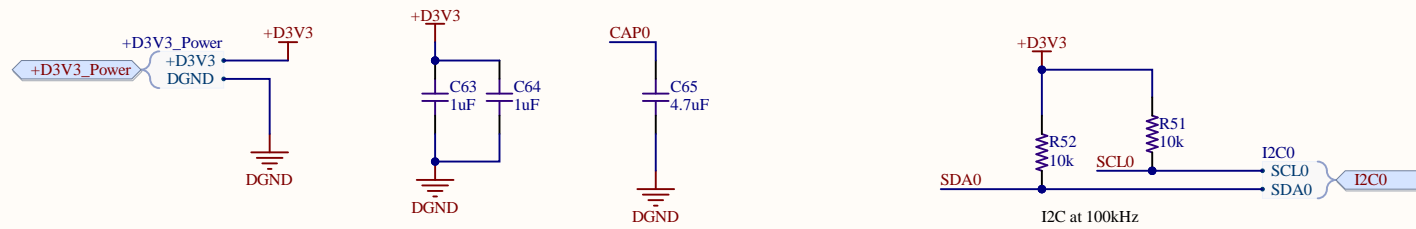
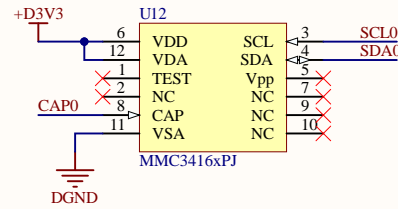


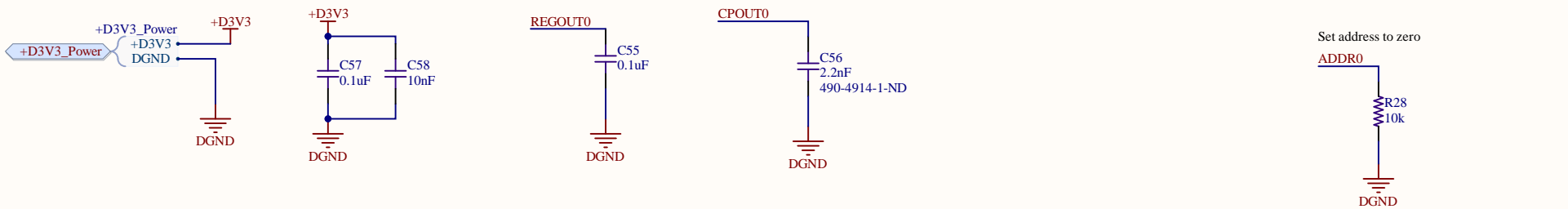
Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko -obc-lego.gg. File does not exist.
Revision: 1	Title: Project Homathko Subtitle: OBC High Level Design		ELW A221, 3800 Finney Road Victoria, BC, Canada V8W 3P6
	Date: 2024-02-09	Modified: 2017-11-29	
	Sheet: 1 of 24	Time: 9:07:02 PM	
SVN Revision #: Not in version control File: E:\homathko-obc-master\OBC High Level SchDot			



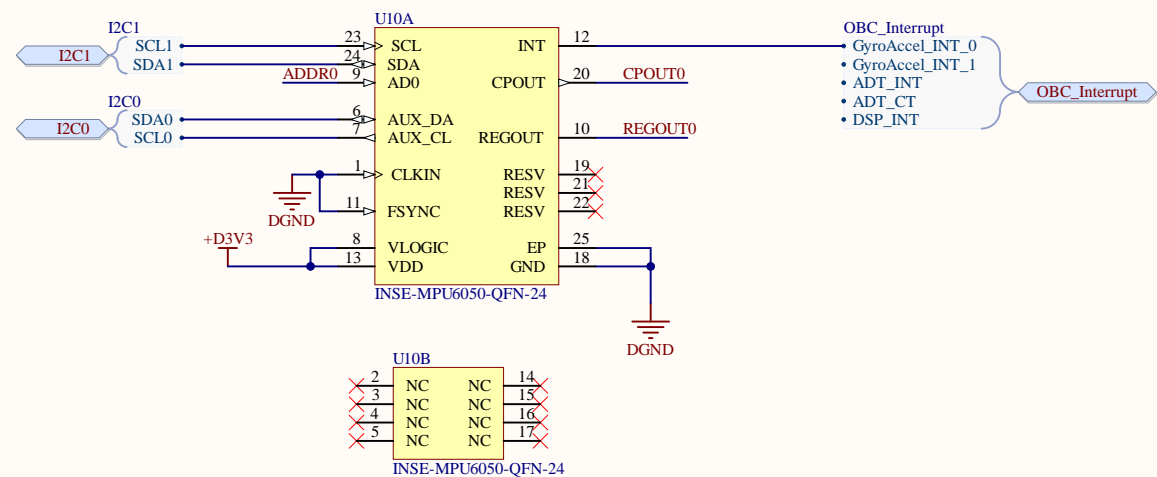
^ 13 Hz data rate



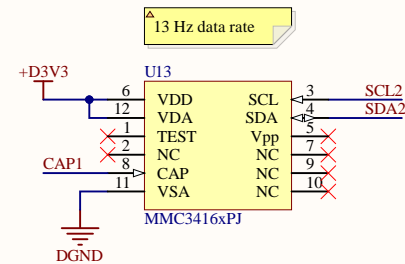
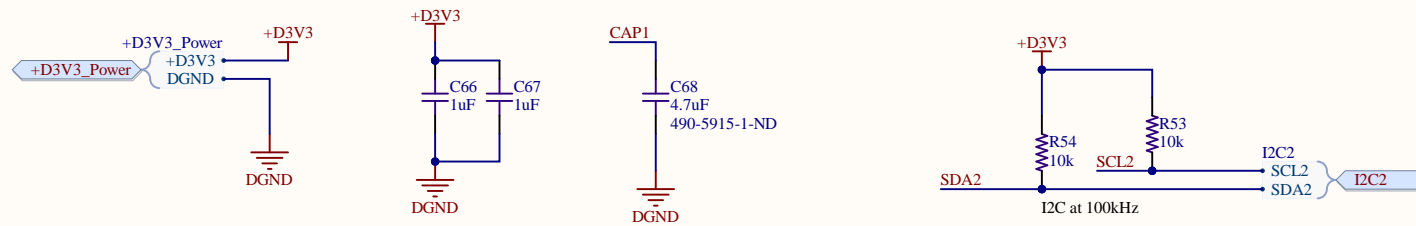
Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko -obc\logo.jpg. File does not exist. ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6
Revision: 1	Title: Project Homathko Subtitle: Magnetometer_0		
	Date: *	Modified: 2017-11-29	
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SVN Revision #: Not in version control File: E:\homathko-obc-master\Magnetometer_0.SchDot			



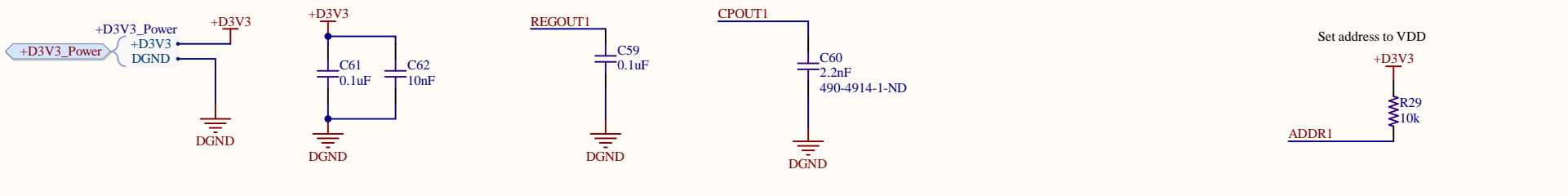
13 Hz to 100 Hz data rate
Also comes with a temperature sensor



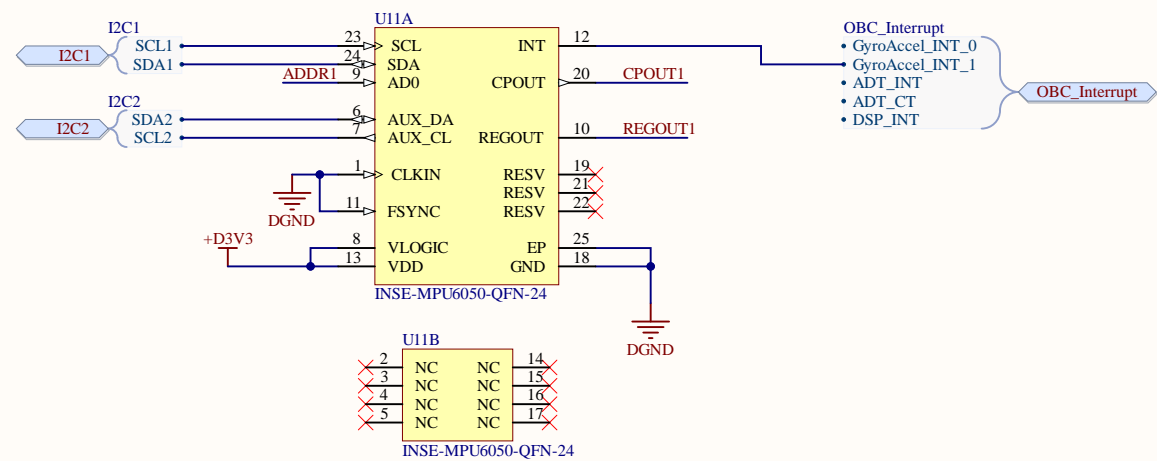
Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko- obc\logo.jpg. File does not exist.
Revision: 1	Title: Project Homathko Subtitle: GyroAccel_0		
	Date: *	Modified: 2017-11-29	
	Sheet: 3 of 24	Time: 9:07:02 PM	
SVN Revision #: Not in version control File: E:\homathko-obc-master\GyroAccel_0.SchDot			ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6



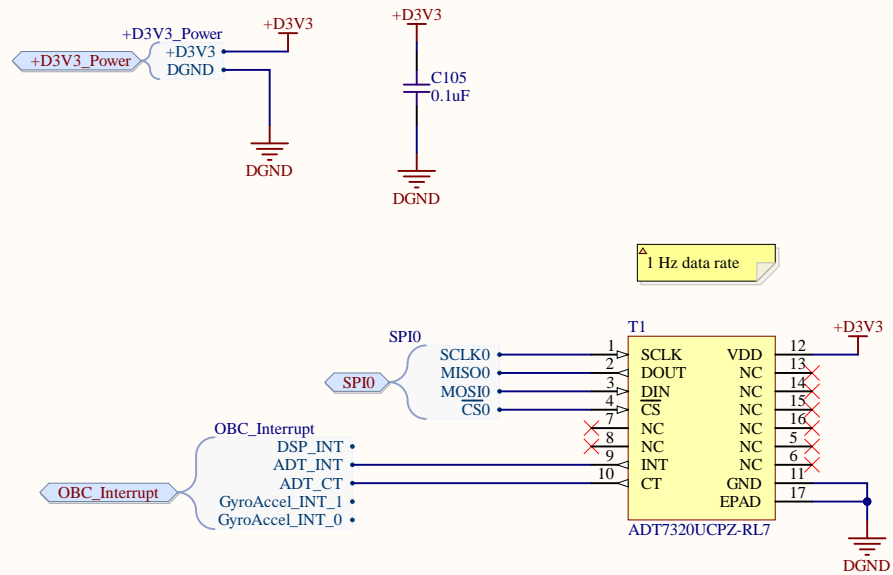
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Revision: 1	Title: Project Homathko Subtitle: Magnetometer_1		
	Date: *	Modified: 2017-11-29	
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SVN Revision #: Not in version control File: E:\homathko-obc-master\Magnetometer_1.SchDot			



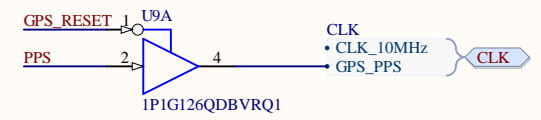
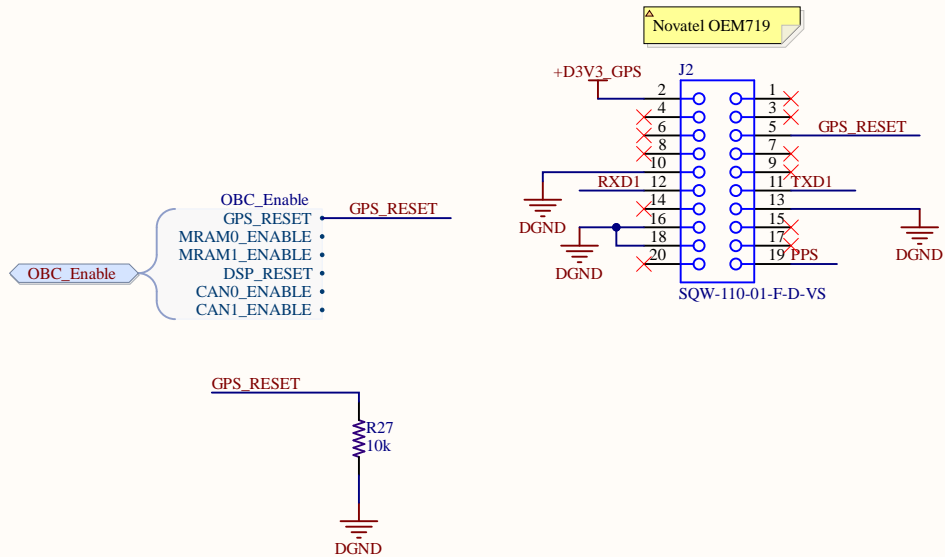
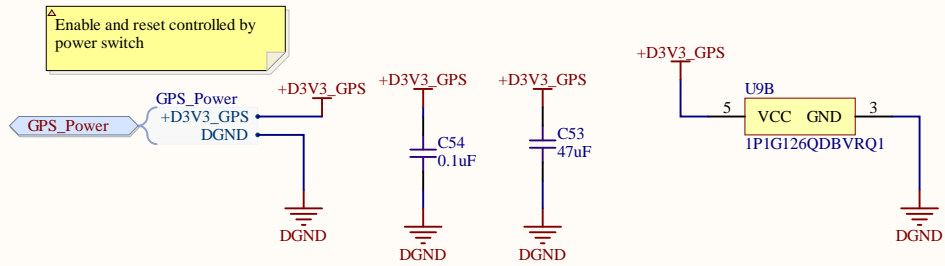
▲ 13 Hz to 100 Hz data rate
Also comes with a temperature sensor



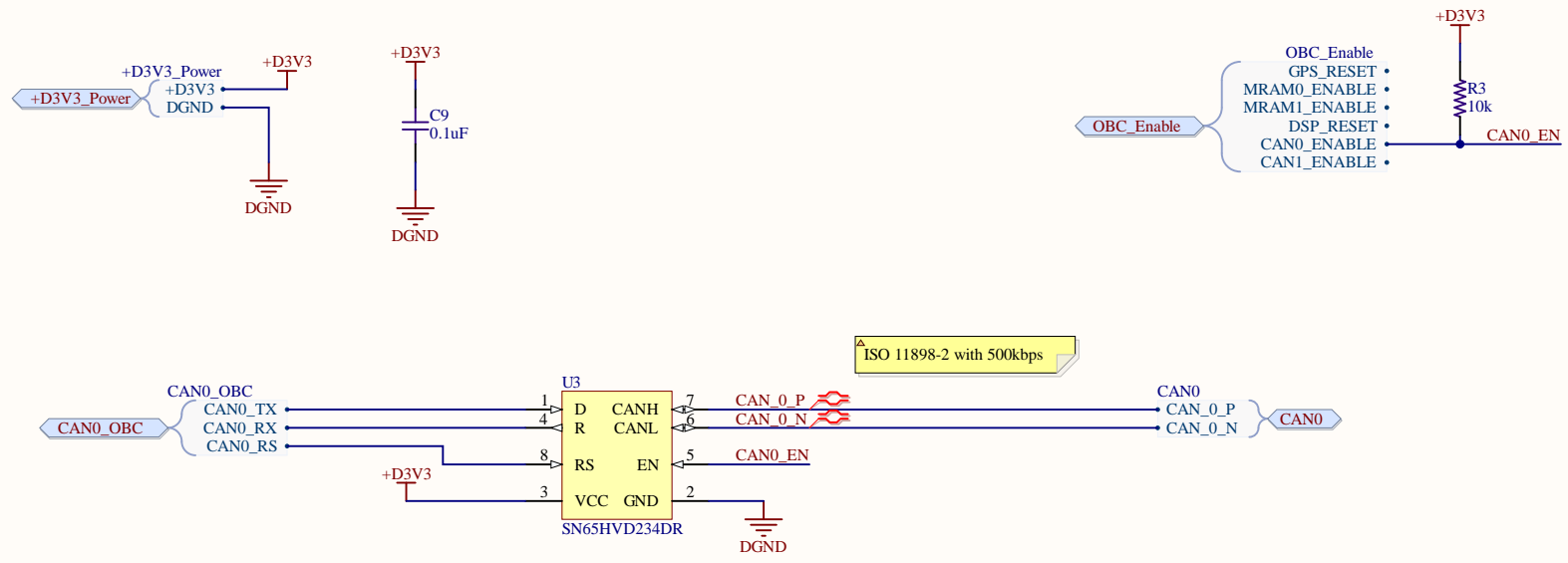
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Revision: 1	Title: Project Homathko Subtitle: GyroAccel_0		
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	Sheet: 5 of 24	Time: 9:07:02 PM	
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ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6			



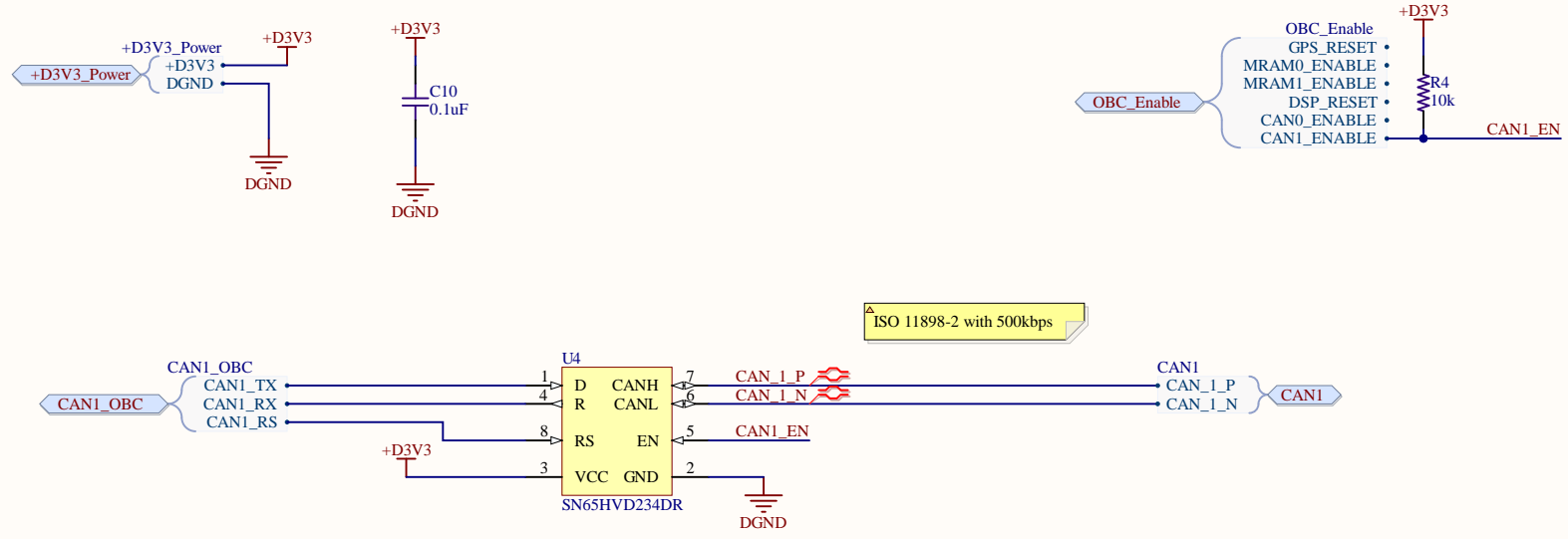
Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko -obc\logo.jpg. File does not exist. ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6
Revision: 1	Title: Project Homathko Subtitle: Temperature_sensor		
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SVN Revision #: Not in version control File: E:\homathko-obc-master\Temperature_sensor.SchDot			



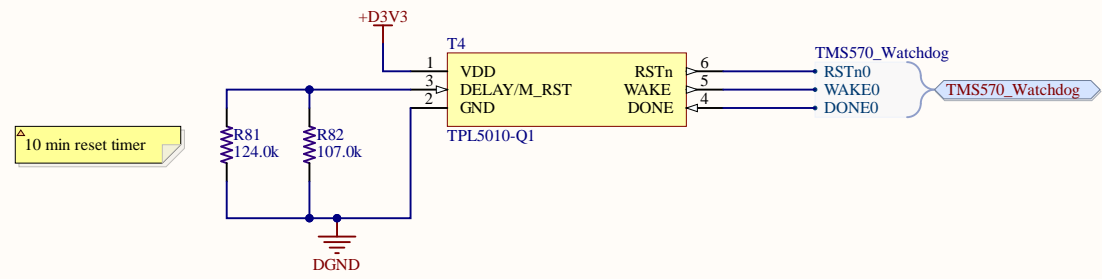
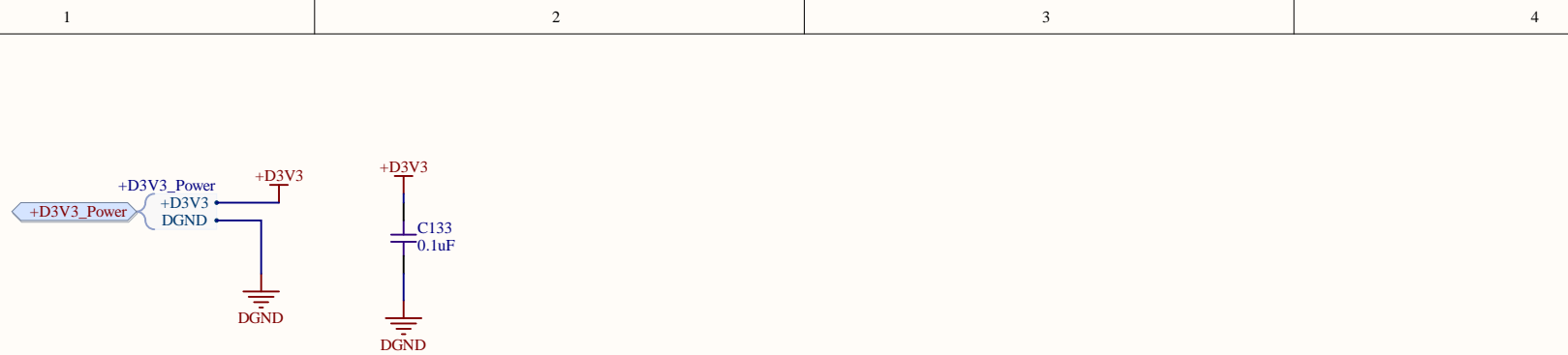
Author: Cass Hussmann	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko -obc\logo.jpg. File does not exist.
Revision: 1	Title: Project Homathko Subtitle: GPS		
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ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6			



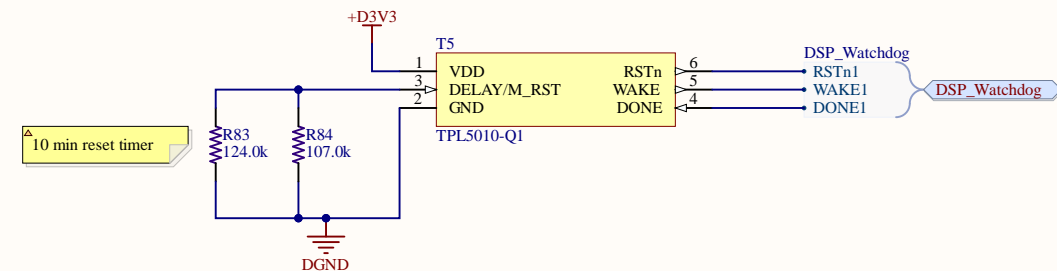
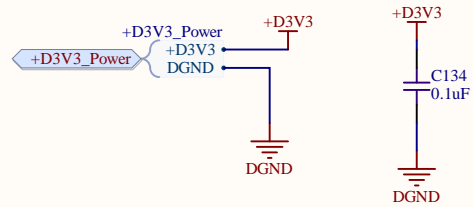
Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko -obc\logo.jpg. File does not exist. ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6
Revision: 1	Title: Project Homathko Subtitle: CAN_bus_0		
	Date: *	Modified: 2017-11-29	
	Sheet: 8 of 24	Time: 9:07:03 PM	
SVN Revision #: Not in version control File: E:\homathko-obc-master\CAN_bus_0.SchDot			



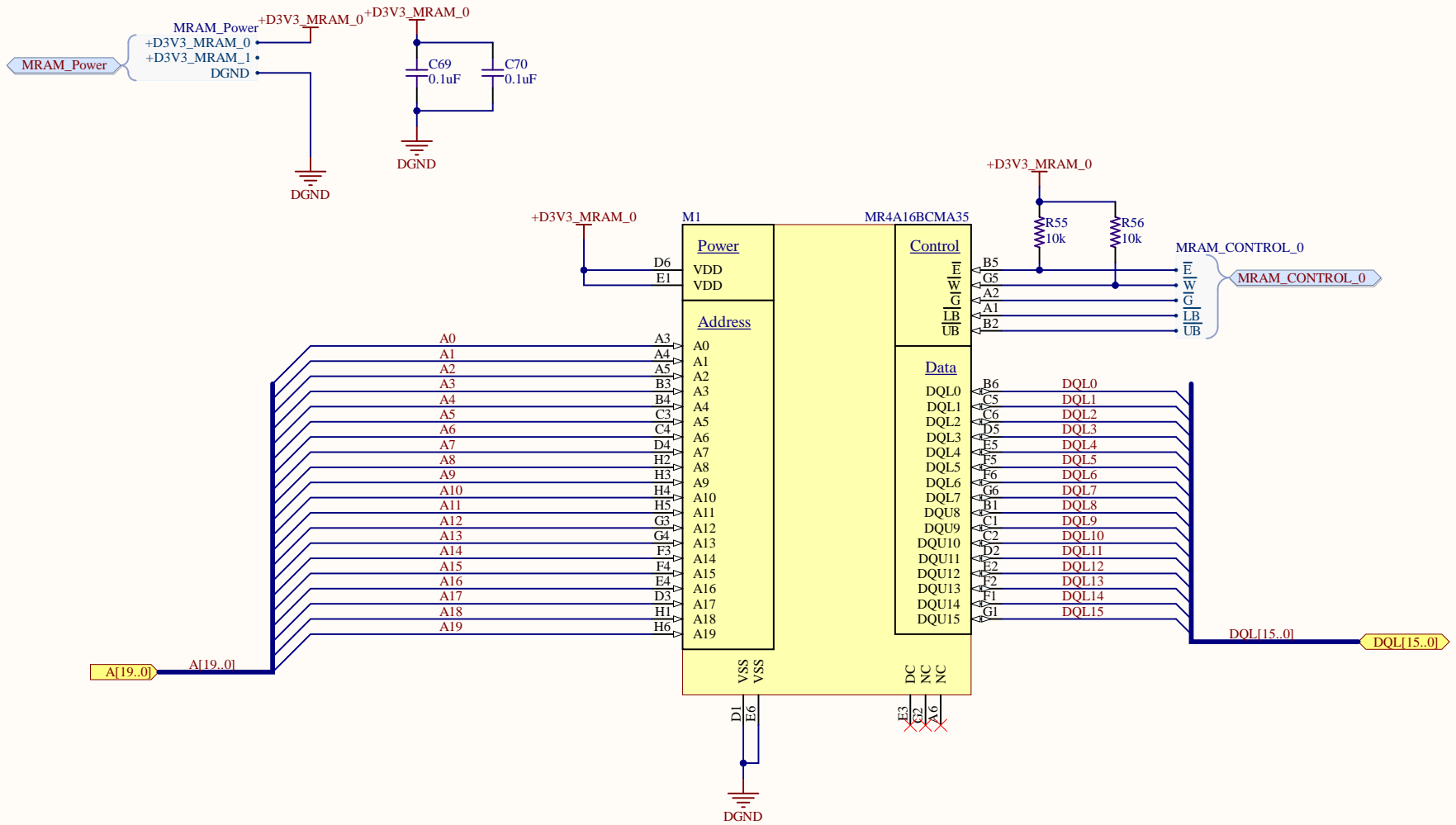
Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko- -obc\logo.jpg. File does not exist. ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6
Revision: 1	Title: Project Homathko Subtitle: CAN_bus_1		
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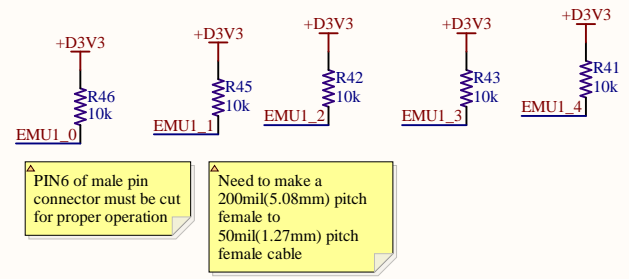
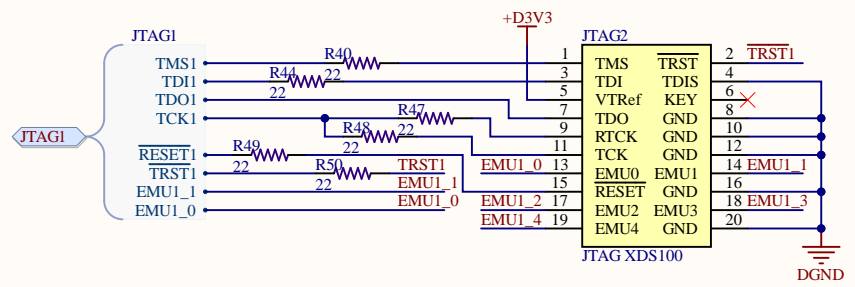
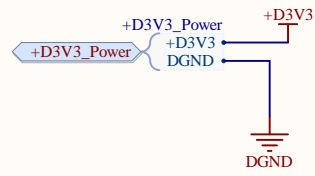
Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko- -obc\logo.jpg. File does not exist.
Revision: 1	Title: Project Homathko Subtitle: Watchdog_0		
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	Sheet: 10 of 24	Time: 9:07:03 PM	
SVN Revision #: Not in version control File: E:\homathko-obc-master\Watchdog_0.SchDot			
ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6			



Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko- -obc\logo.jpg. File does not exist.
Revision: 1	Title: Project Homathko Subtitle: Watchdog_1		
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ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6			



Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko -obc\logo.jpg. File does not exist.
Revision: 1	Title: Project Homathko Subtitle: MRAM_0		
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ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6			



Author: Russell Burge	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko- -obc\logo.jpg. File does not exist.
Revision: 1	Title: Project Homathko Subtitle: JTAG1		
	Date: *	Modified: 2017-11-29	
	Sheet: 13 of 24	Time: 9:07:03 PM	
SVN Revision #: Not in version control File: E:\homathko-obc-master\JTAG1.SchDot			
ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6			

Communications Directions (TX / RX) terms are with respect to the On Board Computer card

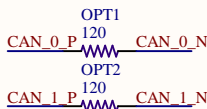
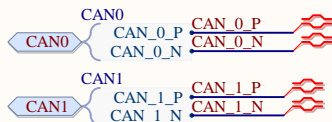
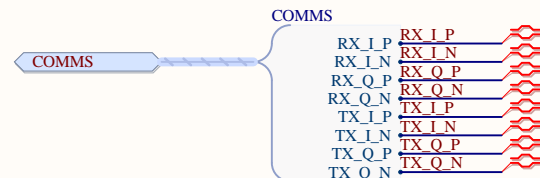
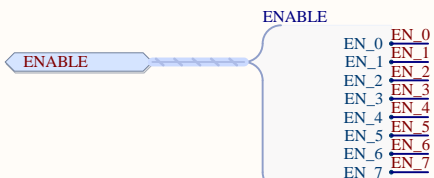
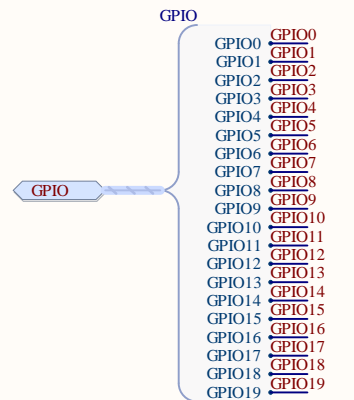
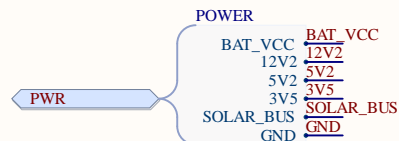
EN_0 is OBC (DSP Modem)
 EN_1 is ADCS
 EN_2 is PWR
 EN_3 is PAYLOAD
 EN_4 is COMM

GPIO_0 is Heater Activate on Battery Board
 GPIO_1 is CMX994 Chip Select
 GPIO_2 is CMX998 Chip Select
 GPIO_3 is LMX2485E Chip Select
 GPIO_4 is Transmitter Enable
 GPIO_5 is RF Power Amplifier enable
 GPIO_6 is RF PLL Lock Detect

RESET Pins are for STM32s

Dual CAN bus for redundancy

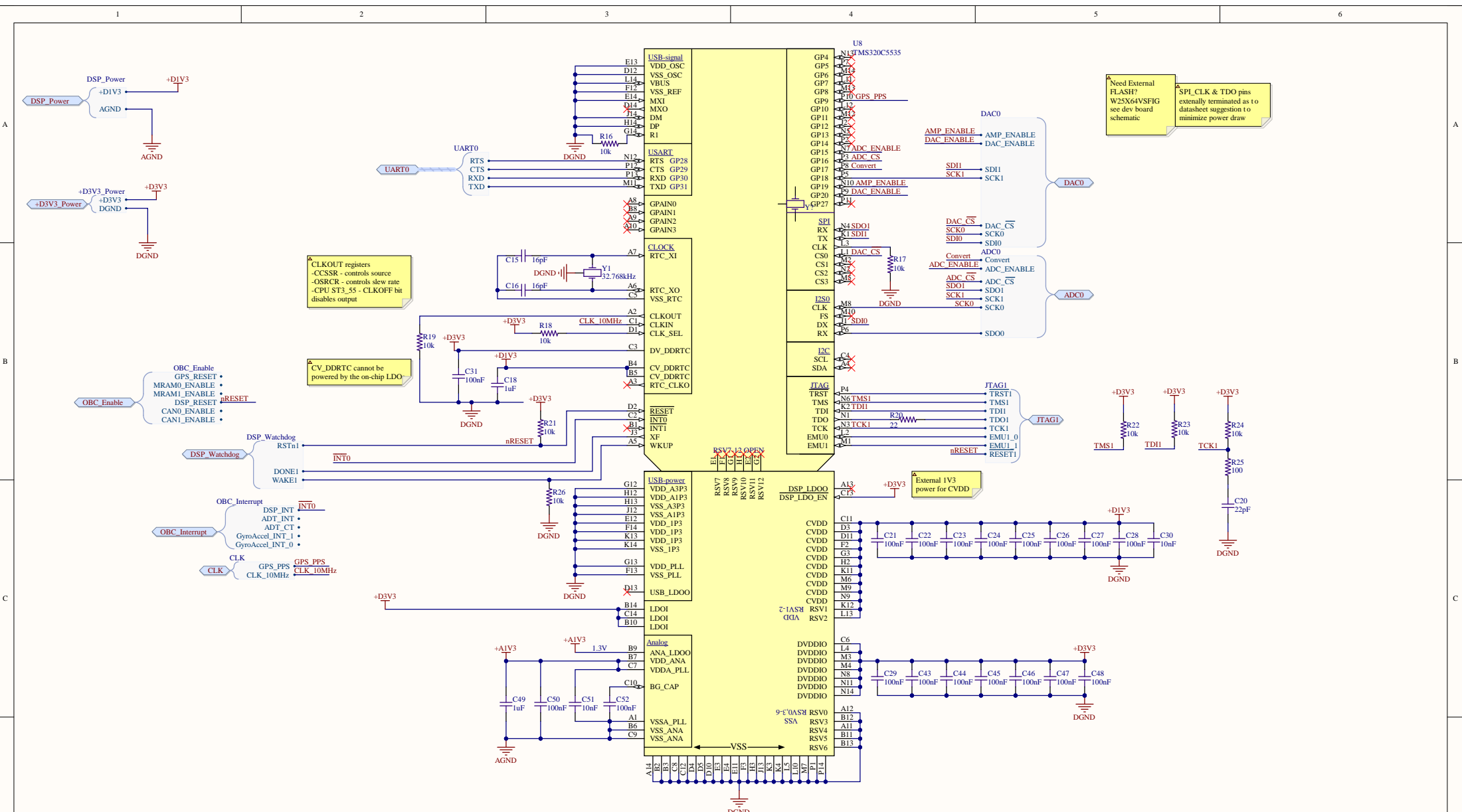
GPS_PPS gives the time in seconds



J1		MEC8-150-2-L-DV	
1	GND	1	GND
2	TX_I_P	2	GND
3	TX_I_N	3	4 GND
4	GND	4	6 GND
5	GND	5	8 RX_I_P
6	GND	6	10 RX_I_N
7	GND	7	12 GND
8	GND	8	14 GND
9	TX_Q_P	9	16 RX_Q_P
10	TX_Q_N	10	18 RX_Q_N
11	GND	11	20 GND
12	GND	12	22 GND
13	GND	13	24 GND
14	GND	14	26 CAN_1_P
15	GND	15	28 CAN_1_N
16	GND	16	30 GND
17	GND	17	32 SOLAR_BUS
18	GND	18	34 BAT_VCC
19	CAN_0_N	19	36 BAT_VCC
20	CAN_0_P	20	38 12V2
21	GND	21	40 12V2
22	GND	22	42 12V2
23	GND	23	44 12V2
24	GND	24	46 5V2
25	GND	25	48 5V2
26	GND	26	50 5V2
27	GND	27	52 3V5
28	GND	28	54 3V5
29	GND	29	56 3V5
30	SOLAR_BUS	30	58 3V5
31	BAT_VCC	31	60 RESET_1
32	BAT_VCC	32	62 RESET_3
33	BAT_VCC	33	64 RESET_5
34	BAT_VCC	34	66 RESET_7
35	12V2	35	68 RESET_9
36	12V2	36	70 RESET_11
37	12V2	37	72 GPS_PPS
38	12V2	38	74 EN_1
39	12V2	39	76 EN_3
40	12V2	40	78 EN_5
41	12V2	41	80 EN_7
42	12V2	42	82 GPIO1
43	12V2	43	84 GPIO3
44	12V2	44	86 GPIO5
45	5V2	45	88 GPIO7
46	5V2	46	90 GPIO9
47	5V2	47	92 GPIO11
48	5V2	48	94 GPIO13
49	3V5	49	96 GPIO15
50	3V5	50	98 GPIO17
51	3V5	51	100 GPIO19
52	3V5	52	
53	3V5	53	
54	3V5	54	
55	3V5	55	
56	3V5	56	
57	3V5	57	
58	RESET_0	58	
59	RESET_2	59	
60	RESET_4	60	
61	RESET_6	61	
62	RESET_8	62	
63	RESET_10	63	
64	RESET_11	64	
65	RESET_12	65	
66	RESET_13	66	
67	RESET_14	67	
68	RESET_15	68	
69	RESET_16	69	
70	RESET_17	70	
71	RESET_18	71	
72	RESET_19	72	
73	CLK_10MHz	73	
74	EN_0	74	
75	EN_2	75	
76	EN_4	76	
77	EN_6	77	
78	EN_8	78	
79	EN_10	79	
80	GPIO0	80	
81	GPIO2	81	
82	GPIO4	82	
83	GPIO6	83	
84	GPIO8	84	
85	GPIO10	85	
86	GPIO12	86	
87	GPIO14	87	
88	GPIO16	88	
89	GPIO18	89	
90	GPIO19	90	
91	GPIO20	91	
92	GPIO21	92	
93	GPIO22	93	
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97	GPIO26	97	
98	GPIO27	98	
99	GPIO28	99	
100	GPIO29	100	

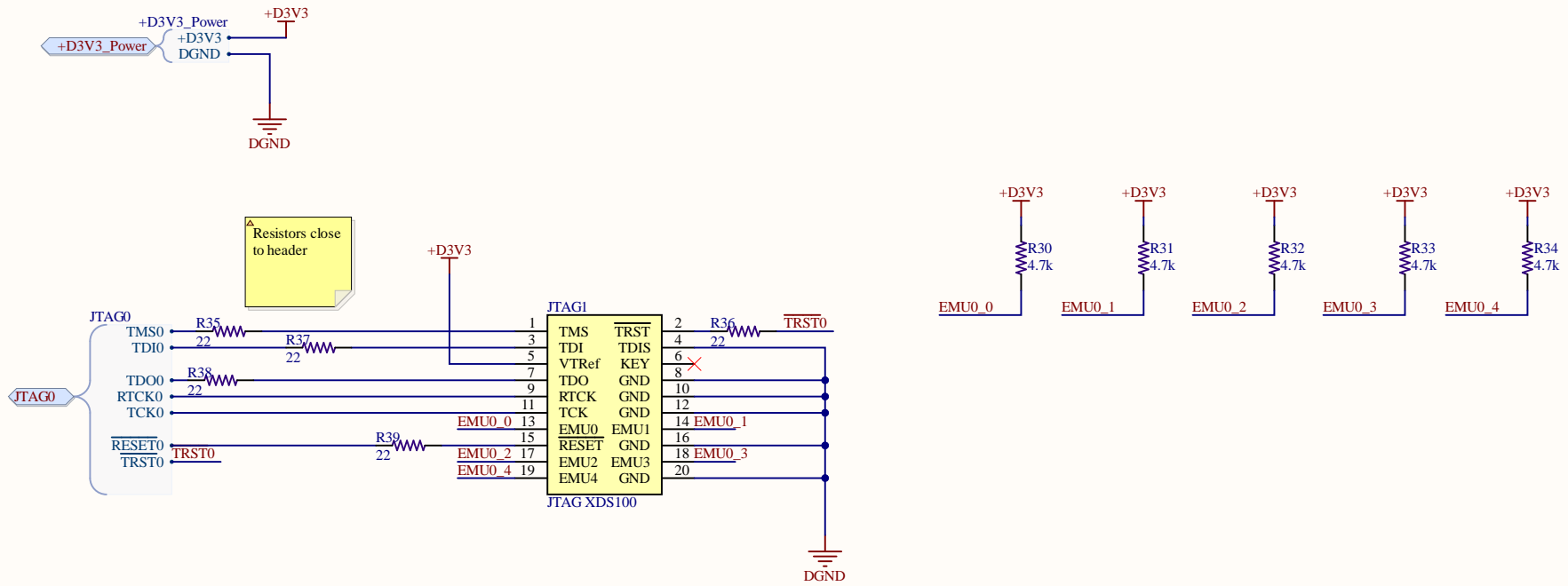
MEC8 connector can handle up to 1.8A of current per pin. In this design we have added a 0.5A buffer so each pin is designed to handle 1.3A.

Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko- -obc\logo.jpg. File does not exist.
Revision: 2	Title: Project Homathko Subtitle: Edge_Connector		
	Date: *	Modified: 2017-11-29	
	Sheet: 14 of 24	Time: 9:07:03 PM	
SVN Revision #: Not in version control File: E:\homathko-obc-master\Edge_Connector.SchDot			ELW A221, 3800 Finnerly Road Victoria, BC, Canada V8W 3P6

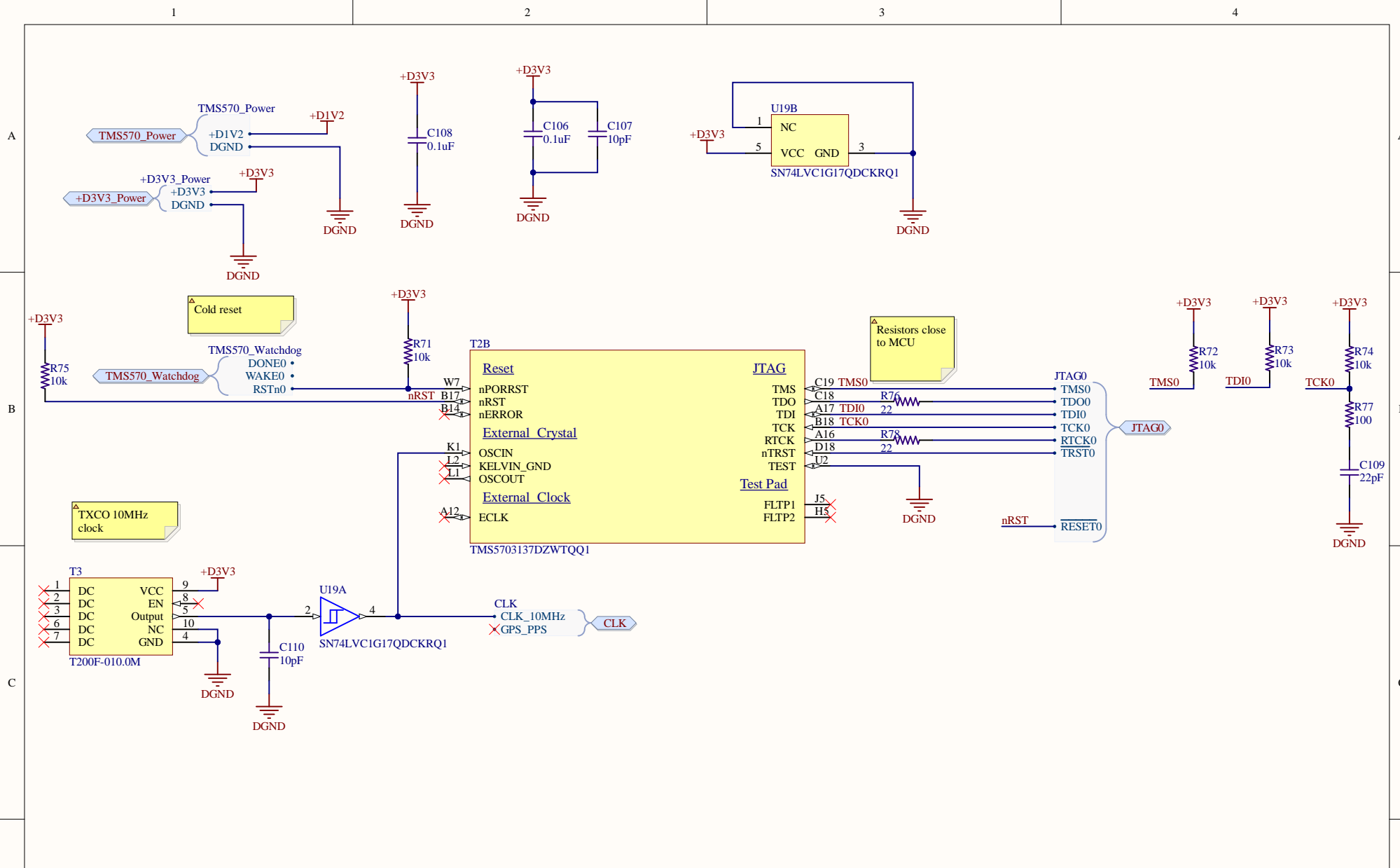


Author: Russell Burge	Checked By: Brosnan Yuen	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko -obc\logo.jpg. File does not exist.
Revision: <div style="font-size: 2em; font-weight: bold; text-align: center;">3</div>	Title: Project Homathko		
	Subtitle: DSP		
	Date: *	Modified: 2017-11-29	
Sheet: 15 of 24		Time: 9:07:03 PM	
SVN Revision #: Not in version control			
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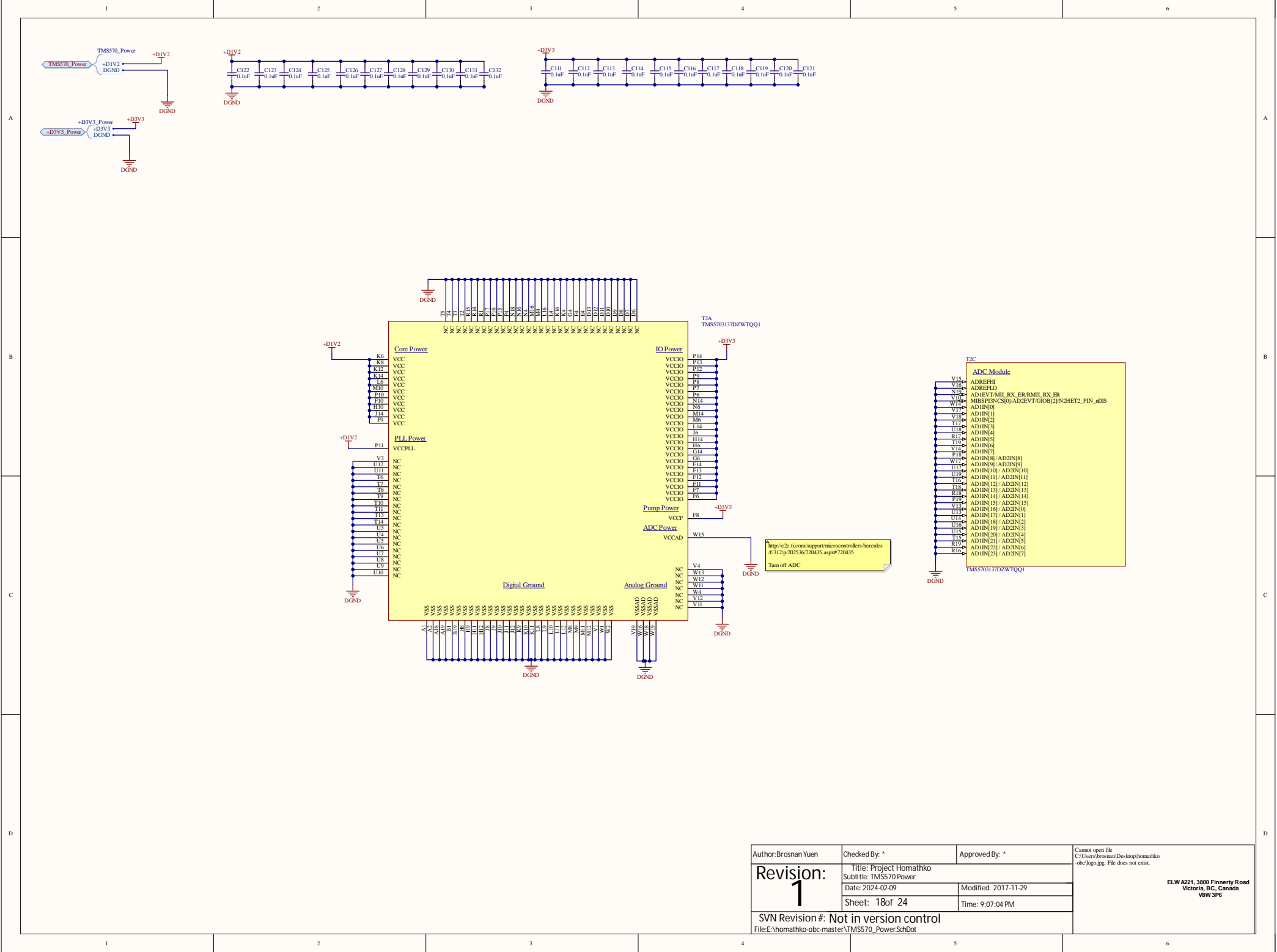
ELW A221, 3800 Finnerty Road
 Victoria, BC, Canada
 V8W 3P6



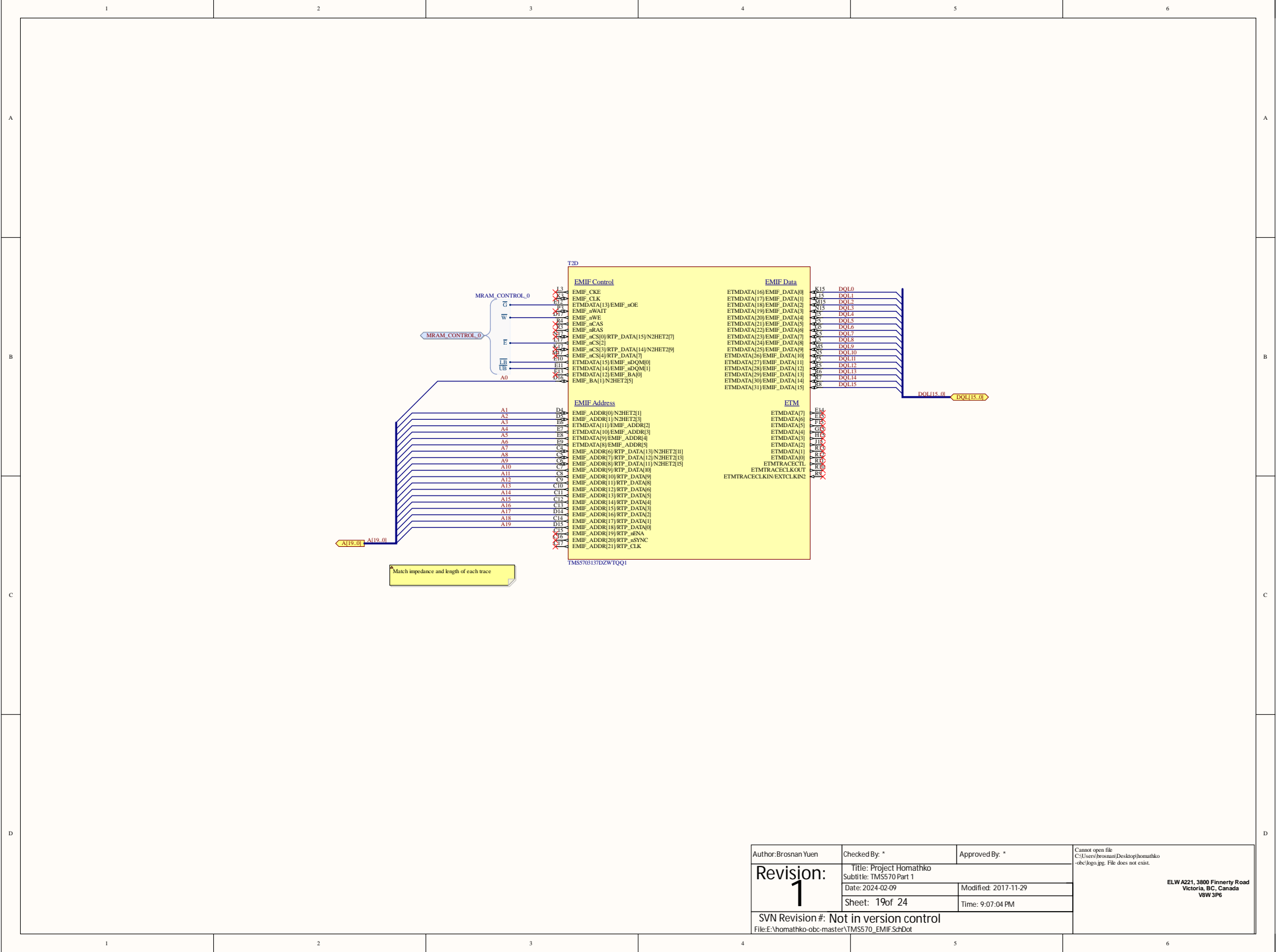
Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko -obc\logo.jpg. File does not exist. ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6
Revision: 1	Title: Project Homathko Subtitle: JTAG0		
	Date: *	Modified: 2017-11-29	
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SVN Revision #: Not in version control File: E:\homathko-obc-master\JTAG0.SchDot			



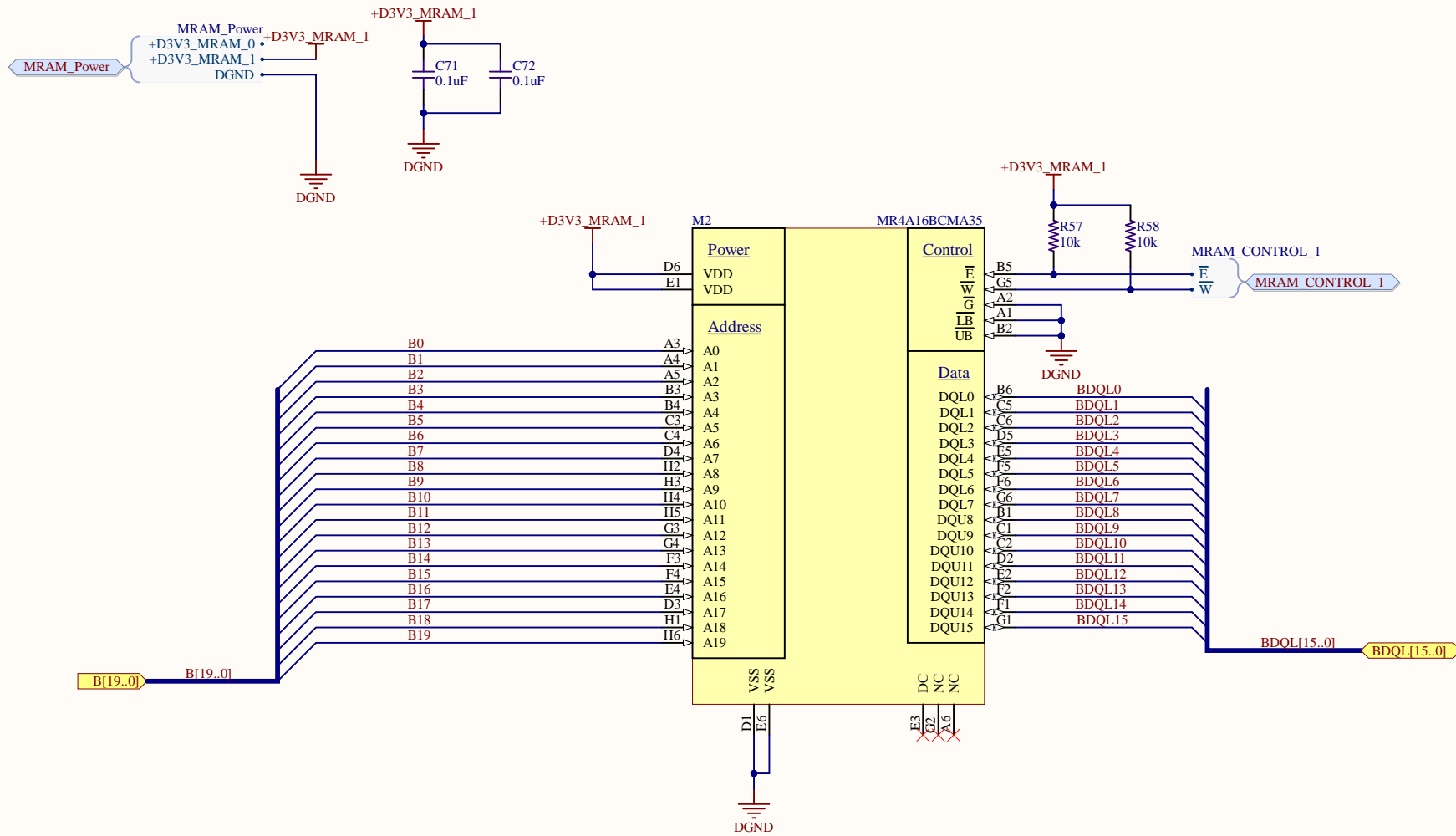
Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko -obc\logo.jpg. File does not exist.
Revision: 1	Title: Project Homathko Subtitle: TMS570 Control		
	Date: *	Modified: 2017-11-29	
	Sheet: 17 of 24	Time: 9:07:04 PM	
SVN Revision #: Not in version control File: E:\homathko-obc-master\TMS570_Control.SchDot			ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6



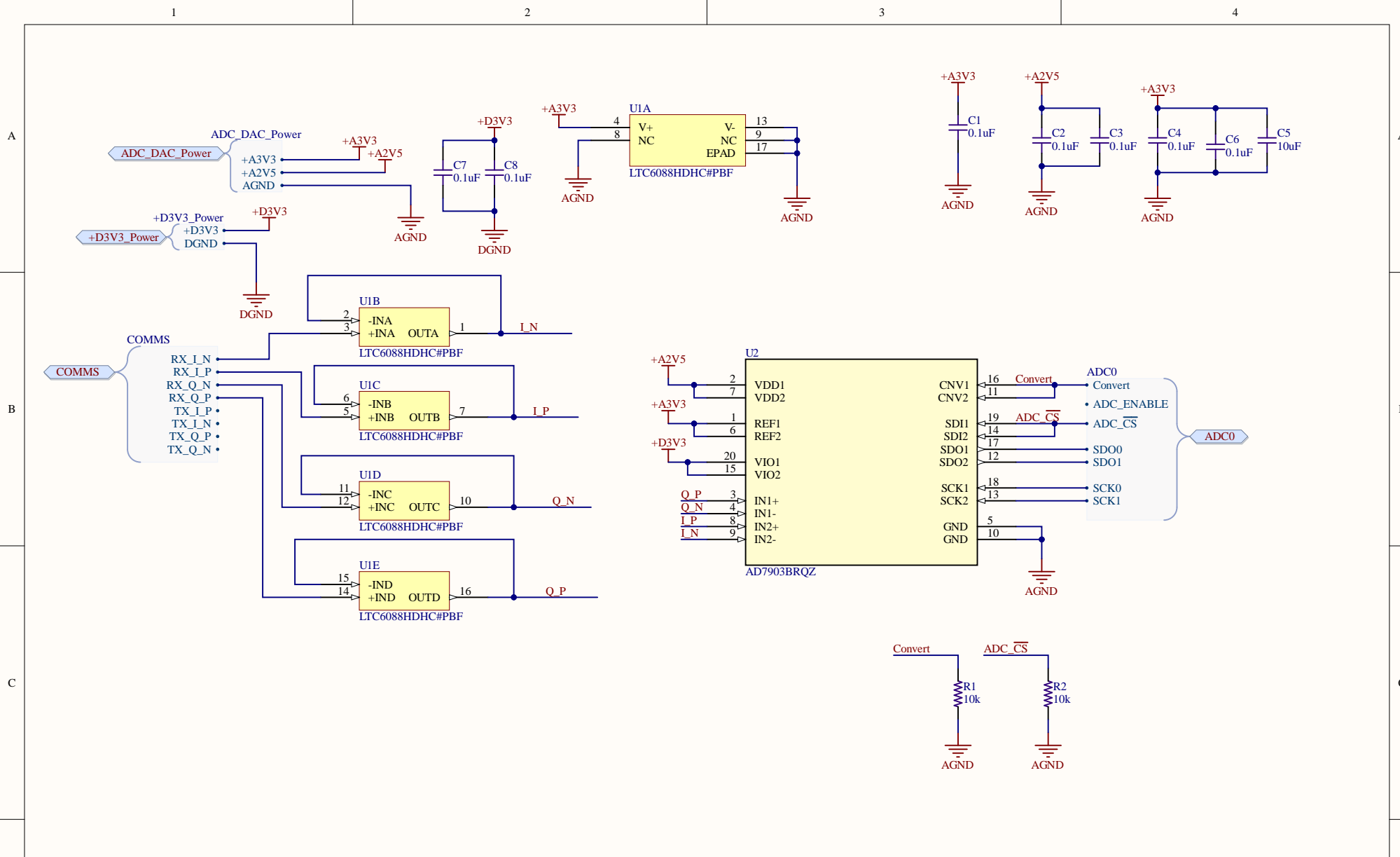
Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko-otbc\logo.jpg. File does not exist. ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6
Revision: <div style="font-size: 2em; font-weight: bold; text-align: center;">1</div>	Title: Project Homathko		
	Date: 2024-02-09	Modified: 2017-11-29	
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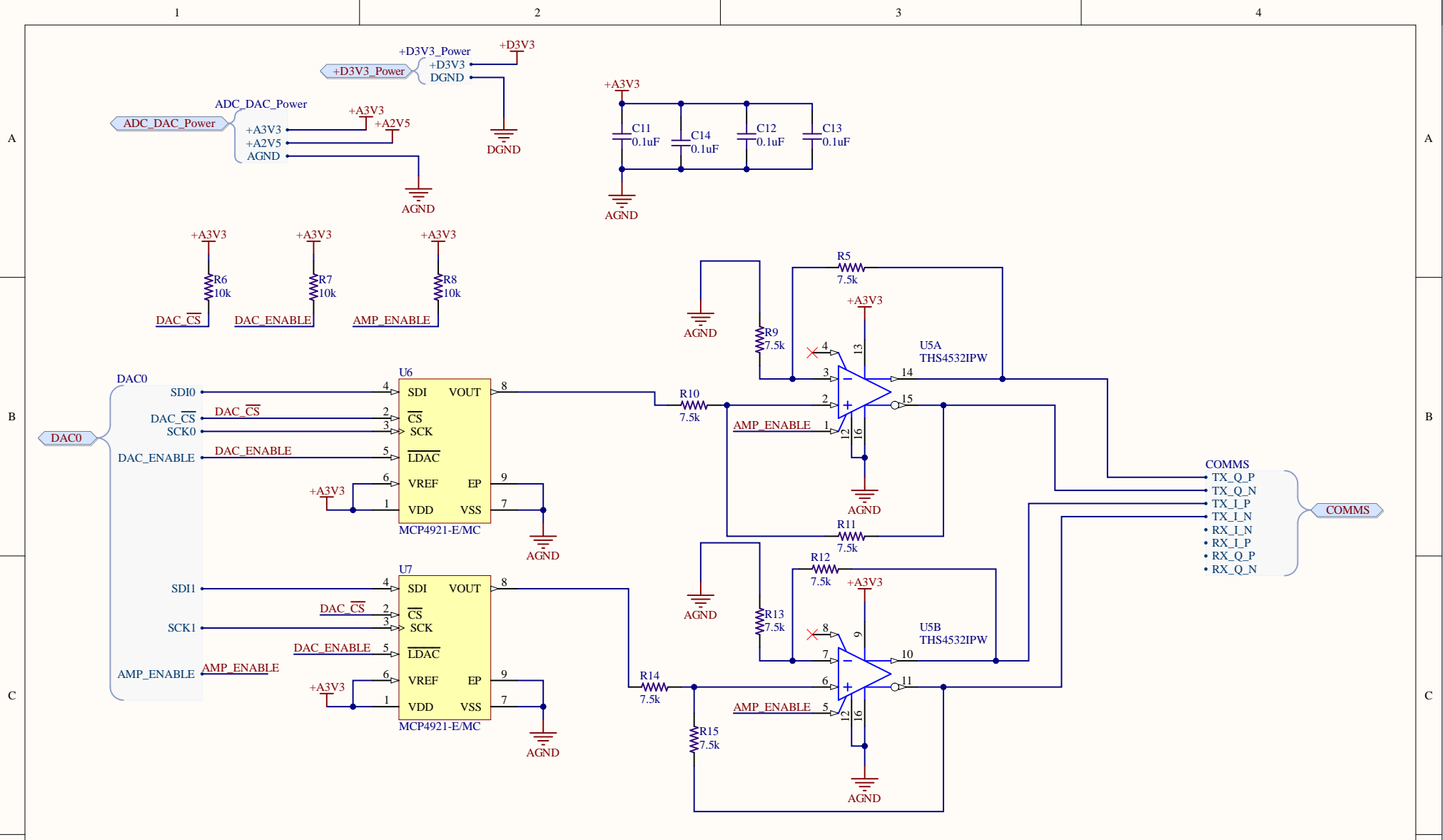
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Revision: 1	Title: Project Homathko Subtitle: TMS570 Part 1		
	Date: 2024-02-09	Modified: 2017-11-29	
	Sheet: 19 of 24	Time: 9:07:04 PM	
SVN Revision #: Not in version control File: E:\homathko-obc-master\TMS570_EMIF SchDot			ELW A221, 3800 Finnelly Road Victoria, BC, Canada V8W 3P6



Author: Brosnan Yuen	Checked By: *	Approved By: *	Cannot open file C:\Users\brosnan\Desktop\homathko -obc\logo.jpg. File does not exist. ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6
Revision: 1	Title: Project Homathko Subtitle: MRAM_1		
	Date: *	Modified: 2017-11-29	
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SVN Revision #: Not in version control File: E:\homathko-obc-master\MRAM_1.SchDot			



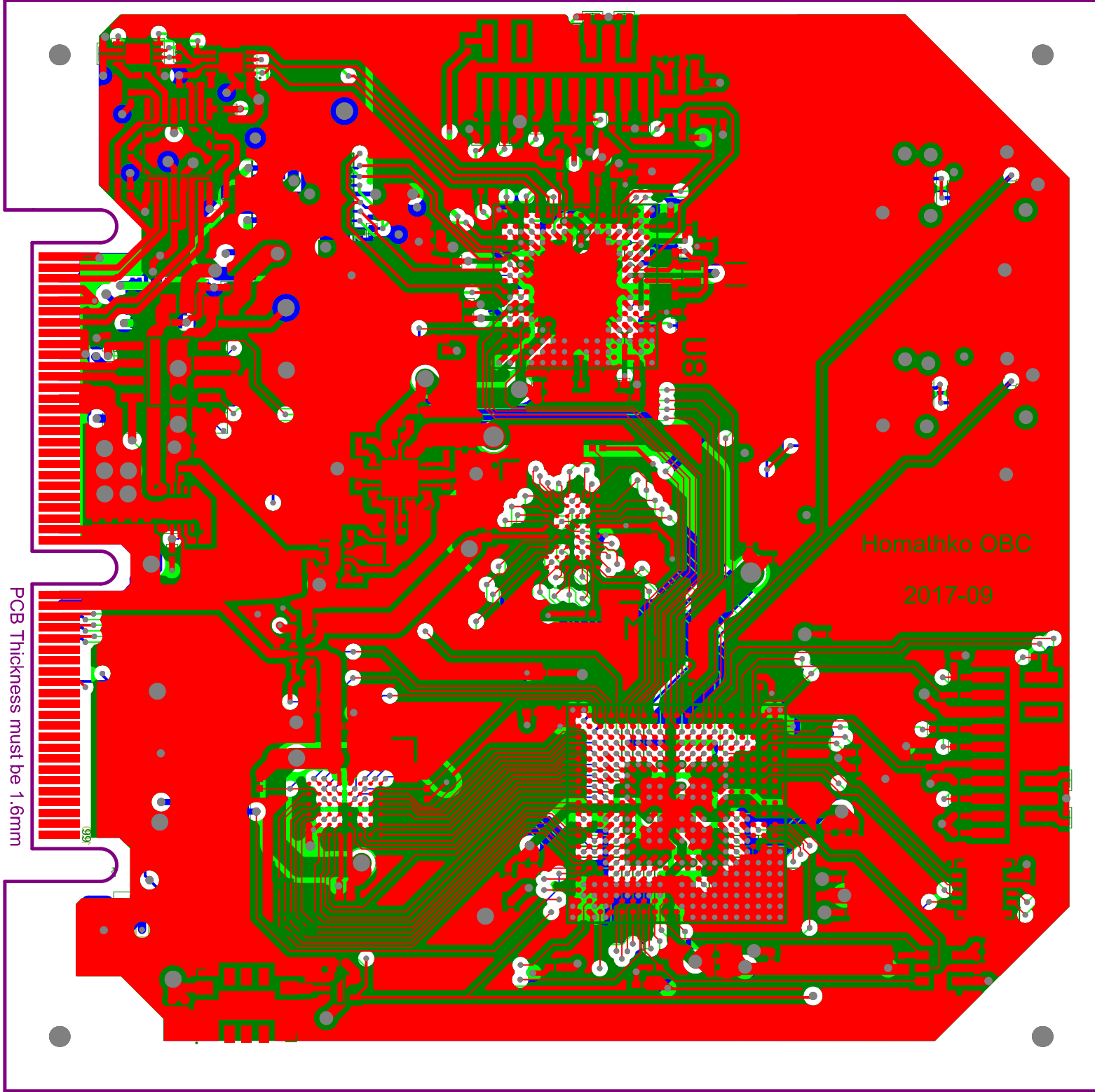
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Revision: 1	Title: Project Homathko		
	Subtitle: ADC		
	Date: *	Modified: 2017-11-29	
	Sheet: 22 of 24	Time: 9:07:04 PM	
SVN Revision #: Not in version control File: E:\homathko-obc-master\ADC.SchDot			ELW A221, 3800 Finnerty Road Victoria, BC, Canada V8W 3P6



Author: Brosnan Yuen	Checked By: *	Approved By: *
Revision: 1	Title: Project Homathko Subtitle: DAC	
	Date: *	Modified: 2017-11-29
	Sheet: 23 of 24	Time: 9:07:05 PM
SVN Revision #: Not in version control		
File: E:\homathko-obc-master\DAC.SchDot		

Cannot open file
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 -obc\logo.jpg. File does not exist.

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 Victoria, BC, Canada
 V8W 3P6**



Homathko OBC

2017-09

PCB Thickness must be 1.6mm