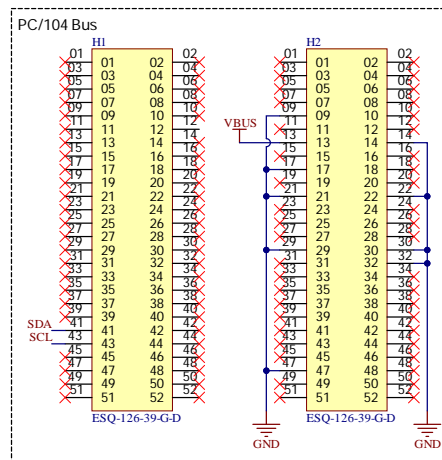
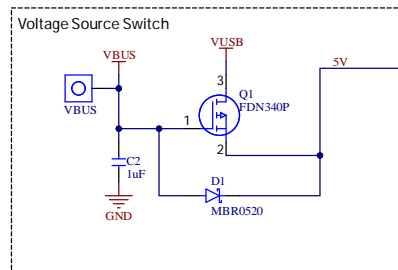
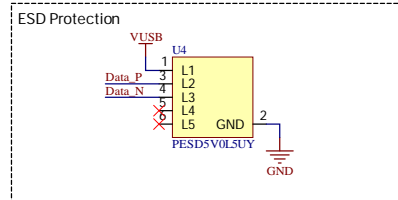
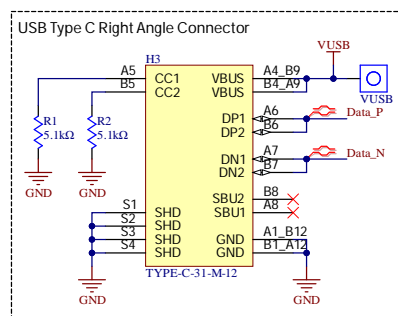
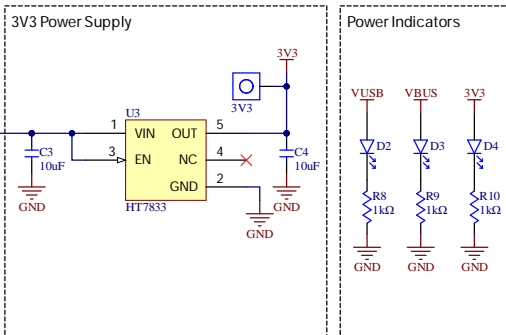
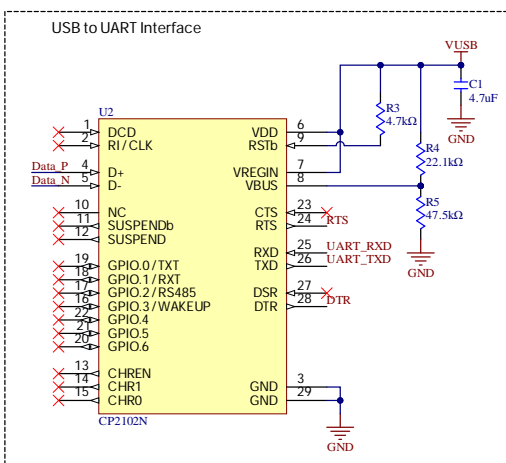


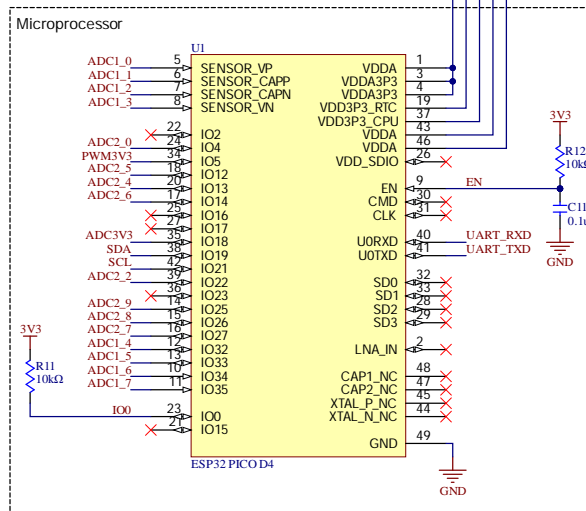
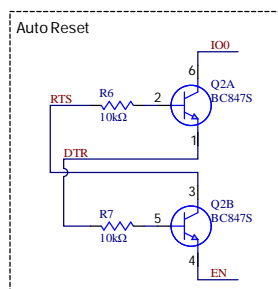
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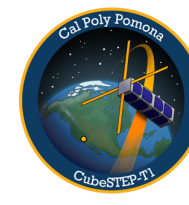
CubeSTEP Payload Processor
Cal Poly Pomona_____2023



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Cal Poly Pomona_____2023

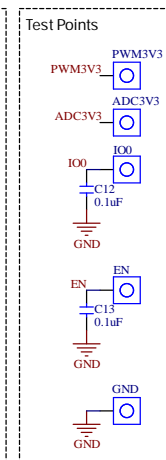
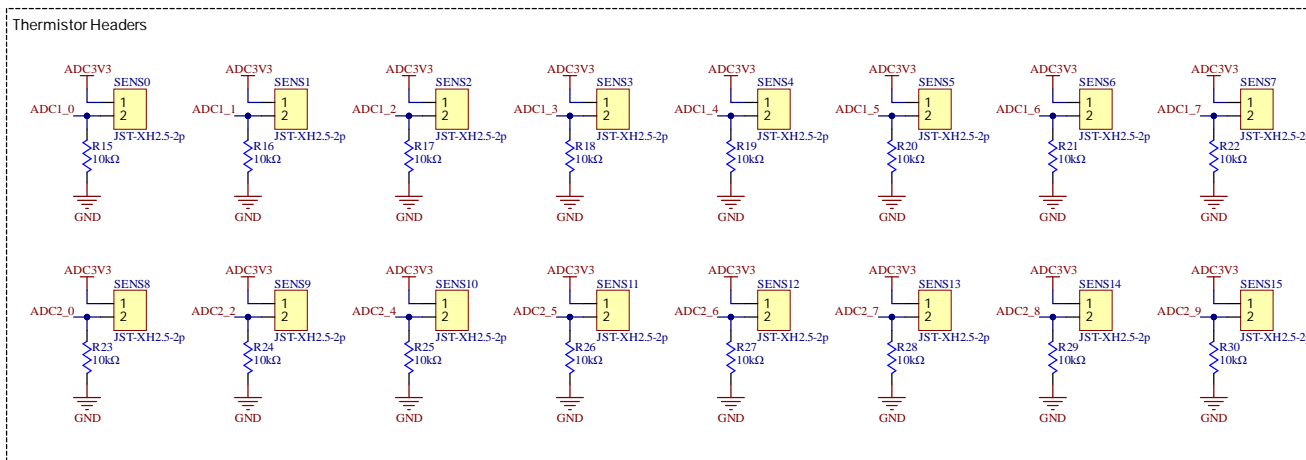
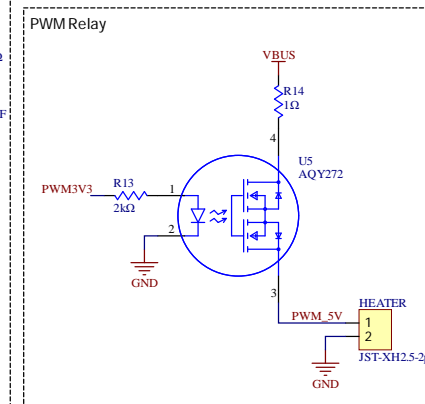
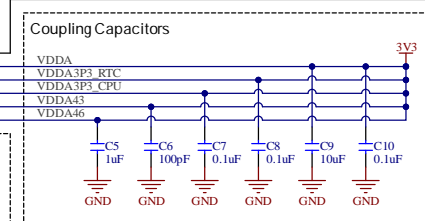


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CubeSat Technology Exploration Project
California State Polytechnic University, Pomona

Designed to be used as an interface for the OBC's 16 temperature sensors and heating cartridge. See the accompanying firmware and its documentation for more information: [GitHub \(23navin/CubeSTEP-payload-firmware\)](#)

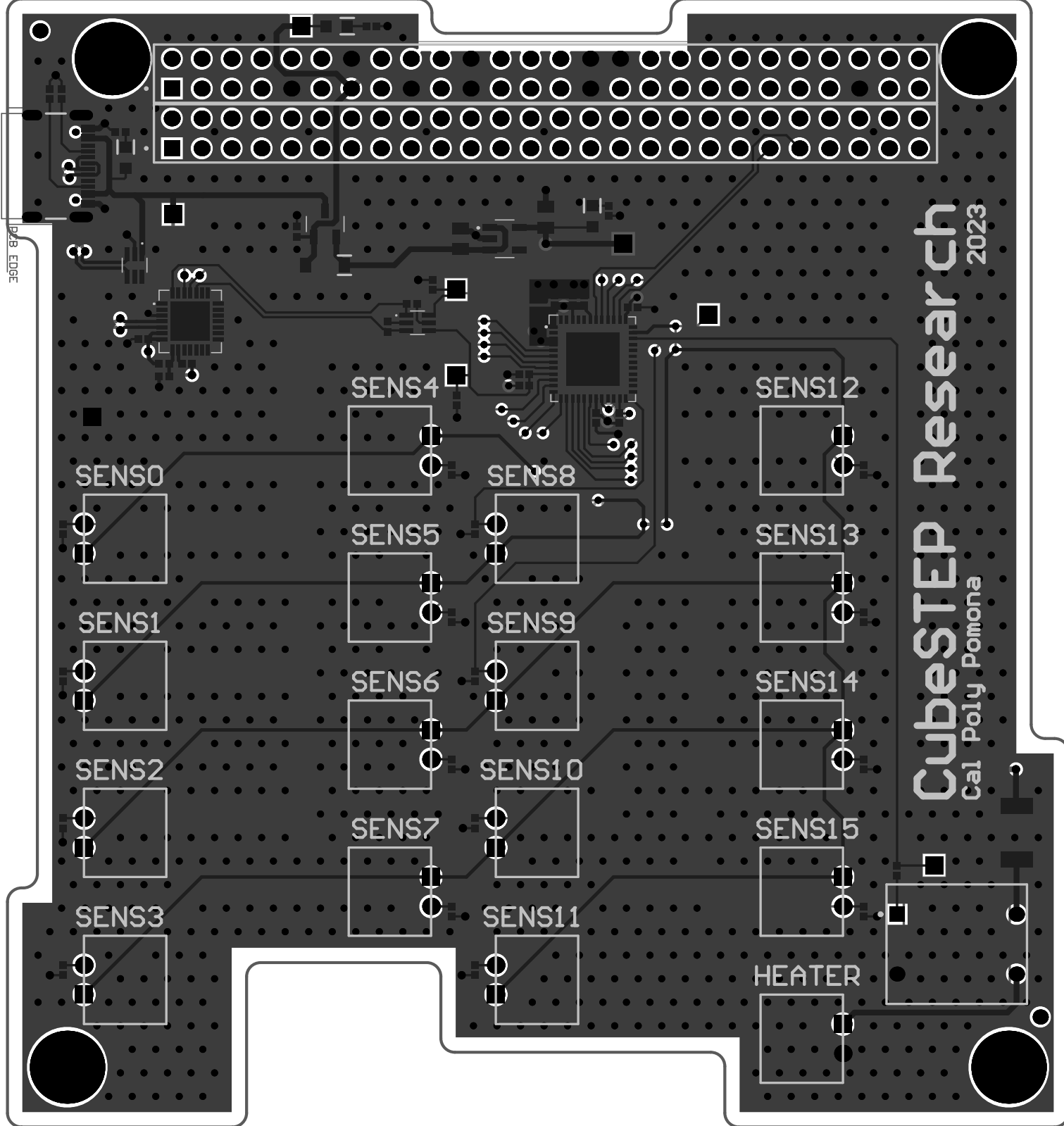


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PDB_EDGE

SENS0

SENS1

SENS2

SENS3

SENS4

SENS5

SENS6

SENS7

SENS8

SENS9

SENS10

SENS11

SENS12

SENS13

SENS14

SENS15

HEATER

CubeSTEP Research
Cal Poly Pomona
2023

Name	Description	Designator	Revision ID	Quantity	ALPCB Part #	Manufacturer 1	Manufacturer Part Number 1
Test Point	Signal test point	3V3, ADC3V3, EN, GND, I00, PWM3V3, VBUS, VUSB		8			
4.7uF	±20% 16V X5R SMD 0402	C1		1	C697614	Kyocera AVX	CM05X5R475M16AH
1uF	±10% 16V X5R SMD 0402	C2, C5		2	C77006	Murata	GRM155R61C105KA12D
10uF	±10% 16V B SMD 0805	C3, C4, C9		3	C162317	Murata	GRM21BB31C106KE15L
100pF	±10% 16V X5R SMD 0402	C6		1	C541374		
0.1uF	±20% 16V X5R SMD 0402	C7, C8, C10, C11, C12, C13		6	C344190		
MBR0520	Rectifier Diode, Schottky, 1 Phase, 1 Element, 0.5A, 20V V(RRM), Silicon	D1		1	C475717	ON Semiconductor	MBR0520LT1G
NCD0603R2	Colorless transparency 65mcd - 150mcd 615nm-630nm - 30°C-+85°C Red 130° 65mW 0603 Light Emitting Diodes (LED) ROHS	D2, D3, D4		3	C90692	Broadcom Avago	HSMC-C280
ESQ-126-39-G-D	Board Connector, 52 Contact(s), 2 Row(s), Female, Straight, 0.1 inch Pitch, Solder Terminal, Locking, Black Insulator, Socket	H1, H2		2		Samtec	ESQ-126-39-G-D
TYPE-C-31-M-12	SA 1 16P Female Type-C SMD USB Connectors ROHS	H3		1	C165948	HRO Electronics	TYPE-C-31-M-12
JST-XH2.5-2p	1x2P XH 1 2.5mm 2 Brass Push-Pull P-2.5mm Wire To Board / Wire To Wire Connector ROHS	HEATER, SENS0, SENS1, SENS2, SENS3, SENS4, SENS5, SENS6, SENS7, SENS8, SENS9, SENS10, SENS11, SENS12, SENS13, SENS14, SENS15		17	C132479	CKMTW	W-2501R02P-N000
FDN340P	SOT-23 MOSFETs ROHS	Q1		1	C347510	ON Semiconductor / Fairchild	FDN340P
BC847S	Small Signal Bipolar Transistor 0.1A I(C), 45V V(BR)CEO, 2-Element, NPN, Silicon	Q2		1	C148112	Infineon	BC847S
5.1kΩ	±0.5% 62.5mW 50V SMD 0402	R1, R2		2	C423276		
4.7kΩ	±1% 62.5mW 50V SMD 0402	R3		1	C105871	Yageo	RC0402FR-074K7L
22.1kΩ	±1% 62.5mW 50V SMD 0402	R4		1	C163478	Yageo	RC0402FR-0722X1L
47.5kΩ	±1% 62.5mW 50V SMD 0402	R5		1	C137974	Yageo	RC0402FR-0747X5L
10kΩ	±1% 62.5mW 50V SMD 0402	R6, R7, R11, R12, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30		20	C258091		
1kΩ	±1% 62.5mW 50V SMD 0402	R8, R9, R10		3	C106235	Yageo	RC0402FR-071KL
2kΩ	±1% 62.5mW 50V SMD 0402	R13		1	C100291		
1Ω	±5% 0.75W 200V SMD 2010	R14		1	C137062	Stackpole Electronics	RMCF2010J1R00
ESP32 PICO D4	System-on-Chip Integrating an ESP32 chip together with a 4 MB SPI flash	U1		1	C193707	Espressif Systems	ESP32-PICO-D4
CP2102N	USB-to-UART bridge controller	U2		1	C964632	Silicon Labs	CP2102N-A02-GQFN28R
HT7833	SOT-23-5 Linear Voltage Regulators (LDO) ROHS	U3		1	C3011187		
PESD5VOL5UY	Trans Voltage Suppressor Diode 25W, 5V V(RWM), Unidirectional, 5 Element, Silicon	U4		1	C2831528	Nexperia	PESD5VOL5UY.125
AQY272	Solid State Relays 1.25V 60V 0.11Ω 2A AC,DC DIP-4 - MOS Output (PhotoMOS) ROHS 1 Form A (SPST-NO)	U5		1	C62652	Panasonic Aromat NAIS	AQY-272