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Samsung Electronics Co.
-- KS32C50100 BSDL
--
-- Version 1.1 01-27-99
-- Revision List:
-- 1) Pin name NC changed to LITTLE
-- 2) 1194 -> 1149
-- Package Type: QFP2828B
--
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entity KS32C50100 is

generic (PHYSICAL_PIN_MAP : string := "QFP2828B");

port (

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nUADTR1          : inbit;
UATXD1           : outbit;
nUADSR1          : outbit;

nDTRA            : outbit;
RXDA             : inbit;
nRTSA           : outbit;
TXDA            : outbit;
nCTSA           : inbit;
nDCDA           : inbit;
RXCA            : inbit;
nSYNCA          : outbit;
TXCA            : inoutbit;
nDTRB           : outbit;
RXDB            : inbit;
nRTSB           : outbit;
TXDB            : outbit;
nCTSB           : inbit;
nDCDB           : inbit;
RXCB            : inbit;
nSYNCB          : outbit;
TXCB            : inoutbit;

CRS_CRS_10M:    inbit;

RX_DV_LINK10:   inbit;
RXD             : inbit_vector(0 to 3);
RX_ERR          : inbit;
RX_CLK_RXCLK_10M: in bit;

COL_COL_10M:    inbit;
TXD             : outbit_vector(0 to 3);
TX_ERR_PCOMP_10M: outbit;
TX_CLK_TXCLK_10M: in bit;
TX_EN_TXEN_10M: outbit;

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MDIO                : inoutbit;
LITTLE              : inbit;
MDC                 : outbit;

TCK                 : inbit;
TMS                 : inbit;
TDI                 : inbit;
TDO                 : outbit;
nTRST               : inbit;
TMODE               : inbit;
UCLK                : inbit;

nECS                : outbit_vector(0 to 3);

nEWAIT              : inbit;
nOE                 : outbit;
B0SIZE              : inbit_vector(0 to 1);

CLKOEN              : inbit;
MCLKO                : outbit;
MCLK                 : inbit;
nRESET              : inbit;
CLKSEL               : inbit;

nRCS                : outbit_vector(0 to 5);
nRAS                 : outbit_vector(0 to 3);
nCAS                 : outbit_vector(0 to 3);
nDWE                 : outbit;
nWBE                 : outbit_vector(0 to 3);

ExtMREQ              : inbit;
ExtMACK              : outbit;
ADDR                 : outbit_vector(0 to 21);

XDATA                : inoutbit_vector(0 to 31);

P                   : inoutbit_vector(0 to 17);
SCL                  : inoutbit;
SDA                  : inoutbit;
UARXD0               : inbit;
nUADTR0              : inbit;
UATXD0               : outbit;
nUADSR0              : outbit;
UARXD1               : inbit;
VDDP                 : linkagebit_vector(0 to 10);
VDDI                 : linkagebit_vector(0 to 10);
VSSP                 : linkagebit_vector(0 to 11);
VSSI                 : linkagebit_vector(0 to 10)

);

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use STD_1149_1_1149.all;

attribute PIN_MAP of KS32C50100 : entity is PHYSICAL_PIN_MAP;
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-- QFP2828B Pin Map
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-- No-connects: 49
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constant QFP2828B : PIN_MAP_STRING :=
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"nUADTR1 : 3, " &
"UATXD1 : 4, " &
"nUADSR1 : 5, " &
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"nDTRA : 6, " &
"RXDA : 7, " &
"nRTSA : 8, " &
"TXDA : 9, " &
"nCTSA : 10, " &
"nDCDA : 13, " &
"RXCA : 14, " &
"nSYNCA : 15, " &
"TXCA : 16, " &
"nDTRB : 17, " &
"RXDB : 18, " &
"nRTSB : 19, " &
"TXDB : 20, " &
"nCTSB : 23, " &
"nDCDB : 24, " &
"RXCB : 25, " &
"nSYNCB : 26, " &
"TXCB : 27, " &
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"CRS_CRS_10M : 28, " &
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"RX_DV_LINK10 : 29, " &
"RXD : (30, 33, 34, 35), " &
"RX_ERR : 36, " &
"RX_CLK_RXCLK_10M : 37, " &
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"COL_COL_10M : 38, " &
"TXD : (39, 40, 43, 44), " &
"TX_ERR_PCOMP_10M : 45, " &
"TX_CLK_TXCLK_10M : 46, " &
"TX_EN_TXEN_10M : 47, " &
"MDIO : 48, " &
"LITTLE : 49, " &
"MDC : 50, " &
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"TCK : 58, " &
 "TMS : 59, " &
 "TDI : 60, " &
 "TDO : 61, " &
 "nTRST : 62, " &
 "TMODE : 63, " &
 "UCLK : 64, " &

 "nECS : (67, 68, 69, 70), " &

 "nEWAIT : 71, " &
 "nOE : 72, " &
 "B0SIZE : (73, 74), " &

 "CLKOEN : 76, " &
 "MCLKO : 77, " &
 "MCLK : 80, " &
 "nRESET : 82, " &
 "PCLKSEL : 83, " &

 "nRCS : (75, 84, 85, 86, 87, 88), " &
 "nRAS : (89, 90, 91, 94), " &
 "nCAS : (95, 96, 97, 98), " &
 "nDWE : 99, " &
 "nWBE : (100, 101, 102, 107), " &

 "ExtMREQ : 108, " &
 "ExtMACK : 109, " &
 -- A0 A1 A2 A3 A4 A5 A6 A7 A8 A9 A10 A11 A12 A13 A14 A15 A16 A17 A18 A19 A20 A21
 "ADDR : (110, 111, 112, 113, 114, 115, 116, 117, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 132, 133, 134, 135), " &

 -- D0 D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16 D17 D18 D19 D20
 D21 D22 D23 D24 D25 D26 D27 D28 D29 D30 D31
 "XDATA : (136, 137, 138, 139, 140, 141, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 159, 160, 161, 162, 163, 164, 165, 166, 169, 170, 171, 172, 173, 174, 175), " &

 -- P0 P1 P2 P3 P4 P5 P6 P7 P8 P9 P10 P11 P12 P13 P14 P15 P16 P17
 "P : (176, 179, 180, 181, 182, 183, 184, 185, 186, 189, 190, 191, 192, 193, 194, 195, 196, 199), " &
 "SCL : 200, " &
 "SDA : 201, " &
 "UARXD0 : 202, " &
 "nUADTR0 : 203, " &
 "UATXD0 : 204, " &
 "nUADSR0 : 205, " &
 "UARXD1 : 206, " &
 "VDDP : 1, 21, 41, 53, 78, 103, 118, 142, 157, 177, 197, " &
 "VDDI : 11, 31, 51, 65, 92, 105, 130, 155, 167, 187, 207, " &
 "VSSP : 2, 22, 42, 54, 79, 93, 106, 131, 156, 168, 188, 208, " &
 "VSSI : 12, 32, 52, 66, 81, 104, 119, 143, 158, 178, 198 ";

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attribute TAP_SCAN_IN of TDI : signal is true;
attribute TAP_SCAN_OUT of TDO : signal is true;

attribute TAP_SCAN_MODE of TMS : signal is true;

attribute TAP_SCAN_RESET of nTRST : signal is true;

attribute TAP_SCAN_CLOCK of TCK : signal is true;

attribute INSTRUCTION_LENGTH of KS32C50100 : entity is 4;

attribute INSTRUCTION_OPCODE of KS32C50100 : entity is
    "EXTEST (0000)," &
    "SCAN_N (0010)," &
    "INTEST (1100)," &
    "IDCODE (1110)," &
    "BYPASS (1111)," &
    "CLAMP (0101)," &
    "HIGHZ (0111)," &
    "CLAMPZ (1001)," &
    "SAMPLE (0011)," &
    "RESTART (0100)";

-- KS32C50100's IDCODE is the ARM7TDMI's IDCODE.
attribute REGISTER_ACCESS of KS32C50100 : entity is
    "0001" &      -- version
    "111100" &   -- design center
    "0011110000" &-- sequence number
    "11110000111" &-- Samsung
    "1";          -- required by 1149.1

attribute REGISTER_ACCESS of KS32C50100 : entity is
    "IDCODE (IDCODE)," &
    "BOUNDARY (INTEST, SAMPLE, EXTEST)," &
    "BYPASS (CLAMP, HIGHZ, BYPASS)";

attribute BOUNDARY_CELLS of KS32C50100 : entity is "BC_4, BC_2, BC_1";

attribute BOUNDARY_LENGTH of KS32C50100 : entity is 233;

attribute BOUNDARY_REGISTER of KS32C50100 : entity is

-- num  cell port      function safe [ccell disval rslt]

"0 ( BC_2, UARXD1,      input,  X) ," &
"1 ( BC_1, nUADSR0,    output2, X) ," &
"2 ( BC_1, UATXD0,     output2, X) ," &
"3 ( BC_2, nUADTR0,    input,  X) ," &
"4 ( BC_2, UARXD0,     input,  X) ," &
"5 ( BC_1, SDA,        output3, 1, 5, 1, Z) ," & -- Open-drain Output

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"6 ( BC_2, SDA,          input, X )," &
"7 ( BC_1, SCL,          output3, 1, 7, 1, Z )," & -- Open-drain Output
"8 ( BC_2, SCL,          input, X )," &

"9 ( BC_1, *,            controlr, 1 )," & --P_ENB(17)
"10 ( BC_1, P(17),       output3, X, 9, 1, Z )," &
"11 ( BC_2, P(17),       input, X )," &

"12 ( BC_1, *,           controlr, 1 )," & --P_ENB(16)
"13 ( BC_1, P(16),       output3, X, 12, 1, Z )," &
"14 ( BC_2, P(16),       input, X )," &

"15 ( BC_1, *,           controlr, 1 )," & --P_ENB(15)
"16 ( BC_1, P(15),       output3, X, 15, 1, Z )," &
"17 ( BC_2, P(15),       input, X )," &

"18 ( BC_1, *,           controlr, 1 )," & --P_ENB(14)
"19 ( BC_1, P(14),       output3, X, 18, 1, Z )," &
"20 ( BC_2, P(14),       input, X )," &

"21 ( BC_1, *,           controlr, 1 )," & --P_ENB(13)
"22 ( BC_1, P(13),       output3, X, 21, 1, Z )," &
"23 ( BC_2, P(13),       input, X )," &

"24 ( BC_1, *,           controlr, 1 )," & --P_ENB(12)
"25 ( BC_1, P(12),       output3, X, 24, 1, Z )," &
"26 ( BC_2, P(12),       input, X )," &

"27 ( BC_1, *,           controlr, 1 )," & --P_ENB(11)
"28 ( BC_1, P(11),       output3, X, 27, 1, Z )," &
"29 ( BC_2, P(11),       input, X )," &

"30 ( BC_1, *,           controlr, 1 )," & --P_ENB(10)
"31 ( BC_1, P(10),       output3, X, 30, 1, Z )," &
"32 ( BC_2, P(10),       input, X )," &
"33 ( BC_1, *,           controlr, 1 )," & --P_ENB(9)
"34 ( BC_1, P(9),        output3, X, 33, 1, Z )," &
"35 ( BC_2, P(9),        input, X )," &

"36 ( BC_1, *,           controlr, 1 )," & --P_ENB(8)
"37 ( BC_1, P(8),        output3, X, 36, 1, Z )," &
"38 ( BC_2, P(8),        input, X )," &

"39 ( BC_1, *,           controlr, 1 )," & --P_ENB(7)
"40 ( BC_1, P(7),        output3, X, 39, 1, Z )," &
"41 ( BC_2, P(7),        input, X )," &

"42 ( BC_1, *,           controlr, 1 )," & --P_ENB(6)
"43 ( BC_1, P(6),        output3, X, 42, 1, Z )," &
"44 ( BC_2, P(6),        input, X )," &

"45 ( BC_1, *,           controlr, 1 )," & --P_ENB(5)
"46 ( BC_1, P(5),        output3, X, 45, 1, Z )," &

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"47 (BC_2, P(5), input, X)," &
"48 (BC_1, *, controlr, 1)," & --P_ENB(4)
"49 (BC_1, P(4), output3, X, 48, 1, Z)," &
"50 (BC_2, P(4), input, X)," &
"51 (BC_1, *, controlr, 1)," & --P_ENB(3)
"52 (BC_1, P(3), output3, X, 51, 1, Z)," &
"53 (BC_2, P(3), input, X)," &
"54 (BC_1, *, controlr, 1)," & --P_ENB(2)
"55 (BC_1, P(2), output3, X, 54, 1, Z)," &
"56 (BC_2, P(2), input, X)," &
"57 (BC_1, *, controlr, 1)," & --P_ENB(1)
"58 (BC_1, P(1), output3, X, 57, 1, Z)," &
"59 (BC_2, P(1), input, X)," &
"60 (BC_1, *, controlr, 1)," & --P_ENB(0)
"61 (BC_1, P(0), output3, X, 60, 1, Z)," &
"62 (BC_2, P(0), input, X)," &
"63 (BC_1, XDATA(31), output3, X, 127, 1, Z)," &
"64 (BC_2, XDATA(31), input, X)," &
"65 (BC_1, XDATA(30), output3, X, 127, 1, Z)," &
"66 (BC_2, XDATA(30), input, X)," &
"67 (BC_1, XDATA(29), output3, X, 127, 1, Z)," &
"68 (BC_2, XDATA(29), input, X)," &
"69 (BC_1, XDATA(28), output3, X, 127, 1, Z)," &
"70 (BC_2, XDATA(28), input, X)," &

"71 (BC_1, XDATA(27), output3, X, 127, 1, Z)," &
"72 (BC_2, XDATA(27), input, X)," &

"73 (BC_1, XDATA(26), output3, X, 127, 1, Z)," &
"74 (BC_2, XDATA(26), input, X)," &

"75 (BC_1, XDATA(25), output3, X, 127, 1, Z)," &
"76 (BC_2, XDATA(25), input, X)," &

"77 (BC_1, XDATA(24), output3, X, 127, 1, Z)," &
"78 (BC_2, XDATA(24), input, X)," &

"79 (BC_1, XDATA(23), output3, X, 127, 1, Z)," &
"80 (BC_2, XDATA(23), input, X)," &

"81 (BC_1, XDATA(22), output3, X, 127, 1, Z)," &
"82 (BC_2, XDATA(22), input, X)," &

"83 (BC_1, XDATA(21), output3, X, 127, 1, Z)," &
"84 (BC_2, XDATA(21), input, X)," &

"85 (BC_1, XDATA(20), output3, X, 127, 1, Z)," &
"86 (BC_2, XDATA(20), input, X)," &

"87 (BC_1, XDATA(19), output3, X, 127, 1, Z)," &
"88 (BC_2, XDATA(19), input, X)," &

"89 (BC_1, XDATA(18), output3, X, 127, 1, Z)," &
"90 (BC_2, XDATA(18), input, X)," &

"91 (BC_1, XDATA(17), output3, X, 127, 1, Z)," &
"92 (BC_2, XDATA(17), input, X)," &

"93 (BC_1, XDATA(16), output3, X, 127, 1, Z)," &
"94 (BC_2, XDATA(16), input, X)," &

"95 (BC_1, XDATA(15), output3, X, 127, 1, Z)," &
"96 (BC_2, XDATA(15), input, X)," &

"97 (BC_1, XDATA(14), output3, X, 127, 1, Z)," &
"98 (BC_2, XDATA(14), input, X)," &

"99 (BC_1, XDATA(13), output3, X, 127, 1, Z)," &
"100 (BC_2, XDATA(13), input, X)," &

"101 (BC_1, XDATA(12), output3, X, 127, 1, Z)," &
"102 (BC_2, XDATA(12), input, X)," &

"103 (BC_1, XDATA(11), output3, X, 127, 1, Z)," &
"104 (BC_2, XDATA(11), input, X)," &

"105 (BC_1, XDATA(10), output3, X, 127, 1, Z)," &
"106 (BC_2, XDATA(10), input, X)," &


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"107 ( BC_1, XDATA(9),      output3, X,  127, 1, Z) ," &
"108 ( BC_2, XDATA(9),      input,  X) ," &

"109 ( BC_1, XDATA(8),      output3, X,  127, 1, Z) ," &
"110 ( BC_2, XDATA(8),      input,  X) ," &

"111 ( BC_1, XDATA(7),      output3, X,  127, 1, Z) ," &
"112 ( BC_2, XDATA(7),      input,  X) ," &

"113 ( BC_1, XDATA(6),      output3, X,  127, 1, Z) ," &
"114 ( BC_2, XDATA(6),      input,  X) ," &

"115 ( BC_1, XDATA(5),      output3, X,  127, 1, Z) ," &
"116 ( BC_2, XDATA(5),      input,  X) ," &

"117 ( BC_1, XDATA(4),      output3, X,  127, 1, Z) ," &
"118 ( BC_2, XDATA(4),      input,  X) ," &

"119 ( BC_1, XDATA(3),      output3, X,  127, 1, Z) ," &
"120 ( BC_2, XDATA(3),      input,  X) ," &

"121 ( BC_1, XDATA(2),      output3, X,  127, 1, Z) ," &
"122 ( BC_2, XDATA(2),      input,  X) ," &

"123 ( BC_1, XDATA(1),      output3, X,  127, 1, Z) ," &
"124 ( BC_2, XDATA(1),      input,  X) ," &

"125 ( BC_1, XDATA(0),      output3, X,  127, 1, Z) ," &
"126 ( BC_2, XDATA(0),      input,  X) ," &

"127 ( BC_1, *,             controlr, 1) ," & --DATAOUT_ENB

"128 ( BC_1, ADDR(21),      output3, X,  184, 1, Z) ," &
"129 ( BC_1, ADDR(20),      output3, X,  184, 1, Z) ," &
"130 ( BC_1, ADDR(19),      output3, X,  184, 1, Z) ," &
"131 ( BC_1, ADDR(18),      output3, X,  184, 1, Z) ," &
"132 ( BC_1, ADDR(17),      output3, X,  184, 1, Z) ," &
"133 ( BC_1, ADDR(16),      output3, X,  184, 1, Z) ," &
"134 ( BC_1, ADDR(15),      output3, X,  184, 1, Z) ," &
"135 ( BC_1, ADDR(14),      output3, X,  184, 1, Z) ," &
"136 ( BC_1, ADDR(13),      output3, X,  184, 1, Z) ," &
"137 ( BC_1, ADDR(12),      output3, X,  184, 1, Z) ," &
"138 ( BC_1, ADDR(11),      output3, X,  184, 1, Z) ," &
"139 ( BC_1, ADDR(10),      output3, X,  184, 1, Z) ," &
"140 ( BC_1, ADDR(9),       output3, X,  184, 1, Z) ," &
"141 ( BC_1, ADDR(8),       output3, X,  184, 1, Z) ," &
"142 ( BC_1, ADDR(7),       output3, X,  184, 1, Z) ," &
"143 ( BC_1, ADDR(6),       output3, X,  184, 1, Z) ," &
"144 ( BC_1, ADDR(5),       output3, X,  184, 1, Z) ," &
"145 ( BC_1, ADDR(4),       output3, X,  184, 1, Z) ," &
"146 ( BC_1, ADDR(3),       output3, X,  184, 1, Z) ," &
"147 ( BC_1, ADDR(2),       output3, X,  184, 1, Z) ," &
"148 ( BC_1, ADDR(1),       output3, X,  184, 1, Z) ," &

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"149 ( BC_1, ADDR(0),      output3, X,  184, 1, Z) ," &
"150 ( BC_1, ExtMACK,      output2, X) ," &
"151 ( BC_2, ExtMREQ,      input,  X) ," &

"152 ( BC_1, nWBE(3),      output3, X,  184, 1, Z) ," &
"153 ( BC_1, nWBE(2),      output3, X,  184, 1, Z) ," &
"154 ( BC_1, nWBE(1),      output3, X,  184, 1, Z) ," &
"155 ( BC_1, nWBE(0),      output3, X,  184, 1, Z) ," &

"156 ( BC_1, nDWE,         output3, X,  184, 1, Z) ," &

"157 ( BC_1, nCAS(3),      output3, X,  184, 1, Z) ," &
"158 ( BC_1, nCAS(2),      output3, X,  184, 1, Z) ," &
"159 ( BC_1, nCAS(1),      output3, X,  184, 1, Z) ," &
"160 ( BC_1, nCAS(0),      output3, X,  184, 1, Z) ," &

"161 ( BC_1, nRAS(3),      output3, X,  184, 1, Z) ," &
"162 ( BC_1, nRAS(2),      output3, X,  184, 1, Z) ," &
"163 ( BC_1, nRAS(1),      output3, X,  184, 1, Z) ," &
"164 ( BC_1, nRAS(0),      output3, X,  184, 1, Z) ," &

"165 ( BC_1, nRCS(5),      output3, X,  184, 1, Z) ," &
"166 ( BC_1, nRCS(4),      output3, X,  184, 1, Z) ," &
"167 ( BC_1, nRCS(3),      output3, X,  184, 1, Z) ," &
"168 ( BC_1, nRCS(2),      output3, X,  184, 1, Z) ," &
"169 ( BC_1, nRCS(1),      output3, X,  184, 1, Z) ," &

"170 ( BC_2, CLKSEL,       input,  X) ," &
"171 ( BC_2, nRESET,       input,  X) ," &
"172 ( BC_4, MCLK,         input,  X) ," &
"173 ( BC_1, MCLKO,        output2, X) ," &
"174 ( BC_2, CLKOEN,       input,  X) ," &

"175 ( BC_1, nRCS(0),      output3, X,  184, 1, Z) ," &

"176 ( BC_2, B0SIZE(1),    input,  X) ," &
"177 ( BC_2, B0SIZE(0),    input,  X) ," &

"178 ( BC_1, nOE,         output3, X,  184, 1, Z) ," &

"179 ( BC_2, nEWAIT,       input,  X) ," &

"180 ( BC_1, nECS(3),      output3, X,  184, 1, Z) ," &
"181 ( BC_1, nECS(2),      output3, X,  184, 1, Z) ," &
"182 ( BC_1, nECS(1),      output3, X,  184, 1, Z) ," &
"183 ( BC_1, nECS(0),      output3, X,  184, 1, Z) ," &

"184 ( BC_1, *,           controlr, 1) ," & --DIS_BUS

"185 ( BC_2, UCLK,         input,  X) ," &
"186 ( BC_2, TMODE,        input,  X) ," &

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"187 ( BC_1, MDC,          output2, X) ," &
"188 ( BC_2, LITTLE,      input,  X) ," &

"189 ( BC_1, *,          controlr, 1) ," & --MDIO_OE
"190 ( BC_1, MDIO,       output3, X, 189, 1, Z) ," &
"191 ( BC_2, MDIO,       input,  X) ," &

"192 ( BC_1, TX_EN_TXEN_10M, output2, X) ," &
"193 ( BC_2, TX_CLK_TXCLK_10M, input,  X) ," &
"194 ( BC_1, TX_ERR_PCOMP_10M, output2, X) ," &
"195 ( BC_1, TXD3,        output2, X) ," &
"196 ( BC_1, TXD2,        output2, X) ," &
"197 ( BC_1, TXD1_LOOP10, output2, X) ," &
"198 ( BC_1, TXD0_TXD_10M, output2, X) ," &
"199 ( BC_2, COL_COL_10M, input,  X) ," &
"200 ( BC_2, RX_CLK_RXCLK_10M, input,  X) ," &
"201 ( BC_2, RX_ERR,      input,  X) ," &
"202 ( BC_2, RXD3,        input,  X) ," &
"203 ( BC_2, RXD2,        input,  X) ," &
"204 ( BC_2, RXD1,        input,  X) ," &
"205 ( BC_2, RXD0_RXD_10M, input,  X) ," &
"206 ( BC_2, RX_DV_LINK10, input,  X) ," &
"207 ( BC_2, CRS_CRS_10M, input,  X) ," &

"208 ( BC_1, *,          controlr, 1) ," & --TXCBEN
"209 ( BC_1, TXCB,       output3, X, 208, 1, Z) ," &
"210 ( BC_2, TXCB,       input,  X) ," &

"211 ( BC_1, nSYNCB,     output2, X) ," &
"212 ( BC_2, RXCB,       input,  X) ," &
"213 ( BC_2, nDCDB,      input,  X) ," &
"214 ( BC_2, nCTSB,      input,  X) ," &
"215 ( BC_1, TXDB,       output2, X) ," &
"216 ( BC_1, nRTSB,      output2, X) ," &
"217 ( BC_2, RXDB,       input,  X) ," &
"218 ( BC_1, nDTRB,      output2, X) ," &

"219 ( BC_1, *,          controlr, 1) ," & --TXCAEN
"220 ( BC_1, TXCA,       output3, X, 219, 1, Z) ," &
"221 ( BC_2, TXCA,       input,  X) ," &

"222 ( BC_1, nSYNCA,     output2, X) ," &
"223 ( BC_2, RXCA,       input,  X) ," &
"224 ( BC_2, nDCDA,      input,  X) ," &
"225 ( BC_2, nCTSA,      input,  X) ," &
"226 ( BC_1, TXDA,       output2, X) ," &
"227 ( BC_1, nRTSA,      output2, X) ," &
"228 ( BC_2, RXDA,       input,  X) ," &
"229 ( BC_1, nDTRA,      output2, X) ," &
"230 ( BC_1, nUADSR1,    output2, X) ," &
"231 ( BC_1, UATXD1,     output2, X) ," &
"232 ( BC_2, nUADTR1,    input,  X) ";
end KS32C50100;

```