

Title ADC with Harness			
Size A	Number 1		Revision 0.0.1
Date:	4/07/2020	Sheet 1 of 15	
File:	C:\Users\...\ADCwHarness.SchDoc	Drawn By: Max Bakes	

A

A

B

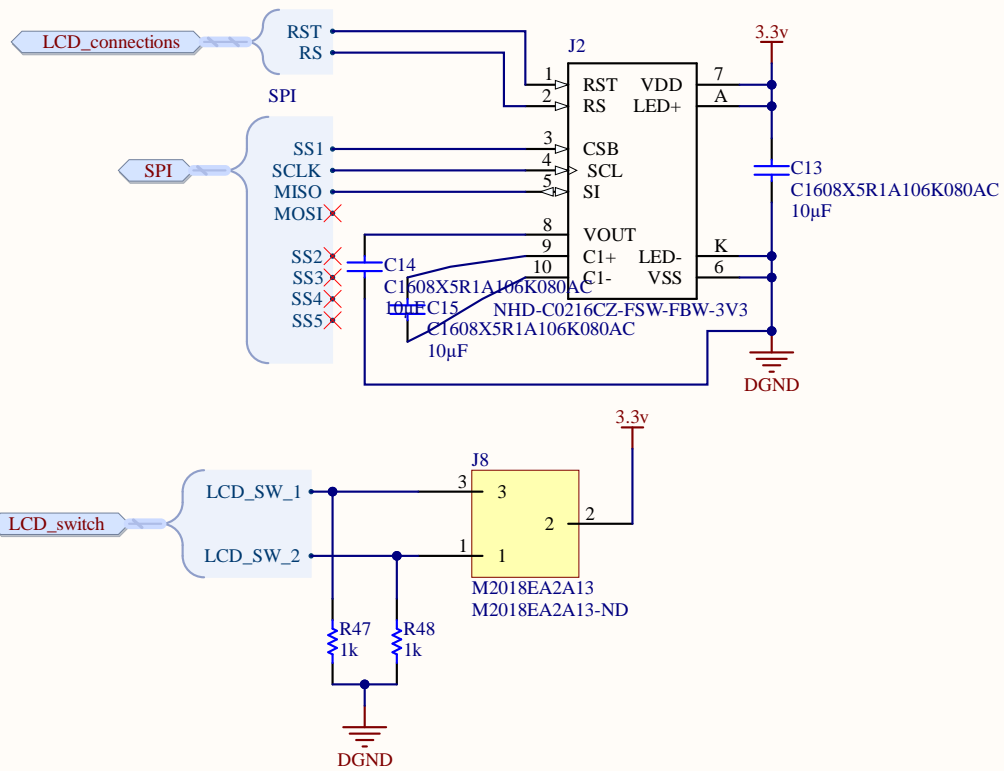
B

C

C

D

D



Title LCD Screen		
Size A	Number 3	Revision 0.0.1
Date:	4/07/2020	Sheet 3 of 15
File:	C:\Users\...\LCD_Screen.SchDoc	Drawn By: Michael Ashford

A

B

C

D

FMC_CONNECTOR
FMC_top.SchDoc

LVDS_UART_AB

LVDS_UART_CD

I2C

SPI

UART

GPIO

Reset

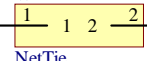
HR_Interrupt

LCD_connections

LCD_switch

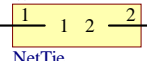
Acc_Interrupt

W1



PGND

W2



DGND

AGND

LVDS_UART_CONNECTORS
LVDS_UART.SchDoc

LVDS_UART_AB

LVDS_UART_CD

EXT_CONNECTIONS
Ext_Connections.SchDoc

I2C

SPI

UART

GPIO

Reset

ADC

I2C_Sensors
I2C_sensors.SchDoc

I2C

HR_Interrupt

LCD
LCD_Screen.SchDoc

LCD_connections

LCD_switch

SPI

ADC
ADCwHarness.SchDoc

SPI

ADC

Accelerometer
Accelerometer.SchDoc

Acc_Interrupt

I2C

Title		
FMC Connector Top		
Size	Number	Revision
A	4	0.0.1
Date:	4/07/2020	Sheet 4 of 15
File:	C:\Users\...\top.SchDoc	Drawn By: Zac Carico

A

B

C

D

A

A

B

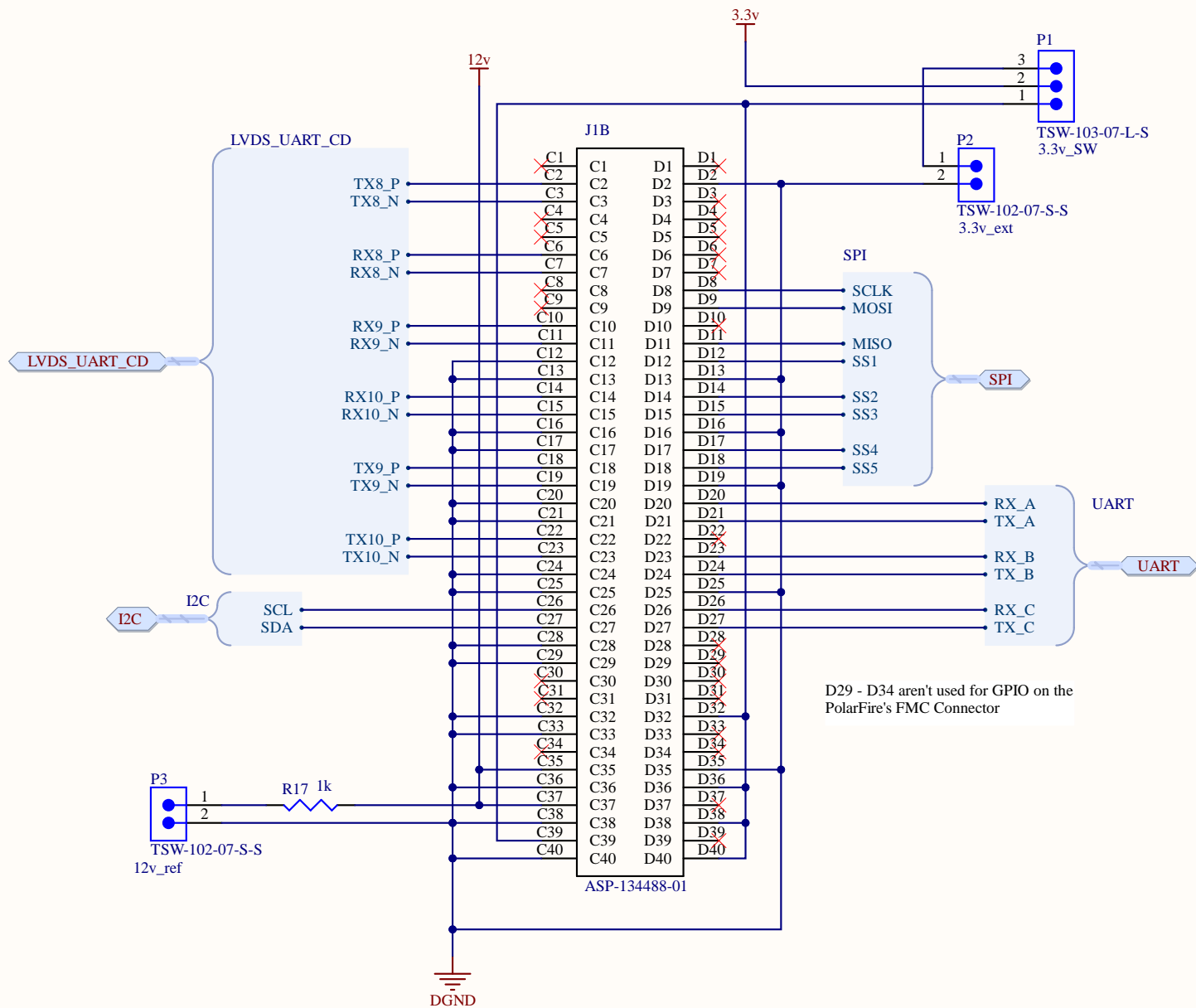
B

C

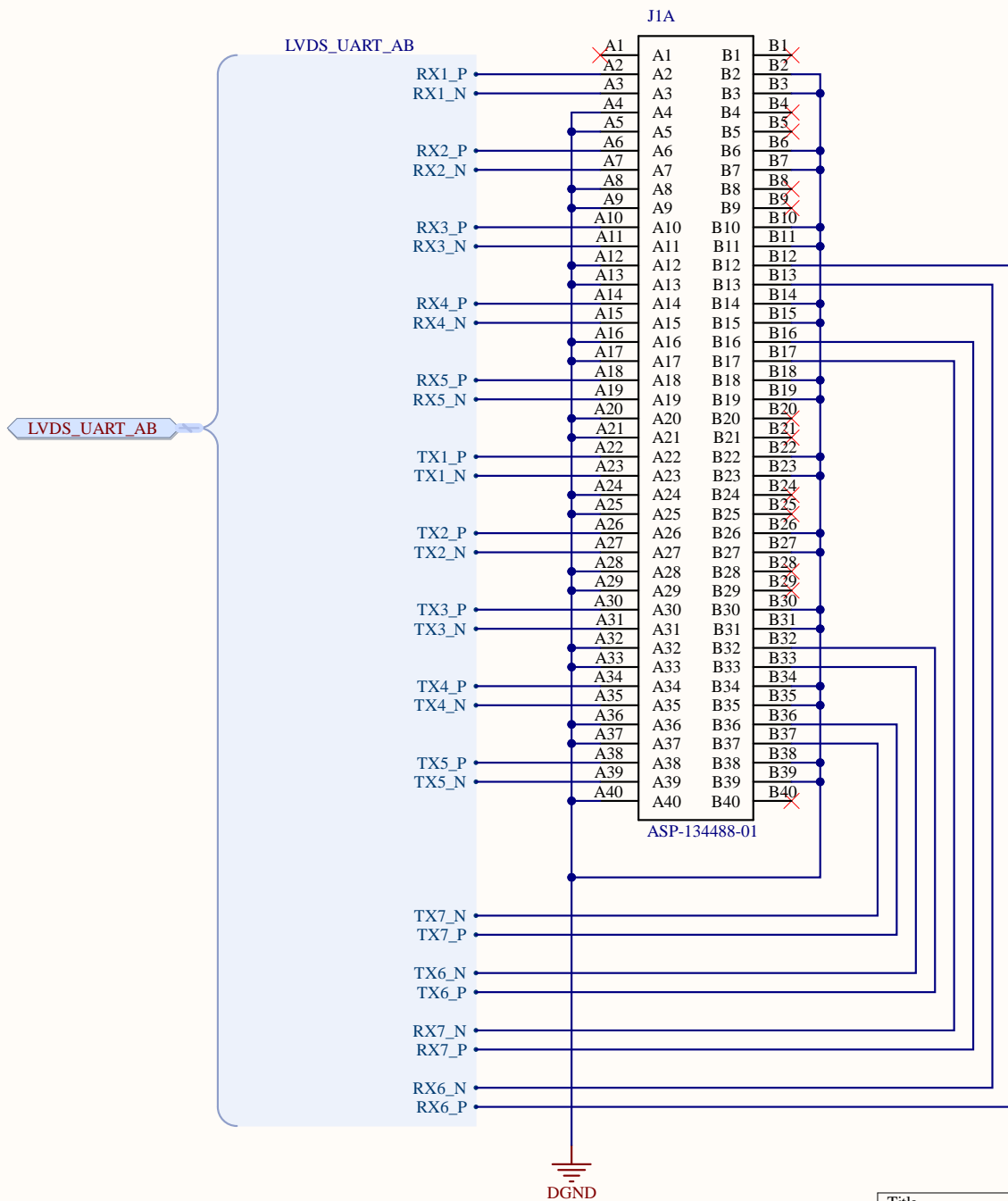
C

D

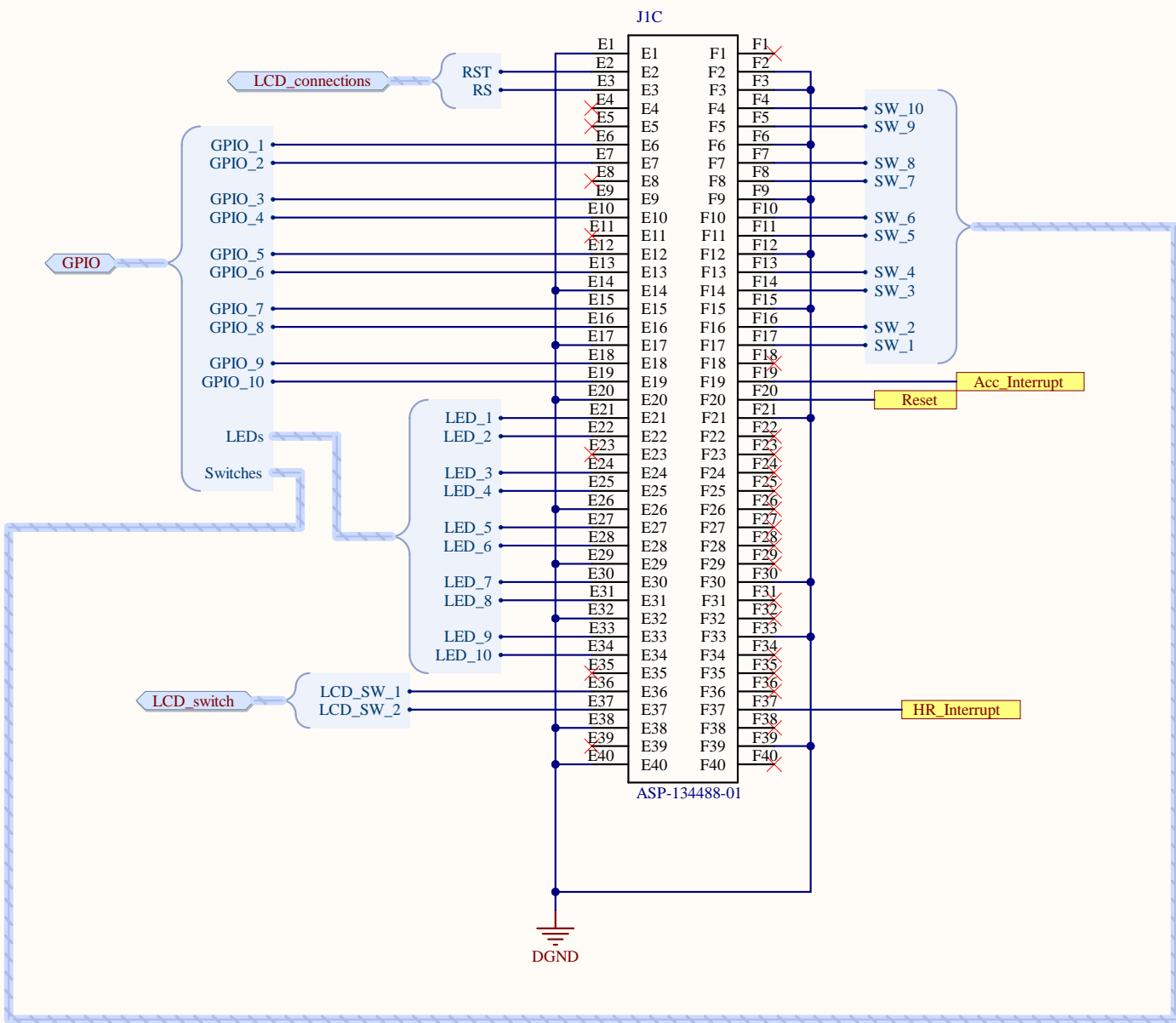
D



Title		
FMC Connector CD		
Size	Number	Revision
A	5	0.0.1
Date:	4/07/2020	Sheet 5 of 15
File:	C:\Users\...\FMC_connector_CD.SchDoc	Drawn By: James Thomas



Title FMC Connector AB		
Size A	Number 6	Revision 0.0.1
Date:	4/07/2020	Sheet 6 of 15
File:	C:\Users\...\FMC_connector_AB.SchDoc	Drawn By: James Thomas



Title FMC Connector EF		
Size A	Number 7	Revision 0.0.1
Date:	4/07/2020	Sheet 7 of 15
File:	C:\Users\...\FMC_connector_EF.SchDoc	Drawn By: James Thomas

A

B

C

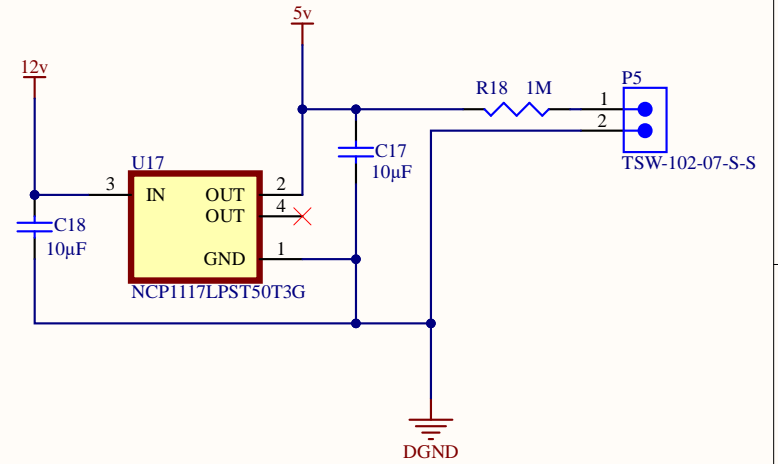
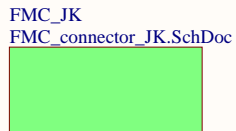
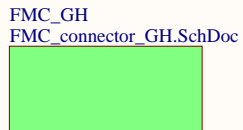
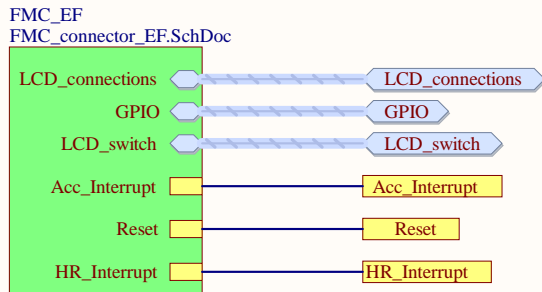
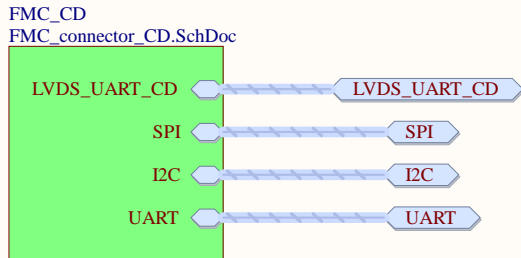
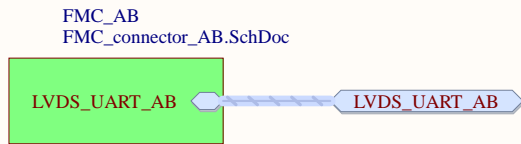
D

1

2

3

4



A

B

C

D

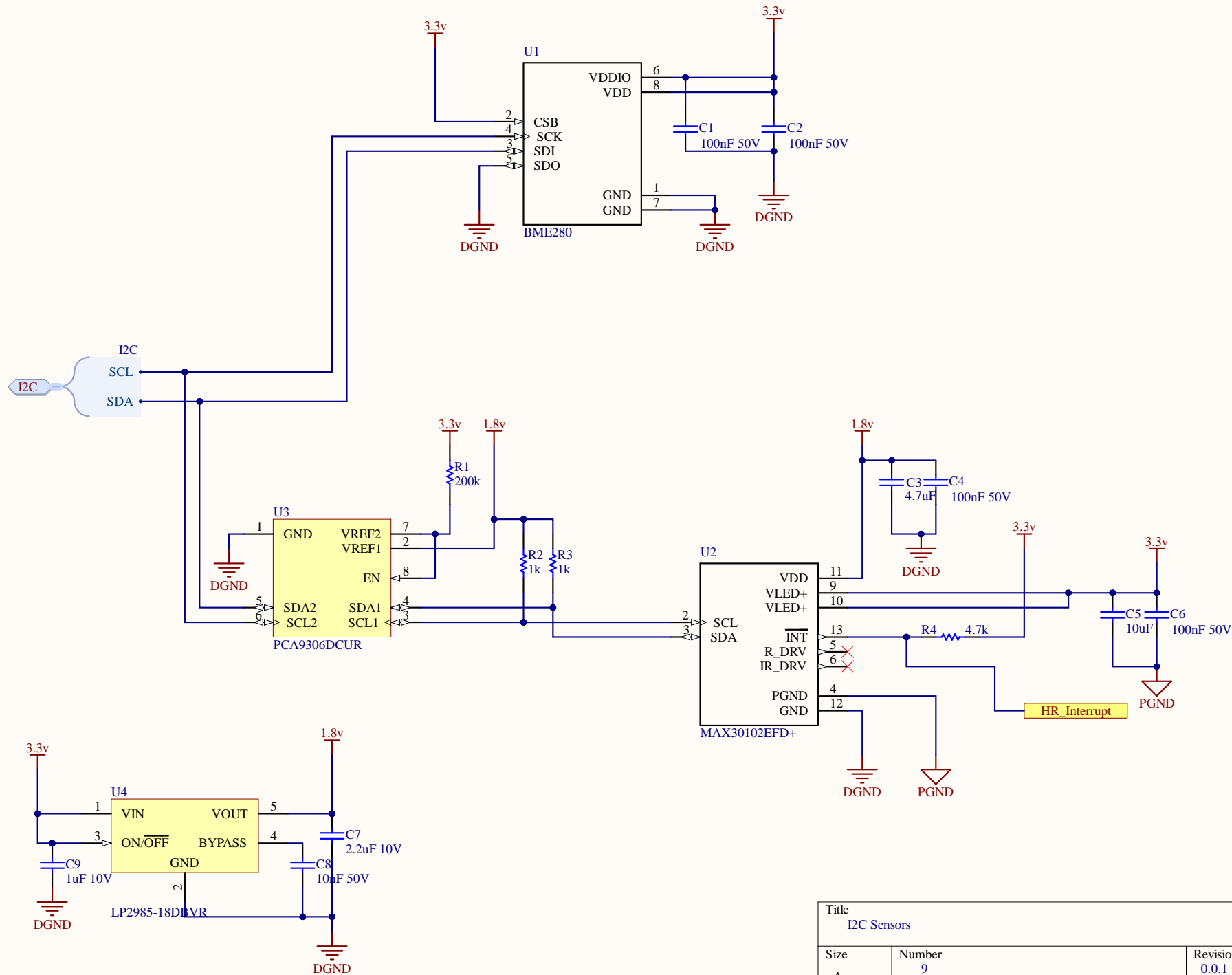
Title		
FMC Connector Top		
Size	Number	Revision
A	8	0.0.1
Date:	4/07/2020	Sheet 8 of 15
File:	C:\Users\...\FMC_top.SchDoc	Drawn By: James Thomas

1

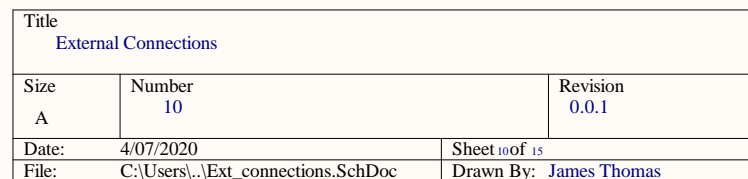
2

3

4



Title		
I2C Sensors		
Size	Number	Revision
A	9	0.0.1
Date:	4/07/2020	Sheet 9 of 15
File:	C:\Users\...\I2C_sensors.SchDoc	Drawn By: Sam Bagley



3.3v

SW

EG1218

S1

S2

S3

S4

S5

S6

S7

S8

S9

S10

SW_1

SW_2

SW_3

SW_4

SW_5

SW_6

SW_7

SW_8

SW_9

SW_10

R34
10K

R35
10K

R36
10K

R37
10K

R38
10K

R39
10K

R40
10K

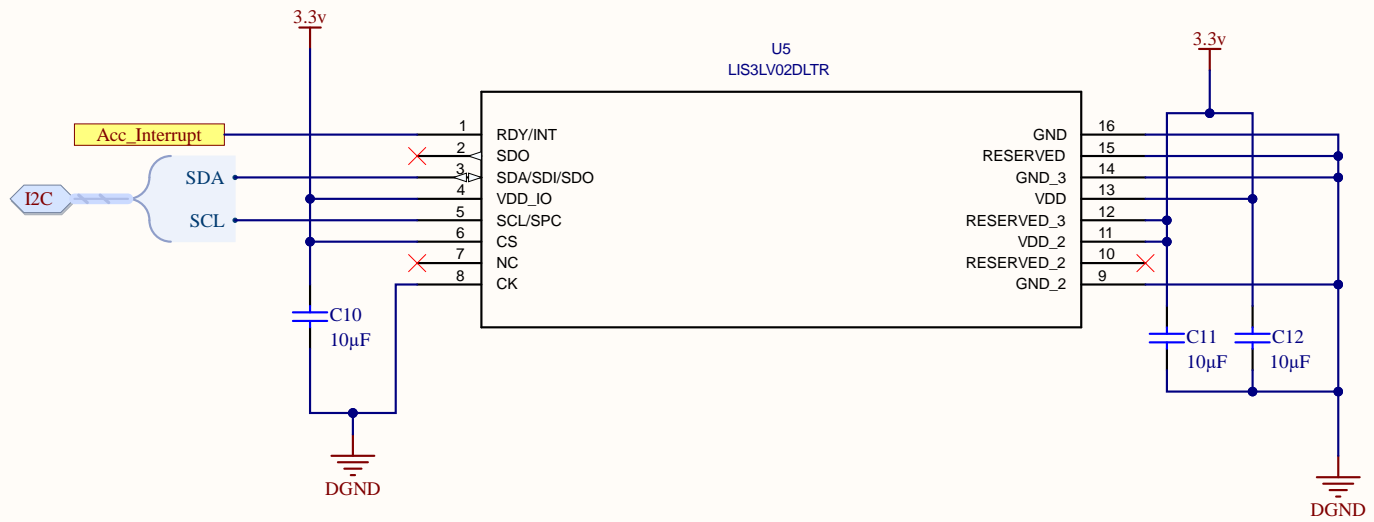
R41
10K

R42
10K

R43
10K

DGND

Title GPIO Switches		
Size A	Number 11	Revision 0.0.1
Date:	4/07/2020	Sheet 11 of 15
File:	C:\Users\...\GPIO_SW.SchDoc	Drawn By: James Thomas



Title Accelerometer		
Size A	Number 12	Revision 0.0.1
Date:	4/07/2020	Sheet 12 of 15
File:	C:\Users\...\Accelerometer.SchDoc	Drawn By: Zac Carico

J1D

G1	G1	H1	H1
G2	G2	H2	H2
G3	G3	H3	H3
G4	G4	H4	H4
G5	G5	H5	H5
G6	G6	H6	H6
G7	G7	H7	H7
G8	G8	H8	H8
G9	G9	H9	H9
G10	G10	H10	H10
G11	G11	H11	H11
G12	G12	H12	H12
G13	G13	H13	H13
G14	G14	H14	H14
G15	G15	H15	H15
G16	G16	H16	H16
G17	G17	H17	H17
G18	G18	H18	H18
G19	G19	H19	H19
G20	G20	H20	H20
G21	G21	H21	H21
G22	G22	H22	H22
G23	G23	H23	H23
G24	G24	H24	H24
G25	G25	H25	H25
G26	G26	H26	H26
G27	G27	H27	H27
G28	G28	H28	H28
G29	G29	H29	H29
G30	G30	H30	H30
G31	G31	H31	H31
G32	G32	H32	H32
G33	G33	H33	H33
G34	G34	H34	H34
G35	G35	H35	H35
G36	G36	H36	H36
G37	G37	H37	H37
G38	G38	H38	H38
G39	G39	H39	H39
G40	G40	H40	H40

ASP-134488-01

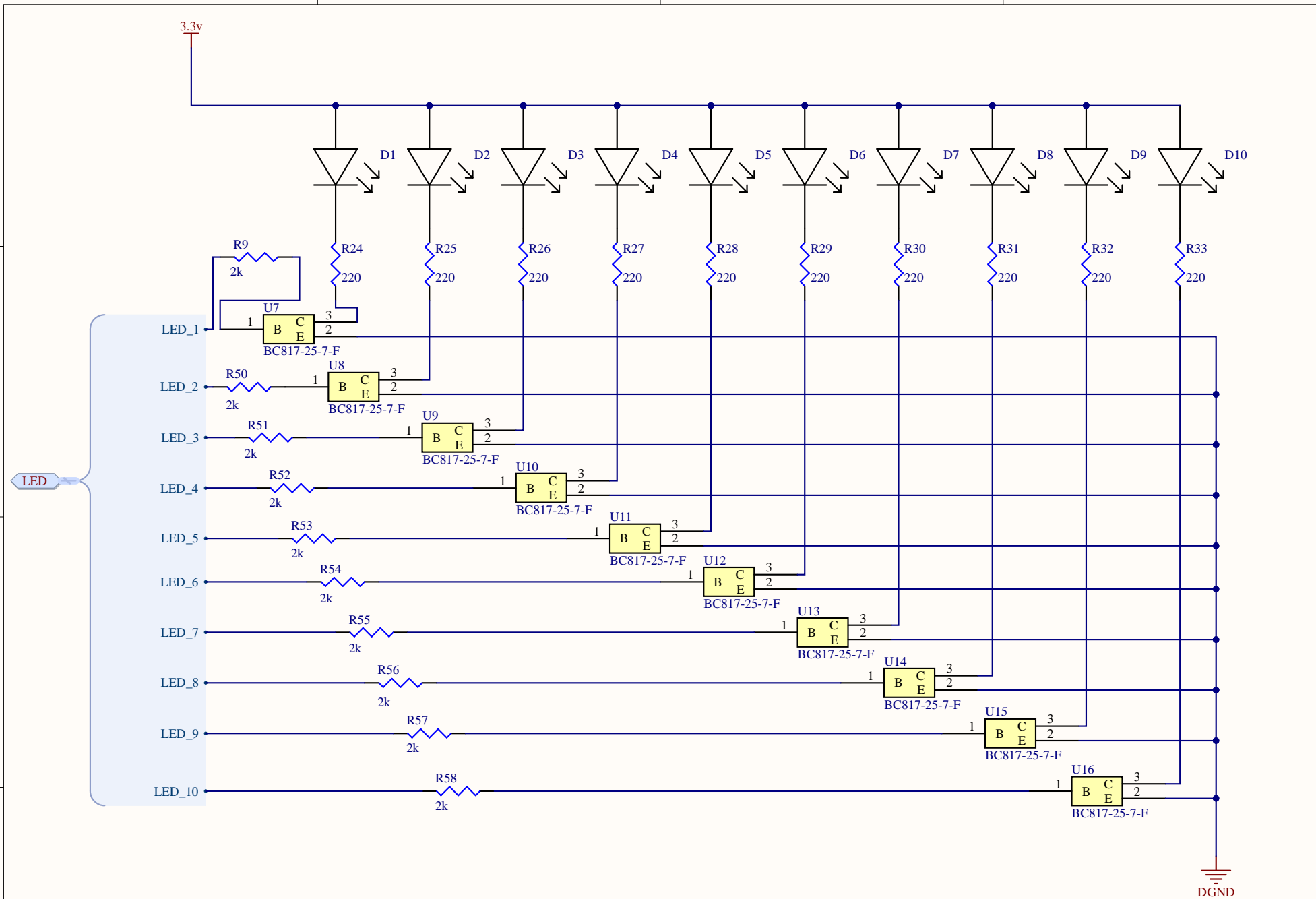
Title FMC Connector GH		
Size A	Number 13	Revision 0.0.1
Date:	4/07/2020	Sheet 13 of 15
File:	C:\Users\...\FMC_connector_GH.SchDoc	Drawn By: James Thomas

J1E

J1	J1	K1	K1
J2	J2	K2	K2
J3	J3	K3	K3
J4	J4	K4	K4
J5	J5	K5	K5
J6	J6	K6	K6
J7	J7	K7	K7
J8	J8	K8	K8
J9	J9	K9	K9
J10	J10	K10	K10
J11	J11	K11	K11
J12	J12	K12	K12
J13	J13	K13	K13
J14	J14	K14	K14
J15	J15	K15	K15
J16	J16	K16	K16
J17	J17	K17	K17
J18	J18	K18	K18
J19	J19	K19	K19
J20	J20	K20	K20
J21	J21	K21	K21
J22	J22	K22	K22
J23	J23	K23	K23
J24	J24	K24	K24
J25	J25	K25	K25
J26	J26	K26	K26
J27	J27	K27	K27
J28	J28	K28	K28
J29	J29	K29	K29
J30	J30	K30	K30
J31	J31	K31	K31
J32	J32	K32	K32
J33	J33	K33	K33
J34	J34	K34	K34
J35	J35	K35	K35
J36	J36	K36	K36
J37	J37	K37	K37
J38	J38	K38	K38
J39	J39	K39	K39
J40	J40	K40	K40

ASP-134488-01

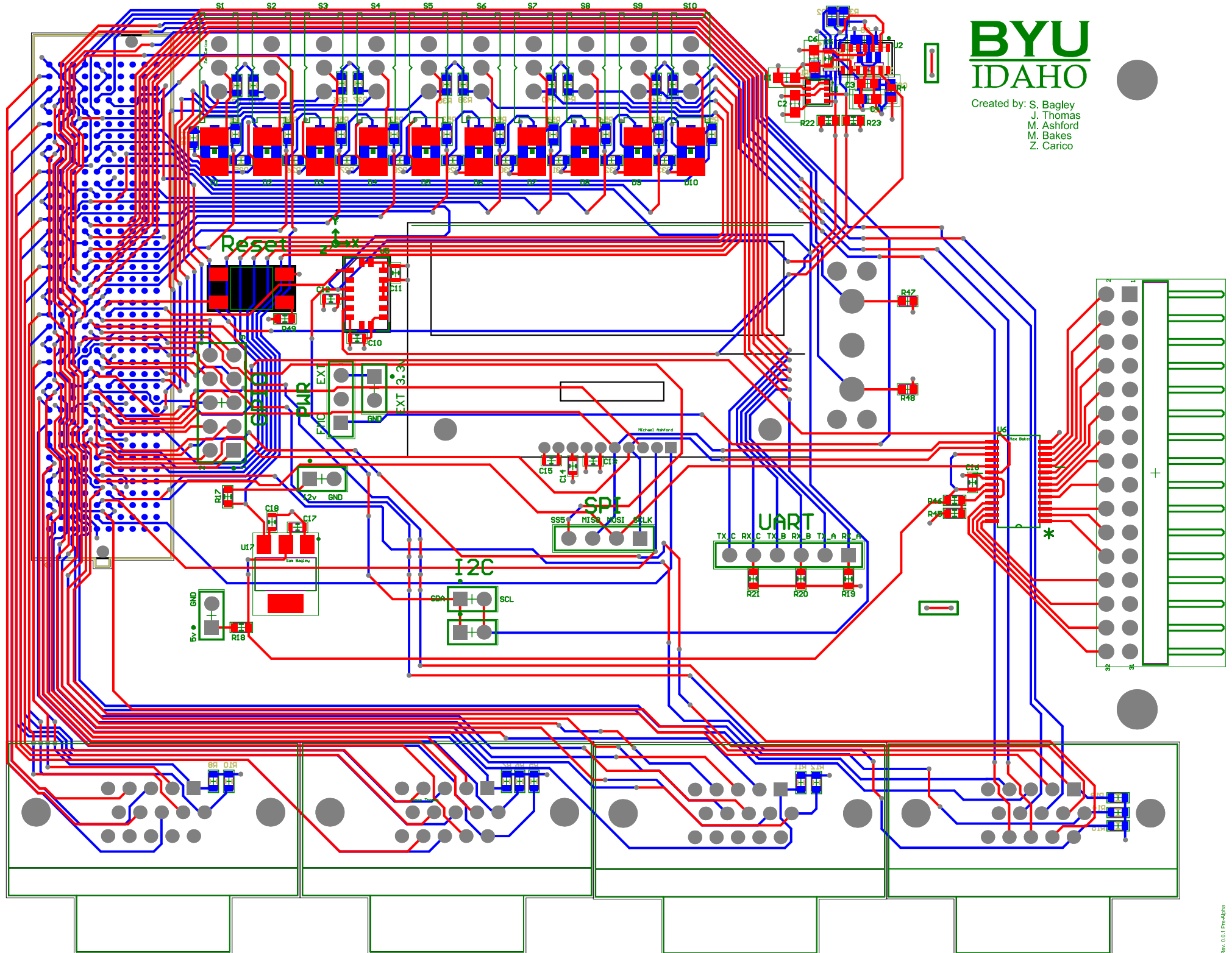
Title FMC Connector JK		
Size A	Number 14	Revision 0.0.1
Date:	4/07/2020	Sheet 14 of 15
File:	C:\Users\...\FMC_connector_JK.SchDoc	Drawn By: James Thomas



Title GPIO LEDs		
Size A	Number 15	Revision 0.0.1
Date:	4/07/2020	Sheet 15 of 15
File:	C:\Users\...\GPIO_LED.SchDoc	Drawn By: James Thomas

BYU IDAHO

Created by: S. Bagley
J. Thomas
M. Ashford
M. Bakes
Z. Carico



Comment	Description	Designator	Footprint	Subst	Quantity
100nf 50V	CAP 100nf 50V .20% to -80% 0603 (1608 Metric) Thickens. Term SMD	C1, C2, C4, C6	CAPC0603(1608)100_M	CMF-1035-02594-1	4
4.7uF	CAP 4.7uF 0603	C3	CAPC160806(7.25)4.7_1T15	CMF-2006-03238-1	1
10uF	Chip Capacitor, 10 uF +/- 10%, 10 V, .55 to 65-deg., 0603 (1608 Metric), RoHS, Tape and Reel	C5	CAPC160806(0603)10_1T15	CMF-2000-04979-1	1
2.2uF 10V	CAP CER 2.2uF 10V 0603	C7	CAPC160806(0603)2.2_1T15	CMF-2006-02836-1	1
10nf 50V	Chip Capacitor, 10nf +/- 10%, 50 V, .55 to 125-deg., 0603 (1608 Metric), RoHS, Tape and Reel	C8	CAPC160806(0603)10_1T20	CMF-2100-03600-1	1
1uF 10V	CAP CER 1uF 10V 0603	C9	CAPC160806(0603)1_1T15	CMF-2006-02287-1	1
C160806R1A106000 AC	Chip Capacitor, 10 uF +/- 10%, 10 V, .55 to 65-deg., 0603 (1608 Metric), RoHS, Tape and Reel	C10, C11, C12, C13, C14, C15, C16, C17, C18	CAPC160806(0603)10_1T15	CMF-2000-04979-1	4
GP 161W P1R2 35-1.20 R18-Z	SMD LED	D1, D2, D3, D4, D5, D6, D7, D8, D9, D10	LP 161W P1R2 35-1.20 R18-Z	GP 161W P1R2 35-1.20 R18-Z	60
ASP-13448B-01		J1	*SANTITEC_ASP-13448B-01_ASP-13448B-01(PPrimary)	ASP-13448B-01	1
NHD-03216C2-F3W-FBW 3x3	Character LCD Display Module Transflective 5 x 8 Dots F370, Film Super-Twisted Nematic LED - White Serial 41.40mm x 24.30mm x 4.00mm	J2	*LCD_NHD-03216C2-F3W-FBW-3V2_NHD-03216C2-F3W-FBW-3V3(PPrimary)	NHD-03216C2-F3W-FBW 3x3	1
181-015-21385A1	15 Position D-Sub, High Density Rhedynalac, Female Socket/Connector	J3, J4, J5, J6	*NORCOMP_181-015-21385A1	181-015-21385A1	4
41303221021	1111 Angled Pin Header WR-PHD, Pitch 2.54 mm, Dual Row, 32 pins	J7	41303221021	CMF-1102-01123-1	1
MD018EA2A13	SWITCH TOGGLE SPDT 6A 125V	J8	MD018EA2A13	MD018EA2A13	1
TSW-103-07-L-S	0.025" SQ Pin Header, Through-hole, Vertical, .55 to 125-deg., 2.54 mm Pitch, 3 Pin, Male, RoHS	J9	SMTC-TSW-103-07-X-S	CMF-1024-00334-1	1
TSW-102-07-S-S	Male Header Pitch 2.54 mm, 1 x 2 Position, Height 8.38 mm, Tail Length 2.54 mm, .55 to 125 degC, Bulk	J92, J93, P5, P6, P8	SMTC-TSW-102-07-S	CMF-1681-00004-4	5
TSW-104-08-G-S	0.025" SQ Pin Header, Through-hole, Vertical, .55 to 125-deg., 2.54 mm Pitch, 4 Pin, Male, RoHS	J94	SMTC-TSW-104-08-X-S	CMF-1024-00357-1	1
TSW-105-07-G-D	Post Terminal Strip Assembly - Pitch 2.54 mm, 2 x Position, Height 8.58 mm, Tail Length 2.54 mm, .55 to 125-degC, RoHS, Bulk	J97	SMTC-TSW-105-07-G-D_V	CMF-2000-07330-1	1
TSW-106-07-L-S	0.025" SQ Pin Header, Through-hole, Vertical, .55 to 125-deg., 2.54 mm Pitch, 6 Pin, Male, RoHS	J99	SMTC-TSW-106-07-X-S	CMF-1024-00386-1	1
200K		R1	RESC1608X55(0603)1T15	CMF-2000-00743-1	1
1k		R2, R3, R47, R48	RESC1608X55(0603)1T20	CMF-2000-00873-1	4
4.7k		R4	RESC1608X55(0603)1T15	CMF-2000-00522-1	1
Res3	Resistor	R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39, R40, R41, R42, R43, R45, R46, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58	J1-0603	Res3	36
SG1218	Slide Switch SPDT Through Hole	S1, S2, S3, S4, S5, S6, S7, S8, S9, S10	*EG1218_EG1218(PPrimary)	SG1218	30
430181038816	Tactile Switch SPST NO Top Actuated Surface Mount	S11	*430181038816	430181038816	1
BMF280	Humidity Temperature Sensor 0 - 100% RH I2C SPI A2% 1s Surface Mount	U1	*PSON6SP250X250X100-8N	BMF280	1
MAX30105FD+	Oil meter/Heart Rate Sensor I2C Output	U2	MAX30201	MAX30105FD+	1
PCA9906DCUR	Dual Bi-Directional I2C-Bus and SMBus Voltage Level Translator, 0 to 5.5 V, 40 to 85 degC, 8-pin US8 (DCA), Green (RoHS & no Sn/Bi)	U3	DCU0000A_M	CMF-0314-00419-2	1
UP285-180BVR	Single Output Low Noise LDO, 150 mA, Fixed 1.8 V Output, 1.5% Tolerance, 2.2 to 16 V Input, Low IQ, 5-Pin SOT-23 (DWV), 40 to 125 degC, Green (RoHS & no Sn/Bi), Tape and Reel	U4	DBV0005A_M	CMF-0758-00065-2	1
US3LV02DLTR	ACCELEROMETER 2-6G I2C SPI 16GA	U5	EGA-16_4P4075K1	US3LV02DLTR	1
AD7490BRUZ	16-Channels, 1 MSPS, 12-Bit ADC with Sequencer in 28 Lead TSSOP	U6	*SOP6SP640X120-28B AD7490BRUZ	AD7490BRUZ	1
BC817-25-7-F	NPN Transistor	U7, U8, U9, U10, U11, U12, U13, U14, U15, U16	*SOT23	BC817-25-7-F	30
NCP1117LPST507AG	Linear Voltage Regulator IC 1 Output 1A SOT-223	U17	SOT23OP700X180-4N	NCP1117LPST507AG	1