
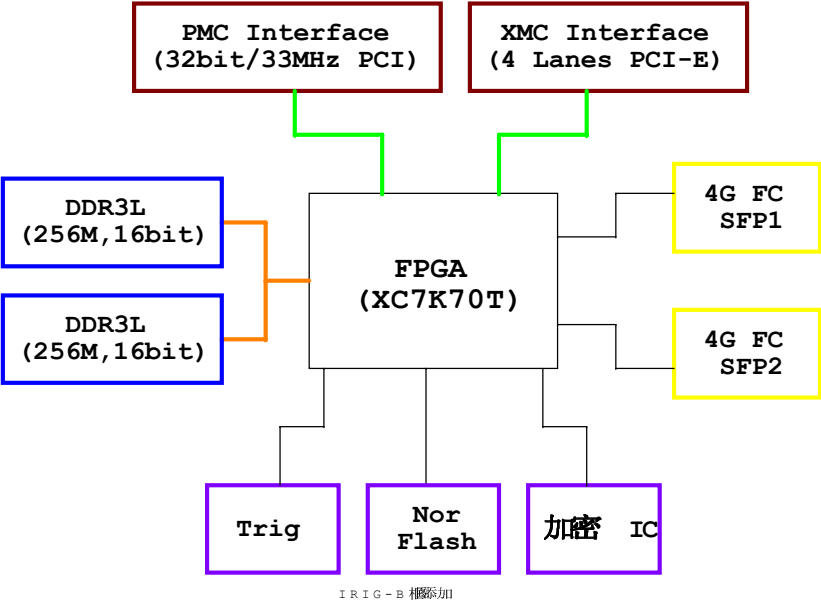


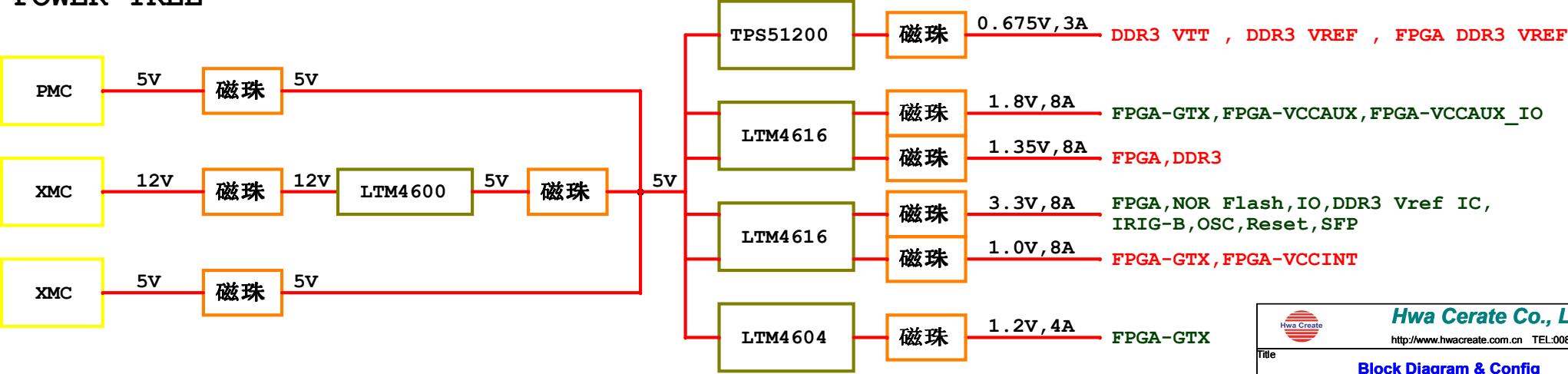
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D									
C									
B									
A									
5		4		3		2		1	

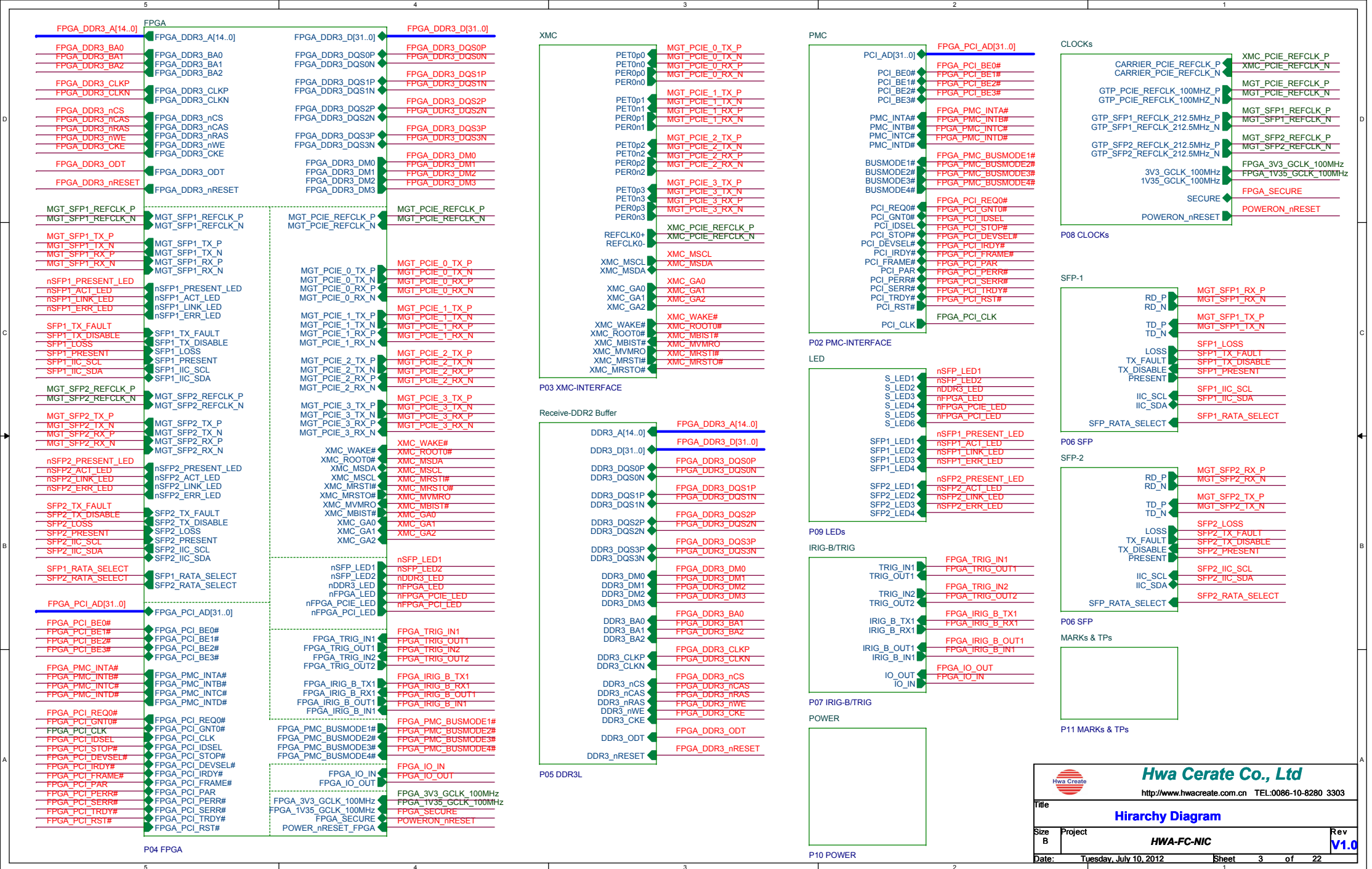
		<b>Hwa Cerate Co., Ltd</b>	
		<a href="http://www.hwacreate.com.cn">http://www.hwacreate.com.cn</a> TEL:0086-10-8280 3303	
Title			
<b>Cover Page</b>			
Size B	Project  <b>HWA-FC-NIC</b>		Rev <b>V1.0</b>
Date:	Tuesday, July 10, 2012	Sheet 1 of 22	

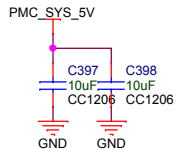
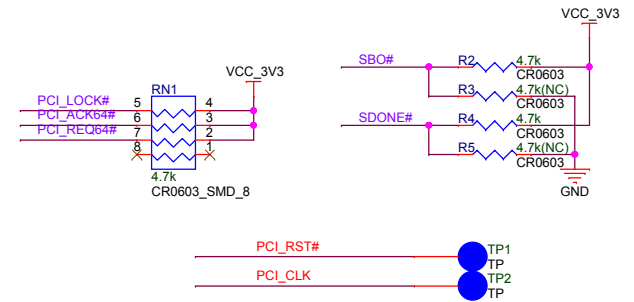
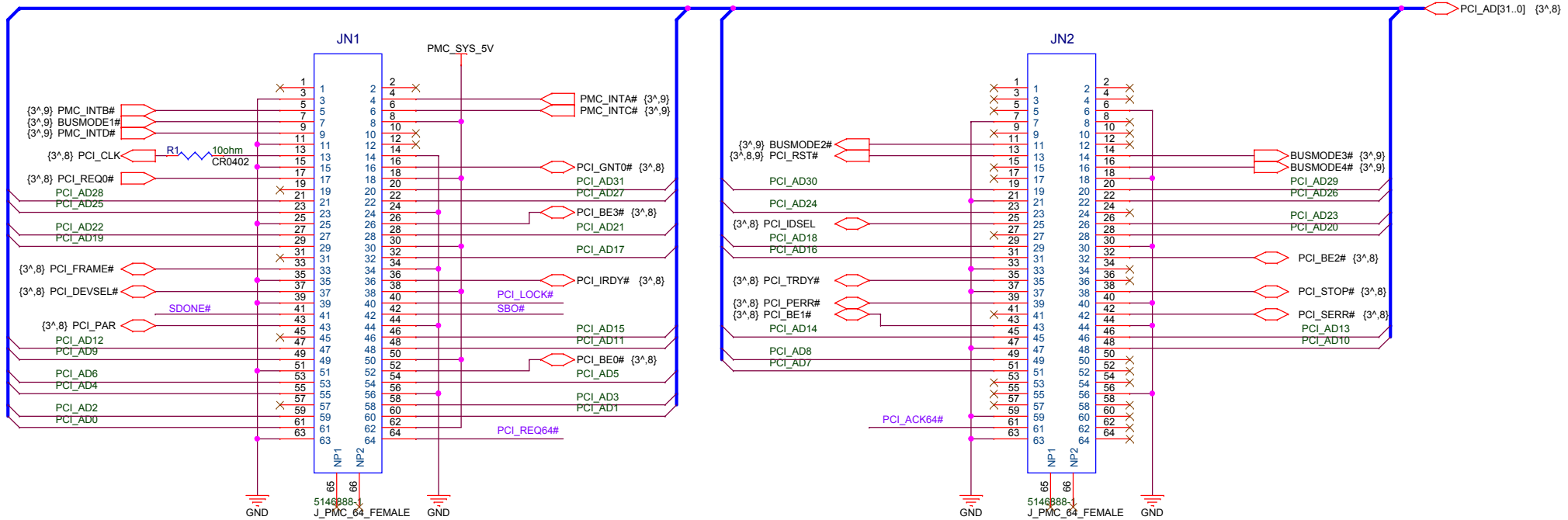
BLOCK DIAGRAM




POWER TREE







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Title	<b>PMC Interface</b>
Size B	Project <b>HWA-FC-NIC</b> Rev <b>V1.0</b>
Date:	Tuesday, July 10, 2012 Sheet 4 of 22

XMC\_SYS\_5V\_12V

J1

F1  
F3  
F5  
F7  
F9  
F11  
F13  
F15

VPWR1\_5V\_12V  
VPWR2\_5V\_12V  
VPWR3\_5V\_12V  
VPWR4\_5V\_12V  
VPWR5\_5V\_12V  
VPWR6\_5V\_12V  
VPWR7\_5V\_12V  
VPWR8\_5V\_12V

C1  
C3  
C5  
C7

3V3\_1  
3V3\_2  
3V3\_3  
3V3\_4

XMC\_AUX\_3V3

C13  
F6  
F8

3V3\_AUX  
+12V  
-12V

A9  
B9  
D9  
E9  
C17  
F17

RFU1  
RFU2  
RFU3  
RFU4  
RFU5  
RFU6

C9  
C15  
C18  
C19  
F18  
F19

RPS1  
RPS2  
RPS3  
RPS4  
RPS5  
RPS6

A2  
A4  
A6  
A8  
A10  
A12  
A14  
A16  
A18  
B2  
B4  
B6  
B8  
B10  
B12  
B14  
B16  
B18  
D2  
D4  
D6  
D8  
D10  
D12  
D14  
D16  
D18  
E2  
E4  
E6  
E8  
E10  
E12  
E14  
E16  
E18

GND1  
GND2  
GND3  
GND4  
GND5  
GND6  
GND7  
GND8  
GND9  
GND10  
GND11  
GND12  
GND13  
GND14  
GND15  
GND16  
GND17  
GND18  
GND19  
GND20  
GND21  
GND22  
GND23  
GND24  
GND25  
GND26  
GND27  
GND28  
GND29  
GND30  
GND31  
GND32  
GND33  
GND34  
GND35  
GND36

REFCLK0+  
REFCLK0-  
WAKE#  
ROOT0#  
MSDA  
MSCL  
GA0  
GA1  
GA2  
MBIST#  
MVMRO  
MRSTI#  
MRSTO#  
TRST#  
TCK  
TMS  
TDI  
TDO  
MPRESENT#

ASP-105885-01  
XMC\_MALE\_CON

P15

PET0p0  
PET0n0  
PER0p0  
PER0n0

A1  
B1  
A11  
B11

PET0p0 {3^,7}  
PET0n0 {3^,7}  
PER0p0 {3^,7}  
PER0n0 {3^,7}

PET0p1  
PET0n1  
PER0p1  
PER0n1

D1  
E1  
D11  
E11

PET0p1 {3^,7}  
PET0n1 {3^,7}  
PER0p1 {3^,7}  
PER0n1 {3^,7}

PET0p2  
PET0n2  
PER0p2  
PER0n2

A3  
B3  
A13  
B13

PET0p2 {3^,7}  
PET0n2 {3^,7}  
PER0p2 {3^,7}  
PER0n2 {3^,7}

PET0p3  
PET0n3  
PER0p3  
PER0n3

D3  
E3  
D13  
E13

PET0p3 {3^,7}  
PET0n3 {3^,7}  
PER0p3 {3^,7}  
PER0n3 {3^,7}

PET0p4  
PET0n4  
PER0p4  
PER0n4

A5  
B5  
A15  
B15

PET0p5  
PET0n5  
PER0p5  
PER0n5

D5  
E5  
D15  
E15

PET0p6  
PET0n6  
PER0p6  
PER0n6

A7  
B7  
A17  
B17

PET0p7  
PET0n7  
PER0p7  
PER0n7

D7  
E7  
D17  
E17

REFCLK0+  
REFCLK0-

A19  
B19

REFCLK0+ {18,3^}  
REFCLK0- {18,3^}

WAKE#  
ROOT0#

D19  
E19

XMC\_WAKE# {11,3^}  
XMC\_ROOT0# {11,3^}

MSDA  
MSCL

F14  
F16

XMC\_MSDA {11,3^}  
XMC\_MSCL {11,3^}

GA0  
GA1  
GA2

F10  
C12  
C14

XMC\_GA0 {11,3^}  
XMC\_GA1 {11,3^}  
XMC\_GA2 {11,3^}

MBIST#  
MVMRO

C11  
C16

XMC\_MBIST# {11,3^}  
XMC\_MVMRO {11,3^}

MRSTI#  
MRSTO#

F2  
F4

XMC\_MRSTI# {3^,9}  
XMC\_MRSTO# {11,3^}

TRST#  
TCK  
TMS  
TDI  
TDO

C2  
C4  
C6  
C8  
C10

0ohm(NC)  
CR0402

For Disable JTAG

MPRESENT#

F12

GND

XMC\_AUX\_3V3

R6  
10k  
CR0402

XMC\_WAKE#

VCC\_3V3

R12  
10k  
CR0402

XMC\_ROOT0#

VCC\_3V3

R7  
4.7k  
CR0402

R8  
4.7k  
CR0402

R9  
4.7k  
CR0402

R10  
4.7k  
CR0402

R11  
4.7k  
CR0402

XMC\_MSDA

XMC\_MSCL

XMC\_MBIST#

XMC\_MRSTI#

XMC\_MRSTO#

XMC\_MRSTI#

XMC\_MRSTO#

TP3

TP

TP4

TP

XMC\_SYS\_5V\_12V

C399  
10uF  
CC1206

C400  
10uF  
CC1206

GND

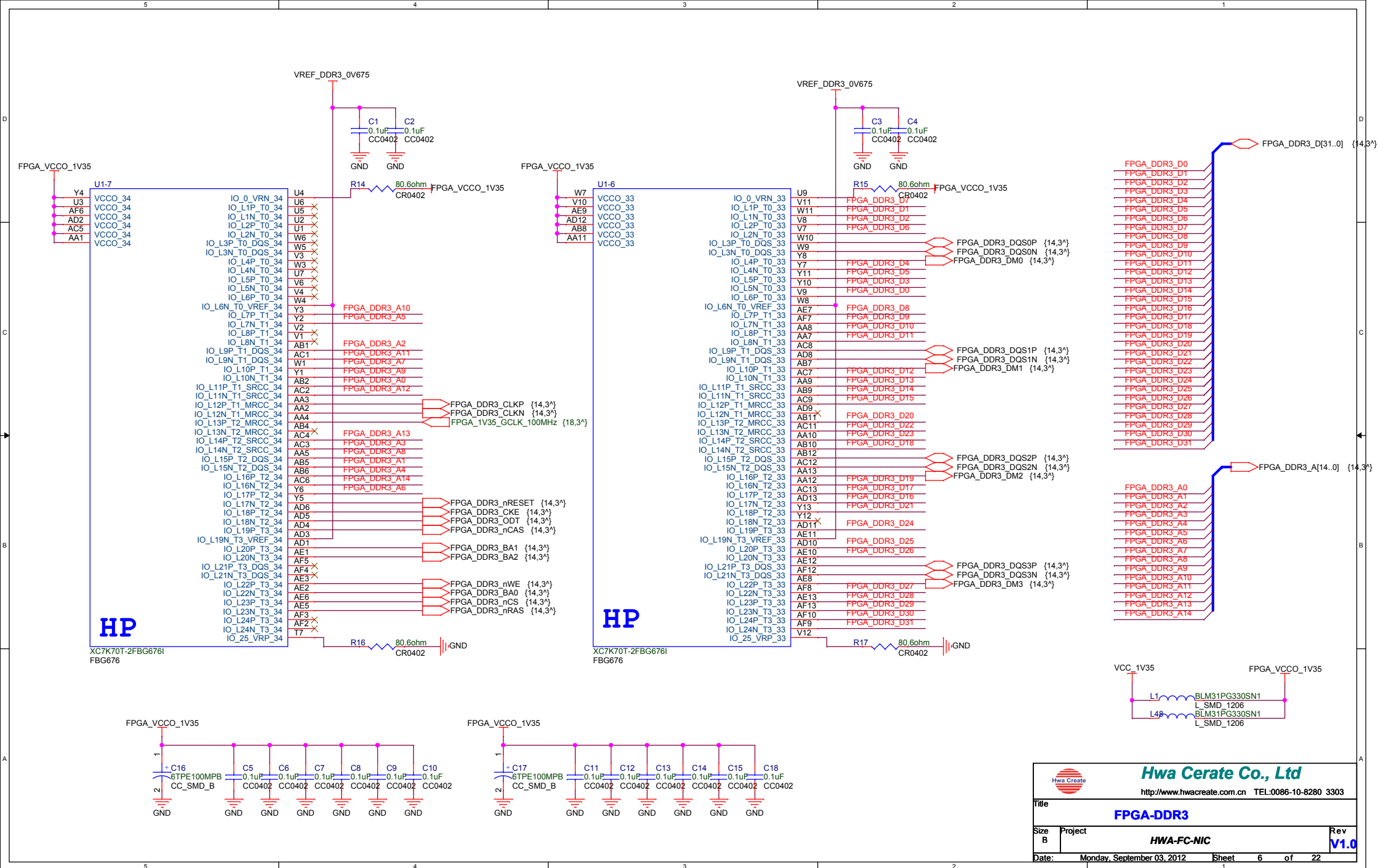
GND

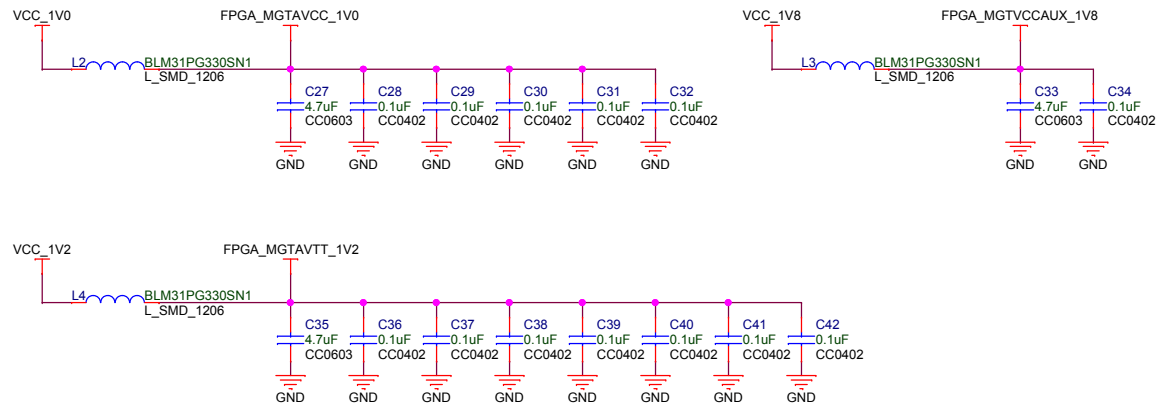
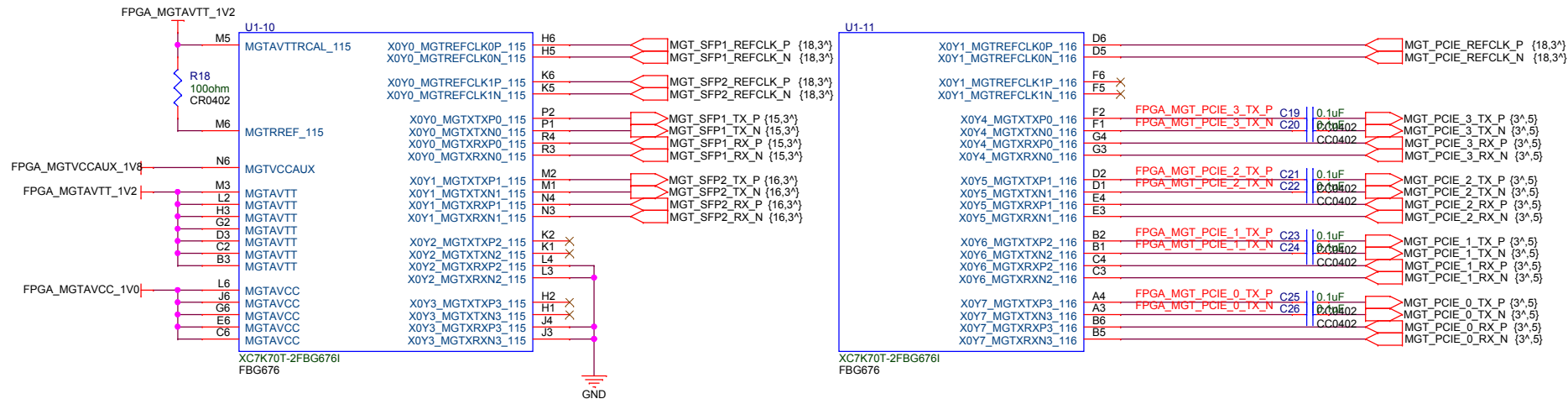


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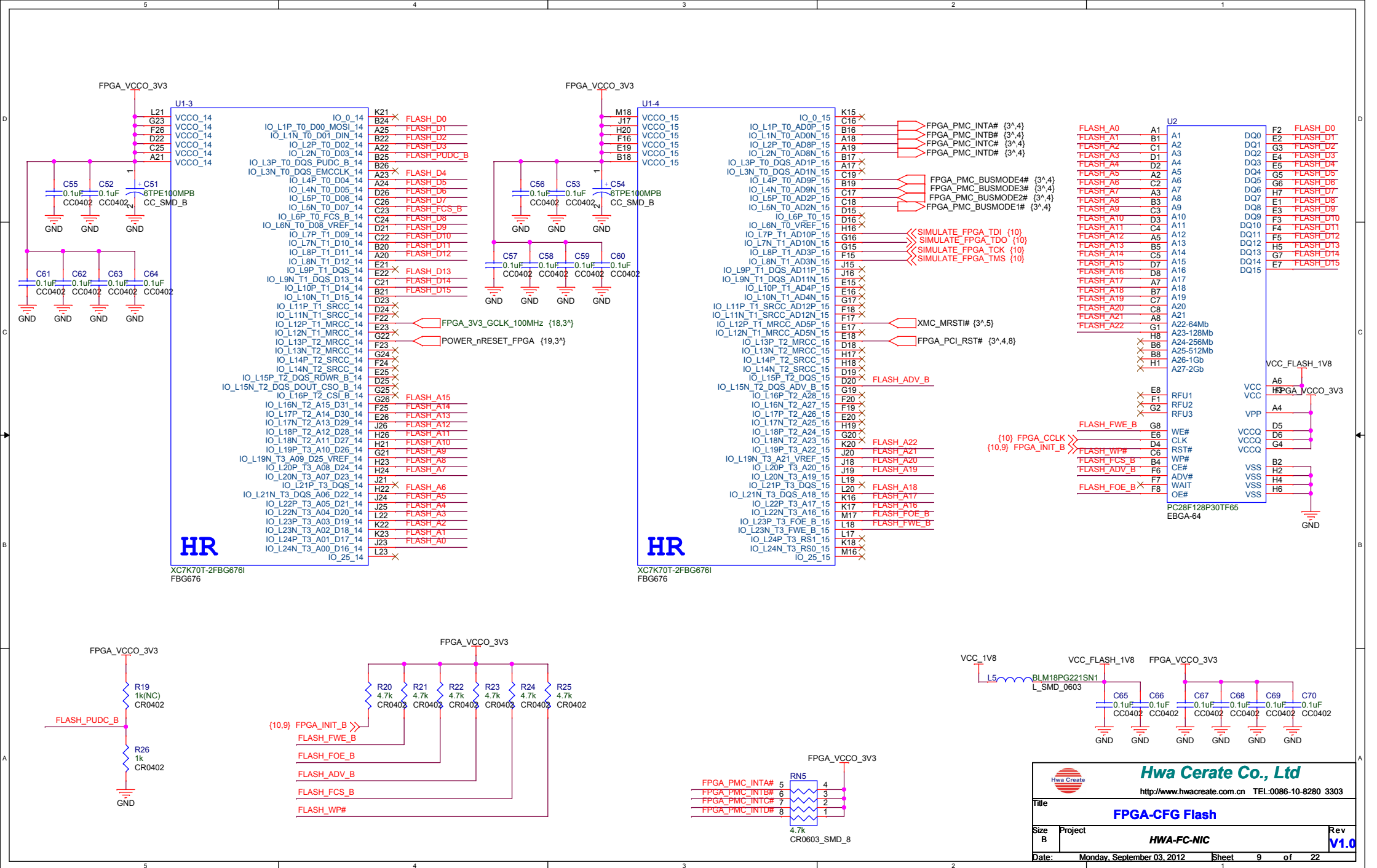
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XMC Interface			
Size	Project	HWA-FC-NIC	
B			
Date:	Tuesday, July 10, 2012	Sheet	5 of 22
		Rev	V1.0

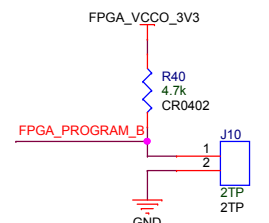
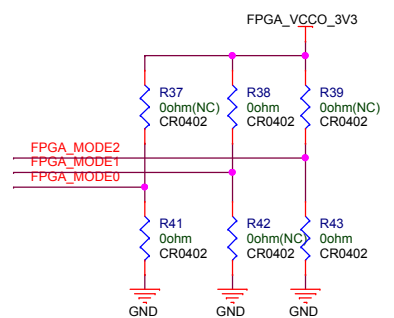
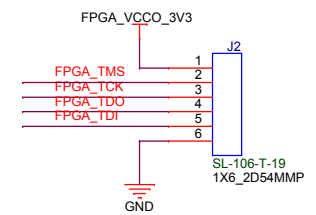
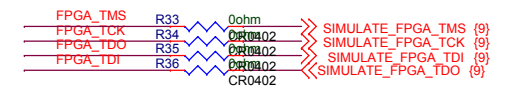
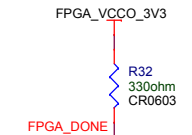
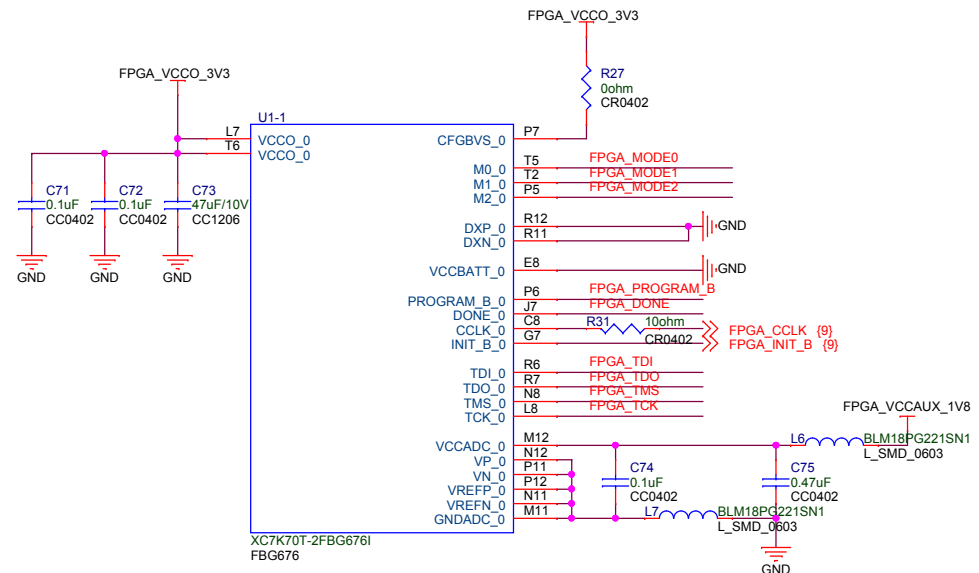












7 Series FPGA Configuration Modes

Configuration Mode	M[2:0]	Bus Width	CCLK Direction
Master Serial	000	x1	Output
Master SPI	001	x1, x2, x4	Output
Master BPI	010	x8, x16	Output
Master SelectMAP	100	x8, x16	Output
JTAG	101	x1	Not Applicable
Slave SelectMAP	110	x8, x16, x32 <sup>(1)</sup>	Input
Slave Serial <sup>(2)</sup>	111	x1	Input

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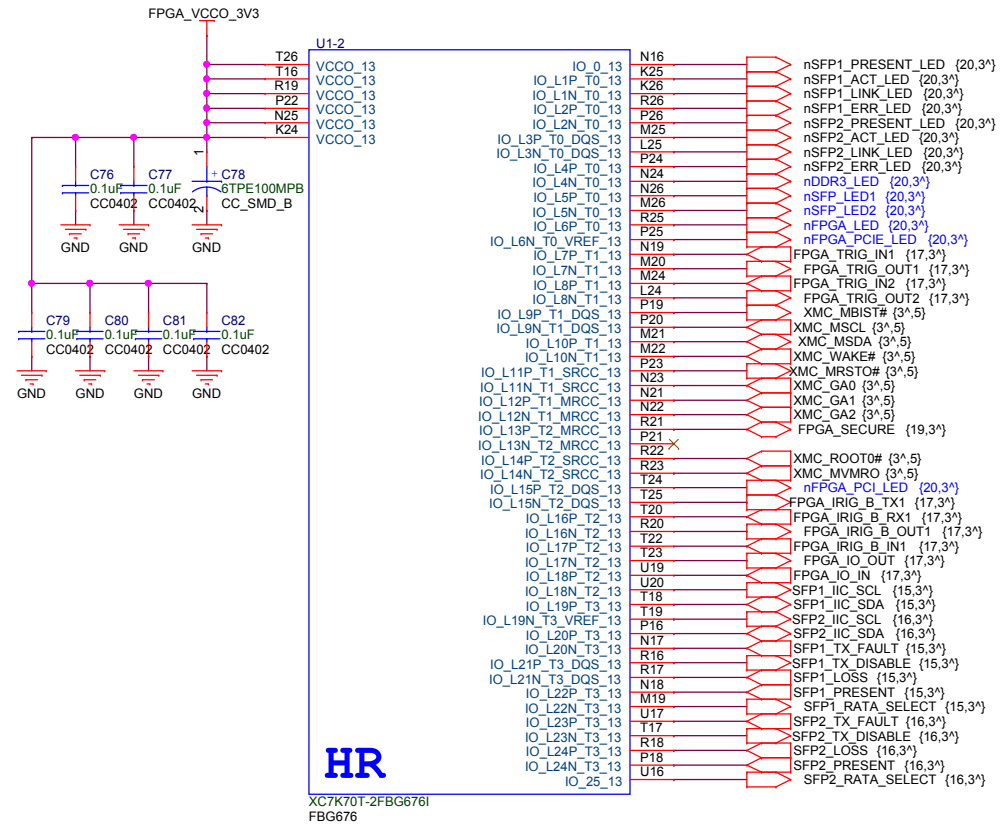
Title **FPGA-JTAG,XADC**

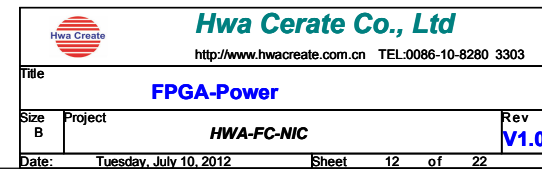
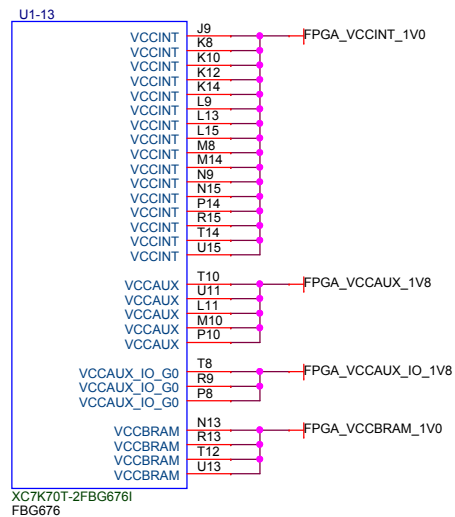
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Size B Project **HWA-FC-NIC** Rev **V1.0**

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U1-8		
<del>Y24</del>	VCCO_12_1	IO_0_12
<del>U20</del>	VCCO_12_2	IO_L1P_T0_12
<del>U23</del>	VCCO_12_3	IO_L1N_T0_12
<del>AF26</del>	VCCO_12_4	IO_L2P_T0_12
<del>AD22</del>	VCCO_12_5	IO_L2N_T0_12
<del>AC25</del>	VCCO_12_6	IO_L3P_T0_DQS_12
<del>AA21</del>	VCCO_12_7	IO_L3N_T0_DQS_12
		IO_L4P_T0_12
		IO_L4N_T0_12
		IO_L5P_T0_12
		IO_L5N_T0_12
		IO_L6P_T0_12
		IO_L6N_T0_VREF_12
		IO_L7P_T1_12
		IO_L7N_T1_12
		IO_L8P_T1_12
		IO_L8N_T1_12
		IO_L9P_T1_DQS_12
		IO_L9N_T1_DQS_12
		IO_L10P_T1_12
		IO_L10N_T1_12
		IO_L11P_T1_SRCC_12
		IO_L11N_T1_SRCC_12
		IO_L12P_T1_MRCC_12
		IO_L12N_T1_MRCC_12
		IO_L13P_T2_MRCC_12
		IO_L13N_T2_MRCC_12
		IO_L14P_T2_SRCC_12
		IO_L14N_T2_SRCC_12
		IO_L15P_T2_DQS_12
		IO_L15N_T2_DQS_12
		IO_L16P_T2_12
		IO_L16N_T2_12
		IO_L17P_T2_12
		IO_L17N_T2_12
		IO_L18P_T2_12
		IO_L18N_T2_12
		IO_L19P_T3_12
		IO_L19N_T3_VREF_12
		IO_L20P_T3_12
		IO_L20N_T3_12
		IO_L21P_T3_DQS_12
		IO_L21N_T3_DQS_12
		IO_L22P_T3_12
		IO_L22N_T3_12
		IO_L23P_T3_12
		IO_L23N_T3_12
		IO_L24P_T3_12
		IO_L24N_T3_12
		IO_25_12

HR

XC7K70T-2FBG676I  
FBG676


70T NC

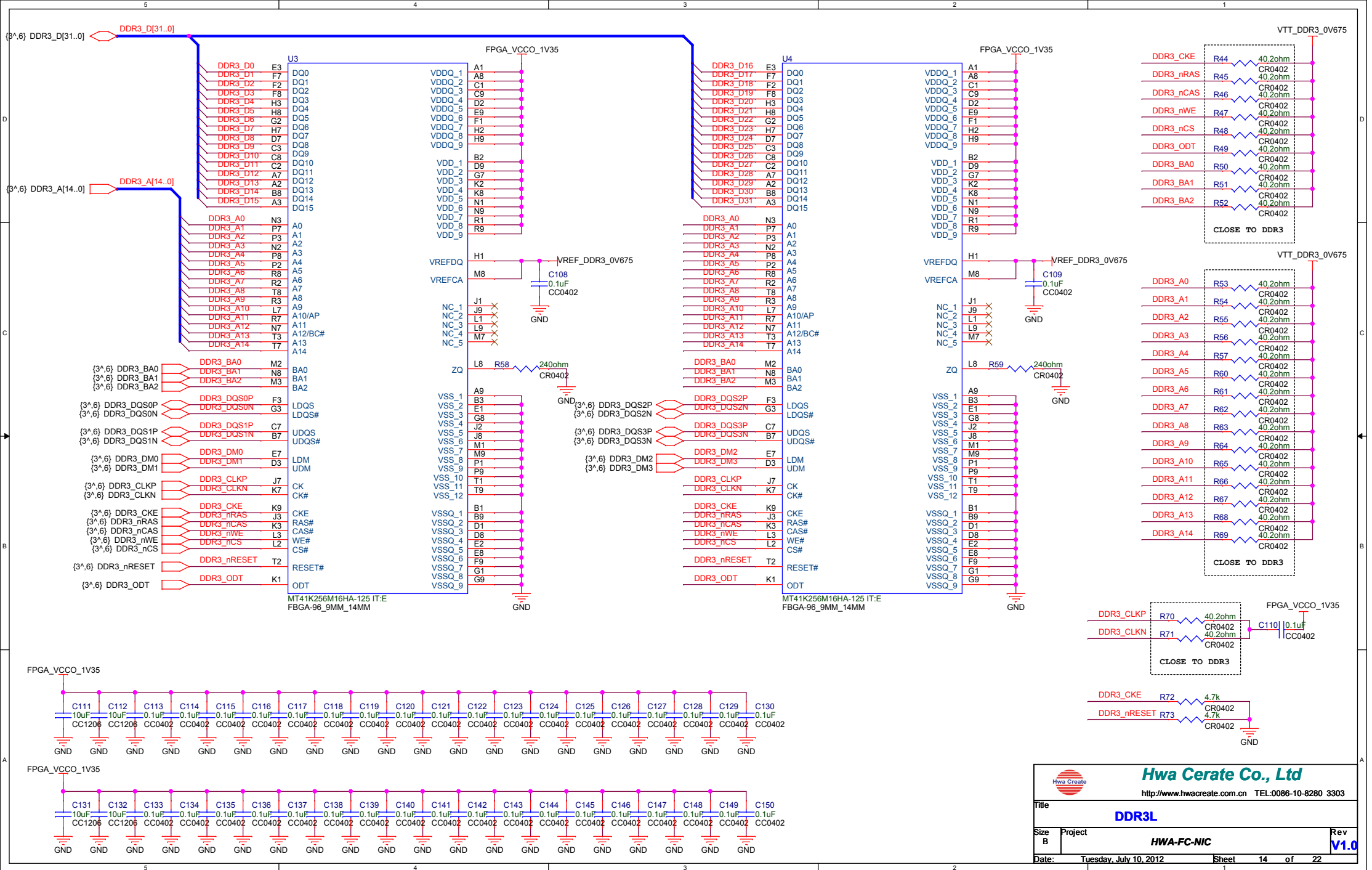
U1-9		
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<del>W17</del>	VCCO_32_2	IO_L1P_T0_32
<del>AF16</del>	VCCO_32_3	IO_L1N_T0_32
<del>AE19</del>	VCCO_32_4	IO_L2P_T0_32
<del>AC15</del>	VCCO_32_5	IO_L2N_T0_32
<del>AB18</del>	VCCO_32_6	IO_L3P_T0_DQS_32
		IO_L3N_T0_DQS_32
		IO_L4P_T0_32
		IO_L4N_T0_32
		IO_L5P_T0_32
		IO_L5N_T0_32
		IO_L6P_T0_32
		IO_L6N_T0_VREF_32
		IO_L7P_T1_32
		IO_L7N_T1_32
		IO_L8P_T1_32
		IO_L8N_T1_32
		IO_L9P_T1_DQS_32
		IO_L9N_T1_DQS_32
		IO_L10P_T1_32
		IO_L10N_T1_32
		IO_L11P_T1_SRCC_32
		IO_L11N_T1_SRCC_32
		IO_L12P_T1_MRCC_32
		IO_L12N_T1_MRCC_32
		IO_L13P_T2_MRCC_32
		IO_L13N_T2_MRCC_32
		IO_L14P_T2_SRCC_32
		IO_L14N_T2_SRCC_32
		IO_L15P_T2_DQS_32
		IO_L15N_T2_DQS_32
		IO_L16P_T2_32
		IO_L16N_T2_32
		IO_L17P_T2_32
		IO_L17N_T2_32
		IO_L18P_T2_32
		IO_L18N_T2_32
		IO_L19P_T3_32
		IO_L19N_T3_VREF_32
		IO_L20P_T3_32
		IO_L20N_T3_32
		IO_L21P_T3_DQS_32
		IO_L21N_T3_DQS_32
		IO_L22P_T3_32
		IO_L22N_T3_32
		IO_L23P_T3_32
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		IO_L24N_T3_32
		IO_25_VRP_32

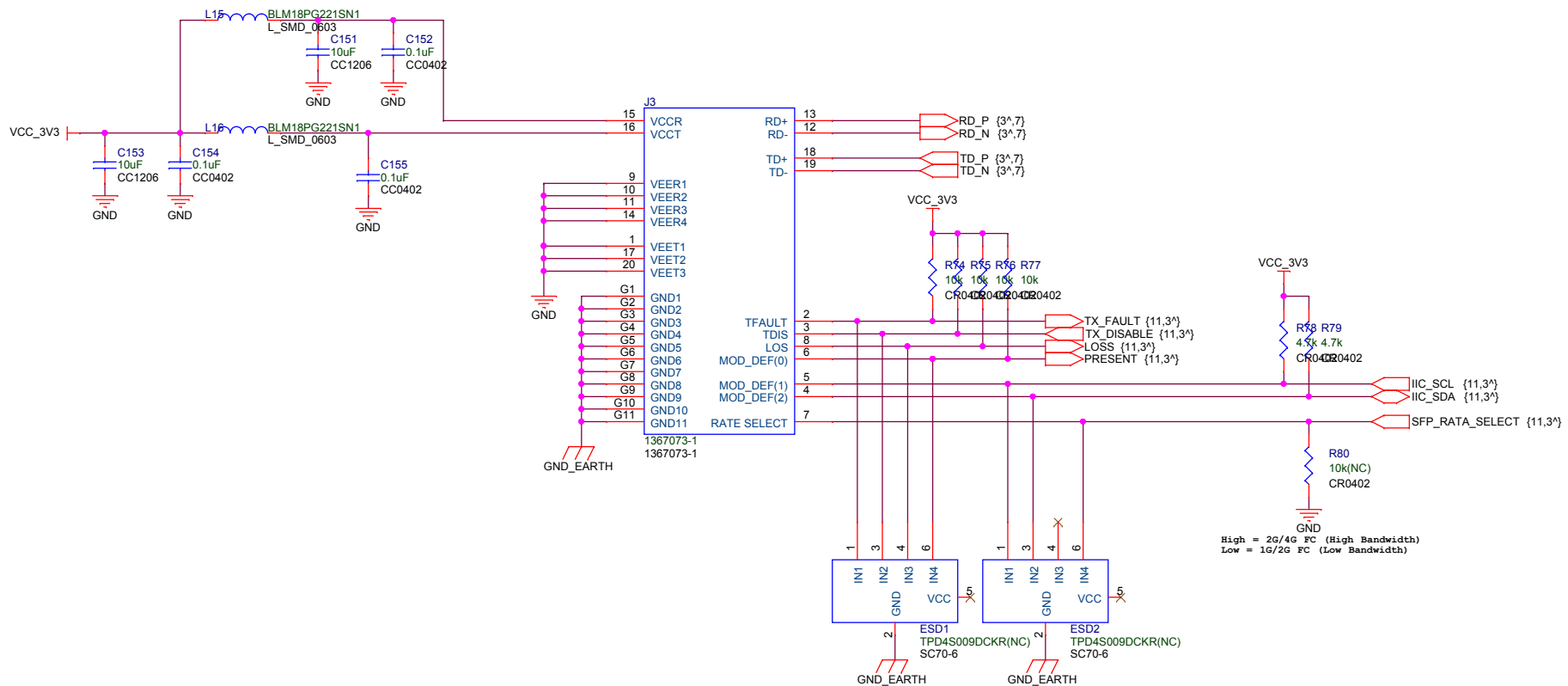
HP

XC7K70T-2FBG676I  
FBG676

70T NC

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Title	
<b>FPGA-NC Bank</b>	
Size	Project
B	<b>HWA-FC-NIC</b>
Date:	Rev
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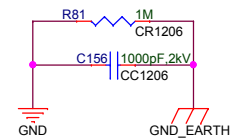



TX Fault (Pull Up) (Output) :  
High = Laser Fault  
Low = Normal Operation

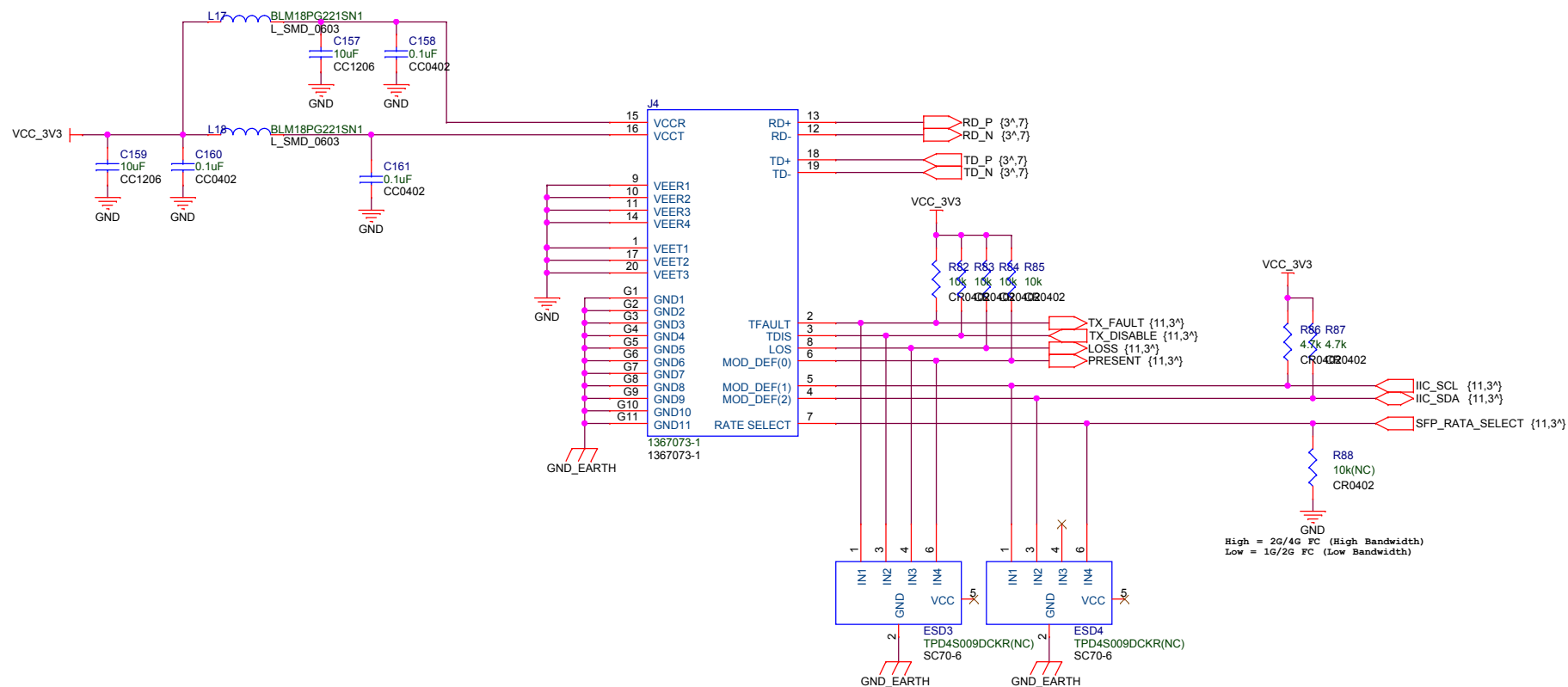
TX Disable (Pull Up) (Input) :  
High/Open = Transmitter Disabled  
Low = Transmitter On

Los (Pull Up) (Output) :  
High = Loss Of Signal  
Low = Normal Operation

Mode Def 0 (Pull Up) (Output):  
Low : Module is Present



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Title	<b>SFP</b>
Size B	Project <b>HWA-FC-NIC</b> Rev <b>V1.0</b>
Date:	Tuesday, July 10, 2012 Sheet 15 of 22

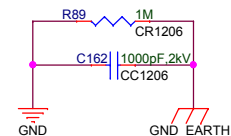



TX Fault (Pull Up) (Output) :  
High = Laser Fault  
Low = Normal Operation

TX Disable (Pull Up) (Input) :  
High/Open = Transmitter Disabled  
Low = Transmitter On

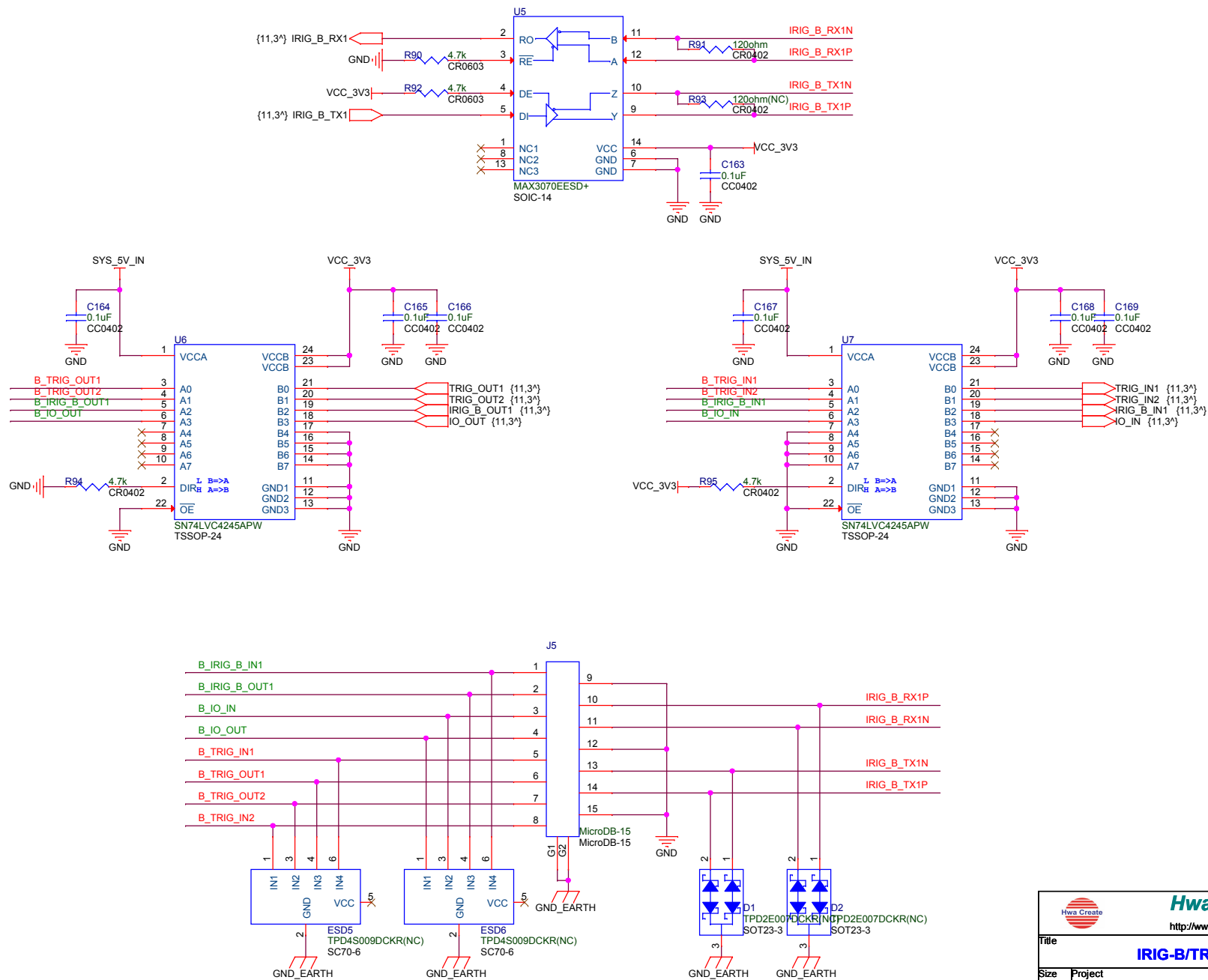
Los (Pull Up) (Output) :  
High = Loss Of Signal  
Low = Normal Operation

Mode Def 0 (Pull Up) (Output):  
Low : Module is Present

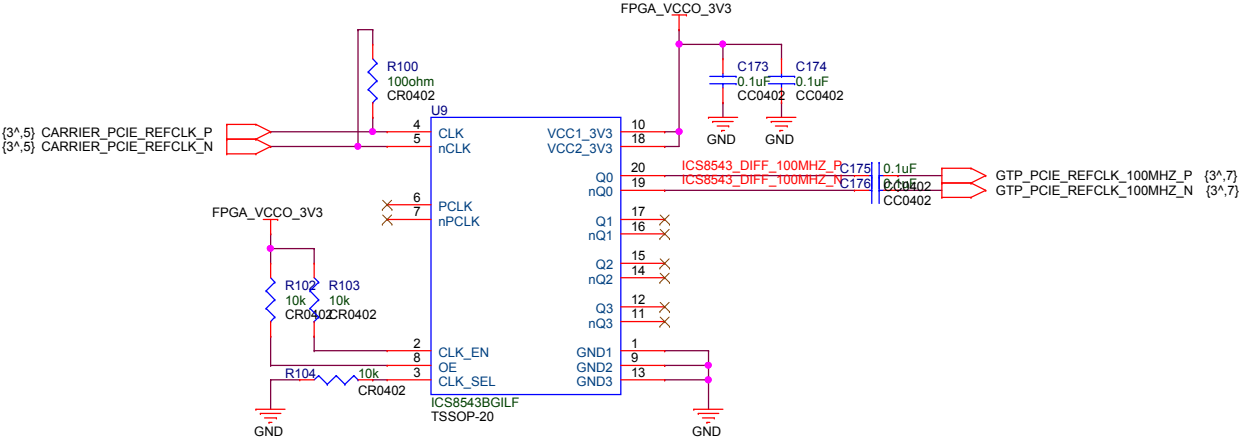


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Title	<b>SFP</b>
Size B	Project <b>HWA-FC-NIC</b>
Date:	Tuesday, July 10, 2012
Sheet	16 of 22
Rev	<b>V1.0</b>

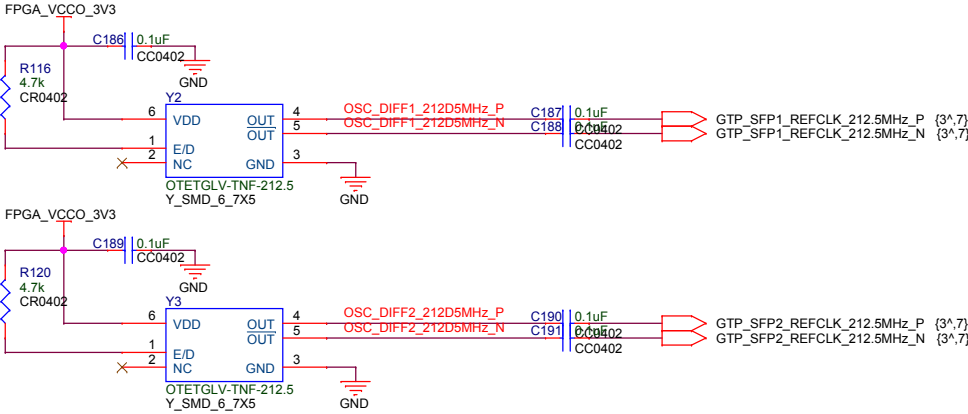




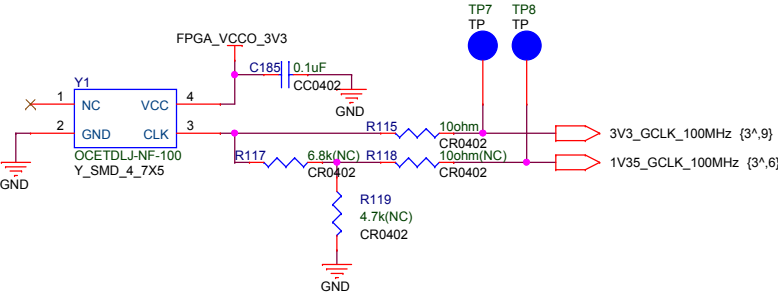
PCIE Clock 100MHz



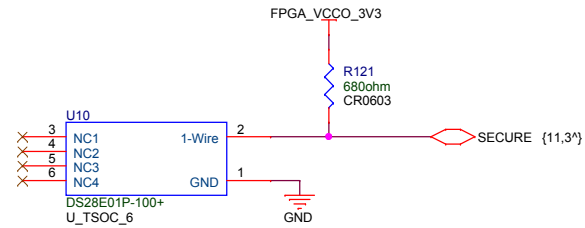
212.5MHz FC Clock



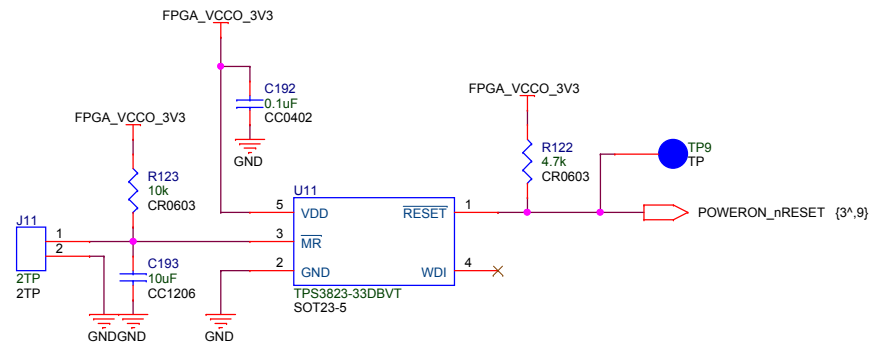
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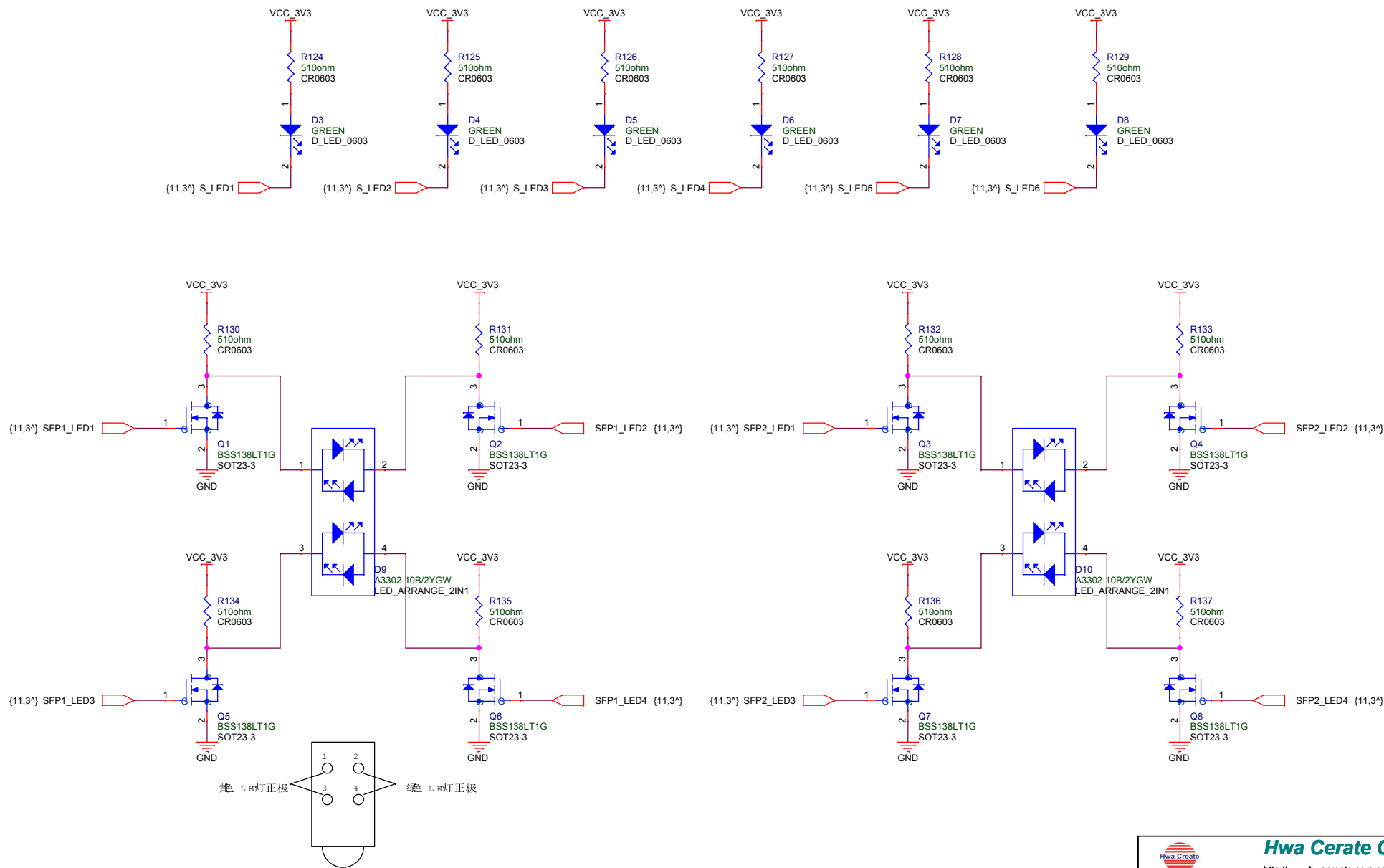



## SECURE IC

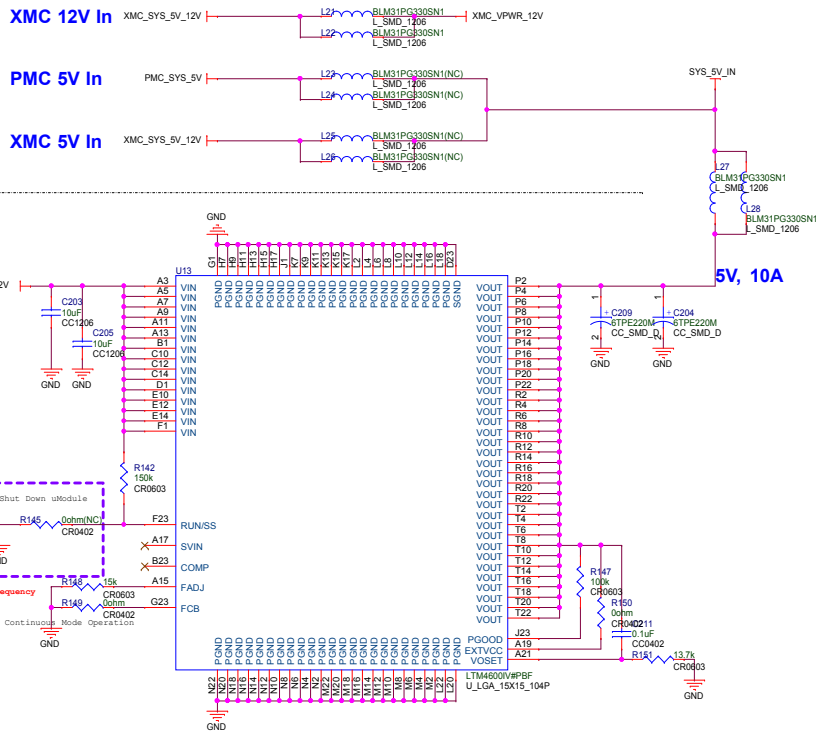


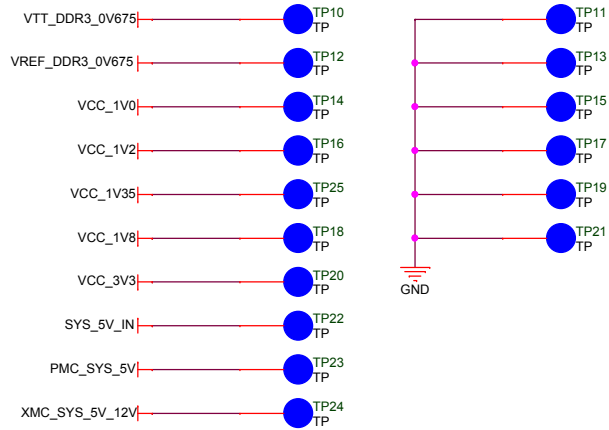
## RESET






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Title	
LEDs	
Size B	Project
HWA-FC-NIC	
Date:	Rev
Tuesday, July 10, 2012	V1.0
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Title			
<b>Marks &amp; TPs</b>			
Size B	Project		Rev
	<b>HWA-FC-NIC</b>		<b>V1.0</b>
Date:	Tuesday, July 10, 2012	Sheet	22 of 22