

## Schematic Symbol for XC4VFX60FF1152

The Schematic symbol consists of 24 heterogeneous parts that are listed below:

### 1. Programming Interface

U?A	
P20	HSWAPEN_0
T18	CCLK_0
R17	D_IN_0
P21	PROGRAM_B_0
P19	INIT_0
T16	CS_B_0
R19	DONE_0
W15	RDWR_B_0
R21	VBATT_0
T20	M2_0
AA16	PWRDWN_B_0
Y14	TMS_0
V18	MD_0
W17	TD_0
AA14	TCK_0
W19	M1_0
Y18	DOÜT_BUSY_0
AA15	TDI_0
D17	TDN_0
C17	TDP_0
AL17	VREFN_SM
AL16	VREFP_SM
AL15	AVDD_SM
AM17	VN_SM
AM16	VP_SM
AM15	AVSS_SM
D20	VREFN_ADC
D19	VREFP_ADC
D18	AVDD_ADC
C20	VN_ADC
C19	VP_ADC
C18	AVSS_ADC

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## 2. I/O Banks 1 and 2

U?B	
G18	IO_L1P_D31_LC_1
F18	IO_L1N_D30_LC_1
H14	IO_L2P_D29_LC_1
H13	IO_L2N_D28_LC_1
G17	IO_L3P_D27_LC_1
G16	IO_L3N_D26_LC_1
G15	IO_L4P_D25_LC_1
H15	IO_L4N_D24_VREF_LC_1
E18	IO_L5P_D23_LC_1
E17	IO_L5N_D22_LC_1
F15	IO_L6P_D21_LC_1
F14	IO_L6N_D20_LC_1
E16	IO_L7P_D19_LC_1
F16	IO_L7N_D18_LC_1
F13	IO_L8P_D17_CC_LC_1
G13	IO_L8N_D16_CC_LC_1
AH22	IO_L1P_D15_CC_LC_2
AJ22	IO_L1N_D14_CC_LC_2
AK18	IO_L2P_D13_LC_2
AK17	IO_L2N_D12_LC_2
AG22	IO_L3P_D11_LC_2
AG21	IO_L3N_D10_LC_2
AH17	IO_L4P_D9_LC_2
AJ17	IO_L4N_D8_VREF_LC_2
AJ21	IO_L5P_D7_LC_2
AJ20	IO_L5N_D6_LC_2
AJ19	IO_L6P_D5_LC_2
AK19	IO_L6N_D4_LC_2
AG20	IO_L7P_D3_LC_2
AH20	IO_L7N_D2_LC_2
AH19	IO_L8P_D1_LC_2
AH18	IO_L8N_D0_LC_2

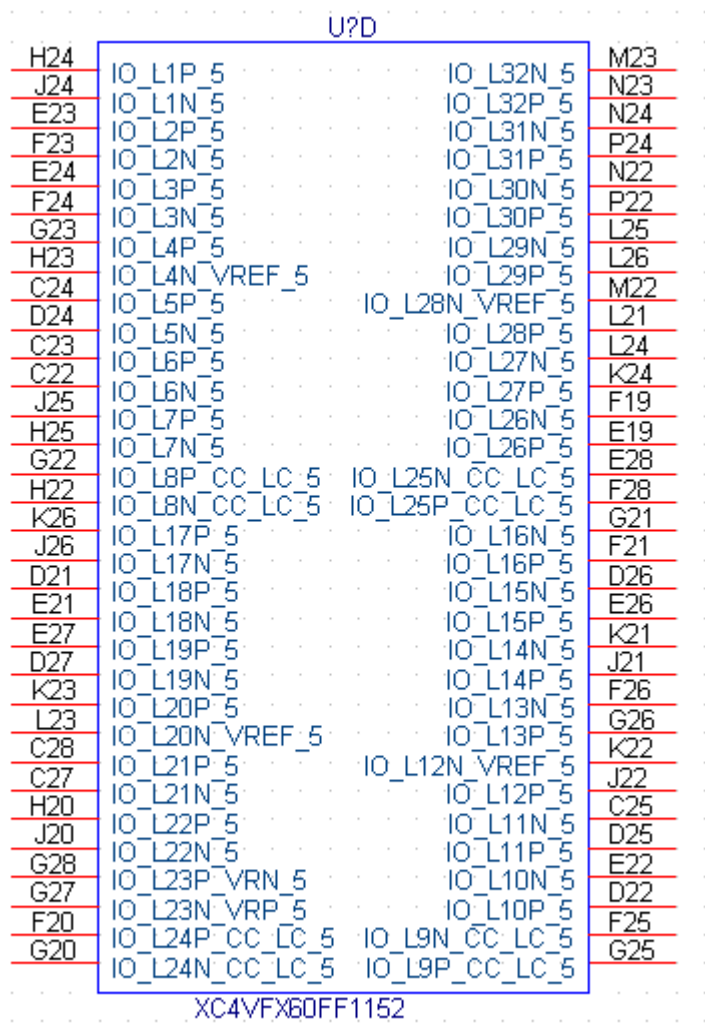
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### 3. I/O Banks 3 and 4

U?C	
H17	IO_L1P_GC_CC_LC_3
J17	IO_L1N_GC_CC_LC_3
K16	IO_L2P_GC_VRN_LC_3
L16	IO_L2N_GC_VRP_LC_3
K18	IO_L3P_GC_LC_3
K17	IO_L3N_GC_LC_3
J16	IO_L4P_GC_LC_3
J15	IO_L4N_GC_VREF_LC_3
K19	IO_L5P_GC_LC_3
J19	IO_L5N_GC_LC_3
J14	IO_L6P_GC_LC_3
K14	IO_L6N_GC_LC_3
H19	IO_L7P_GC_LC_3
H18	IO_L7N_GC_LC_3
L15	IO_L8P_GC_LC_3
L14	IO_L8N_GC_LC_3
AD21	IO_L1P_GC_LC_4
AD20	IO_L1N_GC_LC_4
AF16	IO_L2P_GC_LC_4
AE16	IO_L2N_GC_LC_4
AE21	IO_L3P_GC_LC_4
AF21	IO_L3N_GC_LC_4
AE18	IO_L4P_GC_LC_4
AE17	IO_L4N_GC_VREF_LC_4
AF20	IO_L5P_GC_LC_4
AF19	IO_L5N_GC_LC_4
AG17	IO_L6P_GC_LC_4
AG16	IO_L6N_GC_LC_4
AD19	IO_L7P_GC_VRN_LC_4
AE19	IO_L7N_GC_VRP_LC_4
AF18	IO_L8P_GC_CC_LC_4
AG18	IO_L8N_GC_CC_LC_4

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#### 4. I/O Bank 5



**5. I/O Bank 6**

U?E		
G10	IO_L1P_6	IO_L32N_6
H10	IO_L1N_6	IO_L32P_6
D10	IO_L2P_6	IO_L31N_6
C10	IO_L2N_6	IO_L31P_6
F10	IO_L3P_6	IO_L30N_6
F9	IO_L3N_6	IO_L30P_6
H9	IO_L4P_6	IO_L29N_6
J9	IO_L4N_VREF_6	IO_L29P_6
F11	IO_L5P_6	IO_L28N_VREF_6
E11	IO_L5N_6	IO_L28P_6
D9	IO_L6P_6	IO_L27N_6
E9	IO_L6N_6	IO_L27P_6
D12	IO_L7P_6	IO_L26N_6
D11	IO_L7N_6	IO_L26P_6
C9	IO_L8P_CC_LC_6	IO_L25N_CC_LC_6
C8	IO_L8N_CC_LC_6	IO_L25P_CC_LC_6
J12	IO_L17P_6	IO_L16N_6
H12	IO_L17N_6	IO_L16P_6
E7	IO_L18P_6	IO_L15N_6
E6	IO_L18N_6	IO_L15P_6
E13	IO_L19P_6	IO_L14N_6
E12	IO_L19N_6	IO_L14P_6
K9	IO_L20P_6	IO_L13N_6
K8	IO_L20N_VREF_6	IO_L13P_6
E14	IO_L21P_6	IO_L12N_VREF_6
D14	IO_L21N_6	IO_L12P_6
C7	IO_L22P_6	IO_L11N_6
D7	IO_L22N_6	IO_L11P_6
C15	IO_L23P_VRN_6	IO_L10N_6
C14	IO_L23N_VRP_6	IO_L10P_6
F6	IO_L24P_CC_LC_6	IO_L9N_CC_LC_6
G6	IO_L24N_CC_LC_6	IO_L9P_CC_LC_6
		C3
		C4
		M11
		M12
		E3
		E4
		L13
		M13
		D4
		D5
		K12
		K13
		C5
		D6
		D15
		D16
		H7
		G7
		L11
		K11
		K7
		J7
		G11
		G12
		H8
		G8
		J10
		J11
		F8
		E8
		C12
		C13

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## 6. I/O Bank 7

U?F		
AH27		AK22
AJ27	IO_L25P_CC_SM7_LC_7	AK23
AL25	IO_L25N_CC_SM7_LC_7	AL28
AM25	IO_L26P_SM6_7	AK28
AF26	IO_L26N_SM6_7	AL23
AG26	IO_L27P_SM5_7	AM23
AD24	IO_L27N_SM5_7	AM27
AE24	IO_L28P_7	AM28
AG25	IO_L28N_VREF_7	AD22
AH25	IO_L29P_SM4_7	AE22
AL26	IO_L29N_SM4_7	AH28
AM26	IO_L30P_SM3_7	AH29
AF25	IO_L30N_SM3_7	AM21
AF24	IO_L31P_SM2_7	AM22
AJ26	IO_L31N_SM2_7	AK29
AJ25	IO_L32P_SM1_7	AJ29
AG28	IO_L32N_SM1_7	AK21
AG27	IO_L17P_7	AL21
AH23	IO_L17N_7	AL29
AG23	IO_L18P_7	AM30
AE28	IO_L18N_7	AL20
AF28	IO_L19P_7	AM20
AF23	IO_L19N_7	AL30
AE23	IO_L20P_7	AL31
AE27	IO_L20N_VREF_7	AC22
AE26	IO_L21P_7	AC23
AL24	IO_L21N_7	AM31
AK24	IO_L22P_7	AM32
AK27	IO_L22N_7	AL18
AK26	IO_L23P_VRN_7	AL19
AJ24	IO_L23N_VRP_7	AK31
AH24	IO_L24P_CC_LC_7	AK32
	IO_L24N_CC_LC_7	

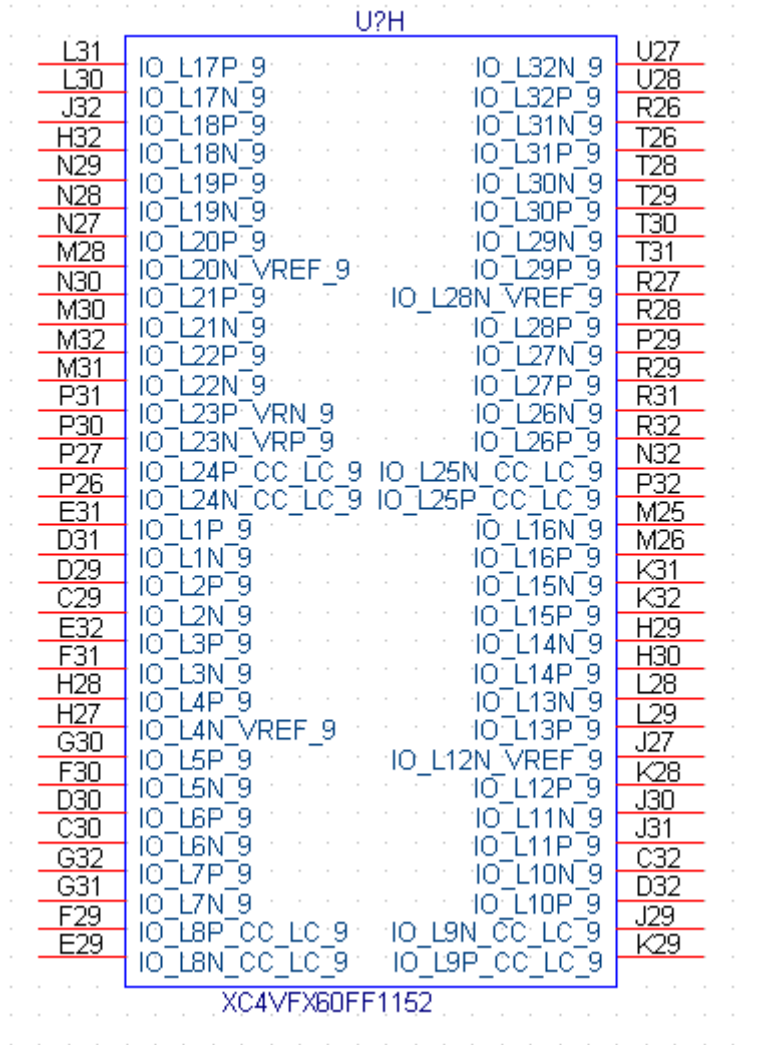
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**7. I/O Bank 8**

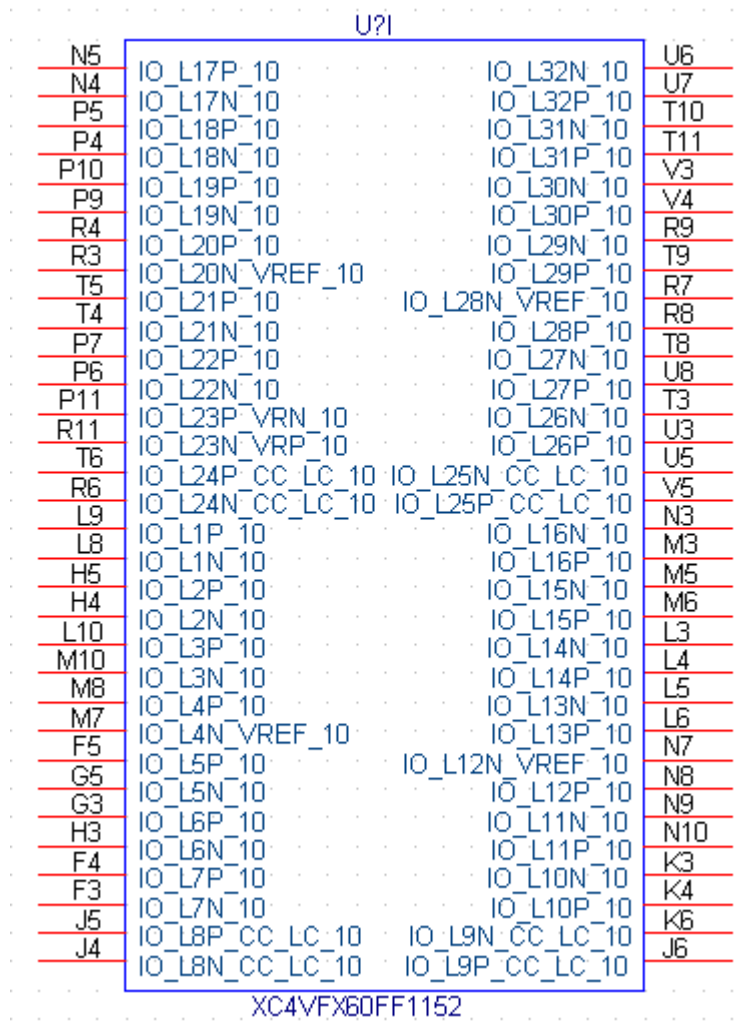
U?G			
AG13			AM10
AH13	IO_L25P_CC_LC_8	IO_L16N_8	AL10
AJ12	IO_L25N_CC_LC_8	IO_L16P_8	AF13
AK12	IO_L26P_8	IO_L15N_8	AE13
AF11	IO_L26N_8	IO_L15P_8	AH9
AG11	IO_L27P_8	IO_L14N_8	AJ9
AF9	IO_L27N_8	IO_L14P_8	AF14
AE9	IO_L28P_8	IO_L13N_8	AE14
AG12	IO_L28N_VREF_8	IO_L13P_8	AD9
AH12	IO_L29P_8	IO_L12N_VREF_8	AD10
AM13	IO_L29N_8	IO_L12P_8	AE11
AM12	IO_L30P_8	IO_L11N_8	AD11
AK14	IO_L30N_8	IO_L11P_8	AK9
AL14	IO_L31P_8	IO_L10N_8	AL9
AK13	IO_L31N_8	IO_L10P_8	AE12
AL13	IO_L32P_8	IO_L9N_CC_LC_8	AD12
AF15	IO_L32N_8	IO_L9P_CC_LC_8	AK8
AG15	IO_L17P_8	IO_L8N_CC_LC_8	AL8
AH10	IO_L17N_8	IO_L8P_CC_LC_8	AC13
AJ10	IO_L18P_8	IO_L7N_8	AD14
AJ16	IO_L18N_8	IO_L7P_8	AM7
AK16	IO_L19P_8	IO_L6N_8	AM8
AF10	IO_L19N_8	IO_L6P_8	AB12
AG10	IO_L20P_8	IO_L5N_8	AC12
AH15	IO_L20N_VREF_8	IO_L5P_8	AH7
AJ15	IO_L21P_8	IO_L4N_VREF_8	AH8
AL11	IO_L21N_8	IO_L4P_8	AA13
AM11	IO_L22P_8	IO_L3N_8	AB13
AH14	IO_L22N_8	IO_L3P_8	AJ7
AJ14	IO_L23P_VRN_8	IO_L2N_8	AK7
AJ11	IO_L23N_VRP_8	IO_L2P_8	AA11
AK11	IO_L24P_CC_LC_8	IO_L1N_8	AB11
	IO_L24N_CC_LC_8	IO_L1P_8	

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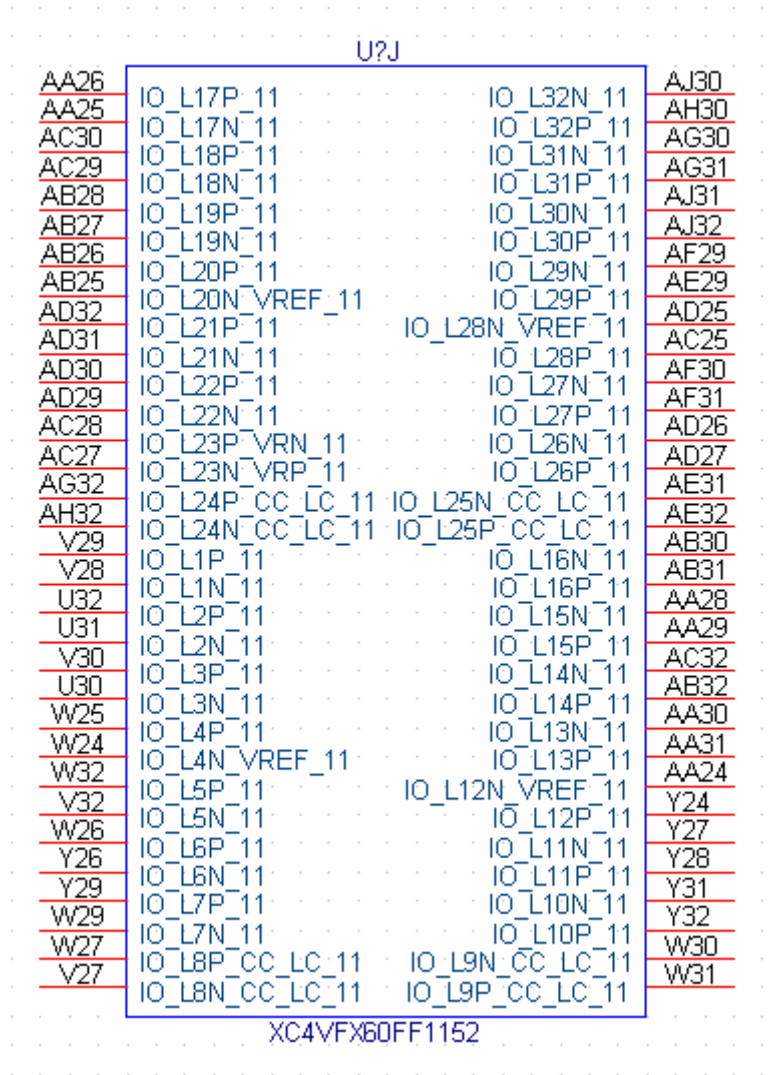
### 8. I/O Bank 9



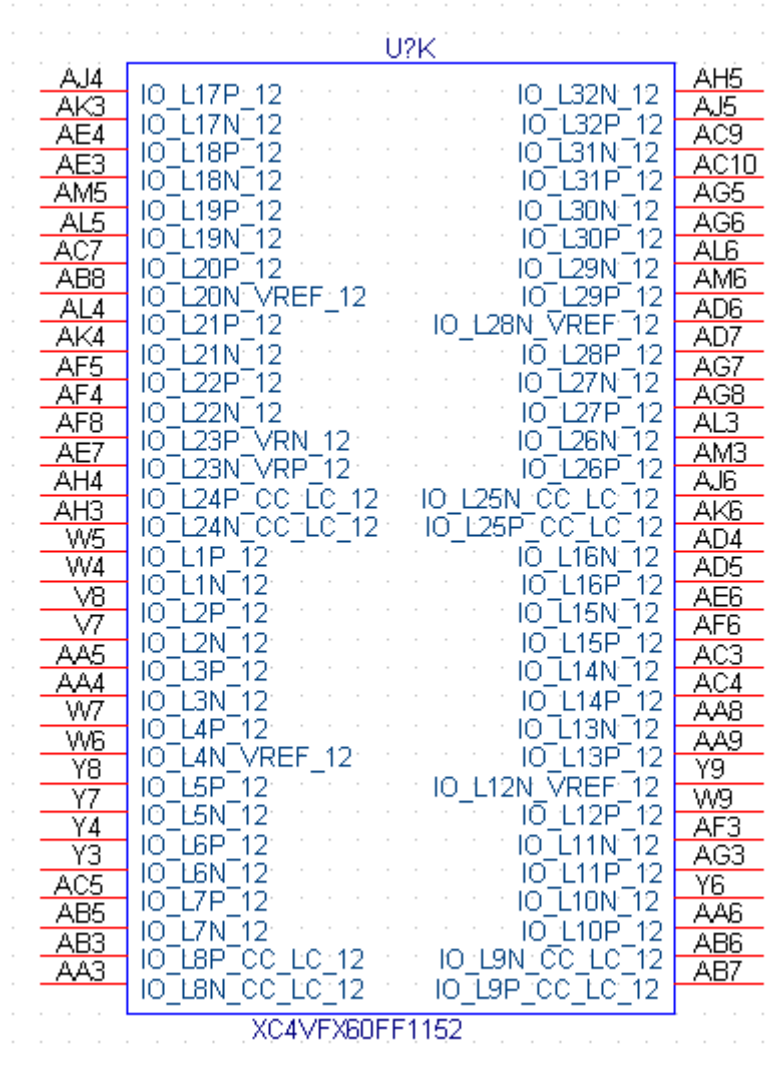
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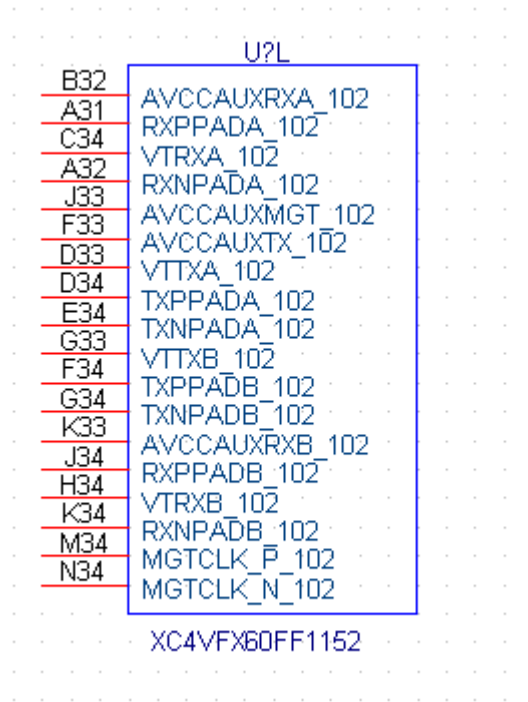
**10. I/O Bank 11**



### 11. 11. I/O Bank 12



## 12. MGT 102



### 13. MGT 103

U?M	
T33	AVCCAUXRXA_103
R34	RXPPADA_103
U34	VTRXA_103
T34	RXNPADA_103
AC33	AVCCAUXMGT_103
Y33	AVCCAUXTX_103
V33	VTTXA_103
V34	TXPPADA_103
W34	TXNPADA_103
AA33	VTTXB_103
Y34	TXPPADB_103
AA34	TXNPADB_103
AE33	AVCCAUXRXB_103
AC34	RXPPADB_103
AB34	VTRXB_103
AD34	RXNPADB_103

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## 14. MGT 105

U?N	
AG33	AVCCAUXRXA_105
AF34	RXPPADA_105
AH34	VTRXA_105
AG34	RXNPADA_105
AN32	AVCCAUXMGT_105
AL33	AVCCAUXTX_105
AJ33	VTTXA_105
AJ34	TXPPADA_105
AK34	TXNPADA_105
AM33	VTTXB_105
AL34	TXPPADB_105
AM34	TXNPADB_105
AN31	AVCCAUXRXB_105
AP32	RXPPADB_105
AN33	VTRXB_105
AP31	RXNPADB_105
AP29	MGTCLK_P_105
AP28	MGTCLK_N_105
AN29	RTERM_105
AN27	MGTVREF_105

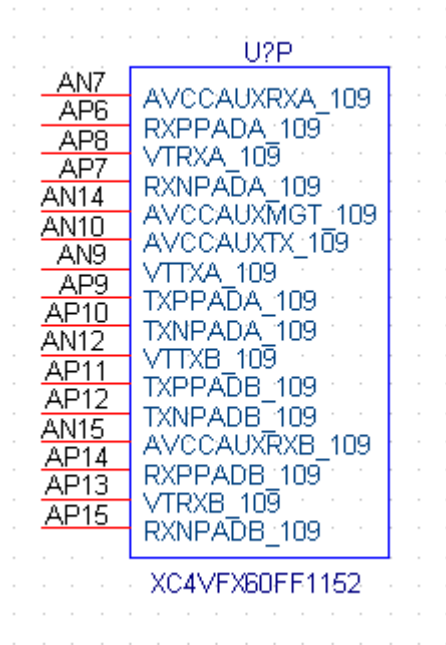
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### 15. MGT 106

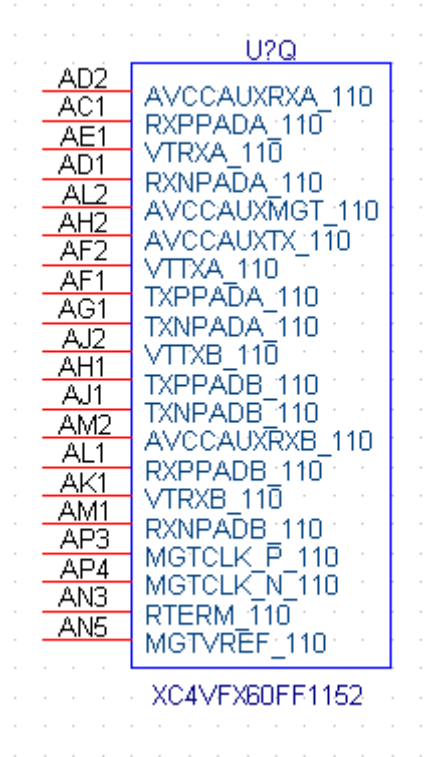
U?O	
<u>AN25</u>	AVCCAUXRXA_106
<u>AP26</u>	RXPPADA_106
<u>AP24</u>	VTRXA_106
<u>AP25</u>	RXNPADA_106
<u>AN18</u>	AVCCAUXMGT_106
<u>AN22</u>	AVCCAUXTX_106
<u>AN23</u>	VTTXA_106
<u>AP23</u>	TXPPADA_106
<u>AP22</u>	TXNPADA_106
<u>AN20</u>	VTTXB_106
<u>AP21</u>	TXPPADB_106
<u>AP20</u>	TXNPADB_106
<u>AN17</u>	AVCCAUXRXB_106
<u>AP18</u>	RXPPADB_106
<u>AP19</u>	VTRXB_106
<u>AP17</u>	RXNPADB_106

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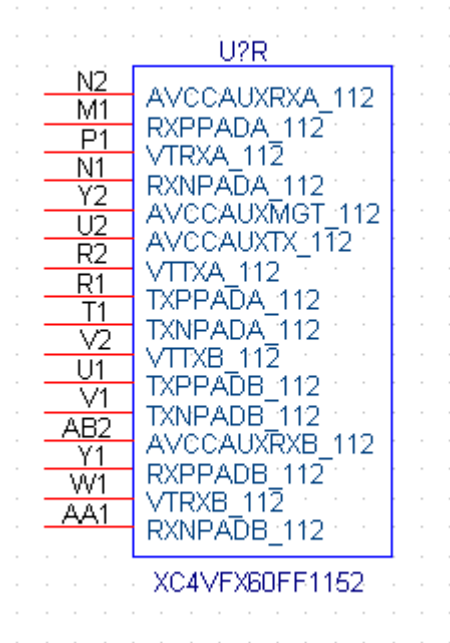
## 16. MGT 109



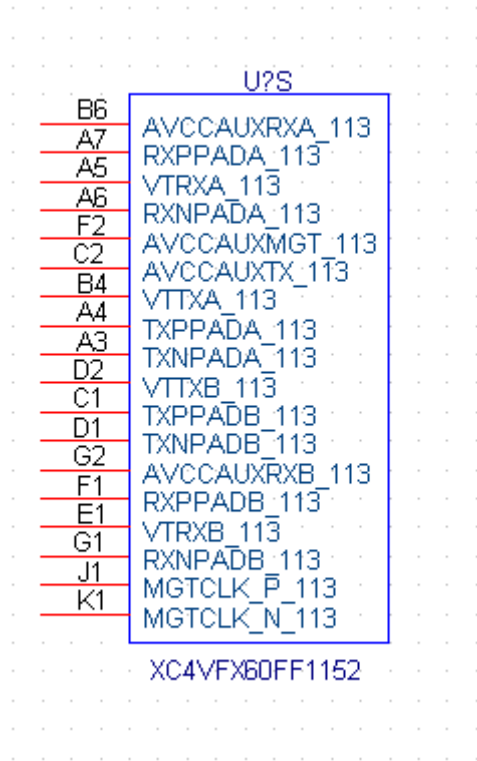
### 17. MGT 110



### 18. MGT 112



### 19. MGT 113



## 20. Ground 1

U?T			
J3			AA17
W3	GND	GND	U17
AJ3	GND	GND	N17
M4	GND	GND	L17
AB4	GND	GND	AH16
AM4	GND	GND	Y16
E5	GND	GND	V16
R5	GND	GND	P16
AE5	GND	GND	H16
H6	GND	GND	AE15
V6	GND	GND	AC15
AH6	GND	GND	U15
L7	GND	GND	R15
AA7	GND	GND	N15
AL7	GND	GND	E15
D8	GND	GND	AM14
P8	GND	GND	AB14
AD8	GND	GND	V14
G9	GND	GND	P14
U9	GND	GND	M14
AG9	GND	GND	AJ13
K10	GND	GND	W13
V10	GND	GND	U13
Y10	GND	GND	R13
AK10	GND	GND	J13
C11	GND	GND	AF12
N11	GND	GND	Y12
W11	GND	GND	V12
AC11	GND	GND	T12
F12	GND	GND	P12
	GND	GND	

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## 21. Ground 2

U?U			
AC17	GND	GND	AF32
M18	GND	GND	T32
P18	GND	GND	F32
AB18	GND	GND	AC31
AD18	GND	GND	N31
AM18	GND	GND	C31
G19	GND	GND	AK30
U19	GND	GND	Y30
AA19	GND	GND	K30
AG19	GND	GND	AG29
K20	GND	GND	U29
M20	GND	GND	G29
V20	GND	GND	AD28
Y20	GND	GND	P28
AB20	GND	GND	D28
AK20	GND	GND	AL27
C21	GND	GND	AA27
N21	GND	GND	L27
U21	GND	GND	AH26
AA21	GND	GND	V26
AC21	GND	GND	H26
F22	GND	GND	AE25
T22	GND	GND	U25
V22	GND	GND	R25
Y22	GND	GND	E25
AF22	GND	GND	AM24
J23	GND	GND	AB24
R23	GND	GND	T24
U23	GND	GND	M24
W23	GND	GND	AJ23
AA23	GND	GND	
	GND		

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## 22. Power 1

U?V			
Y15	VCCO_0	VCCO_12	AB9
T17	VCCO_0	VCCO_12	W8
W18	VCCO_0	VCCO_12	AF7
R20	VCCO_0	VCCO_12	AC6
G14	VCCO_0	VCCO_12	AK5
F17	VCCO_1	VCCO_12	Y5
AJ18	VCCO_1	VCCO_12	AG4
AH21	VCCO_2	VCCO_12	AD3
K15	VCCO_2	VCCO_12	AA32
J18	VCCO_3	VCCO_11	AH31
AF17	VCCO_3	VCCO_11	V31
AE20	VCCO_4	VCCO_11	AE30
E20	VCCO_4	VCCO_11	AB29
H21	VCCO_5	VCCO_11	W28
L22	VCCO_5	VCCO_11	AC26
D23	VCCO_5	VCCO_11	Y25
P23	VCCO_5	VCCO_11	R10
G24	VCCO_5	VCCO_10	M9
K25	VCCO_5	VCCO_10	T7
C26	VCCO_5	VCCO_10	N6
F27	VCCO_5	VCCO_10	K5
D3	VCCO_6	VCCO_10	U4
C6	VCCO_6	VCCO_10	G4
F7	VCCO_6	VCCO_10	P3
J8	VCCO_6	VCCO_10	L32
E10	VCCO_6	VCCO_9	H31
H11	VCCO_6	VCCO_9	R30
L12	VCCO_6	VCCO_9	E30
D13	VCCO_6	VCCO_9	M29
C16	VCCO_6	VCCO_9	J28
AM19	VCCO_6	VCCO_9	T27
AL22	VCCO_7	VCCO_9	N26
AD23	VCCO_7	VCCO_9	AK15
AG24	VCCO_7	VCCO_8	AG14
AK25	VCCO_7	VCCO_8	AD13
AF27	VCCO_7	VCCO_8	AL12
AJ28	VCCO_7	VCCO_8	AA12
AM29	VCCO_7	VCCO_8	AH11
AL32	VCCO_7	VCCO_8	AE10
AJ8	VCCO_8	VCCO_8	AM9

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## 24. MGT Ground

U?X			
A30	GNDA_102	GNDA_113	A8
B31	GNDA_102	GNDA_113	B7
A33	GNDA_102	GNDA_113	B5
B33	GNDA_102	GNDA_113	B3
C33	GNDA_102	GNDA_113	L2
E33	GNDA_102	GNDA_113	K2
H33	GNDA_102	GNDA_113	J2
L33	GNDA_102	GNDA_113	H2
M33	GNDA_102	GNDA_113	E2
N33	GNDA_102	GNDA_113	B2
P33	GNDA_102	GNDA_113	A2
B34	GNDA_102	GNDA_113	L1
L34	GNDA_102	GNDA_113	H1
P34	GNDA_102	GNDA_113	B1
R33	GNDA_102	GNDA_113	W2
U33	GNDA_103	GNDA_112	T2
W33	GNDA_103	GNDA_112	P2
AB33	GNDA_103	GNDA_112	M2
AD33	GNDA_103	GNDA_112	AB1
AE34	GNDA_103	GNDA_112	AA2
AP27	GNDA_103	GNDA_112	AP5
AN28	GNDA_105	GNDA_110	AN4
AN30	GNDA_105	GNDA_110	AP2
AP30	GNDA_105	GNDA_110	AN2
AF33	GNDA_105	GNDA_110	AK2
AH33	GNDA_105	GNDA_110	AG2
AK33	GNDA_105	GNDA_110	AE2
AP33	GNDA_105	GNDA_110	AC2
AN34	GNDA_105	GNDA_110	AN1
AP16	GNDA_105	GNDA_110	AN16
AN19	GNDA_106	GNDA_109	AN13
AN21	GNDA_106	GNDA_109	AN11
AN24	GNDA_106	GNDA_109	AN8
AN26	GNDA_106	GNDA_109	AN6

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## 25. Revision History

	Revision	Date	By	Comments
1	1.01	Jan 29, 2007	MD	Initial Release