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Page 30: Debug Interface

UL = UnLoaded = normally not mounted component.

Default jumper settings are indicated in the schematic.
However, always check jumper positions on actual boards
since there is no guarantee that all jumpers are in default place.

Rev E - also called "V2"
Redesign to supporty iMX 8M/8M-Mini COM board and M.2 connectors.

TITLE: COM Carrier Board V2 rev E

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EACOM Board connector (MXM3)

Short to enable default boot (without fuses blown)
Open to enable boot from fuses

J27
1x2, 100mil pitch

J1B
AS0B826-S78B

MXM3 connector

bottom side / top side

S158	GND				321
S157	PCIE_RX_N	VIN	P156	PCIE_IMX_RX_N	319
S156	PCIE_RX_P	VIN	P155	PCIE_IMX_RX_P	317
S155	GND	VIN	P154		315
S154	PCIE_TX_N	VIN	P153	PCIE_IMX_TX_N	313
S153	PCIE_TX_P	VIN	P152	PCIE_IMX_TX_P	311
S152	GND	VIN	P151		309
S151	PCIE_CLK_N	VIN	P150	PCIE_IMX_CLK_N	307
S150	PCIE_CLK_P	VIN	P149	PCIE_IMX_CLK_P	305
S149	GND	VIN	P148		303
S148	GND/BT_CTRL	VIN	P147		301
S147	SATA_RX_P	ISP_EN	P146	SATA_RXP-PCIE_REFCLK_P	299
S146	SATA_RX_N	VBAT-RTC	P145	SATA_RXN-PCIE_REFCLK_N	297
S145	GND	GND/VIN_SELECT	P144		295
S144	SATA_TX_N	RESET_OUT	P143	SATA_TXN	293
S143	SATA_TX_P	RESET_IN	P142	SATA_TXP	291
S142	GND	PERI_PWR_EN	P141		289
S141	CSI_CLK_P	GPIO-A	P140	CSI_CLK0P	287
S140	CSI_CLK_M	GPIO-B	P139	CSI_CLK0M	285
S139	GND	PWM	P138		283
S138	CSI_D0_P	UART-A_TXD	P137	CSI_D0P	281
S137	CSI_D0_M	UART-A_RTS	P136	CSI_D0M	279
S136	GND	UART-A_CTS	P135		277
S135	CSI_D1_P	UART-A_RXD	P134	CSI_D1P	275
S134	CSI_D1_M	UART-B_TXD	P133	CSI_D1M	273
S133	GND	UART-B_RTS	P132		271
S132	CSI_D2_P	UART-B_CTS	P131	CSI_D2P	269
S131	CSI_D2_M	UART-B_RXD	P130	CSI_D2M	267
S130	GND	UART-C_TXD	P129		265
S129	CSI_D3_P	UART-C_RXD	P128	CSI_D3P	263
S128	CSI_D3_M	GND	P127	CSI_D3M	261
S127	GND	SPI-A_CLK	P126		259
S126	CSI_D7	SPI-A_MISO	P125	CSI_DATA07	257
S125	CSI_D6	SPI-A_MOSI	P124	CSI_DATA06	255
S124	CSI_D5	SPI-A_SSEL	P123	CSI_DATA05	253
S123	CSI_D4	SPI-B_CLK	P122	CSI_DATA04	251
S122	CSI_D3	SPI-B_MISO	P121	CSI_DATA03-TP_IRQ_LCD	249
S121	CSI_D2	SPI-B_MOSI	P120	CSI_DATA02-XBEE_RST	247
S120	CSI_D1	SPI-B_SSEL	P119	CSI_DATA01	245
S119	CSI_D0	GND	P118	CSI_DATA00	243
S118	GND	COM specific	P117		241
S117	CSI_PCLK	COM specific	P116	CSI_PIXCLK	239
S116	CSI_MCLK	COM specific	P115	CSI_MCLK	237
S115	CSI_VSYNC	COM specific	P114	CSI_VSYNC	235
S114	CSI_HSYNC	COM specific	P113	CSI_HSYNC	233
S113	COM specific	COM specific	P112	GPIO_AM-SCAM_DATA	231
S112	COM specific	COM specific	P111	GPIO_AN-SCAM_CLK	229
S111	COM specific	COM specific	P110	GPIO_AP	227
S110	COM specific	COM specific	P109	GPIO_AQ	225
S109	COM specific	COM specific	P108	GPIO_AR	223
S108	COM specific	COM specific	P107	GPIO_AS	221
S107	COM specific	COM specific	P106	GPIO_AT	219
S106	COM specific	COM specific	P105	GPIO_AU	217
S105	COM specific	COM specific	P104	GPIO_AV	215
S104	GND	COM specific	P103		213
S103	COM specific	COM specific	P102	VADC_IN0-MIPI_DSI_CP	211
S102	COM specific	COM specific	P101	VADC_IN1-MIPI_DSI_CN	209
S101	GND	COM specific	P100		207
S100	COM specific	COM specific	P99	VADC_IN2-MIPI_DSI_DP0	205
S99	COM specific	COM specific	P98	VADC_IN3-MIPI_DSI_DN0	203
S98	GND	COM specific	P97		201
S97	AIN0	COM specific	P96	ADC1_IN0-MIPI_DSI_DP1	199
S96	AIN1	COM specific	P95	ADC1_IN1-MIPI_DSI_DN1	197
S95	AIN2	COM specific	P94	ADC1_IN2-GPIO	195
S94	AIN3	COM specific	P93	ADC1_IN3-GPIO	193
S93	AIN4	COM specific	P92	ADC2_IN0-GPIO	191
S92	AIN5	GND	P91	ADC2_IN1-GPIO	189
S91	AIN6	USB_H2_DP	P90	ADC2_IN2-GPIO	187
S90	AIN7	USB_H2_DN	P89	ADC2_IN3-GPIO	185
S89	AIN_VREF	GND	P88	ADC_VREFH-GPIO	183
S88	GND	USB_H2_OC	P87		181
S87	LCD_ENABLE	USB_H2_PWR_EN	P86	LCD_ENABLE	179
S86	LCD_VSYNC	USB_H1_VBUS	P85	LCD_VSYNC	177
S85	LCD_HSYNC	USB_H1_SSRXP	P84	LCD_HSYNC	175
S84	GPIO-G	USB_H1_SSRXN	P83	GPIO_G-LCD_DISP_EN	173
S83	LCD_CLK	GND	P82	LCD_CLK	171
S82	LCD_B7	USB_H1_SSTXP	P81	LCD_DATA07	169
S81	LCD_B6	USB_H1_SSTXN	P80	LCD_DATA06	167
S80	LCD_B5	USB_H1_DP	P79	LCD_DATA05	165
S79	LCD_B4	USB_H1_DN	P78	LCD_DATA04	163
S78	LCD_B3	GND	P77	LCD_DATA03	161
S77	LCD_B2	USB_H1_OC	P76	LCD_DATA02	159
S76	LCD_B1	USB_H1_PWR_EN	P75	LCD_DATA01	157

MXM3 connector mounting holes: A1, A2, A3

Note: Replace with 0R05 to measure current

R1 0R R2 0R COM_VIN

C1 100U/10V

JP1

320					
318					
316					
314					
312					
310					
308					
306					
304					
302					
300	ISP_ENABLE				
298	VBAT_COM_BRD				
296	VIN_SELECT				
294	RESET_OUT				
292	RESET_IN				
290	PERI_PWR_EN				
288	GPIO_A-WL_HOST_WAKE_L-PCIE_PME_L				
286	GPIO_B-BT_HOST_WAKE_L				
284	PWM_1-LVDS0_BL_CTRL				
282	UART-A_TXD				
280	UART-A_RTS				
278	UART-A_CTS				
276	UART-A_RXD				
274	UART-B_TXD				
272	UART-B_RTS				
270	UART-B_CTS				
268	UART-B_RXD				
266	UART-C_TXD				
264	UART-C_RXD				
262					
260	SPI-A_SCLK				
258	SPI-A_MISO				
256	SPI-A_MOSI				
254	SPI-A_SSEL				
252	SPI-B_SCLK				
250	SPI-B_MISO				
248	SPI-B_MOSI				
246	SPI-B_SSEL				
244					
242	GPIO_K				
240	GPIO_L-LVDS1_PWR_EN				
238	GPIO_M-LVDS1_BL_PWR_EN				
236	GPIO_N-LVDS1_CAP_TCH_INT				
234	GPIO_P-M2_ALERT				
232	GPIO_Q				
230	GPIO_R				
228	GPIO_S				
226	GPIO_T				
224	GPIO_U				
222	GPIO_V				
220	GPIO_W				
218	GPIO_X				
216	GPIO_Y				
214	GPIO_Z				
212	GPIO_AA				
210	GPIO_AB				
208	GPIO_AC				
206	GPIO_AD				
204	GPIO_AE				
202	GPIO_AF				
200	GPIO_AG				
198	GPIO_AH				
196	GPIO_AJ				
194	GPIO_AK				
192	GPIO_AL				
190					
188					TP1
186					TP2
184					
182	ONOFF				
180					TP3
178	USB_HOST_VBUS				
176	USB_HOST_SSRXP				
174	USB_HOST_SSRXN				
172	USB_HOST_GND				
170	USB_HOST_SSTXP				
168	USB_HOST_SSTXN				
166	USB_HOST_DP				
164	USB_HOST_DN				
162					
160	USB_HOST_OC				
158	USB_HOST_PWR				

J2
1x2, 100mil pitch
Short to enable ISP (USB)

J3
1x2, 100mil pitch
R3 1K CSI_DATA00
SD1_VSELECT control on iMX7 Dual COM

SMARC mounting holes

H1 4.3mm
H2 4.3mm
H3 4.3mm
H4 4.3mm
SMTSO-M3-5ET

J1A
AS0B826-S78B

MXM3 connector

bottom side / top side

LCD_DATA00	149	S75	LCD_B0				
	147	S74	GND	USB_O1_OC	P74	148	USB_OTG_OC
LCD_DATA15	145	S73	LCD_G7	USB_O1_PWR_EN	P73	146	USB_OTG_PWR
LCD_DATA14	143	S72	LCD_G6	USB_O1_VBUS	P72	144	USB_OTG_VBUS
LCD_DATA13	141	S71	LCD_G5	USB_O1_SSRXP	P71	142	USB_OTG_SSRXP
LCD_DATA12	139	S70	LCD_G4	USB_O1_SSRXN	P70	140	USB_OTG_SSRXN
LCD_DATA11	137	S69	LCD_G3	GND	P69	138	USB_OTG_GND
LCD_DATA10	135	S68	LCD_G2	USB_O1_SSTXP	P68	136	USB_OTG_SSTXP
LCD_DATA09	133	S67	LCD_G1	USB_O1_SSTXN	P67	134	USB_OTG_SSTXN
LCD_DATA08	131	S66	LCD_G0	USB_O1_OTG_ID	P66	132	USB_OTG_ID
LCD_DATA23	129	S65	LCD_R7	USB_O1_DP	P65	130	USB_OTG_DP
LCD_DATA22	127	S64	LCD_R6	USB_O1_DN	P64	128	USB_OTG_DN
LCD_DATA21	125	S63	LCD_R5	GND	P63	126	
LCD_DATA20	123	S62	LCD_R4	ETH2_MD2_P	P62	124	ETH2_TRXP2
LCD_DATA19	121	S61	LCD_R3	ETH2_MD2_N	P61	122	ETH2_TRXN2
LCD_DATA18	119	S60	LCD_R2	GND	P60	120	
LCD_DATA17	117	S59	LCD_R1	ETH2_MD3_P	P59	118	ETH2_TRXP3
LCD_DATA16	115	S58	LCD_R0	ETH2_MD3_N	P58	116	ETH2_TRXN3
	113	S57	GND	ETH2_LINK	P57	114	ETH2_LED_10_100
BL_CONTRAST_PWM-GPIO	111	S56	BL_PWM	ETH2_ACT	P56	112	ETH2_LED_ACT
BL_PWR_EN-GPIO	109	S55	BL_PWR_EN	ETH2_LINK1000	P55	110	ETH2_LED_1000
DISP_PWR_EN-GPIO	107	S54	DISP_PWR_EN	ETH2_MD0_N	P54	108	ETH2_TRXN0
TP_IRQ-GPIO	105	S53	TP_IRQ	ETH2_MD0_P	P53	106	ETH2_TRXP0
TP_RST-GPIO	103	S52	TP_RST	GND	P52	104	
I2C-C_SCL	101	S51	HDMI/I2C-C_SCL	ETH2_MD1_N	P51	102	ETH2_TRXN1
I2C-C_SDA	99	S50	HDMI/I2C-C_SDA	ETH2_MD1_P	P50	100	ETH2_TRXP1
I2C-B_SCL	97	S49	I2C-B_SCL	GND	P49	98	
I2C-B_SDA	95	S48	I2C-B_SDA	ETH1_MD2_P	P48	96	ETH1_TRXP2
I2C-A_SCL	93	S47	I2C-A_SCL	ETH1_MD2_N	P47	94	ETH1_TRXN2
I2C-A_SDA	91	S46	I2C-A_SDA	GND	P46	92	
LVDS0_CLK_N	89	S45	LVDS0_CLK_N	ETH1_MD3_P	P45	90	ETH1_TRXP3
LVDS0_CLK_P	87	S44	LVDS0_CLK_P	ETH1_MD3_N	P44	88	ETH1_TRXN3
	85	S43	GND	ETH1_LINK	P43	86	ETH1_LED_10_100
LVDS0_DATA0_N	83	S42	LVDS0_D0_N	ETH1_ACT	P42	84	ETH1_LED_ACT
LVDS0_DATA0_P	81	S41	LVDS0_D0_P	ETH1_LINK1000	P41	82	ETH1_LED_1000
	79	S40	GND	ETH1_MD0_N	P40	80	ETH1_TRXN0
LVDS0_DATA1_N	77	S39	LVDS0_D1_N	ETH1_MD0_P	P39	78	ETH1_TRXP0
LVDS0_DATA1_P	75	S38	LVDS0_D1_P	GND	P38	76	
	73	S37	GND	ETH1_MD1_N	P37	74	ETH1_TRXN1
LVDS0_DATA2_N	71	S36	LVDS0_D2_N	ETH1_MD1_P	P36	72	ETH1_TRXP1
LVDS0_DATA2_P	69	S35	LVDS0_D2_P	GND	P35	70	
GPIO_H	67	S34	GPIO-H	HDMI_CEC	P34	68	HDMI_CEC_IN
LVDS0_DATA3_N	65	S33	LVDS0_D3_N	HDMI_TXD2_P	P33	66	HDMI_D2P
LVDS0_DATA3_P	63	S32	LVDS0_D3_P	HDMI_TXD2_N	P32	64	HDMI_D2M
	61	S31	GND	GND	P31	62	
LVDS1_CLK_N	59	S30	LVDS1_CLK_N	HDMI_TXD1_P	P30	60	HDMI_D1P
LVDS1_CLK_P	57	S29	LVDS1_CLK_P	HDMI_TXD1_N	P29	58	HDMI_D1M
	55	S28	GND	HDMI_HPD	P28	56	HDMI_HPD
LVDS1_DATA0_N	53	S27	LVDS1_D0_N	HDMI_TXD0_P	P27	54	HDMI_D0P
LVDS1_DATA0_P	51	S26	LVDS1_D0_P	HDMI_TXD0_N	P26	52	HDMI_D0M
	49	S25	GND	GND	P25	50	
LVDS1_DATA1_N	47	S24	LVDS1_D1_N	HDMI_TXC_P	P24	48	HDMI_CLKP
LVDS1_DATA1_P	45	S23	LVDS1_D1_P	HDMI_TXC_N	P23	46	HDMI_CLKM
	43	S22	GND	GND	P22	44	
LVDS1_DATA2_N	41	S21	LVDS1_D2_N	MMC_D2	P21	42	MMC_DATA2
LVDS1_DATA2_P	39	S20	LVDS1_D2_P	MMC_D3	P20	40	MMC_DATA3
GPIO_J	37	S19	GPIO-J	MMC_D4	P19	38	MMC_DATA4
LVDS1_DATA3_N	35	S18	LVDS1_D3_N	MMC_CMD	P18	36	MMC_CMD
LVDS1_DATA3_P	33	S17	LVDS1_D3_P	MMC_D5	P17	34	MMC_DATA5
	31	S16	GND	MMC_CLK	P16	32	MMC_CLK
CAN1_RD	29	S15	CAN1_RX	MMC_D6	P15	30	MMC_DATA6
CAN1_TD	27	S14	CAN1_TX	MMC_D7	P14	28	MMC_DATA7
CAN2_RD	25	S13	CAN2_RX	MMC_D0	P13	26	MMC_DATA0
CAN2_TD	23	S12	CAN2_TX	MMC_D1	P12	24	MMC_DATA1
SPDIF_OUT-GPIO	21	S11	SPDIF_OUT	SD_VCC	P11	22	SD_PWR
SPDIF_IN-GPIO	19	S10	SPDIF_IN	SD_D2	P10	20	SD_DATA2
	17	S9	GND	SD_D3	P9	18	SD_DATA3
AUD_MCLK	15	S8	AUDIO_MCLK	SD_CMD	P8	16	SD_CMD
AUD_TXD	13	S7	AUDIO_TXD	SD_CLK	P7	14	SD_CLK
AUD_TXC	11	S6	AUDIO_TXC	SD_D0	P6	12	SD_DATA0
AUD_RXD	9	S5	AUDIO_RXD	SD_D1	P5	10	SD_DATA1
AUD_TXFS	7	S4	AUDIO_TXFS	GPIO-C	P4	8	GPIO_C-SD_PWR_EN
	5	S3	GND	GPIO-D	P3	6	GPIO_D-SD_CD
MQS_LEFT-GPIO	3	S2	MQS_LEFT	GPIO-E	P2	4	GPIO_E-PCIE_CLKREQ_N
MQS_RIGHT-GPIO	1	S1	MQS_RIGHT	GPIO-F	P1	2	GPIO_F-WL_GPIO_1_DEV_WAKE

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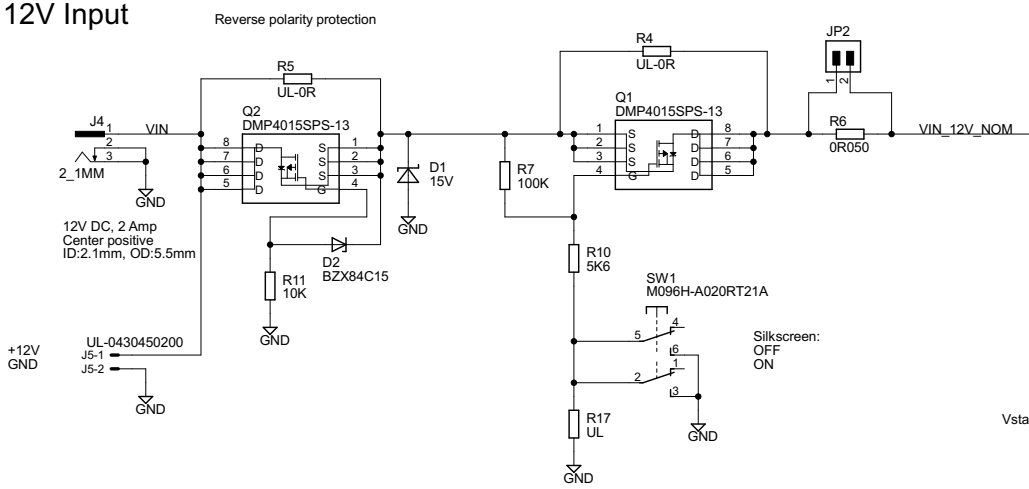
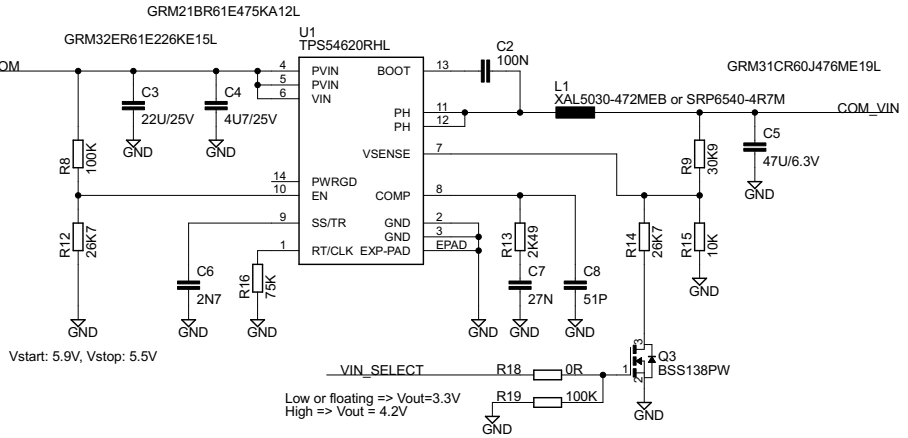
Power Supply Input

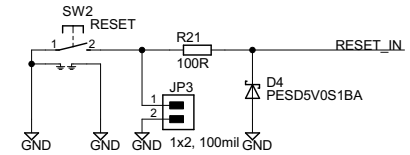
DC 12V Input



3.3V (or 4.2V)/4A supply with 7-17V input range

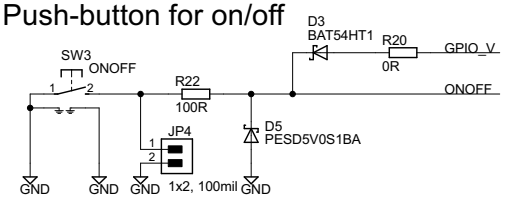


Push-button for reset

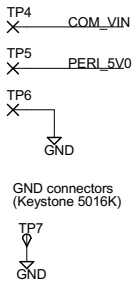


FSMRA2JH (for reset-button, black knob)

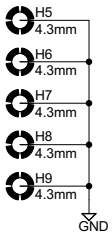
Push-button for on/off



FSMRA3JH (for on/off-button, blue knob)



Mounting Holes



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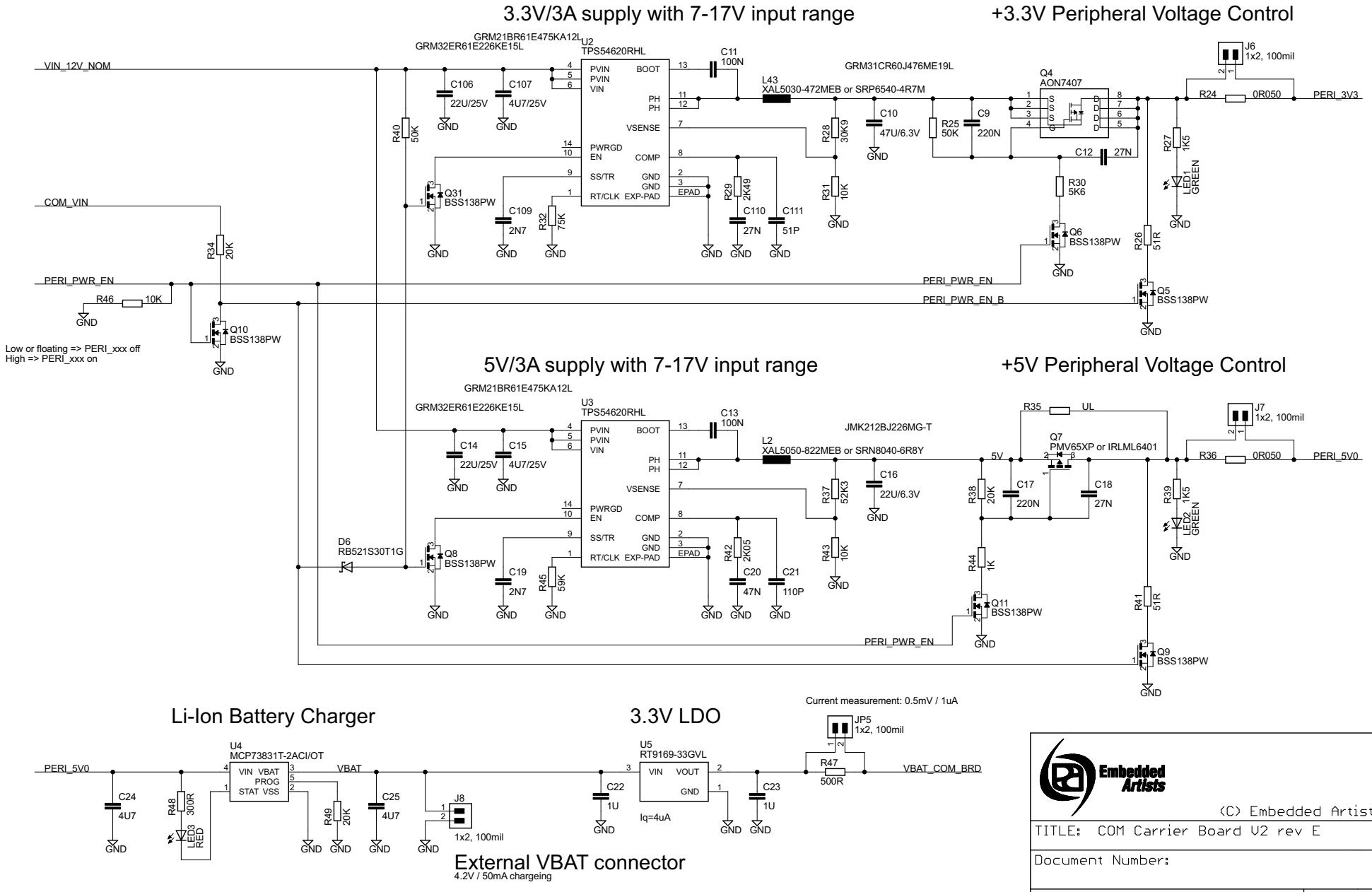
Peripheral Power Supply Control



(C) Embedded Artists AB

TITLE: COM Carrier Board V2 rev E	
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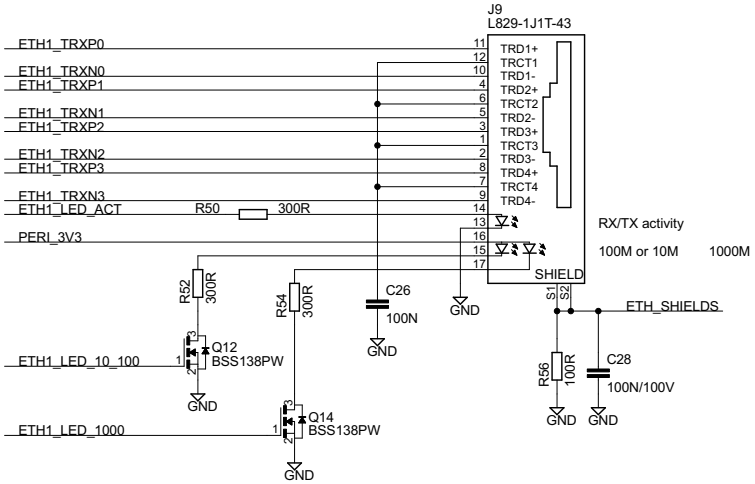
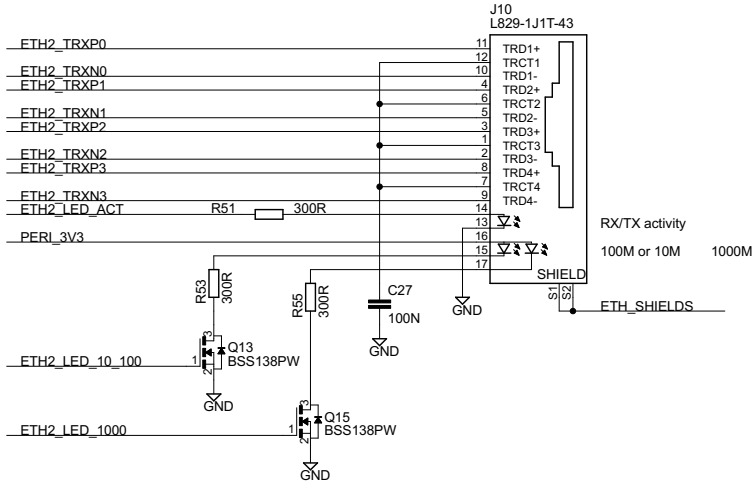
Ethernet interfaces

Ethernet Interface #1



Ethernet Interface #2



(C) Embedded Artists AB

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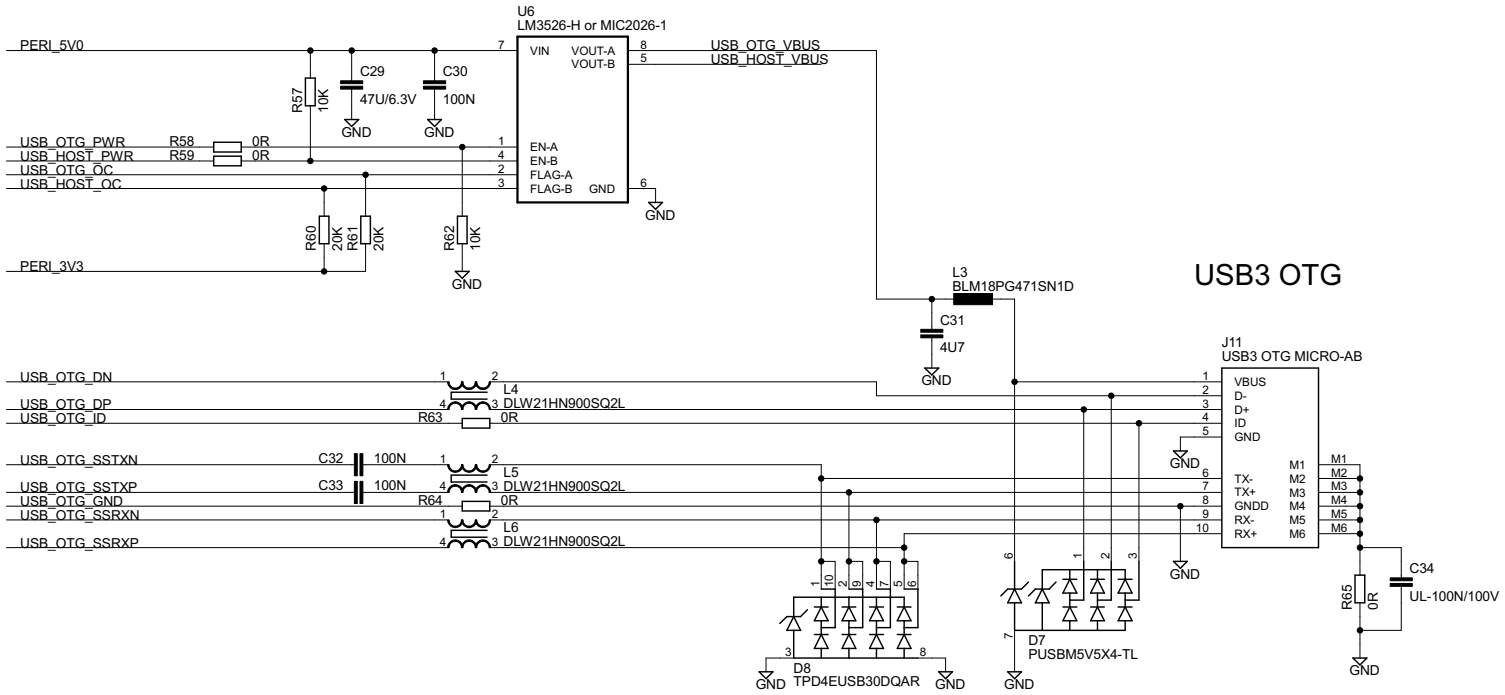
USB OTG Interface



(C) Embedded Artists AB

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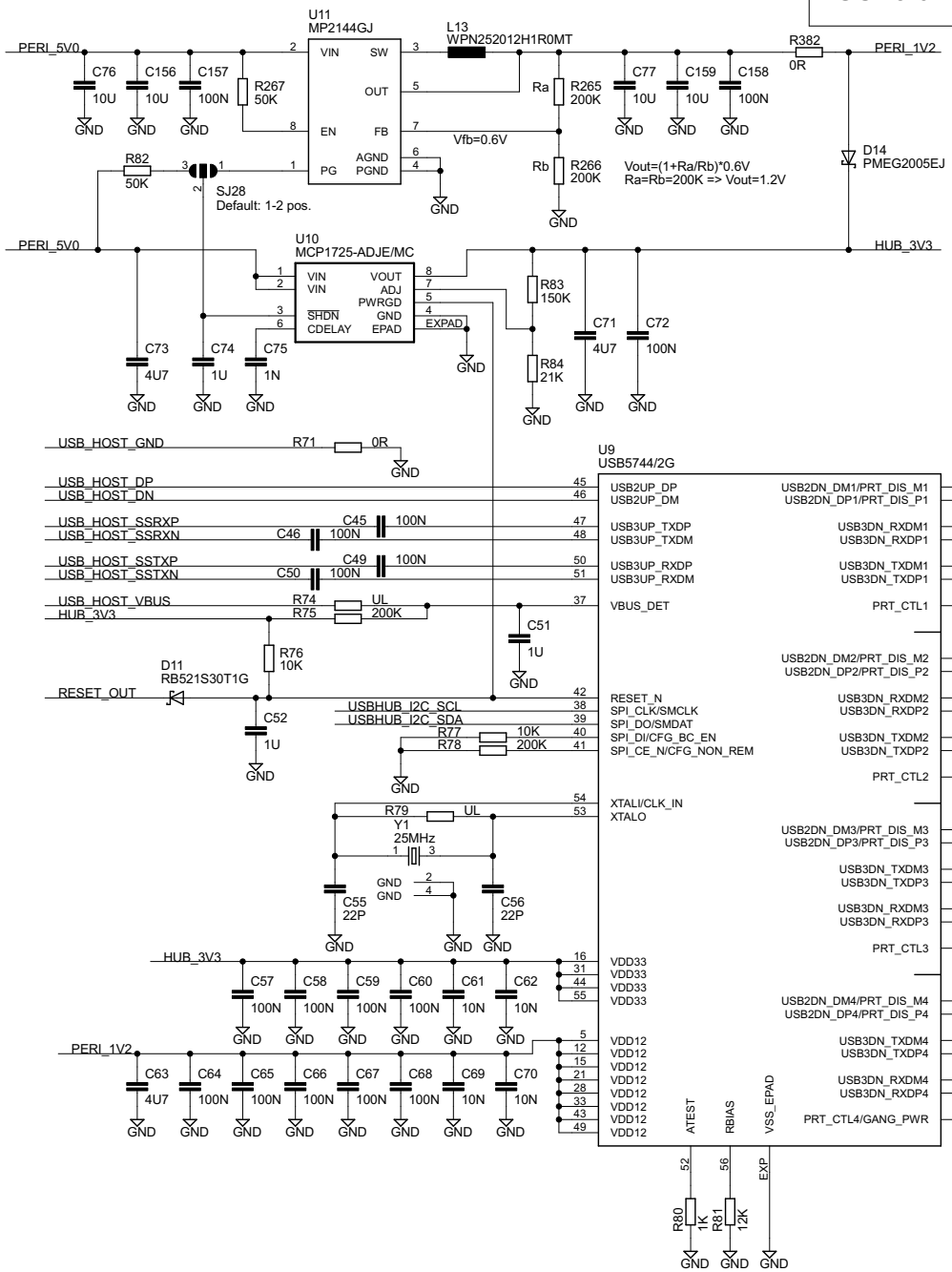
USB3.0 HUB

1.2V / 2A Buck DCDC (700mA needed)



(C) Embedded Artists AB

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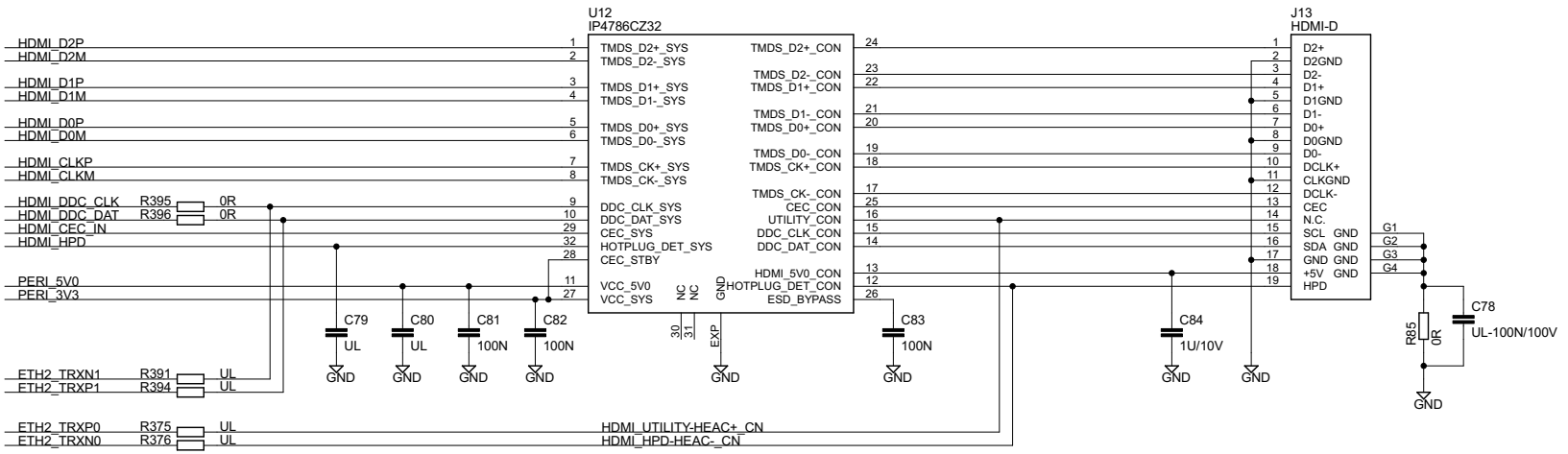
HDMI Interface



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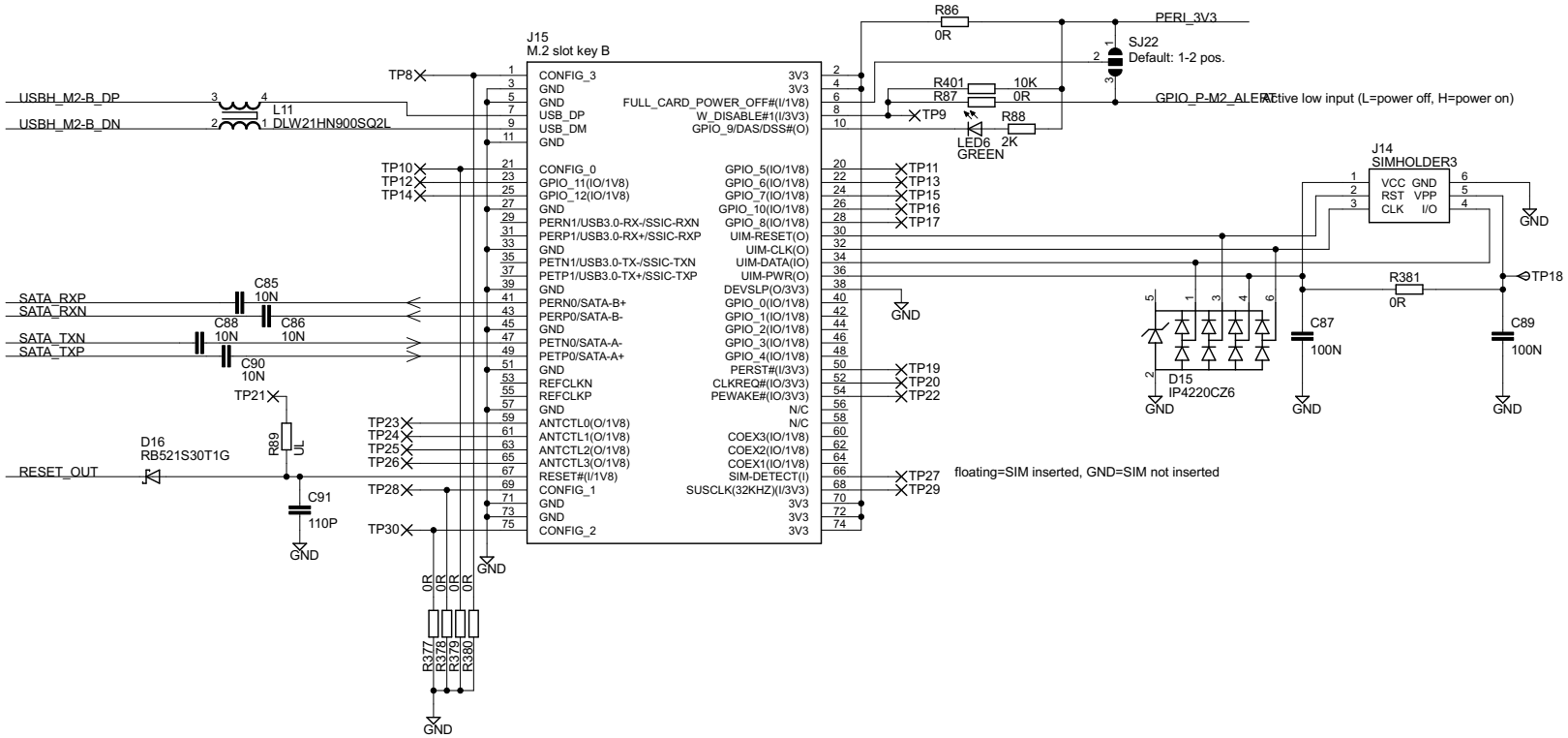
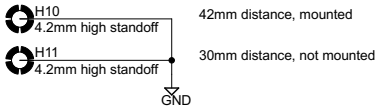
M.2 (NGFF) Key B Connector (USB Host and SATA Interfaces)



Standoffs for M.2 connector, placed at 30mm and 42mm distance from connector



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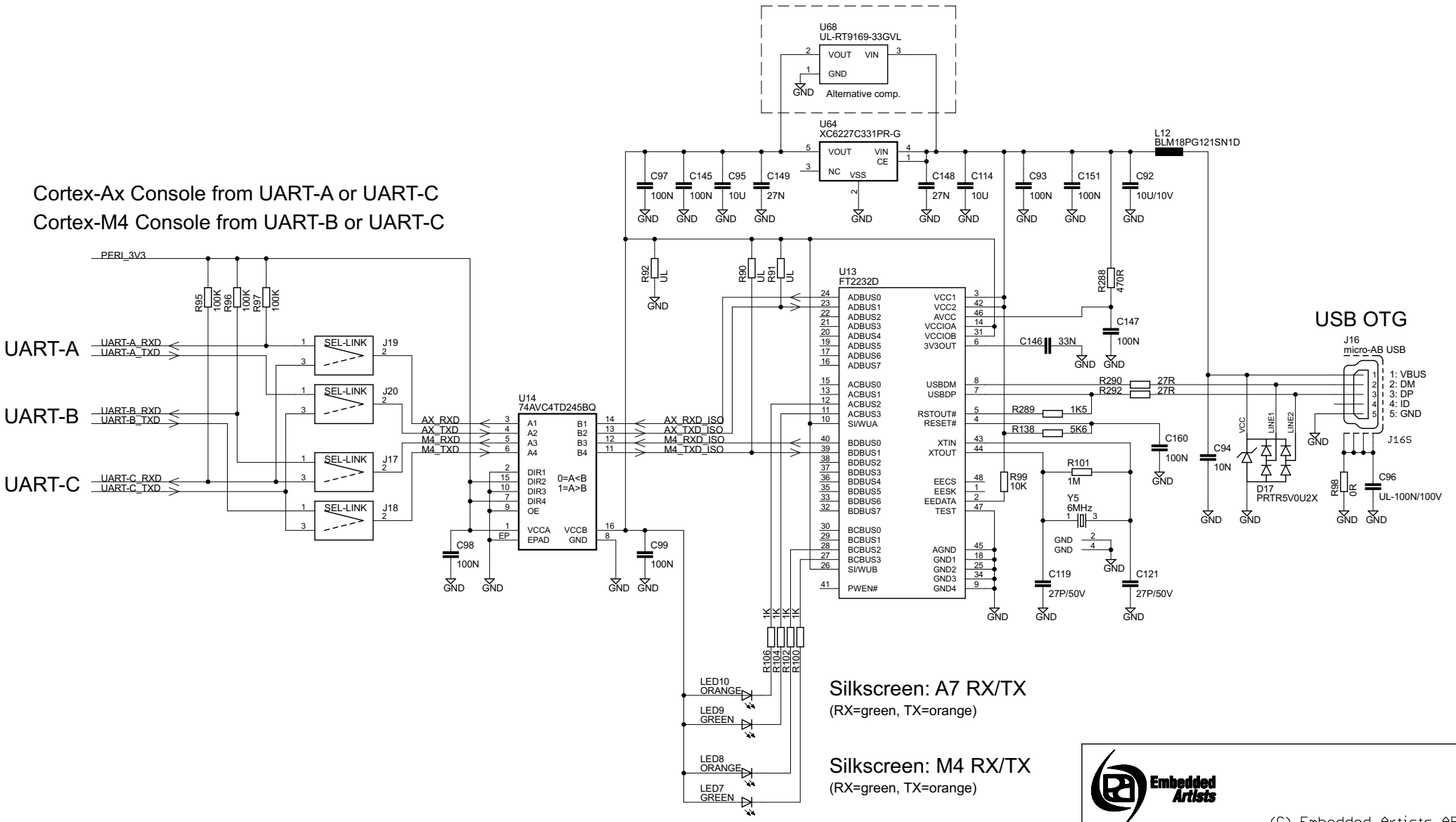
UART Console Interface (virtual COM ports over USB)



For driver installation, please refer to
http://www.ftdichip.com/Documents/InstallGuides.htm

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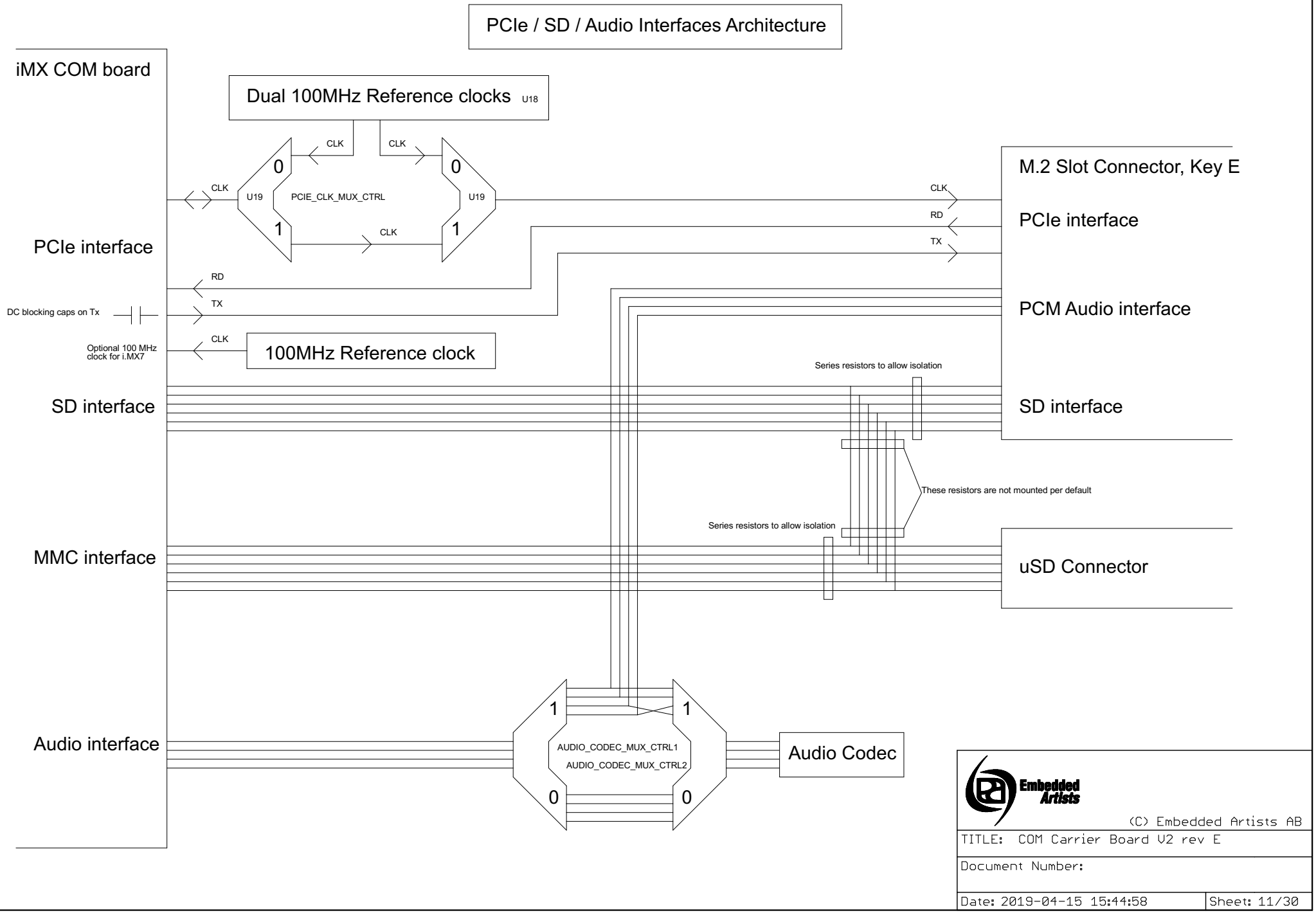
PCIe / SD / Audio Interfaces Architecture



TITLE: COM Carrier Board V2 rev E	
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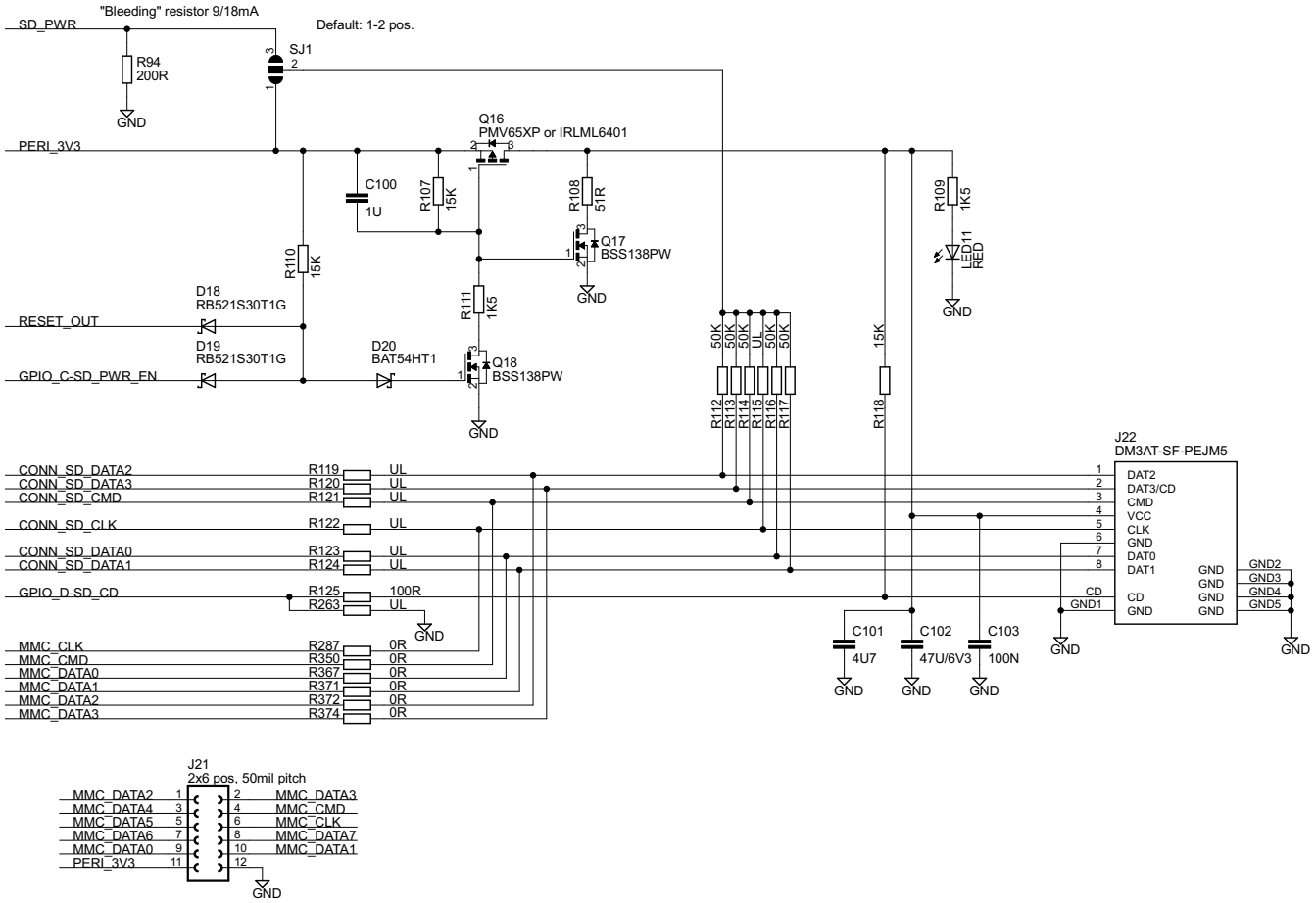
SD/MMC Memory Card Interface



TITLE: COM Carrier Board V2 rev E

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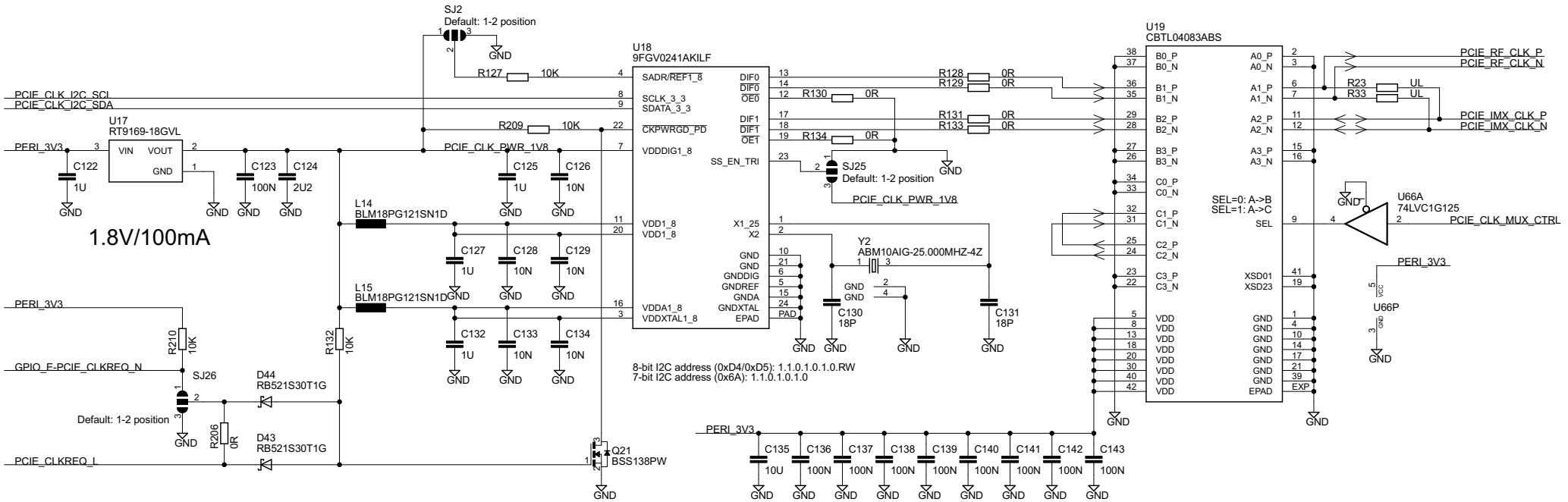
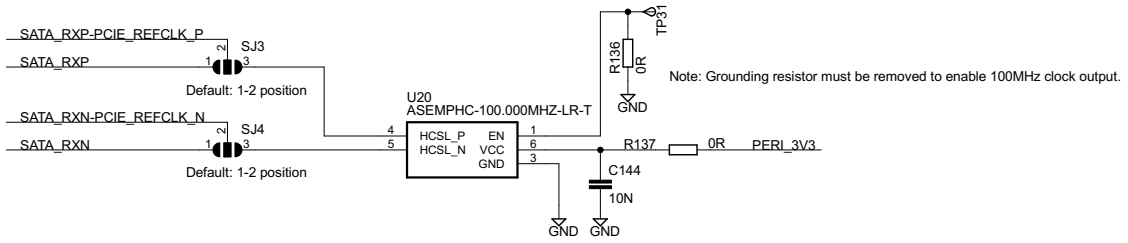
PCIe Reference Clock Multiplexing



Optional 100MHz PCIe reference clock (for i.MX 7Dual)



TITLE: COM Carrier Board V2 rev E	
Document Number:	
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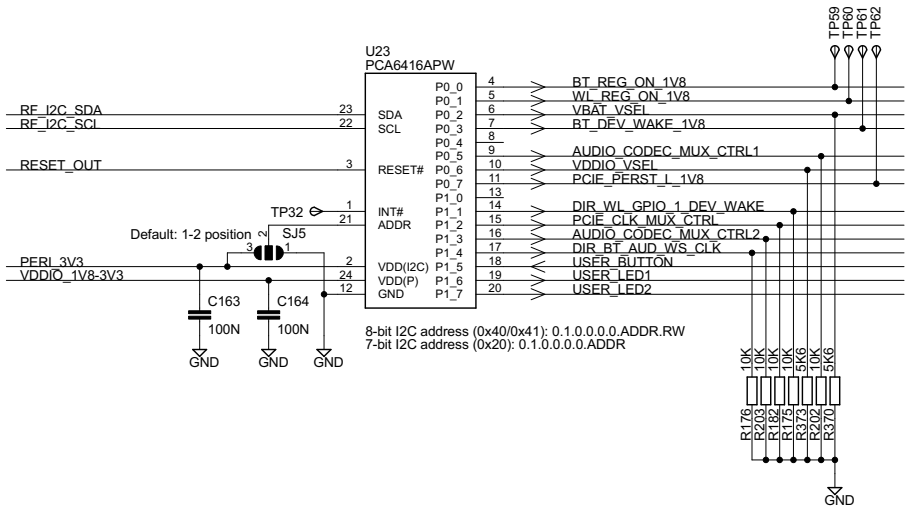
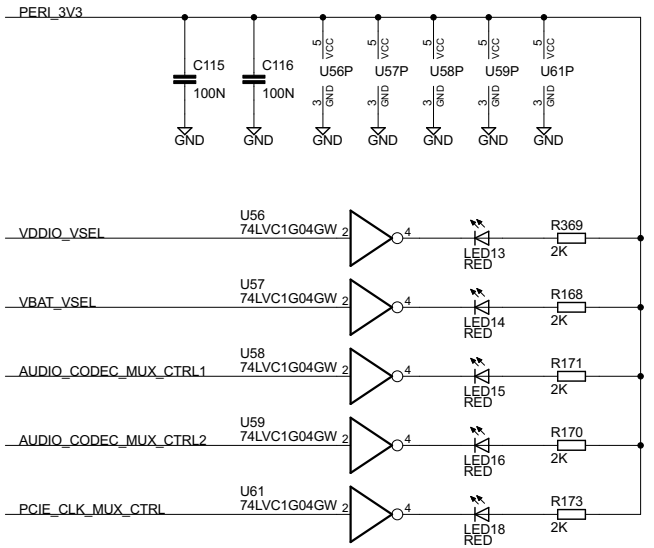
Control Signals and Indicators

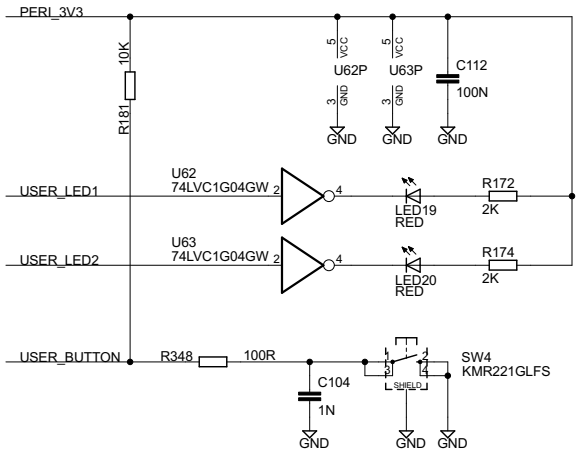
I2C GPIO Expander



Control signal indicators



User LEDs and Push-button



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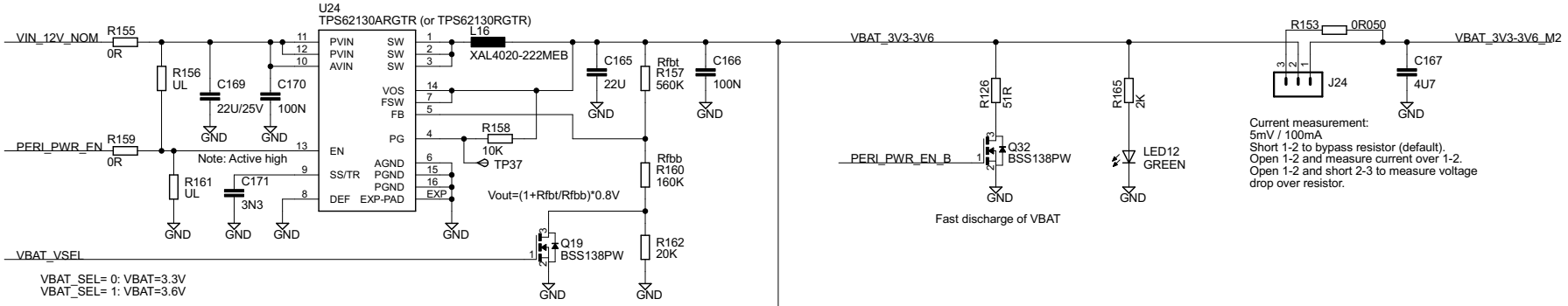
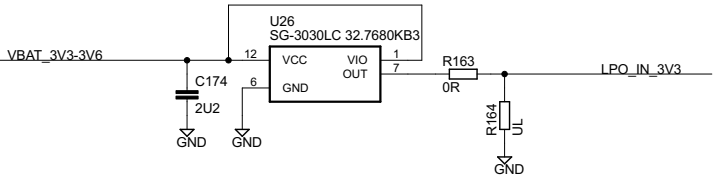
M.2-E Powering

Note: Set VDDIO to 1.8V and VBAT to 3.3V when using M.2 interface!
Only use other settings with extreme care!

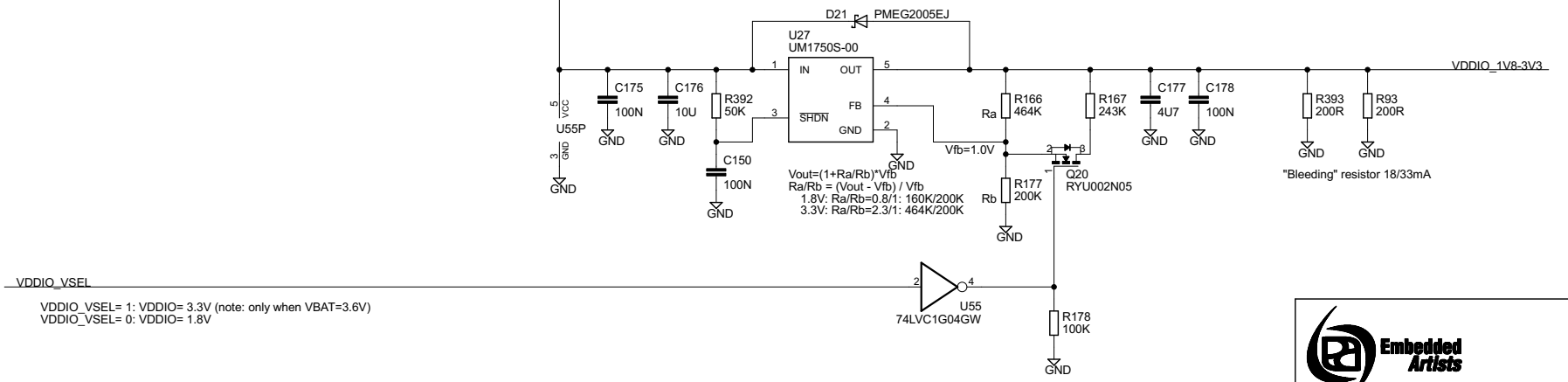
3.6 or 3.3V / 3A VBAT



32.768 kHz oscillator



1.8V or 3.3V/350mA VDDIO



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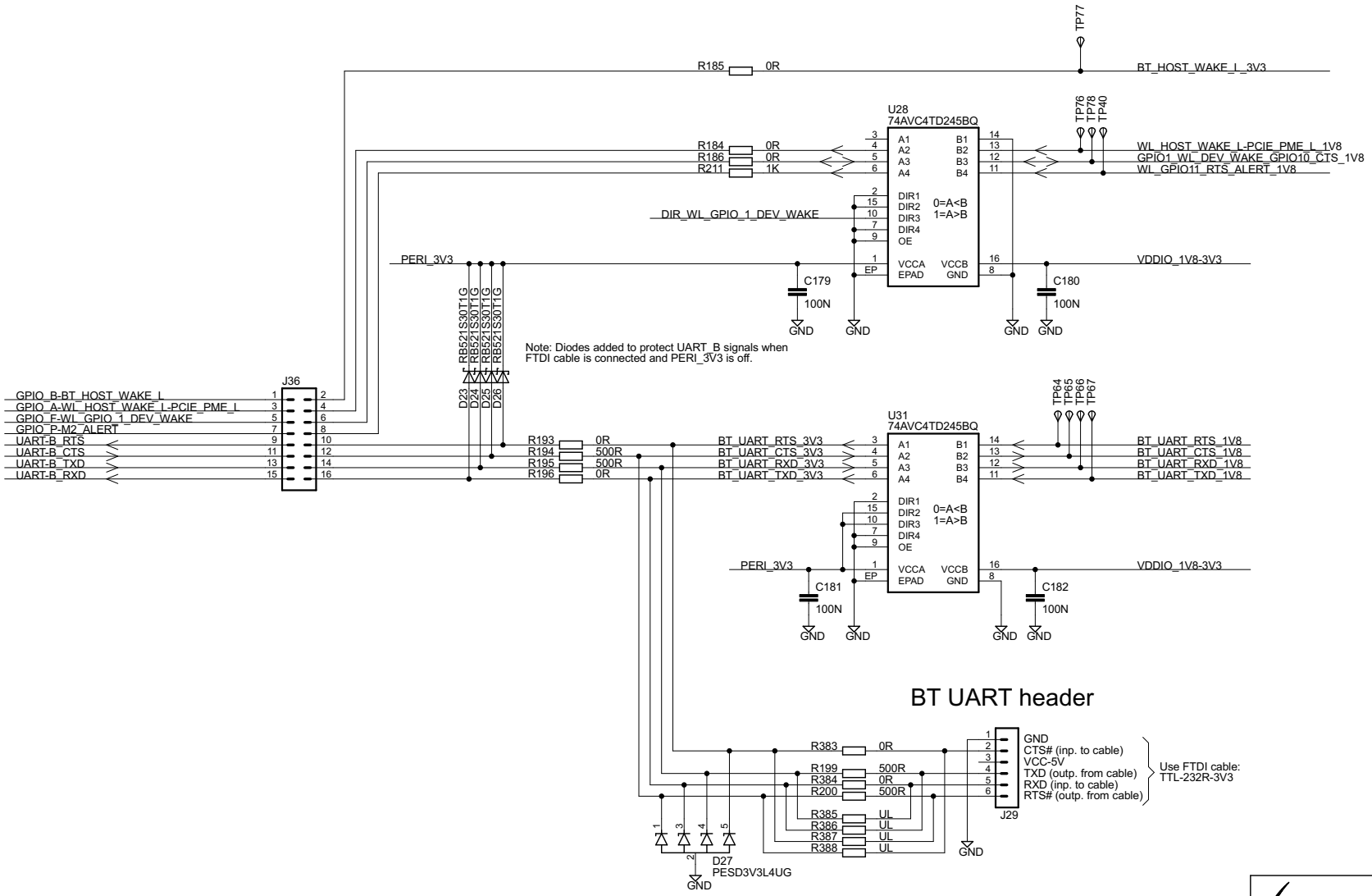
Level Translation for BT UART and Control Signals



TITLE: COM Carrier Board V2 rev E

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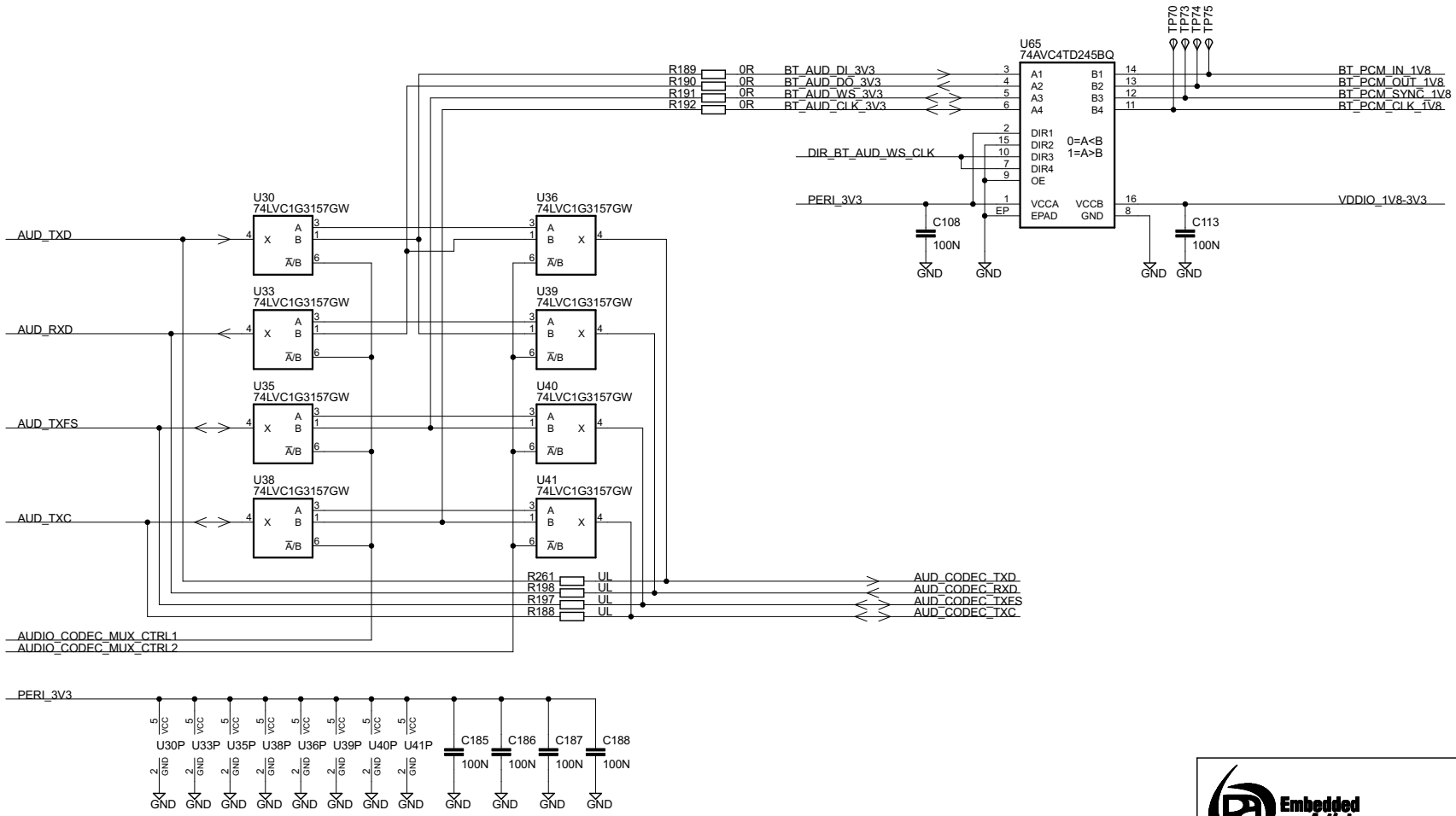
Level Translation and Audio Signal Multiplexing



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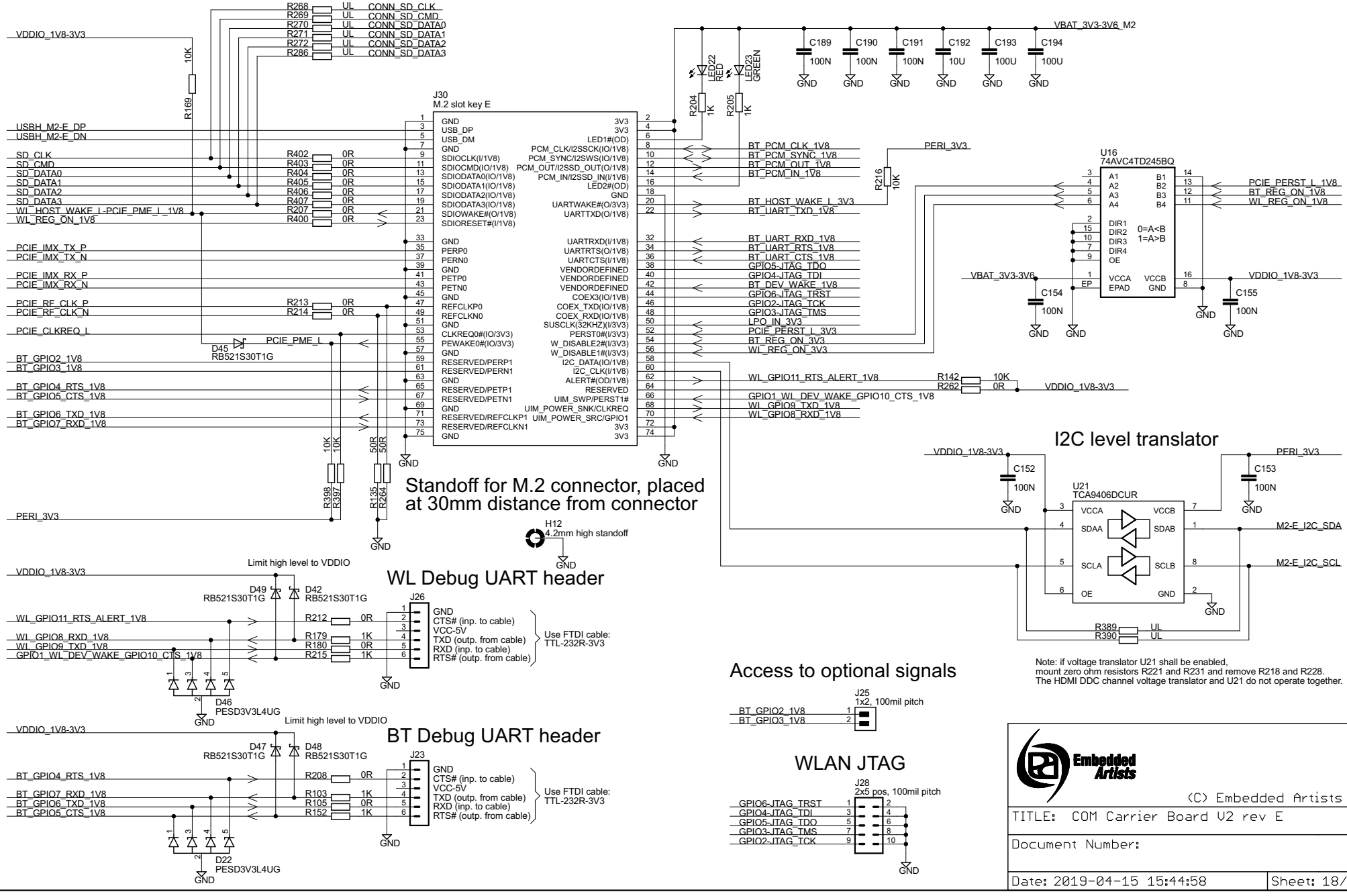
M.2 (NGFF) Key E Connector

Note: Set VDDIO to 1.8V and VBAT to 3.3V.
Only use other settings with extreme care!



Embedded Artists

TITLE: COM Carrier Board V2 rev E

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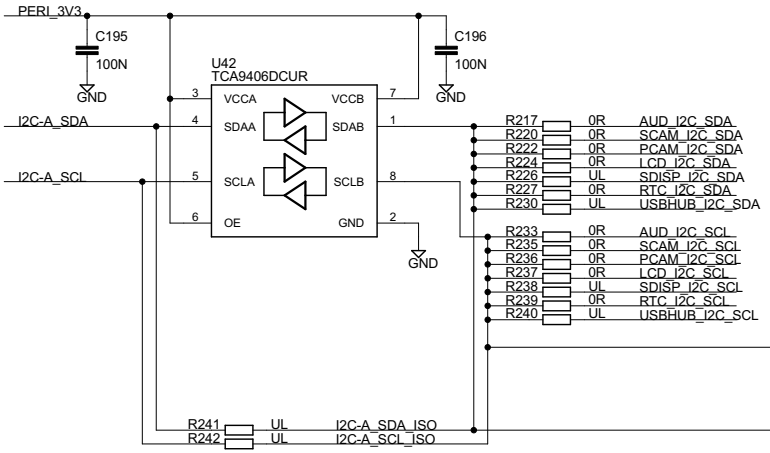
I2C Connections

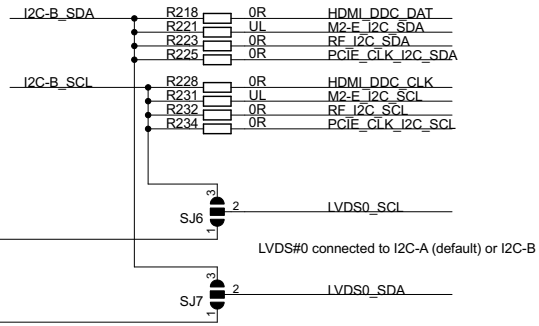
I2C-A



Audio codec: WM8731SEDS
8-bit I2C address (0x34/0x35): 0.0.1.1.0.1.0.RW
7-bit I2C address (0x1A): 0.0.1.1.0.1.0

RTC: PCF8523
8-bit I2C address (0xD0/0xD1): 1.1.0.1.0.0.0.RW
7-bit I2C address (0x68): 1.1.0.1.0.0.0

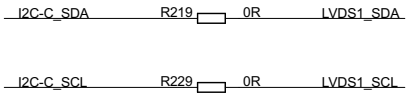
I2C-B



GPIO expander: PCA6416APW
8-bit I2C address (0x40/0x41): 0.1.0.0.0.0.ADDR.RW
7-bit I2C address (0x20): 0.1.0.0.0.0.ADDR

Clock generator: 9FGV0241AKILF
8-bit I2C address (0xD4/0xD5): 1.1.0.1.0.1.0.RW
7-bit I2C address (0x6A): 1.1.0.1.0.1.0

I2C-C



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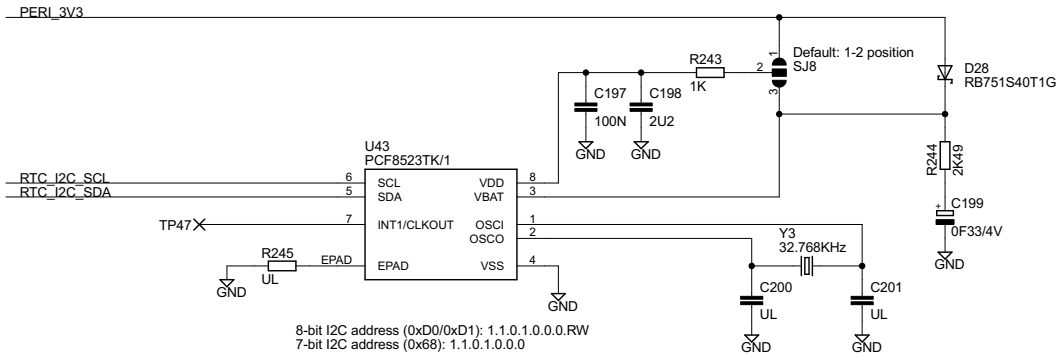
Real-Time Clock

Real Time Clock (PCF8523) with I2C interface
Standby mode: 150nA (typ)



Backup time calculation:

Super capacitor voltage: 3.3-Vf down to 1.0V = 3.0 - 1.0 Volt
RTC current: 150nA typically at 25 degrees C (up to 500nA over temperature range)
Diode leakage: 10nA at 25 degrees C up to 300nA at 60 degrees C

$$t = \frac{C\,(V_{max}-V_{min})}{I_{max}} = \frac{0.33\,(3.0 - 1.0)}{0.000\,000\,8} = 825\,000 \text{ sec} = 229 \text{ hours} = 9.5 \text{ days}$$

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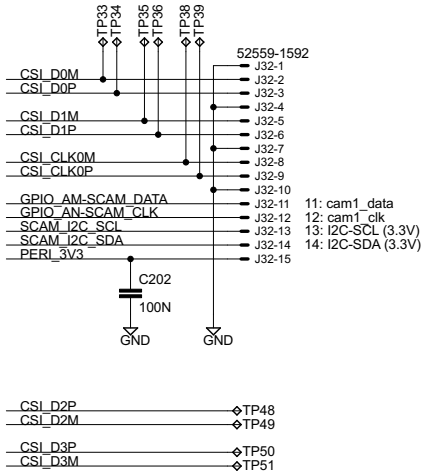
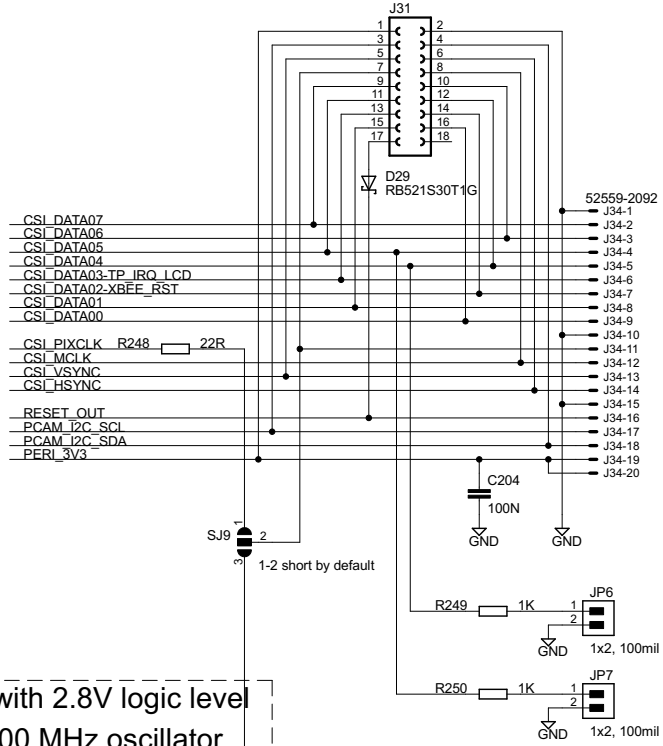
Camera / Display Interfaces

RPI serial camera (MIPI)



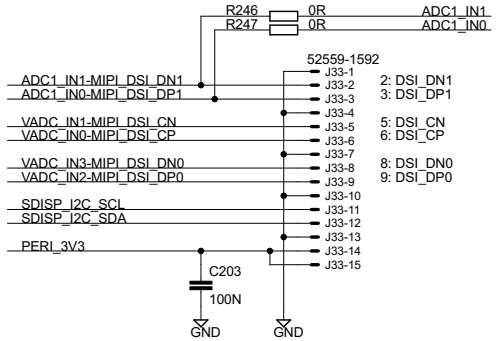
Parallel camera interface (+3.3V logic levels)



Note: Place resistors so that stubs on camera signals are minimized.

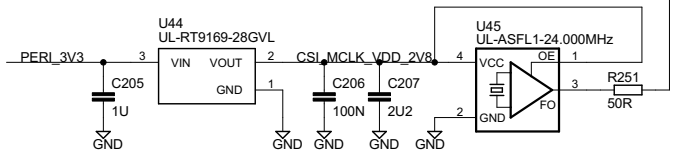
RPI serial display (MIPI) or VADC signals

Note: Place resistors so that stubs on displays signals are minimized.



Alternative CSI_MCLK, 24MHz with 2.8V logic level

2.8V/100mA 24.000 MHz oscillator



Not mounted. Just pads on pcb.

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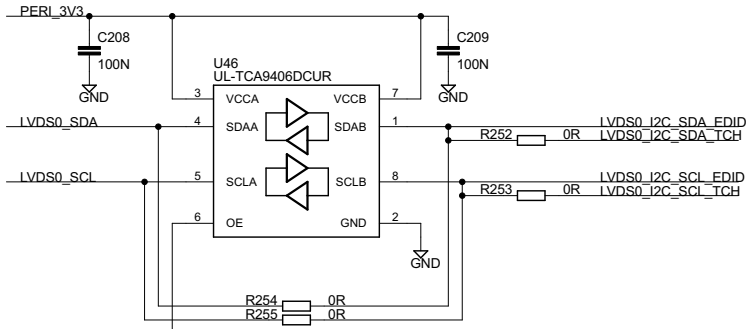
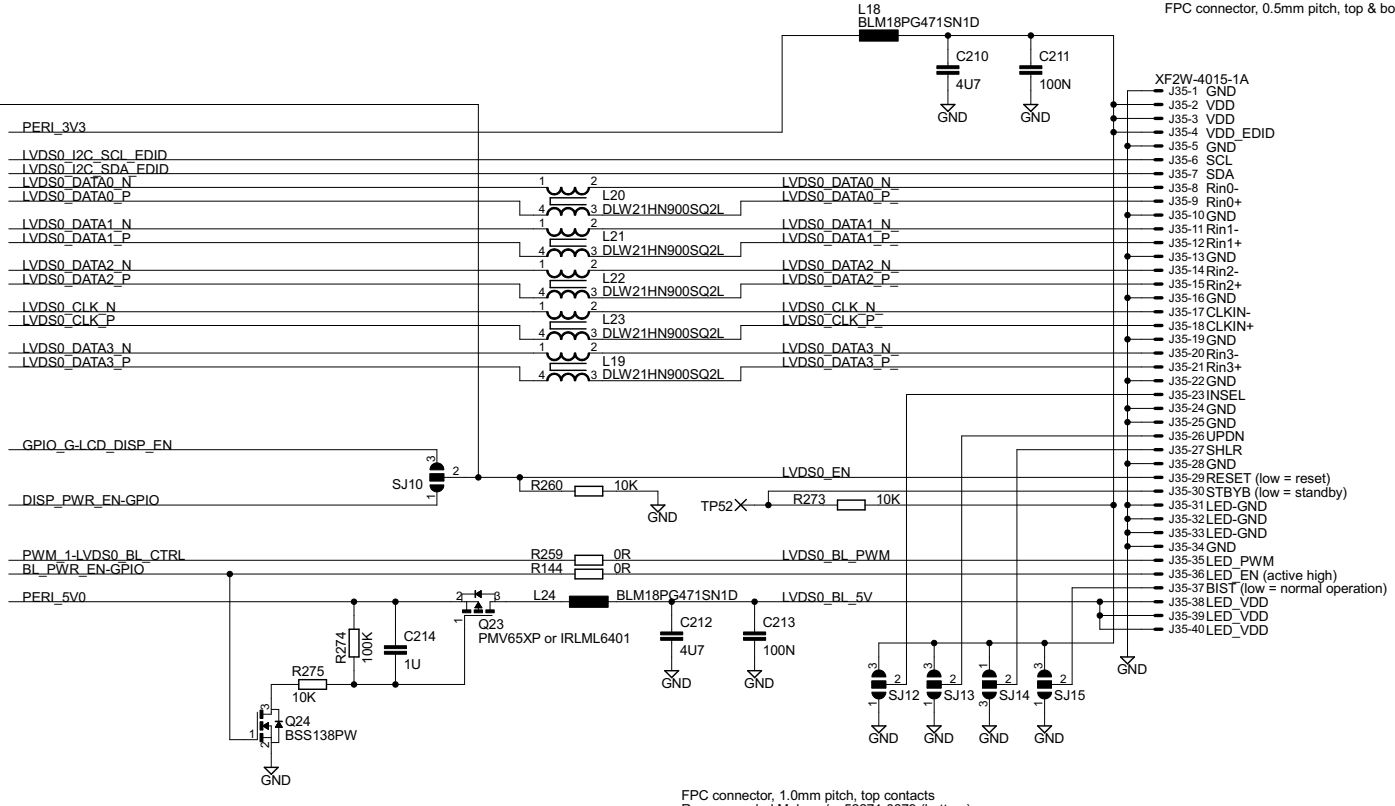
LVDS Interface #0



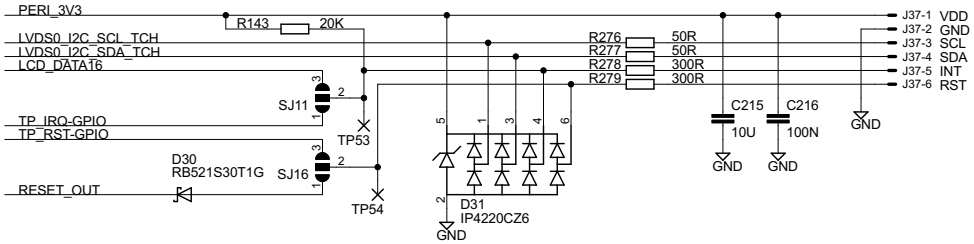
New Haven Displays
NHD-10.1-1024600AF-LSXV-CTP

NHD-10.1-1024600:24:29232073,1024,600,160,160,23,12,0,0,0,0,0

FPC connector, 0.5mm pitch, top & bottom contacts



FPC connector, 1.0mm pitch, top contacts
Recommended Molex p/n: 52271-0679 (bottom)



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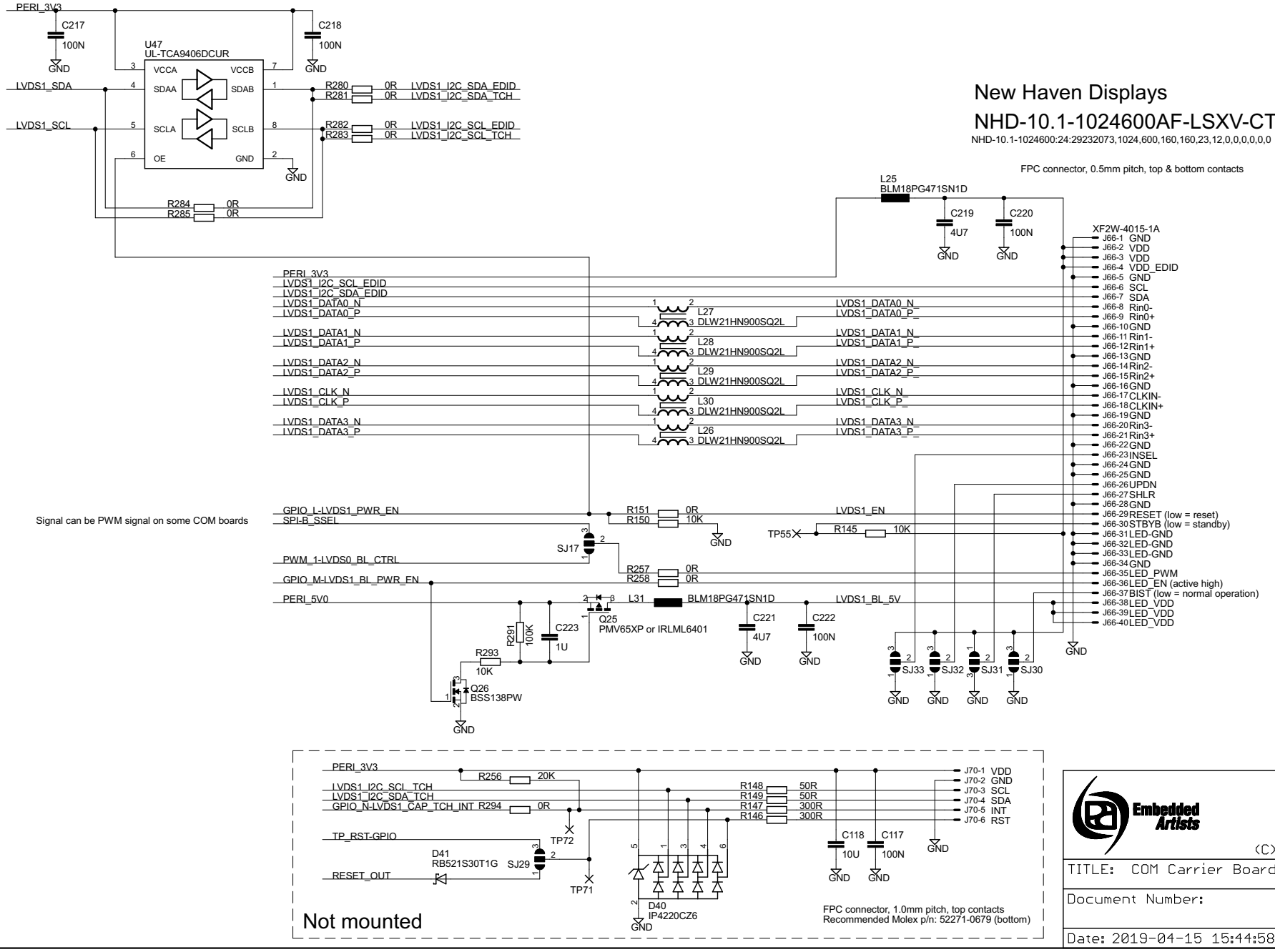
LVDS Interface #1



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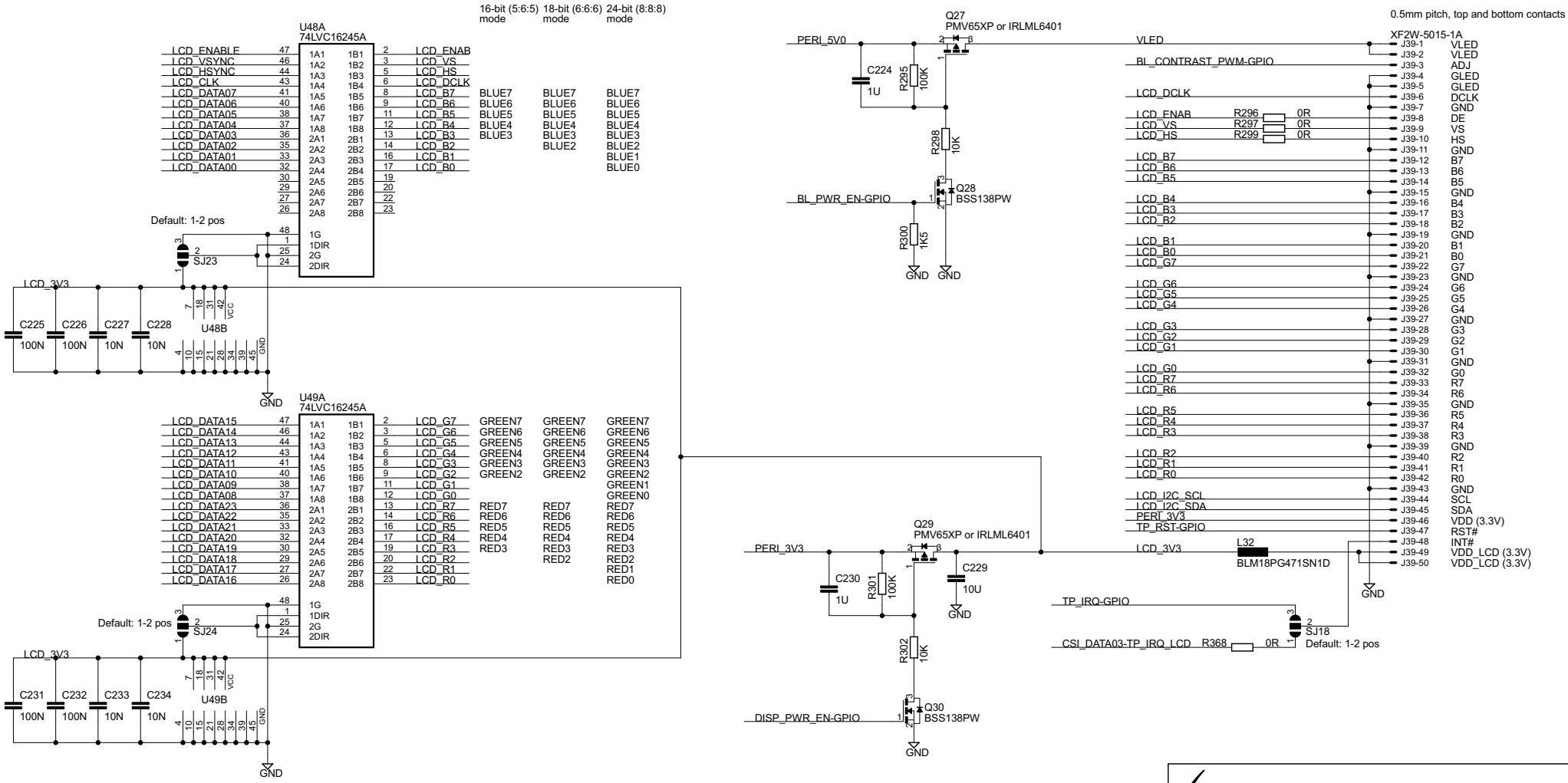
Parallel LCD Interface



LCD_ENABLE	47	1A1	1B1	2	LCD_ENAB				
LCD_VSYNC	46	1A2	1B2	3	LCD_VS				
LCD_HSYNC	44	1A3	1B3	5	LCD_HS				
LCD_CLK	43	1A4	1B4	6	LCD_DCLK				
LCD_DATA07	41	1A5	1B5	8	LCD_B7	BLUE7	BLUE7	BLUE7
LCD_DATA06	40	1A6	1B6	9	LCD_B6	BLUE6	BLUE6	BLUE6
LCD_DATA05	38	1A7	1B7	11	LCD_B5	BLUE5	BLUE5	BLUE5
LCD_DATA04	37	1A8	1B8	12	LCD_B4	BLUE4	BLUE4	BLUE4
LCD_DATA03	36	2A1	2B1	13	LCD_B3	BLUE3	BLUE3	BLUE3
LCD_DATA02	35	2A2	2B2	14	LCD_B2		BLUE2	BLUE2
LCD_DATA01	33	2A3	2B3	16	LCD_B1			BLUE1
LCD_DATA00	32	2A4	2B4	17	LCD_B0			BLUE0
	30	2A5	2B5	19				
	29	2A6	2B6	20				
	27	2A7	2B7	22				
	26	2A8	2B8	23				
	48	1G						
	1	1DIR						
	25	2G						
	24	2DIR						

LCD_DATA15	47	1A1	1B1	2	LCD_G7	GREEN7	GREEN7	GREEN7
LCD_DATA14	46	1A2	1B2	3	LCD_G6	GREEN6	GREEN6	GREEN6
LCD_DATA13	44	1A3	1B3	5	LCD_G5	GREEN5	GREEN5	GREEN5
LCD_DATA12	43	1A4	1B4	6	LCD_G4	GREEN4	GREEN4	GREEN4
LCD_DATA11	41	1A5	1B5	8	LCD_G3	GREEN3	GREEN3	GREEN3
LCD_DATA10	40	1A6	1B6	9	LCD_G2	GREEN2	GREEN2	GREEN2
LCD_DATA09	38	1A7	1B7	11	LCD_G1			GREEN1
LCD_DATA08	37	1A8	1B8	12	LCD_G0			GREEN0
LCD_DATA23	36	2A1	2B1	13	LCD_R7	RED7	RED7	RED7
LCD_DATA22	35	2A2	2B2	14	LCD_R6	RED6	RED6	RED6
LCD_DATA21	33	2A3	2B3	16	LCD_R5	RED5	RED5	RED5
LCD_DATA20	32	2A4	2B4	17	LCD_R4	RED4	RED4	RED4
LCD_DATA19	30	2A5	2B5	19	LCD_R3	RED3	RED3	RED3
LCD_DATA18	29	2A6	2B6	20	LCD_R2		RED2	RED2
LCD_DATA17	27	2A7	2B7	22	LCD_R1			RED1
LCD_DATA16	26	2A8	2B8	23	LCD_R0			RED0
	48	1G						
	1	1DIR						
	25	2G						
	24	2DIR						

J39-1	VLED	LCD_ENAB	R296 0R
J39-2	VLED	LCD_VS	R297 0R
J39-3	ADJ	LCD_HS	R299 0R
J39-4	GLED		
J39-5	GLED		
J39-6	DCLK		
J39-7	GND		
J39-8	DE		
J39-9	VS		
J39-10	HS		
J39-11	GND		
J39-12	B7		
J39-13	B6		
J39-14	B5		
J39-15	GND		
J39-16	B4		
J39-17	B3		
J39-18	B2		
J39-19	GND		
J39-20	B1		
J39-21	B0		
J39-22	G7		
J39-23	GND		
J39-24	G6		
J39-25	G5		
J39-26	G4		
J39-27	GND		
J39-28	G3		
J39-29	G2		
J39-30	G1		
J39-31	GND		
J39-32	G0		
J39-33	R7		
J39-34	R6		
J39-35	GND		
J39-36	R5		
J39-37	R4		
J39-38	R3		
J39-39	GND		
J39-40	R2		
J39-41	R1		
J39-42	R0		
J39-43	GND		
J39-44	SCL		
J39-45	SDA		
J39-46	VDD (3.3V)		
J39-47	RST#		
J39-48	INT#		
J39-49	VDD_LCD (3.3V)		
J39-50	VDD_LCD (3.3V)		

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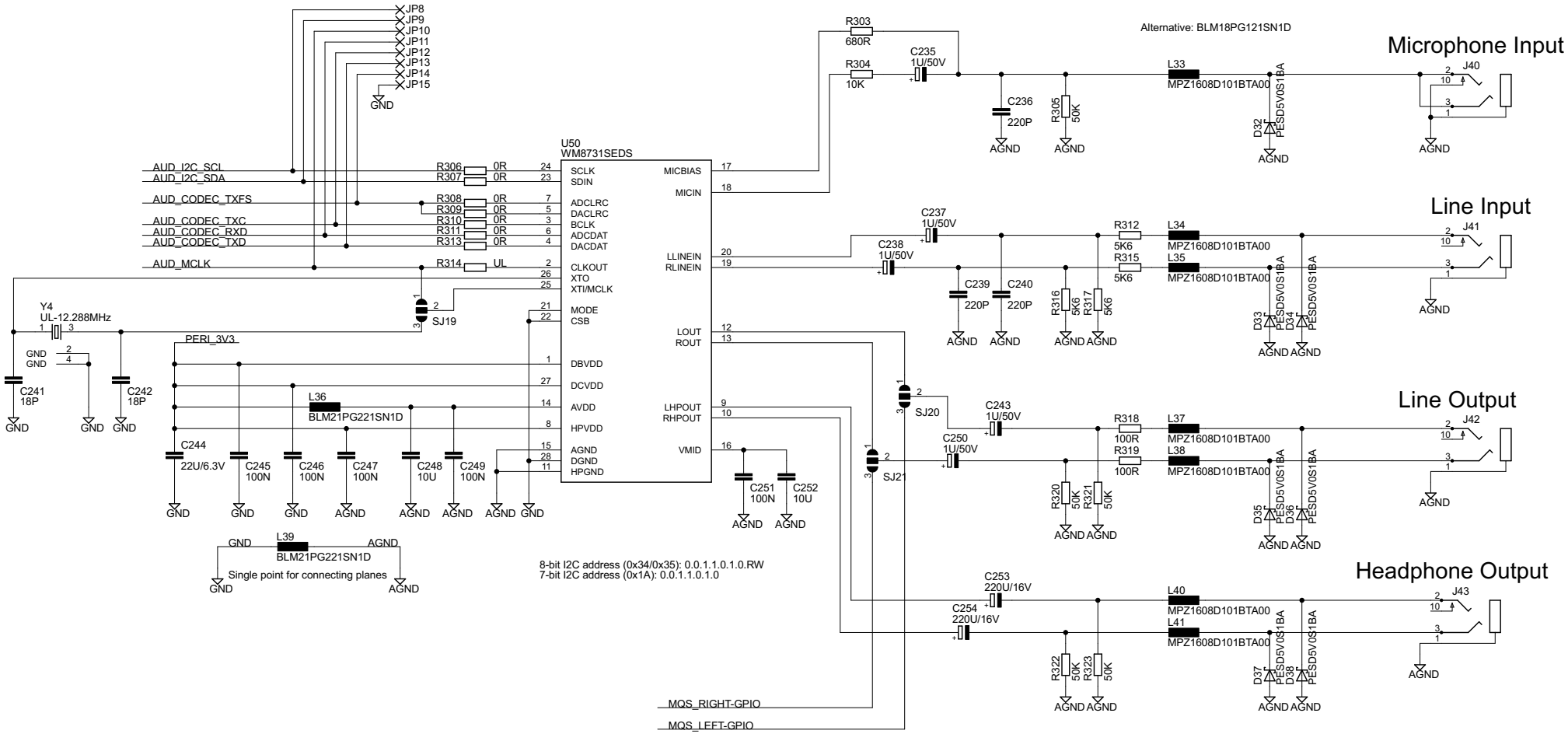
Audio Interface



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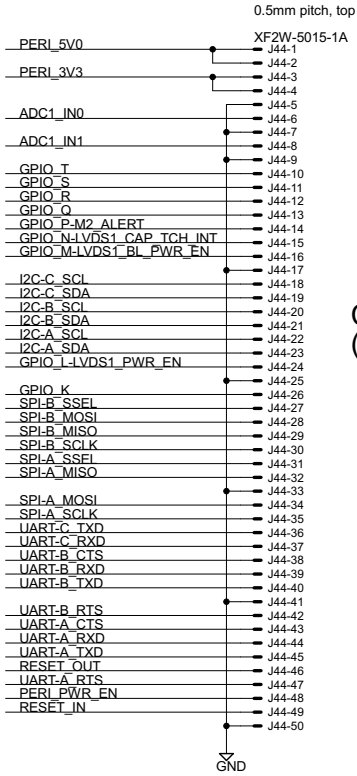
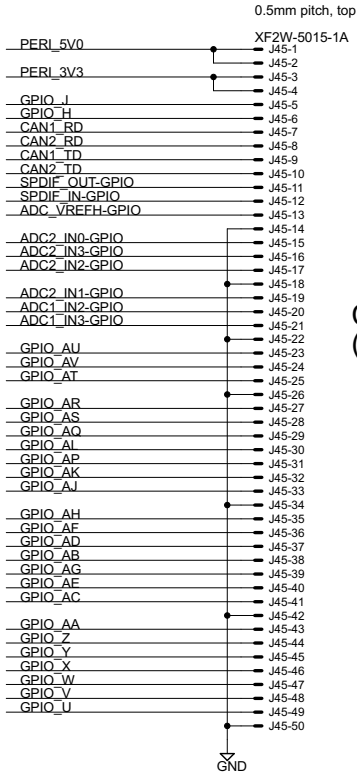
Expansion Connectors

Dual 50-pos FPC Connectors (0.50mm pitch)



Connector "A"
(in silkscreen on PCB)



Connector "B"
(in silkscreen on PCB)

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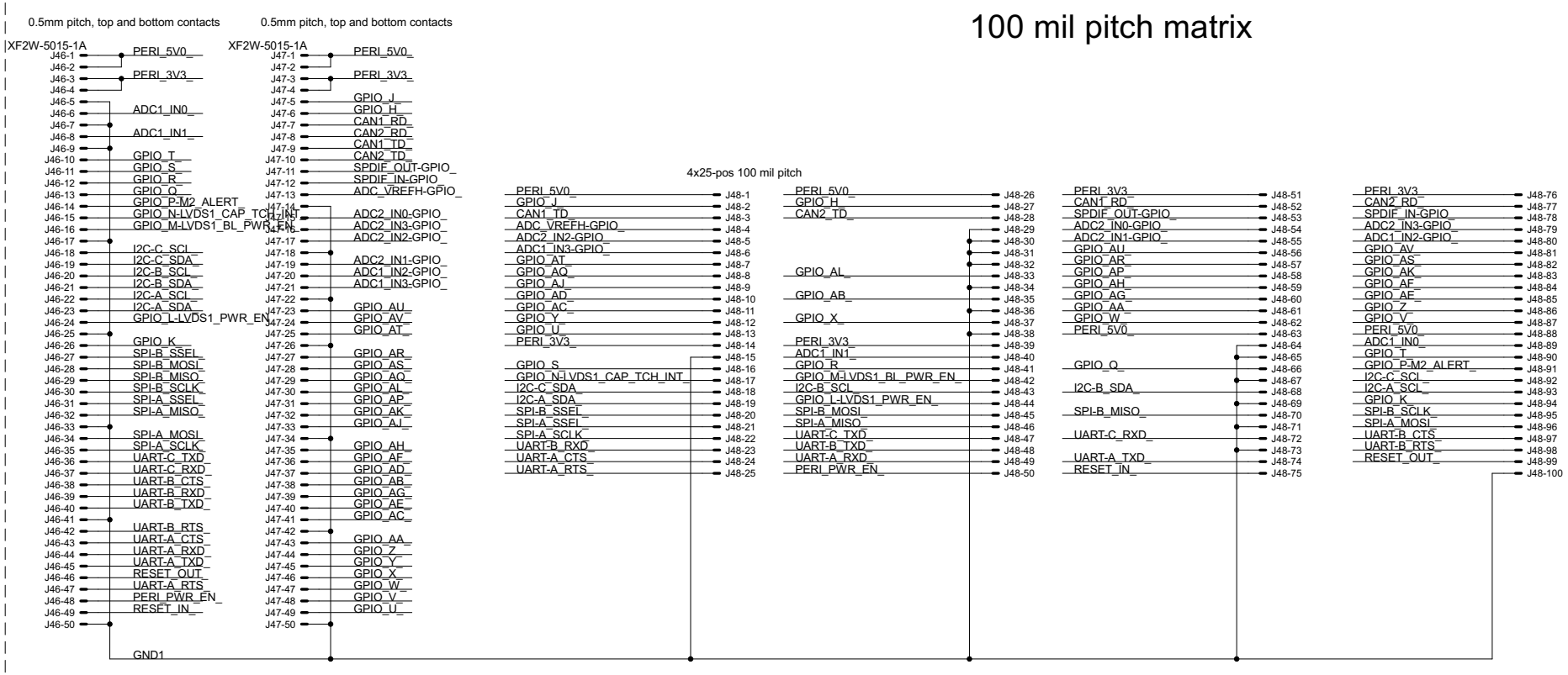
Break-off Board for Expansion Connectors

Break-off Board with 100 mil pich access to all signals



100 mil pitch matrix

Connector "A" (in silkscreen on PCB)

Connector "B" (in silkscreen on PCB)

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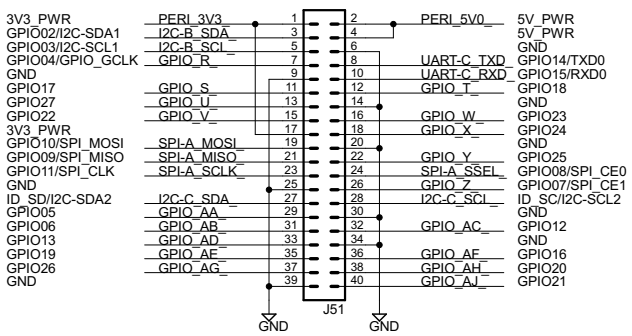
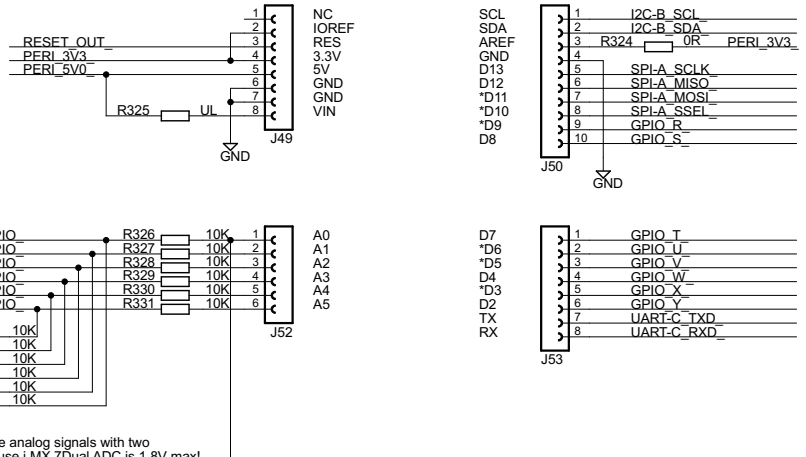
Multiple Expansion Connectors

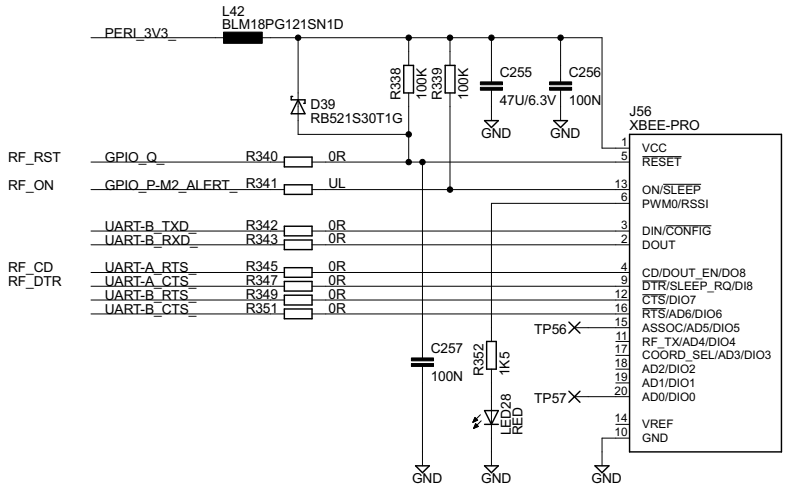
RPi Expansion Connector



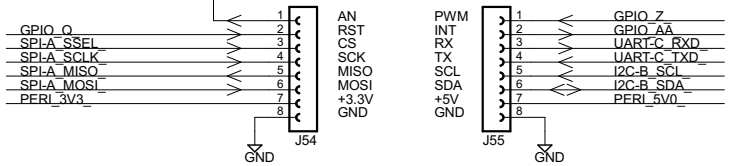
Arduino Shield receptacles R3



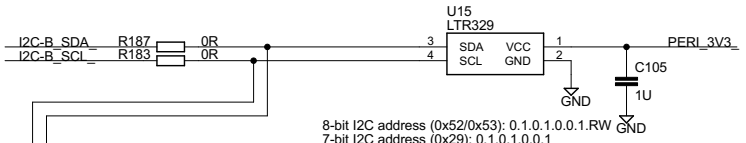
Digi XBee(R) RF-module



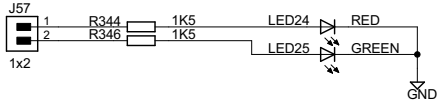
Click Module



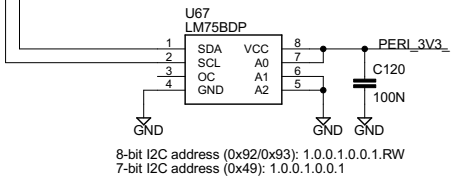
LTR329 I2C Light Sensor



LEDs



LM75 I2C Temperature Sensor



Embedded Artists

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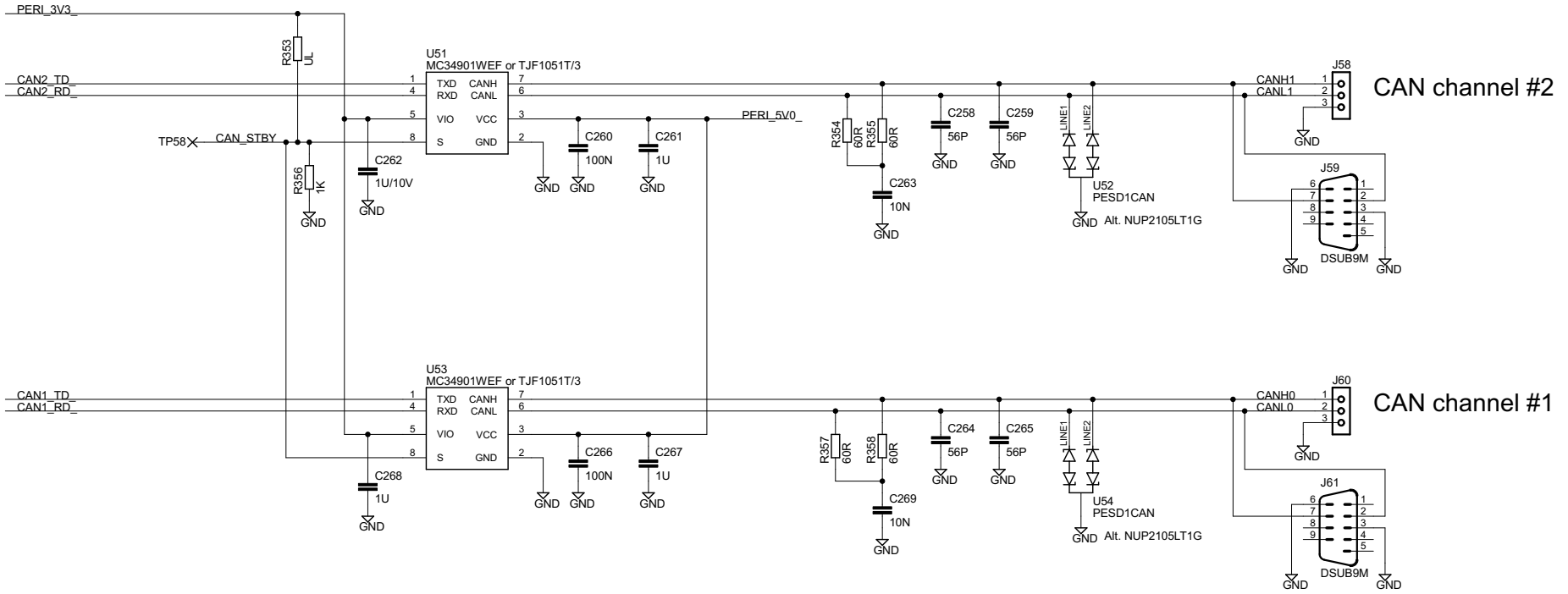
CAN Interfaces

CAN transceivers



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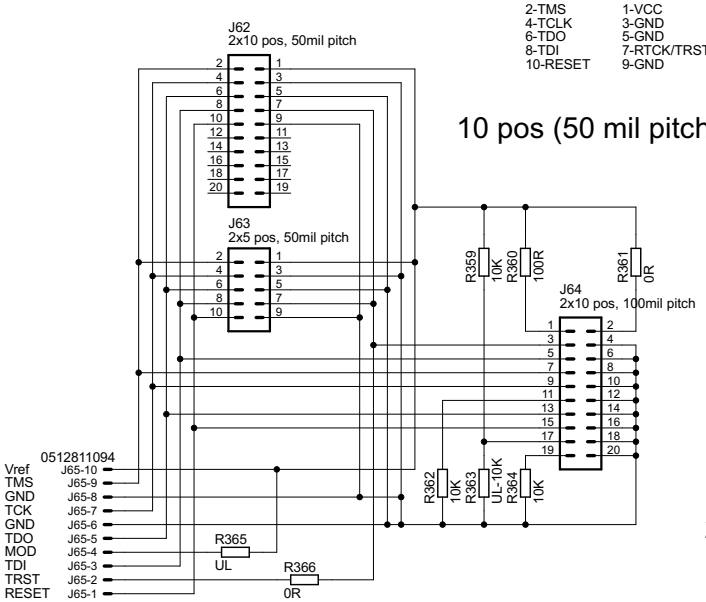
Debug Interface

JTAG Debug Interfaces ARM 10-pin interface JTAG Mode



2-TMS	1-VCC
4-TCLK	3-GND
6-TDO	5-GND
8-TDI	7-RTCK/TRST
10-RESET	9-GND

10 pos (50 mil pitch) connector

ARM 20-pin interface JTAG Mode

1-VCC (Vtref)	2-N/C
3-N/C (TRST)	4-GND
5-TDI	6-GND
7-TMS	8-GND
9-TCLK	10-GND
11-RTCK	12-GND
13-TDO	14-GND
15-RESET	16-GND
17-N/C	18-GND
19-N/C	20-GND

20 pos (100 mil pitch) connector

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