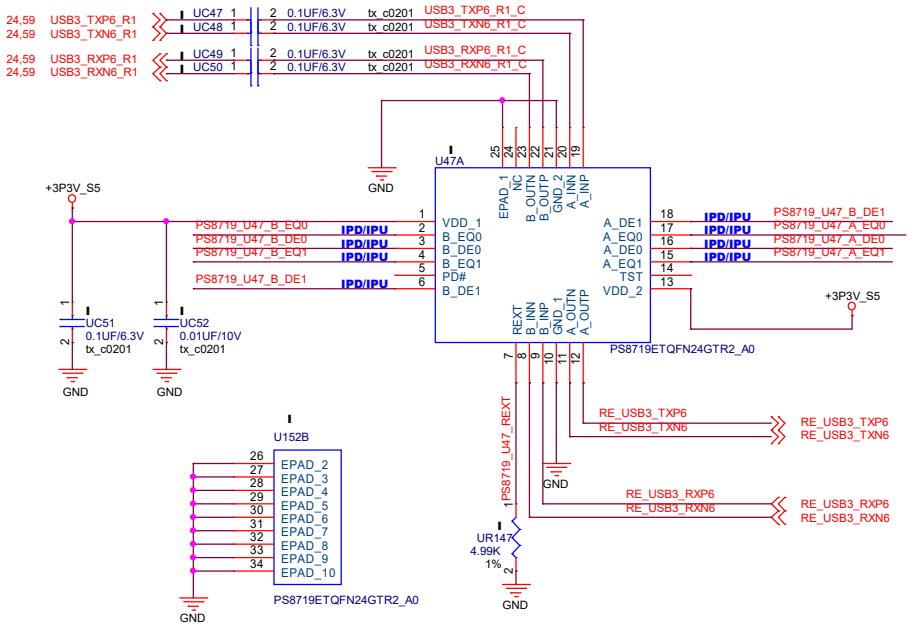

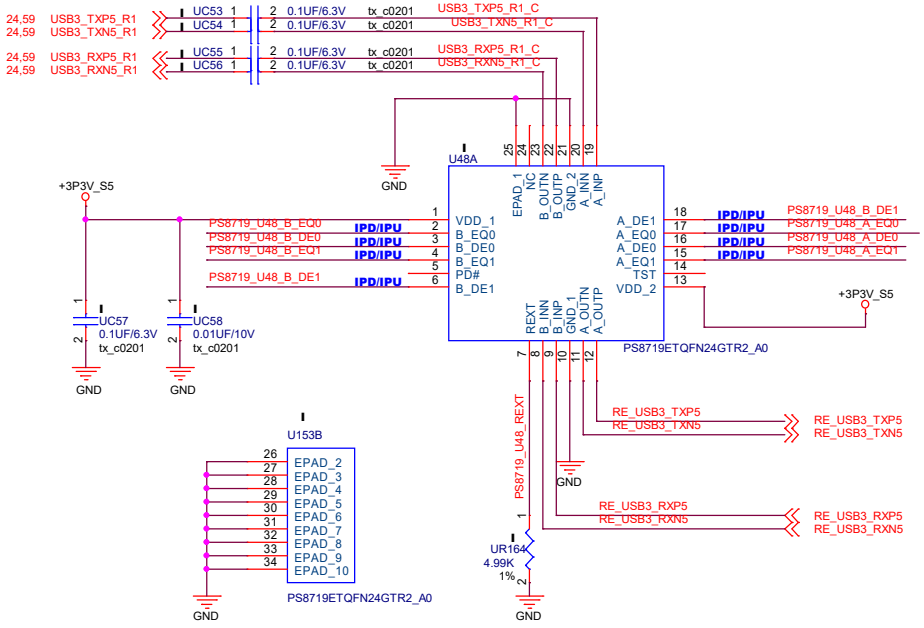

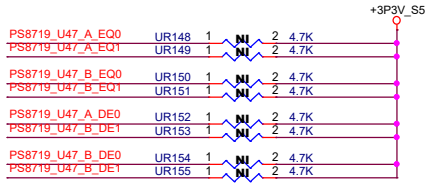

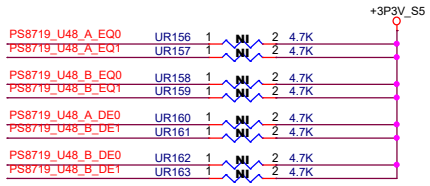

Equalizer control and program for channel A
3.3V tolerant. Internally pulled down at ~150KΩ
[A_EQ1, A_EQ0] ==
LL: program EQ for channel loss up to 9.5dB(default)
LH: program EQ for channel loss up to 13dB
HL: program EQ for channel loss up to 4.5dB
HH: program EQ for channel loss up to 7.5dB

Programmable output pre-emphasis level setting for channel A
3.3V tolerant. Internally pulled down at ~150KΩ
[A_DE1, A_DE0] ==
LL: 3.5dB de-emphasis
LH: No de-emphasis
HL: 2.7dB de-emphasis
HH: 5dB de-emphasis

Equalizer control and program for channel B
3.3V tolerant. Internally pulled down at ~150KΩ
[B_EQ1, B_EQ0] ==
LL: program EQ for channel loss up to 9.5dB(default)
LH: program EQ for channel loss up to 13dB
HL: program EQ for channel loss up to 4.5dB
HH: program EQ for channel loss up to 7.5dB

Programmable output pre-emphasis level setting for channel B
3.3V tolerant. Internally pulled down at ~150KΩ
[B_DE1, B_DE0] ==
LL: 3.5dB de-emphasis
LH: No de-emphasis
HL: 2.7dB de-emphasis
HH: 5dB de-emphasis

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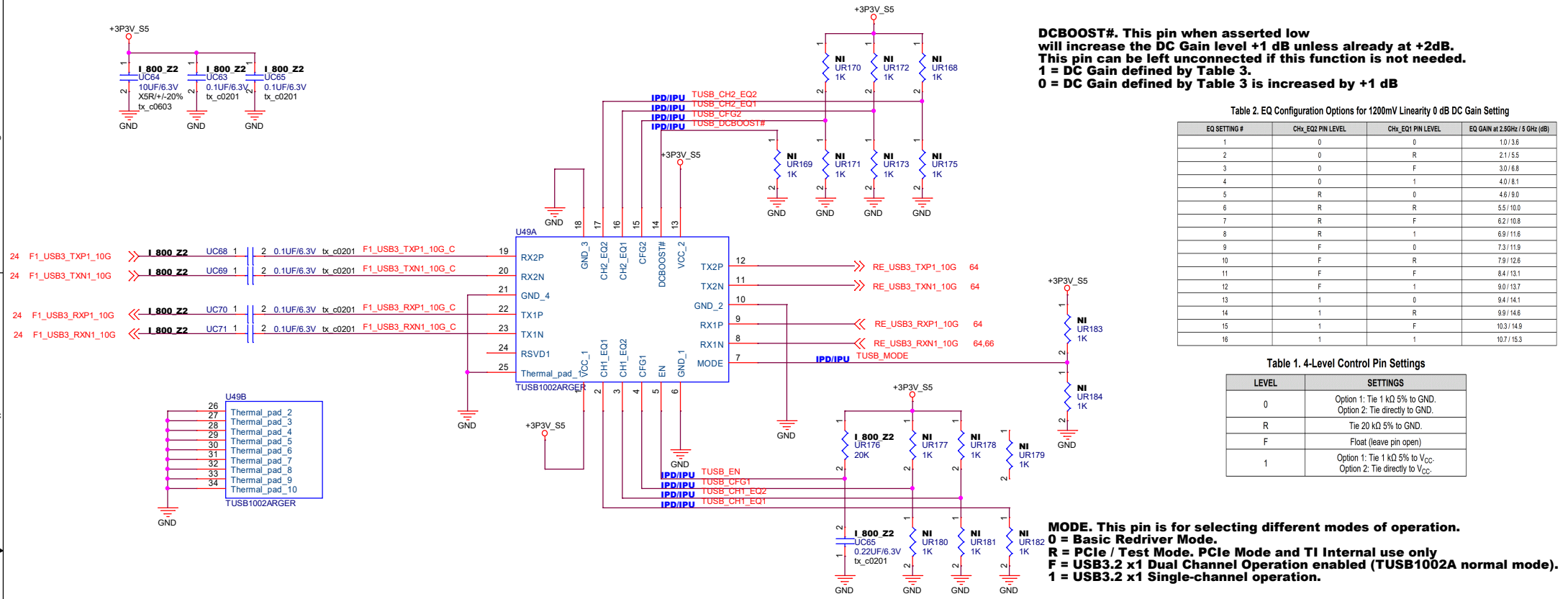

DCBOOST#. This pin when asserted low will increase the DC Gain level +1 dB unless already at +2dB. This pin can be left unconnected if this function is not needed.
1 = DC Gain defined by Table 3.
0 = DC Gain defined by Table 3 is increased by +1 dB

Table 2. EQ Configuration Options for 1200mV Linearity 0 dB DC Gain Setting

EQ SETTING #	CHx_EQ2 PIN LEVEL	CHx_EQ1 PIN LEVEL	EQ GAIN at 2.5GHz / 5 GHz (dB)
1	0	0	1.0 / 3.6
2	0	R	2.1 / 5.5
3	0	F	3.0 / 6.8
4	0	1	4.0 / 8.1
5	R	0	4.6 / 9.0
6	R	R	5.5 / 10.0
7	R	F	6.2 / 10.8
8	R	1	6.9 / 11.6
9	F	0	7.3 / 11.9
10	F	R	7.9 / 12.6
11	F	F	8.4 / 13.1
12	F	1	9.0 / 13.7
13	1	0	9.4 / 14.1
14	1	R	9.9 / 14.6
15	1	F	10.3 / 14.9
16	1	1	10.7 / 15.3

Table 1. 4-Level Control Pin Settings

LEVEL	SETTINGS
0	Option 1: Tie 1 kΩ 5% to GND. Option 2: Tie directly to GND.
R	Tie 20 kΩ 5% to GND.
F	Float (leave pin open)
1	Option 1: Tie 1 kΩ 5% to V_{CC}. Option 2: Tie directly to V_{CC}.

MODE. This pin is for selecting different modes of operation.
0 = Basic Redriver Mode.
R = PCIe / Test Mode. PCIe Mode and TI Internal use only
F = USB3.2 x1 Dual Channel Operation enabled (TUSB1002A normal mode).
1 = USB3.2 x1 Single-channel operation.

Table 3. VOD Linear Range and DC Gain

SETTING #	CFG1 PIN LEVEL	CFG2 PIN LEVEL	CH1 DC GAIN (dB)	CH2 DC GAIN (dB)	CH1 V_{OD} LINEAR RANGE (mVpp)	CH2 V_{OD} LINEAR RANGE (mVpp)
1	0	0	+1	0	900	900
2	0	R	0	+1	900	900
3	0	F	0	0	900	900
4	0	1	+1	+1	900	900
5	R	0	0	0	1000	1000
6	R	R	+1	0	1000	1000
7	R	F	0	-1	1000	1000
8	R	1	+2	+2	1000	1000
9	F	0	-1	-1	1200	1200
10	F	R	+2	+2	1200	1200
11	F	F	0	0	1200	1200
12	F	1	+1	+1	1200	1200
13	1	0	+2	0	1200	1200
14	1	R	0	+2	1200	1200
15	1	F	0	+1	1200	1200
16	1	1	+1	0	1200	1200

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