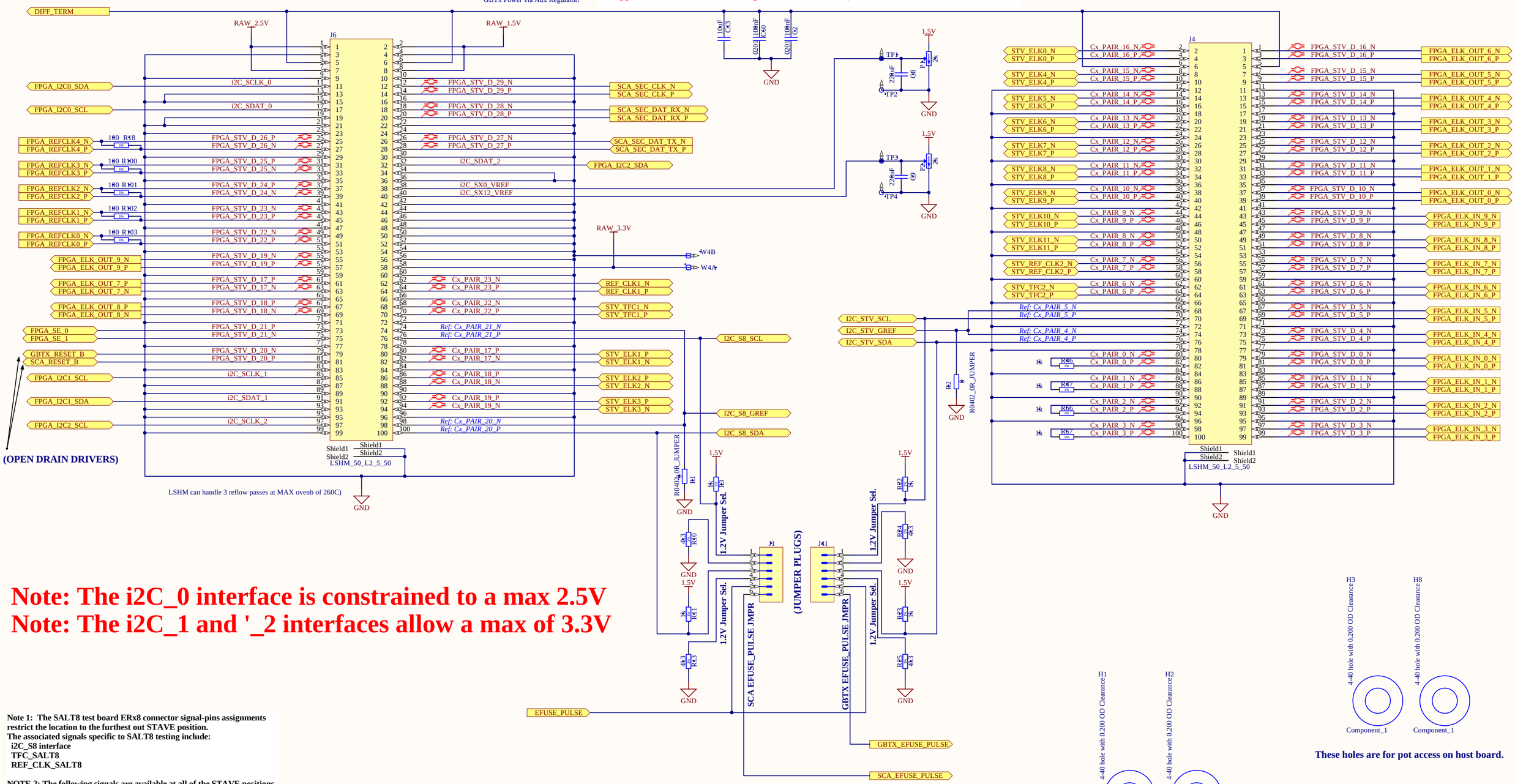
These contact assignments are flipped relative to the COMET board per Samtec note 4: WHEN MATING WITH ANOTHER LSHM-DV, PIN 01 WILL MATE WITH CONTACT 02 ON THE MATING CONNECTOR. (These two connector pin assignments were lifted directly from the remapped COMET termination daughter board schematic)

CONN PLACED ADJACENT TO FPGA 104-53 SIDE
WHICH IS NOT FACING THE ERM8 CONN.

GBTx Power via Aux Regulator!



(OPEN DRAIN DRIVERS)

LSHM can handle 3 reflow passes at MAX ovenb of 260C)

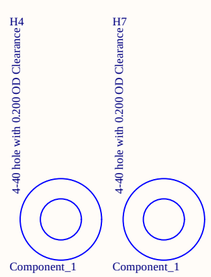
Note: The i2C_0 interface is constrained to a max 2.5V
Note: The i2C_1 and '_2 interfaces allow a max of 3.3V

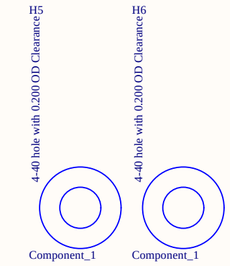
Note 1: The SALT8 test board ERx8 connector signal-pins assignments restrict the location to the furthest out STAVE position.
The associated signals specific to SALT8 testing include:
i2C_S8 interface
TFC_SALT8
REF_CLK_SALT8

NOTE 2: The following signals are available at all of the STAVE positions
i2C_ST interface
TFC_STAVE
REF_CLK_STAVE
ELK11:0]

These holes are for interface with the PWB retention stand-offs.

These holes are for pot access on host board.



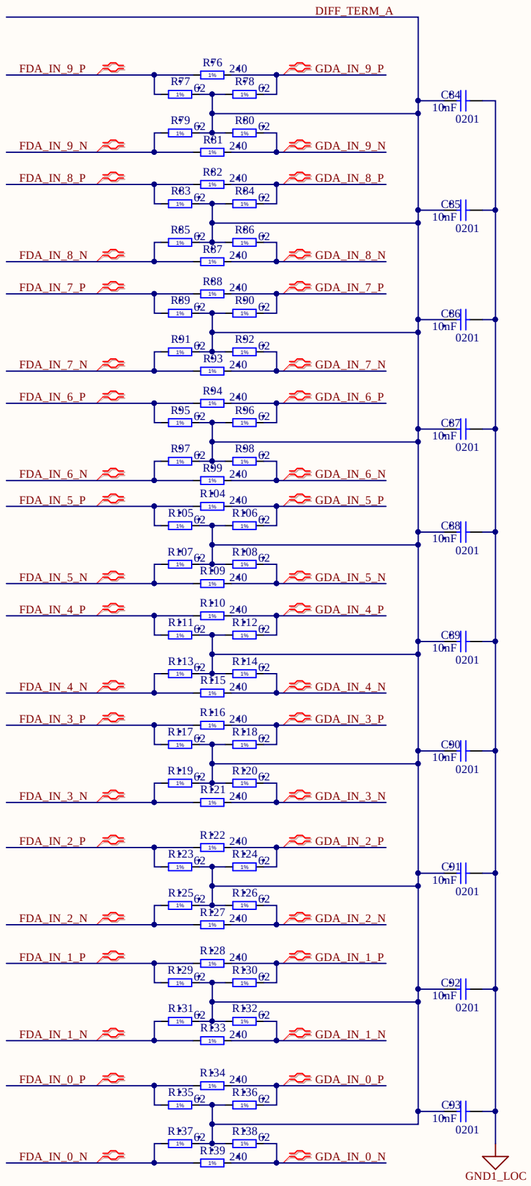


These holes are for spacers to the heat sink

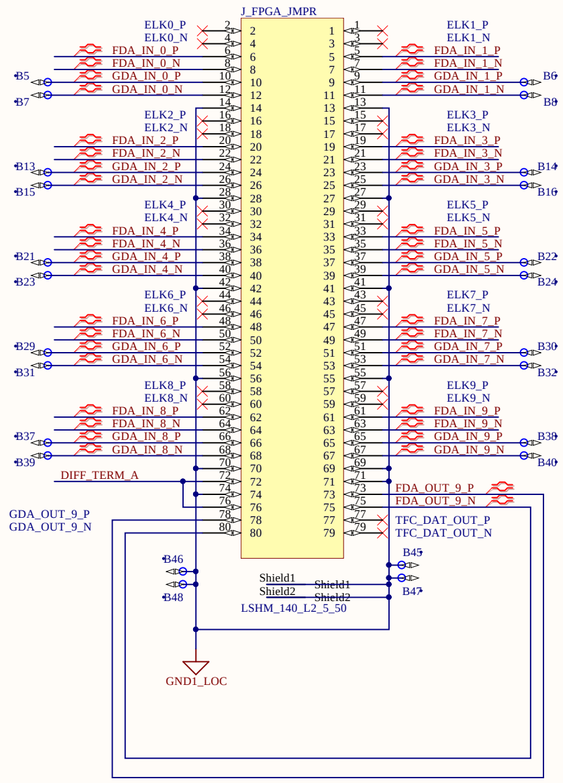
University of Maryland

Title: **COMET GBT Daughter Board LSHM_Conns.SchDoc**		
Size: C	Number: **COMET_DB_GBT_ver.PrjPcb**	Revision: **Rev A**
Date: 3/25/2016	Sheet **1** of **4**	
File: D:\UMD_BOX_STORAGE\..\LSHM_Conns.SchDoc	Drawn By: **Tom O'Bannon**	

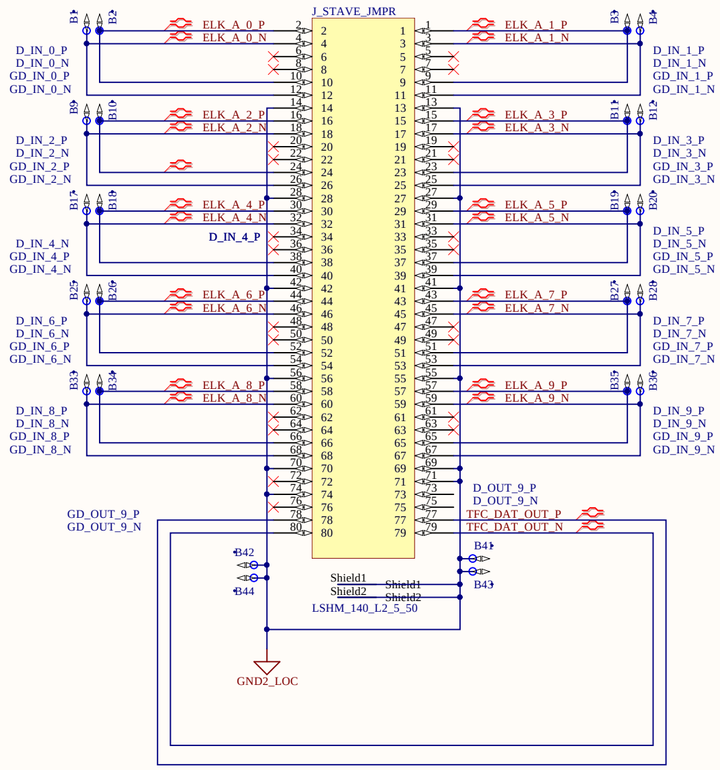
THE NETS ON THIS PAGE SHOULD COMPLETELY INDEPENDENT OF THE OTHER SCHEMATIC PAGES!!!!



Wire Jumper for connecting the FPFA ELINK outputs to the GBTX inputs via attenuator networks (NOTE: THESE ARE MIRRORED PIN ASSIGNMENTS!)



Wire Jumper for connecting the Stave ELINKs to the GBTX inputs (NOTE: THESE ARE MIRRORED PIN ASSIGNMENTS!)



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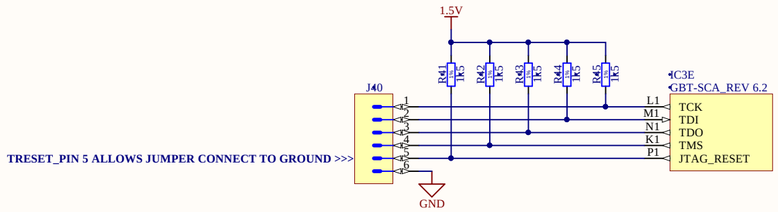

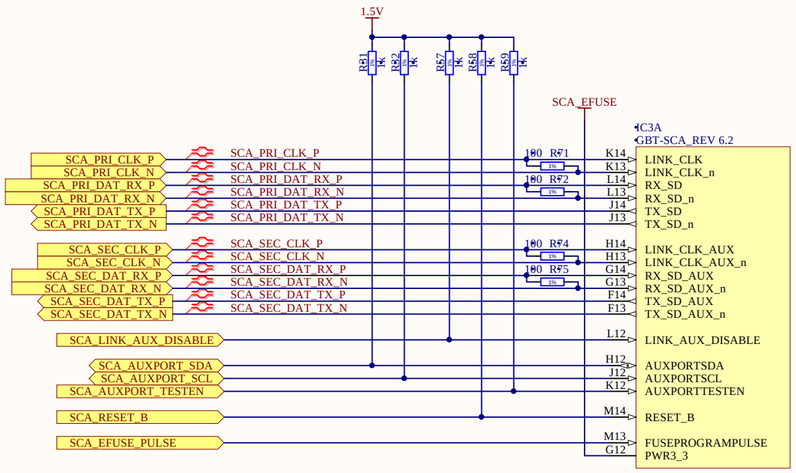

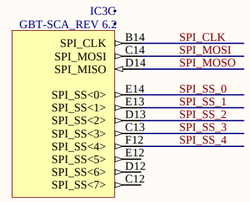

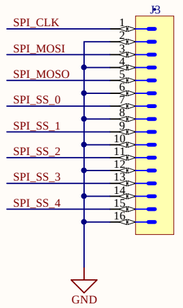

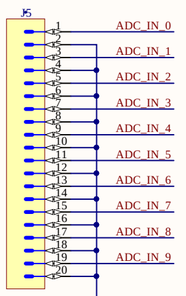

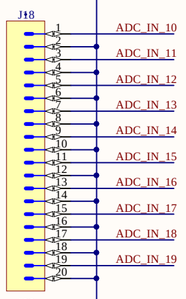

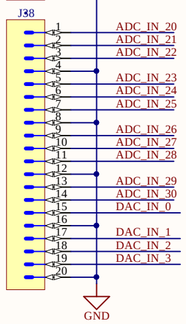

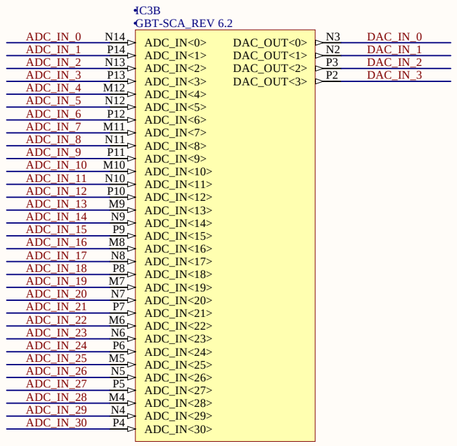

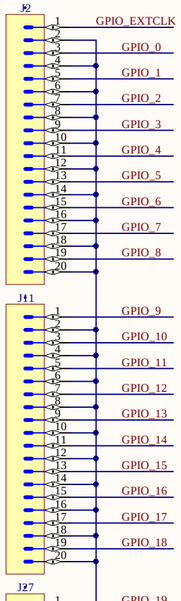

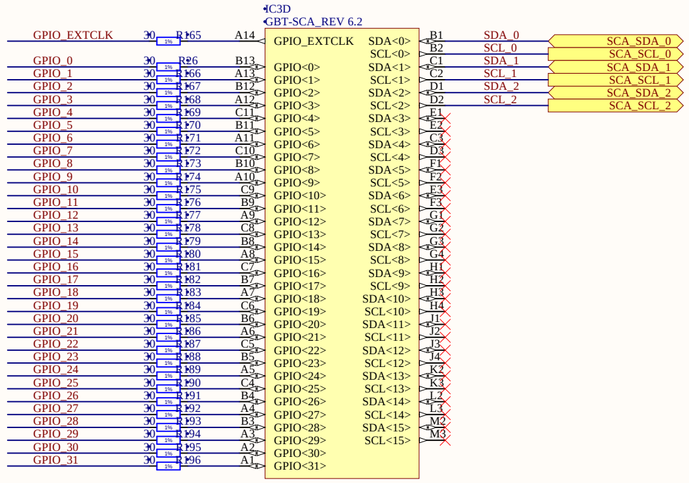

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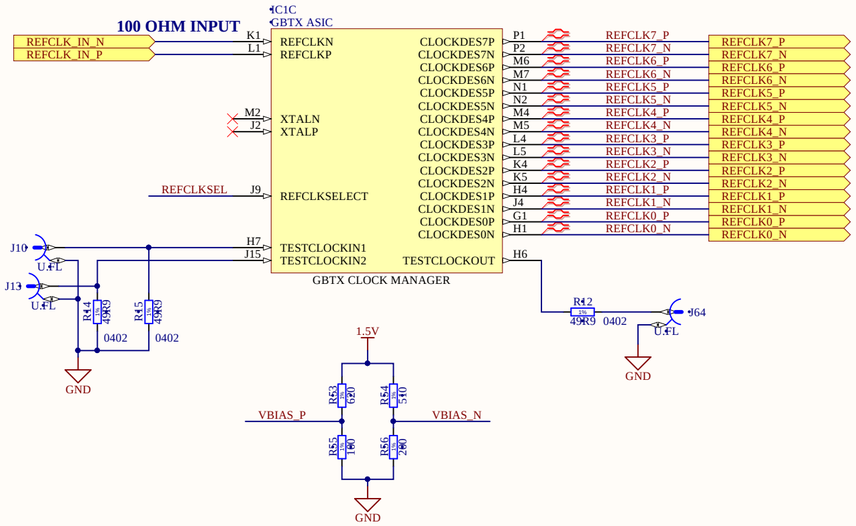
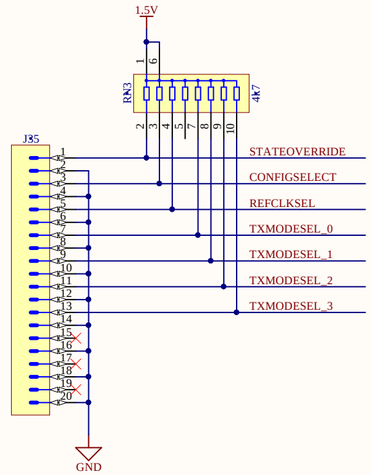
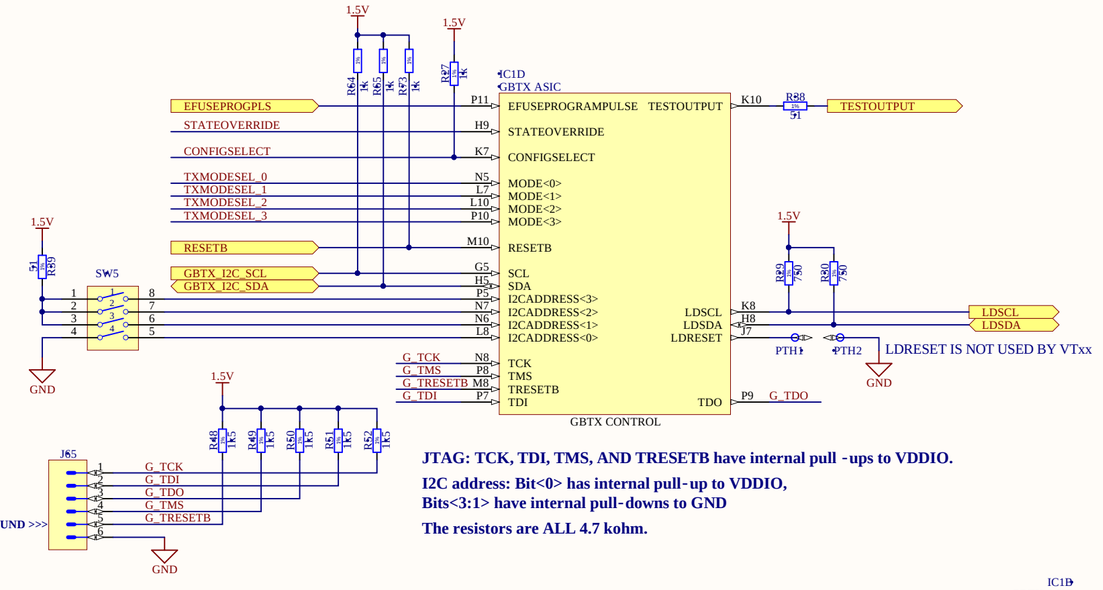




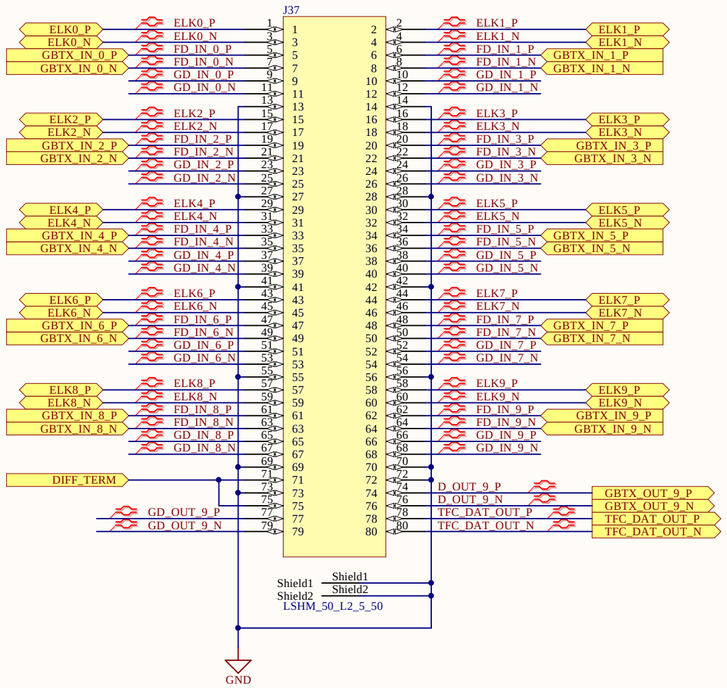


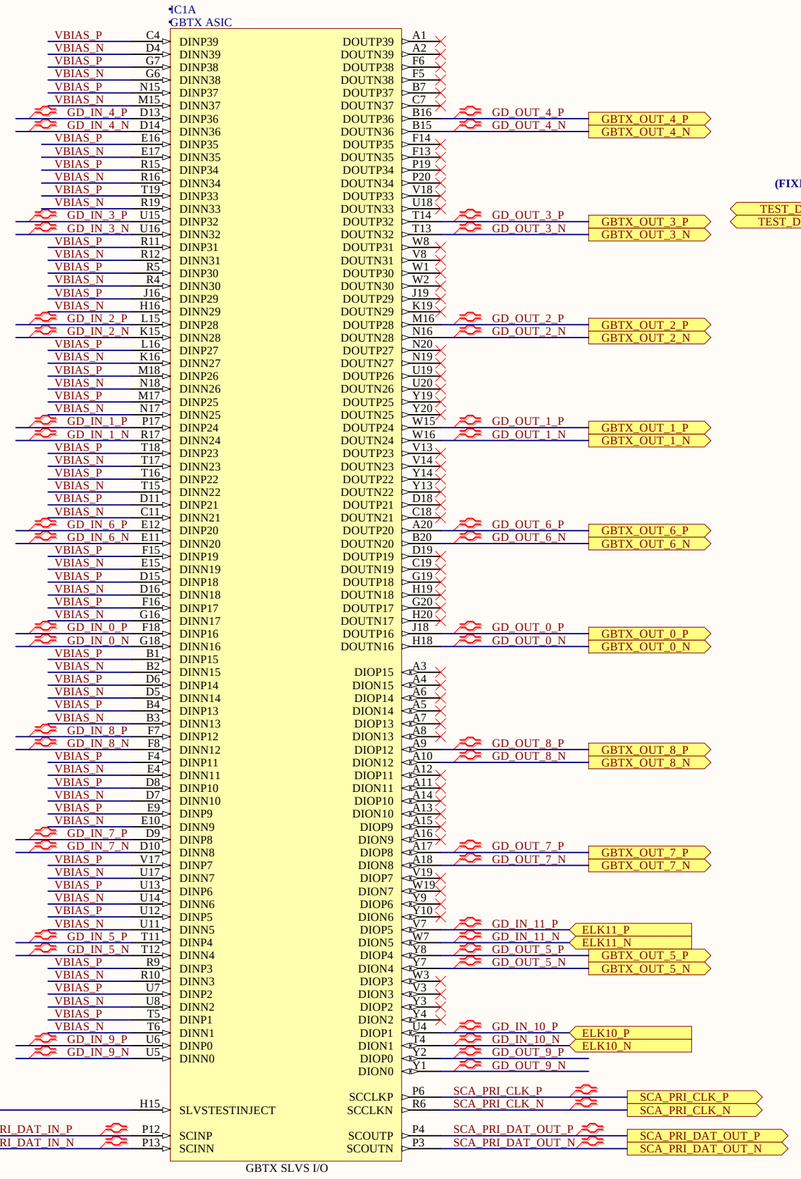
TRESET_PIN 5 ALLOWS JUMPER CONNECT TO GROUND >>>

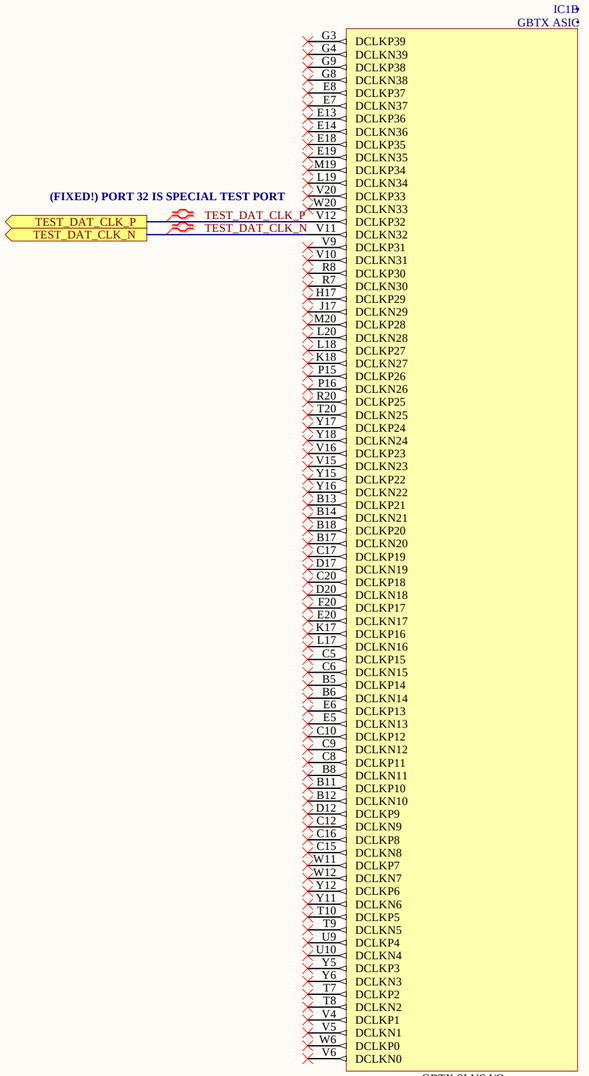
JTAG: TCK, TDI, TMS, AND TRESETB have internal pull -ups to VDDIO.

I2C address: Bit<0> has internal pull-up to VDDIO,
Bits<3:1> have internal pull-downs to GND

The resistors are ALL 4.7 kohm.







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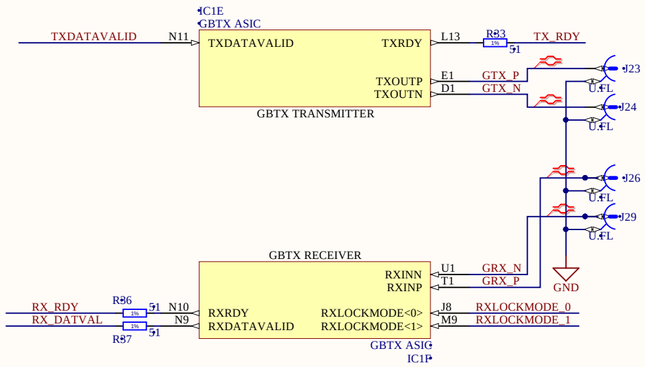
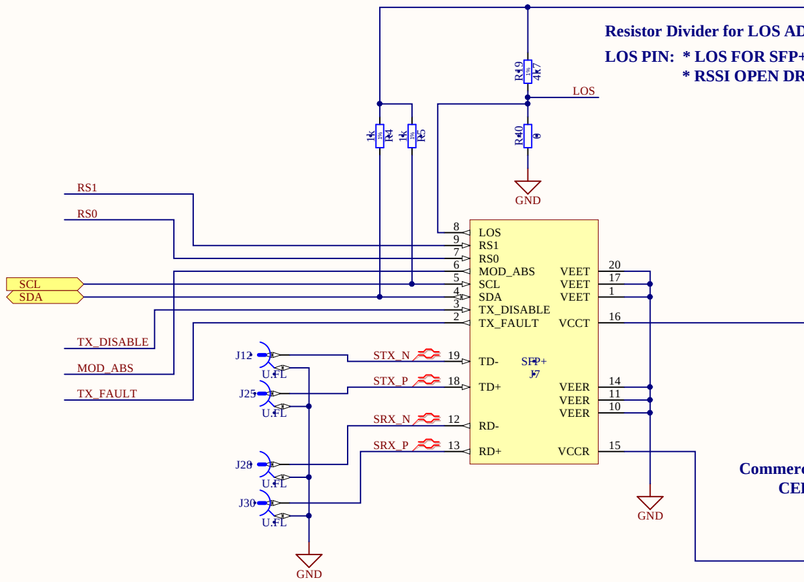




4 Pin assignment and function

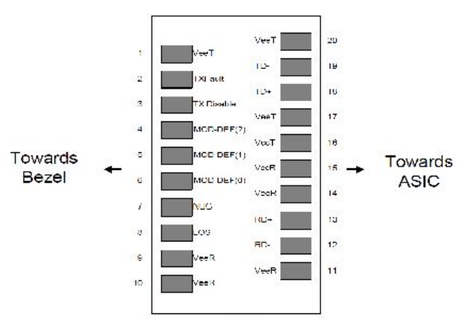


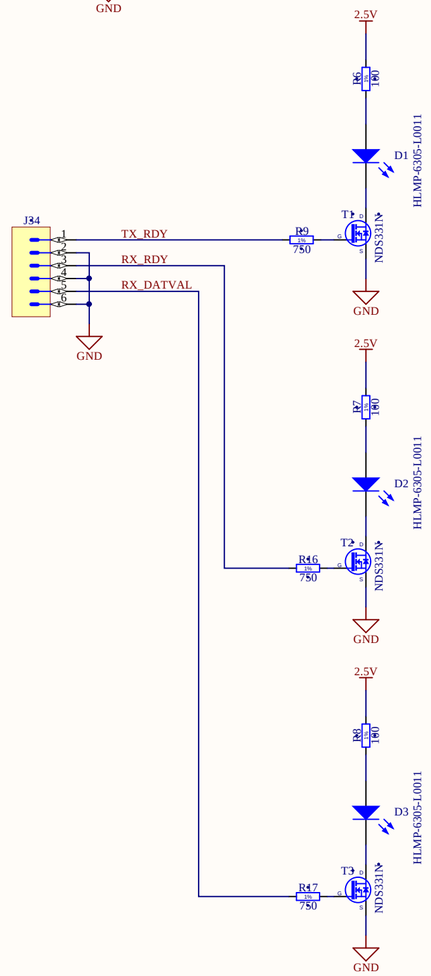
Figure 3. Pin assignment

Pin number	Name	Function	Plug sequence*	Note
1	VeeT	Transmitter ground	1	
2	TXFault	Transmitter fault indication	3	
3	TXDisable	Transmitter disable input	3	Module disables on high or open
4	MOD-DEF2	Module definition 2	3	2 wire serial ID and interface
5	MOD-DEF1	Module definition 1	3	2 wire serial ID and interface
6	MOD-DEF0	Module definition 0	3	Grounded internally via 100ohm
7	NUC	No user connection	3	Reserved for future use
8	LOS	Loss of signal indication	3	
9	VeeR	Receiver ground	1	
10	VeeR	Receiver ground	1	
11	VeeR	Receiver ground	1	
12	RD-	Negative receiver Data out	3	
13	RD+	Positive receiver Data out	3	
14	VeeR	Receiver ground	1	
15	VccR	Receiver power	2	
16	VccT	Transmitter power	2	
17	VeeT	Transmitter ground	1	
18	TD+	Positive transmitter Data in	3	
19	TD-	Negative transmitter Data in	3	
20	VeeT	Transmitter ground	1	

*Plug sequence: Pin engagement sequence during hot plugging.

SFP+ Connector can be populated with several options:
1) VTTx
2) VTRx
3) Industry std SFP+ Tx/Rx
4) Copper SFP+ interface cable

There are only 2 functional applications
a) single Tx using either VTTx, VTRx, or SFP+
Unused Tx channel to be jumper configured with failsafe jumper resistors for DC coupled or 320 MHz clock if module contains internal AC coupling capacitors. This allows thermal evaluation.
b) Standard Tx/Rx using either VTRx or SFP+
The i2C of Commerial SFP+ modules must be provided by the COMET FPGA using 3.3V pullups.
The i2C of CERN VTxx modules must be provided by the GBTx using 1.5V pullups.



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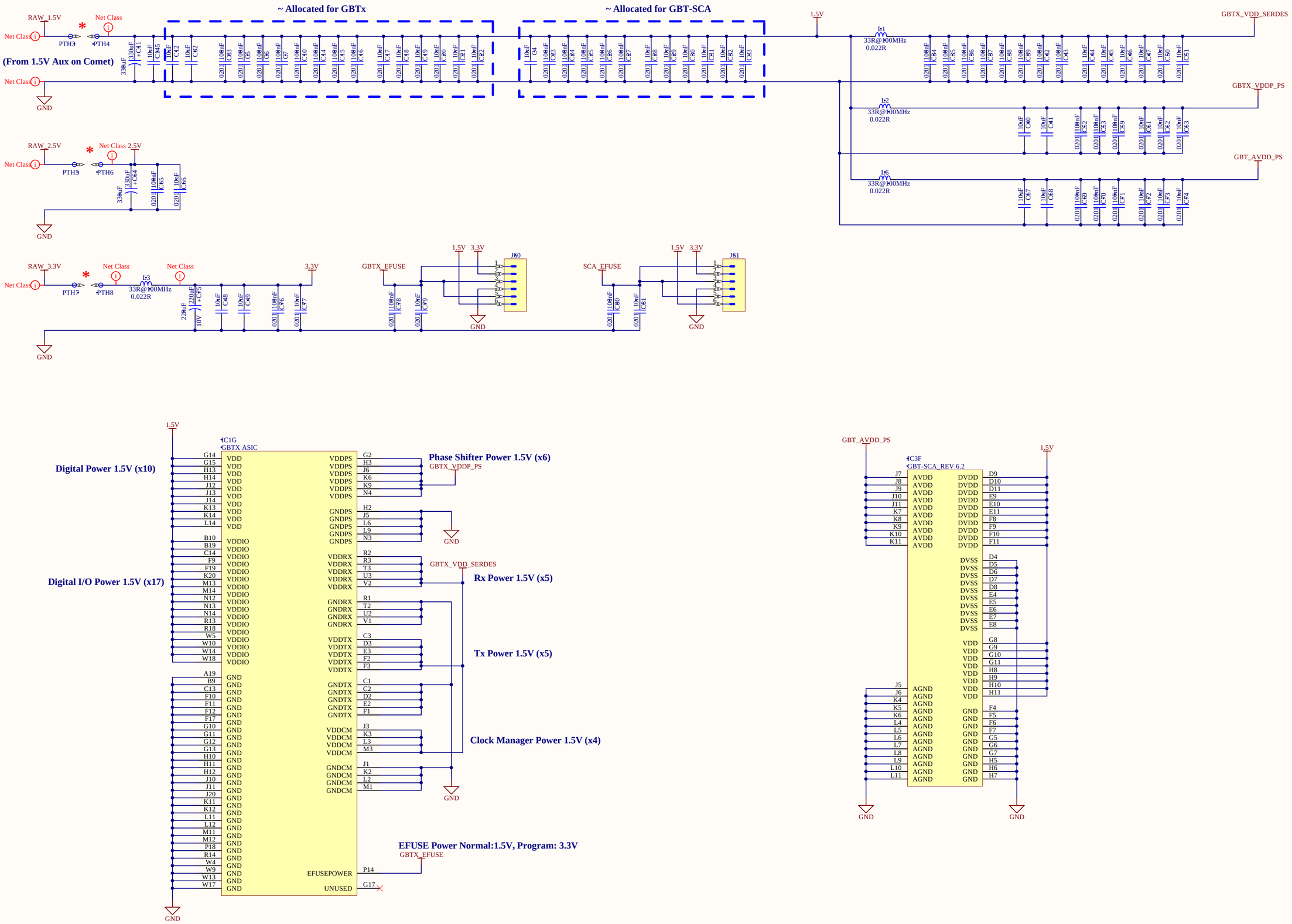

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U.FL CONNECTORS CONNECTED TO THE STAVE VIA ERx8

Note 1: The SALT8 test board ERx8 connector signal-pins assignments restrict the location to the furthest out STAVE position.
The associated signals specific to SALT8 testing include:
i2C_S8 interface
TFC_SALT8
REF_CLK_SALT8

NOTE 2: The following signals are available at all of the STAVE positions
i2C_ST interface
TFC_STAVE
REF_CLK_STAVE
ELK[11:0]

LSHM_CONNS
LSHM_CONNS.SchDoc

U_GBTx_ALL_PORTS
GBTx_ALL_PORTS.SchDoc

U_GBT-SCA
GBT-SCA.SchDoc

U_Optical_Interface
Optical_Interface.SchDoc

U_Power
Power.SchDoc

U_Data_Select_Jumpers
Data_Select_Jumpers.SchDoc

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