

```
1  ## This file is a general .ucf for the Nexys4 DDR Rev C board
2  ## To use it in a project:
3  ## - uncomment the lines corresponding to used pins
4  ## - rename the used signals according to the project
5
6  ## Clock signal
7  NET "clk" LOC = "E3" | IOSTANDARD = "LVCMOS33"; #Bank = 35, Pin name =
   #IO_L12P_T1_MRCC_35, Sch name = clk100mhz
8  #NET "clk100mhz" TNM_NET = sys_clk_pin;
9  #TIMESPEC TS_sys_clk_pin = PERIOD sys_clk_pin 100 MHz HIGH 50%;
10
11
12  ## Switches
13  NET "uphdn1" LOC=J15 | IOSTANDARD=LVCMOS33; #IO_L24N_T3_RS0_15
14  #NET "sw<1>" LOC=L16 | IOSTANDARD=LVCMOS33; #IO_L3N_T0_DQS_EMCCLK_14
15  #NET "sw<2>" LOC=M13 | IOSTANDARD=LVCMOS33; #IO_L6N_T0_D08_VREF_14
16  #NET "sw<3>" LOC=R15 | IOSTANDARD=LVCMOS33; #IO_L13N_T2_MRCC_14
17  #NET "sw<4>" LOC=R17 | IOSTANDARD=LVCMOS33; #IO_L12N_T1_MRCC_14
18  #NET "sw<5>" LOC=T18 | IOSTANDARD=LVCMOS33; #IO_L7N_T1_D10_14
19  #NET "sw<6>" LOC=U18 | IOSTANDARD=LVCMOS33; #IO_L17N_T2_A13_D29_14
20  #NET "sw<7>" LOC=R13 | IOSTANDARD=LVCMOS33; #IO_L5N_T0_D07_14
21  #NET "sw<8>" LOC=T8 | IOSTANDARD=LVCMOS18; #IO_L24N_T3_34
22  #NET "sw<9>" LOC=U8 | IOSTANDARD=LVCMOS18; #IO_25_34
23  #NET "sw<10>" LOC=R16 | IOSTANDARD=LVCMOS33; #IO_L15P_T2_DQS_RDWR_B_14
24  #NET "sw<11>" LOC=T13 | IOSTANDARD=LVCMOS33; #IO_L23P_T3_A03_D19_14
25  #NET "sw<12>" LOC=H6 | IOSTANDARD=LVCMOS33; #IO_L24P_T3_35
26  #NET "sw<13>" LOC=U12 | IOSTANDARD=LVCMOS33; #IO_L20P_T3_A08_D24_14
27  #NET "sw<14>" LOC=U11 | IOSTANDARD=LVCMOS33; #IO_L19N_T3_A09_D25_VREF_14
28  #NET "sw<15>" LOC=V10 | IOSTANDARD=LVCMOS33; #IO_L21P_T3_DQS_14
29
30
31  ## Buttons
32  #NET "cpu_resetrn" LOC=C12 | IOSTANDARD=LVCMOS33; #IO_L3P_T0_DQS_AD1P_15
33
34  #NET "btnc" LOC=N17 | IOSTANDARD=LVCMOS33; #IO_L9P_T1_DQS_14
35  NET "dbnSw" LOC=P18 | IOSTANDARD=LVCMOS33; #IO_L9N_T1_DQS_D13_14
36  #NET "bnl" LOC=P17 | IOSTANDARD=LVCMOS33; #IO_L12P_T1_MRCC_14
37  #NET "btnr" LOC=M17 | IOSTANDARD=LVCMOS33; #IO_L10N_T1_D15_14
38  NET "rst" LOC=M18 | IOSTANDARD=LVCMOS33; #IO_L4N_T0_D05_14
39
40
41  ## LEDs
42  #NET "status[0]" LOC=H17 | IOSTANDARD=LVCMOS33; #IO_L18P_T2_A24_15
43  #NET "status[1]" LOC=K15 | IOSTANDARD=LVCMOS33; #IO_L24P_T3_RS1_15
44  #NET "status[2]" LOC=J13 | IOSTANDARD=LVCMOS33; #IO_L17N_T2_A25_15
45  #NET "status[3]" LOC=N14 | IOSTANDARD=LVCMOS33; #IO_L8P_T1_D11_14
46  #NET "status[4]" LOC=R18 | IOSTANDARD=LVCMOS33; #IO_L7P_T1_D09_14
47  #NET "status[5]" LOC=V17 | IOSTANDARD=LVCMOS33; #IO_L18N_T2_A11_D27_14
48  #NET "status[6]" LOC=U17 | IOSTANDARD=LVCMOS33; #IO_L17P_T2_A14_D30_14
49  #NET "status[7]" LOC=U16 | IOSTANDARD=LVCMOS33; #IO_L18P_T2_A12_D28_14
50  #NET "led<8>" LOC=V16 | IOSTANDARD=LVCMOS33; #IO_L16N_T2_A15_D31_14
51  #NET "led<9>" LOC=T15 | IOSTANDARD=LVCMOS33; #IO_L14N_T2_SRCC_14
52  #NET "led<10>" LOC=U14 | IOSTANDARD=LVCMOS33; #IO_L22P_T3_A05_D21_14
53  #NET "led<11>" LOC=T16 | IOSTANDARD=LVCMOS33; #IO_L15N_T2_DQS_DOUT_CSO_B_14
54  #NET "led<12>" LOC=V15 | IOSTANDARD=LVCMOS33; #IO_L16P_T2_CSI_B_14
55  #NET "led<13>" LOC=V14 | IOSTANDARD=LVCMOS33; #IO_L22N_T3_A04_D20_14
56  #NET "led<14>" LOC=V12 | IOSTANDARD=LVCMOS33; #IO_L20N_T3_A07_D23_14
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57 #NET "led<15>"          LOC=V11 | IOSTANDARD=LVCOS33; #IO_L21N_T3_DQS_A06_D22_14
58
59
60 ##LEDs_RGB
61 #NET "led16_b"          LOC=R12 | IOSTANDARD=LVCOS33; #IO_L5P_T0_D06_14
62 #NET "led16_g"          LOC=M16 | IOSTANDARD=LVCOS33; #IO_L10P_T1_D14_14
63 #NET "led16_r"          LOC=N15 | IOSTANDARD=LVCOS33; #IO_L11P_T1_SRCC_14
64 #NET "led17_b"          LOC=G14 | IOSTANDARD=LVCOS33; #IO_L15N_T2_DQS_ADV_B_15
65 #NET "led17_g"          LOC=R11 | IOSTANDARD=LVCOS33; #IO_0_14
66 #NET "led17_r"          LOC=N16 | IOSTANDARD=LVCOS33; #IO_L11N_T1_SRCC_14
67
68
69 ## 7 segment display
70 NET "a"                  LOC=T10 | IOSTANDARD=LVCOS33; #IO_L24N_T3_A00_D16_14
71 NET "b"                  LOC=R10 | IOSTANDARD=LVCOS33; #IO_25_14
72 NET "c"                  LOC=K16 | IOSTANDARD=LVCOS33; #IO_25_15
73 NET "d"                  LOC=K13 | IOSTANDARD=LVCOS33; #IO_L17P_T2_A26_15
74 NET "e"                  LOC=P15 | IOSTANDARD=LVCOS33; #IO_L13P_T2_MRCC_14
75 NET "f"                  LOC=T11 | IOSTANDARD=LVCOS33; #IO_L19P_T3_A10_D26_14
76 NET "g"                  LOC=L18 | IOSTANDARD=LVCOS33; #IO_L4P_T0_D04_14
77 #NET "dp"                LOC=H15 | IOSTANDARD=LVCOS33; #IO_L19N_T3_A21_VREF_15
78
79 NET "a0"                 LOC=J17 | IOSTANDARD=LVCOS33; #IO_L23P_T3_FOE_B_15
80 NET "a1"                 LOC=J18 | IOSTANDARD=LVCOS33; #IO_L23N_T3_FWE_B_15
81 NET "a2"                 LOC=T9 | IOSTANDARD=LVCOS33; #IO_L24P_T3_A01_D17_14
82 NET "a3"                 LOC=J14 | IOSTANDARD=LVCOS33; #IO_L19P_T3_A22_15
83 NET "a4"                 LOC=P14 | IOSTANDARD=LVCOS33; #IO_L8N_T1_D12_14
84 NET "a5"                 LOC=T14 | IOSTANDARD=LVCOS33; #IO_L14P_T2_SRCC_14
85 NET "a6"                 LOC=K2 | IOSTANDARD=LVCOS33; #IO_L23P_T3_35
86 NET "a7"                 LOC=U13 | IOSTANDARD=LVCOS33; #IO_L23N_T3_A02_D18_14
87
88
89 ## Pmod Header JA
90 #NET "ja<1>"             LOC=C17 | IOSTANDARD=LVCOS33; #IO_L20N_T3_A19_15
91 #NET "ja<2>"             LOC=D18 | IOSTANDARD=LVCOS33; #IO_L21N_T3_DQS_A18_15
92 #NET "ja<3>"             LOC=E18 | IOSTANDARD=LVCOS33; #IO_L21P_T3_DQS_15
93 #NET "ja<4>"             LOC=G17 | IOSTANDARD=LVCOS33; #IO_L18N_T2_A23_15
94 #NET "ja<7>"             LOC=D17 | IOSTANDARD=LVCOS33; #IO_L16N_T2_A27_15
95 #NET "ja<8>"             LOC=E17 | IOSTANDARD=LVCOS33; #IO_L16P_T2_A28_15
96 #NET "ja<9>"             LOC=F18 | IOSTANDARD=LVCOS33; #IO_L22N_T3_A16_15
97 #NET "ja<10>"            LOC=G18 | IOSTANDARD=LVCOS33; #IO_L22P_T3_A17_15
98
99 ## Pmod Header JB
100 #NET "jb<1>"             LOC=D14 | IOSTANDARD=LVCOS33; #IO_L1P_T0_AD0P_15
101 #NET "jb<2>"             LOC=F16 | IOSTANDARD=LVCOS33; #IO_L14N_T2_SRCC_15
102 #NET "jb<3>"             LOC=G16 | IOSTANDARD=LVCOS33; #IO_L13N_T2_MRCC_15
103 #NET "jb<4>"             LOC=H14 | IOSTANDARD=LVCOS33; #IO_L15P_T2_DQS_15
104 #NET "jb<7>"             LOC=E16 | IOSTANDARD=LVCOS33; #IO_L11N_T1_SRCC_15
105 #NET "jb<8>"             LOC=F13 | IOSTANDARD=LVCOS33; #IO_L5P_T0_AD9P_15
106 #NET "jb<9>"             LOC=G13 | IOSTANDARD=LVCOS33; #IO_0_15
107 #NET "jb<10>"            LOC=H16 | IOSTANDARD=LVCOS33; #IO_L13P_T2_MRCC_15
108
109 ## Pmod Header JC
110 #NET "jc<1>"             LOC=K1 | IOSTANDARD=LVCOS33; #IO_L23N_T3_35
111 #NET "jc<2>"             LOC=F6 | IOSTANDARD=LVCOS33; #IO_L19N_T3_VREF_35
112 #NET "jc<3>"             LOC=J2 | IOSTANDARD=LVCOS33; #IO_L22N_T3_35
113 #NET "jc<4>"             LOC=G6 | IOSTANDARD=LVCOS33; #IO_L19P_T3_35
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114 #NET "jc<7>" LOC=E7 | IOSTANDARD=LVC MOS33; #IO_L6P_T0_35
115 #NET "jc<8>" LOC=J3 | IOSTANDARD=LVC MOS33; #IO_L22P_T3_35
116 #NET "jc<9>" LOC=J4 | IOSTANDARD=LVC MOS33; #IO_L21P_T3_DQS_35
117 #NET "jc<10>" LOC=E6 | IOSTANDARD=LVC MOS33; #IO_L5P_T0_AD13P_35
118
119 ## Pmod Header JD
120 #NET "jd<1>" LOC=H4 | IOSTANDARD=LVC MOS33; #IO_L21N_T3_DQS_35
121 #NET "jd<2>" LOC=H1 | IOSTANDARD=LVC MOS33; #IO_L17P_T2_35
122 #NET "jd<3>" LOC=G1 | IOSTANDARD=LVC MOS33; #IO_L17N_T2_35
123 #NET "jd<4>" LOC=G3 | IOSTANDARD=LVC MOS33; #IO_L20N_T3_35
124 #NET "jd<7>" LOC=H2 | IOSTANDARD=LVC MOS33; #IO_L15P_T2_DQS_35
125 #NET "jd<8>" LOC=G4 | IOSTANDARD=LVC MOS33; #IO_L20P_T3_35
126 #NET "jd<9>" LOC=G2 | IOSTANDARD=LVC MOS33; #IO_L15N_T2_DQS_35
127 #NET "jd<10>" LOC=F3 | IOSTANDARD=LVC MOS33; #IO_L13N_T2_MRCC_35
128
129 ##Pmod Header JXADC
130 #NET "xa_n<1>" LOC=A14 | IOSTANDARD=LVDS; #IO_L9N_T1_DQS_AD3N_15
131 #NET "xa_p<1>" LOC=A13 | IOSTANDARD=LVDS; #IO_L9P_T1_DQS_AD3P_15
132 #NET "xa_n<2>" LOC=A16 | IOSTANDARD=LVDS; #IO_L8N_T1_AD10N_15
133 #NET "xa_p<2>" LOC=A15 | IOSTANDARD=LVDS; #IO_L8P_T1_AD10P_15
134 #NET "xa_n<3>" LOC=B17 | IOSTANDARD=LVDS; #IO_L7N_T1_AD2N_15
135 #NET "xa_p<3>" LOC=B16 | IOSTANDARD=LVDS; #IO_L7P_T1_AD2P_15
136 #NET "xa_n<4>" LOC=A18 | IOSTANDARD=LVDS; #IO_L10N_T1_AD11N_15
137 #NET "xa_p<4>" LOC=B18 | IOSTANDARD=LVDS; #IO_L10P_T1_AD11P_15
138
139
140 ##VGA Connector
141 #NET "vga_r<0>" LOC=A3 | IOSTANDARD=LVC MOS33; #IO_L8N_T1_AD14N_35
142 #NET "vga_r<1>" LOC=B4 | IOSTANDARD=LVC MOS33; #IO_L7N_T1_AD6N_35
143 #NET "vga_r<2>" LOC=C5 | IOSTANDARD=LVC MOS33; #IO_L1N_T0_AD4N_35
144 #NET "vga_r<3>" LOC=A4 | IOSTANDARD=LVC MOS33; #IO_L8P_T1_AD14P_35
145
146 #NET "vga_g<0>" LOC=C6 | IOSTANDARD=LVC MOS33; #IO_L1P_T0_AD4P_35
147 #NET "vga_g<1>" LOC=A5 | IOSTANDARD=LVC MOS33; #IO_L3N_T0_DQS_AD5N_35
148 #NET "vga_g<2>" LOC=B6 | IOSTANDARD=LVC MOS33; #IO_L2N_T0_AD12N_35
149 #NET "vga_g<3>" LOC=A6 | IOSTANDARD=LVC MOS33; #IO_L3P_T0_DQS_AD5P_35
150
151 #NET "vga_b<0>" LOC=B7 | IOSTANDARD=LVC MOS33; #IO_L2P_T0_AD12P_35
152 #NET "vga_b<1>" LOC=C7 | IOSTANDARD=LVC MOS33; #IO_L4N_T0_35
153 #NET "vga_b<2>" LOC=D7 | IOSTANDARD=LVC MOS33; #IO_L6N_T0_VREF_35
154 #NET "vga_b<3>" LOC=D8 | IOSTANDARD=LVC MOS33; #IO_L4P_T0_35
155
156 #NET "vga_hs" LOC=B11 | IOSTANDARD=LVC MOS33; #IO_L4P_T0_15
157 #NET "vga_vs" LOC=B12 | IOSTANDARD=LVC MOS33; #IO_L3N_T0_DQS_AD1N_15
158
159
160 ##Micro SD Connector
161 #NET "sd_sck" LOC=B1 | IOSTANDARD=LVC MOS33; #IO_L9P_T1_DQS_AD7P_35
162 #NET "sd_reset" LOC=E2 | IOSTANDARD=LVC MOS33; #IO_L14P_T2_SRCC_35
163 #NET "sd_cd" LOC=A1 | IOSTANDARD=LVC MOS33; #IO_L9N_T1_DQS_AD7N_35
164 #NET "sd_cmd" LOC=C1 | IOSTANDARD=LVC MOS33; #IO_L16N_T2_35
165 #NET "sd_dat<0>" LOC=C2 | IOSTANDARD=LVC MOS33; #IO_L16P_T2_35
166 #NET "sd_dat<1>" LOC=E1 | IOSTANDARD=LVC MOS33; #IO_L18N_T2_35
167 #NET "sd_dat<2>" LOC=F1 | IOSTANDARD=LVC MOS33; #IO_L18P_T2_35
168 #NET "sd_dat<3>" LOC=D2 | IOSTANDARD=LVC MOS33; #IO_L14N_T2_SRCC_35
169
170

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171  ##PWM Audio Amplifier
172  #NET "aud_pwm"          LOC=A11 | IOSTANDARD=LVCOS33; #IO_L4N_T0_15
173  #NET "aud_sd"          LOC=D12 | IOSTANDARD=LVCOS33; #IO_L6P_T0_15
174
175
176  ##Accelerometer
177  #NET "acl_miso"         LOC=E15 | IOSTANDARD=LVCOS33; #IO_L11P_T1_SRCC_15
178  #NET "acl_mosi"         LOC=F14 | IOSTANDARD=LVCOS33; #IO_L5N_T0_AD9N_15
179  #NET "acl_sclk"         LOC=F15 | IOSTANDARD=LVCOS33; #IO_L14P_T2_SRCC_15
180  #NET "acl_csn"          LOC=D15 | IOSTANDARD=LVCOS33; #IO_L12P_T1_MRCC_15
181  #NET "acl_int<1>"        LOC=B13 | IOSTANDARD=LVCOS33; #IO_L2P_T0_AD8P_15
182  #NET "acl_int<2>"        LOC=C16 | IOSTANDARD=LVCOS33; #IO_L20P_T3_A20_15
183
184
185  ##Temperature Sensor
186  #NET "tmp_ct"           LOC=B14 | IOSTANDARD=LVCOS33; #IO_L2N_T0_AD8N_15
187  #NET "tmp_int"          LOC=D13 | IOSTANDARD=LVCOS33; #IO_L6N_T0_VREF_15
188  #NET "tmp_scl"          LOC=C14 | IOSTANDARD=LVCOS33; #IO_L1N_T0_AD0N_15
189  #NET "tmp_sda"          LOC=C15 | IOSTANDARD=LVCOS33; #IO_L12N_T1_MRCC_15
190
191
192  ##USB-RS232 Interface
193  #NET "uart_cts"         LOC=D3 | IOSTANDARD=LVCOS33; #IO_L12N_T1_MRCC_35
194  #NET "uart_rts"         LOC=E5 | IOSTANDARD=LVCOS33; #IO_L5N_T0_AD13N_35
195  #NET "uart_rxd_out"     LOC=D4 | IOSTANDARD=LVCOS33; #IO_L11N_T1_SRCC_35
196  #NET "uart_txd_in"      LOC=C4 | IOSTANDARD=LVCOS33; #IO_L7P_T1_AD6P_35
197
198
199  ##Omnidirectional Microphone
200  #NET "m_clk"            LOC=J5 | IOSTANDARD=LVCOS33; #IO_25_35
201  #NET "m_data"           LOC=H5 | IOSTANDARD=LVCOS33; #IO_L24N_T3_35
202  #NET "m_lrsl"           LOC=F5 | IOSTANDARD=LVCOS33; #IO_0_35
203
204
205  ##USB HID (PS/2)
206  #NET "ps2_clk"          LOC=F4 | IOSTANDARD=LVCOS33; #IO_L13P_T2_MRCC_35
207  #NET "ps2_data"         LOC=B2 | IOSTANDARD=LVCOS33; #IO_L10N_T1_AD15N_35
208
209
210  ##Quad SPI Flash
211  #NET "qspi_csn"         LOC=L13 | IOSTANDARD=LVCOS33; #IO_L6P_T0_FCS_B_14
212  #NET "qspi_dq<0>"        LOC=K17 | IOSTANDARD=LVCOS33; #IO_L1P_T0_D00_MOSI_14
213  #NET "qspi_dq<1>"        LOC=K18 | IOSTANDARD=LVCOS33; #IO_L1N_T0_D01_DIN_14
214  #NET "qspi_dq<2>"        LOC=L14 | IOSTANDARD=LVCOS33; #IO_L2P_T0_D02_14
215  #NET "qspi_dq<3>"        LOC=M14 | IOSTANDARD=LVCOS33; #IO_L2N_T0_D03_14
216
217
218  ##SMSC Ethernet PHY
219  #NET "eth_rxd<0>"        LOC=C11 | IOSTANDARD=LVCOS33; #IO_L13P_T2_MRCC_16
220  #NET "eth_rxd<1>"        LOC=D10 | IOSTANDARD=LVCOS33; #IO_L19N_T3_VREF_16
221  #NET "eth_txd<0>"        LOC=A10 | IOSTANDARD=LVCOS33; #IO_L14P_T2_SRCC_16
222  #NET "eth_txd<1>"        LOC=A8 | IOSTANDARD=LVCOS33; #IO_L12N_T1_MRCC_16
223  #NET "eth_crsv"         LOC=D9 | IOSTANDARD=LVCOS33; #IO_L6N_T0_VREF_16
224  #NET "eth_intn"         LOC=B8 | IOSTANDARD=LVCOS33; #IO_L12P_T1_MRCC_16
225  #NET "eth_mdc"          LOC=C9 | IOSTANDARD=LVCOS33; #IO_L11P_T1_SRCC_16
226  #NET "eth_mdio"         LOC=A9 | IOSTANDARD=LVCOS33; #IO_L14N_T2_SRCC_16
227  #NET "eth_refclk"       LOC=D5 | IOSTANDARD=LVCOS33; #IO_L11P_T1_SRCC_35
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228 #NET "eth_rstn"      LOC=B3 | IOSTANDARD=LVCMOS33; #IO_L10P_T1_AD15P_35
229 #NET "eth_txen"      LOC=B9 | IOSTANDARD=LVCMOS33; #IO_L11N_T1_SRCC_16
230 #NET "eth_rxerr"     LOC=C10 | IOSTANDARD=LVCMOS33; #IO_L13N_T2_MRCC_16
231
```