

ADC Channels 3, 4, 3A And 4A

REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:

D

D

C

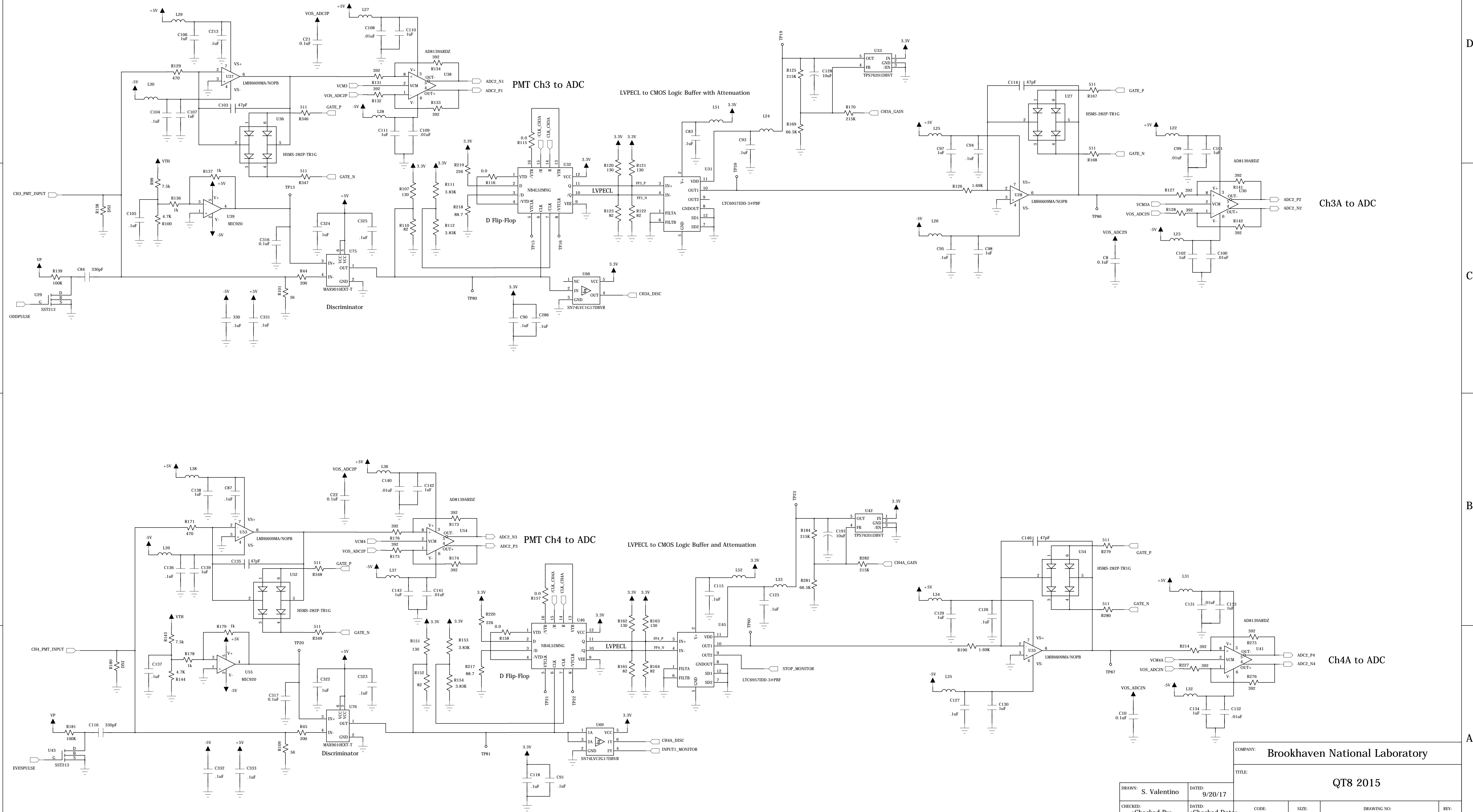
C

B

B

A

A



Note: All LVPECL traces to be 50 ohm

COMPANY: Brookhaven National Laboratory			
TITLE: QT8 2015			
DRAWN: S. Valentino	DATED: 9/20/17	CODE:	SIZE:
CHECKED: <Checked By>	DATED: <Checked Date>	DRAWING NO: TRIG-QT8_2015-SCH-1.5	REV: 5
QUALITY CONTROL: <QC By>	DATED: <QC Date>	SCALE: <Scale>	SHEET: 2 of 5
RELEASED: S. Valentino	DATED: June 2017		

D

C

B

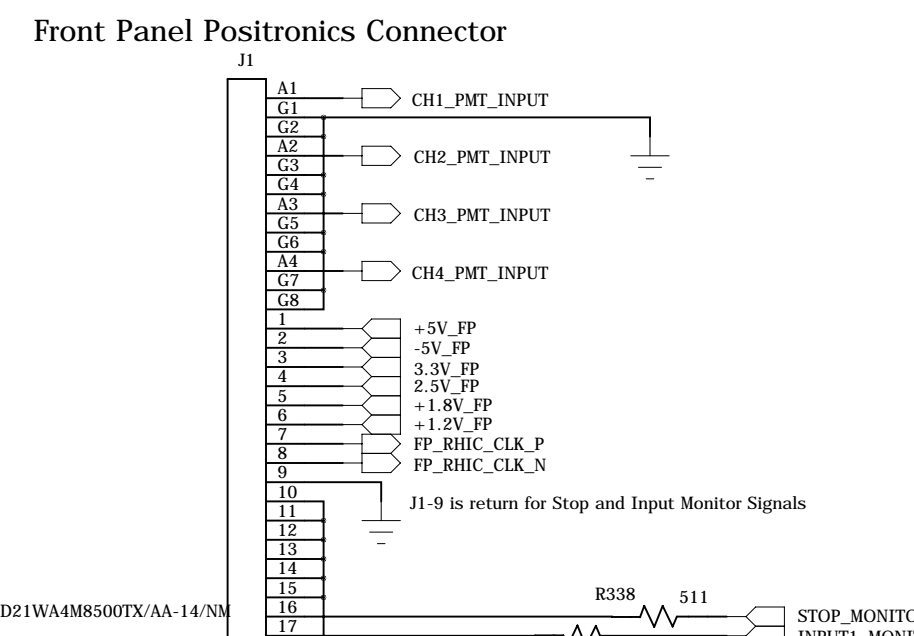
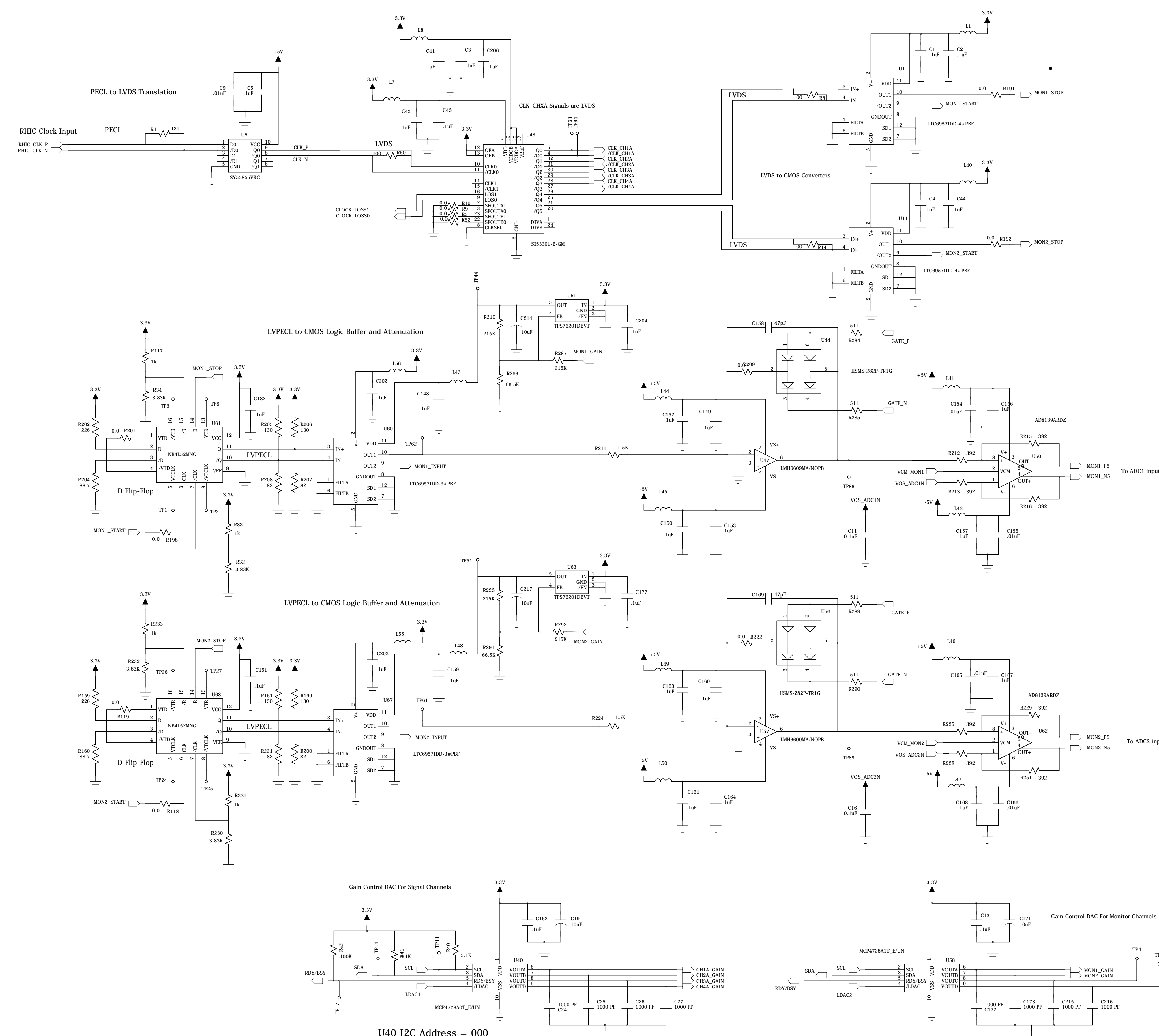
A

D

C

B

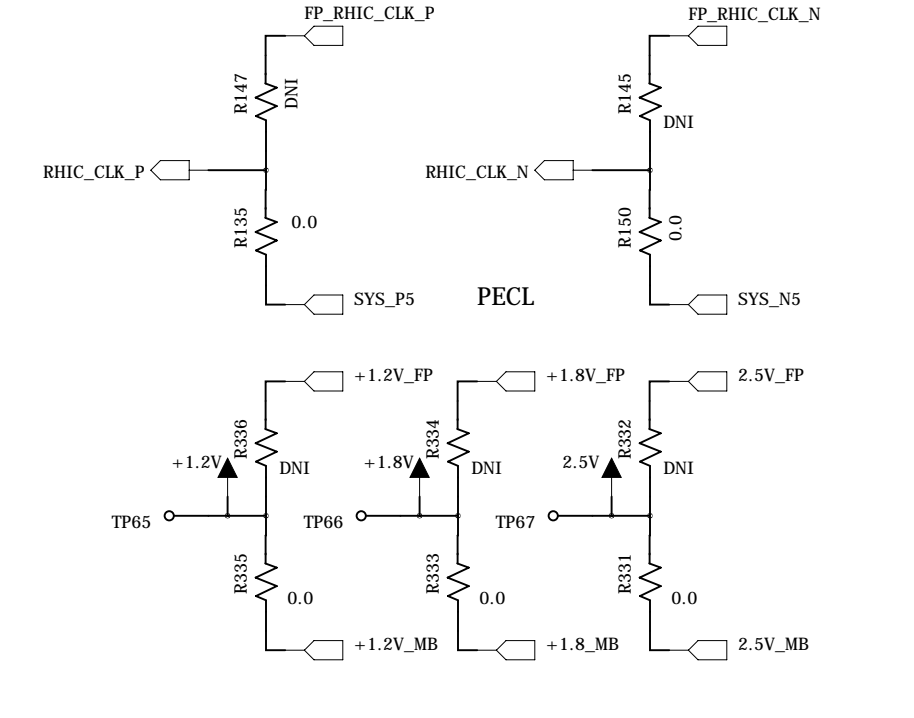
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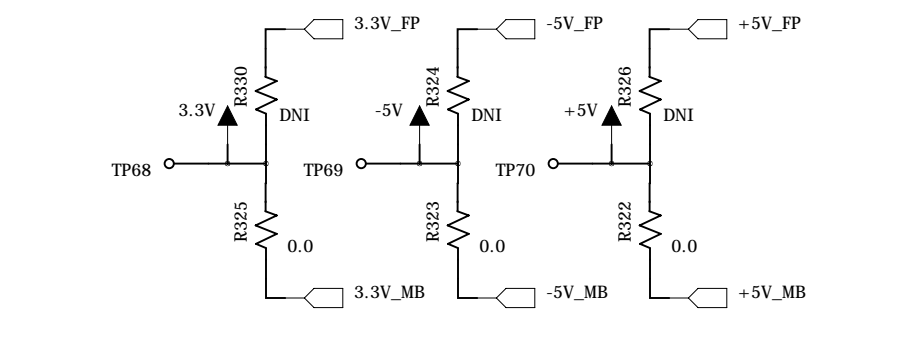
REVISION RECORD			
LTR	ECO NO:	APPROVED:	DATE:

71436-2464			
BUS_D0	1	BUS_A21	2
BUS_D1	2	BUS_A20	3
BUS_D2	3	BUS_A19	4
BUS_D3	4	BUS_A18	5
BUS_D4	5	BUS_A17	6
BUS_D5	6	BUS_A16	7
BUS_D6	7	BUS_A15	8
BUS_D7	8	BUS_A14	9
BUS_D8	9	BUS_A13	10
BUS_D9	10	BUS_A12	11
BUS_D10	11	BUS_A11	12
BUS_D11	12	BUS_A10	13
BUS_D12	13	BUS_A9	14
BUS_D13	14	BUS_A8	15
BUS_D14	15	BUS_A7	16
BUS_D15	16	BUS_A6	17
BUS_D16	17	BUS_A5	18
BUS_D17	18	BUS_A4	19
BUS_D18	19	BUS_A3	20
BUS_D19	20	BUS_A2	21
BUS_D20	21	BUS_A1	22
BUS_D21	22	BUS_A0	23
BUS_D22	23	BUS_CONTROLE	24
BUS_D23	24	BUS_CONTROLE	25
BUS_D24	25	BUS_CONTROLE	26
BUS_D25	26	BUS_CONTROLE	27
BUS_D26	27	BUS_CONTROLE	28
BUS_D27	28	BUS_CONTROLE	29
BUS_D28	29	BUS_CONTROLE	30
BUS_D29	30	BUS_CONTROLE	31
BUS_D30	31	BUS_CONTROLE	32
BUS_D31	32	BUS_CONTROLE	33

Place R147, R145, R135 and R150 to minimize stub length.

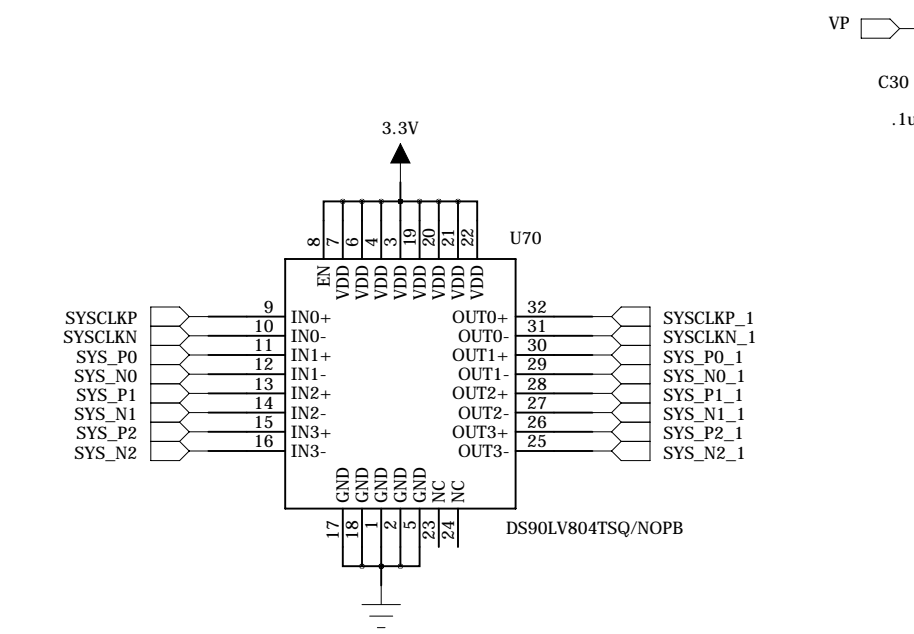


71436-2464			
SUM_IN0	1	SUM_OUT0	2
SUM_IN1	2	SUM_OUT1	3
SUM_IN2	3	SUM_OUT2	4
SUM_IN3	4	SUM_OUT3	5
SUM_IN4	5	SUM_OUT4	6
SUM_IN5	6	SUM_OUT5	7
SUM_IN6	7	SUM_OUT6	8
SUM_IN7	8	SUM_OUT7	9
SUM_IN8	9	SUM_OUT8	10
SUM_IN9	10	SUM_OUT9	11
SUM_IN10	11	SUM_OUT10	12
SUM_IN11	12	SUM_OUT11	13
SUM_IN12	13	SUM_OUT12	14
SUM_IN13	14	SUM_OUT13	15
SUM_IN14	15	SUM_OUT14	16
SUM_IN15	16	SUM_OUT15	17
SUM_IN16	17	SUM_OUT16	18
SUM_IN17	18	SUM_OUT17	19
SUM_IN18	19	SUM_OUT18	20
SUM_IN19	20	SUM_OUT19	21
SUM_IN20	21	SUM_OUT20	22
SUM_IN21	22	SUM_OUT21	23
SUM_IN22	23	SUM_OUT22	24
SUM_IN23	24	SUM_OUT23	25
SUM_IN24	25	SUM_OUT24	26
SUM_IN25	26	SUM_OUT25	27
SUM_IN26	27	SUM_OUT26	28
SUM_IN27	28	SUM_OUT27	29
SUM_IN28	29	SUM_OUT28	30
SUM_IN29	30	SUM_OUT29	31
SUM_IN30	31	SUM_OUT30	32
SUM_IN31	32	SUM_OUT31	33
SUM_IN32	33	SUM_OUT32	34
SUM_IN33	34	SUM_OUT33	35
SUM_IN34	35	SUM_OUT34	36
SUM_IN35	36	SUM_OUT35	37
SUM_IN36	37	SUM_OUT36	38
SUM_IN37	38	SUM_OUT37	39
SUM_IN38	39	SUM_OUT38	40
SUM_IN39	40	SUM_OUT39	41
SUM_IN40	41	SUM_OUT40	42
SUM_IN41	42	SUM_OUT41	43
SUM_IN42	43	SUM_OUT42	44
SUM_IN43	44	SUM_OUT43	45
SUM_IN44	45	SUM_OUT44	46
SUM_IN45	46	SUM_OUT45	47
SUM_IN46	47	SUM_OUT46	48
SUM_IN47	48	SUM_OUT47	49
SUM_IN48	49	SUM_OUT48	50
SUM_IN49	50	SUM_OUT49	51
SUM_IN50	51	SUM_OUT50	52
SUM_IN51	52	SUM_OUT51	53
SUM_IN52	53	SUM_OUT52	54
SUM_IN53	54	SUM_OUT53	55
SUM_IN54	55	SUM_OUT54	56
SUM_IN55	56	SUM_OUT55	57
SUM_IN56	57	SUM_OUT56	58
SUM_IN57	58	SUM_OUT57	59
SUM_IN58	59	SUM_OUT58	60
SUM_IN59	60	SUM_OUT59	61
SUM_IN60	61	SUM_OUT60	62
SUM_IN61	62	SUM_OUT61	63
SUM_IN62	63	SUM_OUT62	64

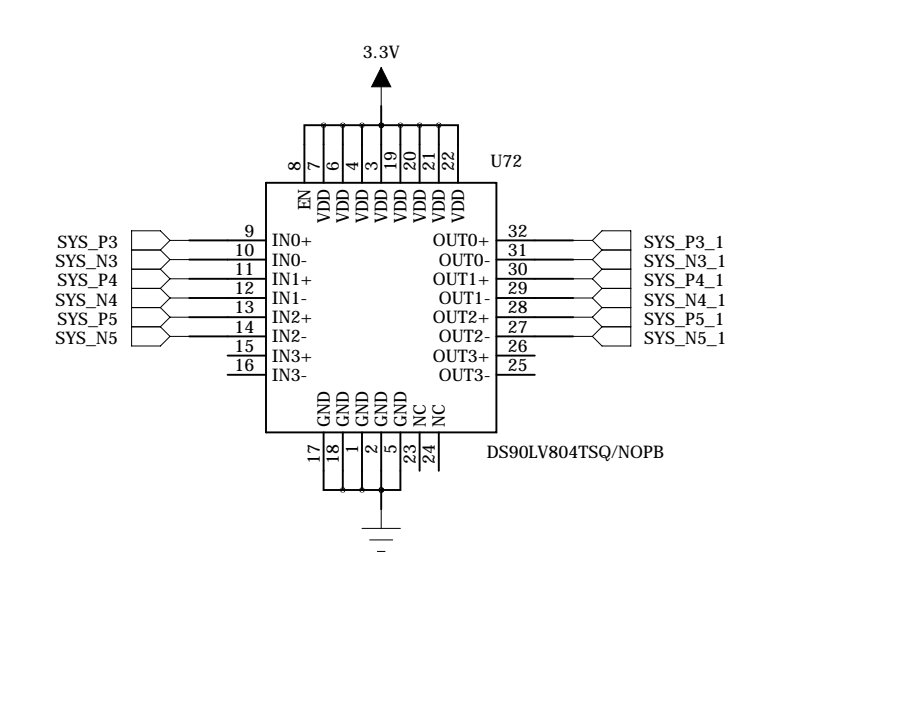


71436-2464			
HI_IN0	1	HI_OUT0	2
HI_IN1	2	HI_OUT1	3
HI_IN2	3	HI_OUT2	4
HI_IN3	4	HI_OUT3	5
HI_IN4	5	HI_OUT4	6
HI_IN5	6	HI_OUT5	7
HI_IN6	7	HI_OUT6	8
HI_IN7	8	HI_OUT7	9
HI_IN8	9	HI_OUT8	10
HI_IN9	10	HI_OUT9	11
HI_IN10	11	HI_OUT10	12
HI_IN11	12	HI_OUT11	13
HI_IN12	13	HI_OUT12	14
HI_IN13	14	HI_OUT13	15
HI_IN14	15	HI_OUT14	16
HI_IN15	16	HI_OUT15	17
HI_IN16	17	HI_OUT16	18
HI_IN17	18	HI_OUT17	19
HI_IN18	19	HI_OUT18	20
HI_IN19	20	HI_OUT19	21
HI_IN20	21	HI_OUT20	22
HI_IN21	22	HI_OUT21	23
HI_IN22	23	HI_OUT22	24
HI_IN23	24	HI_OUT23	25
HI_IN24	25	HI_OUT24	26
HI_IN25	26	HI_OUT25	27
HI_IN26	27	HI_OUT26	28
HI_IN27	28	HI_OUT27	29
HI_IN28	29	HI_OUT28	30
HI_IN29	30	HI_OUT29	31
HI_IN30	31	HI_OUT30	32
HI_IN31	32	HI_OUT31	33
HI_IN32	33	HI_OUT32	34
HI_IN33	34	HI_OUT33	35
HI_IN34	35	HI_OUT34	36
HI_IN35	36	HI_OUT35	37
HI_IN36	37	HI_OUT36	38
HI_IN37	38	HI_OUT37	39
HI_IN38	39	HI_OUT38	40
HI_IN39	40	HI_OUT39	41
HI_IN40	41	HI_OUT40	42
HI_IN41	42	HI_OUT41	43
HI_IN42	43	HI_OUT42	44
HI_IN43	44	HI_OUT43	45
HI_IN44	45	HI_OUT44	46
HI_IN45	46	HI_OUT45	47
HI_IN46	47	HI_OUT46	48
HI_IN47	48	HI_OUT47	49
HI_IN48	49	HI_OUT48	50
HI_IN49	50	HI_OUT49	51
HI_IN50	51	HI_OUT50	52
HI_IN51	52	HI_OUT51	53
HI_IN52	53	HI_OUT52	54
HI_IN53	54	HI_OUT53	55
HI_IN54	55	HI_OUT54	56
HI_IN55	56	HI_OUT55	57
HI_IN56	57	HI_OUT56	58
HI_IN57	58	HI_OUT57	59
HI_IN58	59	HI_OUT58	60
HI_IN59	60	HI_OUT59	61
HI_IN60	61	HI_OUT60	62
HI_IN61	62	HI_OUT61	63
HI_IN62	63	HI_OUT62	64

Board can be powered from separate PS board or through backplane.



71436-2464			
VTH	1	LEVEL_OUT0	2
EVENPULSE	2	LEVEL_OUT1	3
LEVEL_OUT4	3	LEVEL_OUT2	4
LEVEL_OUT5	4	LEVEL_OUT3	5
LEVEL_OUT6	5	LEVEL_OUT4	6
LEVEL_OUT7	6	LEVEL_OUT5	7
LEVEL_OUT8	7	LEVEL_OUT6	8
LEVEL_OUT9	8	LEVEL_OUT7	9
LEVEL_OUT10	9	LEVEL_OUT8	10
LEVEL_OUT11	10	LEVEL_OUT9	11
LEVEL_OUT12	11	LEVEL_OUT10	12
LEVEL_OUT13	12	LEVEL_OUT11	13
LEVEL_OUT14	13	LEVEL_OUT12	14
LEVEL_OUT15	14	LEVEL_OUT13	15
LEVEL_OUT16	15	LEVEL_OUT14	16
LEVEL_OUT17	16	LEVEL_OUT15	17
LEVEL_OUT18	17	LEVEL_OUT16	18
LEVEL_OUT19	18	LEVEL_OUT17	19
LEVEL_OUT20	19	LEVEL_OUT18	20
LEVEL_OUT21	20	LEVEL_OUT19	21
LEVEL_OUT22	21	LEVEL_OUT20	22
LEVEL_OUT23	22	LEVEL_OUT21	23
LEVEL_OUT24	23	LEVEL_OUT22	24
LEVEL_OUT25	24	LEVEL_OUT23	25
LEVEL_OUT26	25	LEVEL_OUT24	26
LEVEL_OUT27	26	LEVEL_OUT25	27
LEVEL_OUT28	27	LEVEL_OUT26	28
LEVEL_OUT29	28	LEVEL_OUT27	29
LEVEL_OUT30	29	LEVEL_OUT28	30
LEVEL_OUT31	30	LEVEL_OUT29	31
LEVEL_OUT32	31	LEVEL_OUT30	32
LEVEL_OUT33	32	LEVEL_OUT31	33
LEVEL_OUT34	33	LEVEL_OUT32	34
LEVEL_OUT35	34	LEVEL_OUT33	35
LEVEL_OUT36	35	LEVEL_OUT34	36
LEVEL_OUT37	36	LEVEL_OUT35	37
LEVEL_OUT38	37	LEVEL_OUT36	38
LEVEL_OUT39	38	LEVEL_OUT37	39
LEVEL_OUT40	39	LEVEL_OUT38	40
LEVEL_OUT41	40	LEVEL_OUT39	41
LEVEL_OUT42	41	LEVEL_OUT40	42
LEVEL_OUT43	42	LEVEL_OUT41	43
LEVEL_OUT44	43	LEVEL_OUT42	44
LEVEL_OUT45	44	LEVEL_OUT43	45
LEVEL_OUT46	45	LEVEL_OUT44	46
LEVEL_OUT47	46	LEVEL_OUT45	47
LEVEL_OUT48	47	LEVEL_OUT46	48
LEVEL_OUT49	48	LEVEL_OUT47	49
LEVEL_OUT50	49	LEVEL_OUT48	50
LEVEL_OUT51	50	LEVEL_OUT49	51
LEVEL_OUT52	51	LEVEL_OUT50	52
LEVEL_OUT53	52	LEVEL_OUT51	53
LEVEL_OUT54	53	LEVEL_OUT52	54
LEVEL_OUT55	54	LEVEL_OUT53	55
LEVEL_OUT56	55	LEVEL_OUT54	56
LEVEL_OUT57	56	LEVEL_OUT55	57
LEVEL_OUT58	57	LEVEL_OUT56	58
LEVEL_OUT59	58	LEVEL_OUT57	59
LEVEL_OUT60	59	LEVEL_OUT58	60
LEVEL_OUT61	60	LEVEL_OUT59	61
LEVEL_OUT62	61	LEVEL_OUT60	62
LEVEL_OUT63	62	LEVEL_OUT61	63
LEVEL_OUT64	63	LEVEL_OUT62	64



71436-2464			
SYS_P3	1	SYS_P3_1	2
SYS_P3	2	SYS_P3_1	3
SYS_P3	3	SYS_P3_1	4
SYS_P3	4	SYS_P3_1	5
SYS_P3	5	SYS_P3_1	6
SYS_P3	6	SYS_P3_1	7
SYS_P3	7	SYS_P3_1	8
SYS_P3	8	SYS_P3_1	9
SYS_P3	9	SYS_P3_1	10
SYS_P3	10	SYS_P3_1	11
SYS_P3	11	SYS_P3_1	12
SYS_P3	12	SYS_P3_1	13
SYS_P3	13	SYS_P3_1	14
SYS_P3	14	SYS_P3_1	15
SYS_P3	15	SYS_P3_1	16
SYS_P3	16	SYS_P3_1	17
SYS_P3	17	SYS_P3_1	18
SYS_P3	18	SYS_P3_1	19
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SYS_P3	20	SYS_P3_1	21
SYS_P3	21	SYS_P3_1	22
SYS_P3	22	SYS_P3_1	23
SYS_P3	23	SYS_P3_1	24
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SYS_P3	25	SYS_P3_1	26
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SYS_P3	30	SYS_P3_1	31
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SYS_P3	46	SYS_P3_1	47
SYS_P3	47	SYS_P3_1	48
SYS_P3	48	SYS_P3_1	49
SYS_P3	49	SYS_P3_1	50
SYS_P3	50	SYS_P3_1	51
SYS_P3	51	SYS_P3_1	52
SYS_P3	52	SYS_P3_1	53
SYS_P3	53	SYS_P3_1	54
SYS_P3	54	SYS_P3_1	55
SYS_P3	55	SYS_P3_1	56
SYS_P3	56	SYS_P3_1	57
SYS_P3	57	SYS_P3_1	58
SYS_P3	58	SYS_P3_1	59
SYS_P3	59	SYS_P3_1	60
SYS_P3	60	SYS_P3_1	61
SYS_P3	61	SYS_P3_1	62
SYS_P3	62	SYS_P3_1	63
SYS_P3	63	SYS_P3_1	64

COMPANY: Brookhaven National Laboratory

TITLE: QT8 2015

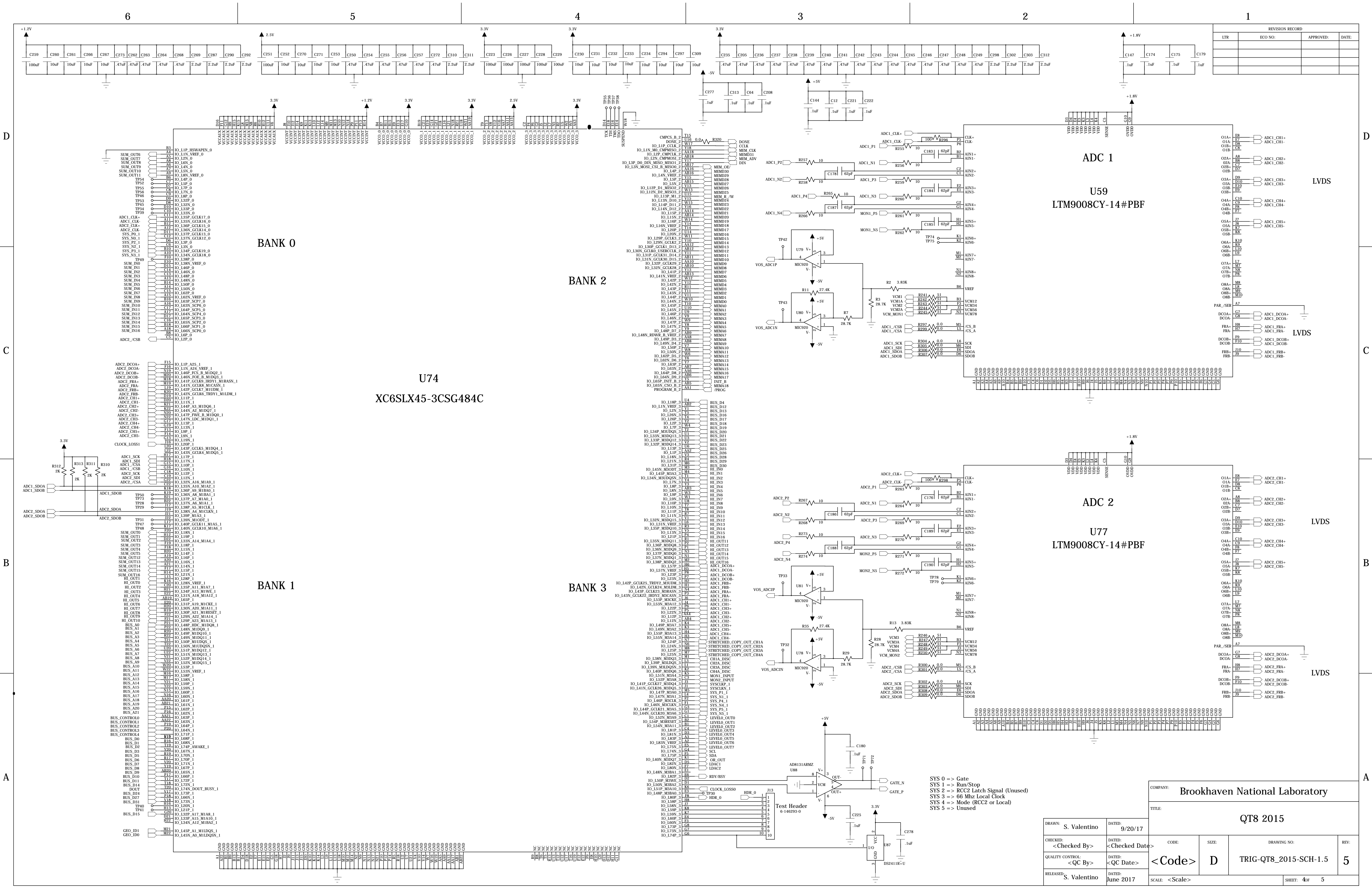
DRAWN: S. Valentino DATED: 9/20/17

CHECKED: <Checked By> DATED: <Checked Date>

QUALITY CONTROL: <QC By> DATED: <QC Date>

RELEASED: S. Valentino DATED: June 2017

CODE: <Code>	SIZE: D
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REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:

BANK 0

BANK 1

BANK 2

BANK 3

U74
XC6SLX45-3CSG484C

ADC 1
U59
LTM9008CY-14#PBF

ADC 2
U77
LTM9008CY-14#PBF

SYS 0 => Gate
SYS 1 => Run/Stop
SYS 2 => RC22 Latch Signal (Unused)
SYS 3 => 60 Mhz Local Clock
SYS 4 => Mode (RC22 or Local)
SYS 5 => Unused

COMPANY: Brookhaven National Laboratory			
TITLE: QT8 2015			
DRAWN: S. Valentino	DATED: 9/20/17	CODE:	SIZE:
CHECKED: <Checked By>	DATED: <Checked Date>	DRAWING NO: <Code>	REV: 5
QUALITY CONTROL: <QC By>	DATED: <QC Date>	SCALE: <Scale>	SHEET: 4 of 5
RELEASED: S. Valentino	DATED: June 2017		

REVISION RECORD			
LTR	ECO NO.	APPROVED:	DATE:

Revision Notes:

Revision 1.2: PCB: TRIG-QT8_2015-PCB-0 (OCT. 2015)

1. For Use with QT32B Mother Board

Revision 1.2: PCB: TRIG-QT8_2015-PCB-1 (MARCH 2016)

1. Change R2, R13 from 3.48K to 3.83K
2. Change R11, R35 from 28.7K to 27.4K
3. For Use with QT32B Mother Board

Revision 1.3: PCB: TRIG-QT8_2015-PCB-1 (MARCH 2016)

1. Change R147, R145, R336, R334, R332, R330, R324, R326 form 0 Ohm to DNI
2. Change R135, R150, R335, R333, R331, R325, R323, R322 From DNI to 0 Ohm
3. For Use with QT32C Mother Board

Revision 1.4: PCB: TRIG-QT8_2015-PCB-2 (JUNE 2017)

1. Change R232, R230, R34 and R32 From 1K to 3.83K
2. Add C314, C315, C316, C317, C326, C327, C328, C329, C330, C331, C332, C333 R19, R21, R44, R45
3. Remove D1, D2, D3, D4, C10, C11, C112, C113, C117, C120, C123, C145, C170, C181, C20, C21, C211, C212, C218, C219, C224, C274
C275, C276, C295, C299, C300, C304, C306, C308, C32, C54, C56, C57, C59, C60, C7, C88, C305, C301, C85, C258, C96, U71, U73
C86, C296, C124, C307, C121, C16, C18, C209, C289, C34, C22, C5, C8, C291, C55, C81
4. Change R53, R85, R129, R171 From 470 OHMS TO 4.7K
5. Change C45, C71, C103, C135 FROM 47pf TO 4.7pf
6. Change U64, U65, U66, U69 From SN65EPT23DGK to SN74LVC1G17DBVR
7. Change R17, R18, R100, R144 FROM 665 Ohms TO 4.7K
8. Remove R27, R26, R70, R69, R114, R113, R156, R155, R319
9. Add TP80, TP81, TP82, TP83, TP84, TP85, TP86, TP88, TP89
10. Modified For EPD. For Use with QT32C Mother Board

Revision 1.5: PCB: TRIG-QT8_2015-PCB-3 (October 2017)

1. Change R129, R171, R53, R85 from 4.7K to 470 Ohms
2. Change C45, C71, C103, C135 FROM 4.7pf TO 470pf
3. Change R188, R95, R139, R181 to 100K
4. Change C15, C31, C84, C116 to 330pf
5. Add C6, C7, C8, C10, C11, C16, C18, C20, C21

Build Notes:

Revision 1.1:

First Prototype

Revision 1.2:

For Use w/PS board and QT32B

Revision 1.3:

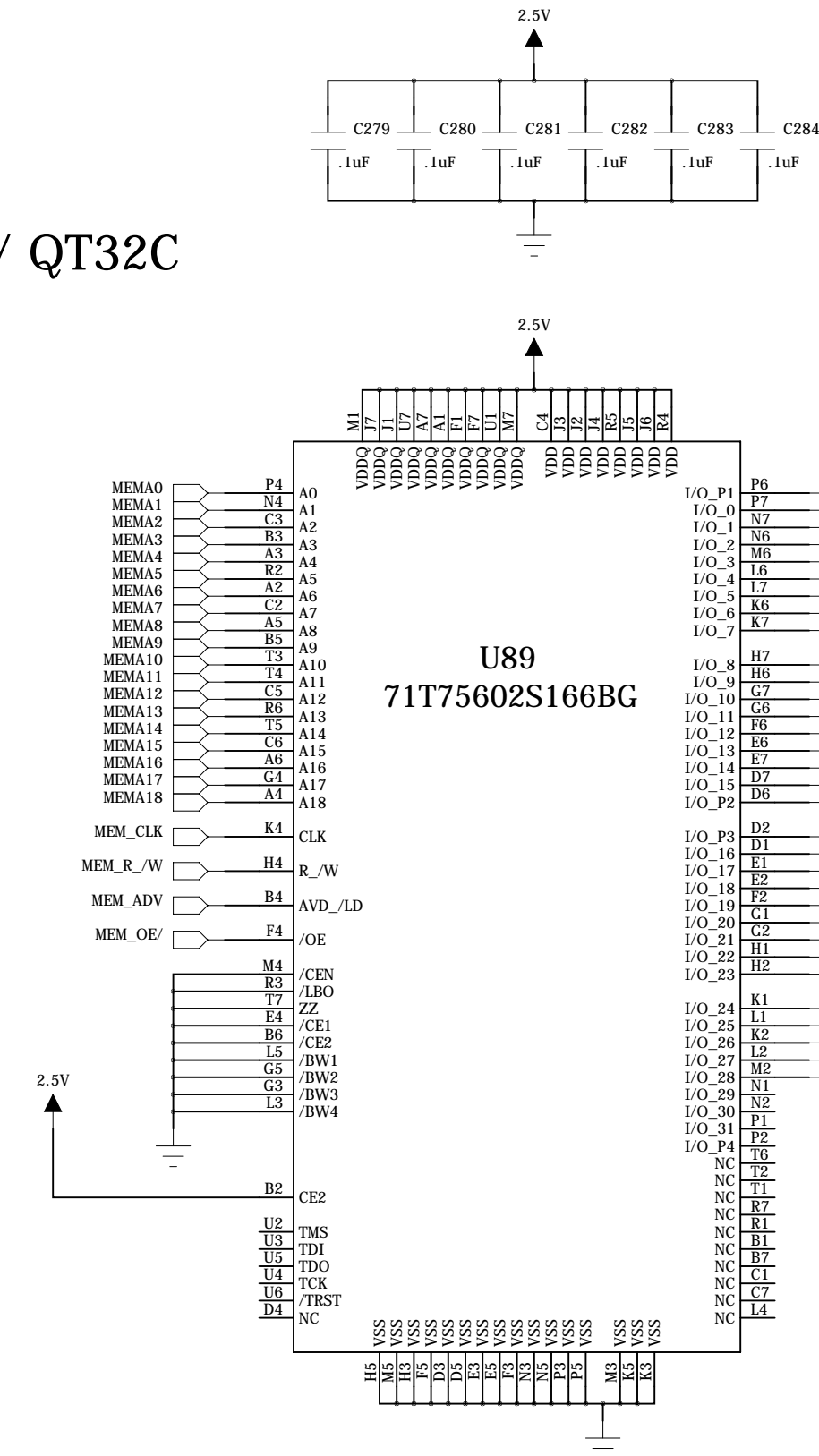
For Use w/ QT32C

Revision 1.4:

EPD Version Prototype. For Use w/ QT32C

Revision 1.5:

EPD Version Production Version. For Use w/ QT32C



COMPANY: Brookhaven National Laboratory			
TITLE: QT8 2015			
DRAWN: S. Valentino	DATED: 9/20/17	CODE: <Code>	SIZE: D
CHECKED: <Checked By>	DATED: <Checked Date>	QUALITY CONTROL: <QC By>	DATED: <QC Date>
RELEASED: S. Valentino	DATED: June 2017	DRAWING NO: TRIG-QT8_2015-SCH-1.5	
SCALE: <Scale>		REV: 5	
		SHEET: 5OF 5	