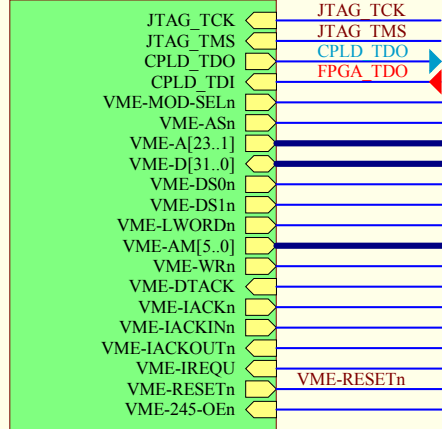


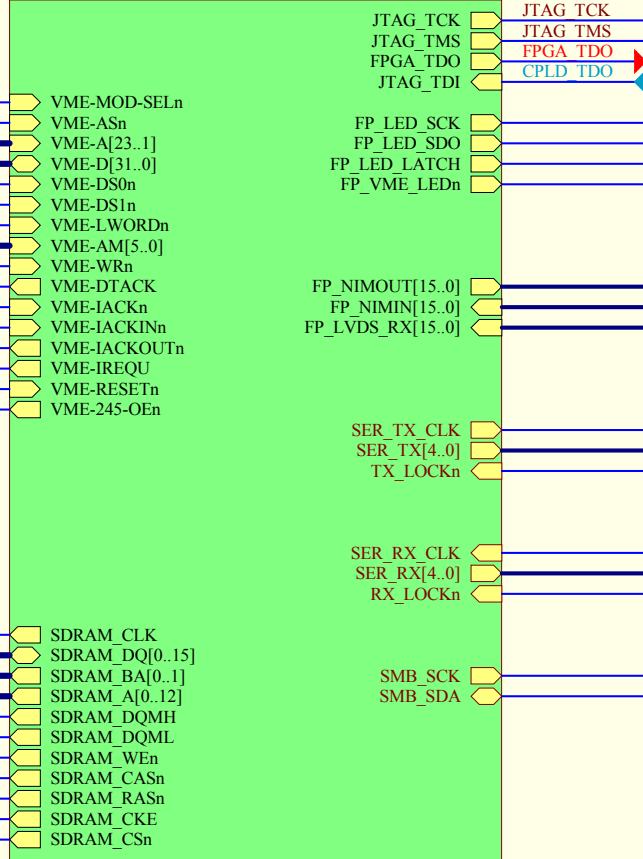
VME

VME-NIMIO32 - VME Interface.SchDoc



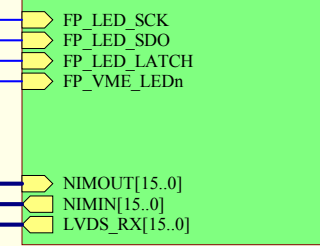
FPGA

VME-NIMIO32 - Trigger Logic.SCHDOC



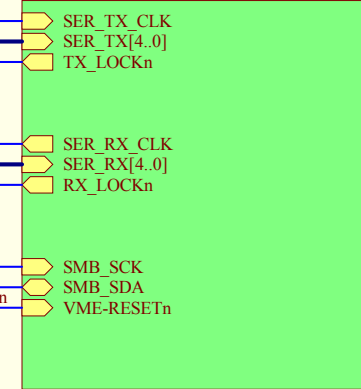
FP

VME-NIMIO32 - Front Panel.SCHDOC



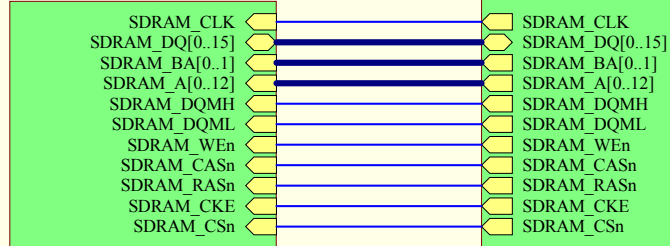
SERIAL

VME - NIMIO32 - High Speed Serial.SchDoc



SDRAM

VME-NIMIO32 - SDRAM.SCHDOC




REG

VME-NIMIO32 - Voltage Regulators.SCHDOC

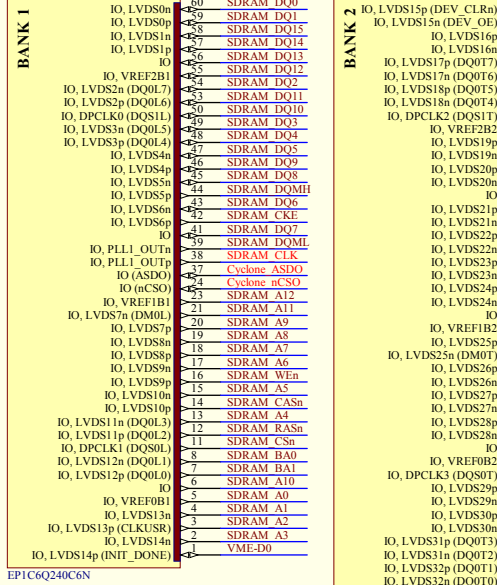


VME - NIMIO32 - Top Level

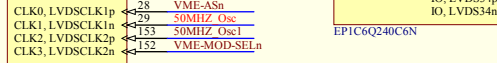
TRIUMF
LOGO

Revision 1	Drawing #: 1		TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3	
	Sheet #: 1 of 14	Size: A		
	Drawn by: D.Bishop	Date: 5/5/2010		
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CY1A



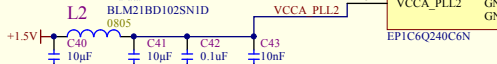
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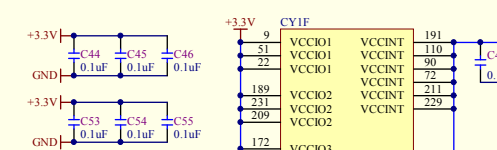
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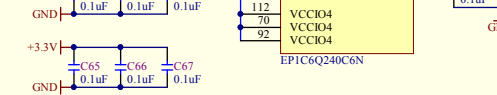
CY1D



CY1E



CY1F



CY1G



CY1H



CY1I

CY1J

CY1K

CY1L

CY1M

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CY1O

CY1P

CY1Q

CY1R

CY1S

CY1T

CY1U

CY1V

CY1W

CY1X

CY1Y

CY1Z

CY2A

CY2B

CY2C

CY2D

CY2E

CY2F

CY2G

CY2H

CY2I

CY2J

CY2K

CY2L

CY2M

CY2N

CY2O

CY2P

CY2Q

CY2R

CY2S

CY2T

CY2U

CY2V

CY2W

CY2X

CY2Y

CY2Z

CY3A

CY3B

CY3C

CY3D

CY3E

CY3F

CY3G

CY3H

CY3I

CY3J

CY3K

CY3L

CY3M

CY3N

CY3O

CY3P

CY3Q

CY3R

CY3S

CY3T

CY3U

CY3V

CY3W

CY3X

CY3Y

CY3Z

CY4A

CY4B

CY4C

CY4D

CY4E

CY4F

CY4G

CY4H

CY4I

CY4J

CY4K

CY4L

CY4M

CY4N

CY4O

CY4P

CY4Q

CY4R

CY4S

CY4T

CY4U

CY4V

CY4W

CY4X

CY4Y

CY4Z

CY5A

CY5B

CY5C

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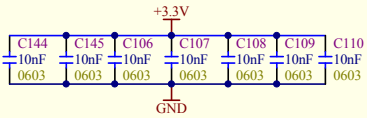
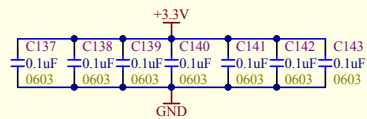
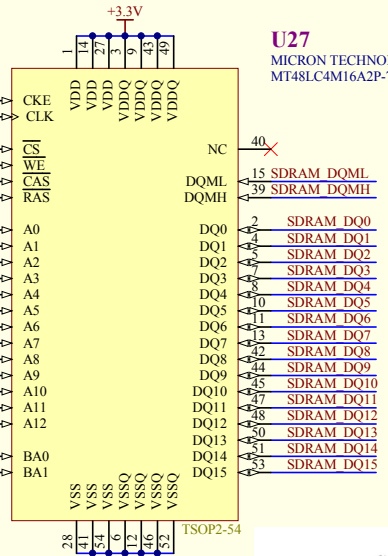
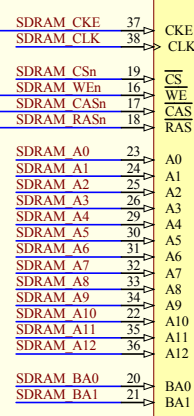
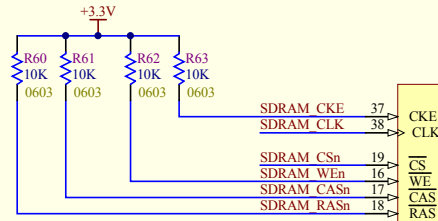
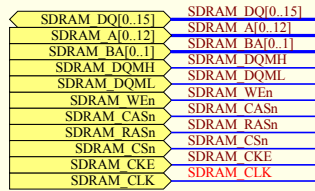
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CY5Q

CY5R

CY5S

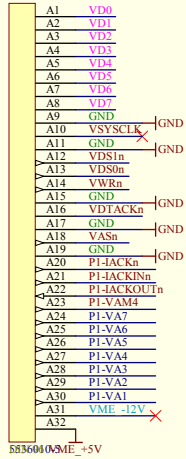
CY5T



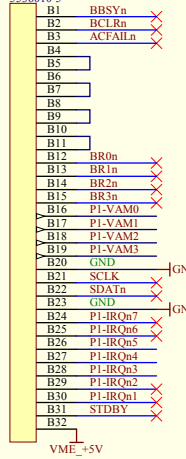
VME - NIMIO32 - SDRAM			
Revision	Drawing #: 3		TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3
1	Sheet #: 3 of 14	Size: A	
Drawn by: D.Bishop		Date: 5/5/2010	Cannot open file G:\AHW\PR OTEL\SCH 1.D\Triumf
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A32815-ND

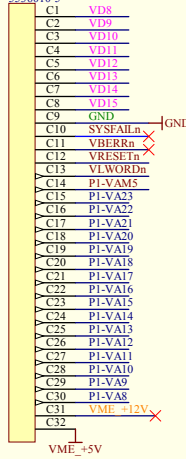
PIA
Tyco Electronics



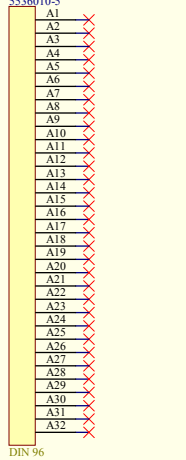
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Tyco Electronics



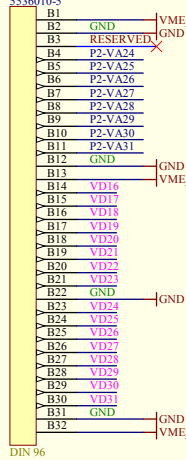
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Tyco Electronics



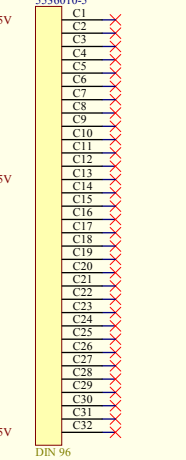
P2A
Tyco Electronics



P2B
Tyco Electronics



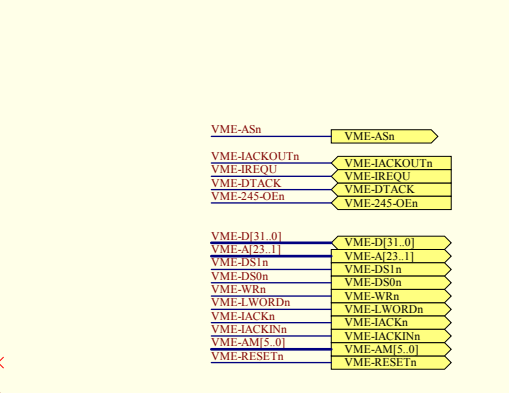
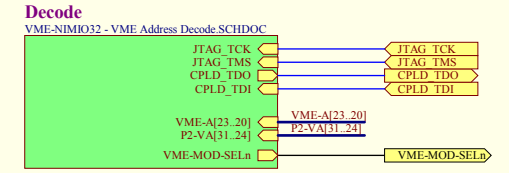
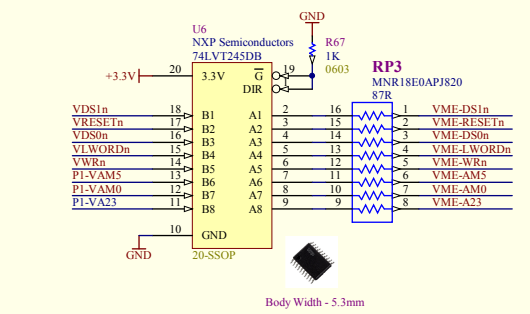
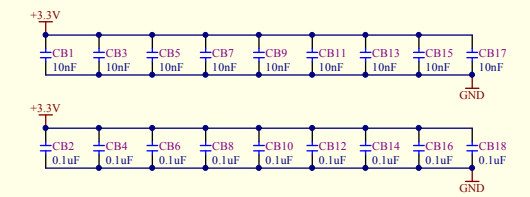
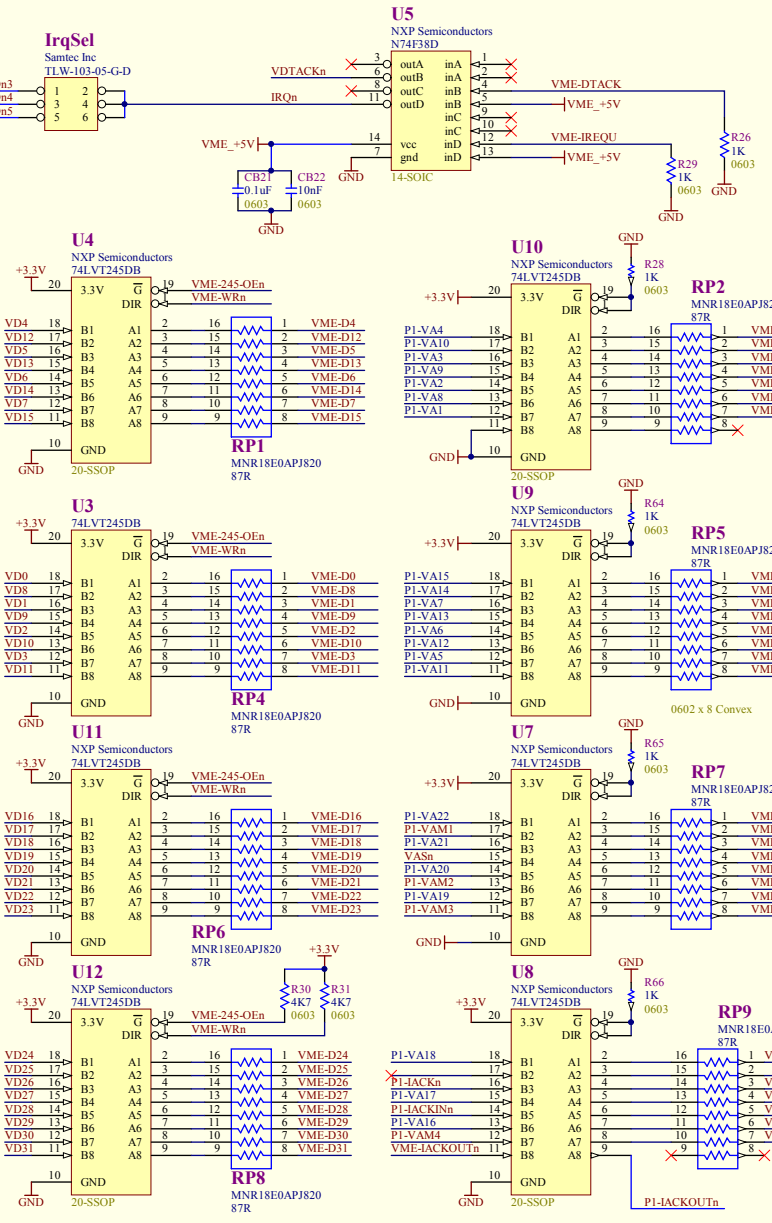
P2C
Tyco Electronics



DIN 96

DIN 96

DIN 96



VME - NIMIO32 - VME Interface			
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1	Sheet # : 4 of 14	4004 Westbrook Mall	file
	Size : B	Vancouver, B.C.	G:\AHW\PR
	Drawn by : Hubert Hui	Canada	O\TELSCH
	Date : 5/5/2010	V6T 2A3	I\H\TRU/MF
			4:31:00 PM

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P2-VA[31..24] →

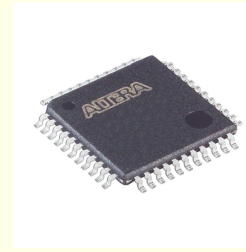
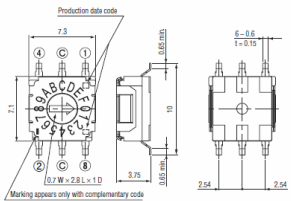
VME-MOD-SELn → VME-MOD-SELn

VME-A[23..20] → VME-A[23..20]

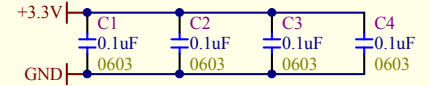
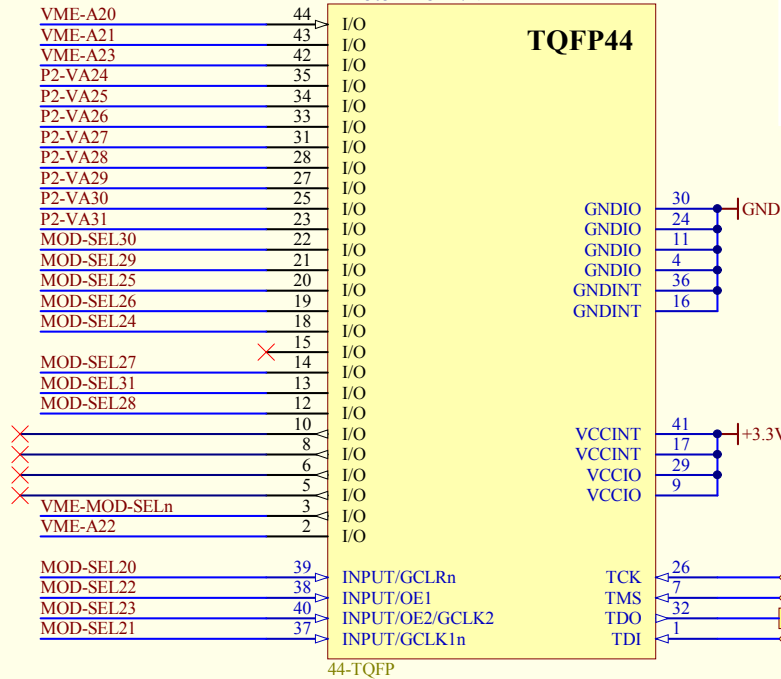
COPAL ELECTRONICS

**SH-7000
ROTARY CODED SWITCHES (SMD)**

- SH-7050B (Real code)
- SH-7070B (Complementary code)

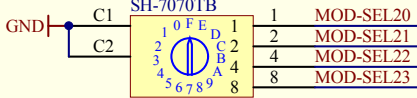


U1
ALTERA
EPM3032ATC44-7N



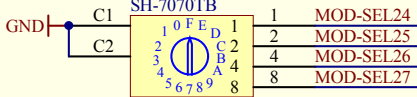
SW3

Copal Electronics Inc
SH-7070TB



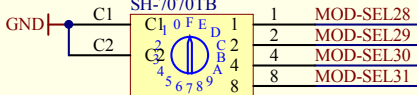
SW2

Copal Electronics Inc
SH-7070TB



SW1

Copal Electronics Inc
SH-7070TB

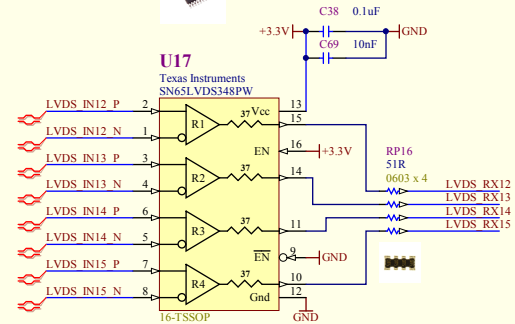
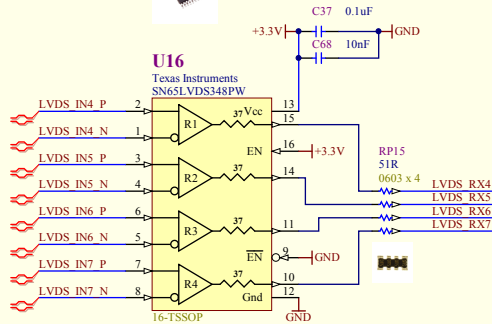
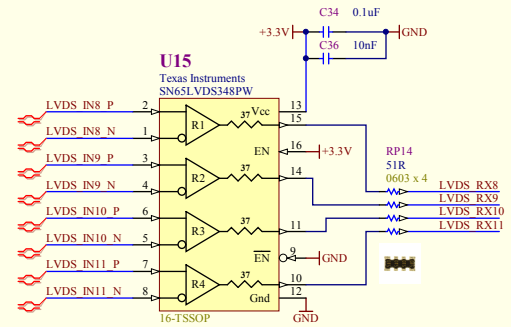
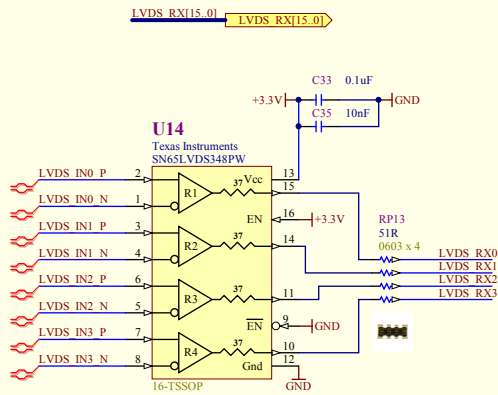


CODE FORMAT

No. of positions	16 positions																
	Position	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
Real code	8																
	4																
	2																
	1																
Complementary code	8																
	4																
	2																
	1																
Gray code	8																
	4																
	2																
	1																

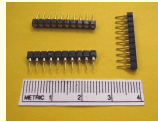
VME - NIMIO32 - VME Address Decode

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Drawn by: D.Bishop	Date: 5/5/2010	Canada	LIB\TRIUM
		V6T 2A3	
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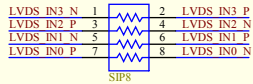


SAMTEC Sockets
SS-108-G-2

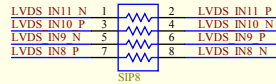
STORES: 1-1/01026



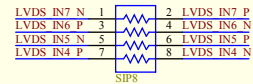
TERM1
CTS Resistor Products
77083101P
100R



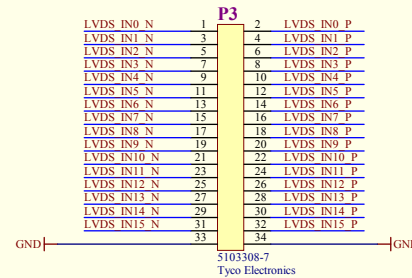
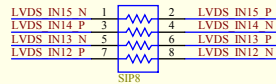
TERM3
CTS Resistor Products
77083101P
100R



TERM2
CTS Resistor Products
77083101P
100R

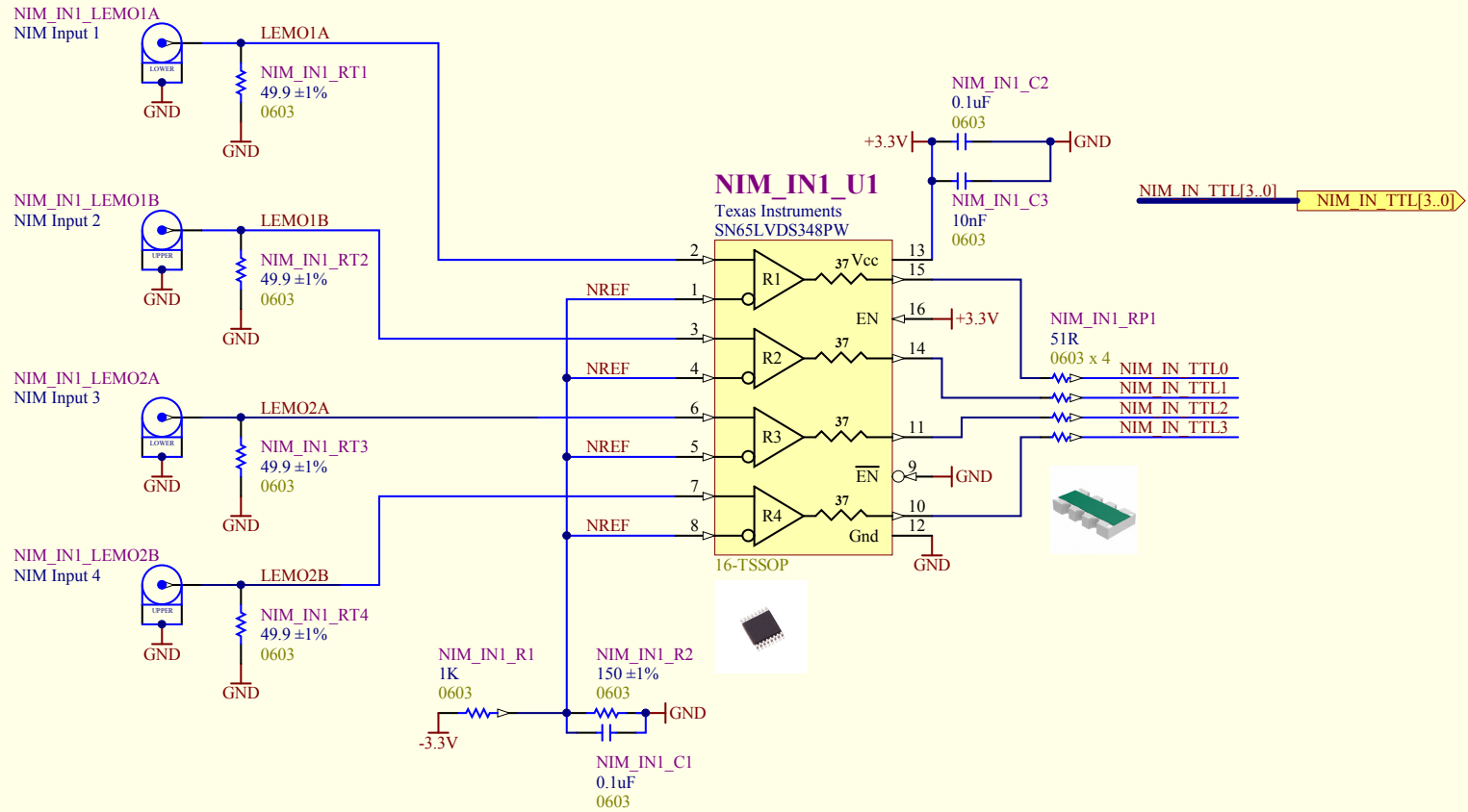


TERM4
CTS Resistor Products
77083101P
100R




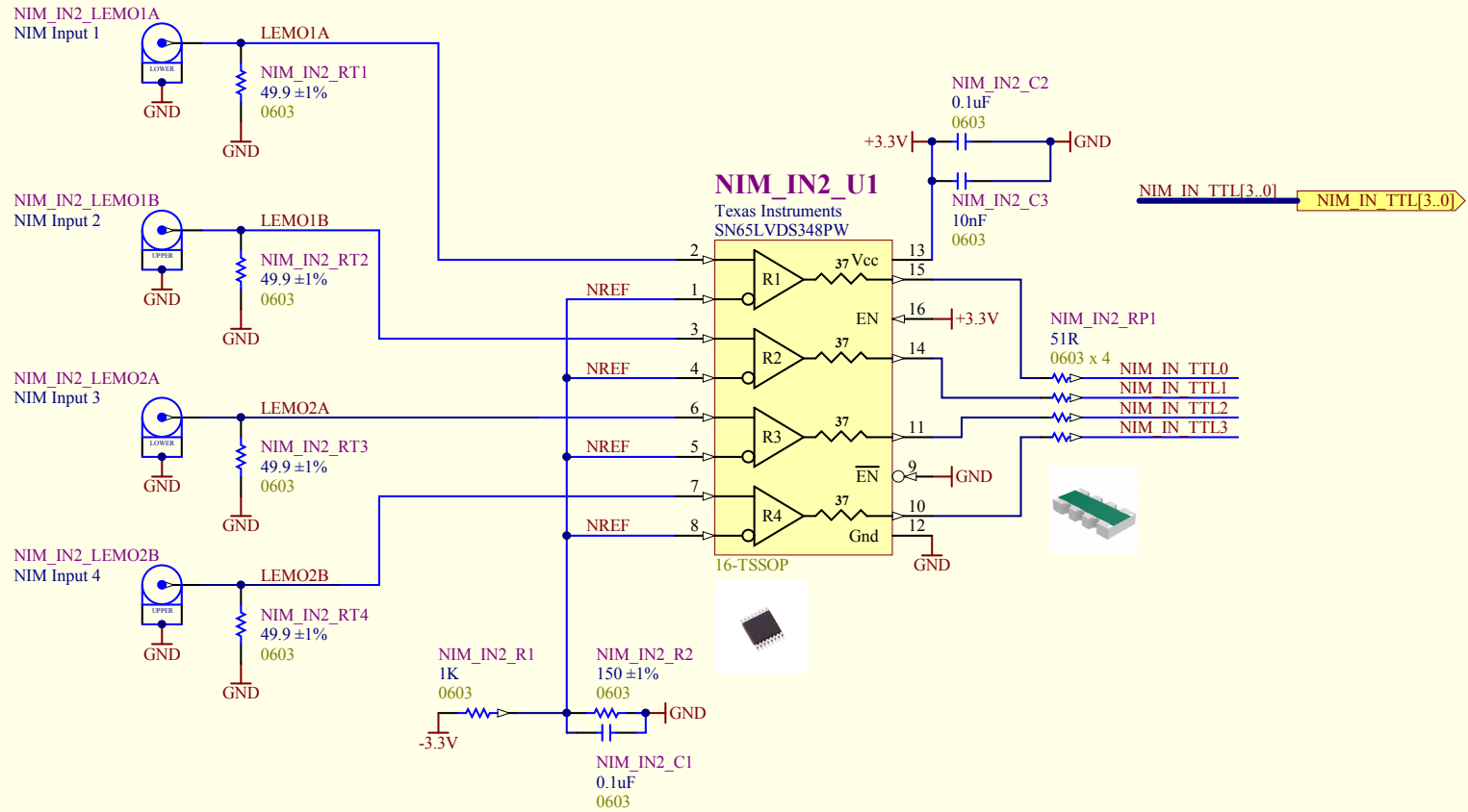
VMEIO - NIMIO32 - LVDS / ECL Input

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1	Sheet #: 6 of 14	Size: B	
	Drawn by: D.Bishop	Date: 5/5/2010	
File: G:\VME-NIMIO32\ALU\Aluminum\VME - NIMIO32 - LVDS_IN.SchDoc			4:31:00 PM




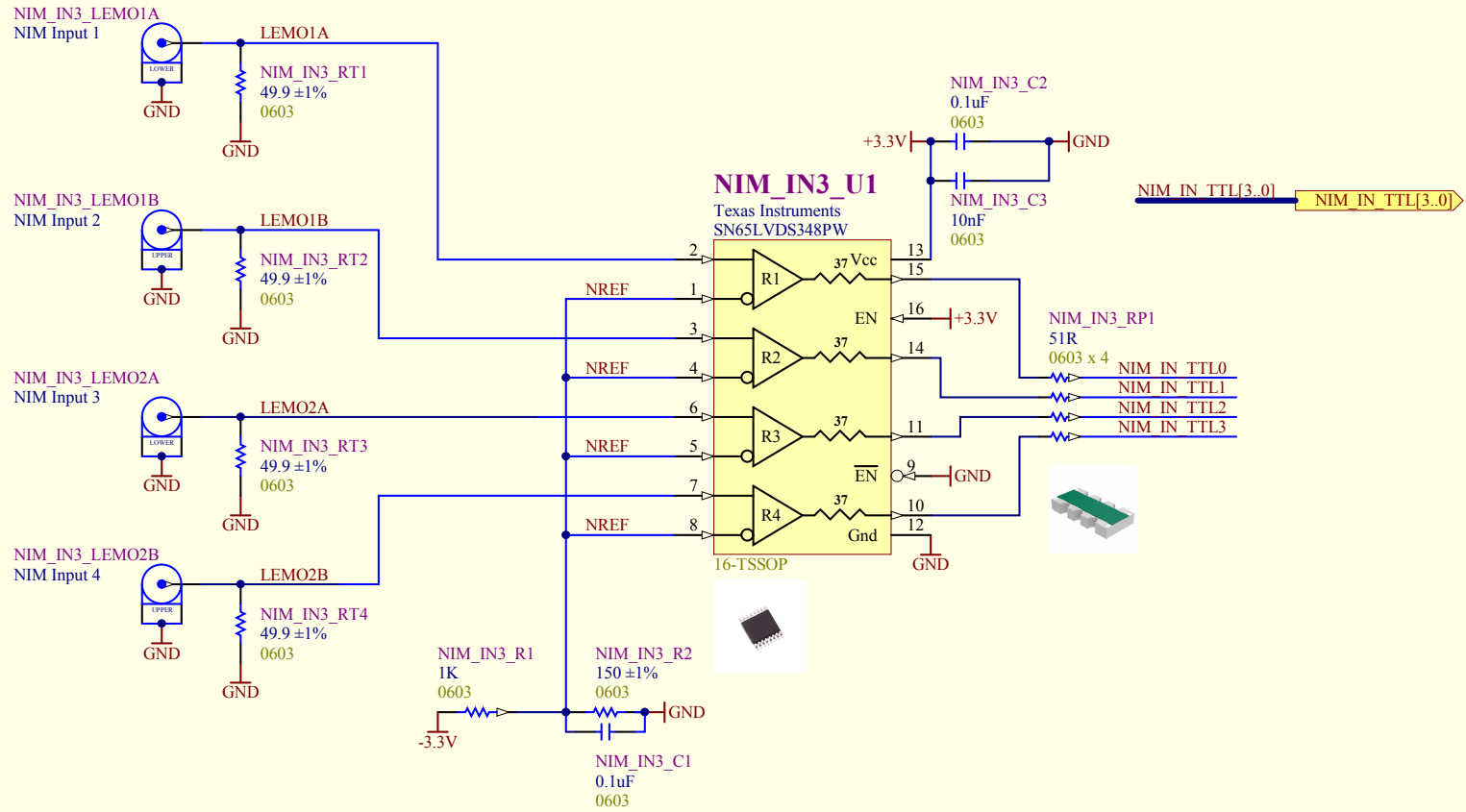
VMEIO - NIMIO32 - NIM INPUT

Revision 1	Drawing #: 7		TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3	
	Sheet #: 7 of 14	Size: A		
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				4:31:00 PM




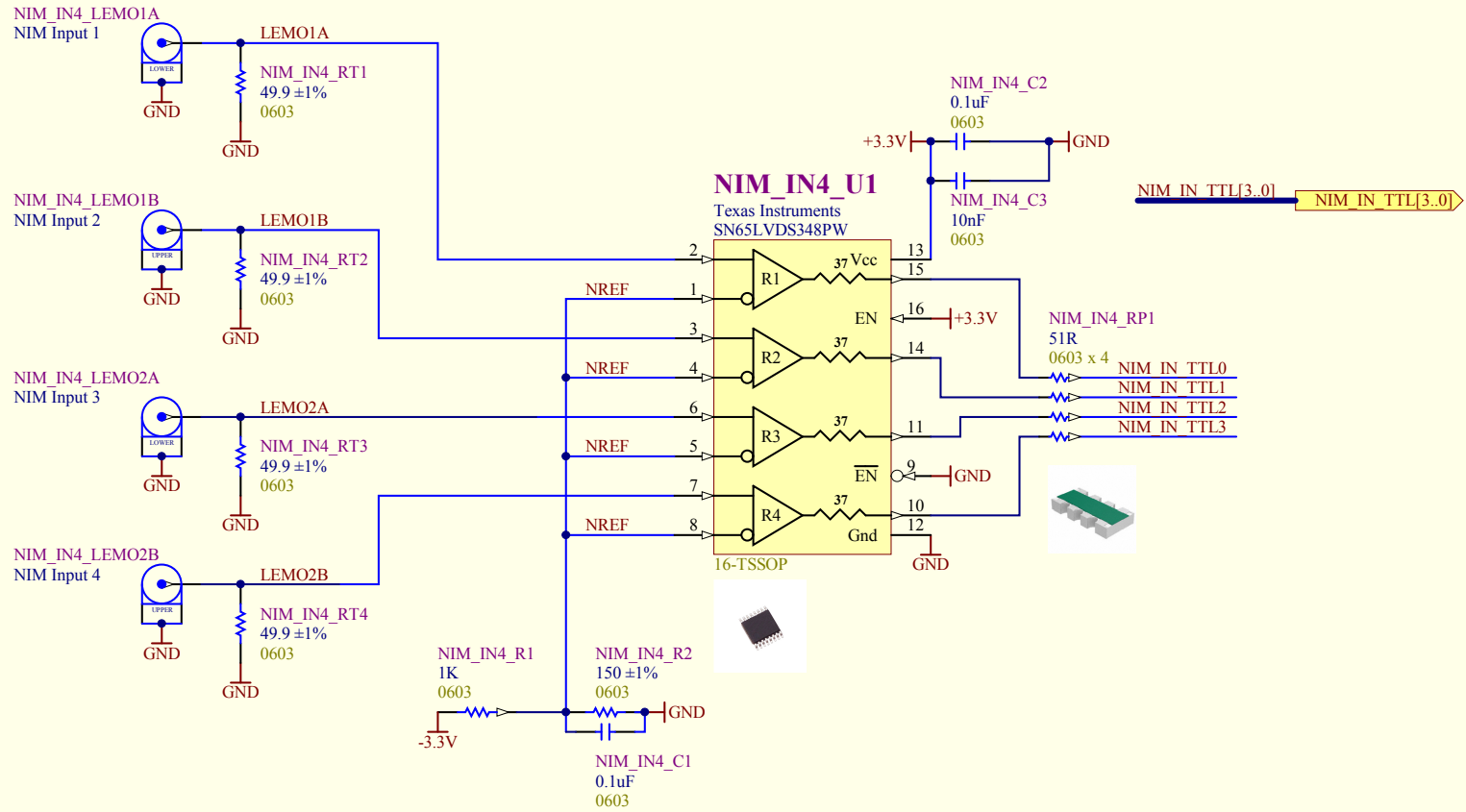
VMEIO - NIMIO32 - NIM INPUT

Revision 1	Drawing #: 7		TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3	
	Sheet #: 7 of 14	Size: A		
	Drawn by: D.Bishop	Date: 5/5/2010		
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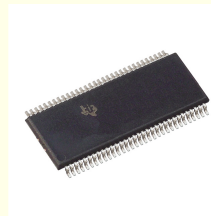
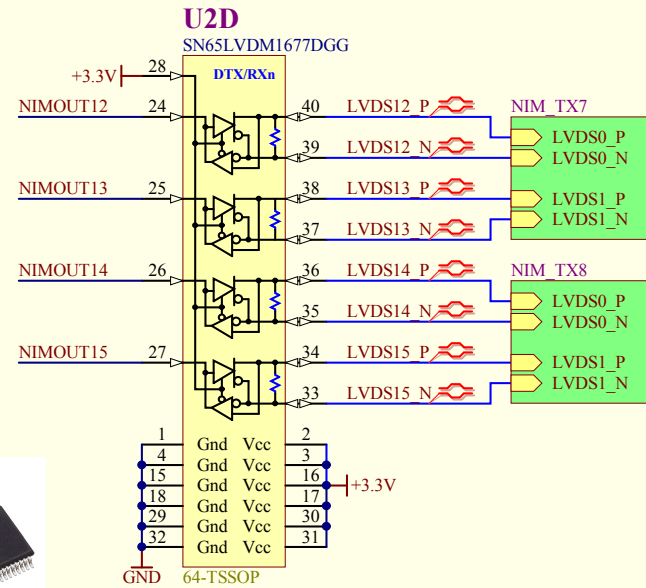
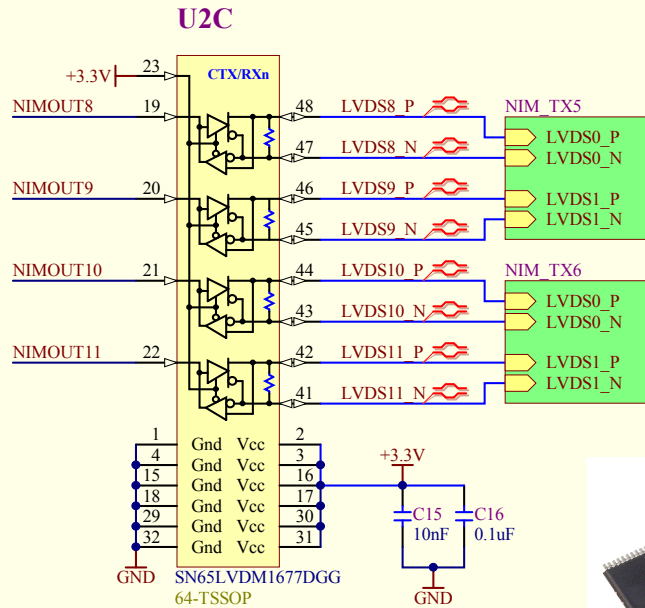
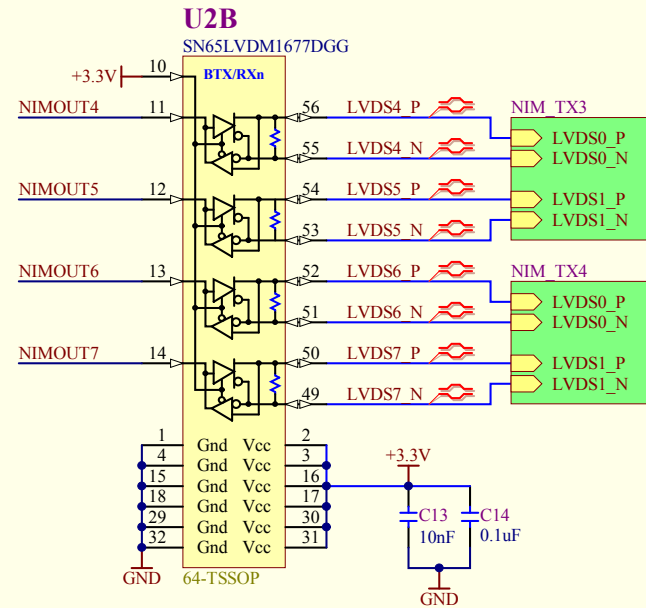
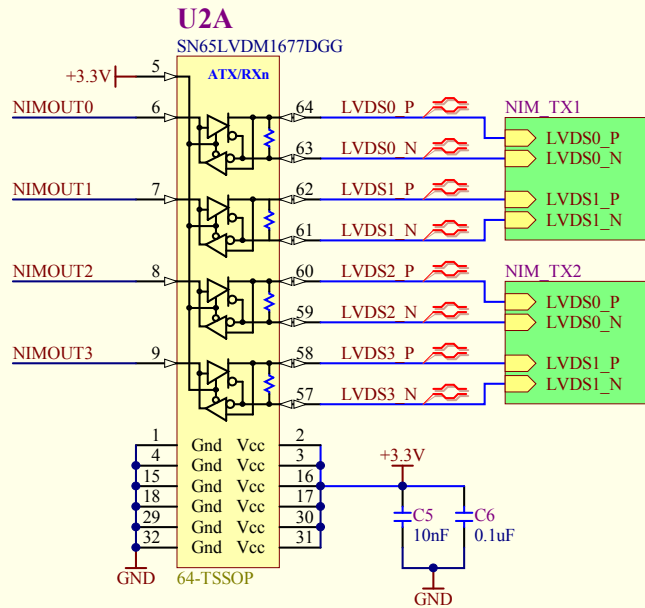
VMEIO - NIMIO32 - NIM INPUT

Revision 1	Drawing #: 7		TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3	
	Sheet #: 7 of 14	Size: A		
	Drawn by: D.Bishop	Date: 5/5/2010		
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4:31:00 PM				



VMEIO - NIMIO32 - NIM INPUT

Revision 1	Drawing #: 7		TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3	
	Sheet #: 7 of 14	Size: A		
	Drawn by: D.Bishop	Date: 5/5/2010		
File: G:\VME-NIMIO32\ALTUM\Altium\VME - NIMIO32 - NIMIN.SchDoc				
				4:31:00 PM



NIMOUT[15..0] → NIMOUT[15..0]

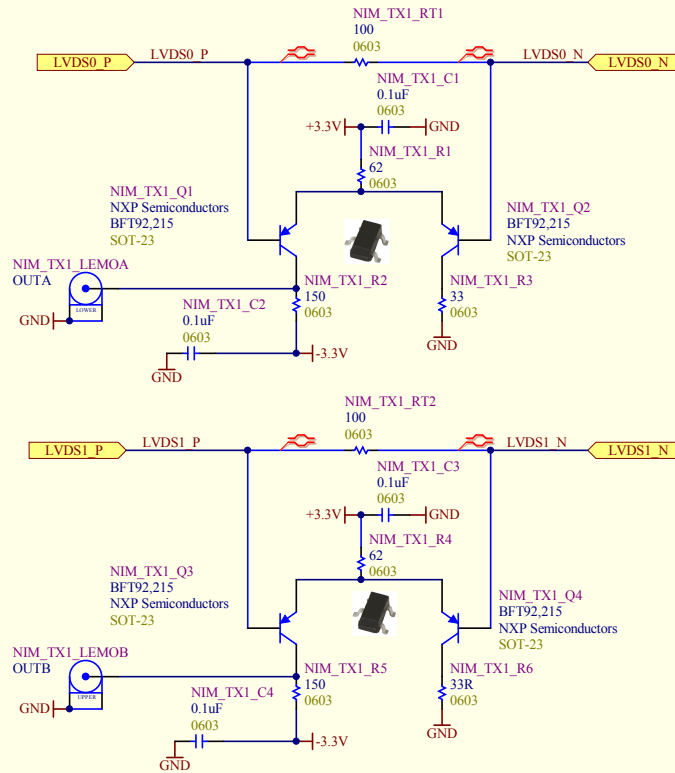
VMEIO - NIMIO32 - LVDS / ECL Input

Revision 1	Drawing #: 8		TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3	
	Sheet #: 8 of 14	Size: A		
	Drawn by: D.Bishop	Date: 5/5/2010		
File: G:\VME-NIMIO32\ALTUM\Altium\VME - NIMIO32 - NIMOUT.SchDoc				
4:31:00 PM				

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CEO}	collector cut-off current	I _E = 0; V _{CB} = -10 V;	-	-	-50	nA
h _{FE}	DC current gain	I _C = -14 mA; V _{CE} = -10 V	20	50	-	-
f _T	transition frequency	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz	-	5	-	GHz
C _c	collector capacitance	I _E = I _C = 0; V _{CB} = -10 V; f = 1 MHz	-	0.75	-	pF
C _e	emitter capacitance	I _C = I _E = 0; V _{EB} = -0.5 V; f = 1 MHz	-	0.8	-	pF
C _{FB}	feedback capacitance	I _C = -2 mA; V _{CE} = -10 V; f = 1 MHz	-	0.7	-	pF
G _{UM}	maximum unilateral power gain (note 1)	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	18	-	dB
F	noise figure	I _C = -5 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	2.5	-	dB
V ₀	output voltage	note 2	-	150	-	mV



Cyclone - LVDS

Output Offset Voltage

Vos Max: 1.375
 Vos Typ: 1.25
 Vos Min: 1.125

Diff Output Voltage

Vod Min: 250mv
 Vod Max: 600mv

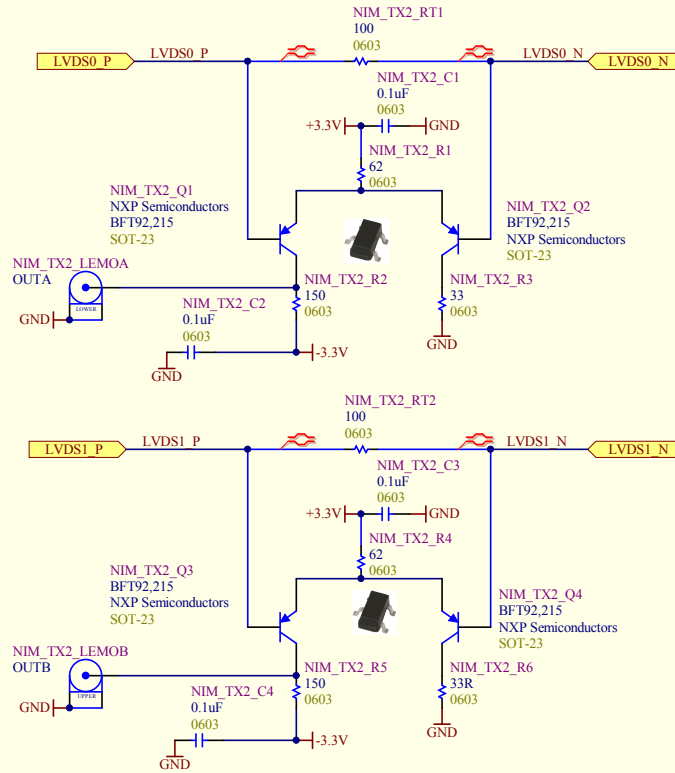
VME - NIMIO32 - LVDS to NIM Converter

Revision	Drawing #: 9	TRUMF	Cannot open file
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Drawn by: D.Bishop	Date: 5/5/2010	Canada	V6T 2A3
File: G:\VME-NIMIO32\ALTUM\Altium\VME-NIMIO32 - LVDS to NIM.SCHDOC			4:31:00 PM

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CEO}	collector cut-off current	I _E = 0; V _{CB} = -10 V;	-	-	-50	nA
h _{FE}	DC current gain	I _C = -14 mA; V _{CE} = -10 V	20	50	-	-
f _T	transition frequency	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz	-	5	-	GHz
C _c	collector capacitance	I _E = I _C = 0; V _{CB} = -10 V; f = 1 MHz	-	0.75	-	pF
C _e	emitter capacitance	I _C = I _E = 0; V _{EB} = -0.5 V; f = 1 MHz	-	0.8	-	pF
C _{FB}	feedback capacitance	I _C = -2 mA; V _{CE} = -10 V; f = 1 MHz	-	0.7	-	pF
G _{UM}	maximum unilateral power gain (note 1)	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	18	-	dB
F	noise figure	I _C = -5 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	2.5	-	dB
V ₀	output voltage	note 2	-	150	-	mV



Cyclone - LVDS

Output Offset Voltage

Vos Max: 1.375
 Vos Typ: 1.25
 Vos Min: 1.125

Diff Output Voltage

Vod Min: 250mv
 Vod Max: 600mv

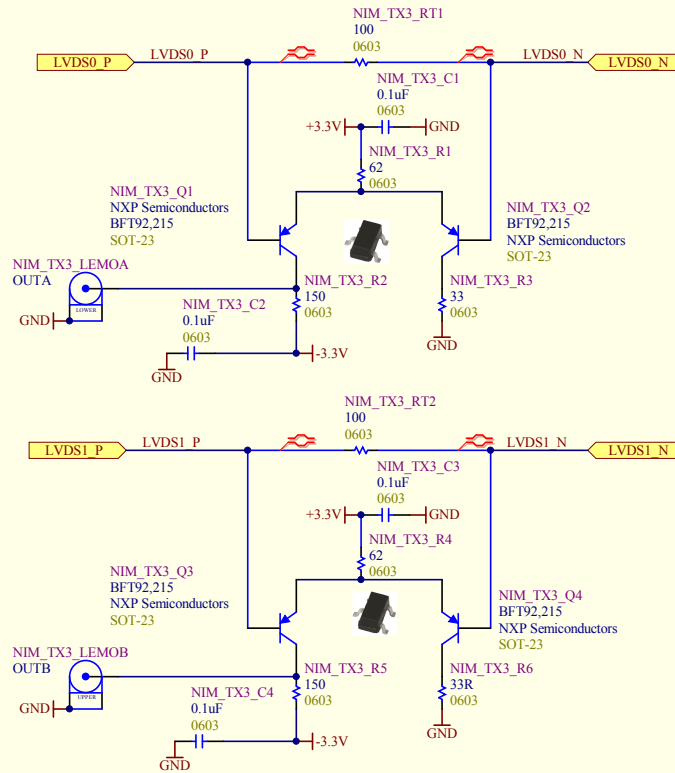
VME - NIMIO32 - LVDS to NIM Converter

Revision	Drawing #: 9	TRUMF	Cannot open file
1	Sheet #: 9 of 14	4004 Wesbrook Mall	G:\AHW\PR
	Size: A	Vancouver, B.C.	OTEL\SCH
Drawn by: D.Bishop	Date: 5/5/2010	Canada	V6T 2A3
File: G:\VME-NIMIO32\ALTUM\Altium\VME-NIMIO32 - LVDS to NIM.SCHDOC			4:31:00 PM

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CEO}	collector cut-off current	I _E = 0; V _{CB} = -10 V;	-	-	-50	nA
h _{FE}	DC current gain	I _C = -14 mA; V _{CE} = -10 V	20	50	-	-
f _T	transition frequency	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz	-	5	-	GHz
C _c	collector capacitance	I _E = I _C = 0; V _{CB} = -10 V; f = 1 MHz	-	0.75	-	pF
C _e	emitter capacitance	I _C = I _E = 0; V _{EB} = -0.5 V; f = 1 MHz	-	0.8	-	pF
C _{FB}	feedback capacitance	I _C = -2 mA; V _{CE} = -10 V; f = 1 MHz	-	0.7	-	pF
G _{UM}	maximum unilateral power gain (note 1)	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	18	-	dB
F	noise figure	I _C = -5 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	2.5	-	dB
V ₀	output voltage	note 2	-	150	-	mV



Cyclone - LVDS

Output Offset Voltage

Vos Max: 1.375
 Vos Typ: 1.25
 Vos Min: 1.125

Diff Output Voltage

Vod Min: 250mv
 Vod Max: 600mv

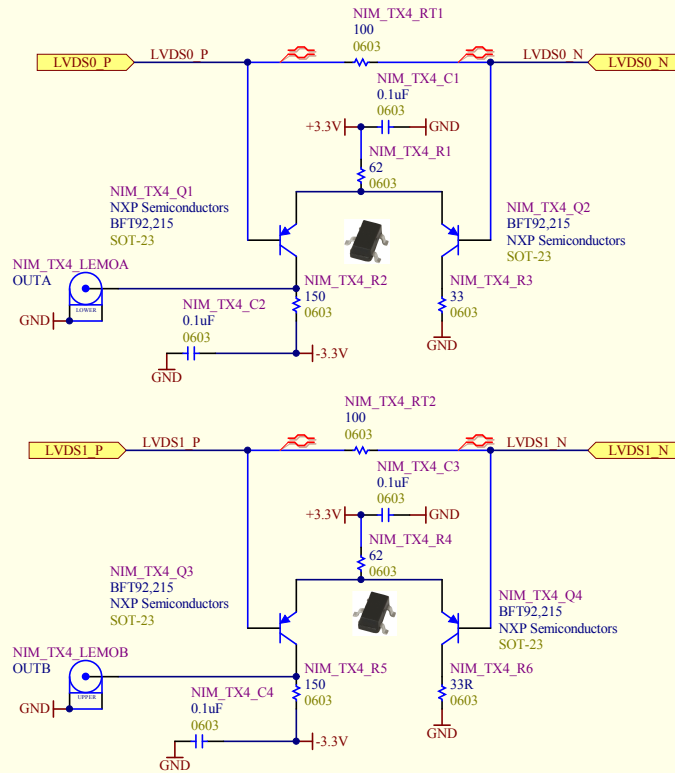
VME - NIMIO32 - LVDS to NIM Converter

Revision	Drawing #: 9	TRUMF	Cannot open file
1	Sheet #: 9 of 14	4004 Wesbrook Mall	G:\AHW\PR
	Size: A	Vancouver, B.C.	OTEL\SCH
Drawn by: D.Bishop	Date: 5/5/2010	Canada	V6T 2A3
File: G:\VME-NIMIO32\ALTUM\Altium\VME-NIMIO32 - LVDS to NIM.SCHDOC			4:31:01 PM

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CEO}	collector cut-off current	I _E = 0; V _{CB} = -10 V;	-	-	-50	nA
h _{FE}	DC current gain	I _C = -14 mA; V _{CE} = -10 V	20	50	-	-
f _T	transition frequency	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz	-	5	-	GHz
C _c	collector capacitance	I _E = I _C = 0; V _{CB} = -10 V; f = 1 MHz	-	0.75	-	pF
C _e	emitter capacitance	I _C = I _E = 0; V _{EB} = -0.5 V; f = 1 MHz	-	0.8	-	pF
C _{FB}	feedback capacitance	I _C = -2 mA; V _{CE} = -10 V; f = 1 MHz	-	0.7	-	pF
G _{UM}	maximum unilateral power gain (note 1)	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	18	-	dB
F	noise figure	I _C = -5 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	2.5	-	dB
V ₀	output voltage	note 2	-	150	-	mV



Cyclone - LVDS

Output Offset Voltage

Vos Max: 1.375
 Vos Typ: 1.25
 Vos Min: 1.125

Diff Output Voltage

Vod Min: 250mv
 Vod Max: 600mv

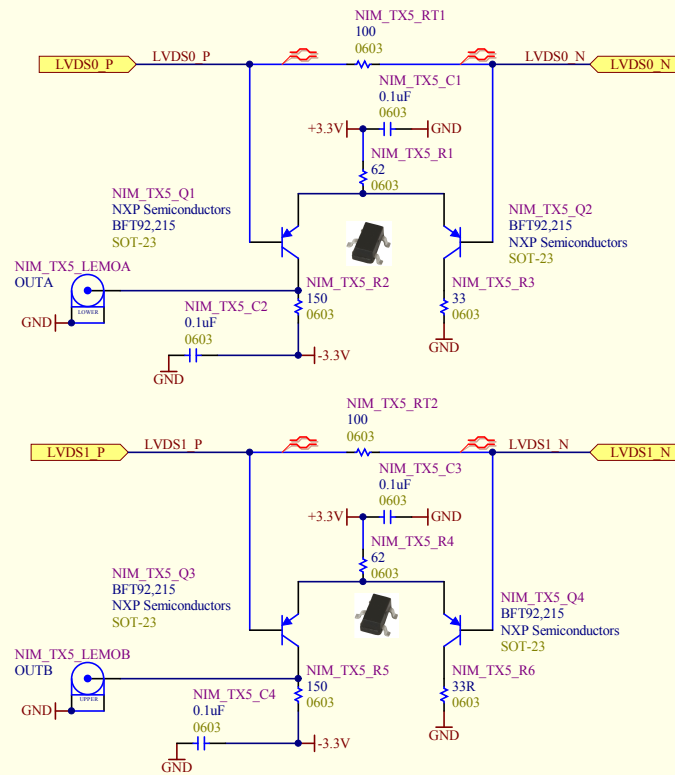
VME - NIMIO32 - LVDS to NIM Converter

Revision	Drawing #: 9	TRUMF	Cannot open file
1	Sheet #: 9 of 14	4004 Wesbrook Mall	G:\AHW\PR
	Size: A	Vancouver, B.C.	OTEL\SCH
Drawn by: D.Bishop	Date: 5/5/2010	Canada	V6T 2A3
File: G:\VME-NIMIO32\ALTUM\Altium\VME-NIMIO32 - LVDS to NIM.SCHDOC			4:31:01 PM

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CEO}	collector cut-off current	I _E = 0; V _{CB} = -10 V;	-	-	-50	nA
h _{FE}	DC current gain	I _C = -14 mA; V _{CE} = -10 V	20	50	-	
f _T	transition frequency	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz	-	5	-	GHz
C _c	collector capacitance	I _E = I _C = 0; V _{CB} = -10 V; f = 1 MHz	-	0.75	-	pF
C _e	emitter capacitance	I _C = I _E = 0; V _{EB} = -0.5 V; f = 1 MHz	-	0.8	-	pF
C _{FB}	feedback capacitance	I _C = -2 mA; V _{CE} = -10 V; f = 1 MHz	-	0.7	-	pF
G _{UM}	maximum unilateral power gain (note 1)	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	18	-	dB
F	noise figure	I _C = -5 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	2.5	-	dB
V ₀	output voltage	note 2	-	150	-	mV

**Cyclone - LVDS**Output Offset Voltage

Vos Max: 1.375

Vos Typ: 1.25

Vos Min: 1.125

Diff Output Voltage

Vod Min: 250mv

Vod Max: 600mv

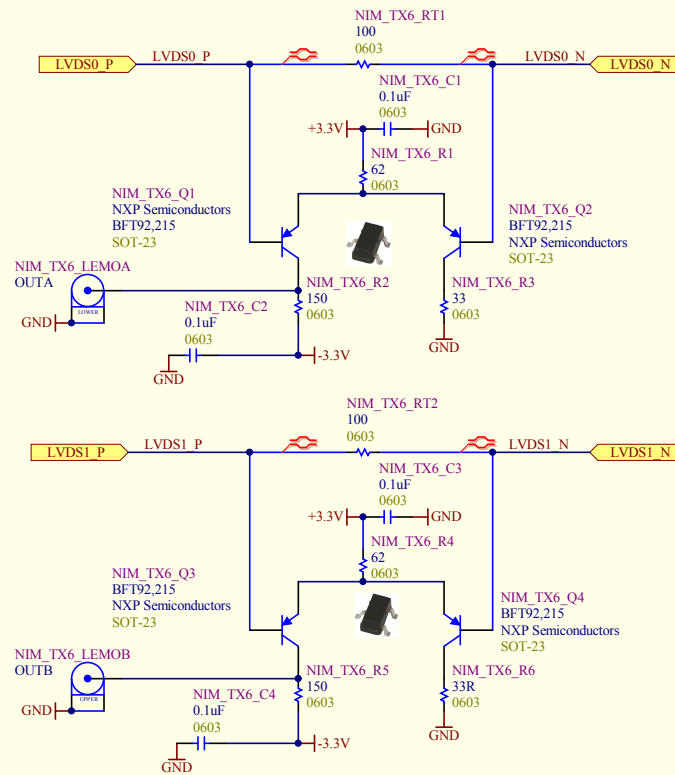
VME - NIMIO32 - LVDS to NIM Converter

Revision	Drawing #: 9	TRUMF	Cannot open file
1	Sheet #: 9 of 14	4004 Wesbrook Mall	G:\AHW\PR
	Size: A	Vancouver, B.C.	OTEL\SCH
	Drawn by: D.Bishop	Canada	V6T 2A3
	Date: 5/5/2010	V6T 2A3	4:31:01 PM
	File: G:\VME-NIMIO32\Altium\Altium\VME-NIMIO32 - LVDS to NIM.SCHDOC		

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CEO}	collector cut-off current	I _E = 0; V _{CB} = -10 V;	-	-	-50	nA
h _{FE}	DC current gain	I _C = -14 mA; V _{CE} = -10 V	20	50	-	
f _T	transition frequency	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz	-	5	-	GHz
C _c	collector capacitance	I _E = I _C = 0; V _{CB} = -10 V; f = 1 MHz	-	0.75	-	pF
C _e	emitter capacitance	I _C = I _E = 0; V _{EB} = -0.5 V; f = 1 MHz	-	0.8	-	pF
C _{FB}	feedback capacitance	I _C = -2 mA; V _{CE} = -10 V; f = 1 MHz	-	0.7	-	pF
G _{UM}	maximum unilateral power gain (note 1)	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	18	-	dB
F	noise figure	I _C = -5 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	2.5	-	dB
V ₀	output voltage	note 2	-	150	-	mV

**Cyclone - LVDS**Output Offset Voltage

Vos Max: 1.375

Vos Typ: 1.25

Vos Min: 1.125

Diff Output Voltage

Vod Min: 250mv

Vod Max: 600mv

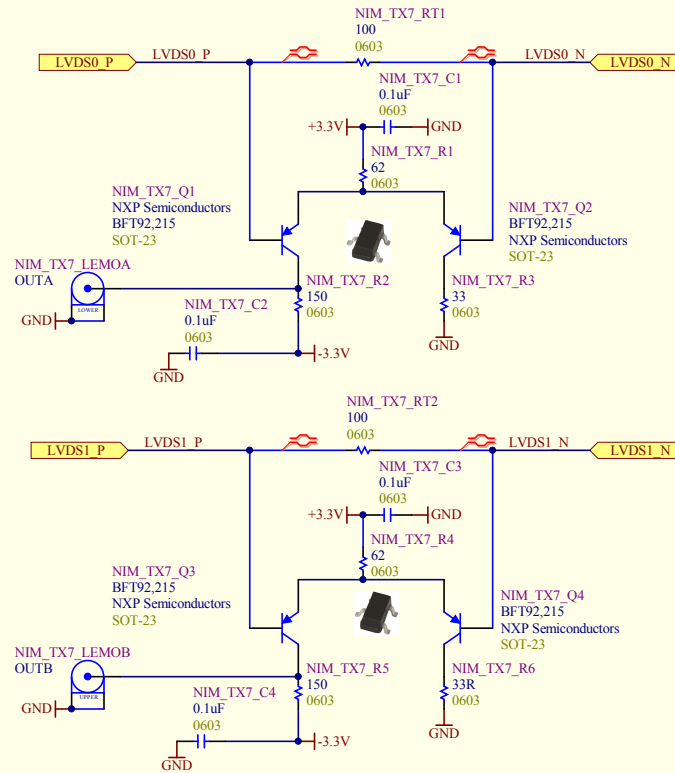
VME - NIMIO32 - LVDS to NIM Converter

Revision	Drawing #: 9		TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3	Cannot open file G:\AHW\PR OTEL\SCH 1.D\Trio...
1	Sheet #: 9 of 14	Size: A		
	Drawn by: D.Bishop	Date: 5/5/2010	V6T 2A3	1.D\Trio...
File: G:\VME-NIMIO32\ALTUM\Altium\VME-NIMIO32 - LVDS to NIM.SCHDOC				4:31:01 PM

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CEO}	collector cut-off current	I _E = 0; V _{CB} = -10 V;	-	-	-50	nA
h _{FE}	DC current gain	I _C = -14 mA; V _{CE} = -10 V	20	50	-	
f _T	transition frequency	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz	-	5	-	GHz
C _c	collector capacitance	I _E = I _C = 0; V _{CB} = -10 V; f = 1 MHz	-	0.75	-	pF
C _e	emitter capacitance	I _C = I _E = 0; V _{EB} = -0.5 V; f = 1 MHz	-	0.8	-	pF
C _{FB}	feedback capacitance	I _C = -2 mA; V _{CE} = -10 V; f = 1 MHz	-	0.7	-	pF
G _{UM}	maximum unilateral power gain (note 1)	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	18	-	dB
F	noise figure	I _C = -5 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	2.5	-	dB
V ₀	output voltage	note 2	-	150	-	mV

**Cyclone - LVDS**Output Offset Voltage

Vos Max: 1.375

Vos Typ: 1.25

Vos Min: 1.125

Diff Output Voltage

Vod Min: 250mv

Vod Max: 600mv

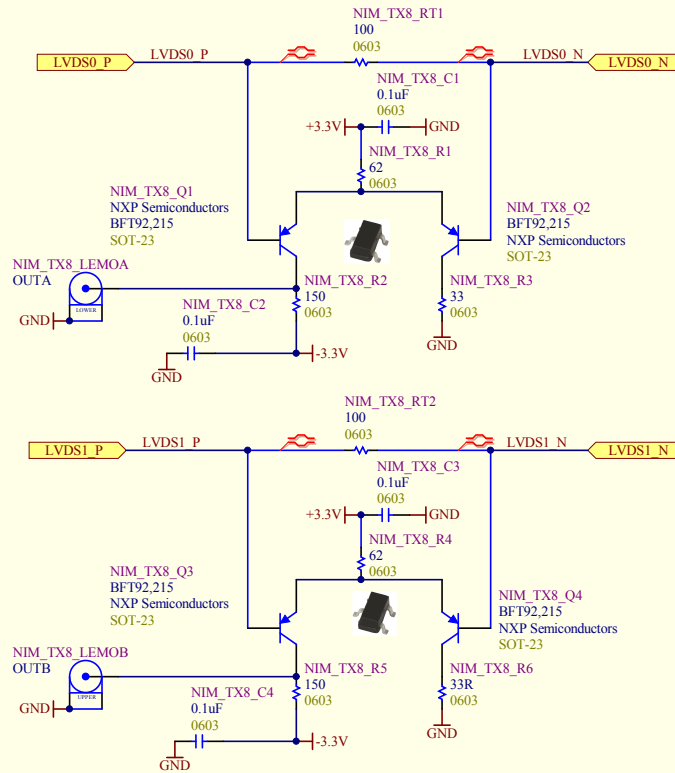
VME - NIMIO32 - LVDS to NIM Converter

Revision	Drawing #: 9	TRUMF	Cannot open file
1	Sheet #: 9 of 14	4004 Wesbrook Mall	G:\AHW\PR
	Size: A	Vancouver, B.C.	OTEL\SCH
	Drawn by: D.Bishop	Canada	V6T 2A3
	Date: 5/5/2010	V6T 2A3	4:31:01 PM
File:	G:\VME-NIMIO32\ALTUM\Altium\VME-NIMIO32 - LVDS to NIM.SCHDOC		

CHARACTERISTICS

T_j = 25 °C unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	TYP.	MAX.	UNIT
I _{CEO}	collector cut-off current	I _E = 0; V _{CB} = -10 V;	-	-	-50	nA
h _{FE}	DC current gain	I _C = -14 mA; V _{CE} = -10 V	20	50	-	-
f _T	transition frequency	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz	-	5	-	GHz
C _c	collector capacitance	I _E = I _C = 0; V _{CB} = -10 V; f = 1 MHz	-	0.75	-	pF
C _e	emitter capacitance	I _C = I _E = 0; V _{EB} = -0.5 V; f = 1 MHz	-	0.8	-	pF
C _{FB}	feedback capacitance	I _C = -2 mA; V _{CE} = -10 V; f = 1 MHz	-	0.7	-	pF
G _{UM}	maximum unilateral power gain (note 1)	I _C = -14 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	18	-	dB
F	noise figure	I _C = -5 mA; V _{CE} = -10 V; f = 500 MHz; T _{amb} = 25 °C	-	2.5	-	dB
V ₀	output voltage	note 2	-	150	-	mV



Cyclone - LVDS

Output Offset Voltage

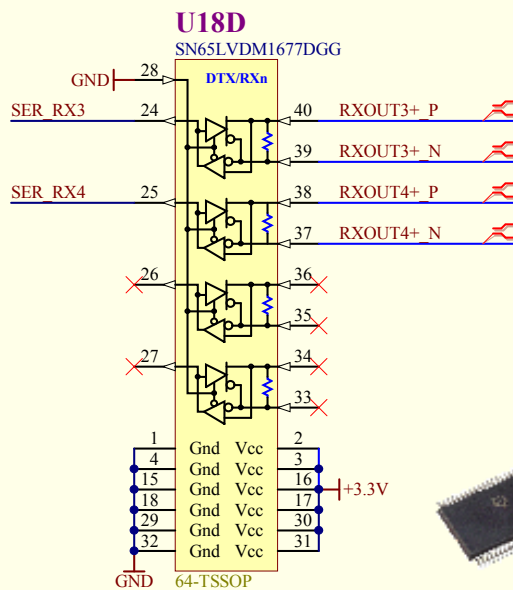
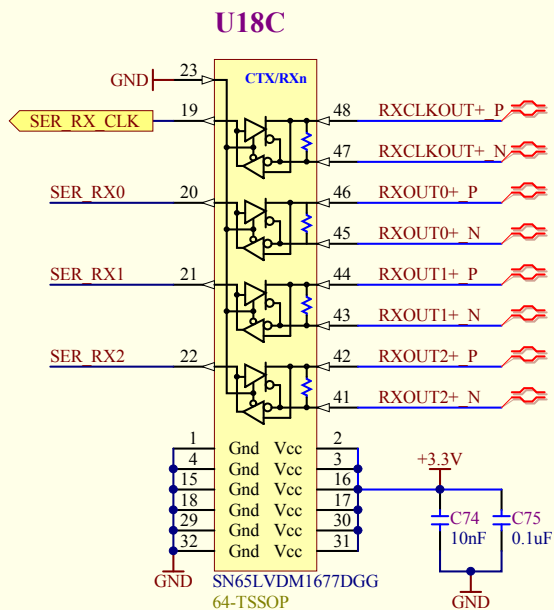
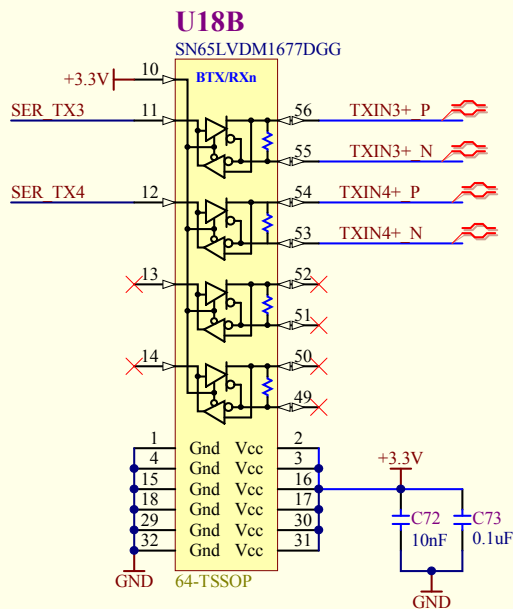
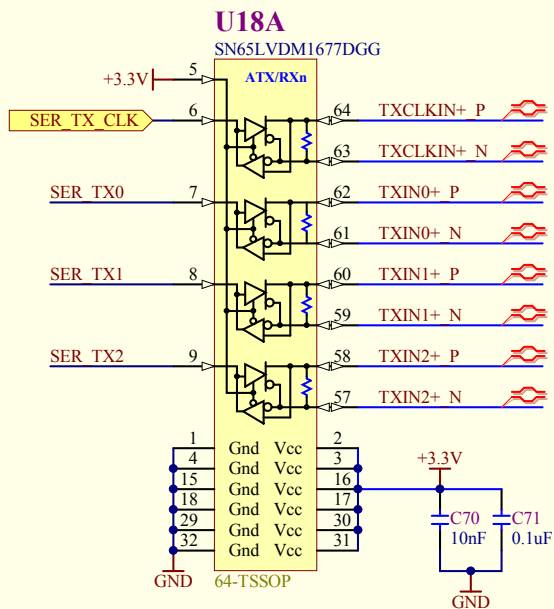
Vos Max: 1.375
 Vos Typ: 1.25
 Vos Min: 1.125

Diff Output Voltage

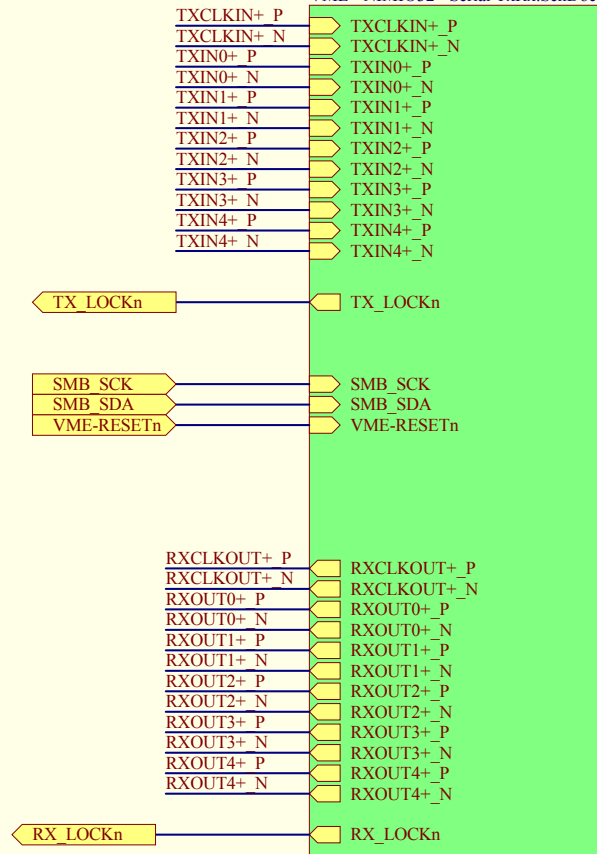
Vod Min: 250mv
 Vod Max: 600mv

VME - NIMIO32 - LVDS to NIM Converter

Revision	Drawing #: 9		TRUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3	Cannot open file G:\AHW\PR OTEL\SCH 1.D\T...
1	Sheet #: 9 of 14	Size: A		
	Drawn by: D.Bishop	Date: 5/5/2010	V6T 2A3	4:31:01 PM
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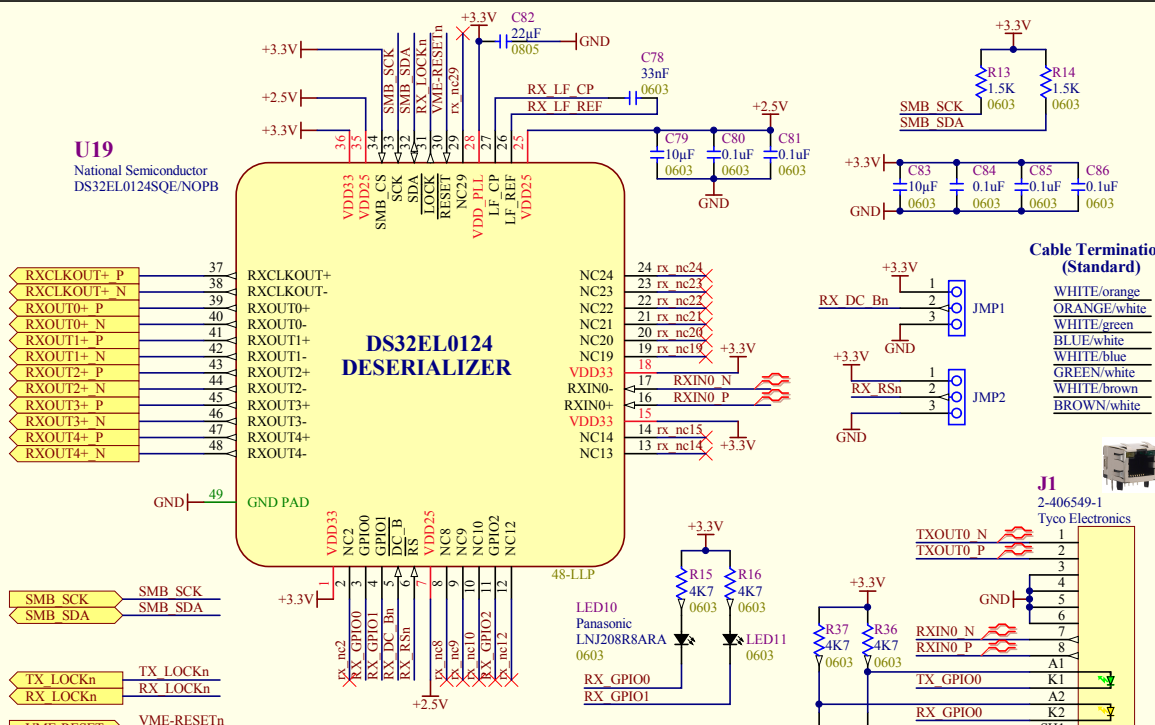


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VME - NIMIO32 - Serial TxRx.SchDoc

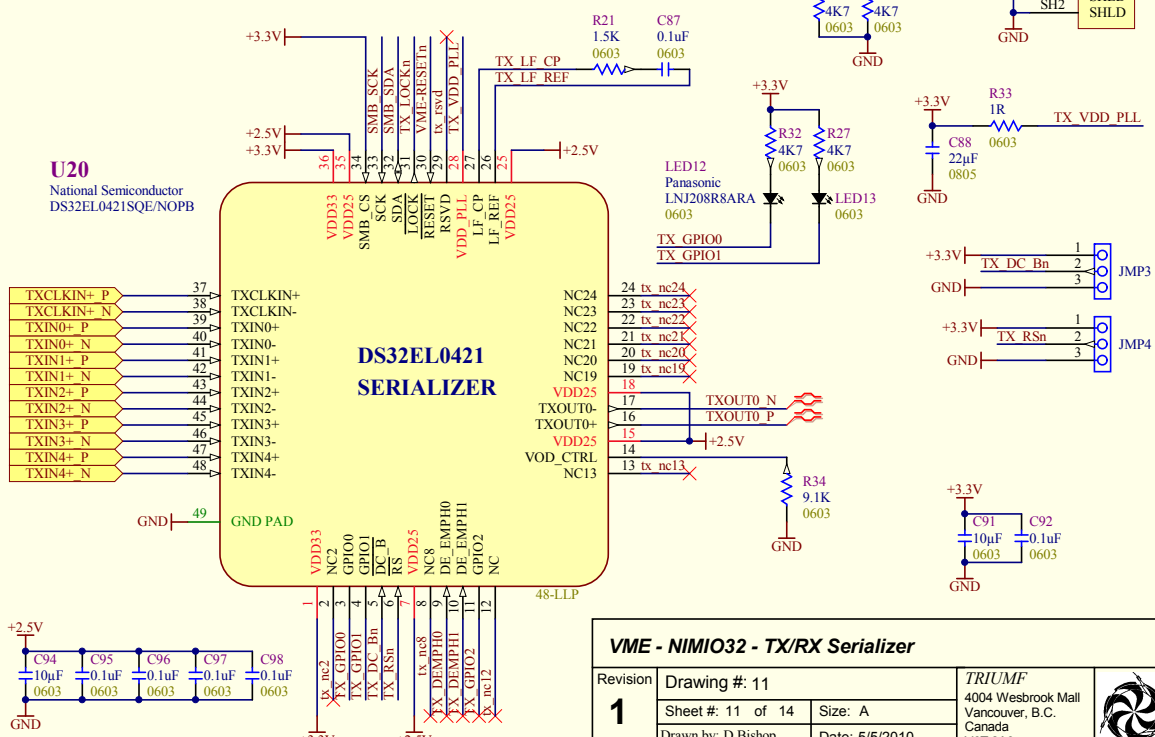


VMEIO - NIMIO32 - High Speed Serial			
Revision	Drawing #: 10		TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3
0	Sheet #: 10 of 14	Size: A	
	Drawn by: D.Bishop	Date: 5/5/2010	
File: G:\VME-NIMIO32\ALTUM\Altium\VME - NIMIO32 - High Speed Serial.SchDoc			
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National Semiconductor
DS32EL0124SQE/NOPB



U20
National Semiconductor
DS32EL0421SQE/NOPB

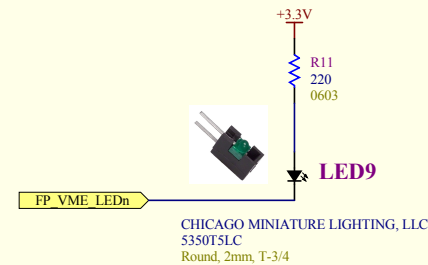
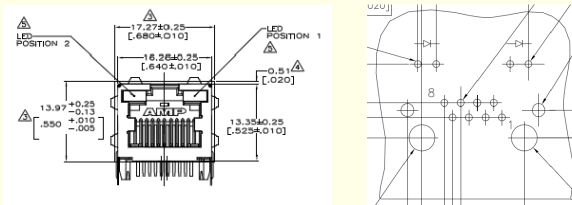
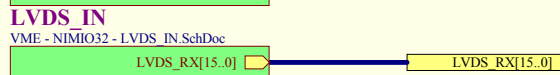
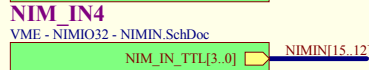
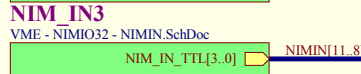
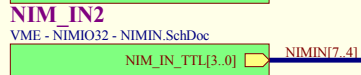
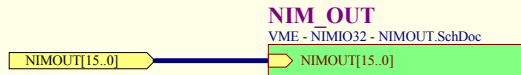
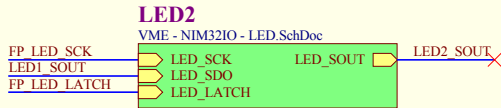
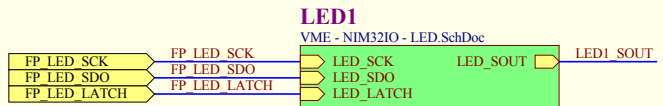


VME - NIMIO32 - TX/RX Serializer

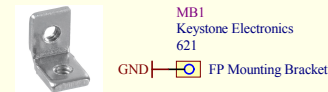
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1	Sheet #: 11 of 14		
	Drawn by: D.Bishop	Date: 5/5/2010	

File: G:\VME-NIMIO32\ALTIUM\Altium\VME - NIMIO32 - Serial TxRxSchDoc

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MATTE TIN	TRAY	-	GREEN/RED	3-406549-3
MATTE TIN	TRAY	RED	GREEN	3-406549-2
MATTE TIN	TUBE	YELLOW	GREEN	3-406549-1
MATTE TIN	TRAY	ORANGE/GREEN	GREEN	3-406549-0
MATTE TIN	TRAY	ORANGE/GREEN	YELLOW	2-406549-9
MATTE TIN	TRAY	YELLOW/GREEN	YELLOW/GREEN	2-406549-8
MATTE TIN	TRAY	ORANGE/GREEN	ORANGE/GREEN	2-406549-7
MATTE TIN	TRAY	YELLOW	YELLOW	2-406549-6
MATTE TIN	TRAY	GREEN	GREEN	2-406549-5
MATTE TIN	TRAY	GREEN	YELLOW	2-406549-4
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MATTE TIN	TRAY	-	GREEN	2-406549-2
MATTE TIN	TRAY	YELLOW	GREEN	2-406549-1
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TIN-LEAD	TRAY	YELLOW	YELLOW	406549-6
TIN-LEAD	TRAY	GREEN	GREEN	406549-5
TIN-LEAD	TRAY	GREEN	YELLOW	406549-4
TIN-LEAD	TRAY	YELLOW	-	406549-3
TIN-LEAD	TRAY	-	GREEN	406549-2
TIN-LEAD	TRAY	YELLOW	GREEN	406549-1
TERMINAL LEAD PLATING	PACKAGING	POSITION 2	POSITION 1	PART NUMBER



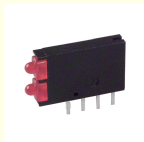
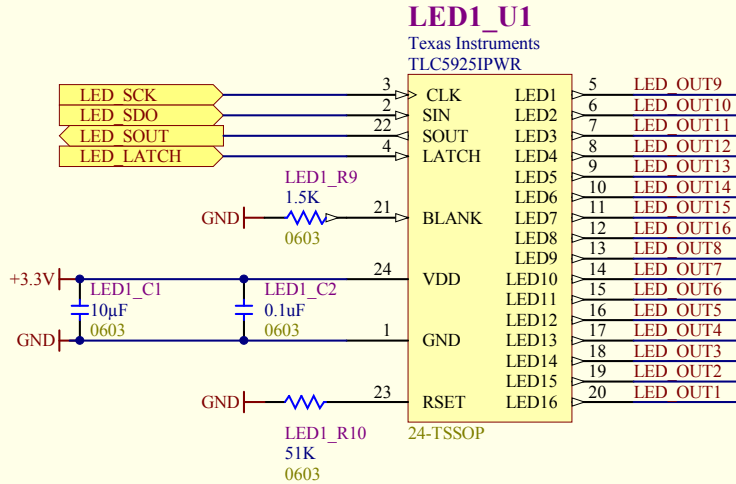
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DESIGNED BY: G. GARRETT		DATE: 17-SEP-97	DATE: 17-SEP-97	Harrisburg, Pa 17105-3608
DRAWN BY: M. DERSTINE		DATE: 17-SEP-97	DATE: 17-SEP-97	
REVISED BY: 108-1163-4		REVISED BY: 114-2154	REVISED BY: A1	REVISED BY: C=406549
DATE CODE (FORMAT YY)		00779	00779	00779
CUSTOMER DRAWING		4.1	1	R5

VME - NIMIO32 - Front Panel

Revision 1	Drawing #: 12	TRIUMF
Sheet #: 12 of 14	Size: A	4004 Wesbrook Mall
Drawn by: D.Bishop	Date: 5/5/2010	Vancouver, B.C.
		Canada
		V6T 2A3

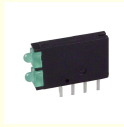


Alternate Part Numbers:
 Texas Instruments - TLC5928PW
 Texas Instruments - TLC5925IPWR
 ST Microelectronics - STP16CP05TTR
 Catalyst Semiconductor - CAT4016Y-T2
 Allegro - A628ZELP-T



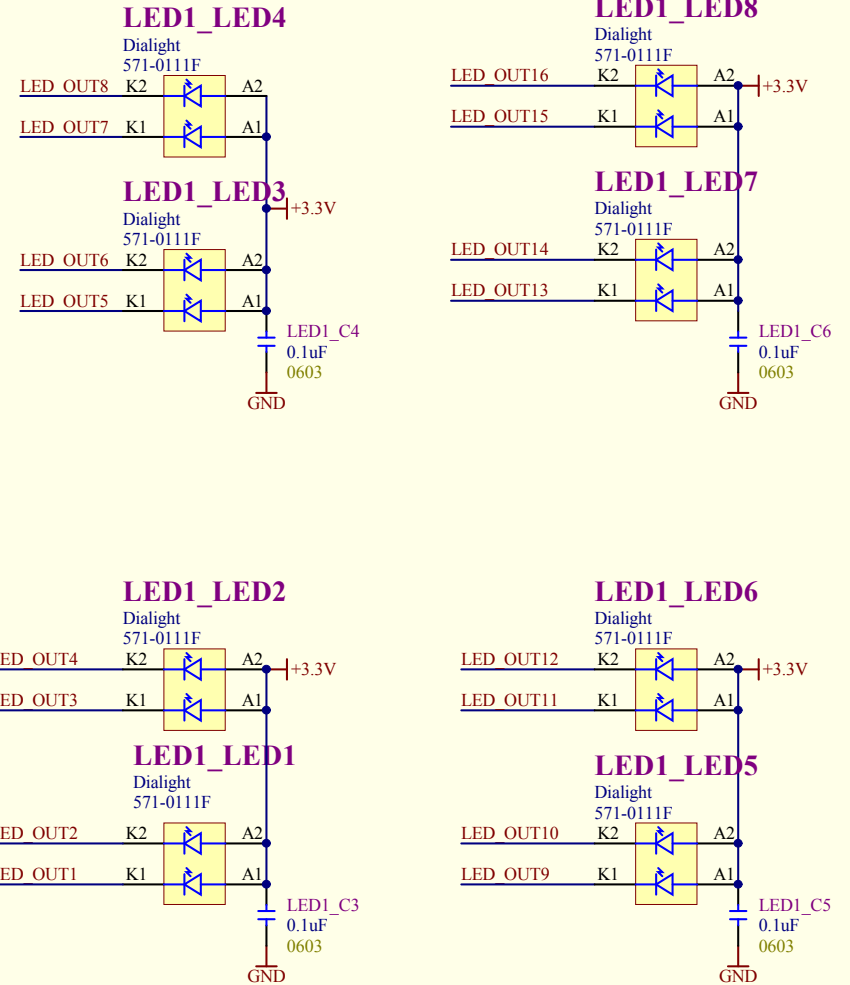
OUTPUTS

Red LEDs: 571-0111F



INPUTS

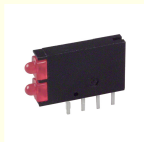
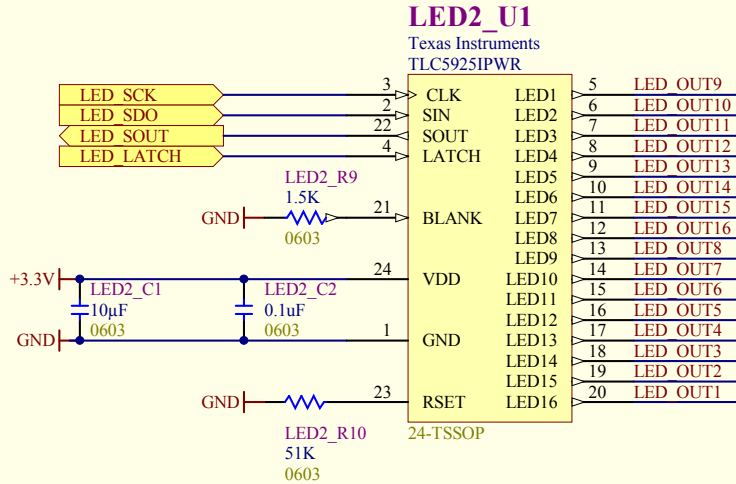
Green LEDs: 571-0122F



VME - NIMIO32 - Front Panel LEDs and driver

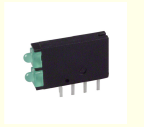
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	Sheet #: 13 of 14	Size: A		
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File: G:\VME-NIMIO32\ALTUM\Altium\VME - NIM32IO - LED.SchDoc				
4:31:01 PM				

Alternate Part Numbers:
 Texas Instruments - TLC5928PW
 Texas Instruments - TLC5925IPWR
 ST Microelectronics - STP16CP05TTR
 Catalyst Semiconductor - CAT4016Y-T2
 Allegro - A628ZELP-T



OUTPUTS

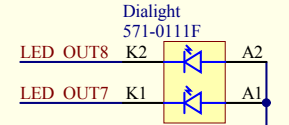
Red LEDs: 571-0111F



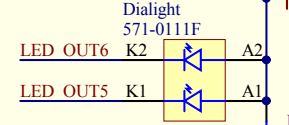
INPUTS

Green LEDs: 571-0122F

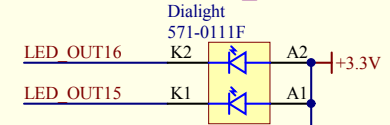
LED2_LED4



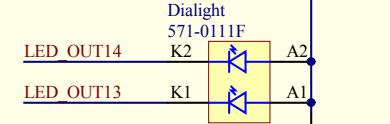
LED2_LED3



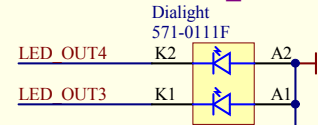
LED2_LED8



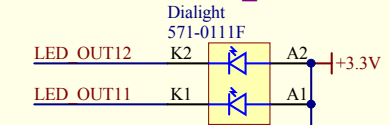
LED2_LED7



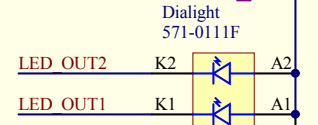
LED2_LED2



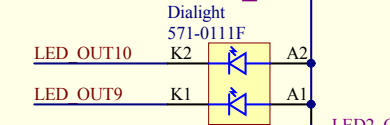
LED2_LED6




LED2_LED1



LED2_LED5



VME - NIMIO32 - Front Panel LEDs and driver

Revision 1	Drawing #: 13		TRIUMF 4004 Wesbrook Mall Vancouver, B.C. Canada V6T 2A3	
	Sheet #: 13 of 14	Size: A		
	Drawn by: D.Bishop	Date: 5/5/2010		
File: G:\VME-NIMIO32\ALTUM\Altium\VME - NIM32IO - LED.SchDoc				
				4:31:01 PM

