P1 PMOD

IOT_217 #139	IOT_219 #141
IOT_215 #137	IOT_216 #138
IOT_213 #135	IOT_214 #136
IOT_206 #130	IOT_212 #134
GND	GND
3.3V	3.3V

P2 PMOD

IOB_94 #56	IOB_91 #55
IOB_80 #48	IOB_79 #47
IOB_73 #45	IOB_72 #44
IOB_71 #43	IOB_64 #42
GND	GND
3.3V	3.3V

P3 PMOD

IOL_18B #26	IOB_63 #41
IOL_23B #29	IOB_61 #39
IOL_23A #28	IOB_57 #38
IOB_81_GBIN4 #52	IOB_56 #37
GND	GND
3.3V	3.3V

P4 PMOD

IOL_14A_GBIN6 #21	IOL_2A #1
IOL_13B_GBIN7 #20	IOT_222 #144
IOL_4B #26	IOT_221 #143
IOL_4A #27	IOT_220 #142
GND	GND
3.3V	3.3V

IS61WV**256**16EDBLL-10TLI

IceZero side	SRAM side	SRAM side	IceZero side
IOL_25B #34	A0 #1	I/O0 #7	IOL_17A #23
IOL_25A #33	A1 #2	I/O1 #8	IOL_14B #22
IOL_24B #32	A2 #3	I/O2 #9	IOL_13A #19
IOL_24A #31	A3 #4	I/O3 #10	IOL_12B #18
IOL_18A #25	A4 #5	I/O4 #13	IOL_12A #17
IOL_5B #10	A5 #18	I/O5 #14	IOL_10B #16
IOL_5A #9	A6 #19	I/O6 #15	IOL_10A #15
IOL_3B #4	A7 #20	I/O7 #16	IOL_8B #12
IOL_3A #3	A8 #21	I/O8 #29	IOR_147 #97
IOB_95 #60	A9 #22	I/O9 #30	IOR_146 #96
IOB_96 #61	A10 #23	I/O10 #31	IOR_144 #95
IOR_166 #106	A11 #24	I/O11 #32	IOR_139 #91
IOR_165 #105	A12 #25	I/O12 #35	IOR_120 #84
IOR_164 #104	A13 #26	I/O13 #36	IOR_118 #82
IOR_161 #102	A14 #27	I/O14 #37	IOR_119 #83
IOB_102 #62	A15 #42	I/O15 #38	IOR_116 #80
IOR_167 #107	A16 #43		
IOL_2B #2	A17 #44		
IOL_17B #24	CEn #6		
IOL_8A #11	WEn #17		
IOR_112 #76	OEn #41		
IOR_117 #81	LBn #39		
IOR_111 #75	UBn #40		
IOR_148 #98	NC #28		

Trenz electronic - IceZero - TE0876-02
FPGA: **Lattice iCE40HX4K-TQ144**
Package: 144-pin TQFP (20 x 20 mm)
Pin spacing: 0.50 mm (107 IOs @ 3.3V)

Misc

LED1	IOT_168 #110
LED2	IOR_140_GBIN3 #93
LED3	IOR_141_GBIN2 #94
BTN	IOB_103_CBSEL0 #63
CLK (see *3)	IOB_81_GBIN5 #49

Raspberry Pi3 GPIO 40-pin header

rPi side	IceZero side
I2C SDA #3 *1	IOT_172 #115
I2C SCL #5 *1	IOT_171 #114
UART Tx #8	IOT_170 #113
UART Rx #10	IOT_169 #112
SPI_MOSI #19	IOR_138 #90
SPI_MISO #21	IOR_136 #54
SPI_SCK #23	IOR_115 #79
SPI_CE0N #24	IOR_128 #85
SPI_CE1N #26	IOR_114 #78
GPIO25 #22	IOR_137 #88
GPIO24 #18	IOR_152 #99
GPIO22 #15	IOR_160 #101
ID_SD #27	IOR_109 #73
ID_SC #28	IOR_110 #74

Configuration through rPi header

rPi side	IceZero side
GPIO5 #29	CDONE #65
GPIO6 #31	IOB_106_SDI #68 *2
GPIO13 #33	IOB_105_SDO #67 *2
GPIO16 #36	IOB_107_SCK #70 *2
GPIO12 #32	IOB_108_SS #71 *2
GPIO26 #37	CRESET_B #66

J1

IOT_179 #120	IOT_174 #117
IOT_181 #121	IOT_177 #118
IOT_173 #116	GND

J3 FTDI TTL-232R-**3.3V** only!

IceZero side	FTDI side
GND	GND
IOT_178 #119	→ CTS
5V (be careful)	VCC
IOT_190 #122	→ Tx
IOT_191 #124	← Rx
IOT_125 #125	← DTR

Specs	HX4K	HX8K
LC (LUT4+FF)	3520	7680
RAM4K Mem B.	20	32
RAM4K bits	80K	128K
PLLs	2	2
Max config bits	533 Kb	1057 Kb
Power @ 0 kHz	667 uA	1100 uA
Max IO	95	206
Max diff. pairs	12	26

J2

5V
GND
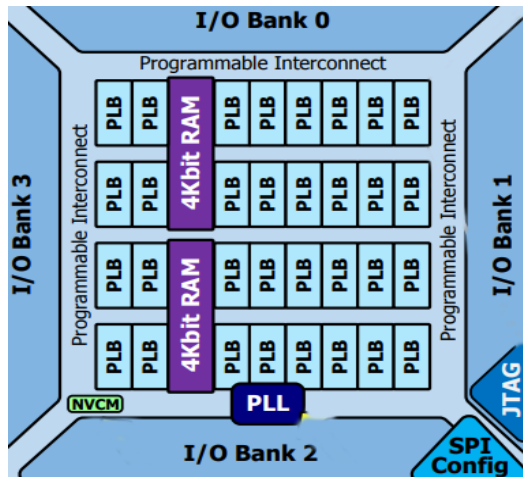
Tool arguments

nextpnr	--hx8k --package tq144:4k
arachne-pnr	-d 8k -P tq144:4k
icetime	-d hx8k

*1 rPi's **I2C** connected to 24LC**64**T-E/OT as well.
*2 Configuration 64M SPI FLASH
N25Q064A13ESE40F (Size: 16M x 4)
connects to **configuration** pins as well
*3 SiT8008AI-73-XXS-100.00000E **100MHz** clock.