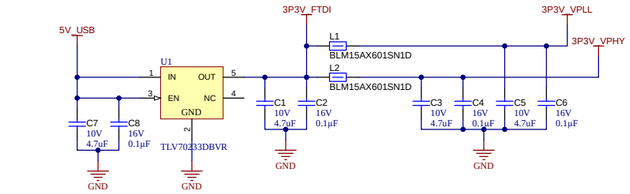
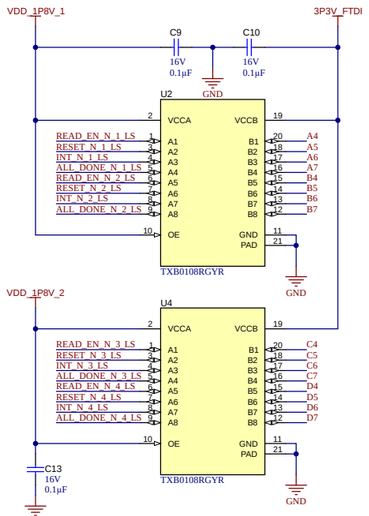
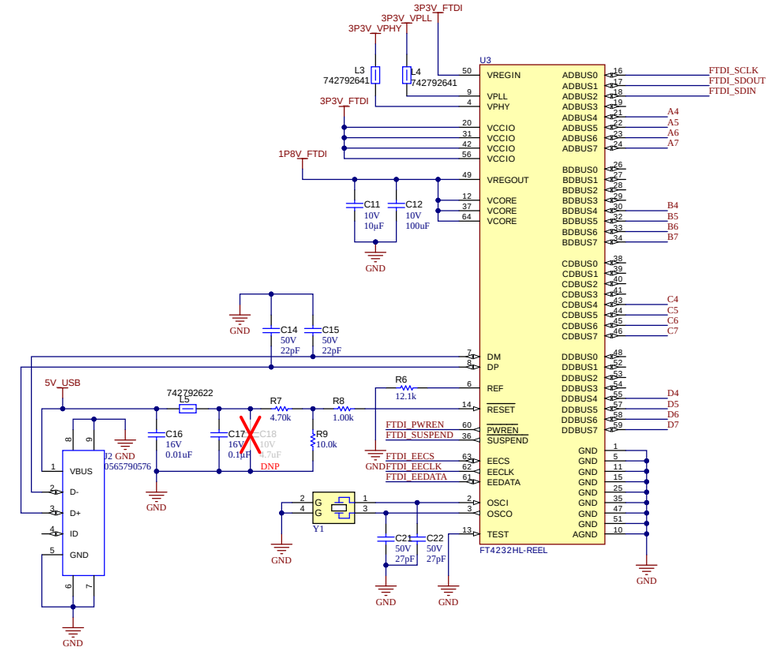
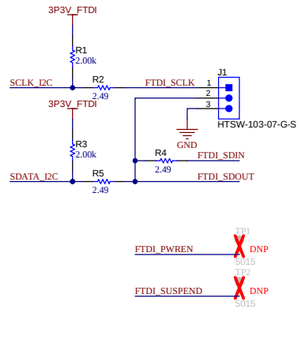
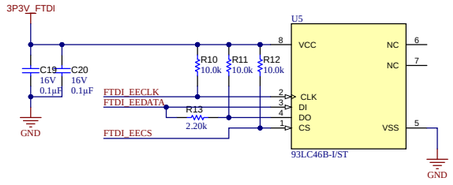
Orderable:	Designed for: Public Release	Mod. Date: 3/2/2023
TID #: N/A	Project Title: 56G Retimer MCB QSFP-DD Ref Design	
Number: TIDA-060043 Rev: E1	Sheet Title: Power Supplies	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet 1 of 1
Drawn By:	File: PWR_Supplies.SchDoc	Size: A2
Engineer: Lucas Wolter	Contact: http://www.ti.com/support	http://www.ti.com











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TID #: N/A	Project Title: 56G Retimer MCB QSFP-DD Ref Design	
Number: TIDA-060043 Rev: E1	Sheet Title: FTDI Chip, USB	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet 1 of 1
Drawn By:	File: FTDI_USB.SchDoc	Size: A2
Engineer: Lucas Wolter	Contact: http://www.ti.com/support	

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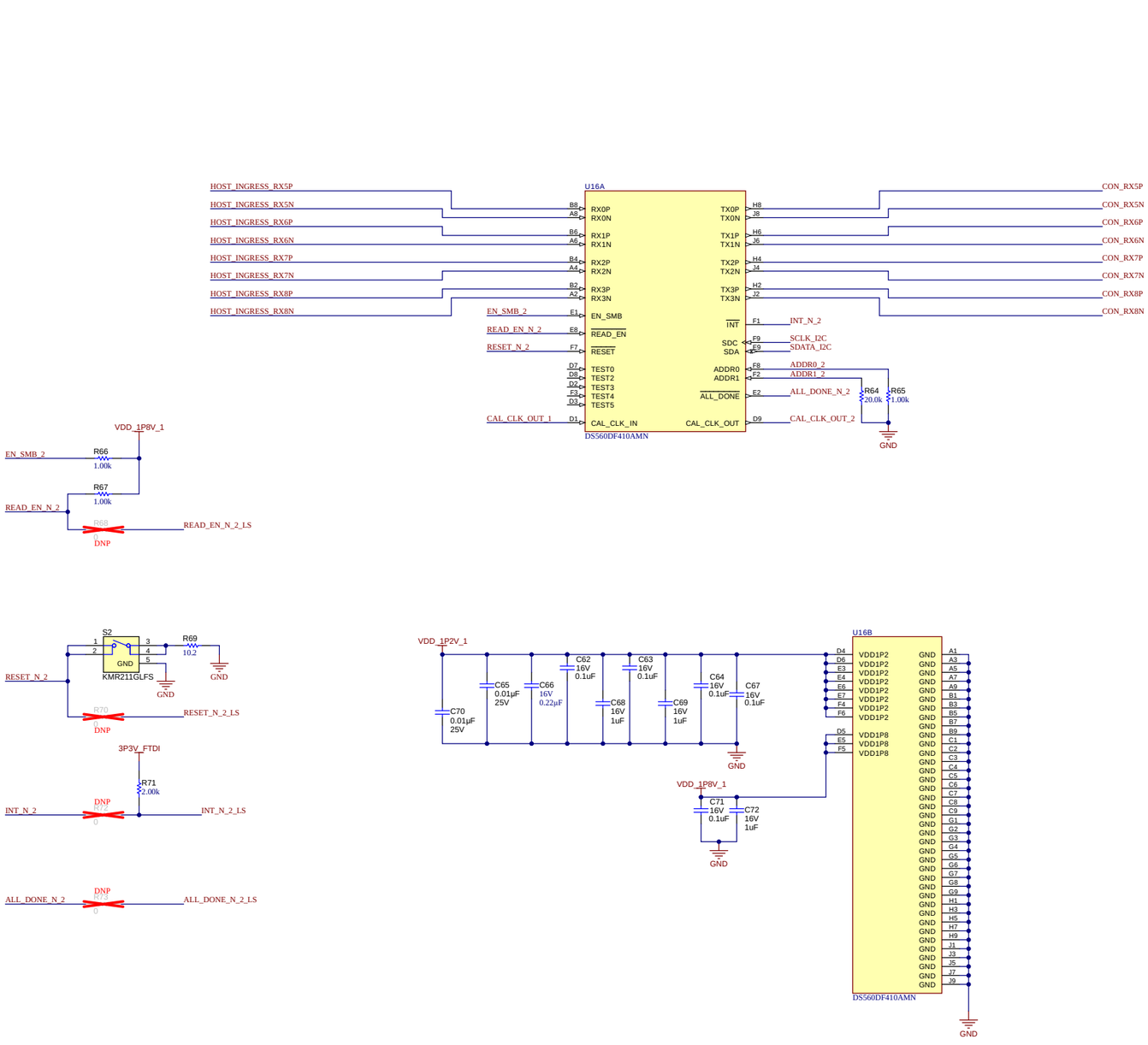

Orderable:	Designed for: Public Release	Mod. Date: 3/2/2023
TID #: N/A	Project Title: 56G Retimer MCB QSFP-DD Ref Design	
Number: TIDA-060043 Rev: E1	Sheet Title: Retimer Ingress RX5-8	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet 1 of 1
Drawn By:	File: DF410_Ingress_2.SchDoc	Size: A2
Engineer: Lucas Wolter	Contact: http://www.ti.com/support	

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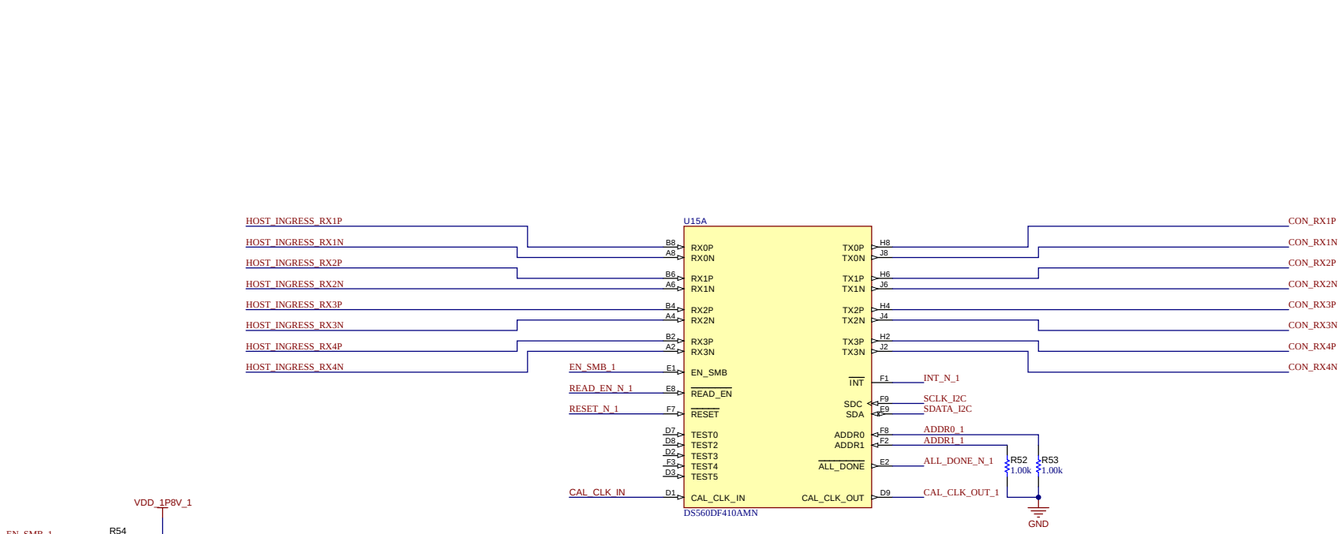

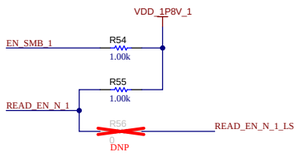

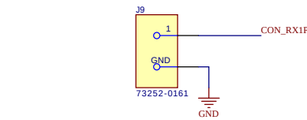

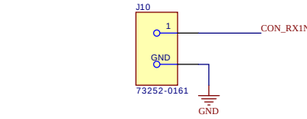

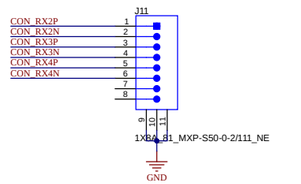

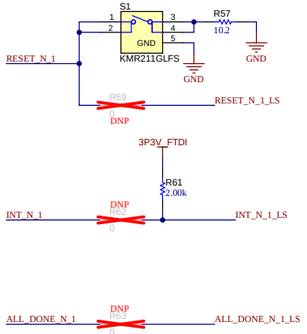

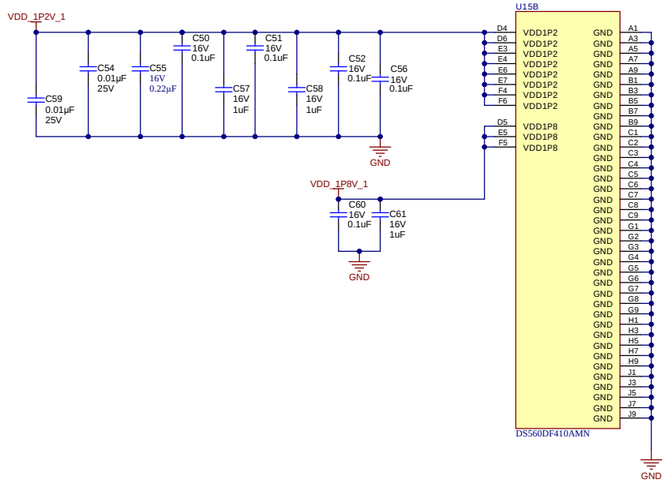

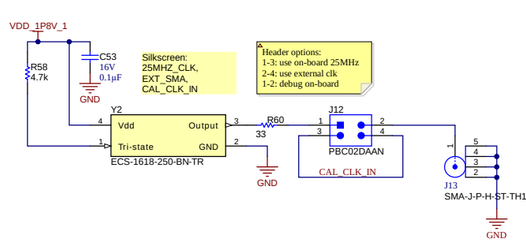

Orderable:		Designed for: Public Release	Mod. Date: 3/2/2023
TID #: N/A		Project Title: 56G Retimer MCB QSFP-DD Ref Design	
Number: TIDA-060043	Rev: E1	Sheet Title: Retimer Ingress RX1-4	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet 1 of 1
Drawn By:		File: DF410_Ingress_1.SchDoc	Size: A2
Engineer: Lucas Wolter		Contact: http://www.ti.com/support	

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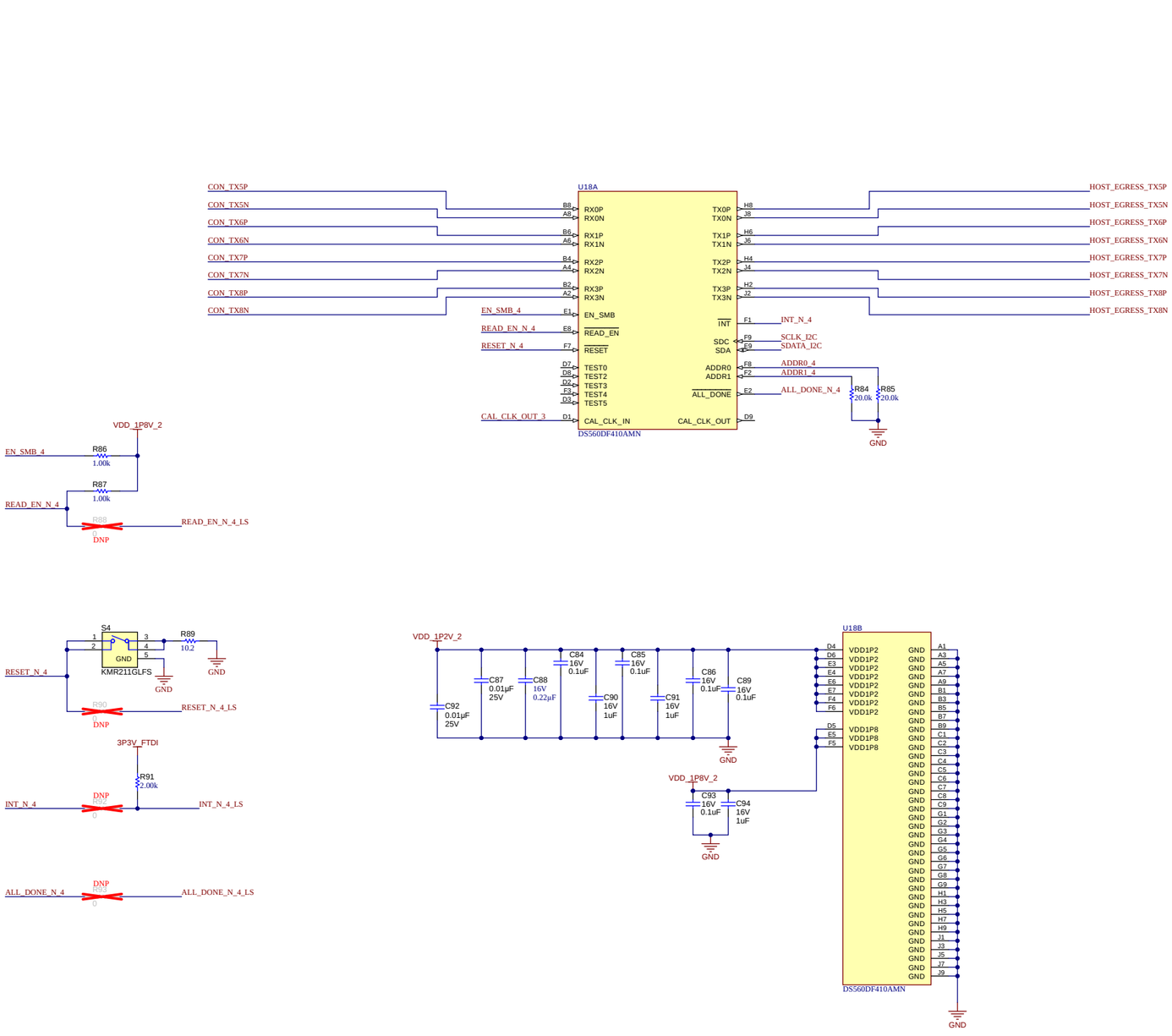

Orderable:	Designed for: Public Release	Mod. Date: 3/2/2023
TID #: N/A	Project Title: 56G Retimer MCB QSFP-DD Ref Design	
Number: TIDA-060043 Rev: E1	Sheet Title: Retimer Egress RX5-8	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet 1 of 1
Drawn By:	File: DF410_Egress_4.SchDoc	Size: A2
Engineer: Lucas Wolter	Contact: http://www.ti.com/support	

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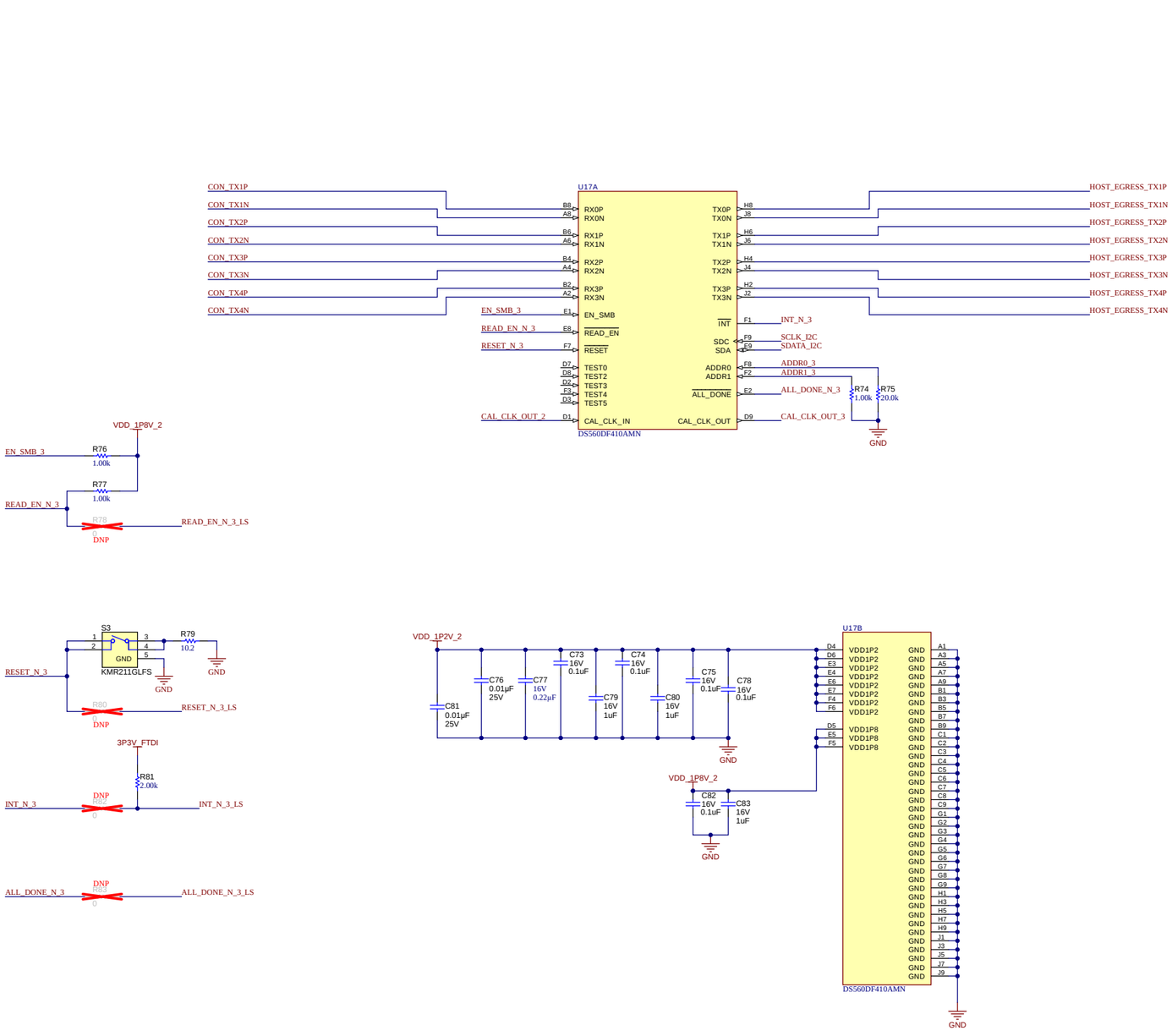

Orderable:	Designed for: Public Release | Mod. Date: 3/2/2023
TID #: N/A	Project Title: 56G Retimer MCB QSFP-DD Ref Design
Number: TIDA-060043 | Rev: E1	Sheet Title: Retimer Egress RX1-4
SVN Rev: Not in version control	Assembly Variant: 001 | Sheet 1 of 1
Drawn By:	File: DF410_Egress_3.SchDoc | Size: A2
Engineer: Lucas Wolter	Contact: http://www.ti.com/support

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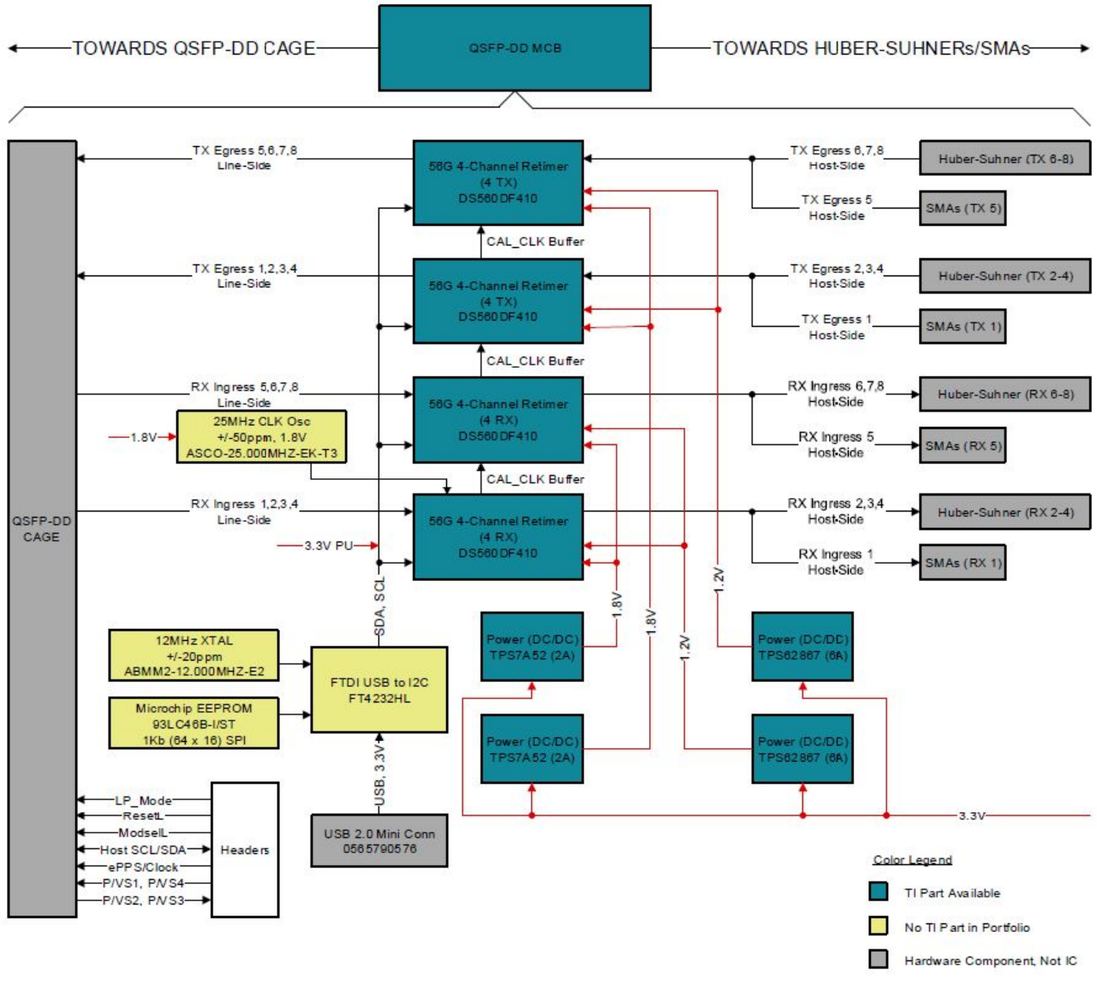

Orderable:	Designed for: Public Release	Mod. Date: 10/25/2022
TID #: N/A	Project Title: 56G Retimer MCB QSFP-DD Ref Design	
Number: TIDA-060043 Rev: E1	Sheet Title: Cover Sheet	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet 1 of 1
Drawn By:	File: Cover_Sheet.SchDoc	Size: A2
Engineer: Lucas Wolter	Contact: http://www.ti.com/support	

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QSFP-DD Port Connection

SILKSCREEN: QSFP-DD_VCC_3P3V
SILKSCREEN: GND
TP3
TP4
5015
5015
QSFP-DD_VCC_3P3V
C95 10µF 16V
C96 16V 1uF
GND

For MCB, Rx and Tx are from the perspective of the Host.
Rx = Ingress from Module to Host).
Tx (Egress from Host to Module).

QSFP-DD I/O Connector (76-Pin), Molex

Silkscreen:
MAIN_SDA,
MAIN_SCL, GND

J24
1 SDATA_I2C
2 SCLK_I2C
3
GND
J25
1
3
2 QSFP-DD_SDA_HOST
4 QSFP-DD_SCL_HOST
PBC02DAAN

QSFP-DD_VCC_3P3V
R95 4.7k
R98 4.7k
R97 4.7k
R94 4.7k
R96 4.7k
QSFP-DD OBSERVATION AND CONTROL HEADER
J26
ModSelL 1 2
ResetL 3 4
ModPrsL 5 6
IntL/RxLOS 7 8
LPMode/TxDis 9 10
TSW-105-08-G-D
GND

ModSelL = Should be pulled to Vcc in module. If held low, module responds to TWI communication.

ResetL = Should be pulled to Vcc in the module. If low, module is held in state of reset.

LPMode/TxDis = Dual mode signal from host. Should be pulled to Vcc in module

ModPrsL = Should be pulled to Vcc Host on host board and pulled low in module.

IntL/RxLOS = Dual mode output signal from module. Should be pulled up to Vcc on host board.

Silkscreen: Label signals based on net-names.

ModSelL 2 D10 1 R99 200
ResetL 2 D11 1 R100 200
ModPrsL 2 D12 1 R101 200
IntL/RxLOS 2 D13 1 R102 200
LPMode/TxDis 2 D14 1 R103 200
GND

Status LEDs. Should turn on based on actual voltages measured on these pins.

J28
P/VS4 1 2
P/VS1 3 4
P/VS2 5 6
P/VS3 7 8
QSFP-DD_RESERVED 9 10
ePPS/CLOCK 11 12
TSW-106-07-G-D
GND

J23A
2027180100

GND	1		
TX2n	2	HOST_EGRESS_TX3N	
TX2p	3	HOST_EGRESS_TX3P	
GND	4		
TX4n	5	HOST_EGRESS_TX4N	
TX4p	6	HOST_EGRESS_TX4P	
GND	7		
ModSel	8	ModSelL	
Reset	9	ResetL	
VCC_RX	10	QSFP-DD_VCC_3P3V	
SCL	11	QSFP-DD_SCL_HOST	
SDA	12	QSFP-DD_SDA_HOST	
GND	13		
RX3p	14	HOST_INGRESS_RX5P	
RX3n	15	HOST_INGRESS_RX5N	
GND	16		
RX1p	17	HOST_INGRESS_RX6P	
RX1n	18	HOST_INGRESS_RX6N	
GND	19		
GND	20		
RX2n	21	HOST_INGRESS_RX3N	
RX2p	22	HOST_INGRESS_RX3P	
GND	23		
RX4n	24	HOST_INGRESS_RX4N	
RX4p	25	HOST_INGRESS_RX4P	
GND	26		
ModPrs	27	ModPrsL	
Int	28	IntL/RxLOS	
VCC_TX	29	QSFP-DD_VCC_3P3V	
VCC1	30	QSFP-DD_VCC_3P3V	
LPMode	31	LPMode/TxDis	
GND	32		
TX3p	33	HOST_EGRESS_TX5P	
TX3n	34	HOST_EGRESS_TX5N	
GND	35		
TX1p	36	HOST_EGRESS_TX6P	
TX1n	37	HOST_EGRESS_TX6N	
GND	38		

GND

J23B
2027180100

GND	39		
TX6n	40	HOST_EGRESS_TX2N	
TX6p	41	HOST_EGRESS_TX2P	
GND	42		
TX8n	43	HOST_EGRESS_TX1N	
TX8p	44	HOST_EGRESS_TX1P	
GND	45		
TBD	46	P/VS4	
TBD	47	P/VS1	
VCC	48	QSFP-DD_VCC_3P3V	
TBD	49	P/VS2	
TBD	50	P/VS3	
GND	51		
RX7p	52	HOST_INGRESS_RX7P	
RX7n	53	HOST_INGRESS_RX7N	
GND	54		
RX5p	55	HOST_INGRESS_RX8P	
RX5n	56	HOST_INGRESS_RX8N	
GND	57		
GND	58		
RX6n	59	HOST_INGRESS_RX2N	
RX6p	60	HOST_INGRESS_RX2P	
GND	61		
RX8n	62	HOST_INGRESS_RX1N	
RX8p	63	HOST_INGRESS_RX1P	
GND	64		
NC	65		
TBD	66	QSFP-DD_RESERVED	
VCC	67	QSFP-DD_VCC_3P3V	
VCC	68	QSFP-DD_VCC_3P3V	
TBD	69	ePPS/CLOCK	
GND	70		
TX7p	71	HOST_EGRESS_TX7P	
TX7n	72	HOST_EGRESS_TX7N	
GND	73		
TX5p	74	HOST_EGRESS_TX8P	
TX5n	75	HOST_EGRESS_TX8N	
GND	76		

GND

J23C
MNT_1
MNT_2
MNT_3
MNT_4
MNT_5
MNT_6
2027180100
GND

QSFP-DD EMI Cage to be placed over 2027180100 Connector, Molex

J27
MNT_1
MNT_2
MNT_3
MNT_4
MNT_5
MNT_6
MNT_7
MNT_8
MNT_9
MNT_10
2031431350
GND

Orderable:	Designed for: Public Release	Mod. Date: 11/2/2022
TID #: N/A	Project Title: 56G Retimer MCB QSFP-DD Ref Design	
Number: TIDA-060043 Rev: E1	Sheet Title: QSFP-DD Connector	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 4 of 8
Drawn By:	File: QSFP-DD_Connector.SchDoc	Size: B
Engineer: Lucas Wolter	Contact: http://www.ti.com/support	

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H1 1
NY PMS 440 0025 PH

H2 1
NY PMS 440 0025 PH

H3 1
NY PMS 440 0025 PH

H4 1
NY PMS 440 0025 PH

SH-J1
Shunt J12 Pins 1-3

FID1 FID2 FID3 FID4 FID5 FID6

PCB Number: TIDA-060043
PCB Rev: E1

CE Mark

PCB
LOGO
FCC disclaimer

PCB
LOGO
WEEE logo

LBL1
PCB Label
THT-14-423-10
Size: 0.65" x 0.20 "

ZZ1
Label Assembly Note
This Assembly Note is for PCB labels only

Variant/Label Table	
Variant	Label Text
001	DS560DF410_MCB

ZZ2
Assembly Note
These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ3
Assembly Note
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ4
Assembly Note
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

ZZ5
Assembly Note
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

Orderable:	Designed for: Public Release	Mod. Date: 10/5/2023
TID #: N/A	Project Title: 56G Retimer MCB QSFP-DD Ref Design	
Number: TIDA-060043 Rev: E1	Sheet Title: PCB Hardware	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 8 of 8
Drawn By:	File: Hardware.SchDoc	Size: B
Engineer: Lucas Wolter	Contact: http://www.ti.com/support	

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