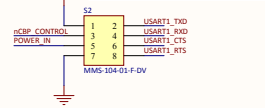


RS485 Daughter Card Interface

This is a sink of +3.3V power - not a source!
This is also useful for 5V > 3V TTL level translation.



Hardware Version ID Resistors

(Tells the software the HW Version number)

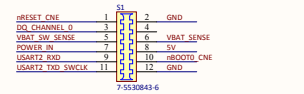
Configured

R22	R20	R24	R23	Ver
0	0	0	0	0
0	0	0	1	1
0	0	1	0	2
0	0	1	1	3
0	1	0	0	4
0	1	0	1	5
0	1	1	0	6
0	1	1	1	7
1	0	0	0	8
1	0	0	1	9
1	0	1	0	10
1	0	1	1	11
1	1	0	0	12
1	1	0	1	13
1	1	1	0	14
1	1	1	1	15

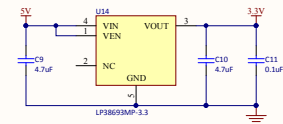


VER1 = Least Significant Bit

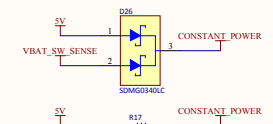
CN/CNE Interface



3.3 Volt Regulator



Power for Port Grounding Switches

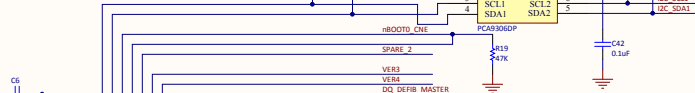
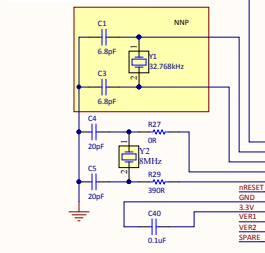


Notes:
4. D26 provides constant power to the NLA54157 analog switches. This allows the switch to ground the DQ lines when the unit is in sleep mode.
5. Populate D26 when NLA5 switches should be powered by the battery.
6. Populate R17 when NLA5 switches should be powered by the 5V supply only.

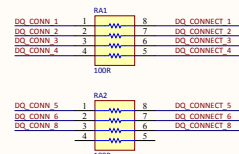
Boot Mode Selection pins		Boot Mode	Allowing
Boot1	Boot0		
X	0	User Flash memory	User Flash memory is selected as the boot space
0	1	System memory	System memory is selected as the boot space
1	1	Embedded SRAM	Embedded SRAM is selected as the boot space

PCB HW Revision Matrix

hCBP_CONTROL
This signal is used to gate the power ON to down stream CNE's when the system is line powered. CBP = CNE Bus Power
This allows for dynamic RS485 addressability. The server has to discover and assign an address to this unit.

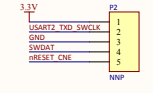


Notes:
1. nBOOT0_CNE is an INPUT that is active only during the first four clock cycles after reset.
2. PB7 is used as an INPUT to trigger (ACTIVE HIGH) in Application Programming during normal application operation.
3. R18 is used to keep USART1 quiet during the serial bootloading process.

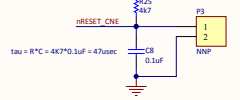


JTAG Programming

(ST LINK/V2 interface)

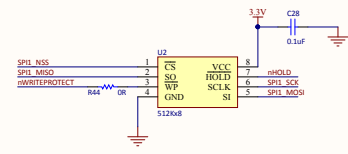
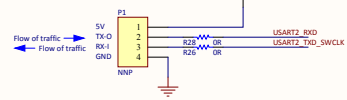


Reset



TTL UART Interface

(Sparkfun FT232RL BOB Modified to produce +5V)



Notes:
4. This footprint will accommodate an SRAM, EEPROM or a FLASH device with an SPI interface.

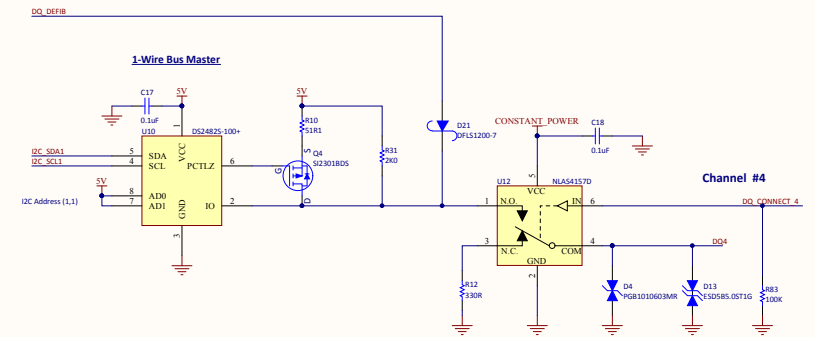
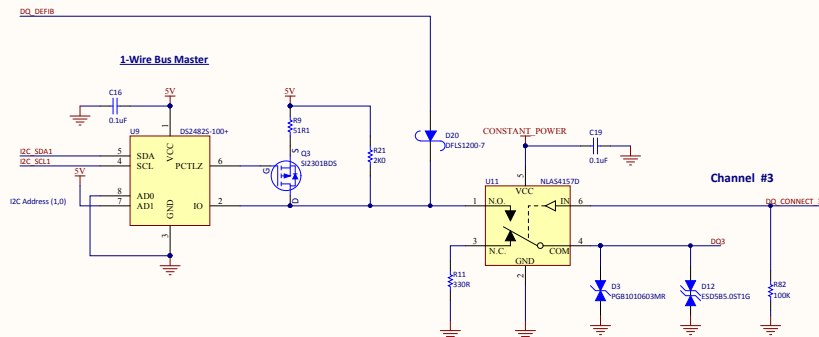
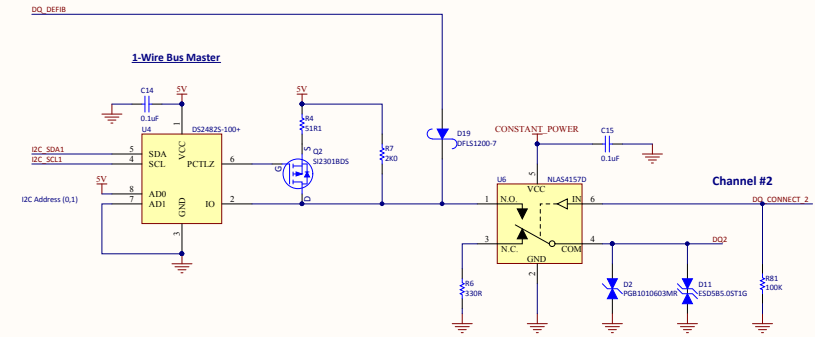
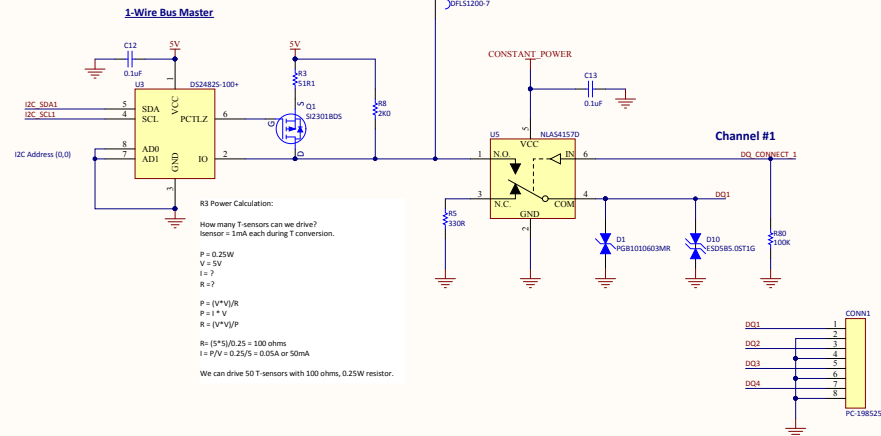
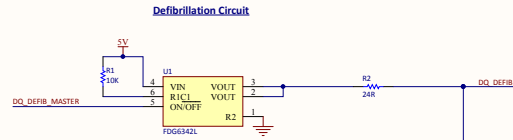
Fiducial Alignment Components

Silkscreen Features

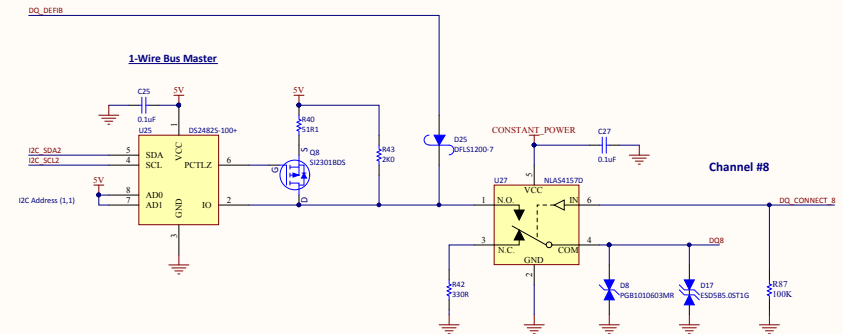
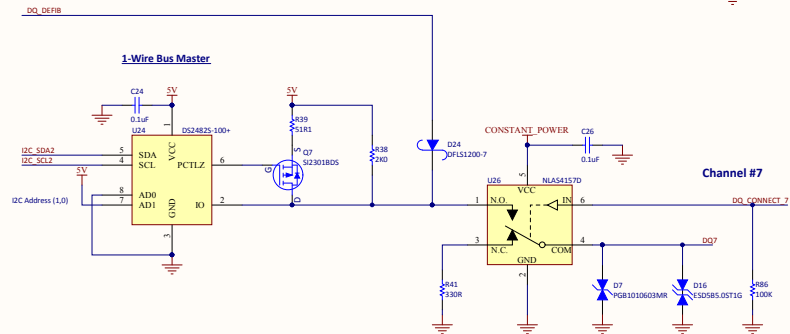
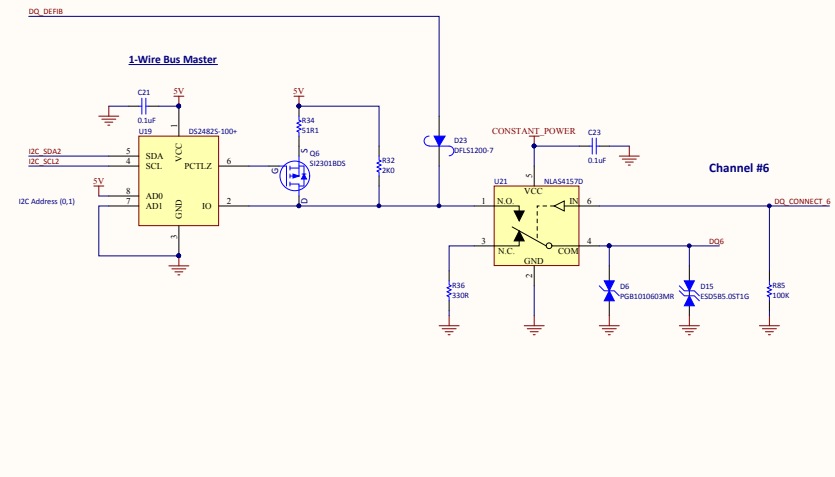
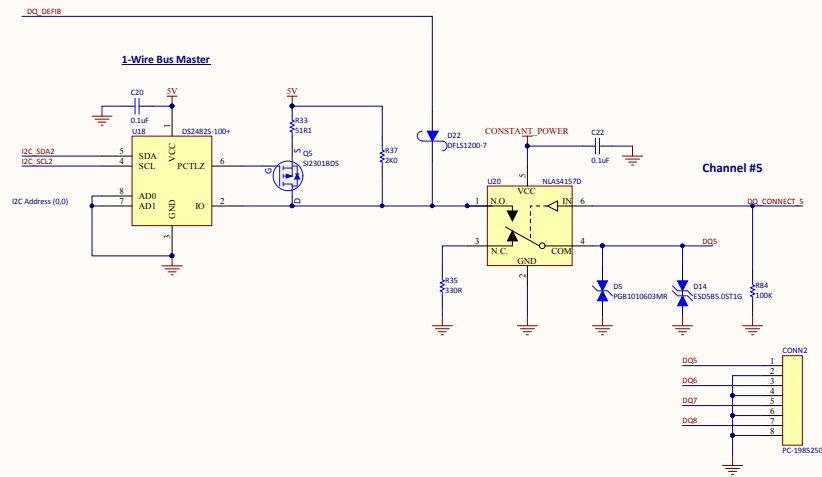


Cable Node Expansion Puck Rev F

Cable Node Expansion Puck Rev F



Cable Node Expansion Puck Rev F



Design Rules Verification Report

Filename : N:\LloydJ\CNEPuckRevF\CNEPuckRevF.PcbDoc

Warnings 3
Rule Violations 0

Warnings	
Multilayer Pads with 0 size Hole found	3
Total	3

Rule Violations	
Power Plane Connect Rule(Direct Connect)(Expansion=20mil) (Conductor Width=10mil) (Air Gap=10mil) (Entries=4)	0
Clearance Constraint (Gap=8mil) (All),(All)	0
Clearance Constraint (Gap=7mil) ((InComponent('U13'))),(All)	0
Net Antennae (Tolerance=0mil) (All)	0
Silk to Silk (Clearance=9mil) (All),(All)	0
Silk To Solder Mask (Clearance=7mil) (IsPad),(All)	0
Minimum Solder Mask Sliver (Gap=3mil) (All),(All)	0
Hole To Hole Clearance (Gap=10mil) (All),(All)	0
Height Constraint (Min=0mil) (Max=1000mil) (Prefered=500mil) (All)	0
Hole Size Constraint (Min=1mil) (Max=620mil) (All)	0
Un-Routed Net Constraint ((All))	0
Short-Circuit Constraint (Allowed=No) (All),(All)	0
Power Plane Connect Rule(Relief Connect)(Expansion=20mil) (Conductor Width=20mil) (Air Gap=10mil) (Entries=4)	0
Width Constraint (Min=8mil) (Max=100mil) (Preferred=8mil) (All)	0
Clearance Constraint (Gap=4mil) ((InComponent('U16') OR InComponent('U17'))),(All)	0
Clearance Constraint (Gap=10mil) ((InNamedPolygon('Bottom GND') OR InNamedPolygon('Top GND'))),(All)	0
Clearance Constraint (Gap=3mil) ((InComponent('RA1') OR InComponent('RA2') OR InComponent('RA3') OR	0
Minimum Solder Mask Sliver (Gap=1.5mil) ((InComponent('RA1') OR InComponent('RA2') OR InComponent('RA3') OR	0
Total	0

Multilayer Pads with 0 size Hole found	
Pad FD1-0(-1842mil,0.001mil) Multi-Layer	
Pad FD3-0(0mil,1981.001mil) Multi-Layer	
Pad FD2-0(1837mil,0.001mil) Multi-Layer	



CNEPuckRevF.PrjPcb

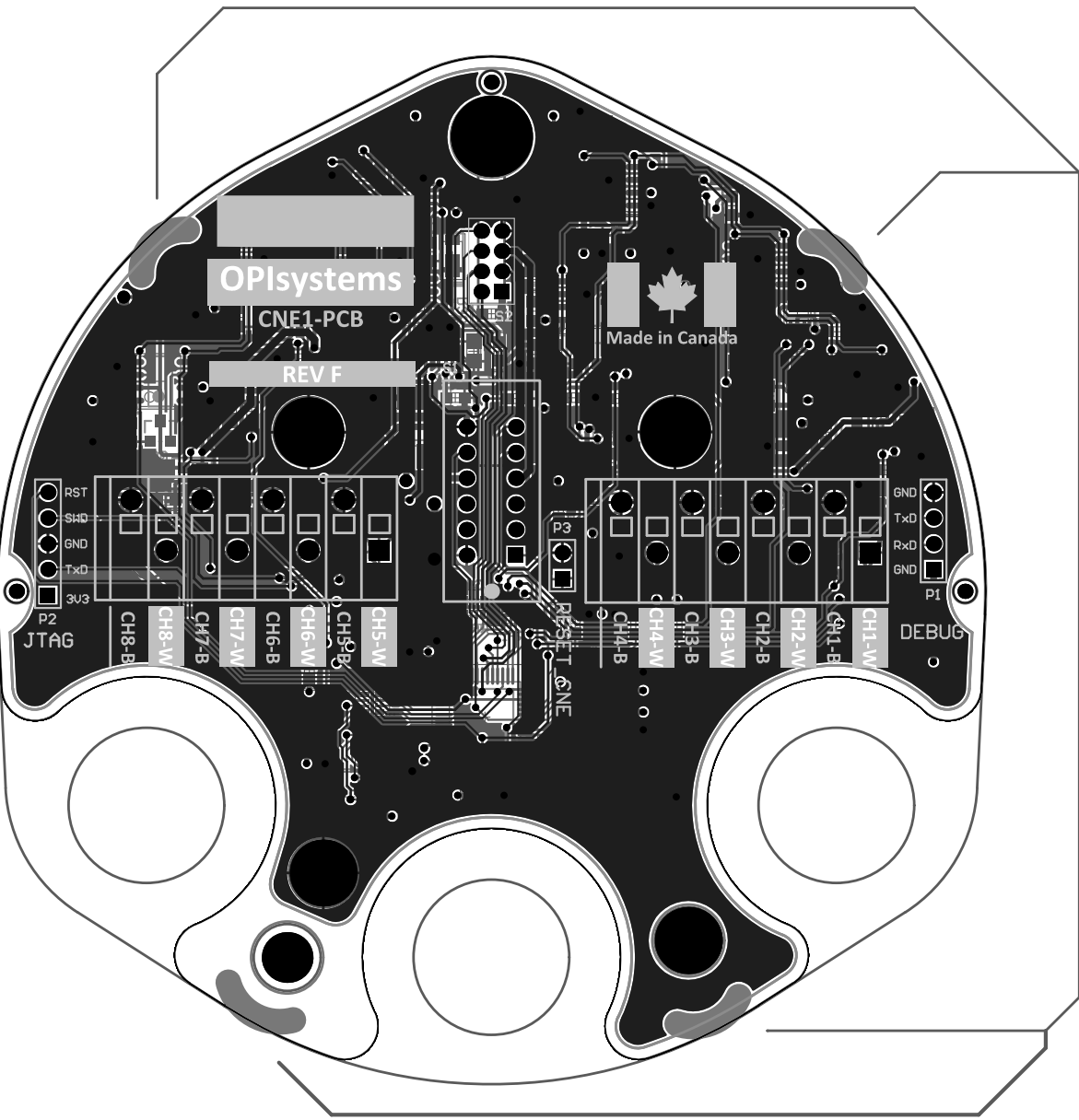
Spread Rows Now! Or press CTRL+R to spread out rows evenly.

Variant:	Variant to Contract Manufacturer
----------	----------------------------------

Build Qty: 0

#	Designator	Quantity	OPL VID	Neede	Here	Order	Vendor	Description	Manufacturer	Manufacturer Part Num	Footprint	Comment	Fitted	Other info
1	C1, C3	2	101353	0				CAP CER 6.8PF 50V NP0 0603	TDK Corporation	C1608C0G1H6R80	RC0603	6.8pF	Fitted	
2	C2, C9, C10	3	101354	0				CAP CER 4.7UF 10V 10% X5R 0603	TDK Corporation	C0808X5R1A475K0.50	RC0603	4.7uF	Fitted	
3	C4, C5	2	101355	0				CAP CER 20PF 50V 5% NP0 0603	Yageo	C0603J3RNP020B200	RC0603	20pF	Fitted	
4	C6, C7, C8, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C27, C28, C40, C41, C42	24	100039	0				CAP CERH .1UF 10% 16V X7R 0603	AVX Corporation	0603Y1C104KAT2A	RC0603	0.1uF	Fitted	
5	CONN1, CONN2	2	101356	0				TERM BLOCK PCB 8POS 3.5MM GREEN	Phoenix Contact	1985250	PTSA1 5/8-3.5-Z	PC-1985250	Fitted	
6	D1, D2, D3, D4, D5, D6, D7, D8	8	101020	0				SUPPRESSOR ESD 24VDC 0603 SMD	Littlefuse Inc	PGB1010603MR	RC0603	PGB1010603MR	Fitted	
7	D10, D11, D12, D13, D14, D15, D16, D17	8	101019	0				TVS BIDIRECT 50W SOD523	ON Semiconductor	ESD5B5.0ST1G	SOD-523	ESD5B5.0ST1G	Fitted	
8	D26	1	101462	0				DIODE SCHOTTKY 40V 30MA SOT323	Diodes Inc	SDMG0340LC-7-F	SOT-323	SDMG0340LC	Fitted	
9	D9, D18, D19, D20, D21, D22, D23, D24, D25	9	101018	0				DIODE SCHOTTKY 1A 200V PWRDI 123	Diodes Inc	DFLS1200-7	POWERDI-123	DFLS1200-7	Fitted	
10	Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8	8	100638	0				MOSFET P-CH 20V 2.2A SOT23-3	Vishay/Siliconix	SI2301BDS-T1-E3	SOT23(DGS)	SI2301BDS	Fitted	
11	R1	1	101044	0				RES 10K OHM 1/10W 5% 0603 SMD	Panasonic Electronic Components	ERJ-3GEYJ103V	RC0603	10K	Fitted	
12	R13, R14, R15, R16, R20, R22, R24, R52, R53, R55, R56	11	101388	0				RES 2.2K OHM 1/10W 5% 0603 SMD	Panasonic Electronic Components	ERJ-3GEYJ222V	RC0603	2K2	Fitted	
13	R18, R80, R81, R82, R83, R84, R85, R86, R87	9	101335	0				RES 100K OHM 1/10W 5% 0603 SMD	Panasonic Electronic Components	ERJ-3GEYJ104V	RC0603	100K	Fitted	
14	R19	1	101043	0				RES 47K OHM 1/10W 5% 0603 SMD	Panasonic - ECG	ERJ-3GEYJ473V	RC0603	47K	Fitted	
15	R2	1	101380	0				RES 24 OHM 1W 5% 2512 SMD	Vishay/Dale	CRCW251224R0JNEG	RES2512	24R	Fitted	
16	R25	1	101175	0				RES 4.7K OHM 1/10W 5% 0603 SMD	Panasonic - ECG	ERJ-3GEYJ472V	RC0603	4k7	Fitted	
17	R26, R27, R28, R30, R44	5	101042	0				RES 0.0 OHM 1/10W 0603 SMD	Panasonic - ECG	ERJ-3GEY0R00V	RC0603	0R	Fitted	
18	R29	1	101357	0				RES 390 OHM 1/10W 5% 0603 SMD	Panasonic Electronic Components	ERJ-3GEYJ391V	RC0603	390R	Fitted	
19	R3, R4, R9, R10, R33, R34, R36, R40, R5, R6, R11, R12, R35, R36, R41, R42	8	101449	0				RES 51.1 OHM .25W 1% 0603 SMD	Vishay Dale	CRCW060351R1FKEAH	RC0603	51R1	Fitted	
20	R5, R6, R11, R12, R35, R36, R41, R42	8	101386	0				RES 330 OHM 1/8W 5% 0805 SMD	KOA Speer Technologies	RK73B2ATD12331J	RC0805	330R	Fitted	
21	R51, R54	2	101538	0				RES 200K OHM 1/10W 5% 0603 SMD	Panasonic Electronic Components	ERJ-3GEYJ204V	RC0603	200K	Fitted	
22	R7, R8, R21, R31, R32, R37, R38, R43	8	101487	0				RES 2K OHM 1/10W 1% 0603 SMD	Panasonic Electronic Components	ERJ-3EKF2001V	RC0603	2K0	Fitted	
23	RA1, RA2, RA3, RA4	4	101389	0				RES ARRAY 100 OHM 4 RES 0804	Panasonic Electronic Components	EXB-28V101JX	exb28v	100R	Fitted	
24	S1	1	101359	0				CONN RECTANG 6POS .100 VERT	TE Connectivity	7-5530843-6	EdgeConnector-612	7-5530843-6	Fitted	
25	S2	1	101488	0				CONN RCPT 2MM 8POS DL VERT PCB	Santec Inc	MMS-104-01-F-DV	hrose-2x4	MMS-104-01-F-DV	Fitted	
26	U1	1	101348	0				IC LOAD SWITCH INTEGRATED SC70-6	Fairchild Semiconductor	FDG6342L	TSSA3160	FDG6342L	Fitted	
27	U13	1	101360	0				IC MCU 32BIT 64KB FLASH 48LQFP	STMicroelectronics	STM32F051C8T6	LQFP48-7x7mm	STM32F051C8T6	Fitted	
28	U14	1	101178	0				IC REG LDO 500MA 3.3V SOT223-4	National Semiconductor	LP38693MP-3.3NOPB	SOT223	LP38693MP-3.3	Fitted	
29	U16, U17	2	101536	0				IC LEVEL TRANSLATOR - TSSOP8	ON Semiconductor	PCA9306DTR2G	TSSOP65P640X12 0-8N	PCA9306DP	Fitted	
30	U2	1	101391	0				IC SRAM SPI 512K 2.5V 8SOIC	Microchip Technology	23LCV512-I/SN	SOIC127P600X12 65-8N	512Kx8	Fitted	
31	U3, U4, U9, U10, U18, U19, U24, U25	8	101350	0				IC SWITCH IC2C TO 1-WIRE 8-SOIC	Maxim Integrated	DS2482S-100+	SOIC127P5980X12 53-8N	DS2482S-100+	Fitted	
32	U5, U6, U11, U12, U20, U21, U26, U27	8	101351	0				IC BRIDGE SPDT SC88	ON Semiconductor	NLAS4157DF12G	TSSA3160	NLAS4157D	Fitted	
33	Y1	1	101361	0				CRYSTAL 32.768KHZ 12.5PF SMD	Fox Electronics	FX135A-327	FX135	32.768kHz	Fitted	
34	Y2	1	101362	0				CRYSTAL 8.000000MHZ 8PF SMD	NDK	NB045GB-8.000000MHZ	NB045GB	8MHz	Fitted	
35	CANADAF1AG1	0		0				Canada Flag				CanadaFlag500 x250		Not Fitted
36	FD1, FD2, FD3	0		0				Fiducial Round				FIDUCIAL ROUND SMALL MountingHole		Not Fitted
37	MH1, MH2, MH3	0		0				PCB Mounting Hole, 0.150" hole, 0.270" Keupout						Not Fitted
38	P1	0	100210	0				Header, 4-Pin	3M	2340-6111TG	HDR1X4		Not Fitted	
39	P2	0	100210	0				Header, 5-Pin	3M	2340-6111TG	HDR1X5		Not Fitted	
40	P3	0	100210	0				Header, 2-Pin	3M	2340-6111TG	HDR1X2		Not Fitted	
41	R17, R23	0	101042, 101388	0				RES 0.0 OHM 1/10W 0603 SMD, RES 2.2K OHM 1/10W 5% 0603 SMD	Panasonic - ECG, Panasonic Electronic Components	ERJ-3GEY0R00V, ERJ-3GEYJ222V			Not Fitted	
Total Qty: 153														

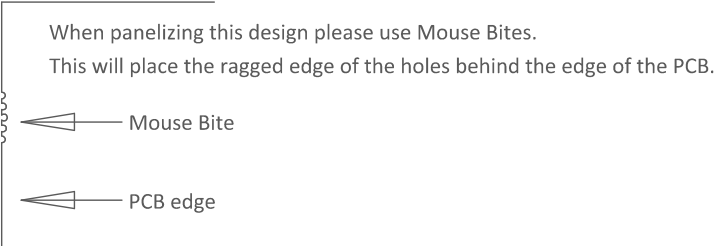
Total Qty:	153
------------	-----



Cable Node Expander PCB

IMPORTANT:

Please make sure that perforated edges of Mouse Bytes are within the edge of the PCB - aka no jagged edges of the byte can exist outside of the PCB edge.



Mechanical 2 Layer: Mouse Bites Panelization Details

Top Silkscreen Layer
Top Copper Layer

Bottom Copper Layer
Bottom Silkscreen Layer
Mechanical 1 Layer: Board Outline Layer

Keepout Layer