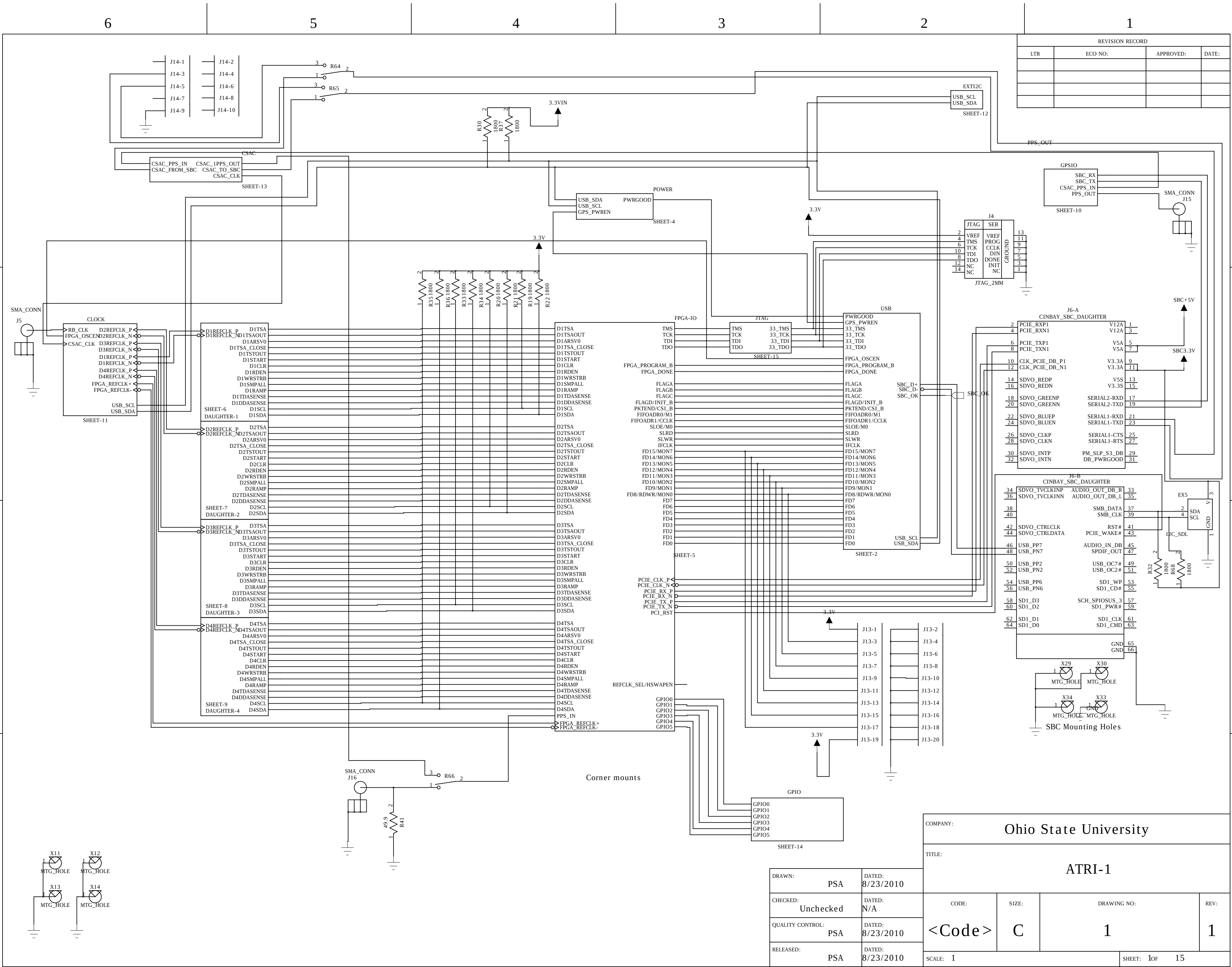


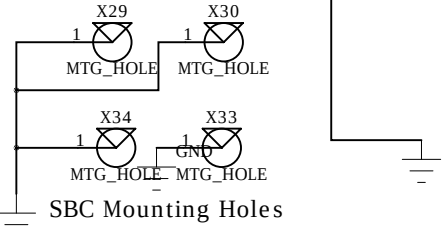


REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

GPSIO	SBC_RX	SBC_TX	CSAC_PPS_IN	PPS_OUT
SHEET-10				

J6-A			
CINBAY_SBC_DAUGHTER			
2	PCIE_RXP1	V12A	1
4	PCIE_RXN1	V12A	3
6	PCIE_TXP1	V5A	5
8	PCIE_TXN1	V5A	7
10	CLK_PCIE_DB_P1	V3.3A	9
12	CLK_PCIE_DB_N1	V3.3A	11
14	SDVO_RED_P	V5S	13
16	SDVO_RED_N	V3.3S	15
18	SDVO_GREEN_P	SERIAL2-RXD	17
20	SDVO_GREEN_N	SERIAL2-TXD	19
22	SDVO_BLUE_P	SERIAL1-RXD	21
24	SDVO_BLUE_N	SERIAL1-TXD	23
26	SDVO_CLK_P	SERIAL1-CTS	25
28	SDVO_CLK_N	SERIAL1-RTS	27
30	SDVO_INTP	PM_SLP_S3_DB	29
32	SDVO_INTN	DB_PWRGOOD	31

J6-B			
CINBAY_SBC_DAUGHTER			
34	SDVO_TVCLKINP	AUDIO_OUT_DB_R	33
36	SDVO_TVCLKINN	AUDIO_OUT_DB_L	35
38	SMB_DATA		37
40	SMB_CLK		39
42	SDVO_CTRLCLK	RST#	41
44	SDVO_CTRLDATA	PCIE_WAKE#	43
46	USB_PP7	AUDIO_IN_DB	45
48	USB_PN7	SPDIF_OUT	47
50	USB_PP2	USB_OC7#	49
52	USB_PN2	USB_OC2#	51
54	USB_PP6	SD1_WP	53
56	USB_PN6	SD1_CD#	55
58	SD1_D3	SCH_SPIOSUS_3	57
60	SD1_D2	SD1_PWR#	59
62	SD1_D1	SD1_CLK	61
64	SD1_D0	SD1_CMD	63
65	GND		
66	GND		



COMPANY: Ohio State University			
TITLE: ATRI-1			
CODE:	SIZE:	DRAWING NO:	REV:
<Code>	C	1	1
SCALE: 1			SHEET: 1 of 15

DRAWN:	PSA	DATED:	8/23/2010
CHECKED:	Unchecked	DATED:	N/A
QUALITY CONTROL:	PSA	DATED:	8/23/2010
RELEASED:	PSA	DATED:	8/23/2010

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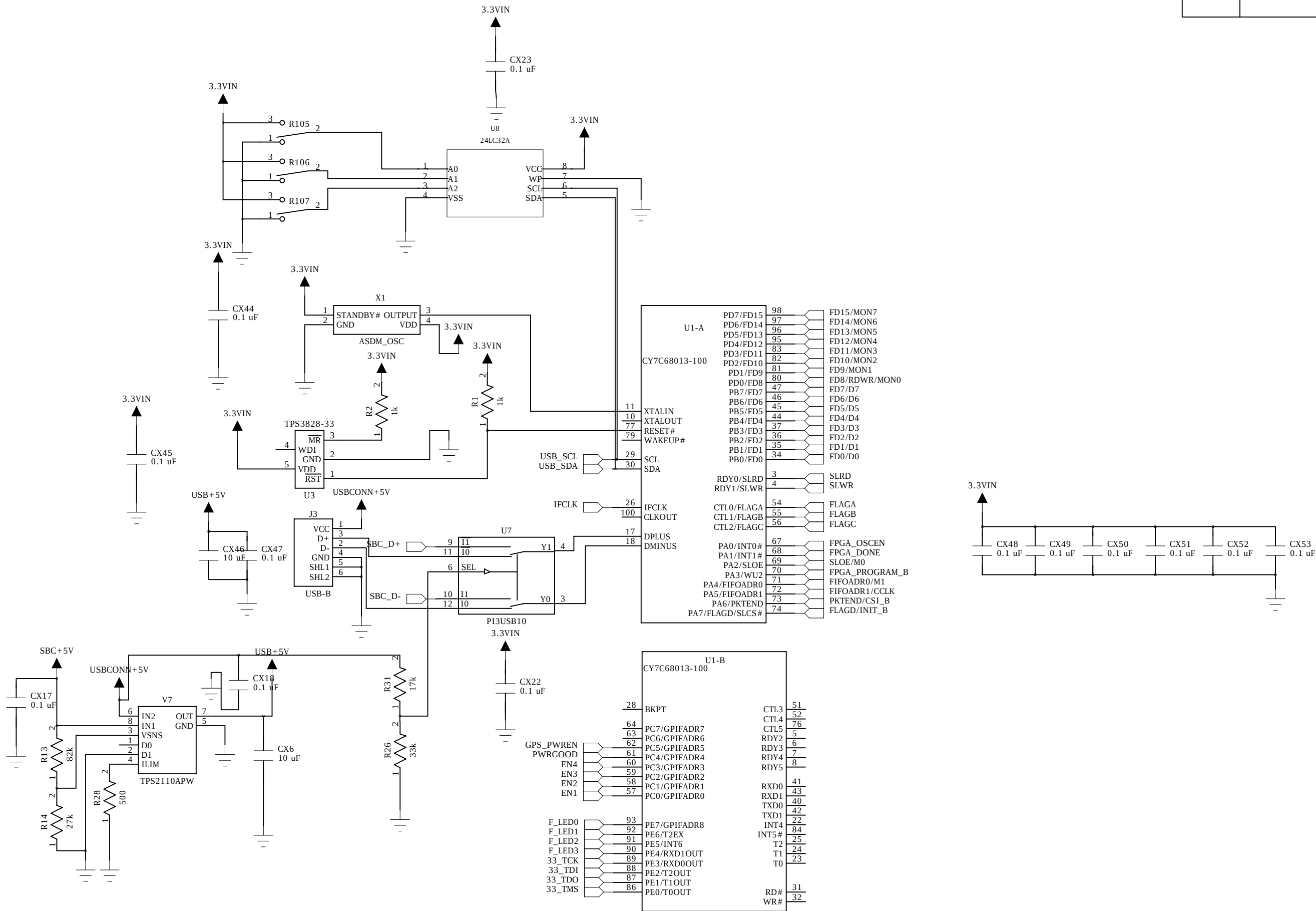
4

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2

1

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



3.3V logic, 2V forward drop
20 mA max current in 2 resistors =
33 ohms/resistor

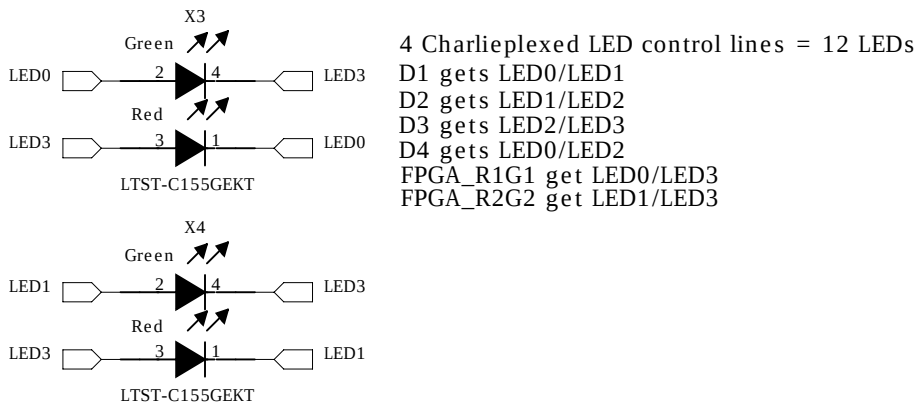
F_LED0 LED0

F_LED1 LED1

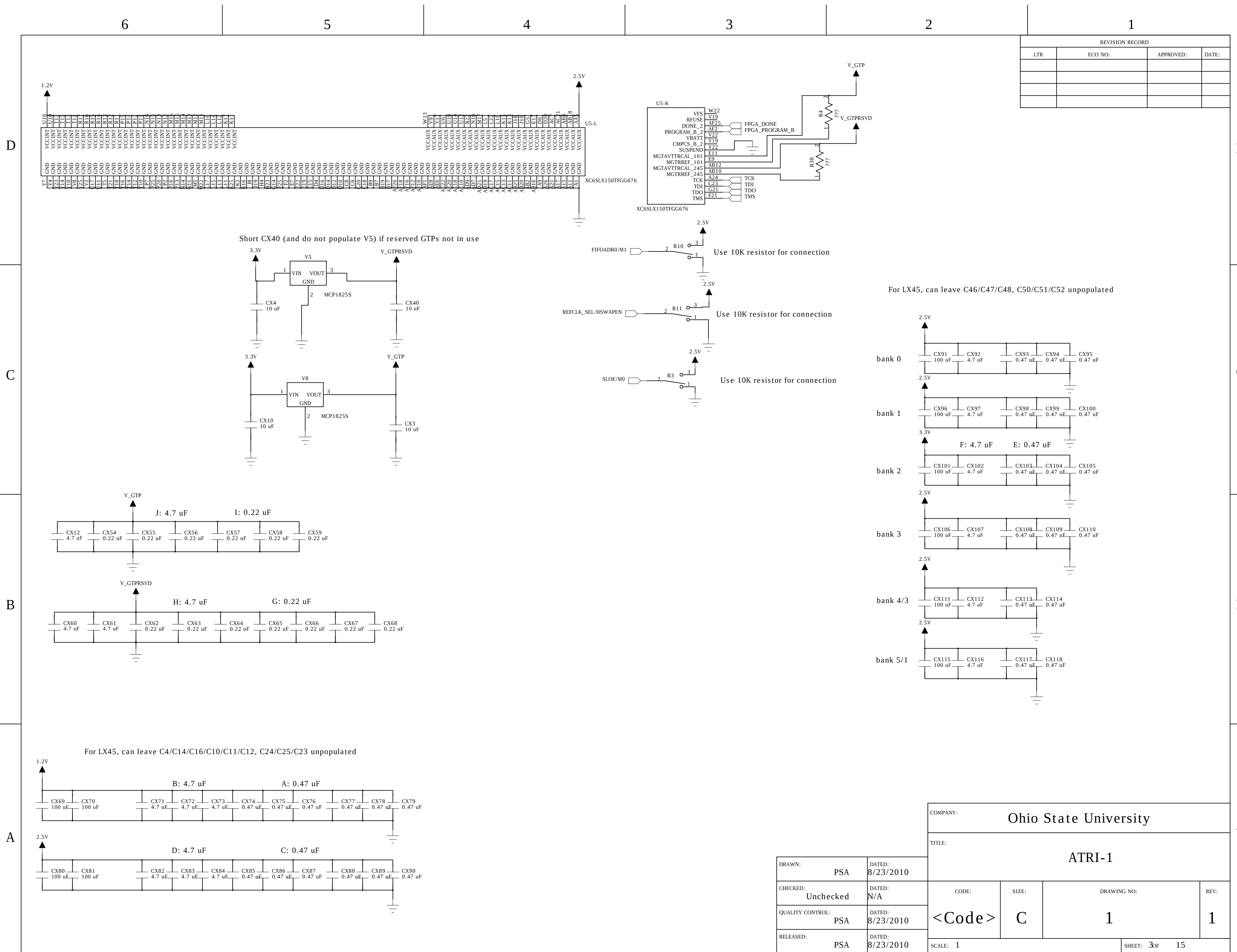
F_LED2 LED2

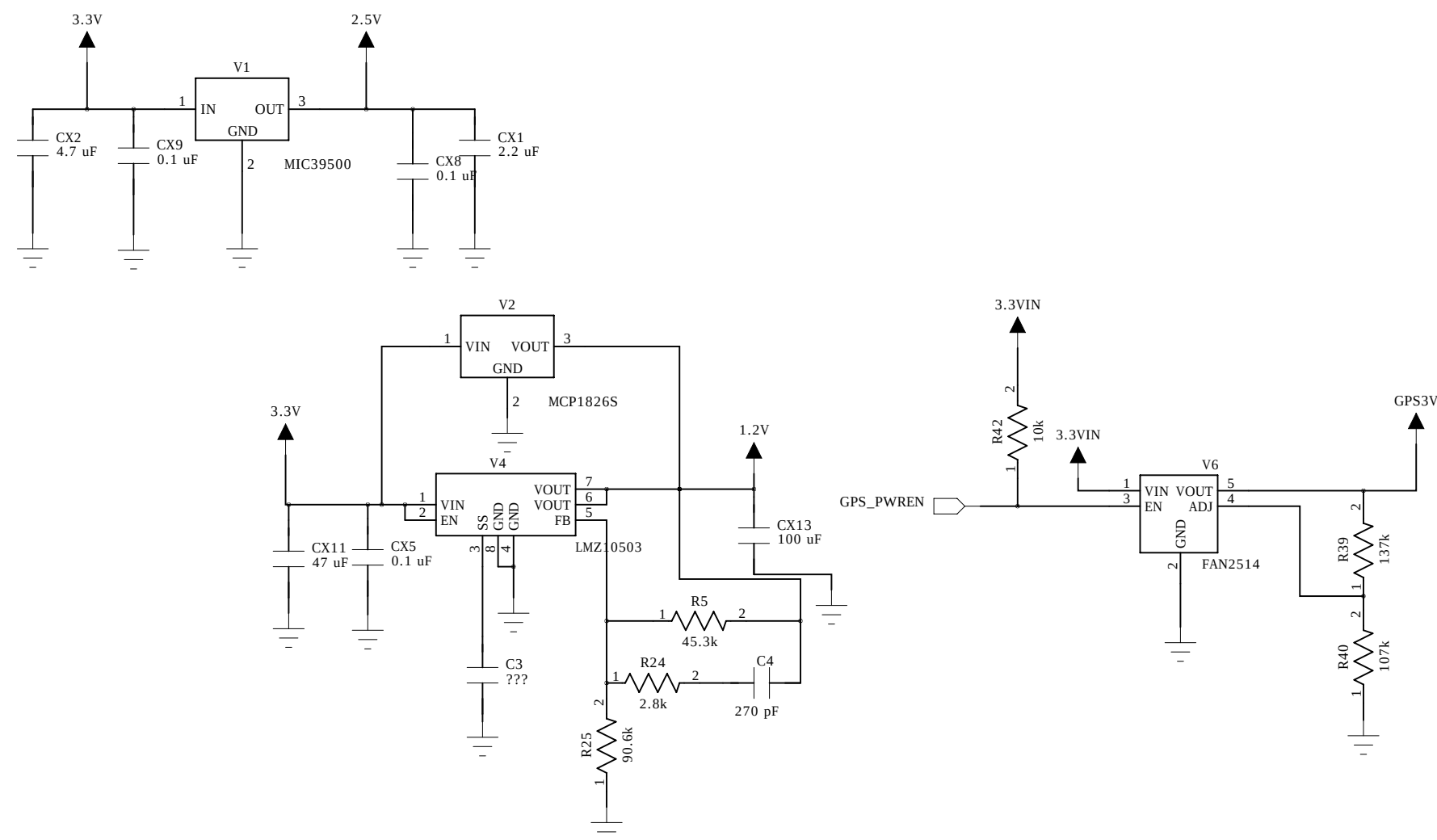
F_LED3 LED3

Note: LEDs will not be at max brightness
since only have 8% duty cycle (avg 1.2 mA)
Can adjust lower if needed



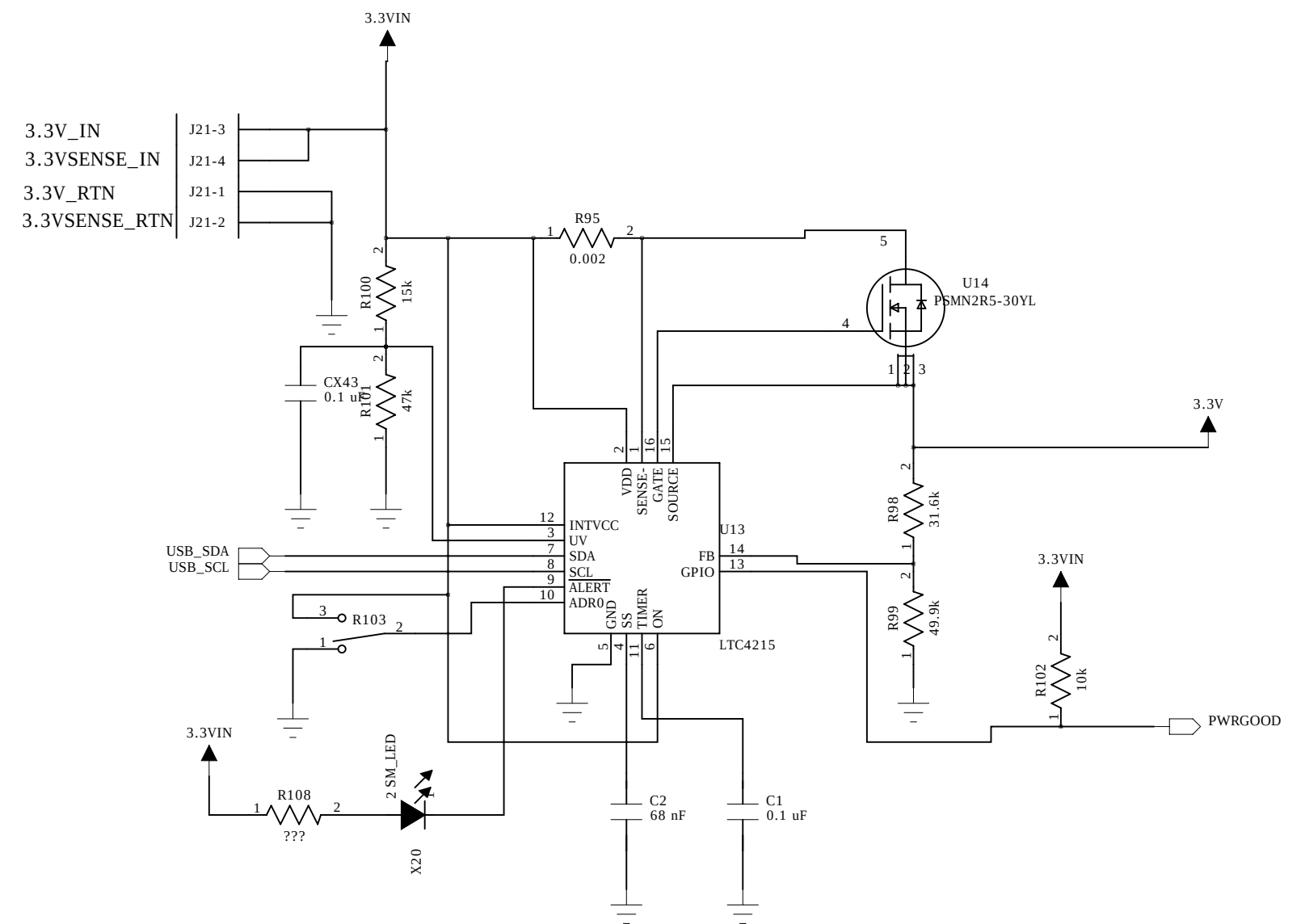
COMPANY: Ohio State University			
TITLE: ATRI-1			
DRAWN: PSA	DATED: 8/23/2010	CODE: <Code>	SIZE: C
CHECKED: Unchecked	DATED: N/A	DRAWING NO: 1	REV: 1
QUALITY CONTROL: PSA	DATED: 8/23/2010	SCALE: 1	
RELEASED: PSA	DATED: 8/23/2010	SHEET: 2 of 15	





Install either MCP1826S or LMZ10503
LMZs are switching regulators, MCP1826S is linear

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



3.3VIN is always-on 3.3V supply
 Powers:
 CY7C68013A EZ-USB FX2LP microcontroller
 TPS3828 supervisory IC
 Motorola M12M GPS
 ADG772 USB multiplexer
 External devices (via SDL I2C connector)
 LTC4215 hot-swap controller
 24LC128 EEPROM
 CSAC Rb clock
 PCA9518 I2C repeater

3.3V is the board-switched 3.3V supply
Powers everything else

NOTE:
Either USB or SBC must be plugged in to provide +5V
Board works without +5V, but the following outputs become weaker:

- 1) GPS PPS output to external Rb clock
- 2) Cal pulser output
- 3) General-purpose output
- 4) PPS LED

DRAWN: PSA	DATED: 8/23/2010
CHECKED: Unchecked	DATED: N/A
QUALITY CONTROL: PSA	DATED: 8/23/2010
RELEASED: PSA	DATED: 8/23/2010

COMPANY:		Ohio State University	
TITLE:		ATRI-1	
CODE:	SIZE:	DRAWING NO:	REV:
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SCALE: 1		SHEET: 4 of 15	

6

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4

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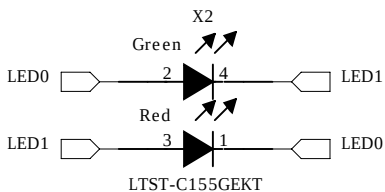
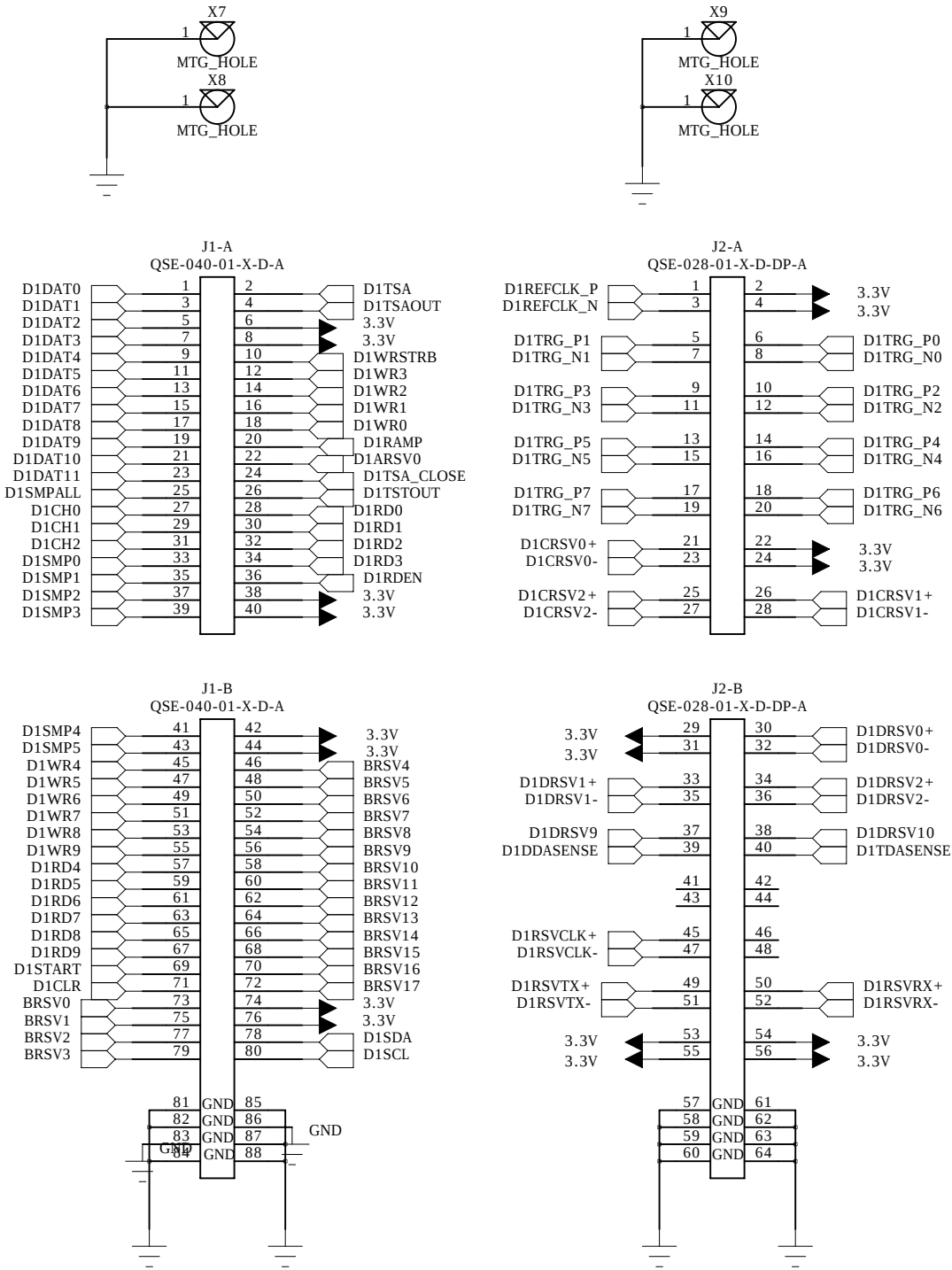
2

1

REVISION RECORD

LTR	ECO NO:	APPROVED:	DATE:

Daughterboard connector mounts



4 Charlieplexed LED control lines = 12 LEDs
D1 gets LED0/LED1
D2 gets LED1/LED2
D3 gets LED2/LED3
D4 gets LED0/LED2
FPGA_R1G1 get LED0/LED3
FPGA_R2G2 get LED1/LED3

DDASENSE/TDASENSE are pulled up on FPGA
Short to ground on DDA/TDA boards for presence detect

D*DRSV[6,4,3]+/- are board-to-board only

COMPANY: Ohio State University			
TITLE: ATRI-1			
CODE:	SIZE: C	DRAWING NO: 1	REV: 1
SCALE: 1	SHEET: 6 of 15		

DRAWN: PSA	DATED: 8/23/2010
CHECKED: Unchecked	DATED: N/A
QUALITY CONTROL: PSA	DATED: 8/23/2010
RELEASED: PSA	DATED: 8/23/2010

6

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4

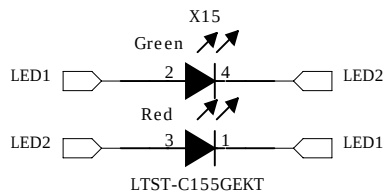
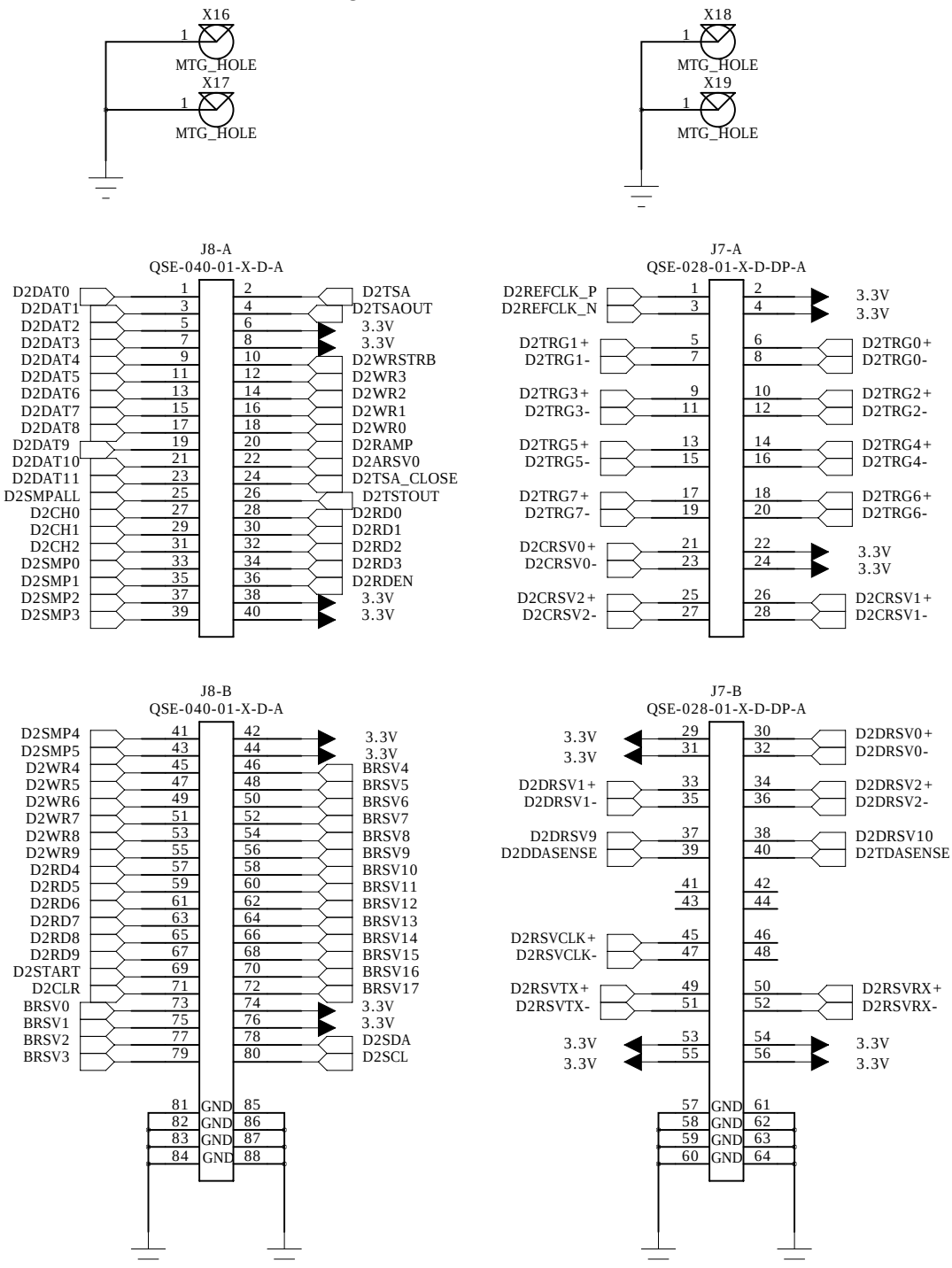
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2

1

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

Daughterboard connector mounts



4 Charlieplexed LED control lines = 12 LEDs
D1 gets LED0/LED1
D2 gets LED1/LED2
D3 gets LED2/LED3
D4 gets LED0/LED2
FPGA_R1G1 get LED0/LED3
FPGA_R2G2 get LED1/LED3

DDASENSE/TDASENSE are pulled up on FPGA
Short to ground on DDA/TDA boards for presence detect

COMPANY: Ohio State University			
TITLE: ATRI-1			
CODE:	SIZE: C	DRAWING NO: 1	REV: 1
SCALE: 1		SHEET: 7 of 15	

DRAWN: PSA	DATED: 8/23/2010
CHECKED: Unchecked	DATED: N/A
QUALITY CONTROL: PSA	DATED: 8/23/2010
RELEASED: PSA	DATED: 8/23/2010

6

5

4

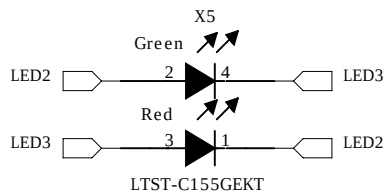
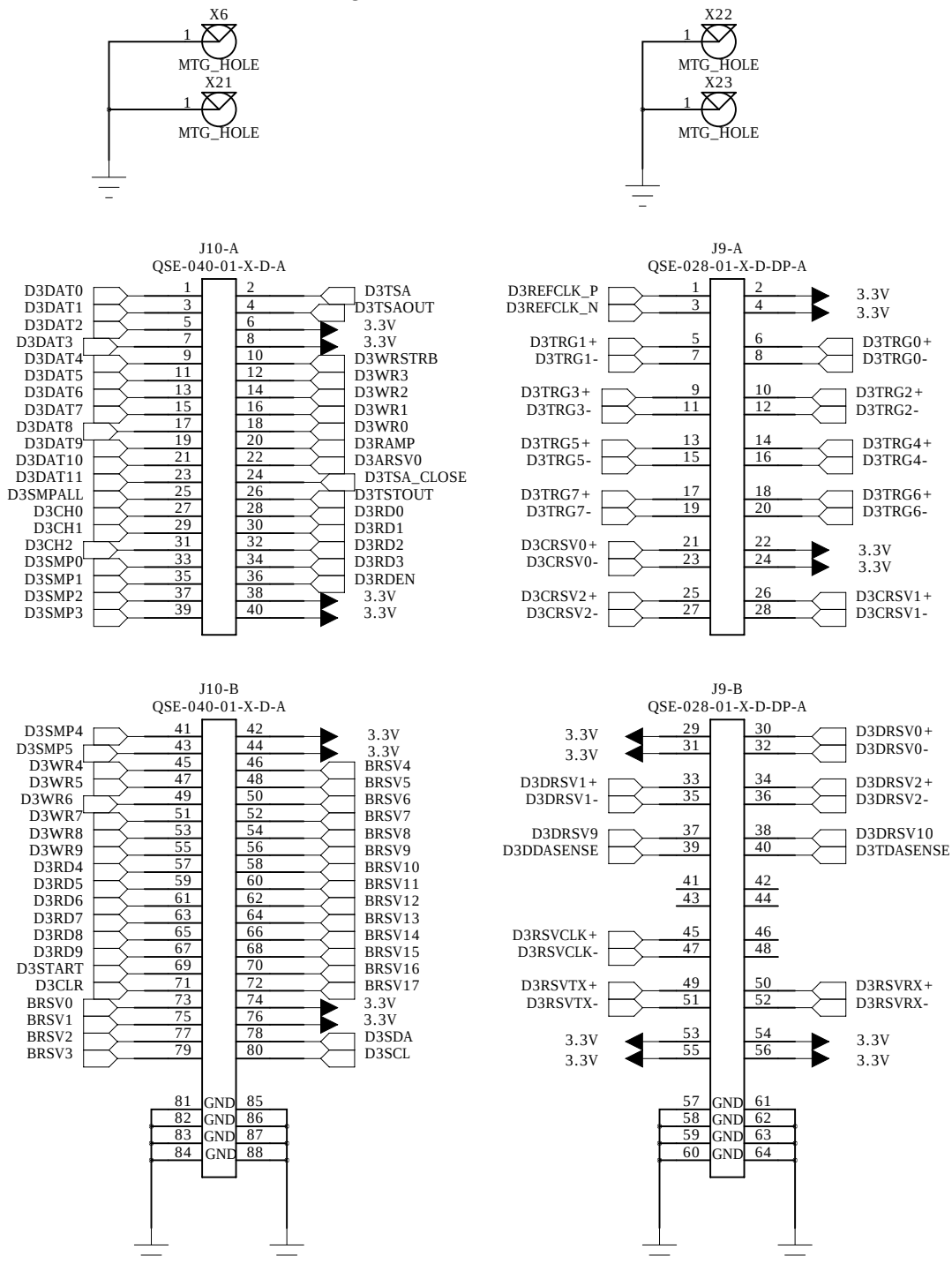
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2

1

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

Daughterboard connector mounts



4 Charlieplexed LED control lines = 12 LEDs
D1 gets LED0/LED1
D2 gets LED1/LED2
D3 gets LED2/LED3
D4 gets LED0/LED2
FPGA_R1G1 get LED0/LED3
FPGA_R2G2 get LED1/LED3

DDASENSE/TDASENSE are pulled up on FPGA
Short to ground on DDA/TDA boards for presence detect

COMPANY: Ohio State University			
TITLE: ATRI-1			
CODE:	SIZE: C	DRAWING NO: 1	REV: 1
SCALE: 1		SHEET: 8 of 15	

DRAWN: PSA	DATED: 8/23/2010
CHECKED: Unchecked	DATED: N/A
QUALITY CONTROL: PSA	DATED: 8/23/2010
RELEASED: PSA	DATED: 8/23/2010

6

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4

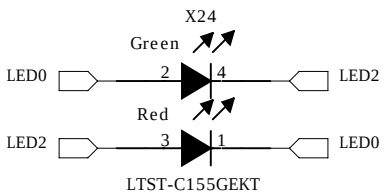
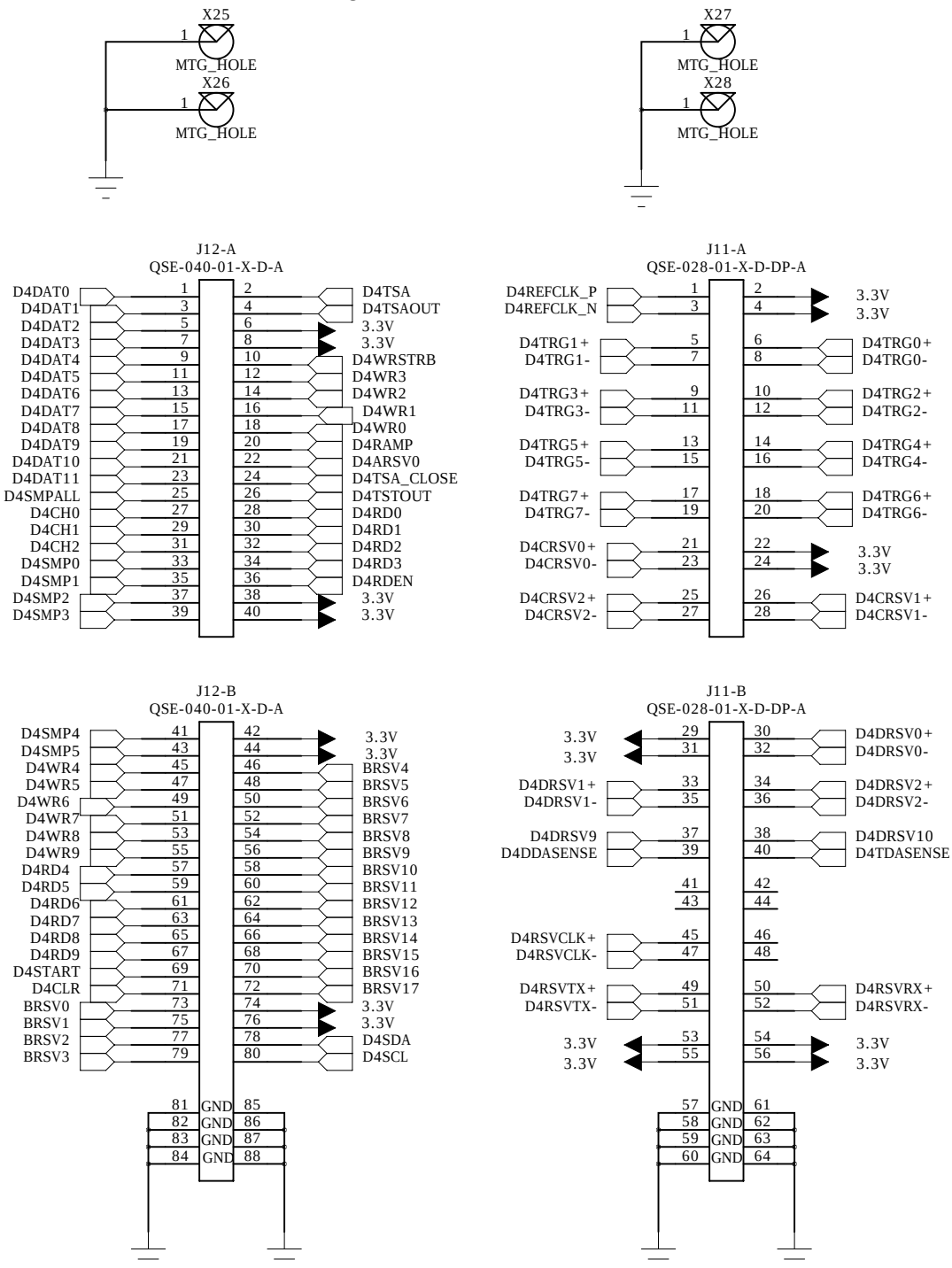
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2

1

REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

Daughterboard connector mounts

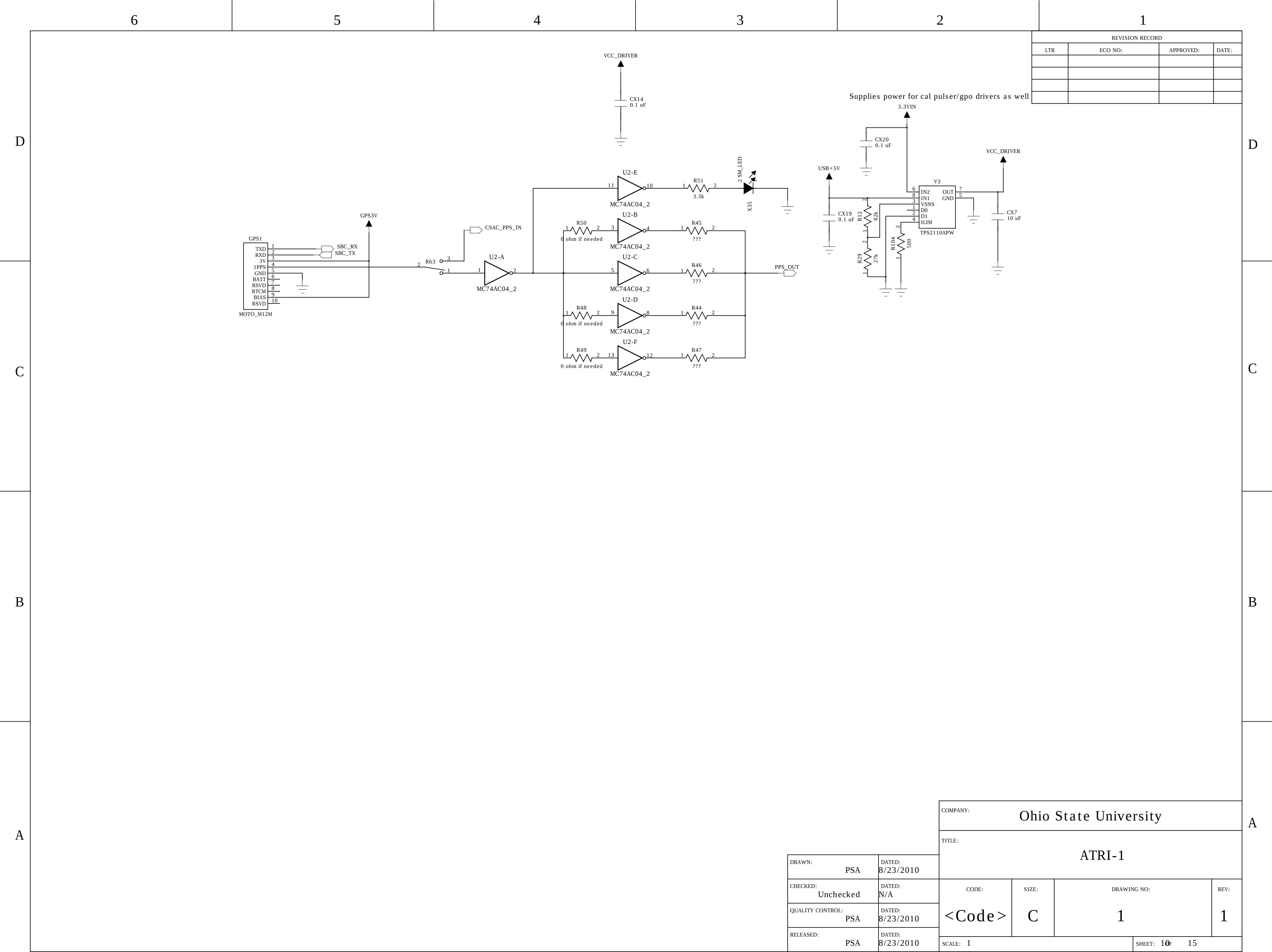


4 Charlieplexed LED control lines = 12 LEDs
D1 gets LED0/LED1
D2 gets LED1/LED2
D3 gets LED2/LED3
D4 gets LED0/LED2
FPGA_R1G1 get LED0/LED3
FPGA_R2G2 get LED1/LED3

DDASENSE/TDASENSE are pulled up on FPGA
Short to ground on DDA/TDA boards for presence detect

COMPANY: Ohio State University			
TITLE: ATRI-1			
CODE:	SIZE: C	DRAWING NO: 1	REV: 1
SCALE: 1		SHEET: 9 of 15	

DRAWN: PSA	DATED: 8/23/2010
CHECKED: Unchecked	DATED: N/A
QUALITY CONTROL: PSA	DATED: 8/23/2010
RELEASED: PSA	DATED: 8/23/2010



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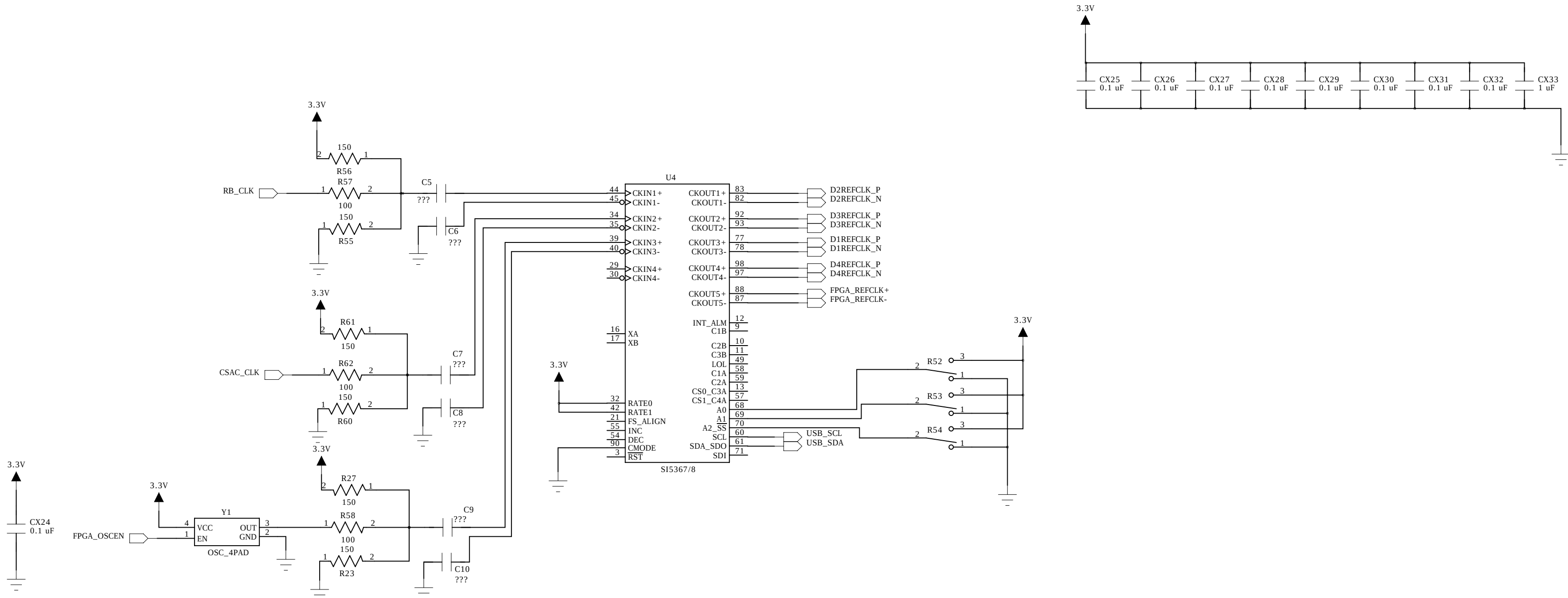
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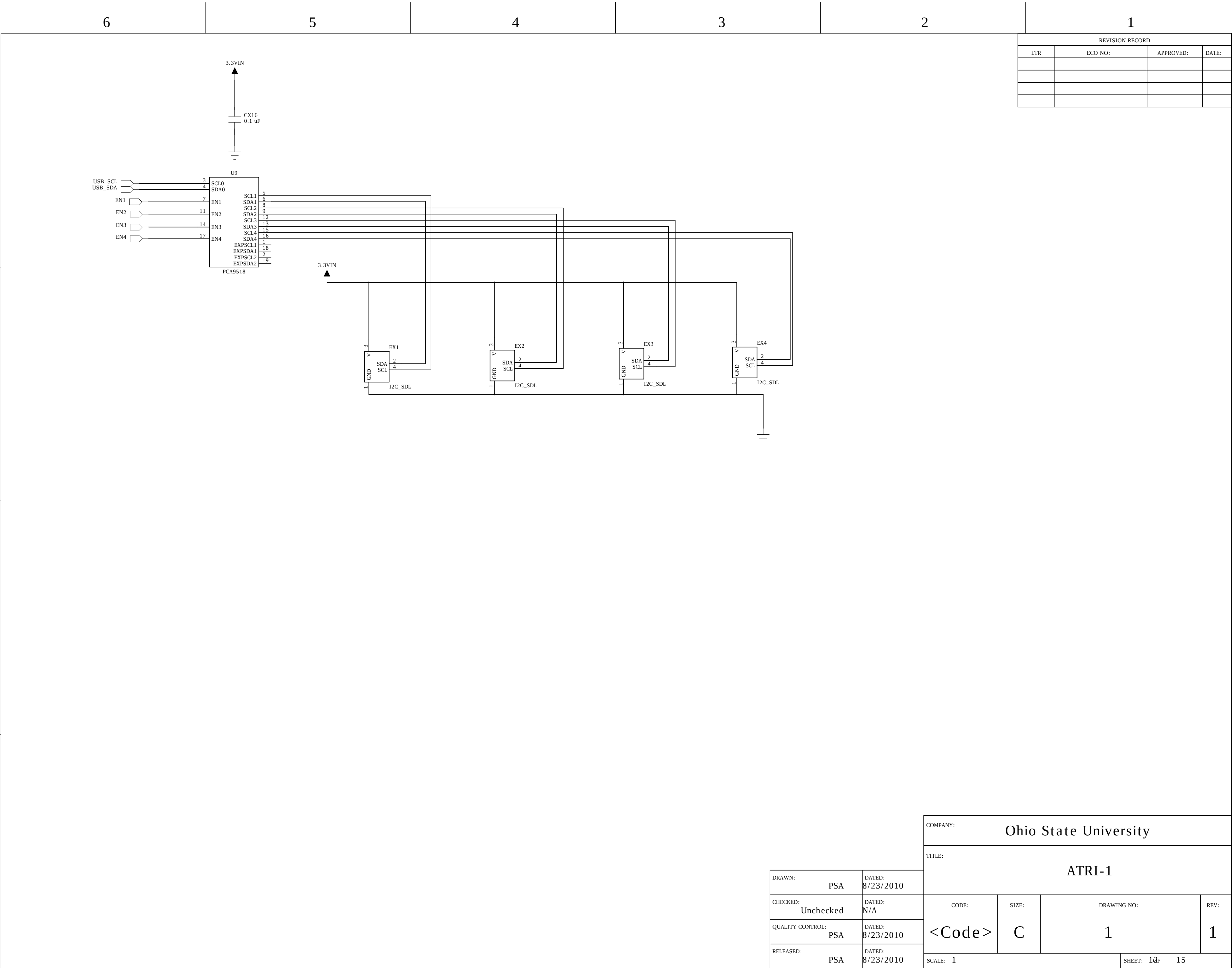
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REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:



COMPANY: Ohio State University			
TITLE: ATRI-1			
CODE:	SIZE: C	DRAWING NO: 1	REV: 1
SCALE: 1		SHEET: 1dF 15	

DRAWN: PSA	DATED: 8/23/2010
CHECKED: Unchecked	DATED: N/A
QUALITY CONTROL: PSA	DATED: 8/23/2010
RELEASED: PSA	DATED: 8/23/2010



REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

DRAWN: PSA		DATED: 8/23/2010		COMPANY: Ohio State University			
CHECKED: Unchecked		DATED: N/A		TITLE: ATRI-1			
QUALITY CONTROL: PSA		DATED: 8/23/2010		CODE: <Code>	SIZE: C	DRAWING NO: 1	REV: 1
RELEASED: PSA		DATED: 8/23/2010		SCALE: 1			SHEET: 1 of 15

