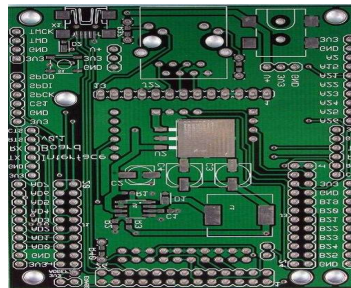


SF-1V

FBO17



SF-1V.REV0.01

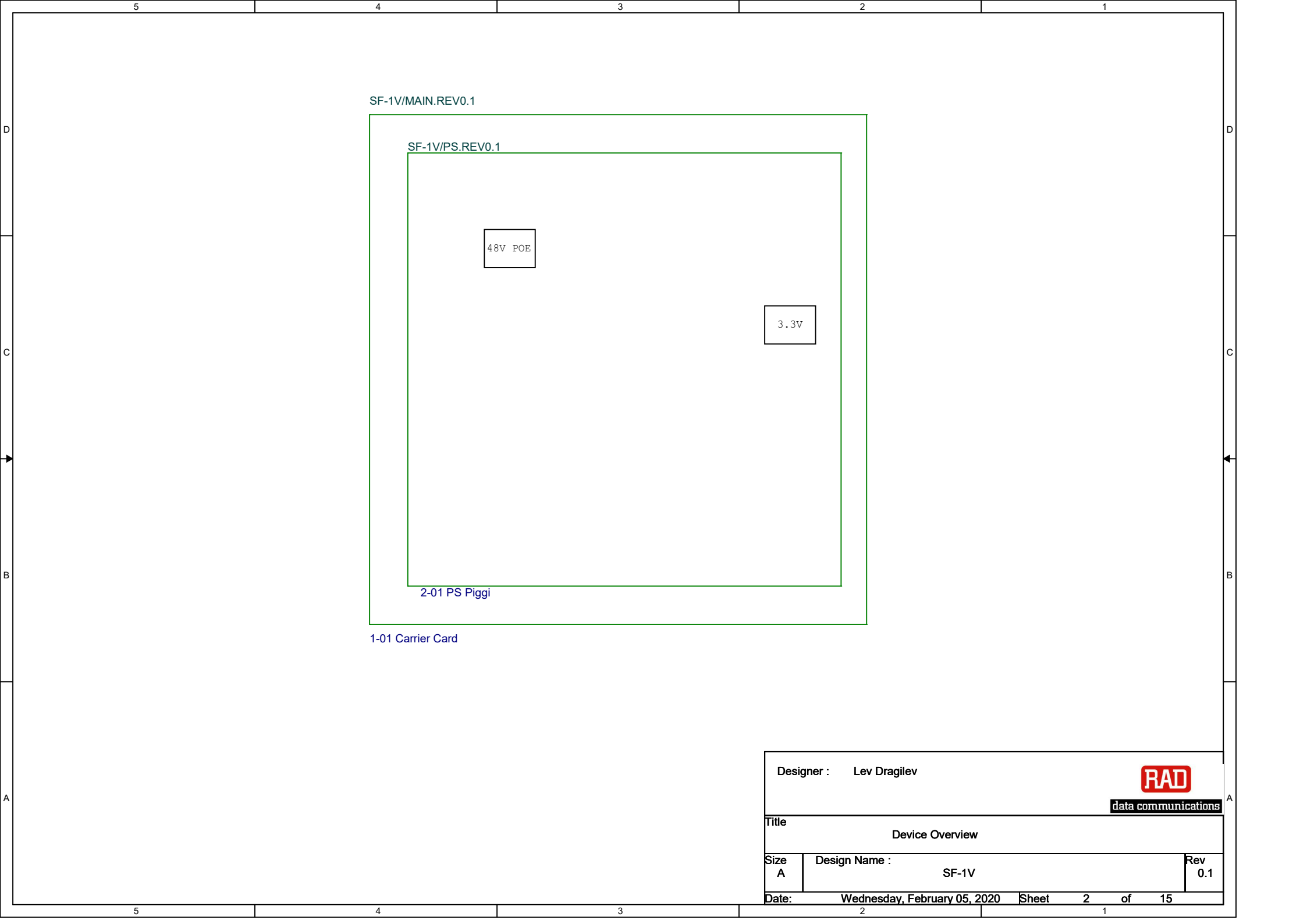
REV	Description	Date
0.0	Initial	01/10/17
0.1	<p>Main Card</p> <ol style="list-style-type: none"> 1. Fix wrong connectivity of MPP26, MPP36, MPP43, MPP47, MPP53, MPP58 & MPP59 2. Replace for SRD Lanes 2,4 between Rx and Tx pairs 3. Add SPI Piggi connector J17. 4. Add Terminals for POE & SER isolated GND. 5. Change assembly option for R8 & R263 to N.C. and R22 is ass always. 6. Improve routing of MDIO/MDC signal's and their derivatives to prevent crosstalks. 7. Replace connectors miniPCle-1 by high 5.7mm and move it to PS. miniPCle-2 moves to CS. 8. Replace Y3,Y4 crystals to smaller pkg. 9. Replace 3-x LED house and simpler connectivity 10. Add one GND terminal on each PCB side. 11. Opt JTAG Connector J15 replaced by other type. 12. Add micro-pushbutton SW3 for UBOOT recovery mode 13. Add test points for SPI bus, 3V3_SER and 3V3_POE 14. Remove MAC Part, since configuration is saved in EEPROM 15. Connect nWAKE to nBRST, add ext PU for CELL_RST signals 16. Set R217 PD instead of PU because BM3 17. Invert D9 and remove I2C PU R45 . 18. Use delayed Board Reset for mini-Card POR signals . 19. Add resistor 4.7K in parallel to Vbus bulk cap to speed the discharge when port is disable. 20. Use MPP32 for Console control nCON_EN 21. Move nRUN LED to MPP26. 22. Decrease size of R248 10k to 0402. 23. Fix polarity of SFP Tx SD5 from SOM 24. Incorrect U35 pinout. Fix it. 25. Add 2x USB HUB part U37 on USB Port 2. 26. TX_DIS func moved from MPP41 to MPP22. 27. Add serial resistors 100HM for RS232 driver short protection. <p>PS Card</p> <ol style="list-style-type: none"> 1. Replace 12V Delta PS 305 by Glary U3218033N10N-15APA 2. Replace 3-pin PowerIN Connector J1 to 5-pins. 3. Add TI ctrl for in-rush current & protection operation. 	31/08/18


Designer : Lev Dragilev

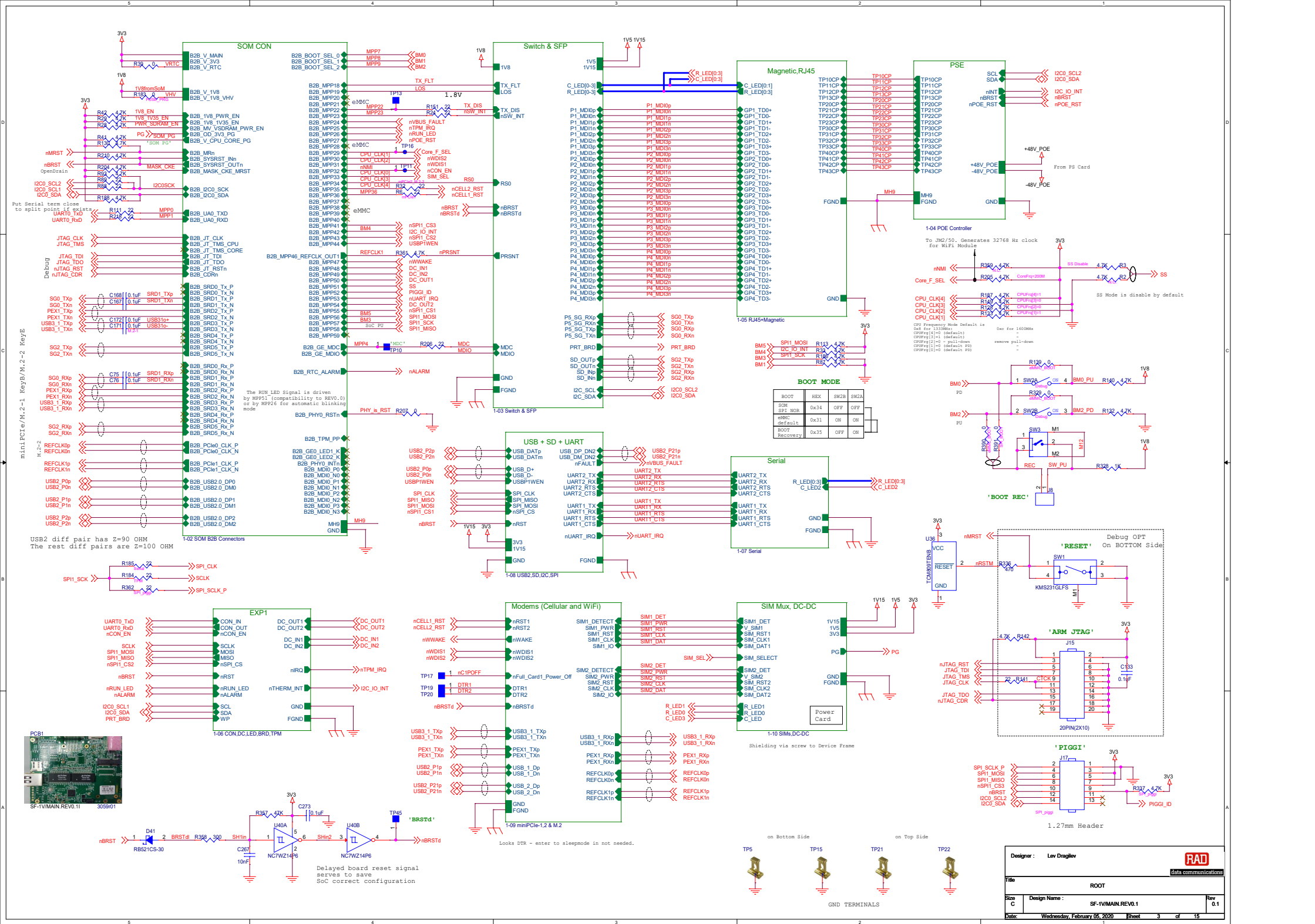


data communications

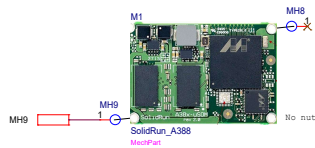
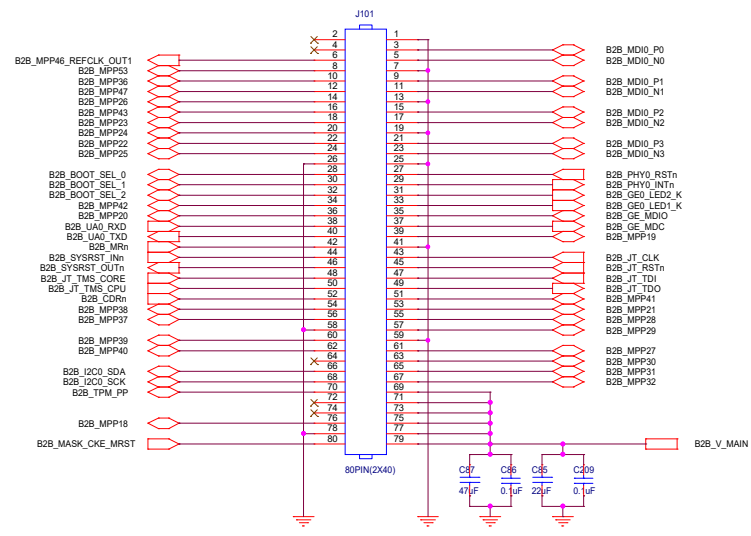
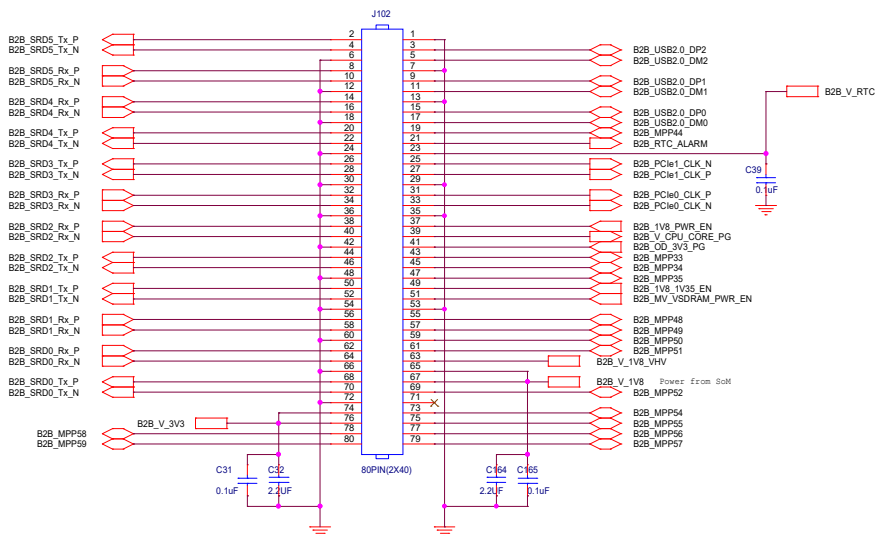
Title		
SF-1V Title		
Size A	Design Name : SF-1V	Rev 0.1
Date:	Wednesday, February 05, 2020	Sheet 1 of 15



Designer : Lev Dragilev		 data communications	
Title Device Overview			
Size A	Design Name : SF-1V		Rev 0.1
Date:	Wednesday, February 05, 2020	Sheet 2 of 15	



SOM Connectors



Port 1-2

Digital

POE

NO POE

For non-POE applications,
the transformer replaced to regular
one drop-in-placement

Switch P1 -> Port 2

Switch P2 -> Port 3

Switch P3 -> Port 4

Switch P4 -> Port 5

Port 3-4

Port 4-5

Port 5-6

Port 6-7

Port 7-8

Port 8-9

Port 9-10

Port 10-11

Port 11-12

Port 12-13

Port 13-14

Port 14-15

Port 15-16

Port 16-17

Port 17-18

Port 18-19

Port 19-20

Port 20-21

Port 21-22

Port 22-23

Port 23-24

Port 24-25

Port 25-26

Port 26-27

Port 27-28

Port 28-29

Port 29-30

Port 30-31

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Port 241-242

Port 242-243

Port 243-244

Port 244-245

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Port 249-250

Port 250-251

Port 251-252

Port 252-253

Port 253-254

Port 254-255

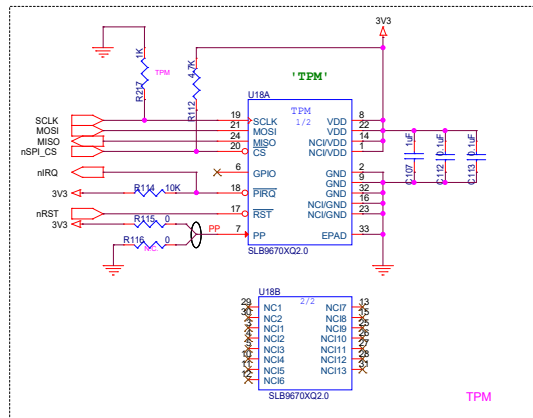
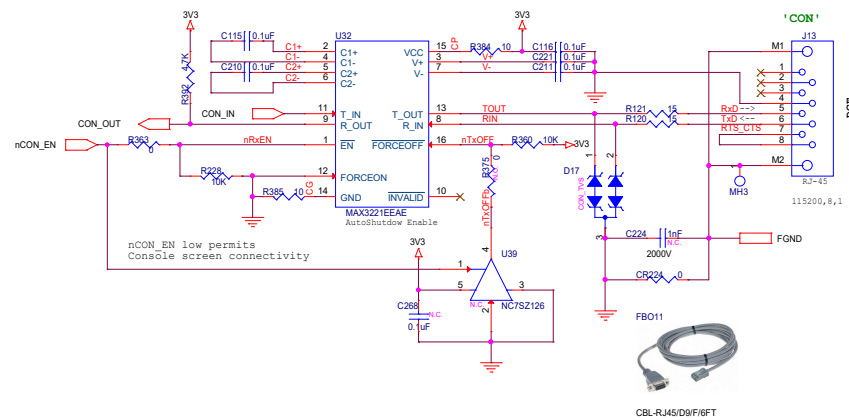
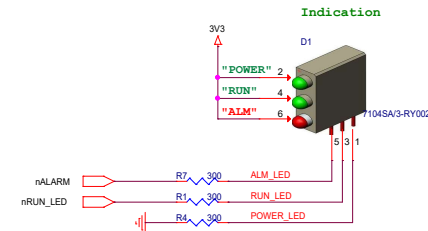
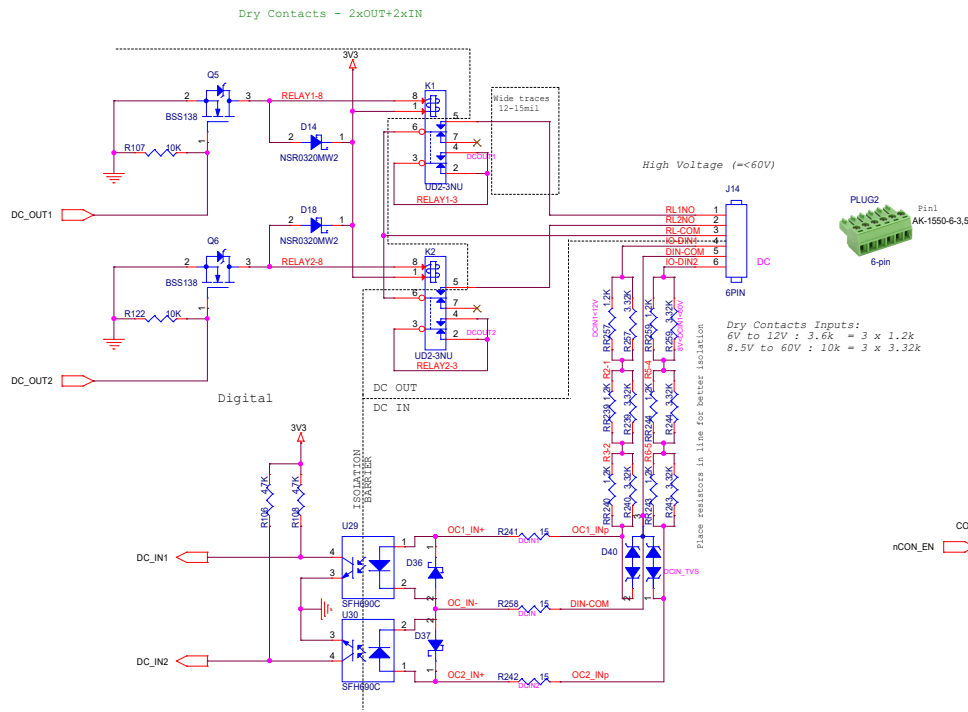
Port 255-256

Port 256-257

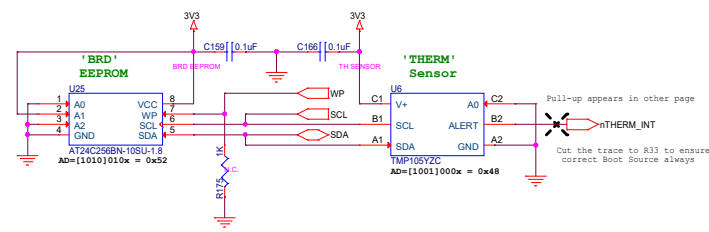
Port 257-258

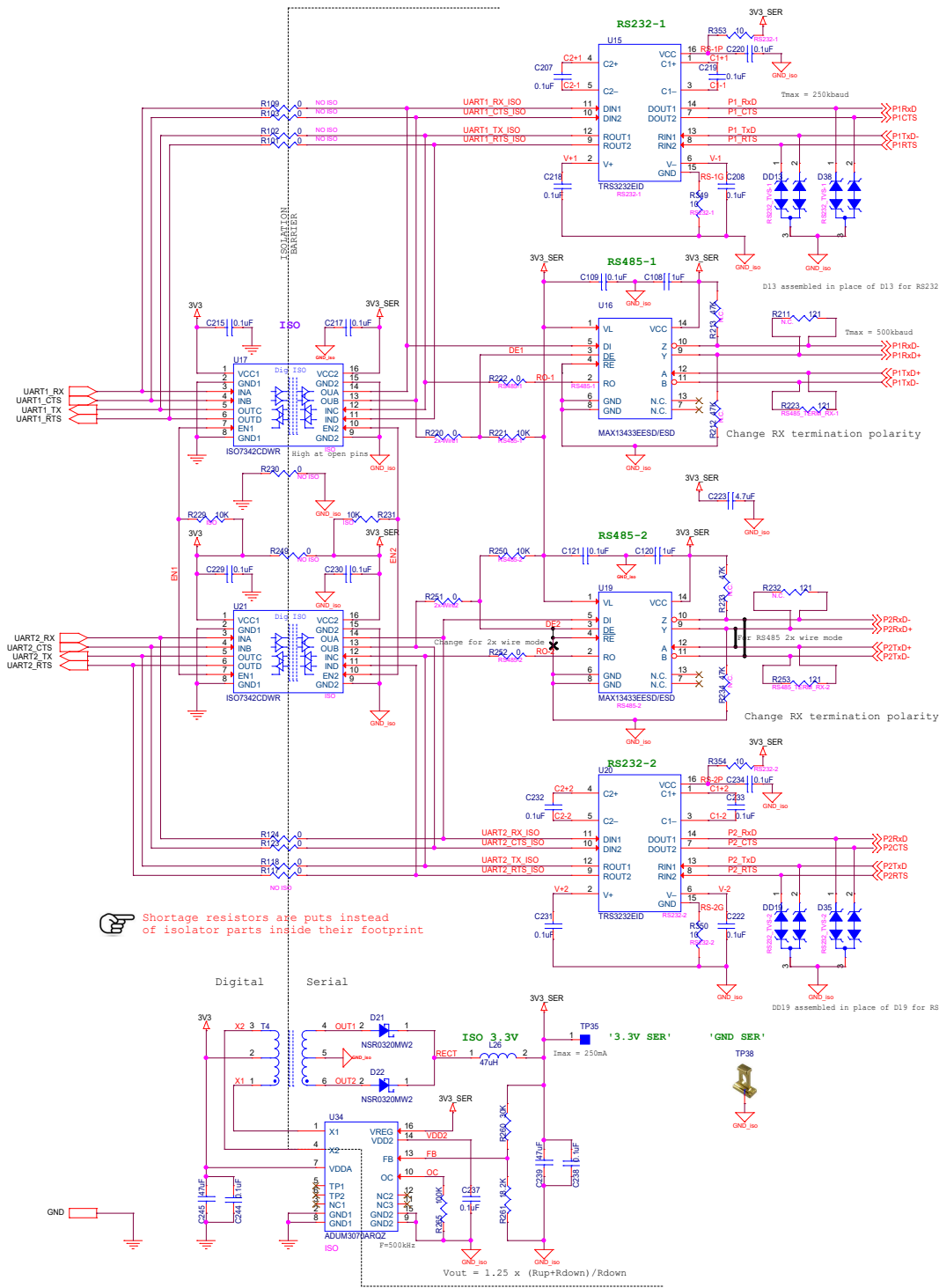
Port 258-259

Port 259-260



BRD EEPROM and TMP Sensor

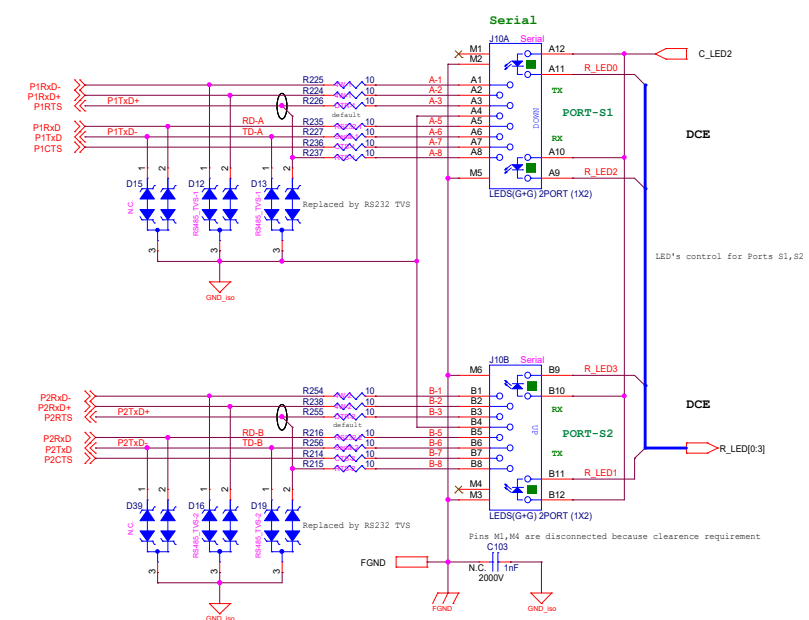




2x Serial Ports with Options:

and

1. ISO
 2. NO-ISO
1. RS232
 2. RS485



RJ45 for RS232 I/F pinout is compliant to EIA-561

Pin No.	Signal Description	Abbr.	DTE	DCE
1	DCE Ready, Ring Indicator	DSR/RI	←	→
2	Received Line Signal Detector	DCD	←	→
3	DTE Ready	DTR	→	←
4	Signal Ground	SG		
5	Received Data	Rd	←	→
6	Transmitted Data	Txd	→	←
7	Clear To Send	CTS	←	→
8	Request To Send	RTS	→	←



Designer : Lev Draglov

RAD

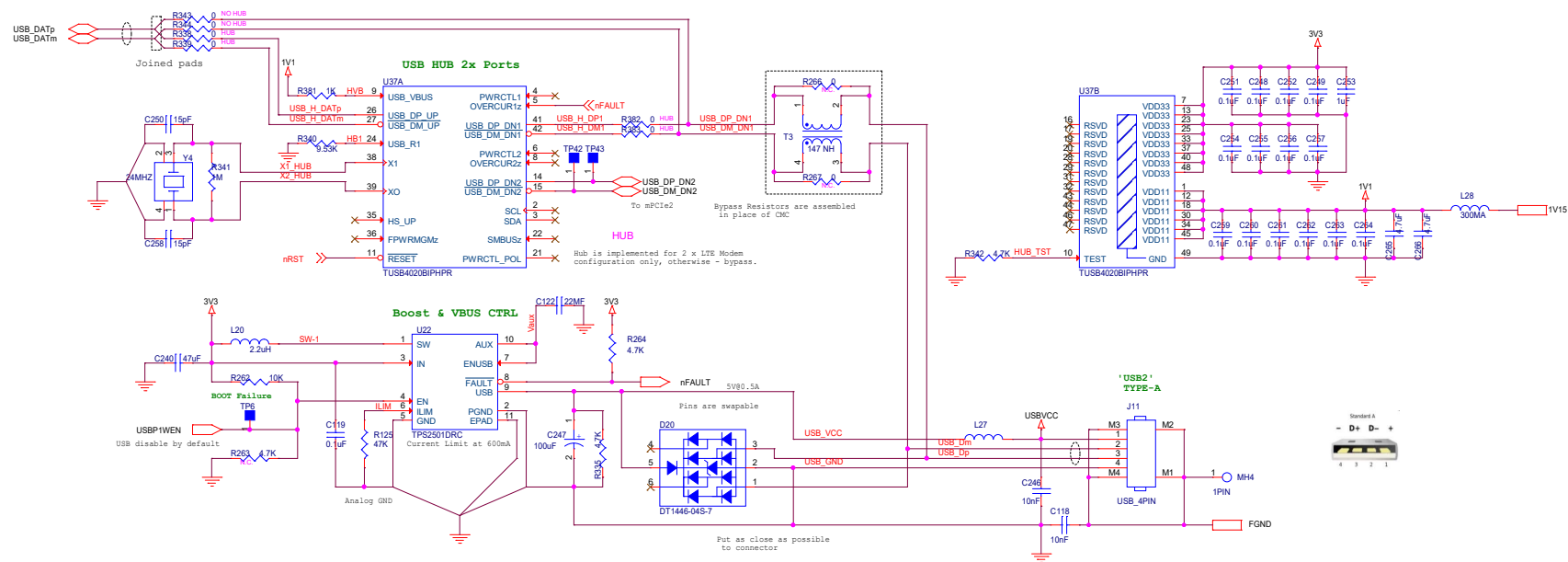
data communications

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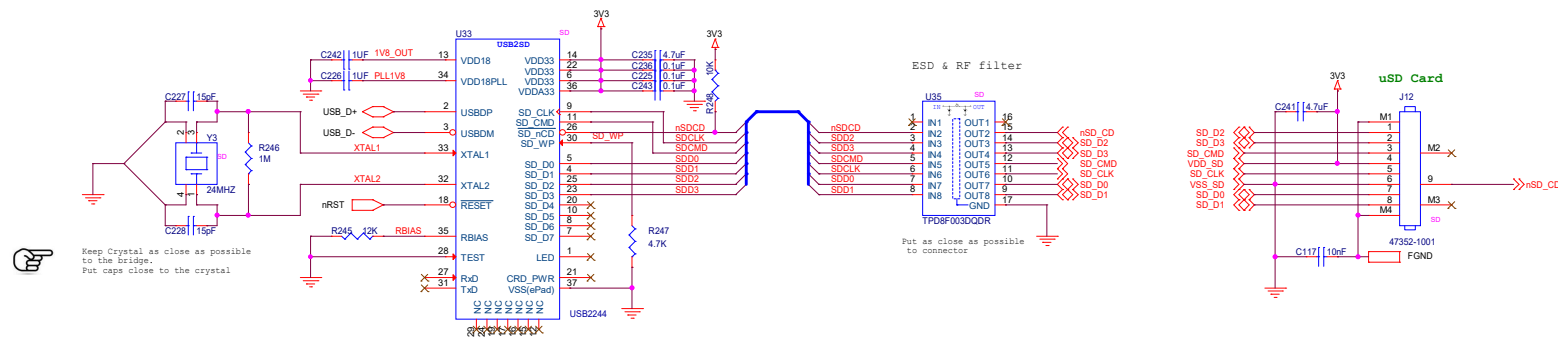
Size C : Design Name : SF-1VMAIN.REV0.1 Rev 0.1

Date : Wednesday, February 05, 2020 Sheet 8 of 15

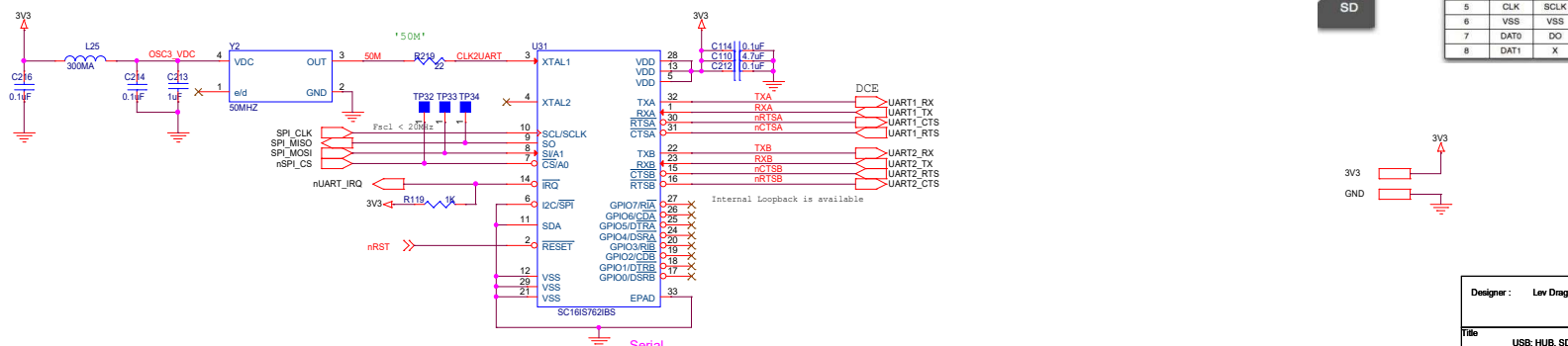
USB HUB + Vbus CTRL



USB to SD Card



SPI to 2xUART Bridge



Pin	SD	SPI
1	DAT2	X
2	CD/DAT3	CS
3	CMD	DI
4	VDD	VDD
5	CLK	SCLK
6	VSS	VSS
7	DAT0	DO
8	DAT1	X

[illegible]

The figure illustrates the electrical connections for two mPCIe modules, mPCIe1 and mPCIe2, in both 'ON PS' and 'ON CS' states. Each module has a 52PIN connector. The 'ON PS' diagrams show connections for various peripheral signals (DTR, USB, SIM, LEDs, etc.) to the module pins. The 'ON CS' diagrams show the power and control signal connections (VCC, GND, WAKE, CLK, etc.) to the module pins. The diagrams include component values for resistors, capacitors, and inductors, as well as labels for specific modules and sockets.

FBO18









NoPart
HMC WiFi




MH10, MH11 are 1.5mm nuts on TOP (J2 side)

This image displays a variety of mobile phone components, including antennas, connectors, and modules. The items are arranged in a grid-like fashion, with labels and part numbers provided for each. The components include:

- FB03**: EC25xxx-MINIPICIE module.
- FB08**: LTE-MAIN antenna.
- FB013**: T-SAA31176AD antenna.
- FB09**: LTE-AUX antenna.
- FB015**: T-SAA31176AD antenna.
- FB022**: GPS (Opt.) module.
- FB023**: CBL-LTE-UFL-SMA/F100 cable.
- FB024**: CBL-LTE-UFL-SMA/F200 cable.
- FB025**: CBL-LTE-UFL-SMA/F100 cable.
- FB026**: CBL-LTE-UFL-SMA/F200 cable.
- FB027**: CBL-LTE-UFL-SMA/F100 cable.
- FB028**: CBL-LTE-UFL-SMA/F200 cable.
- FB029**: CBL-LTE-UFL-SMA/F100 cable.
- FB030**: CBL-LTE-UFL-SMA/F200 cable.
- FB031**: CBL-LTE-UFL-SMA/F100 cable.
- FB032**: CBL-LTE-UFL-SMA/F200 cable.
- FB033**: CBL-LTE-UFL-SMA/F100 cable.
- FB034**: CBL-LTE-UFL-SMA/F200 cable.
- FB035**: CBL-LTE-UFL-SMA/F100 cable.
- FB036**: CBL-LTE-UFL-SMA/F200 cable.
- FB037**: CBL-LTE-UFL-SMA/F100 cable.
- FB038**: CBL-LTE-UFL-SMA/F200 cable.
- FB039**: CBL-LTE-UFL-SMA/F100 cable.
- FB040**: CBL-LTE-UFL-SMA/F200 cable.
- FB041**: CBL-LTE-UFL-SMA/F100 cable.
- FB042**: CBL-LTE-UFL-SMA/F200 cable.
- FB043**: CBL-LTE-UFL-SMA/F100 cable.
- FB044**: CBL-LTE-UFL-SMA/F200 cable.
- FB045**: CBL-LTE-UFL-SMA/F100 cable.
- FB046**: CBL-LTE-UFL-SMA/F200 cable.
- FB047**: CBL-LTE-UFL-SMA/F100 cable.
- FB048**: CBL-LTE-UFL-SMA/F200 cable.
- FB049**: CBL-LTE-UFL-SMA/F100 cable.
- FB050**: CBL-LTE-UFL-SMA/F200 cable.
- FB051**: CBL-LTE-UFL-SMA/F100 cable.
- FB052**: CBL-LTE-UFL-SMA/F200 cable.
- FB053**: CBL-LTE-UFL-SMA/F100 cable.
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- FB083**: CBL-LTE-UFL-SMA/F100 cable.
- FB084**: CBL-LTE-UFL-SMA/F200 cable.
- FB085**: CBL-LTE-UFL-SMA/F100 cable.
- FB086**: CBL-LTE-UFL-SMA/F200 cable.
- FB087**: CBL-LTE-UFL-SMA/F100 cable.
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- FB095**: CBL-LTE-UFL-SMA/F100 cable.
- FB096**: CBL-LTE-UFL-SMA/F200 cable.
- FB097**: CBL-LTE-UFL-SMA/F100 cable.
- FB098**: CBL-LTE-UFL-SMA/F200 cable.
- FB099**: CBL-LTE-UFL-SMA/F100 cable.
- FB100**: CBL-LTE-UFL-SMA/F200 cable.

<p>FB05</p>  <p>EC25xx-MINIPCE</p> <p>Quectel EC25</p> <p>MiniPart</p>	<p>FB07</p>  <p>LTE-MAIN</p> <p>MiniPart</p>	<p>T-SAA1178A</p>  <p>MiniPart</p>
	<p>CBL-LTE-UFL-SMA/F/200</p>	
	<p>FB10</p>  <p>LTE-AUX</p> <p>MiniPart</p>	<p>T-SAA1178A</p>  <p>MiniPart</p>
	<p>CBL-LTE-UFL-SMA/F/200</p>	
<p>FB02</p>  <p>GPS (Opt.)</p> <p>MiniPart</p>		
<p>CBL-LTE-UFL-SMA/F/100</p>		

or 3G module: UC20GD-MINIPCIE

Designer : Lev Dragilev			
		data communication	
Title			
mPCIe-1,2 and M.2s			
Size C	Design Name : SF-1V/MAIN.REV0.1		Rev 0.1
Date:	Wednesday, February 05, 2020	Sheet	11 of 15

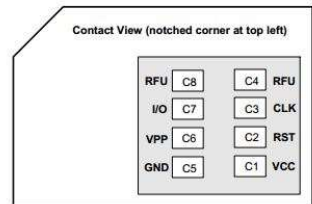
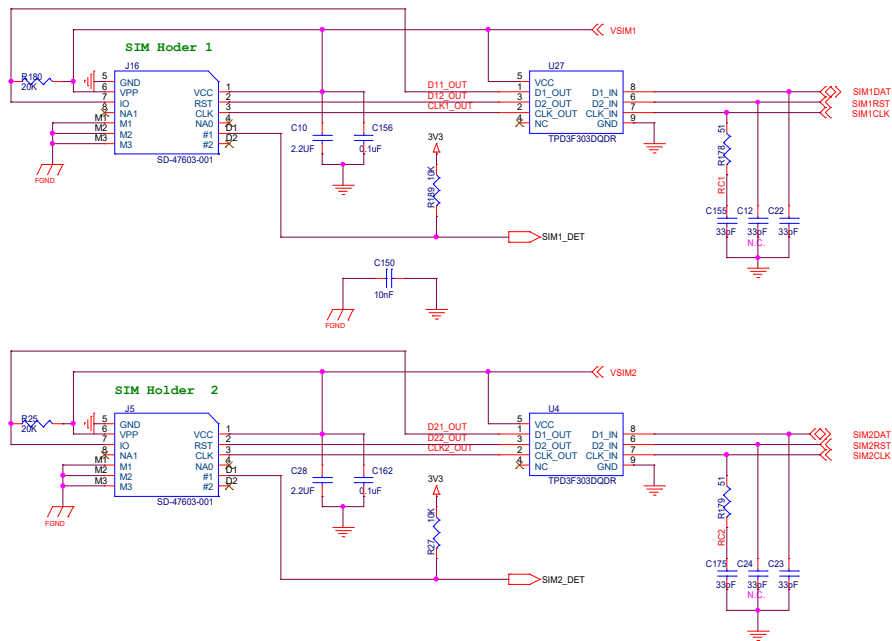
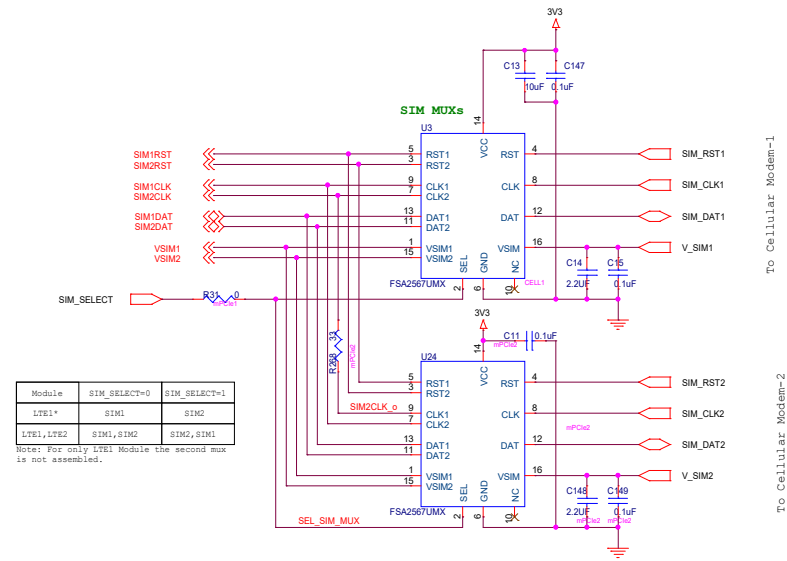
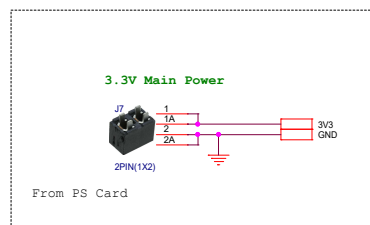


Figure 3-4: SIM card contacts (contact view)



Module	SIM_SELECT=0	SIM_SELECT=1
LTE1*	SIM1	SIM2
LTE1, LTE2	SIM1, SIM2	SIM2, SIM1

Note: For only LTE1 Module the second mux is not assembled.

