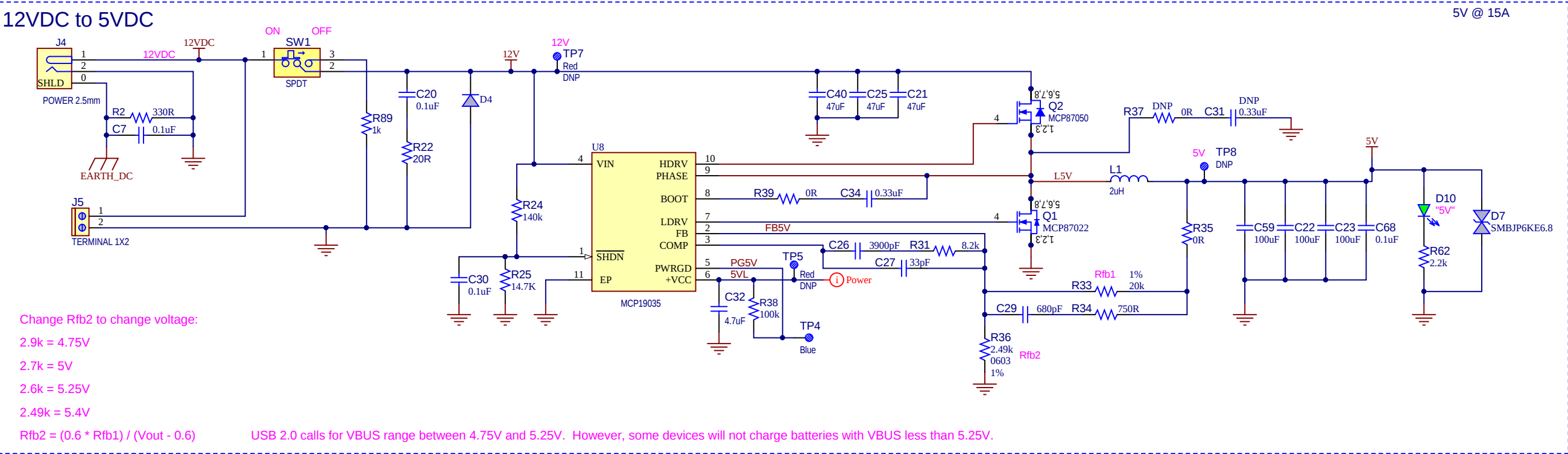
USB3.1(Type-A) Downstream Port 5



USB-A Downstream Port 6



Power Regulators



Bill of Materials

EVB-USB7206 Anorak

Document Number: 02-PCB-UNG8190_A1

Board Number: 04-PCB-UNG8190_A1

Part Number: EVB-USB7206

Revision: A1

Engineer: Connor Chilton

Drawn By: Connor Chilton

M

Creation Date: 7/11/2019

Creation Time: 10:23 AM

Quantity	Designator	Description_	Manufacturer 1	Manufacturer Part Number 1	Supplier 1	Supplier Part Number 1	Supplier Unit Price 1	Price / 1 Board
35	C1, C6, C7, C14, C15, C20, C30, C36, C38, C39, C41, C42, C43, C44, C45, C47, C48, C49, C50, C52, C54, C57, C58, C60, C61, C62, C63, C64, C66, C68, C76, C85, C86, C93, C98	CAP CER 0.1uF 16V 10% X7R SMD 0402	Murata	GRM155R71C104KA88D	Digi-Key	490-3261-2-ND		\$0.0000
12	C2, C3, C4, C5, C53, C56, C65, C67, C91, C92, C94, C95	CAP CER 47uF 6.3V 20% X5R SMD 0805	Taiyo Yuden	JMK212BJ476MG-T	Digi-Key	587-1779-1-ND		\$0.0000
23	C8, C9, C10, C12, C13, C18, C19, C24, C33, C35, C51, C69, C73, C74, C78, C79, C80, C81, C88, C89, C90, C96, C97	CAP CER 0.1uF 35V 10% X7R SMD 0402	TDK Corporation	CGA2B3X7R1V104K050	Digi-Key	445-6901-1-ND		\$0.0000
4	C11, C55, C70, C72	CAP CER 10uF 16V 10% X5R SMD 0805	Würth Electronics Inc	885012107014	Digi-Key	732-7624-1-ND		\$0.0000
6	C16, C17, C28, C71, C82, C83	CAP CER 47uF 10V 20% X5R SMD 0805	TDK Corporation	C2012X5R1A476M125AC	Digi-Key	445-8239-2-ND		\$0.0000
3	C21, C25, C40	CAP CER 47uF 16V 10% X5R SMD 1210	Murata Electronics North	GRM32ER61C476KE15K	Digi-Key	490-6538-1-ND		\$0.0000
3	C22, C23, C59	CAP CER 100uF 10V 20% X5R SMD 1210	Taiyo Yuden	LMK325BJ107MM-T	Digi-Key	587-1965-1-ND		\$0.0000
1	C26	CAP CER 3900pF 50V 5% C0G SMD 0603	TDK	C1608C0G1H392J080AA	Digi-Key	445-7399-1-ND		\$0.0000
1	C27	CAP CER 33pF 50V 5% NP0 SMD 0603	Cal-Chip	GMC10CG330J50NTLF	Cal-Chip	GMC10CG330J50NTLF		\$0.0000
1	C29	CAP CER 680pF 50V 5% NP0 SMD 0603	Panasonic	ECJ-1VC1H681J	Digi-Key	PCC2149TR-ND		\$0.0000
1	C32	CAP CER 4.7uF 35V 10% X7R SMD 0805	TDK Corporation	C2012X7R1V475K125AC	Digi-Key	445-7555-2-ND		\$0.0000
1	C34	CAP CER 0.33uF 16V 10% X7R SMD 0603	Murata	GRM188R71C334KA01D	Digi-Key	490-3294-1-ND		\$0.0000
2	C75, C87	CAP CER 22uF 10V 10% X7R SMD 1206	Samsung Electro-Mechan	CL31B226KPHNNNE	Digi-Key	1276-2769-1-ND		\$0.0000
1	C77	CAP CER 470pF 25V 5% NP0 SMD 0603	AVX	06033A471JAT2A	Digi-Key	478-6201-1-ND		\$0.0000
1	C84	CAP CER 2.2uF 10V 10% X7R SMD 0603	Murata	GRM188R71A225KE15D	Digi-Key	490-4520-1-ND		\$0.0000

10	D1, D2, D3, D5, D9, D10, D11, D12, D13, D14	DIO LED GREEN 2V 30mA 35mcd Clear SMD 0603	Lite-On Inc	LTST-C191KGKT	Digi-Key	160-1446-1-ND		\$0.0000
1	D4	DIO RECT MMBD914-7-F 1.25V 200mA 75V SMD SOT-23-3	Diodes Incorporated	MMBD914-7-F	Digi-Key	MMBD914-FDICT-ND		\$0.0000
1	D6	DIO RED 2V 20mA 54mcd CLEAR SMD 0603	Lite-On Inc.	LTST-C191KRKT	Digi-Key	160-1447-1-ND		\$0.0000
1	D7	DIO TVS SMBJP6KE6.8CA 5.8V 600W DO-214AA_SMB	Micro Commercial Co	SMBJP6KE6.8CA-TP	Digi-Key	SMBJP6KE6.8CA-TPMSCT-ND		\$0.0000
1	D8	DIO LED BLUE 2.8V 20mA 15mcd Clear SMD 0603	Lite-On	LTST-C193TBKT-5A	Digi-Key	160-1827-1-ND		\$0.0000
1	J1	CON USB3.0 MICRO-B FEMALE SMD R/A	Hirose Electric Co Ltd	ZX360D-B-10P	Digi-Key	H11889CT-ND		\$0.0000
5	J2, J11, J19, J22, J23	CON USB3.0 STD-A FEMALE TH R/A	Würth Electronics Inc	692121030100	Digi-Key	732-3146-1-ND		\$0.0000
1	J3	CON USB2.0 STD-A FEMALE TH R/A	TE Connectivity AMP Cor	292303-1	Digi-Key	A31726-ND		\$0.0000
1	J4	CON POWER 2.5mm 5.5mm TH R/A	CUI Inc.	PJ-063BH	Digi-Key	CP-063BH-ND		\$0.0000
1	J5	CON TERMINAL 5.08mm 1X2 Female 16-30AWG 13.5A TH RA	TE Connectivity	282836-2	Digi-Key	A98076-ND		\$0.0000
1	J6	CON HDR-2.54 Male 1x1 Gold 5.84MH TH VERT	TE Connectivity	5-146280-1	Digi-Key	A107006-ND		\$0.0000
2	J8, J21	CON HDR-2.54 Male 2x2 Gold 5.84MH TH VERT	Samtec	TSW-102-07-G-D	Digi-Key	SAM1028-02-ND		\$0.0000
4	J9, J12, J15, J20	CON HDR-2.54 Male 1x2 Gold 5.84MH TH VERT	FCI	77311-118-02LF	Digi-Key	609-4434-ND		\$0.0000
1	J10	CON HDR-2.54 Male 3x2 Gold 5.84MH TH VERT	Samtec Inc.	TSW-102-07-G-T	Digi-Key	TSW-102-07-G-T-ND		\$0.0000
2	J13, J14	CON HDR-2.54 Male 1x3 Gold 5.84MH TH VERT	FCI	68000-103HLF	Digi-Key	609-3461-ND		\$0.0000
2	J24, J25	CON HDR-2.54 Female 1x8 Tin TH VERT	Sullins	PPTC081LFBN-RC	Digi-Key	S7006-ND		\$0.0000
1	L1	INDUCTOR 2uH 23A 20% SMD L12.8W12.8H6.2	Würth Electronics Inc.	7443551200	Digi-Key	732-1125-1-ND		\$0.0000
1	L2	INDUCTOR 1.5uH 3A 20% SMD L5W5H2.2	Murata Electronics North	LQH5BPN1R5NT0L	Digi-Key	490-7777-1-ND		\$0.0000
1	Q3	TRANS BJT NPN MMBT3904 40V 200mA 310mW SOT-23-3	Diodes Incorporated	MMBT3904-7	Digi-Key	MMBT3904DITR-ND		\$0.0000
8	R1, R2, R8, R10, R46, R83, R84, R85	RES TKF 330R 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF3300V	Digi-Key	P330HCT-ND		\$0.0000
11	R3, R4, R5, R23, R43, R54, R64, R86, R87, R89, R92	RES TKF 1k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF1001V	Digi-Key	P1.00KHCT-ND		\$0.0000
1	R6	RES TKF 43k 1% 1/10W SMD 0603	Yageo	9C06031A4302FKHFT	Digi-Key	311-43.0KHDKR-ND		\$0.0000
1	R7	RES TKF 49.9k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF4992V	Digi-Key	P49.9KHTR-ND		\$0.0000
16	R9, R27, R30, R42, R44, R45, R47, R58, R59, R79, R88, R90, R98, R99, R102, R103	RES TKF 10k 1% 1/10W SMD 0603	ROHM	MCR03EZPFX1002	Digi-Key	RHM10.0KHCT-ND		\$0.0000
14	R11, R12, R16, R21, R40, R48, R52, R56, R60, R66, R71, R74, R75, R81	RES TKF 0R 1/10W SMD 0603	Panasonic	ERJ-3GSY0R00V	Digi-Key	P0.0GTR-ND		\$0.0000
3	R13, R49, R73	RES TKF 33k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF3302V	Digi-Key	P33.0KHCT-ND		\$0.0000
9	R17, R20, R28, R41, R50, R57, R67, R70, R91	RES TKF 100k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF1003V	Digi-Key	P100KHTR-ND		\$0.0000
1	R22	RES TKF 20R 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF20R0V	Digi-Key	P20.0HCT-ND		\$0.0000
1	R24	RES TKF 140k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF1403V	Digi-Key	P140KHCT-ND		\$0.0000
1	R25	RES TKF 14.7K 1% 1/10W SMD 0603	Panasonic Electronic Cor	ERJ-3EKF1472V	Digi-Key	P14.7KHCT-ND		\$0.0000
1	R31	RES TKF 8.2k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF8201V	Digi-Key	P8.20KHCT-ND		\$0.0000
1	R33	RES TKF 20k 1% 1/10W SMD 0603	Yageo	9C06031A2002FKHFT	Digi-Key	311-20.0KHTR-ND		\$0.0000
1	R34	RES TKF 750R 1% 1/10W SMD 0603	Vishay	CRCW0603750RFKEA	Digi-Key	541-750HCT-ND		\$0.0000
2	R35, R39	RES TKF 0R 1/10W SMD 0603	NIC Components	NRC06Z0TRF	NIC Componen	NRC06Z0TRF		\$0.0000

1	R36	RES TKF 2.49k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF2491V	Digi-Key	P2.49KHCT-ND		\$0.0000
1	R38	RES TF 100k 1% 1/8W SMD 0603	Vishay	MCT06030C1003FP500	Digi-Key	MCT0603-100K-CFTR-ND		\$0.0000
4	R51, R94, R96, R100	RES TKF 200k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF2003V	Digi-Key	P200KHCT-ND		\$0.0000
1	R62	RES TKF 2.2k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF2201V	Digi-Key	P2.20KHCT-ND		\$0.0000
1	R63	RES TKF 86.6k 1% 1/10W SMD 0603	Panasonic Electronic Com	ERJ-3EKF8662V	Digi-Key	P86.6KHCT-ND		\$0.0000
2	R65, R97	RES TKF 12k 1% 1/10W SMD 0603	Yageo	RC0603FR-0712KL	Digi-Key	311-12.0KHRCT-ND		\$0.0000
2	R72, R82	RES TKF 10k 1% 1/10W SMD 0603	Vishay	CRCW060310K0FKEA	Digi-Key	541-10.0KHCT-ND		\$0.0000
1	R76	RES TKF 12k 1% 1/10W SMD 0603	Stackpole Electronics Inc	RMCF0603FT12K0	Digi-Key	RMCF0603FT12K0CT-ND		\$0.0000
1	R77	RES TKF 10k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF1002V	Digi-Key	P10.0KHCT-ND		\$0.0000
2	R93, R95	RES TKF 10R 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF10R0V	Digi-Key	P10.0HTR-ND		\$0.0000
1	R101	RES TKF 500R 5% 1/10W SMD 0603	Stackpole Electronics Inc	RMC 1/16 500 5% R	Digi-Key	RMC1/165005%R-ND		\$0.0000
1	SW1	SWITCH SLIDE SPDT 120V 6A 1101M2S3CQE2 TH	C&K Components	1101M2S3CQE2	Digi-Key	CKN5001-ND		\$0.0000
1	SW2	SWITCH TACT SPST 16V 50mA PTS810 SJM 250 SMTR LFS SMD	C&K Components	PTS810 SJM 250 SMTR	Digi-Key	CKN10502CT-ND		\$0.0000
1	TP4	CON TP LOOP BLUE Ag TH	Keystone Electronics	5117	Digi-Key	36-5117-ND		\$0.0000
1	TP10	MISC, TEST POINT MULTI PURPOSE MINI BLACK	Keystone	5001	Digi-Key	36-5001-ND		\$0.0000
1	TP11	CON TP LOOP Orange TH	Keystone Electronics	5003	Digi-Key	5003K-ND		\$0.0000
1	TP12	MISC, TEST POINT PC MINI, 0.040" D YELLOW	Keystone	5004	Digi-Key	36-5004-ND		\$0.0000
9	U1, U2, U3, U5, U9, U12, U16, U17, U18	74LVC1G14GW,125 SCHMITT-TRG INVERTER	NXP	74LVC1G14GW,125	Mouser	771-74LVC1G14GW-G		\$0.0000

Microchip Parts listed below

1	Q1	MCHP ANALOG MOSFET N-CH 25V 100A 0.0026R MCP87022T-U/MF PDFN-8	Microchip Technology	MCP87022T-U/MF	Microchip Tech	MCP87022T-U/MF		\$0.0000
1	Q2	MCHP ANALOG MOSFET N-CH 25V 100A 0.006R MCP87050-U/MF PDFN-8	Microchip	MCP87050T-U/MF	Microchip	MCP87050T-U/MF		\$0.0000
1	U0	MCHP INTERFACE USB HUB USB7206 VQFN100	Microchip Technology Inc	USB7206	Microchip Tech	USB7206		\$0.0000
3	U4, U11, U15	MCHP INTERFACE USB Power Controller UCS2114 QFN-20	Microchip	UCS2114-1-V/LX	Microchip	UCS2114-1-V/LX		\$0.0000
1	U6	MCHP MEMORY SERIAL FLASH 16M 104MHz SST26VF016B-104I/SM SOIJ-8	Microchip Technology	SST26VF016B-104I/SM	Digi-Key	SST26VF016B-104I/SM-ND		\$0.0000
1	U7	MCHP ANALOG SUPERVISOR 2.93V MIC803-29D4VM3-TR SOT-23-3	Microchip Technology	MIC803-29D4VM3-TR	Digi-Key	576-3806-1-ND		\$0.0000
1	U8	MCHP ANALOG PWM CONTROLLER 600kHz MCP19035-BAABE/MF DFN-10	Microchip	MCP19035-BAABE/MF	Digi-Key	MCP19035-BAABE/MF-ND		\$0.0000
1	U13	MCHP ANALOG LDO ADJ MCP1825T- ADJE/DC SOT-223-5	Microchip	MCP1825T-ADJE/DC	Digi-Key	MCP1825T-ADJE/DCCT-ND		\$0.0000
1	U14	MCHP ANALOG SWITCHER Buck 0.95V to 3.6V 2A MIC23201YML-TR MLF-10	Microchip Technology	MIC23201YML-TR	Digi-Key	576-4159-1-ND		\$0.0000
1	Y1	MCHP CLOCK OSCILLATOR SINGLE 25MHZ DSC1001CI2-025.0000T CDFN-4	Microchip Technology	DSC1001CI2-025.0000T	Digi-Key	DSC1001CI2-025.0000TCT-ND		\$0.0000
								\$0.0000
								\$0.0000
								\$0.0000
								\$0.0000

Mechanical Parts to be added in the package

4	PAD1, PAD2, PAD3, PAD4	MECH HW RUBBER PAD CYLINDRICAL D7.9 H5.3 BLACK	3M	SJ61A11	Digi-Key	SJ5747-0-ND		\$0.0000
								\$0.0000

PCB								
1	PCB1	Printed Circuit Board		04-PCB-UNG8190_A1-RA1				\$0.0000
								\$0.0000
Do Not Populate Parts listed below								
1	C31	CAP CER 0.33uF 16V 10% X7R SMD 0603	Murata	GRM188R71C334KA01D	Digi-Key	490-3294-1-ND		\$0.0000
2	C37, C46	CAP CER 10pF 50V 5% NP0 SMD 0402	Murata	GRM1555C1H100JZ01D	Digi-Key	490-1278-1-ND		\$0.0000
1	C99	CAP CER 0.1uF 16V 10% X7R SMD 0402	Murata	GRM155R71C104KA88D	Digi-Key	490-3261-2-ND		\$0.0000
1	J7	CON HDR-2.54 Male 2x2 Gold 5.84MH TH VERT	Samtec	TSW-102-07-G-D	Digi-Key	SAM1028-02-ND		\$0.0000
2	J16, J18	CON HDR-2.54 Male 1x10 Gold 5.84MH TH VERT	Greenconn	GPHA101-1002A001B1B	Raynen	CONN00686A01M		\$0.0000
1	J17	CON HDR-2.54 Male 1x3 Gold 5.84MH TH VERT	FCI	68000-103HLF	Digi-Key	609-3461-ND		\$0.0000
6	R14, R15, R32, R61, R78, R80	RES TKF 1k 1% 1/10W SMD 0603	Panasonic	ERJ-3EKF1001V	Digi-Key	P1.00KHCT-ND		\$0.0000
9	R18, R19, R26, R29, R37, R53, R55, R68, R69	RES TKF 0R 1/10W SMD 0603	Panasonic	ERJ-3GSY0R00V	Digi-Key	P0.0GTR-ND		\$0.0000
3	TP5, TP7, TP8	MISC, TEST POINT MULTI PURPOSE MINI RED	Keystone	5000	Digi-Key	36-5000-ND		\$0.0000
1	Y2	CRYSTAL 25MHz 10pF SMD ABM8G	Abracon LLC	ABM8G-25.000MHZ-4Y-T	Digi-Key	535-10915-1-ND		\$0.0000
								\$0.0000

Approved	Notes	Description