

Pinout XynergyBF537

| Signal    | Connection to Pin |       |          |              | Function  |
|-----------|-------------------|-------|----------|--------------|---|
|           | SO-DIMM           | BF537 | Spartan6 | Other        |   |
| V_BAT     | 1                 | B9    | -        | -            | Reserved, buffered RTC supply                                   |
| PH10      | 3                 | B6    | -        | -            | BF537 GPIO with multiplexed functions                           |
| PH13      | 5                 | A4    | -        | -            | BF537 GPIO with multiplexed functions                           |
| PH12      | 7                 | A3    | -        | -            | BF537 GPIO with multiplexed functions                           |
| PH11      | 9                 | A2    | -        | -            | BF537 GPIO with multiplexed functions                           |
| PG14      | 11                | D6    | -        | -            | BF537 GPIO with multiplexed functions                           |
| ETH_TX_N  | 13                | -     | -        | LAN8720A.20  | Ethernet negative transmit lane, connect to magnetics           |
| ETH_TX_P  | 15                | -     | -        | LAN8720A.21  | Ethernet positive transmit lane, connect to magnetics           |
| ETH_RX_N  | 17                | -     | -        | LAN8720A.22  | Ethernet negative receive lane, connect to magnetics            |
| ETH_RX_P  | 19                | -     | -        | LAN8720A.23  | Ethernet positive receive lane, connect to magnetics            |
| ETH_LED1  | 21                | -     | -        | LAN8720A.2   | Ethernet Status LED, connect to LED against VCC3.3 or pull high |
| ETH_LED0  | 23                | -     | -        | LAN8720A.3   | Ethernet Status LED, connect to LED against GND or pull- down   |
| ADC_IN3   | 25                | -     | -        | ADC124S051_5 | ADC connected to Spartan6 (via SPI)                             |
| PG15      | 27                | -     | -        | -            | BF537 GPIO with multiplexed functions                           |
| ADC_IN4   | 29                | -     | -        | ADC124S051_4 | ADC connected to Spartan6 (via SPI)                             |
| MCP_GP0   | 31                | -     | -        | -            | BF537 GPIO with multiplexed functions                           |
| ADC_IN1   | 33                | -     | -        | ADC124S051_7 | ADC connected to Spartan6 (via SPI)                             |
| MCP_GP1   | 35                | -     | -        | -            | BF537 GPIO with multiplexed functions                           |
| ADC_IN2   | 37                | -     | -        | ADC124S051_6 | ADC connected to Spartan6 (via SPI)                             |
| GND       | 39                | -     | -        | -            | Supply Ground   |
| GND       | 41                | -     | -        | -            | Supply Ground   |
| DAC_OUT1  | 43                | -     | -        | AD5623R_1    | DAC connected to Spartan6 (via SPI)                             |
| DAC_OUT2  | 45                | -     | -        | AD5623R_2    | DAC connected to Spartan6 (via SPI)                             |
| SDIO_DET  | 47                | -     | N6       | -            | Spartan6 GPIO   |
| SDIO_D0   | 49                | -     | P6       | -            | Spartan6 GPIO   |
| SDIO_CMD  | 51                | -     | P12      | -            | Spartan6 GPIO   |
| SDIO_CLK  | 53                | -     | P11      | -            | Spartan6 GPIO   |
| PG2       | 55                | G3    | -        | -            | BF537 GPIO with multiplexed functions                           |
| PG1       | 57                | G2    | -        | -            | BF537 GPIO with multiplexed functions                           |
| PG0       | 59                | G1    | -        | -            | BF537 GPIO with multiplexed functions                           |
| GND       | 61                | -     | -        | -            | Supply Ground   |
| GND       | 63                | -     | -        | -            | Supply Ground   |
| GND       | 65                | -     | -        | -            | Supply Ground   |
| GND       | 67                | -     | -        | -            | Supply Ground   |
| UART_RX   | 69                | L3    | C18      | -            | BF537 GPIO with multiplexed functions,connected to Spartan6     |
| UART_TX   | 71                | L2    | C17      | -            | BF537 GPIO with multiplexed functions,connected to Spartan6     |
| PF15      | 73                | H4    | -        | -            | BF537 GPIO with multiplexed functions                           |
| NMI       | 75                | B10   | -        | -            | BF537 non maskable interrupt input                              |
| BMODE2    | 77                | L5    | -        | -            | BF537 boot mode 2 input   |
| PF8       | 79                | K4    | -        | -            | BF537 GPIO with multiplexed functions                           |
| PF7       | 81                | K3    | -        | -            | BF537 GPIO with multiplexed functions                           |
| EXT_RESET | 83                | -     | -        | RESET_IN     | External Reset input, low active, connect to e.g. push button   |
| FPGA_TMS  | 85                | -     | B18      | -            | Spartan6 JTAG Master Select                                     |
| FPGA_TDO  | 87                | -     | D16      | -            | Spartan6 JTAG Data Out  |
| FPGA_TDI  | 89                | -     | D15      | -            | Spartan6 JTAG Data In   |
| FPGA_TCK  | 91                | -     | A17      | -            | Spartan6 JTAG Clock   |
| IO_L47N_2 | 93                | -     | P7       | -            | Spartan6 GPIO   |
| IO_L44P_2 | 95                | -     | N7       | -            | Spartan6 GPIO   |
| GND       | 97                | -     | -        | -            | Supply Ground   |
| GND       | 99                | -     | -        | -            | Supply Ground   |
| GND       | 101               | -     | -        | -            | Supply Ground   |

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|                       |     |   |     |   |                                      |
|-----------------------|-----|---|-----|---|--------------------------------------|
| GND                   | 103 | - | -   | - | Supply Ground                        |
| VCC3.3                | 105 | - | -   | - | Main 3.3V Supply                     |
| VCC3.3                | 107 | - | -   | - | Main 3.3V Supply                     |
| VCC3.3                | 109 | - | -   | - | Main 3.3V Supply                     |
| VCC3.3                | 111 | - | -   | - | Main 3.3V Supply                     |
| VCCAUX                | 113 | - | -   | - | Auxiliary Voltage for Spartan6       |
| VCCAUX                | 115 | - | -   | - | Auxiliary Voltage for Spartan6       |
| VCCIO                 | 117 | - | -   | - | IO Voltage for Spartan6 Bank 0 and 2 |
| VCCIO                 | 119 | - | -   | - | IO Voltage for Spartan6 Bank 0 and 2 |
| GND                   | 121 | - | -   | - | Supply Ground                        |
| GND                   | 123 | - | -   | - | Supply Ground                        |
| IO_L66P_SCP1_0        | 125 | - | B16 | - | Spartan6 GPIO                        |
| IO_L66N_SCP0_0        | 127 | - | A16 | - | Spartan6 GPIO                        |
| IO_L62P_0             | 129 | - | B14 | - | Spartan6 GPIO                        |
| IO_L62N_VREF_0        | 131 | - | A14 | - | Spartan6 GPIO                        |
| IO_L41P_0             | 133 | - | B12 | - | Spartan6 GPIO                        |
| IO_L41N_0             | 135 | - | A12 | - | Spartan6 GPIO                        |
| IO_L39P_0             | 137 | - | B11 | - | Spartan6 GPIO                        |
| IO_L39N_0             | 139 | - | A11 | - | Spartan6 GPIO                        |
| IO_L37P_GCLK13_0      | 141 | - | C10 | - | Spartan6 GPIO                        |
| IO_L37N_GCLK12_0      | 143 | - | A10 | - | Spartan6 GPIO                        |
| IO_L35P_GCLK17_0      | 145 | - | B9  | - | Spartan6 GPIO                        |
| IO_L35N_GCLK16_0      | 147 | - | A9  | - | Spartan6 GPIO                        |
| IO_L33P_0             | 149 | - | B8  | - | Spartan6 GPIO                        |
| IO_L33N_0             | 151 | - | A8  | - | Spartan6 GPIO                        |
| IO_L8P_0              | 153 | - | B6  | - | Spartan6 GPIO                        |
| IO_L8N_VREF_0         | 155 | - | A6  | - | Spartan6 GPIO                        |
| IO_L3P_0              | 157 | - | D6  | - | Spartan6 GPIO                        |
| IO_L3N_0              | 159 | - | C6  | - | Spartan6 GPIO                        |
| IO_L5P_0              | 161 | - | B4  | - | Spartan6 GPIO                        |
| IO_L5N_0              | 163 | - | A4  | - | Spartan6 GPIO                        |
| IO_L2P_0              | 165 | - | B2  | - | Spartan6 GPIO                        |
| IO_L2N_0              | 167 | - | A2  | - | Spartan6 GPIO                        |
| IO_L48P_D7_2          | 169 | - | R5  | - | Spartan6 GPIO                        |
| IO_L48N_RDWR_B_VREF_2 | 171 | - | T5  | - | Spartan6 GPIO                        |
| IO_L29P_GCLK3_2       | 173 | - | R10 | - | Spartan6 GPIO                        |
| IO_L29N_GCLK2_2       | 175 | - | T10 | - | Spartan6 GPIO                        |
| IO_L63P_2             | 177 | - | T4  | - | Spartan6 GPIO                        |
| IO_L63N_2             | 179 | - | V4  | - | Spartan6 GPIO                        |
| IO_L49P_D3_2          | 181 | - | U5  | - | Spartan6 GPIO                        |
| IO_L49N_D4_2          | 183 | - | V5  | - | Spartan6 GPIO                        |
| IO_L43P_2             | 185 | - | U7  | - | Spartan6 GPIO                        |
| IO_L43N_2             | 187 | - | V7  | - | Spartan6 GPIO                        |
| IO_L41P_0             | 189 | - | U8  | - | Spartan6 GPIO                        |
| IO_L41N_VREF_2        | 191 | - | V8  | - | Spartan6 GPIO                        |
| IO_L12P_D1_MISO2_2    | 193 | - | T14 | - | Spartan6 GPIO                        |
| IO_L12N_D2_MISO3_2    | 195 | - | V14 | - | Spartan6 GPIO                        |
| GND                   | 197 | - | -   | - | Supply Ground                        |
| GND                   | 199 | - | -   | - | Supply Ground                        |

Background Colours show groups of signals, blank are non-I/O signals (JTAG, reserved)

27.02.2017

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| Signal       | Connection to Pin |       |          |                        | Function   |
|--------------|-------------------|-------|----------|------------------------|--|
|              | SO-DIMM           | BF537 | Spartan6 | Other                  |  |
| GND          | 2                 | -     | -        | -                      | Supply Ground  |
| n.c          | 4                 | -     | -        | -                      |  |
| n.c.         | 6                 | -     | -        | -                      |  |
| CAN_RX       | 8                 | D7    | -        | -                      | BF537 GPIO with multiplexed functions, CAN functionality                 |
| CAN_TX       | 10                | D8    | -        | -                      | BF537 GPIO with multiplexed functions, CAN functionality                 |
| GND          | 12                | -     | -        | -                      | Supply Ground  |
| DSP_LED1     | 14                | C5    | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| DSP_LED0     | 16                | C4    | -        | -                      | BF537 GPIO, connected to STM32.D6 „BOOT0“, pull to select boot mode      |
| PG13         | 18                | D5    | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| GND          | 20                | -     | -        | -                      | Supply Ground  |
| I2C_SCL      | 22                | B11   | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| I2C_SDA      | 24                | C11   | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| PG12         | 26                | D3    | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| PG11         | 28                | D2    | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| PG10         | 30                | D1    | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| PG7          | 32                | E2    | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| PG6          | 34                | E1    | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| PG4          | 36                | F2    | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| PG3          | 38                | F1    | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| GND          | 40                | -     | -        | -                      | Supply Ground  |
| GND          | 42                | -     | -        | -                      | Supply Ground  |
| PG9          | 44                | E4    | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| PG8          | 46                | E3    | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| PG5          | 48                | F3    | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| BF_EMU#      | 50                | M2    | -        | -                      | BF537 JTAG EMU#  |
| BF_TCK       | 52                | P2    | -        | -                      | BF537 JTAG Clock   |
| BF_TRST#     | 54                | N1    | -        | -                      | BF537 JTAG Reset, low active   |
| BF_TDO       | 56                | N3    | -        | -                      | BF537 JTAG Data Out  |
| BF_TDI       | 58                | M3    | -        | -                      | BF537 JTAG Data In   |
| BF_TMS       | 60                | N2    | -        | -                      | BF537 JTAG Master Select   |
| n.c.         | 62                | -     | -        | -                      |  |
| n.c.         | 64                | -     | -        | -                      |  |
| USB_VBUS     | 66                | -     | -        | TPS76333DBVR_1         | USB-interface, power supply  |
| n.c.         | 68                | -     | -        | -                      |  |
| USB_D_N      | 70                | -     | -        | MCP2221A_11            | USB-interface, data line   |
| USB_D_P      | 72                | -     | -        | MCP2221A_12            | USB-interface, data line   |
| PF9          | 74                | J1    | -        | -                      | BF537 GPIO with multiplexed functions                                    |
| GND          | 76                | -     | -        | -                      | Supply Ground  |
| GND          | 78                | -     | -        | -                      | Supply Ground  |
| GND          | 80                | -     | -        | -                      | Supply Ground  |
| GND          | 82                | -     | -        | -                      | Supply Ground  |
| SYS_RESET#   | 84                | -     | C4       | RESET_OUT, LAN8720A.15 | System Reset signal, low active, used for synchronous reset of externals |
| GND          | 86                | -     | -        | -                      | Supply Ground  |
| GND          | 88                | -     | -        | -                      | Supply Ground  |
| GND          | 90                | -     | -        | -                      | Supply Ground  |
| GND          | 92                | -     | -        | -                      | Supply Ground  |
| IO_L22P_2    | 94                | -     | M10      | -                      | Spartan6 GPIO  |
| IO_L64P_D8_2 | 96                | -     | N5       | -                      | Spartan6 GPIO, connected to Spartan6.N12 „M1“, pull to select boot mode  |
| GND          | 98                | -     | -        | -                      | Supply Ground  |
| GND          | 100               | -     | -        | -                      | Supply Ground  |
| GND          | 102               | -     | -        | -                      | Supply Ground  |

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|                      |     |   |     |   |                                      |
|----------------------|-----|---|-----|---|--------------------------------------|
| GND                  | 104 | - | -   | - | Supply Ground                        |
| VCC3.3               | 106 | - | -   | - | Main 3.3V Supply                     |
| VCC3.3               | 108 | - | -   | - | Main 3.3V Supply                     |
| VCC3.3               | 110 | - | -   | - | Main 3.3V Supply                     |
| VCC3.3               | 112 | - | -   | - | Main 3.3V Supply                     |
| VCCAUX               | 114 | - | -   | - | Auxiliary Voltage for Spartan6       |
| VCCAUX               | 116 | - | -   | - | Auxiliary Voltage for Spartan6       |
| VCCIO                | 118 | - | -   | - | IO Voltage for Spartan6 Bank 0 and 2 |
| VCCIO                | 120 | - | -   | - | IO Voltage for Spartan6 Bank 0 and 2 |
| GND                  | 122 | - | -   | - | Supply Ground                        |
| GND                  | 124 | - | -   | - | Supply Ground                        |
| IO_L64N_SCP4_0       | 126 | - | A15 | - | Spartan6 GPIO                        |
| IO_L64P_SCP5_0       | 128 | - | C15 | - | Spartan6 GPIO                        |
| IO_L65N_SCP2_0       | 130 | - | C14 | - | Spartan6 GPIO                        |
| IO_L65P_SCP3_0       | 132 | - | D14 | - | Spartan6 GPIO                        |
| IO_L63N_SCP6_0       | 134 | - | E13 | - | Spartan6 GPIO                        |
| IO_L63P_SCP7_0       | 136 | - | F13 | - | Spartan6 GPIO                        |
| IO_L36N_GCLK14_0     | 138 | - | C11 | - | Spartan6 GPIO                        |
| IO_L36P_GCLK15_0     | 140 | - | D11 | - | Spartan6 GPIO                        |
| IO_L34N_GCLK18_0     | 142 | - | C9  | - | Spartan6 GPIO                        |
| IO_L34P_GCLK19_0     | 144 | - | D9  | - | Spartan6 GPIO                        |
| IO_L38N_VREF_0       | 146 | - | F9  | - | Spartan6 GPIO                        |
| IO_L38P_0            | 148 | - | G9  | - | Spartan6 GPIO                        |
| IO_L11N_0            | 150 | - | C8  | - | Spartan6 GPIO                        |
| IO_L11P_0            | 152 | - | D8  | - | Spartan6 GPIO                        |
| IO_L10N_0            | 154 | - | A7  | - | Spartan6 GPIO                        |
| IO_L10P_0            | 156 | - | C7  | - | Spartan6 GPIO                        |
| IO_L6N_0             | 158 | - | A5  | - | Spartan6 GPIO                        |
| IO_L6P_0             | 160 | - | C5  | - | Spartan6 GPIO                        |
| IO_L4N_0             | 162 | - | A3  | - | Spartan6 GPIO                        |
| IO_L4P_0             | 164 | - | B3  | - | Spartan6 GPIO                        |
| IO_L62N_D6_2         | 166 | - | T3  | - | Spartan6 GPIO                        |
| IO_L62P_D5_2         | 168 | - | R3  | - | Spartan6 GPIO                        |
| IO_L31N_GCLK30_D15_2 | 170 | - | T8  | - | Spartan6 GPIO                        |
| IO_L31P_GCLK31_D14_2 | 172 | - | R8  | - | Spartan6 GPIO                        |
| IO_L45N_2            | 174 | - | V6  | - | Spartan6 GPIO                        |
| IO_L45P_2            | 176 | - | T6  | - | Spartan6 GPIO                        |
| IO_L23N_2            | 178 | - | V11 | - | Spartan6 GPIO                        |
| IO_L23P_2            | 180 | - | U11 | - | Spartan6 GPIO                        |
| IO_L46N_2            | 182 | - | T7  | - | Spartan6 GPIO                        |
| IO_L46P_2            | 184 | - | R7  | - | Spartan6 GPIO                        |
| IO_L32N_GCLK28_2     | 186 | - | V9  | - | Spartan6 GPIO                        |
| IO_L32P_GCLK29_2     | 188 | - | T9  | - | Spartan6 GPIO                        |
| IO_L16N_VREF_2       | 190 | - | T11 | - | Spartan6 GPIO                        |
| IO_L16P_2            | 192 | - | R11 | - | Spartan6 GPIO                        |
| IO_L14N_D12_2        | 194 | - | V13 | - | Spartan6 GPIO                        |
| IO_L14P_D11_2        | 196 | - | U13 | - | Spartan6 GPIO                        |
| GND                  | 198 | - | -   | - | Supply Ground                        |
| GND                  | 200 | - | -   | - | Supply Ground                        |

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