Terasic HDMI Daughter Board

SCHEMATIC	*CONTENT*	*PAGE*
01 Top	Cover Page, Placement,TOP	01 ~ 03
02 HSTC	HSTC	04 ~ 05
03 Receiver	CAT6023	06 ~ 06
04 Transmitter	CAT6613	07 ~ 07

V1.1 modify comment

Page 5 : add EDID_WP_n to J1 pin 53

Page 6 : add EDID_WP_n pull-hogh to U4, U5

Page 7 : TX_5V connect to VCC50

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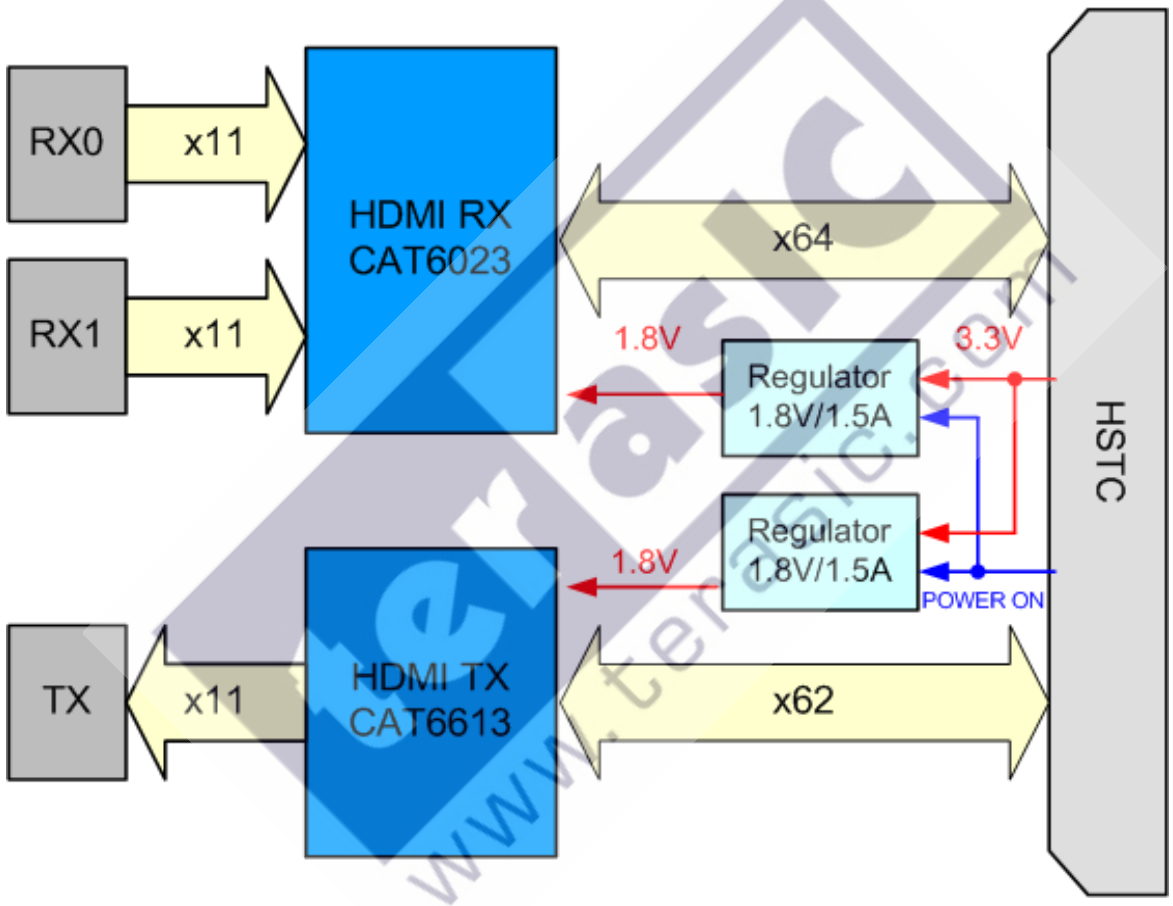
Title: THDB-HDMI		
Size: B	Document Number: Cover Page	Rev: 1.1
Date: Friday, October 17, 2008	Sheet 1 of 8	



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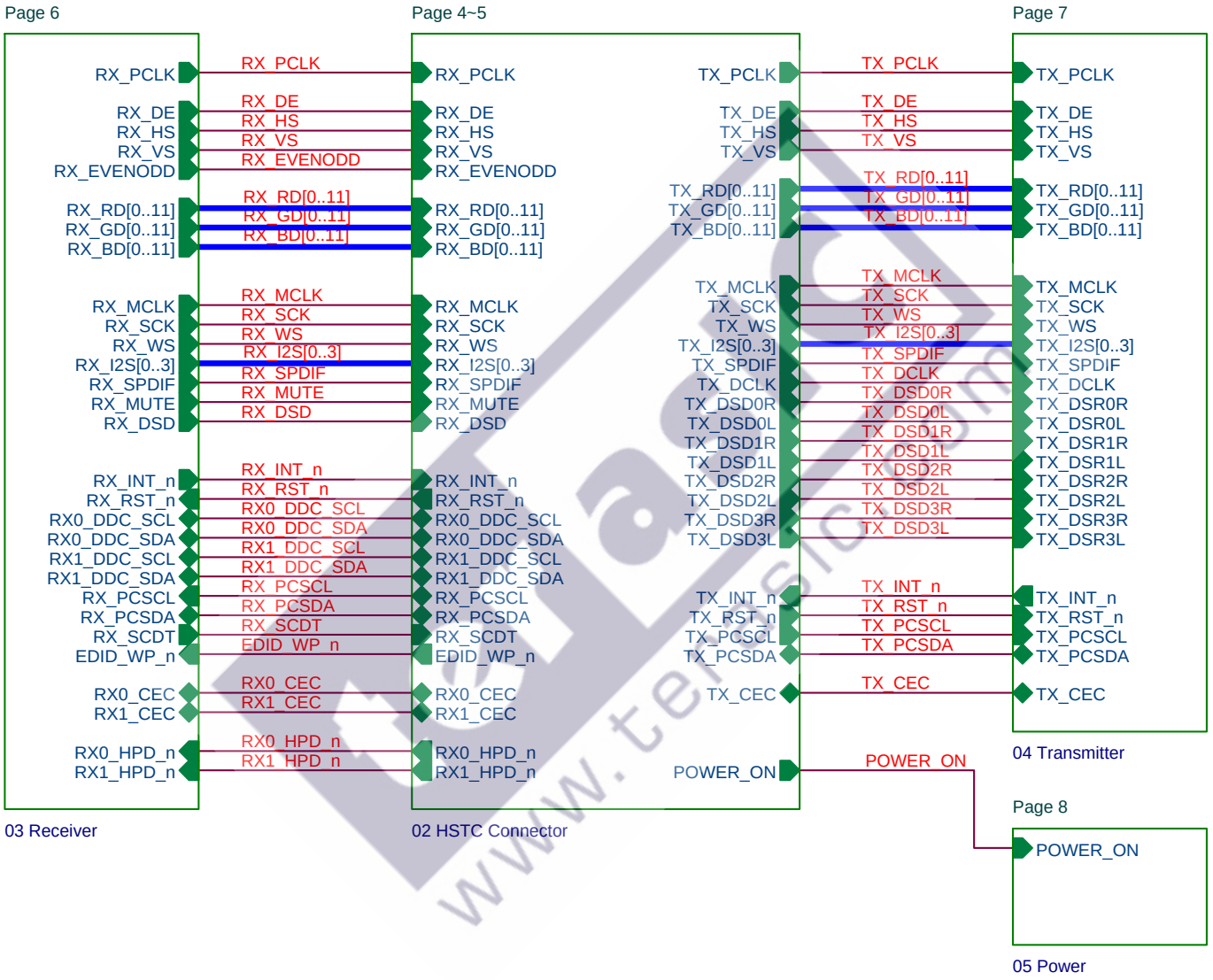
Title	THDB-HDMI	
Size A	Document Number Placement	Rev 1.1
Date: Friday, October 17, 2008	Sheet 2 of 8	



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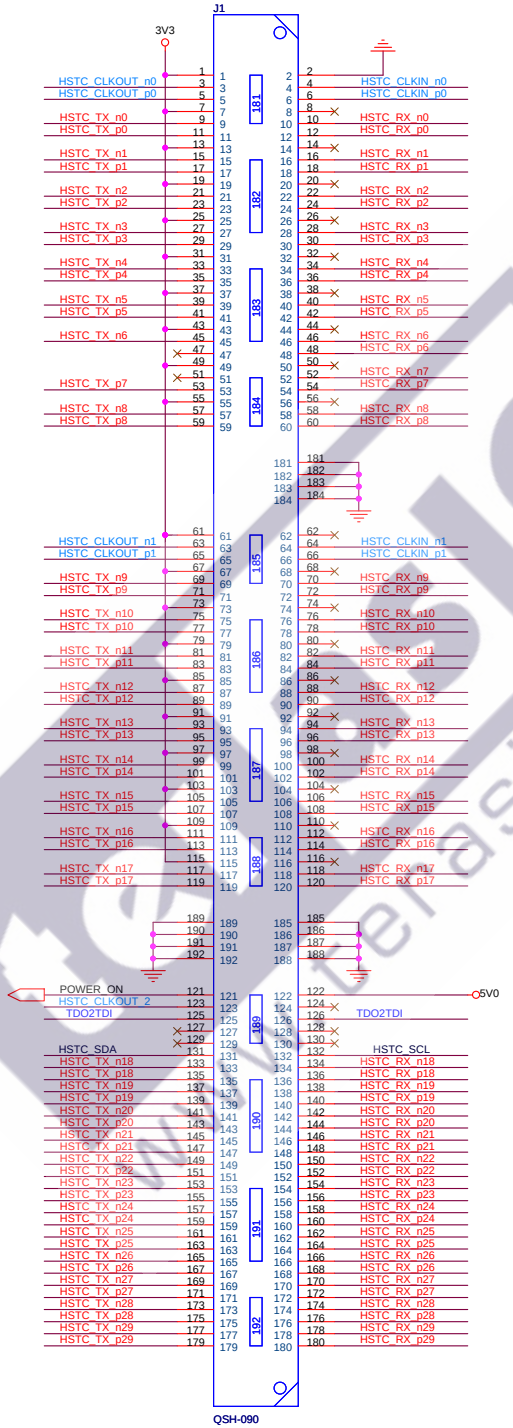
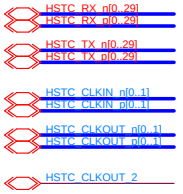
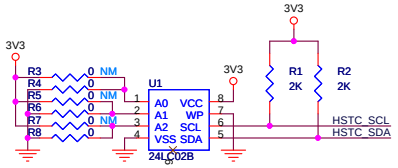
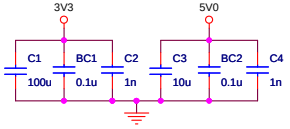
Title	THDB-HDMI	
Size A	Document Number TOP	Rev 1.1
Date: Friday, October 17, 2008	Sheet 3 of 8	







U1: Address 0~7
Default Address 0



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Title: THDB-HDMI

Size	Document Number	Rev
Custom	High Speed Terasic Connector Bottom	1.1

Date: Friday, October 17, 2008 Sheet 4 of 8

HSTC_TX_n0	RX_RD0
HSTC_TX_p0	RX_GD11
HSTC_TX_n1	RX_RD2
HSTC_TX_p1	RX_RD1
HSTC_TX_n2	RX_RD4
HSTC_TX_p2	RX_RD3
HSTC_TX_n3	RX_I2S1
HSTC_TX_p3	RX_I2S2
HSTC_TX_n4	RX_SPDIF
HSTC_TX_p4	RX_I2S0
HSTC_TX_n5	RX_MUTE
HSTC_TX_p5	RX_DSD
HSTC_TX_n6	RX_RD8
HSTC_TX_p7	EDID_WP_n
HSTC_TX_n8	RX_GD1
HSTC_TX_p8	RX_GD2
HSTC_TX_n9	RX_BD8
HSTC_TX_p9	RX_BD9
HSTC_TX_n10	RX_BD2
HSTC_TX_p10	RX_DE
HSTC_TX_n11	RX_PCSDA
HSTC_TX_p11	RX_BD4
HSTC_TX_n12	RX1_DDC_SDA
HSTC_TX_p12	RX1_DDC_SCL
HSTC_TX_n13	RX0_DDC_SDA
HSTC_TX_p13	RX0_DDC_SCL
HSTC_TX_n14	RX0_HPD_n
HSTC_TX_p14	TX_GD8
HSTC_TX_n15	TX_GD9
HSTC_TX_p15	TX_RD0
HSTC_TX_n16	TX_RD3
HSTC_TX_p16	TX_RD6
HSTC_TX_n17	TX_RD8
HSTC_TX_p17	TX_RD9
HSTC_TX_n18	TX_RD11
HSTC_TX_p18	TX_RD10
HSTC_TX_n19	TX_GD7
HSTC_TX_p19	TX_PCSCL
HSTC_TX_n20	TX_RST_n
HSTC_TX_p20	TX_INT_n
HSTC_TX_n21	TX_DSD3L
HSTC_TX_p21	TX_DSD3R
HSTC_TX_n22	TX_DSD2L
HSTC_TX_p22	TX_DSD2R
HSTC_TX_n23	TX_DSD1L
HSTC_TX_p23	TX_DSD1R
HSTC_TX_n24	TX_DSD0L
HSTC_TX_p24	TX_DSD0R
HSTC_TX_n25	TX_DCLK
HSTC_TX_p25	TX_SCK
HSTC_TX_n26	TX_WS
HSTC_TX_p26	TX_MCLK
HSTC_TX_n27	TX_I2S0
HSTC_TX_p27	TX_I2S1
HSTC_TX_n28	TX_I2S2
HSTC_TX_p28	TX_I2S3
HSTC_TX_n29	TX_VS
HSTC_TX_p29	TX_SPDIF

HSTC_RX_n0	RX_GD10
HSTC_RX_p0	RX_GD9
HSTC_RX_n1	RX_GD8
HSTC_RX_p1	RX_GD7
HSTC_RX_n2	RX1_HPD_n
HSTC_RX_p2	RX1_CEC
HSTC_RX_n3	RX_RST_n
HSTC_RX_p3	RX_SCDT
HSTC_RX_n4	RX_INT_n
HSTC_RX_p4	RX_RD11
HSTC_RX_n5	RX_RD10
HSTC_RX_p5	RX_RD9
HSTC_RX_n6	RX_RD7
HSTC_RX_p6	RX_RD6
HSTC_RX_n7	RX_RD5
HSTC_RX_p7	RX_GD3
HSTC_RX_n8	RX_GD5
HSTC_RX_p8	RX_GD6
HSTC_RX_n9	RX_BD11
HSTC_RX_p9	RX_BD3
HSTC_RX_n10	RX_BD1
HSTC_RX_p10	RX_BD0
HSTC_RX_n11	RX_HS
HSTC_RX_p11	RX_PCSCL
HSTC_RX_n12	RX_EVENODD
HSTC_RX_p12	RX_VS
HSTC_RX_n13	RX_BD5
HSTC_RX_p13	RX_BD6
HSTC_RX_n14	RX_BD7
HSTC_RX_p14	RX0_CEC
HSTC_RX_n15	TX_GD10
HSTC_RX_p15	TX_GD11
HSTC_RX_n16	TX_RD1
HSTC_RX_p16	TX_RD2
HSTC_RX_n17	TX_RD4
HSTC_RX_p17	TX_RD5
HSTC_RX_n18	TX_GD6
HSTC_RX_p18	TX_GD5
HSTC_RX_n19	TX_GD4
HSTC_RX_p19	TX_PCSDA
HSTC_RX_n20	TX_GD3
HSTC_RX_p20	TX_GD2
HSTC_RX_n21	TX_GD1
HSTC_RX_p21	TX_GD0
HSTC_RX_n22	TX_BD11
HSTC_RX_p22	TX_BD10
HSTC_RX_n23	TX_BD9
HSTC_RX_p23	TX_PCLK
HSTC_RX_n24	TX_BD8
HSTC_RX_p24	TX_BD7
HSTC_RX_n25	TX_BD6
HSTC_RX_p25	TX_BD5
HSTC_RX_n26	TX_BD4
HSTC_RX_p26	TX_BD3
HSTC_RX_n27	TX_BD2
HSTC_RX_p27	TX_BD1
HSTC_RX_n28	TX_BD0
HSTC_RX_p28	TX_DE
HSTC_RX_n29	TX_HS
HSTC_RX_p29	TX_CEC

HSTC_RX_n[0..29]	
HSTC_RX_p[0..29]	
HSTC_TX_n[0..29]	
HSTC_TX_p[0..29]	
HSTC_CLKIN_n[0..1]	
HSTC_CLKIN_p[0..1]	
HSTC_CLKOUT_n[0..1]	
HSTC_CLKOUT_p[0..1]	

HSTC_CLKIN_n0	RX_SCK
HSTC_CLKIN_p0	RX_MCLK
HSTC_CLKIN_n1	RX_GD4
HSTC_CLKIN_p1	RX_PCLK
HSTC_CLKOUT_n0	RX_I2S3
HSTC_CLKOUT_p0	RX_WS
HSTC_CLKOUT_n1	RX_GD0
HSTC_CLKOUT_p1	RX_BD10
HSTC_CLKOUT_2	TX_RD7

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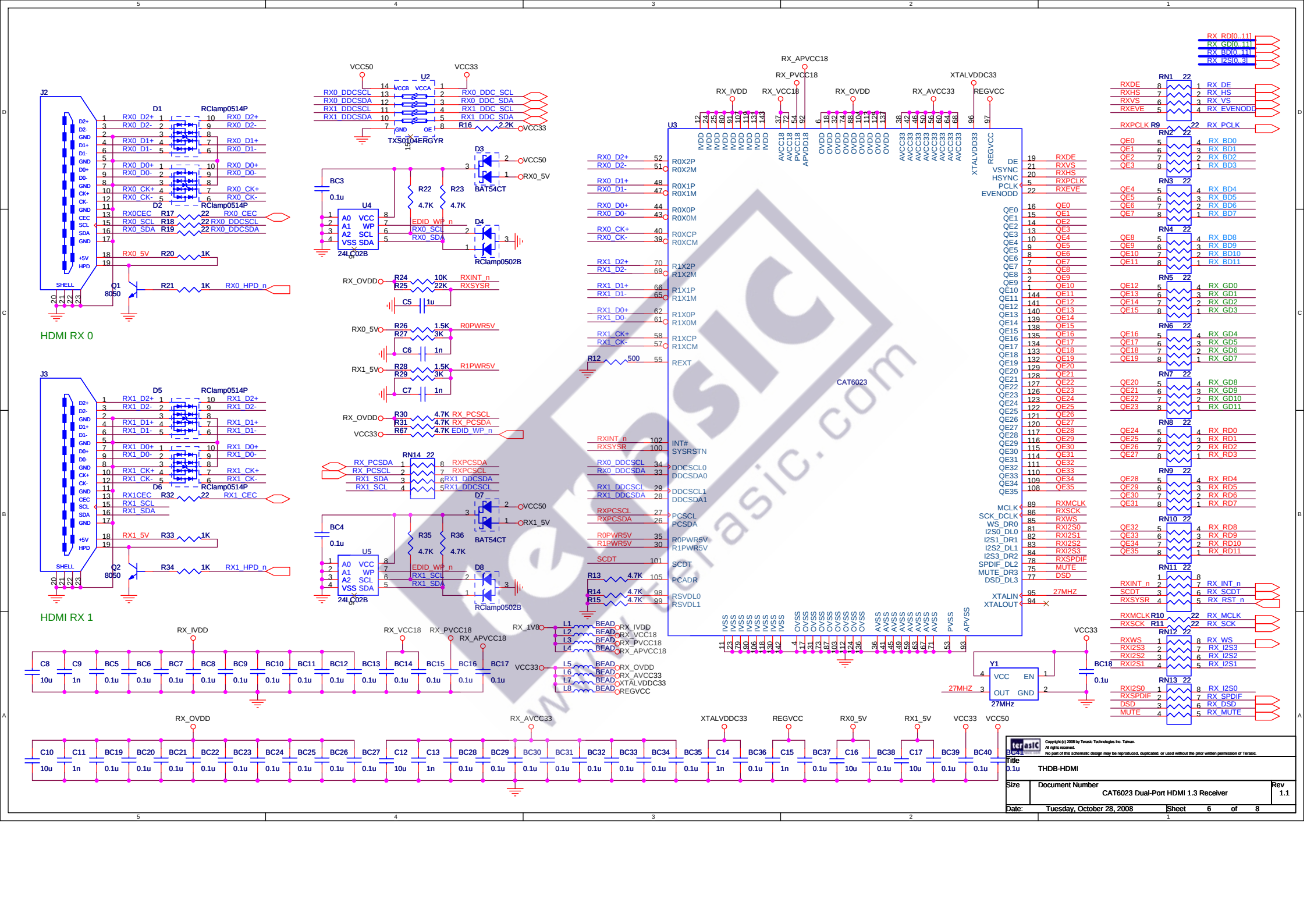
Title: **THDB-HDMI**

Size	Document Number	Rev
	HSTC to HDMI RX / TX Chip	1.1

Date: Friday, October 17, 2008 Sheet 5 of 8


HDMI RX 0
HDMI RX 1
CAT6023
TXS0104ERGYR
24LC02B
RClamp0514P
BAT54CT
RClamp0502B
THDB-HDMI
CAT6023 Dual-Port HDMI 1.3 Receiver
Tuesday, October 28, 2008
Sheet 6 of 8
Rev 1.1
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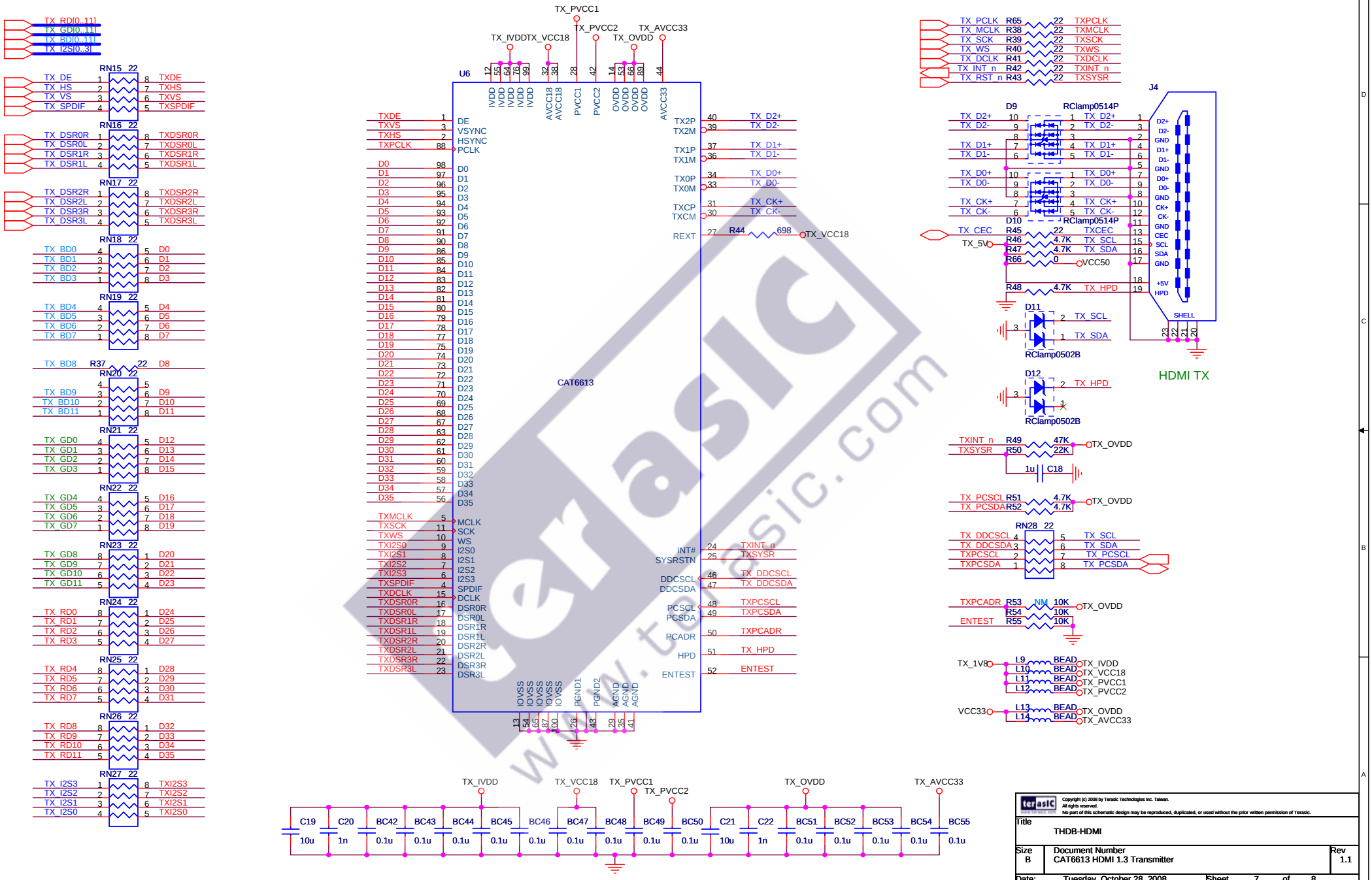
TX_RD[0..11]
TX_GD[0..11]
TX_BD[0..11]
TX_I2S[0..3]
RN15 22
TX_DE
TX_HS
TX_VS
TX_SPDIF
TXDE
TXHS
TXVS
TXSPDIF
RN16 22
TX_DSR0R
TX_DSR0L
TX_DSR1R
TX_DSR1L
TXDSR0R
TXDSR0L
TXDSR1R
TXDSR1L
RN17 22
TX_DSR2R
TX_DSR2L
TX_DSR3R
TX_DSR3L
TXDSR2R
TXDSR2L
TXDSR3R
TXDSR3L
RN18 22
TX_BD0
TX_BD1
TX_BD2
TX_BD3
D0
D1
D2
D3
RN19 22
TX_BD4
TX_BD5
TX_BD6
TX_BD7
D4
D5
D6
D7
TX_BD8
R37 22
D8
RN20 22
TX_BD9
TX_BD10
TX_BD11
D9
D10
D11
RN21 22
TX_GD0
TX_GD1
TX_GD2
TX_GD3
D12
D13
D14
D15
RN22 22
TX_GD4
TX_GD5
TX_GD6
TX_GD7
D16
D17
D18
D19
RN23 22
TX_GD8
TX_GD9
TX_GD10
TX_GD11
D20
D21
D22
D23
RN24 22
TX_RD0
TX_RD1
TX_RD2
TX_RD3
D24
D25
D26
D27
RN25 22
TX_RD4
TX_RD5
TX_RD6
TX_RD7
D28
D29
D30
D31
RN26 22
TX_RD8
TX_RD9
TX_RD10
TX_RD11
D32
D33
D34
D35
RN27 22
TX_I2S3
TX_I2S2
TX_I2S1
TX_I2S0
TXI2S3
TXI2S2
TXI2S1
TXI2S0
TX_PVCC1
TX_IVDD
TX_VCC18
TX_PVCC2
TX_OVDD
TX_AVCC33
U6
CAT6613
TXDE
TXVS
TXHS
TXPCLK
DE
VSYNC
HSYNC
PCLK
D0
D1
D2
D3
D4
D5
D6
D7
D8
D9
D10
D11
D12
D13
D14
D15
D16
D17
D18
D19
D20
D21
D22
D23
D24
D25
D26
D27
D28
D29
D30
D31
D32
D33
D34
D35
TXMCLK
TXSCK
TXWS
TXI2S0
TXI2S1
TXI2S2
TXI2S3
TXSPDIF
TXDCLK
TXDSR0R
TXDSR0L
TXDSR1R
TXDSR1L
TXDSR2R
TXDSR2L
TXDSR3R
TXDSR3L
MCLK
SCK
WS
I2S0
I2S1
I2S2
I2S3
SPDIF
DCLK
DSR0R
DSR0L
DSR1R
DSR1L
DSR2R
DSR2L
DSR3R
DSR3L
IVDD
AVCC18
PVCC1
PVCC2
OVDD
AVCC33
IOVSS
PGND1
PGND2
AGND
TX2P
TX2M
TX1P
TX1M
TX0P
TX0M
TXCP
TXCM
REXT
R44 698
TX_VCC18
TX_D2+
TX_D2-
TX_D1+
TX_D1-
TX_D0+
TX_D0-
TX_CK+
TX_CK-
INT#
SYSRSTN
DDCSCL
DDCSDA
PCSCL
PCSDA
PCADR
HPD
ENTEST
TXINT_n
TXSYSR
TXPCSCL
TXPCSDA
TXPCADR
TX_HPD
ENTEST
TX_PCLK R65 22 TXPCLK
TX_MCLK R38 22 TXMCLK
TX_SCK R39 22 TXSCK
TX_WS R40 22 TXWS
TX_DCLK R41 22 TXDCLK
TX_INT_n R42 22 TXINT_n
TX_RST_n R43 22 TXSYSR
J4
D9
RClamp0514P
D10
RClamp0514P
TX_CEC R45 22 TXCEC
TX_5V
R46 4.7K TX_SCL
R47 4.7K TX_SDA
R66 0 VCC50
R48 4.7K TX_HPD
D11
RClamp0502B
D12
RClamp0502B
SHELL
HDMI TX
TXINT_n R49 47K TX_OVDD
TXSYSR R50 22K
1u C18
TX_PCSCL R51 4.7K TX_OVDD
TX_PCSDA R52 4.7K
RN28 22
TX_DDCSCL
TX_DDCSDA
TXPCSCL
TXPCSDA
TX_SCL
TX_SDA
TX_PCSCL
TX_PCSDA
TXPCADR R53 NM 10K TX_OVDD
R54 10K
ENTEST R55 10K
TX_1V8
L9 BEAD TX_IVDD
L10 BEAD TX_VCC18
L11 BEAD TX_PVCC1
L12 BEAD TX_PVCC2
VCC33
L13 BEAD TX_OVDD
L14 BEAD TX_AVCC33
C19 10u
C20 1n
BC42 0.1u
BC43 0.1u
BC44 0.1u
BC45 0.1u
BC46 0.1u
BC47 0.1u
BC48 0.1u
BC49 0.1u
BC50 0.1u
C21 10u
C22 1n
BC51 0.1u
BC52 0.1u
BC53 0.1u
BC54 0.1u
BC55 0.1u
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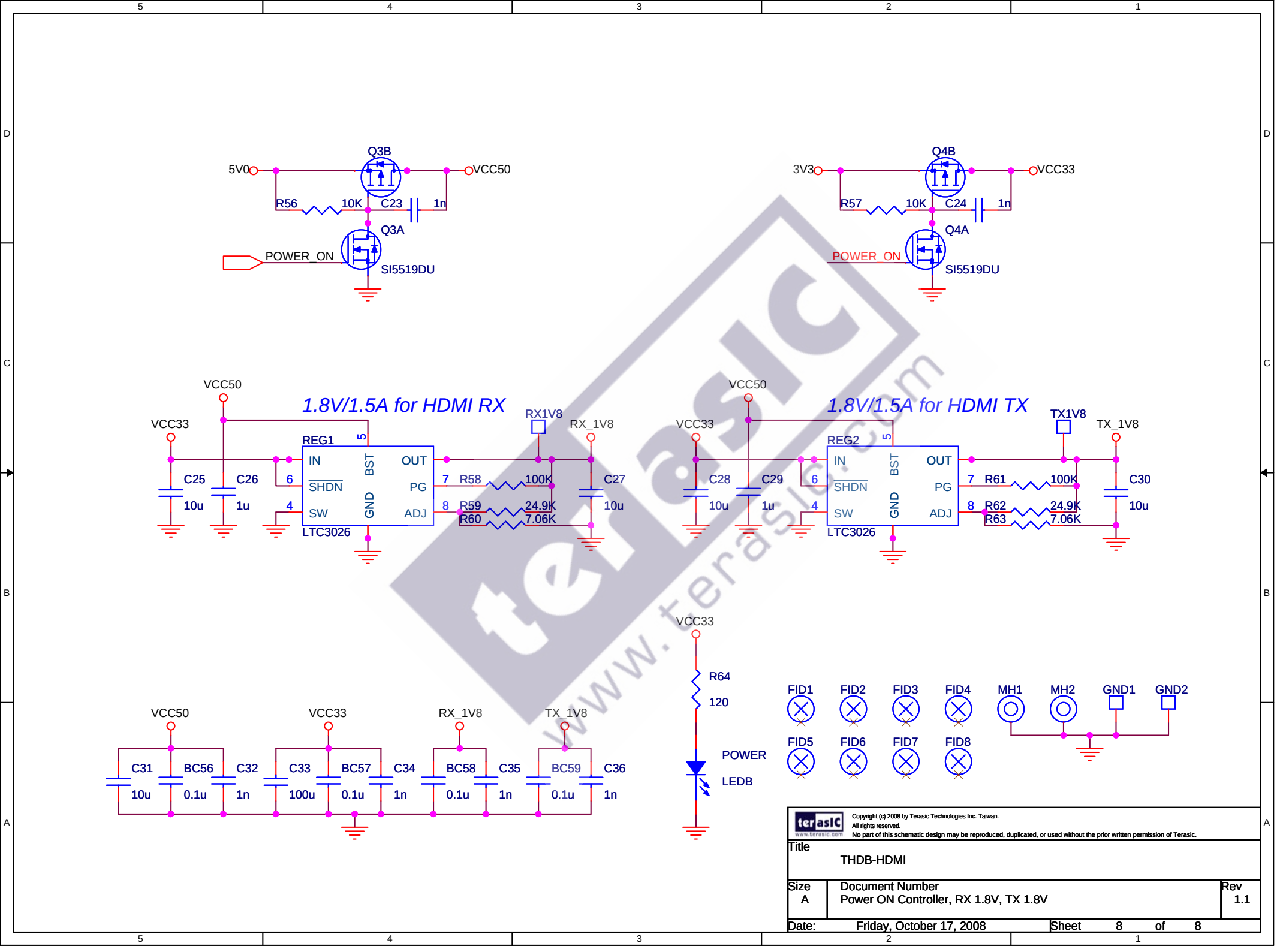
Title
THDB-HDMI
Size B
Document Number
CAT6613 HDMI 1.3 Transmitter
Rev 1.1
Date: Tuesday, October 28, 2008
Sheet 7 of 8



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Title	THDB-HDMI
Size	A
Document Number	Power ON Controller, RX 1.8V, TX 1.8V
Rev	1.1
Date:	Friday, October 17, 2008
Sheet	8 of 8