# Lattice Semiconductor Corporation - LFE2-20SE-5FN256C Datasheet


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## Understanding Embedded - FPGAs (Field Programmable Gate Array)

Embedded - FPGAs, or Field Programmable Gate Arrays, are advanced integrated circuits that offer unparalleled flexibility and performance for digital systems. Unlike traditional fixed-function logic devices, FPGAs can be programmed and reprogrammed to execute a wide array of logical operations, enabling customized functionality tailored to specific applications. This reprogrammability allows developers to iterate designs quickly and implement complex functions without the need for custom hardware.

## Applications of Embedded - FPGAs

The versatility of Embedded - FPGAs makes them indispensable in numerous fields. In telecommunications.

| Details | |
|---|---|
| Product Status | Active |
| Number of LABs/CLBs | 2625 |
| Number of Logic Elements/Cells | 21000 |
| Total RAM Bits | 282624 |
| Number of I/O | 193 |
| Number of Gates | - |
| Voltage - Supply | 1.14V ~ 1.26V |
| Mounting Type | Surface Mount |
| Operating Temperature | 0°C ~ 85°C (TJ) |
| Package / Case | 256-BGA |
| Supplier Device Package | 256-FPBGA (17x17) |
| Purchase URL | https://www.e-xfl.com/product-detail/lattice-semiconductor/lfe2-20se-5fn256c |

# LatticeECP2/M Family Data Sheet Introduction

July 2012 Data Sheet DS1006

## Features

- **High Logic Density for System Integration**
  - 6K to 95K LUTs
  - 90 to 583 I/Os
- **Embedded SERDES (LatticeECP2M Only)**
  - Data Rates 250 Mbps to 3.125 Gbps
  - Up to 16 channels per device
    PCI Express, Ethernet (1GbE, SGMII), OBSAI, CPRI and Serial RapidIO.
- **sysDSP™ Block**
  - 3 to 42 blocks for high performance multiply and accumulate
  - Each block supports
    - One 36x36, four 18x18 or eight 9x9 multipliers
- **Flexible Memory Resources**
  - 55Kbits to 5308Kbits sysMEM™ Embedded Block RAM (EBR)
    - 18Kbit block
    - Single, pseudo dual and true dual port
    - Byte Enable Mode support
  - 12K to 202Kbits distributed RAM
    - Single port and pseudo dual port
- **sysCLOCK Analog PLLs and DLLs**
  - Two GPLLs and up to six SPLLs per device
    - Clock multiply, divide, phase & delay adjust
    - Dynamic PLL adjustment
  - Two general purpose DLLs per device
- **Pre-Engineered Source Synchronous I/O**
  - DDR registers in I/O cells
  - Dedicated gearing logic
  - Source synchronous standards support
    - SPI4.2, SFI4 (DDR Mode), XGMII
    - High Speed ADC/DAC devices
  - Dedicated DDR and DDR2 memory support
    - DDR1: 400 (200MHz) / DDR2: 533 (266MHz)
  - Dedicated DQS support
- **Programmable sysI/O™ Buffer Supports Wide Range Of Interfaces**
  - LVTTL and LVCMOS 33/25/18/15/12
  - SSTL 3/2/18 I, II
  - HSTL15 I and HSTL18 I, II
  - PCI and Differential HSTL, SSTL
  - LVDS, RSDS, Bus-LVDS, MLVDS, LVPECL
- **Flexible Device Configuration**
  - 1149.1 Boundary Scan compliant
  - Dedicated bank for configuration I/Os
  - SPI boot flash interface
  - Dual boot images supported
  - TransFR™ I/O for simple field updates
  - Soft Error Detect macro embedded
- **Optional Bitstream Encryption (LatticeECP2/M "S" Versions Only)**
- **System Level Support**
  - ispTRACY™ internal logic analyzer capability
  - On-chip oscillator for initialization & general use
  - 1.2V power supply

*Table 1-1. LatticeECP2 (Including "S-Series") Family Selection*

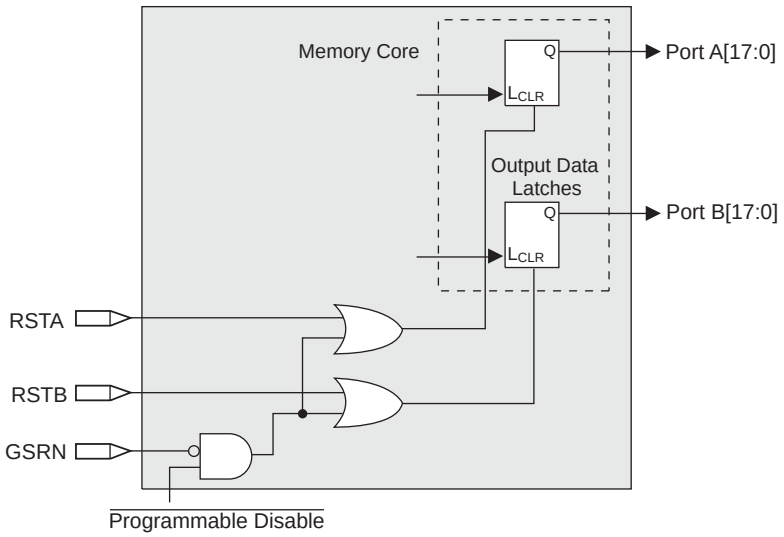
| Device | ECP2-6 | ECP2-12 | ECP2-20 | ECP2-35 | ECP2-50 | ECP2-70 |
|---|---|---|---|---|---|---|
| LUTs (K) | 6 | 12 | 21 | 32 | 48 | 68 |
| Distributed RAM (Kbits) | 12 | 24 | 42 | 64 | 96 | 136 |
| EBR SRAM (Kbits) | 55 | 221 | 276 | 332 | 387 | 1032 |
| EBR SRAM Blocks | 3 | 12 | 15 | 18 | 21 | 60 |
| sysDSP Blocks | 3 | 6 | 7 | 8 | 18 | 22 |
| 18x18 Multipliers | 12 | 24 | 28 | 32 | 72 | 88 |
| GPLL + SPLL + DLL | 2+0+2 | 2+0+2 | 2+0+2 | 2+0+2 | 2+2+2 | 2+4+2 |
| Maximum Available I/O | 190 | 297 | 402 | 450 | 500 | 583 |
| **Packages and I/O Combinations** | | | | | | |
| 144-pin TQFP (20 x 20 mm) | 90 | 93 | | | | |
| 208-pin PQFP (28 x 28 mm) | | 131 | 131 | | | |
| 256-ball fpBGA (17 x 17 mm) | 190 | 193 | 193 | | | |
| 484-ball fpBGA (23 x 23 mm) | | 297 | 331 | 331 | 339 | |
| 672-ball fpBGA (27 x 27 mm) | | | 402 | 450 | 500 | 500 |
| 900-ball fpBGA (31 x 31 mm) | | | | | | 583 |

2. Write Through – A copy of the input data appears at the output of the same port during a write cycle. This mode is supported for all data widths.

## Memory Core Reset

The memory array in the EBR utilizes latches at the A and B output ports. These latches can be reset asynchronously or synchronously. RSTA and RSTB are local signals, which reset the output latches associated with Port A and Port B, respectively. The Global Reset (GSRN) signal resets both ports. The output data latches and associated resets for both ports are as shown in Figure 2-20.

***Figure 2-20. Memory Core Reset***

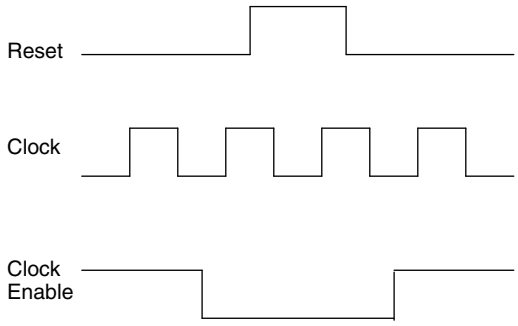



For further information about the sysMEM EBR block, please see the the list of additional technical documentation at the end of this data sheet.

## EBR Asynchronous Reset

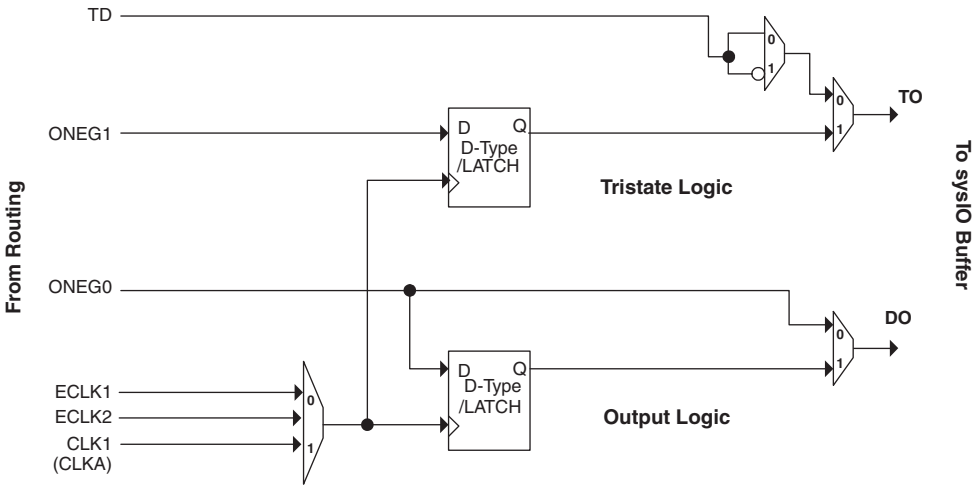
EBR asynchronous reset or GSR (if used) can only be applied if all clock enables are low for a clock cycle before the reset is applied and released a clock cycle after the reset is released, as shown in Figure 2-21. The GSR input to the EBR is always asynchronous.

***Figure 2-21. EBR Asynchronous Reset (Including GSR) Timing Diagram***




If all clock enables remain enabled, the EBR asynchronous reset or GSR may only be applied and released after the EBR read and write clock inputs are in a steady state condition for a minimum of $1/f_{MAX}$ (EBR clock). The reset release must adhere to the EBR synchronous reset setup time before the next active read or write clock edge.

*Figure 2-32. Output and Tristate Block, Top Edge*




Note: Simplified version does not show CE and SET/RESET details.

## Tristate Register Block

The tristate register block provides the ability to register tri-state control signals from the core of the device before they are passed to the sysI/O buffers. The block contains a register for SDR operation and an additional latch for DDR operation. Figure 2-31 shows the diagram of the Tristate Register Block with the Output Block for the left, right and bottom edges and Figure 2-32 shows the diagram of the Tristate Register Block with the Output Block for the top edge.

In SDR mode, ONEG1 feeds one of the flip-flops that then feeds the output. The flip-flop can be configured a D-type or latch. In DDR mode, ONEG1 and OPOS1 are fed into registers on the positive edge of the clock. Then in the next clock the registered OPOS1 is latched. A multiplexer running off the same clock cycle selects the correct register for feeding to the output (D0).

## Control Logic Block

The control logic block allows the selection and modification of control signals for use in the PIO block. A clock is selected from one of the clock signals provided from the general purpose routing, one of the edge clocks (ECLK1/ ECLK2) and a DQS signal provided from the programmable DQS pin and provided to the input register block. The clock can optionally be inverted.

# DDR Memory Support

Certain PICs have additional circuitry to allow the implementation of high speed source synchronous and DDR memory interfaces. The support varies by the edge of the device as detailed below.

## Left and Right Edges

PICs on these edges have registered elements that support DDR memory interfaces. One of every 16 PIOs contains a delay element to facilitate the generation of DQS signals. The DQS signal feeds the DQS bus that spans the set of 16 PIOs. Figure 2-33 shows the assignment of DQS pins in each set of 16 PIOs.

## Bottom Edge

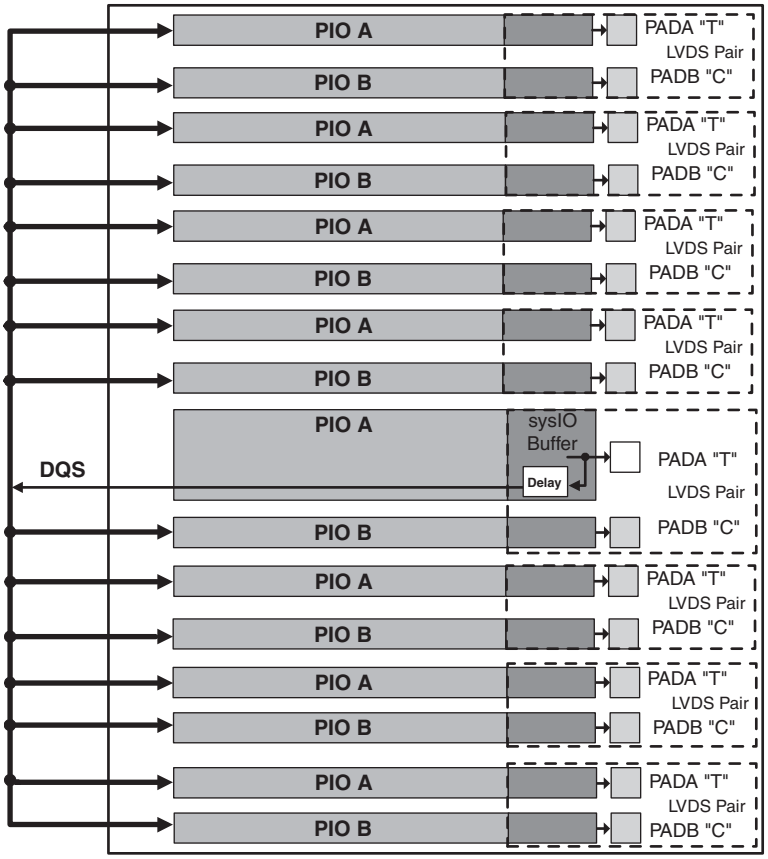
PICs on the bottom edge have registered elements that support DDR memory interfaces. One of every 18 PIOs contains a delay element to facilitate the generation of DQS signals. The DQS signal feeds the DQS bus that spans the set of 18 PIOs. Figure 2-34 shows the assignment of DQS pins in each set of 18 PIOs.

## Top Edge

The PICs on the top edge are different from PIOs on the left, right and bottom edges. PIOs on this edge do not have DDR registers or DQS signals.

The exact DQS pins are shown in a dual function in the Logic Signal Connections table in this data sheet. Additional detail is provided in the Signal Descriptions table. The DQS signal from the bus is used to strobe the DDR data from the memory into input register blocks. Interfaces on the left and right edges are designed for DDR memories that support 16 bits of data, whereas interfaces on the bottom are designed for memories that support 18 bits of data.

***Figure 2-33. DQS Input Routing for the Left and Right Edges of the Device***



# LFE2-12E/SE and LFE2-20E/SE Logic Signal Connections: 208 PQFP (Cont.)

| LFE2-12E/SE | | | | | LFE2-20E/SE | | | |
|---|---|---|---|---|---|---|---|---|
| Pin Number | Pin/Pad Function | Bank | Dual Function | Differential | Pin/Pad Function | Bank | Dual Function | Differential |
| 138 | PR15A | 3 | PCLKT3_0 | T (LVDS)* | PR21A | 3 | PCLKT3_0/RDQ25 | T (LVDS)* |
| 139 | GND | - | | | GND | - | | |
| 140 | VCC | - | | | VCC | - | | |
| 141 | PR13B | 2 | PCLKC2_0/RDQ10 | C | PR19B | 2 | PCLKC2_0/RDQ16 | C |
| 142 | PR13A | 2 | PCLKT2_0/RDQ10 | T | PR19A | 2 | PCLKT2_0/RDQ16 | T |
| 143 | VCCIO2 | 2 | | | VCCIO2 | 2 | | |
| 144 | PR12A | 2 | RDQ10 | | PR16A | 2 | RDQS16 | |
| 145 | GND | - | | | GND | - | | |
| 146 | VCC | - | | | VCC | - | | |
| 147 | PR8B | 2 | RDQ10 | C (LVDS)* | PR14B | 2 | RDQ16 | C (LVDS)* |
| 148 | VCCIO2 | 2 | | | VCCIO2 | 2 | | |
| 149 | PR8A | 2 | RDQ10 | T (LVDS)* | PR14A | 2 | RDQ16 | T (LVDS)* |
| 150 | PR6B | 2 | RDQ10 | C (LVDS)* | PR12B | 2 | RDQ16 | C (LVDS)* |
| 151 | VCCAUX | - | | | VCCAUX | - | | |
| 152 | PR6A | 2 | RDQ10 | T (LVDS)* | PR12A | 2 | RDQ16 | T (LVDS)* |
| 153 | PR4B | 2 | | C (LVDS)* | PR6B | 2 | RDQ8 | C (LVDS)* |
| 154 | PR4A | 2 | | T (LVDS)* | PR6A | 2 | RDQ8 | T (LVDS)* |
| 155 | PR2B | 2 | VREF2_2 | C (LVDS)* | PR2B | 2 | VREF2_2 | C (LVDS)* |
| 156 | PR2A | 2 | VREF1_2 | T (LVDS)* | PR2A | 2 | VREF1_2 | T (LVDS)* |
| 157 | PT55B | 1 | VREF2_1 | C | PT64B | 1 | VREF2_1 | C |
| 158 | PT55A | 1 | VREF1_1 | T | PT64A | 1 | VREF1_1 | T |
| 159 | GND | - | | | GND | - | | |
| 160 | PT54B | 1 | | C | PT62B | 1 | | C |
| 161 | PT54A | 1 | | T | PT62A | 1 | | T |
| 162 | VCCIO1 | 1 | | | VCCIO1 | 1 | | |
| 163 | PT52B | 1 | | C | PT60B | 1 | | C |
| 164 | PT52A | 1 | | T | PT60A | 1 | | T |
| 165 | PT50B | 1 | | C | PT58B | 1 | | C |
| 166 | PT50A | 1 | | T | PT58A | 1 | | T |
| 167 | PT48B | 1 | | C | PT56B | 1 | | C |
| 168 | PT48A | 1 | | T | PT56A | 1 | | T |
| 169 | GND | - | | | GND | - | | |
| 170 | VCCIO1 | 1 | | | VCCIO1 | 1 | | |
| 171 | VCC | - | | | VCC | - | | |
| 172 | PT40B | 1 | | C | PT50B | 1 | | C |
| 173 | PT40A | 1 | | T | PT50A | 1 | | T |
| 174 | VCCAUX | - | | | VCCAUX | - | | |
| 175 | GND | - | | | GND | - | | |
| 176 | PT36B | 1 | | C | PT44B | 1 | | C |
| 177 | PT36A | 1 | | T | PT44A | 1 | | T |
| 178 | PT34B | 1 | | C | PT42B | 1 | | C |
| 179 | PT34A | 1 | | T | PT42A | 1 | | T |
| 180 | PT30B | 1 | PCLKC1_0 | C | PT39B | 1 | PCLKC1_0 | C |
| 181 | PT30A | 1 | PCLKT1_0 | T | PT39A | 1 | PCLKT1_0 | T |
| 182 | XRES | 1 | | | XRES | 1 | | |
| 183 | PT28B | 0 | PCLKC0_0 | C | PT37B | 0 | PCLKC0_0 | C |

# LFE2-6E/SE and LFE2-12E/SE Logic Signal Connections: 256 fpBGA (Cont.)

| LFE2-6E/SE | | | | | LFE2-12E/SE | | | |
|---|---|---|---|---|---|---|---|---|
| Ball Number | Ball/Pad Function | Bank | Dual Function | Differential | Ball/Pad Function | Bank | Dual Function | Differential |
| F15 | PR11B | 2 | RDQ10 | C | PR11B | 2 | RDQ10 | C |
| G11 | PR12B | 2 | RDQ10 | C (LVDS)* | PR12B | 2 | RDQ10 | C (LVDS)* |
| F14 | PR11A | 2 | RDQ10 | T | PR11A | 2 | RDQ10 | T |
| VCCIO | VCCIO2 | 2 | | | VCCIO2 | 2 | | |
| F12 | PR12A | 2 | RDQ10 | T (LVDS)* | PR12A | 2 | RDQ10 | T (LVDS)* |
| G14 | PR10B | 2 | RDQ10 | C (LVDS)* | PR10B | 2 | RDQ10 | C (LVDS)* |
| G13 | PR10A | 2 | RDQS10 | T (LVDS)* | PR10A | 2 | RDQS10 | T (LVDS)* |
| GND | GNDIO2 | - | | | GNDIO2 | - | | |
| F16 | PR8B | 2 | RDQ10 | C (LVDS)* | PR8B | 2 | RDQ10 | C (LVDS)* |
| F9 | PR9B | 2 | RDQ10 | C | PR9B | 2 | RDQ10 | C |
| E16 | PR8A | 2 | RDQ10 | T (LVDS)* | PR8A | 2 | RDQ10 | T (LVDS)* |
| F10 | PR9A | 2 | RDQ10 | T | PR9A | 2 | RDQ10 | T |
| VCCIO | VCCIO2 | 2 | | | VCCIO2 | 2 | | |
| D16 | PR7B | 2 | RDQ10 | C | PR7B | 2 | RDQ10 | C |
| D15 | PR7A | 2 | RDQ10 | T | PR7A | 2 | RDQ10 | T |
| C15 | PR4B | 2 | | C (LVDS)* | PR4B | 2 | | C (LVDS)* |
| C16 | PR5B | 2 | | C | PR5B | 2 | | C |
| GND | GNDIO2 | - | | | GNDIO2 | - | | |
| D14 | PR4A | 2 | | T (LVDS)* | PR4A | 2 | | T (LVDS)* |
| B16 | PR5A | 2 | | T | PR5A | 2 | | T |
| F13 | PR2B | 2 | VREF2_2 | C (LVDS)* | PR2B | 2 | VREF2_2 | C (LVDS)* |
| VCCIO | VCCIO2 | 2 | | | VCCIO2 | 2 | | |
| E13 | PR2A | 2 | VREF1_2 | T (LVDS)* | PR2A | 2 | VREF1_2 | T (LVDS)* |
| F11 | PT28B | 1 | VREF2_1 | C | PT55B | 1 | VREF2_1 | C |
| E11 | PT28A | 1 | VREF1_1 | T | PT55A | 1 | VREF1_1 | T |
| GND | GNDIO1 | - | | | GNDIO1 | - | | |
| A15 | PT27B | 1 | | C | PT54B | 1 | | C |
| E12 | PT26B | 1 | | C | PT53B | 1 | | C |
| B15 | PT27A | 1 | | T | PT54A | 1 | | T |
| VCCIO | VCCIO1 | 1 | | | VCCIO1 | 1 | | |
| D12 | PT26A | 1 | | T | PT53A | 1 | | T |
| B14 | PT25B | 1 | | C | PT52B | 1 | | C |
| C14 | PT24B | 1 | | C | PT51B | 1 | | C |
| A14 | PT25A | 1 | | T | PT52A | 1 | | T |
| D13 | PT24A | 1 | | T | PT51A | 1 | | T |
| C13 | PT23B | 1 | | C | PT50B | 1 | | C |
| GND | GNDIO1 | - | | | GNDIO1 | - | | |
| A13 | PT22B | 1 | | C | PT49B | 1 | | C |
| B13 | PT23A | 1 | | T | PT50A | 1 | | T |
| VCCIO | VCCIO1 | 1 | | | VCCIO1 | 1 | | |
| A12 | PT22A | 1 | | T | PT49A | 1 | | T |
| B11 | PT21B | 1 | | C | PT48B | 1 | | C |
| D11 | PT20B | 1 | | C | PT47B | 1 | | C |
| A11 | PT21A | 1 | | T | PT48A | 1 | | T |
| C11 | PT20A | 1 | | T | PT47A | 1 | | T |

# LFE2-12E/SE and LFE2-20E/SE Logic Signal Connections: 484 fpBGA (Cont.)

| LFE2-12E/12SE | | | | | LFE2-20E/20SE | | | |
|---|---|---|---|---|---|---|---|---|
| Ball Number | Ball/Pad Function | Bank | Dual Function | Differential | Ball/Pad Function | Bank | Dual Function | Differential |
| F19 | PR5A | 2 | | T | PR7A | 2 | RDQ8 | T |
| D20 | PR4A | 2 | | T (LVDS)* | PR6A | 2 | RDQ8 | T (LVDS)* |
| F18 | PR3B | 2 | | C | PR5B | 2 | RDQ8 | C |
| VCCIO | VCCIO2 | 2 | | | VCCIO2 | 2 | | |
| C21 | NC | - | | | PR4B | 2 | RDQ8 | C (LVDS)* |
| F16 | PR3A | 2 | | T | PR5A | 2 | RDQ8 | T |
| C22 | NC | - | | | PR4A | 2 | RDQ8 | T (LVDS)* |
| - | - | - | | | GNDIO | - | | |
| D19 | PR2B | 2 | VREF2_2 | C (LVDS)* | PR2B | 2 | VREF2_2 | C (LVDS)* |
| E19 | PR2A | 2 | VREF1_2 | T (LVDS)* | PR2A | 2 | VREF1_2 | T (LVDS)* |
| B21 | PT55B | 1 | VREF2_1 | C | PT64B | 1 | VREF2_1 | C |
| B22 | PT55A | 1 | VREF1_1 | T | PT64A | 1 | VREF1_1 | T |
| GNDIO | GNDIO1 | - | | | GNDIO1 | - | | |
| D18 | PT53B | 1 | | C | PT62B | 1 | | C |
| C20 | PT54B | 1 | | C | PT63B | 1 | | C |
| E18 | PT53A | 1 | | T | PT62A | 1 | | T |
| C19 | PT54A | 1 | | T | PT63A | 1 | | T |
| VCCIO | VCCIO1 | 1 | | | VCCIO1 | 1 | | |
| D17 | PT51B | 1 | | C | PT60B | 1 | | C |
| B20 | PT52B | 1 | | C | PT61B | 1 | | C |
| C18 | PT51A | 1 | | T | PT60A | 1 | | T |
| A19 | PT52A | 1 | | T | PT61A | 1 | | T |
| GNDIO | GNDIO1 | - | | | GNDIO1 | - | | |
| A18 | PT49B | 1 | | C | PT58B | 1 | | C |
| A21 | PT50B | 1 | | C | PT59B | 1 | | C |
| B18 | PT49A | 1 | | T | PT58A | 1 | | T |
| A20 | PT50A | 1 | | T | PT59A | 1 | | T |
| VCCIO | VCCIO1 | 1 | | | VCCIO1 | 1 | | |
| D16 | PT47B | 1 | | C | PT56B | 1 | | C |
| G16 | PT48B | 1 | | C | PT57B | 1 | | C |
| E16 | PT47A | 1 | | T | PT56A | 1 | | T |
| G15 | PT48A | 1 | | T | PT57A | 1 | | T |
| C17 | PT46B | 1 | | C | PT55B | 1 | | C |
| GNDIO | GNDIO1 | - | | | GNDIO1 | - | | |
| C16 | PT46A | 1 | | T | PT55A | 1 | | T |
| A17 | PT44B | 1 | | C | PT53B | 1 | | C |
| B17 | PT45B | 1 | | C | PT54B | 1 | | C |
| A16 | PT44A | 1 | | T | PT53A | 1 | | T |
| VCCIO | VCCIO1 | 1 | | | VCCIO1 | 1 | | |
| B16 | PT45A | 1 | | T | PT54A | 1 | | T |
| E15 | PT42B | 1 | | C | PT51B | 1 | | C |
| C15 | PT43B | 1 | | C | PT52B | 1 | | C |
| F15 | PT42A | 1 | | T | PT51A | 1 | | T |
| D15 | PT43A | 1 | | T | PT52A | 1 | | T |

# LFE2-35E/SE and LFE2-50E/SE Logic Signal Connections: 484 fpBGA (Cont.)

| LFE2-35E/SE | | | | | LFE2-50E/SE | | | |
|---|---|---|---|---|---|---|---|---|
| Ball Number | Ball/Pad Function | Bank | Dual Function | Differential | Ball/Pad Function | Bank | Dual Function | Differential |
| W20 | CFG0 | 8 | | | CFG0 | 8 | | |
| V20 | PROGRAMN | 8 | | | PROGRAMN | 8 | | |
| W22 | CCLK | 8 | | | CCLK | 8 | | |
| V22 | INITN | 8 | | | INITN | 8 | | |
| V21 | DONE | 8 | | | DONE | 8 | | |
| GNDIO | GNDIO8 | - | | | GNDIO8 | - | | |
| R16 | PR58B | 8 | WRITEN | C | PR77B | 8 | WRITEN | C |
| R17 | PR58A | 8 | CS1N | T | PR77A | 8 | CS1N | T |
| U19 | PR57B | 8 | CSN | C | PR76B | 8 | CSN | C |
| U20 | PR57A | 8 | D0/SPIFASTN | T | PR76A | 8 | D0/SPIFASTN | T |
| VCCIO | VCCIO8 | 8 | | | VCCIO | 8 | | |
| U22 | PR56B | 8 | D1 | C | PR75B | 8 | D1 | C |
| U21 | PR56A | 8 | D2 | T | PR75A | 8 | D2 | T |
| T20 | PR55B | 8 | D3 | C | PR74B | 8 | D3 | C |
| GNDIO | GNDIO8 | - | | | GNDIO8 | - | | |
| T19 | PR55A | 8 | D4 | T | PR74A | 8 | D4 | T |
| T17 | PR54B | 8 | D5 | C | PR73B | 8 | D5 | C |
| T18 | PR54A | 8 | D6 | T | PR73A | 8 | D6 | T |
| T21 | PR53B | 8 | D7/SPID0 | C | PR72B | 8 | D7/SPID0 | C |
| VCCIO | VCCIO8 | 8 | | | VCCIO | 8 | | |
| T22 | PR53A | 8 | DI/CSSPI0N | T | PR72A | 8 | DI/CSSPI0N | T |
| R18 | PR52B | 8 | DOUT/CSON | C | PR71B | 8 | DOUT/CSON | C |
| R19 | PR52A | 8 | BUSY/SISPI | T | PR71A | 8 | BUSY/SISPI | T |
| GNDIO | GNDIO3 | - | | | GNDIO3 | - | | |
| VCCIO | VCCIO3 | 3 | | | VCCIO | 3 | | |
| R22 | PR47B | 3 | RDQ48 | C | PR66B | 3 | RDQ67 | C |
| R21 | PR47A | 3 | RDQ48 | T | PR66A | 3 | RDQ67 | T |
| P18 | PR46B | 3 | RDQ48 | C (LVDS)* | PR65B | 3 | RDQ67 | C (LVDS)* |
| P19 | PR46A | 3 | RDQ48 | T (LVDS)* | PR65A | 3 | RDQ67 | T (LVDS)* |
| VCCIO | VCCIO3 | 3 | | | VCCIO | 3 | | |
| R20 | PR45B | 3 | RLM0_GPLLC_FB_A/RDQ48 | C | PR64B | 3 | RLM0_GPLLC_FB_A/RDQ67 | C |
| P22 | PR45A | 3 | RLM0_GPLLT_FB_A/RDQ48 | T | PR64A | 3 | RLM0_GPLLT_FB_A/RDQ67 | T |
| P21 | PR44B | 3 | RLM0_GPLLC_IN_A**/RDQ48 | C (LVDS)* | PR63B | 3 | RLM0_GPLLC_IN_A**/RDQ67 | C (LVDS)* |
| N21 | PR44A | 3 | RLM0_GPLLT_IN_A**/RDQ48 | T (LVDS)* | PR63A | 3 | RLM0_GPLLT_IN_A**/RDQ67 | T (LVDS)* |
| N17 | RLM0_PLLCAP | 3 | | | RLM0_PLLCAP | 3 | | |
| N22 | PR42B | 3 | RLM0_GDLLC_FB_A/RDQ39 | C | PR61B | 3 | RLM0_GDLLC_FB_A/RDQ58 | C |
| N20 | PR42A | 3 | RLM0_GDLLT_FB_A/RDQ39 | T | PR61A | 3 | RLM0_GDLLT_FB_A/RDQ58 | T |
| GNDIO | GNDIO3 | - | | | GNDIO3 | - | | |
| M22 | PR41B | 3 | RLM0_GDLLC_IN_A**/RDQ39 | C (LVDS)* | PR60B | 3 | RLM0_GDLLC_IN_A**/RDQ58 | C (LVDS)* |
| M21 | PR41A | 3 | RLM0_GDLLT_IN_A**/RDQ39 | T (LVDS)* | PR60A | 3 | RLM0_GDLLT_IN_A**/RDQ58 | T (LVDS)* |
| N19 | PR40B | 3 | RDQ39 | C | PR59B | 3 | RDQ58 | C |
| M19 | PR40A | 3 | RDQ39 | T | PR59A | 3 | RDQ58 | T |
| VCCIO | VCCIO3 | 3 | | | VCCIO | 3 | | |
| GNDIO | GNDIO3 | - | | | GNDIO3 | - | | |
| L22 | PR30B | 3 | RDQ31 | C | PR49B | 3 | RDQ50 | C |
| K22 | PR30A | 3 | RDQ31 | T | PR49A | 3 | RDQ50 | T |

# LFE2-20E/SE and LFE2-35E/SE Logic Signal Connections: 672 fpBGA (Cont.)

| LFE2-20E/20SE | | | | | LFE2-35E/35SE | | | |
|---|---|---|---|---|---|---|---|---|
| Ball Number | Ball/Pad Function | Bank | Dual Function | Differential | Ball/Pad Function | Bank | Dual Function | Differential |
| AE17 | PB51B | 4 | BDQ51 | C | PB51B | 4 | BDQ51 | C |
| AB19 | PB52A | 4 | BDQ51 | T | PB52A | 4 | BDQ51 | T |
| AE19 | PB52B | 4 | BDQ51 | C | PB52B | 4 | BDQ51 | C |
| AF17 | PB53A | 4 | BDQ51 | T | PB53A | 4 | BDQ51 | T |
| AE18 | PB53B | 4 | BDQ51 | C | PB53B | 4 | BDQ51 | C |
| VCCIO | VCCIO4 | 4 | | | VCCIO4 | 4 | | |
| W16 | PB54A | 4 | BDQ51 | T | PB54A | 4 | BDQ51 | T |
| AA17 | PB54B | 4 | BDQ51 | C | PB54B | 4 | BDQ51 | C |
| AF18 | PB55A | 4 | BDQ51 | T | PB55A | 4 | BDQ51 | T |
| AF19 | PB55B | 4 | BDQ51 | C | PB55B | 4 | BDQ51 | C |
| GND | GNDIO4 | - | | | GNDIO4 | - | | |
| AA19 | NC | - | | | PB56A | 4 | BDQ60 | T |
| W17 | NC | - | | | PB56B | 4 | BDQ60 | C |
| Y19 | NC | - | | | PB57A | 4 | BDQ60 | T |
| Y17 | NC | - | | | PB57B | 4 | BDQ60 | C |
| AF20 | NC | - | | | NC | - | | |
| VCCIO | VCCIO4 | 4 | | | VCCIO4 | 4 | | |
| AE20 | NC | - | | | NC | - | | |
| AA20 | NC | - | | | NC | - | | |
| W18 | NC | - | | | NC | - | | |
| AD20 | NC | - | | | NC | - | | |
| GND | GNDIO4 | - | | | GNDIO4 | - | | |
| AE21 | NC | - | | | NC | - | | |
| AF21 | NC | - | | | NC | - | | |
| AF22 | NC | - | | | NC | - | | |
| VCCIO | VCCIO4 | 4 | | | VCCIO4 | 4 | | |
| GND | GNDIO4 | - | | | GNDIO4 | - | | |
| AE22 | PB56A | 4 | BDQ60 | T | PB65A | 4 | BDQ69 | T |
| AD22 | PB56B | 4 | BDQ60 | C | PB65B | 4 | BDQ69 | C |
| AF23 | PB57A | 4 | BDQ60 | T | PB66A | 4 | BDQ69 | T |
| AE23 | PB57B | 4 | BDQ60 | C | PB66B | 4 | BDQ69 | C |
| AD23 | PB58A | 4 | BDQ60 | T | PB67A | 4 | BDQ69 | T |
| AC23 | PB58B | 4 | BDQ60 | C | PB67B | 4 | BDQ69 | C |
| VCCIO | VCCIO4 | 4 | | | VCCIO4 | 4 | | |
| AB20 | PB59A | 4 | BDQ60 | T | PB68A | 4 | BDQ69 | T |
| AC20 | PB59B | 4 | BDQ60 | C | PB68B | 4 | BDQ69 | C |
| GND | GNDIO4 | - | | | GNDIO4 | - | | |
| AB21 | PB60A | 4 | BDQS60 | T | PB69A | 4 | BDQS69 | T |
| AC22 | PB60B | 4 | BDQ60 | C | PB69B | 4 | BDQ69 | C |
| W19 | PB61A | 4 | BDQ60 | T | PB70A | 4 | BDQ69 | T |
| AA21 | PB61B | 4 | BDQ60 | C | PB70B | 4 | BDQ69 | C |
| AF24 | PB62A | 4 | BDQ60 | T | PB71A | 4 | BDQ69 | T |
| AE24 | PB62B | 4 | BDQ60 | C | PB71B | 4 | BDQ69 | C |
| VCCIO | VCCIO4 | 4 | | | VCCIO4 | 4 | | |
| Y20 | PB63A | 4 | BDQ60 | T | PB72A | 4 | BDQ69 | T |
| AB22 | PB63B | 4 | BDQ60 | C | PB72B | 4 | BDQ69 | C |

# LFE2M35E/SE and LFE2M50E/SE Logic Signal Connections: 672 fpBGA (Cont.)

| LFE2M35E/SE | | | | | LFE2M50E/SE | | | |
|---|---|---|---|---|---|---|---|---|
| Ball Number | Ball/Pad Function | Bank | Dual Function | Differential | Ball/Pad Function | Bank | Dual Function | Differential |
| VCCIO | VCCIO3 | 3 | | | VCCIO3 | 3 | | |
| U20 | PR58A | 3 | RLM0_GPLLT_IN_A**/RDQ57 | T | PR63A | 3 | RLM0_GPLLT_IN_A | T |
| W24 | PR57B | 3 | RLM0_GPLLC_FB_A/RDQ57 | C (LVDS)* | PR62B | 3 | RLM0_GPLLC_FB_A | C* |
| V24 | PR57A | 3 | RLM0_GPLLT_FB_A/RDQS57 | T (LVDS)* | PR62A | 3 | RLM0_GPLLT_FB_A | T* |
| GNDIO | GNDIO3 | - | | | GNDIO3 | - | | |
| U21 | PR56A | 3 | RDQ57 | T | PR60A | 3 | | T |
| W25 | PR55B | 3 | RDQ57 | C (LVDS)* | PR59B | 3 | | C* |
| W26 | PR55A | 3 | RDQ57 | T (LVDS)* | PR59A | 3 | | T* |
| VCCIO | VCCIO3 | 3 | | | VCCIO3 | 3 | | |
| U18 | PR54B | 3 | RDQ57 | C | PR58B | 3 | | C |
| U22 | PR54A | 3 | RDQ57 | T | PR58A | 3 | | T |
| V25 | PR53B | 3 | RDQ57 | C (LVDS)* | PR57B | 3 | | C* |
| V26 | PR53A | 3 | RDQ57 | T (LVDS)* | PR57A | 3 | | T* |
| U24 | PR51B | 3 | RDQ48 | C | PR55B | 3 | RDQ52 | C |
| T24 | PR51A | 3 | RDQ48 | T | PR55A | 3 | RDQ52 | T |
| GNDIO | GNDIO3 | - | | | GNDIO3 | - | | |
| T22 | PR50B | 3 | RDQ48 | C (LVDS)* | PR54B | 3 | RDQ52 | C* |
| T23 | PR50A | 3 | RDQ48 | T (LVDS)* | PR54A | 3 | RDQ52 | T* |
| U25 | PR49B | 3 | RDQ48 | C | PR53B | 3 | RDQ52 | C |
| U26 | PR49A | 3 | RDQ48 | T | PR53A | 3 | RDQ52 | T |
| VCCIO | VCCIO3 | 3 | | | VCCIO3 | 3 | | |
| T19 | PR48B | 3 | RDQ48 | C (LVDS)* | PR52B | 3 | RDQ52 | C* |
| R19 | PR48A | 3 | RDQS48 | T (LVDS)* | PR52A | 3 | RDQS52 | T* |
| R21 | PR47B | 3 | RDQ48 | C | PR51B | 3 | RDQ52 | C |
| GNDIO | GNDIO3 | - | | | GNDIO3 | - | | |
| R20 | PR47A | 3 | RDQ48 | T | PR51A | 3 | RDQ52 | T |
| T26 | PR46B | 3 | RDQ48 | C (LVDS)* | PR50B | 3 | RDQ52 | C* |
| R26 | PR46A | 3 | RDQ48 | T (LVDS)* | PR50A | 3 | RDQ52 | T* |
| P21 | PR45B | 3 | RDQ48 | C | PR49B | 3 | RDQ52 | C |
| VCCIO | VCCIO3 | 3 | | | VCCIO3 | 3 | | |
| P19 | PR45A | 3 | RDQ48 | T | PR49A | 3 | RDQ52 | T |
| R23 | PR44B | 3 | RDQ48 | C (LVDS)* | PR48B | 3 | RDQ52 | C* |
| R24 | PR44A | 3 | RDQ48 | T (LVDS)* | PR48A | 3 | RDQ52 | T* |
| - | - | - | | | GNDIO3 | - | | |
| R22 | PR42B | 3 | RLM2_SPLLC_FB_A | C | PR46B | 3 | RLM3_SPLLC_FB_A | C |
| VCCIO | VCCIO3 | 3 | | | VCCIO3 | 3 | | |
| N19 | PR42A | 3 | RLM2_SPLLT_FB_A | T | PR46A | 3 | RLM3_SPLLT_FB_A | T |
| P23 | PR41B | 3 | RLM2_SPLLC_IN_A | C (LVDS)* | PR45B | 3 | RLM3_SPLLC_IN_A | C* |
| P24 | PR41A | 3 | RLM2_SPLLT_IN_A | T (LVDS)* | PR45A | 3 | RLM3_SPLLT_IN_A | T* |
| GNDIO | GNDIO3 | - | | | GNDIO3 | - | | |
| N21 | PR40B | 3 | | C | PR44B | 3 | | C |
| P22 | PR40A | 3 | | T | PR44A | 3 | | T |
| N20 | PR39B | 3 | | C (LVDS)* | PR43B | 3 | | C* |
| N22 | PR39A | 3 | | T (LVDS)* | PR43A | 3 | | T* |
| VCCIO | VCCIO3 | 3 | | | VCCIO3 | 3 | | |
| P25 | PR38B | 3 | VREF2_3 | C | PR42B | 3 | VREF2_3 | C |
| P26 | PR38A | 3 | VREF1_3 | T | PR42A | 3 | VREF1_3 | T |
| M21 | PR37B | 3 | PCLKC3_0 | C (LVDS)* | PR41B | 3 | PCLKC3_0 | C* |

# LFE2M35E/SE and LFE2M50E/SE Logic Signal Connections: 672 fpBGA (Cont.)

| LFE2M35E/SE | | | | | LFE2M50E/SE | | | |
|---|---|---|---|---|---|---|---|---|
| Ball Number | Ball/Pad Function | Bank | Dual Function | Differential | Ball/Pad Function | Bank | Dual Function | Differential |
| C15 | URC_SQ_VCCIB2 | 12 | | | URC_SQ_VCCIB2 | 12 | | |
| B15 | URC_SQ_HDINN2 | 12 | | C | URC_SQ_HDINN2 | 12 | | C |
| C14 | URC_SQ_VCCRX2 | 12 | | | URC_SQ_VCCRX2 | 12 | | |
| A18 | URC_SQ_HDOUTP2 | 12 | | T | URC_SQ_HDOUTP2 | 12 | | T |
| C18 | URC_SQ_VCCOB2 | 12 | | | URC_SQ_VCCOB2 | 12 | | |
| B18 | URC_SQ_HDOUTN2 | 12 | | C | URC_SQ_HDOUTN2 | 12 | | C |
| C17 | URC_SQ_VCCTX2 | 12 | | | URC_SQ_VCCTX2 | 12 | | |
| B17 | URC_SQ_HDOUTN3 | 12 | | C | URC_SQ_HDOUTN3 | 12 | | C |
| A16 | URC_SQ_VCCOB3 | 12 | | | URC_SQ_VCCOB3 | 12 | | |
| A17 | URC_SQ_HDOUTP3 | 12 | | T | URC_SQ_HDOUTP3 | 12 | | T |
| C16 | URC_SQ_VCCTX3 | 12 | | | URC_SQ_VCCTX3 | 12 | | |
| B14 | URC_SQ_HDINN3 | 12 | | C | URC_SQ_HDINN3 | 12 | | C |
| B13 | URC_SQ_VCCIB3 | 12 | | | URC_SQ_VCCIB3 | 12 | | |
| A14 | URC_SQ_HDINP3 | 12 | | T | URC_SQ_HDINP3 | 12 | | T |
| C13 | URC_SQ_VCCRX3 | 12 | | | URC_SQ_VCCRX3 | 12 | | |
| - | - | - | | | GNDIO1 | - | | |
| - | - | - | | | VCCIO1 | 1 | | |
| E17 | PT46B | 1 | | C | PT55B | 1 | | C |
| D17 | PT46A | 1 | | T | PT55A | 1 | | T |
| GNDIO | GNDIO1 | - | | | GNDIO1 | - | | |
| F17 | PT45B | 1 | | C | PT54B | 1 | | C |
| D16 | PT45A | 1 | | T | PT54A | 1 | | T |
| F19 | PT44B | 1 | | C | PT53B | 1 | | C |
| F18 | PT44A | 1 | | T | PT53A | 1 | | T |
| VCCIO | VCCIO1 | 1 | | | VCCIO1 | 1 | | |
| E16 | PT43B | 1 | | C | PT52B | 1 | | C |
| D15 | PT43A | 1 | | T | PT52A | 1 | | T |
| G18 | PT42B | 1 | | C | PT51B | 1 | | C |
| E15 | PT42A | 1 | | T | PT51A | 1 | | T |
| GNDIO | GNDIO1 | - | | | GNDIO1 | - | | |
| G17 | PT41B | 1 | | C | PT50B | 1 | | C |
| E14 | PT41A | 1 | | T | PT50A | 1 | | T |
| D14 | PT40B | 1 | | C | PT49B | 1 | | C |
| D13 | PT40A | 1 | | T | PT49A | 1 | | T |
| VCCIO | VCCIO1 | 1 | | | VCCIO1 | 1 | | |
| F15 | PT39B | 1 | VREF2_1 | C | PT48B | 1 | VREF2_1 | C |
| E12 | PT39A | 1 | VREF1_1 | T | PT48A | 1 | VREF1_1 | T |
| H17 | PT38B | 1 | PCLKC1_0 | C | PT47B | 1 | PCLKC1_0 | C |
| E13 | PT38A | 1 | PCLKT1_0 | T | PT47A | 1 | PCLKT1_0 | T |
| C12 | PT37B | 0 | PCLKC0_0 | C | PT46B | 0 | PCLKC0_0 | C |
| GNDIO | GNDIO0 | - | | | GNDIO0 | - | | |
| G15 | PT37A | 0 | PCLKT0_0 | T | PT46A | 0 | PCLKT0_0 | T |
| C11 | PT36B | 0 | VREF2_0 | C | PT45B | 0 | VREF2_0 | C |
| F14 | PT36A | 0 | VREF1_0 | T | PT45A | 0 | VREF1_0 | T |

# LFE2M50E/SE and LFE2M70E/SE Logic Signal Connections: 900 fpBGA (Cont.)

| LFE2M50E/SE | | | | | LFE2M70E/SE | | | |
|---|---|---|---|---|---|---|---|---|
| Ball Number | Ball/Pad Function | Bank | Dual Function | Differential | Ball/Pad Function | Bank | Dual Function | Differential |
| P13 | GND | - | | | GND | - | | |
| P14 | GND | - | | | GND | - | | |
| P15 | GND | - | | | GND | - | | |
| P16 | GND | - | | | GND | - | | |
| P17 | GND | - | | | GND | - | | |
| P18 | GND | - | | | GND | - | | |
| P20 | GND | - | | | GND | - | | |
| R10 | GND | - | | | GND | - | | |
| R11 | GND | - | | | GND | - | | |
| R13 | GND | - | | | GND | - | | |
| R14 | GND | - | | | GND | - | | |
| R15 | GND | - | | | GND | - | | |
| R16 | GND | - | | | GND | - | | |
| R17 | GND | - | | | GND | - | | |
| R18 | GND | - | | | GND | - | | |
| R20 | GND | - | | | GND | - | | |
| R21 | GND | - | | | GND | - | | |
| R24 | GND | - | | | GND | - | | |
| R7 | GND | - | | | GND | - | | |
| T10 | GND | - | | | GND | - | | |
| T11 | GND | - | | | GND | - | | |
| T13 | GND | - | | | GND | - | | |
| T14 | GND | - | | | GND | - | | |
| T15 | GND | - | | | GND | - | | |
| T16 | GND | - | | | GND | - | | |
| T17 | GND | - | | | GND | - | | |
| T18 | GND | - | | | GND | - | | |
| T20 | GND | - | | | GND | - | | |
| T21 | GND | - | | | GND | - | | |
| T24 | GND | - | | | GND | - | | |
| T7 | GND | - | | | GND | - | | |
| U11 | GND | - | | | GND | - | | |
| U13 | GND | - | | | GND | - | | |
| U14 | GND | - | | | GND | - | | |
| U15 | GND | - | | | GND | - | | |
| U16 | GND | - | | | GND | - | | |
| U17 | GND | - | | | GND | - | | |
| U18 | GND | - | | | GND | - | | |
| U20 | GND | - | | | GND | - | | |
| V14 | GND | - | | | GND | - | | |
| V15 | GND | - | | | GND | - | | |
| V16 | GND | - | | | GND | - | | |
| V17 | GND | - | | | GND | - | | |
| V27 | GND | - | | | GND | - | | |
| V4 | GND | - | | | GND | - | | |
| W23 | GND | - | | | GND | - | | |
| W8 | GND | - | | | GND | - | | |
| Y14 | GND | - | | | GND | - | | |

# LFE2M100E/SE Logic Signal Connections: 900 fpBGA (Cont.)

| LFE2M100E/SE | | | | |
|---|---|---|---|---|
| **Ball Number** | **Ball/Pad Function** | **Bank** | **Dual Function** | **Differential** |
| AC19 | PB96A | 4 | BDQS96 | T |
| AD20 | PB96B | 4 | BDQ96 | C |
| AB18 | PB97A | 4 | BDQ96 | T |
| AC20 | PB97B | 4 | BDQ96 | C |
| AE20 | PB98A | 4 | BDQ96 | T |
| AE21 | PB98B | 4 | BDQ96 | C |
| VCCIO | VCCIO4 | 4 | | |
| AC23 | PB99A | 4 | BDQ96 | T |
| AD23 | PB99B | 4 | BDQ96 | C |
| GNDIO | GNDIO4 | - | | |
| AH18 | LRC_SQ_VCCRX3 | 13 | | |
| AK19 | LRC_SQ_HDINP3 | 13 | | T |
| AJ18 | LRC_SQ_VCCIB3 | 13 | | |
| AJ19 | LRC_SQ_HDINN3 | 13 | | C |
| AH21 | LRC_SQ_VCCTX3 | 13 | | |
| AK22 | LRC_SQ_HDOUTP3 | 13 | | T |
| AK21 | LRC_SQ_VCCOB3 | 13 | | |
| AJ22 | LRC_SQ_HDOUTN3 | 13 | | C |
| AH22 | LRC_SQ_VCCTX2 | 13 | | |
| AJ23 | LRC_SQ_HDOUTN2 | 13 | | C |
| AH23 | LRC_SQ_VCCOB2 | 13 | | |
| AK23 | LRC_SQ_HDOUTP2 | 13 | | T |
| AH19 | LRC_SQ_VCCRX2 | 13 | | |
| AJ20 | LRC_SQ_HDINN2 | 13 | | C |
| AH20 | LRC_SQ_VCCIB2 | 13 | | |
| AK20 | LRC_SQ_HDINP2 | 13 | | T |
| AH24 | LRC_SQ_VCCP | 13 | | |
| AG24 | LRC_SQ_REFCLKP | 13 | | T |
| AF24 | LRC_SQ_REFCLKN | 13 | | C |
| AJ24 | LRC_SQ_VCCAUX33 | 13 | | |
| AK28 | LRC_SQ_HDINP1 | 13 | | T |
| AH28 | LRC_SQ_VCCIB1 | 13 | | |
| AJ28 | LRC_SQ_HDINN1 | 13 | | C |
| AH29 | LRC_SQ_VCCRX1 | 13 | | |
| AK25 | LRC_SQ_HDOUTP1 | 13 | | T |
| AH25 | LRC_SQ_VCCOB1 | 13 | | |
| AJ25 | LRC_SQ_HDOUTN1 | 13 | | C |
| AH26 | LRC_SQ_VCCTX1 | 13 | | |
| AJ26 | LRC_SQ_HDOUTN0 | 13 | | C |
| AK27 | LRC_SQ_VCCOB0 | 13 | | |
| AK26 | LRC_SQ_HDOUTP0 | 13 | | T |
| AH27 | LRC_SQ_VCCTX0 | 13 | | |
| AJ29 | LRC_SQ_HDINN0 | 13 | | C |

## LFE2M100E/SE Logic Signal Connections: 900 fpBGA (Cont.)

| LFE2M100E/SE | | | | |
|---|---|---|---|---|
| **Ball Number** | **Ball/Pad Function** | **Bank** | **Dual Function** | **Differential** |
| AE23 | NC | - | | |
| AE5 | NC | - | | |
| AE6 | NC | - | | |
| AE7 | NC | - | | |
| AF20 | NC | - | | |
| AF23 | NC | - | | |
| AF5 | NC | - | | |
| AG23 | NC | - | | |
| AG26 | NC | - | | |
| D10 | NC | - | | |
| E10 | NC | - | | |
| E11 | NC | - | | |
| F10 | NC | - | | |
| F20 | NC | - | | |
| F23 | NC | - | | |
| F8 | NC | - | | |
| G10 | NC | - | | |
| G20 | NC | - | | |
| G21 | NC | - | | |
| G7 | NC | - | | |
| G8 | NC | - | | |
| G9 | NC | - | | |
| H19 | NC | - | | |
| H20 | NC | - | | |
| H21 | NC | - | | |
| H22 | NC | - | | |
| H6 | NC | - | | |
| H8 | NC | - | | |
| H9 | NC | - | | |
| J10 | NC | - | | |
| J20 | NC | - | | |
| J21 | NC | - | | |
| J9 | NC | - | | |
| K9 | NC | - | | |
| R9 | NC | - | | |
| U22 | NC | - | | |
| W9 | NC | - | | |
| N13 | VCCPLL | - | | |
| N18 | VCCPLL | - | | |
| V13 | VCCPLL | - | | |

# LFE2M70E/SE and LFE2M100E/SE Logic Signal Connections: 1152 fpBGA

| LFE2M70E/SE | | | | LFE2M100E/SE | | | | |
|---|---|---|---|---|---|---|---|---|
| Ball Number | Ball/Pad Function | Bank | Dual Function | Differential | Ball/Pad Function | Bank | Dual Function | Differential |
| VCCIO | VCCIO7 | 7 | | | VCCIO7 | 7 | | |
| F4 | PL9A | 7 | VREF2_7 | T | PL9A | 7 | VREF2_7 | T |
| F3 | PL9B | 7 | VREF1_7 | C | PL9B | 7 | VREF1_7 | C |
| GNDIO | GNDIO7 | - | | | GNDIO7 | - | | |
| E1 | PL11A | 7 | LUM0_SPLLT_IN_A/LDQ15 | T (LVDS)* | PL11A | 7 | LUM0_SPLLT_IN_A/LDQ15 | T (LVDS)* |
| E2 | PL11B | 7 | LUM0_SPLLC_IN_A/LDQ15 | C (LVDS)* | PL11B | 7 | LUM0_SPLLC_IN_A/LDQ15 | C (LVDS)* |
| K9 | PL12A | 7 | LUM0_SPLLT_FB_A/LDQ15 | T | PL12A | 7 | LUM0_SPLLT_FB_A/LDQ15 | T |
| H7 | PL12B | 7 | LUM0_SPLLC_FB_A/LDQ15 | C | PL12B | 7 | LUM0_SPLLC_FB_A/LDQ15 | C |
| VCCIO | VCCIO7 | 7 | | | VCCIO7 | 7 | | |
| F1 | PL13A | 7 | LDQ15 | T (LVDS)* | PL13A | 7 | LDQ15 | T (LVDS)* |
| F2 | PL13B | 7 | LDQ15 | C (LVDS)* | PL13B | 7 | LDQ15 | C (LVDS)* |
| J8 | PL14A | 7 | LDQ15 | T | PL14A | 7 | LDQ15 | T |
| H6 | PL14B | 7 | LDQ15 | C | PL14B | 7 | LDQ15 | C |
| GNDIO | GNDIO7 | - | | | GNDIO7 | - | | |
| G2 | PL15A | 7 | LDQS15 | T (LVDS)* | PL15A | 7 | LDQS15 | T (LVDS)* |
| G1 | PL15B | 7 | LDQ15 | C (LVDS)* | PL15B | 7 | LDQ15 | C (LVDS)* |
| J7 | PL16A | 7 | LDQ15 | T | PL16A | 7 | LDQ15 | T |
| VCCIO | VCCIO7 | 7 | | | VCCIO7 | 7 | | |
| L8 | PL16B | 7 | LDQ15 | C | PL16B | 7 | LDQ15 | C |
| L9 | PL17A | 7 | LDQ15 | T (LVDS)* | PL17A | 7 | LDQ15 | T (LVDS)* |
| L10 | PL17B | 7 | LDQ15 | C (LVDS)* | PL17B | 7 | LDQ15 | C (LVDS)* |
| H5 | PL18A | 7 | LDQ15 | T | PL18A | 7 | LDQ15 | T |
| GNDIO | GNDIO7 | - | | | GNDIO7 | - | | |
| J6 | PL18B | 7 | LDQ15 | C | PL18B | 7 | LDQ15 | C |
| H2 | NC | - | | | PL19A | 7 | LDQ23 | T (LVDS)* |
| H1 | NC | - | | | PL19B | 7 | LDQ23 | C (LVDS)* |
| G5 | NC | - | | | PL20A | 7 | LDQ23 | T |
| G6 | NC | - | | | PL20B | 7 | LDQ23 | C |
| M9 | NC | - | | | PL21A | 7 | LDQ23 | T (LVDS)* |
| - | - | - | | | VCCIO7 | 7 | | |
| M10 | NC | - | | | PL21B | 7 | LDQ23 | C (LVDS)* |
| H3 | NC | - | | | PL22A | 7 | LDQ23 | T |
| H4 | NC | - | | | PL22B | 7 | LDQ23 | C |
| J2 | PL19A | 7 | | T (LVDS)* | PL23A | 7 | LDQS23 | T (LVDS)* |
| - | - | - | | | GNDIO7 | - | | |
| J1 | PL19B | 7 | | C (LVDS)* | PL23B | 7 | LDQ23 | C (LVDS)* |
| K2 | PL20A | 7 | | T | PL24A | 7 | LDQ23 | T |
| K1 | PL20B | 7 | | C | PL24B | 7 | LDQ23 | C |
| VCCIO | VCCIO7 | 7 | | | VCCIO7 | 7 | | |
| J4 | PL21A | 7 | | T (LVDS)* | PL25A | 7 | LDQ23 | T (LVDS)* |
| J3 | PL21B | 7 | | C (LVDS)* | PL25B | 7 | LDQ23 | C (LVDS)* |
| J5 | PL22A | 7 | | T | PL26A | 7 | LDQ23 | T |
| K5 | PL22B | 7 | | C | PL26B | 7 | LDQ23 | C |
| GNDIO | GNDIO7 | - | | | GNDIO7 | - | | |
| L2 | PL24A | 7 | LDQ28 | T (LVDS)* | PL28A | 7 | LDQ32 | T (LVDS)* |
| L1 | PL24B | 7 | LDQ28 | C (LVDS)* | PL28B | 7 | LDQ32 | C (LVDS)* |
| L7 | PL25A | 7 | LDQ28 | T | PL29A | 7 | LDQ32 | T |
| K6 | PL25B | 7 | LDQ28 | C | PL29B | 7 | LDQ32 | C |
| VCCIO | VCCIO7 | 7 | | | VCCIO7 | 7 | | |

# LFE2M70E/SE and LFE2M100E/SE Logic Signal Connections: 1152 fpBGA (Cont.)

| LFE2M70E/SE | | | | LFE2M100E/SE | | | | |
|---|---|---|---|---|---|---|---|---|
| Ball Number | Ball/Pad Function | Bank | Dual Function | Differential | Ball/Pad Function | Bank | Dual Function | Differential |
| AF1 | PL78B | 6 | LDQ82 | C (LVDS)* | PL95B | 6 | LDQ99 | C (LVDS)* |
| AE5 | PL79A | 6 | LDQ82 | T | PL96A | 6 | LDQ99 | T |
| AE6 | PL79B | 6 | LDQ82 | C | PL96B | 6 | LDQ99 | C |
| AF4 | PL80A | 6 | LDQ82 | T (LVDS)* | PL97A | 6 | LDQ99 | T (LVDS)* |
| VCCIO | VCCIO6 | 6 | | | VCCIO6 | 6 | | |
| AF3 | PL80B | 6 | LDQ82 | C (LVDS)* | PL97B | 6 | LDQ99 | C (LVDS)* |
| AF5 | PL81A | 6 | LDQ82 | T | PL98A | 6 | LDQ99 | T |
| AF6 | PL81B | 6 | LDQ82 | C | PL98B | 6 | LDQ99 | C |
| AG1 | PL82A | 6 | LLM0_GPLLT_IN_A**/LDQS82 | T (LVDS)* | PL99A | 6 | LLM0_GPLLT_IN_A**/ LDQS99 | T (LVDS)* |
| GNDIO | GNDIO6 | - | | | GNDIO6 | - | | |
| AG2 | PL82B | 6 | LLM0_GPLLC_IN_A**/LDQ82 | C (LVDS)* | PL99B | 6 | LLM0_GPLLC_IN_A**/LDQ99 | C (LVDS)* |
| AE9 | PL83A | 6 | LLM0_GPLLT_FB_A/LDQ82 | T | PL100A | 6 | LLM0_GPLLT_FB_A/LDQ99 | T |
| AF7 | PL83B | 6 | LLM0_GPLLC_FB_A/LDQ82 | C | PL100B | 6 | LLM0_GPLLC_FB_A/LDQ99 | C |
| VCCIO | VCCIO6 | 6 | | | VCCIO6 | 6 | | |
| AH1 | PL84A | 6 | LLM0_GDLLT_IN_A**/LDQ82 | T (LVDS)* | PL101A | 6 | LLM0_GDLLT_IN_A**/LDQ99 | T (LVDS)* |
| AH2 | PL84B | 6 | LLM0_GDLLC_IN_A**/LDQ82 | C (LVDS)* | PL101B | 6 | LLM0_GDLLC_IN_A**/ LDQ99 | C (LVDS)* |
| AG5 | PL85A | 6 | LLM0_GDLLT_FB_A/LDQ82 | T | PL102A | 6 | LLM0_GDLLT_FB_A/LDQ99 | T |
| AG4 | PL85B | 6 | LLM0_GDLLC_FB_A/LDQ82 | C | PL102B | 6 | LLM0_GDLLC_FB_A/LDQ99 | C |
| GNDIO | GNDIO6 | - | | | GNDIO6 | - | | |
| AG6 | LLM0_PLLCAP | 6 | | | LLM0_PLLCAP | 6 | | |
| AJ1 | PL87A | 6 | | T | PL104A | 6 | | T |
| AJ2 | PL87B | 6 | | C | PL104B | 6 | | C |
| AK2 | TCK | - | | | TCK | - | | |
| AK1 | TDI | - | | | TDI | - | | |
| AL1 | TMS | - | | | TMS | - | | |
| AF10 | TDO | - | | | TDO | - | | |
| AK3 | VCCJ | - | | | VCCJ | - | | |
| AN2 | LLC_SQ_VCCRX3 | 14 | | | LLC_SQ_VCCRX3 | 14 | | |
| AM2 | LLC_SQ_HDINP3 | 14 | | T | LLC_SQ_HDINP3 | 14 | | T |
| AN1 | LLC_SQ_VCCIB3 | 14 | | | LLC_SQ_VCCIB3 | 14 | | |
| AM3 | LLC_SQ_HDINN3 | 14 | | C | LLC_SQ_HDINN3 | 14 | | C |
| AN3 | LLC_SQ_VCCTX3 | 14 | | | LLC_SQ_VCCTX3 | 14 | | |
| AP2 | LLC_SQ_HDOUTP3 | 14 | | T | LLC_SQ_HDOUTP3 | 14 | | T |
| AM1 | LLC_SQ_VCCOB3 | 14 | | | LLC_SQ_VCCOB3 | 14 | | |
| AP3 | LLC_SQ_HDOUTN3 | 14 | | C | LLC_SQ_HDOUTN3 | 14 | | C |
| AN4 | LLC_SQ_VCCTX2 | 14 | | | LLC_SQ_VCCTX2 | 14 | | |
| AP4 | LLC_SQ_HDOUTN2 | 14 | | C | LLC_SQ_HDOUTN2 | 14 | | C |
| AL3 | LLC_SQ_VCCOB2 | 14 | | | LLC_SQ_VCCOB2 | 14 | | |
| AP5 | LLC_SQ_HDOUTP2 | 14 | | T | LLC_SQ_HDOUTP2 | 14 | | T |
| AN5 | LLC_SQ_VCCRX2 | 14 | | | LLC_SQ_VCCRX2 | 14 | | |
| AM4 | LLC_SQ_HDINN2 | 14 | | C | LLC_SQ_HDINN2 | 14 | | C |
| AL4 | LLC_SQ_VCCIB2 | 14 | | | LLC_SQ_VCCIB2 | 14 | | |
| AM5 | LLC_SQ_HDINP2 | 14 | | T | LLC_SQ_HDINP2 | 14 | | T |
| AL6 | LLC_SQ_VCCP | 14 | | | LLC_SQ_VCCP | 14 | | |
| AL5 | LLC_SQ_REFCLKP | 14 | | T | LLC_SQ_REFCLKP | 14 | | T |
| AK5 | LLC_SQ_REFCLKN | 14 | | C | LLC_SQ_REFCLKN | 14 | | C |
| AK6 | LLC_SQ_VCCAUX33 | 14 | | | LLC_SQ_VCCAUX33 | 14 | | |
| AM6 | LLC_SQ_HDINP1 | 14 | | T | LLC_SQ_HDINP1 | 14 | | T |

# LFE2M70E/SE and LFE2M100E/SE Logic Signal Connections: 1152 fpBGA (Cont.)

| LFE2M70E/SE | | | | LFE2M100E/SE | | | | |
|---|---|---|---|---|---|---|---|---|
| Ball Number | Ball/Pad Function | Bank | Dual Function | Differential | Ball/Pad Function | Bank | Dual Function | Differential |
| AK20 | PB66B | 4 | BDQ69 | C | PB75B | 4 | BDQ78 | C |
| AN22 | PB67A | 4 | BDQ69 | T | PB76A | 4 | BDQ78 | T |
| AL21 | PB67B | 4 | BDQ69 | C | PB76B | 4 | BDQ78 | C |
| VCCIO | VCCIO4 | 4 | | | VCCIO4 | 4 | | |
| GNDIO | GNDIO4 | - | | | GNDIO4 | - | | |
| AH19 | PB69A | 4 | BDQS69 | T | PB78A | 4 | BDQS78 | T |
| AJ20 | PB69B | 4 | BDQ69 | C | PB78B | 4 | BDQ78 | C |
| AD20 | PB71A | 4 | BDQ69 | T | PB80A | 4 | BDQ78 | T |
| AF20 | PB71B | 4 | BDQ69 | C | PB80B | 4 | BDQ78 | C |
| VCCIO | VCCIO4 | 4 | | | VCCIO4 | 4 | | |
| AJ19 | PB72A | 4 | BDQ69 | T | PB81A | 4 | BDQ78 | T |
| AH20 | PB72B | 4 | BDQ69 | C | PB81B | 4 | BDQ78 | C |
| AE20 | PB73A | 4 | BDQ69 | T | PB82A | 4 | BDQ78 | T |
| AG20 | PB73B | 4 | BDQ69 | C | PB82B | 4 | BDQ78 | C |
| GNDIO | GNDIO4 | - | | | GNDIO4 | - | | |
| AH22 | NC | - | | | PB89A | 4 | BDQ87 | T |
| - | - | - | | | VCCIO4 | 4 | | |
| AH21 | NC | - | | | PB89B | 4 | BDQ87 | C |
| AG22 | NC | - | | | PB90A | 4 | BDQ87 | T |
| AG21 | NC | - | | | PB90B | 4 | BDQ87 | C |
| - | - | - | | | GNDIO4 | - | | |
| AM22 | PB74A | 4 | BDQ78 | T | PB92A | 4 | BDQ96 | T |
| AL22 | PB74B | 4 | BDQ78 | C | PB92B | 4 | BDQ96 | C |
| VCCIO | VCCIO4 | 4 | | | VCCIO4 | 4 | | |
| AP23 | PB77A | 4 | BDQ78 | T | PB95A | 4 | BDQ96 | T |
| AN23 | PB77B | 4 | BDQ78 | C | PB95B | 4 | BDQ96 | C |
| GNDIO | GNDIO4 | - | | | GNDIO4 | - | | |
| AM24 | PB78A | 4 | BDQS78 | T | PB96A | 4 | BDQS96 | T |
| AL24 | PB78B | 4 | BDQ78 | C | PB96B | 4 | BDQ96 | C |
| AK22 | PB79A | 4 | BDQ78 | T | PB97A | 4 | BDQ96 | T |
| AJ22 | PB79B | 4 | BDQ78 | C | PB97B | 4 | BDQ96 | C |
| AL23 | PB80A | 4 | BDQ78 | T | PB98A | 4 | BDQ96 | T |
| AK23 | PB80B | 4 | BDQ78 | C | PB98B | 4 | BDQ96 | C |
| VCCIO | VCCIO4 | 4 | | | VCCIO4 | 4 | | |
| AJ23 | PB81A | 4 | BDQ78 | T | PB99A | 4 | BDQ96 | T |
| AH23 | PB81B | 4 | BDQ78 | C | PB99B | 4 | BDQ96 | C |
| GNDIO | GNDIO4 | - | | | GNDIO4 | - | | |
| AL28 | LRC_SQ_VCCRX3 | 13 | | | LRC_SQ_VCCRX3 | 13 | | |
| AM26 | LRC_SQ_HDINP3 | 13 | | T | LRC_SQ_HDINP3 | 13 | | T |
| AN26 | LRC_SQ_VCCIB3 | 13 | | | LRC_SQ_VCCIB3 | 13 | | |
| AM27 | LRC_SQ_HDINN3 | 13 | | C | LRC_SQ_HDINN3 | 13 | | C |
| AN27 | LRC_SQ_VCCTX3 | 13 | | | LRC_SQ_VCCTX3 | 13 | | |
| AP26 | LRC_SQ_HDOUTP3 | 13 | | T | LRC_SQ_HDOUTP3 | 13 | | T |
| AL26 | LRC_SQ_VCCOB3 | 13 | | | LRC_SQ_VCCOB3 | 13 | | |
| AP27 | LRC_SQ_HDOUTN3 | 13 | | C | LRC_SQ_HDOUTN3 | 13 | | C |
| AN28 | LRC_SQ_VCCTX2 | 13 | | | LRC_SQ_VCCTX2 | 13 | | |
| AP28 | LRC_SQ_HDOUTN2 | 13 | | C | LRC_SQ_HDOUTN2 | 13 | | C |
| AK28 | LRC_SQ_VCCOB2 | 13 | | | LRC_SQ_VCCOB2 | 13 | | |
| AP29 | LRC_SQ_HDOUTP2 | 13 | | T | LRC_SQ_HDOUTP2 | 13 | | T |

# LFE2M70E/SE and LFE2M100E/SE Logic Signal Connections: 1152 fpBGA (Cont.)

| LFE2M70E/SE | | | | LFE2M100E/SE | | | | |
|---|---|---|---|---|---|---|---|---|
| Ball Number | Ball/Pad Function | Bank | Dual Function | Differential | Ball/Pad Function | Bank | Dual Function | Differential |
| P31 | NC | - | | | PR39B | 2 | | C (LVDS)* |
| P32 | NC | - | | | PR39A | 2 | | T (LVDS)* |
| R25 | NC | - | | | PR38B | 2 | | C |
| - | - | - | | | VCCIO2 | 2 | | |
| T24 | NC | - | | | PR38A | 2 | | T |
| N34 | NC | - | | | PR37B | 2 | | C (LVDS)* |
| N33 | NC | - | | | PR37A | 2 | | T (LVDS)* |
| GNDIO | GNDIO2 | - | | | GNDIO2 | - | | |
| M34 | PR31B | 2 | RDQ28 | C | PR35B | 2 | RDQ32 | C |
| M33 | PR31A | 2 | RDQ28 | T | PR35A | 2 | RDQ32 | T |
| - | - | - | | | GNDIO2 | - | | |
| R24 | PR30B | 2 | RDQ28 | C (LVDS)* | PR34B | 2 | RDQ32 | C (LVDS)* |
| P24 | PR30A | 2 | RDQ28 | T (LVDS)* | PR34A | 2 | RDQ32 | T (LVDS)* |
| N30 | PR29B | 2 | RDQ28 | C | PR33B | 2 | RDQ32 | C |
| M29 | PR29A | 2 | RDQ28 | T | PR33A | 2 | RDQ32 | T |
| VCCIO | VCCIO2 | 2 | | | VCCIO2 | 2 | | |
| N28 | PR28B | 2 | RDQ28 | C (LVDS)* | PR32B | 2 | RDQ32 | C (LVDS)* |
| N29 | PR28A | 2 | RDQS28 | T (LVDS)* | PR32A | 2 | RDQS32 | T (LVDS)* |
| N24 | PR27B | 2 | RDQ28 | C | PR31B | 2 | RDQ32 | C |
| GNDIO | GNDIO2 | - | | | GNDIO2 | - | | |
| N25 | PR27A | 2 | RDQ28 | T | PR31A | 2 | RDQ32 | T |
| M28 | PR26B | 2 | RDQ28 | C (LVDS)* | PR30B | 2 | RDQ32 | C (LVDS)* |
| M27 | PR26A | 2 | RDQ28 | T (LVDS)* | PR30A | 2 | RDQ32 | T (LVDS)* |
| L27 | PR25B | 2 | RDQ28 | C | PR29B | 2 | RDQ32 | C |
| VCCIO | VCCIO2 | 2 | | | VCCIO2 | 2 | | |
| M26 | PR25A | 2 | RDQ28 | T | PR29A | 2 | RDQ32 | T |
| M32 | PR24B | 2 | RDQ28 | C (LVDS)* | PR28B | 2 | RDQ32 | C (LVDS)* |
| M31 | PR24A | 2 | RDQ28 | T (LVDS)* | PR28A | 2 | RDQ32 | T (LVDS)* |
| GNDIO | GNDIO2 | - | | | GNDIO2 | - | | |
| - | - | - | | | VCCIO2 | 2 | | |
| L34 | PR22B | 2 | | C | PR22B | 2 | RDQ23 | C |
| L33 | PR22A | 2 | | T | PR22A | 2 | RDQ23 | T |
| L32 | PR21B | 2 | | C (LVDS)* | PR21B | 2 | RDQ23 | C (LVDS)* |
| L31 | PR21A | 2 | | T (LVDS)* | PR21A | 2 | RDQ23 | T (LVDS)* |
| VCCIO | VCCIO2 | 2 | | | VCCIO2 | 2 | | |
| L28 | PR20B | 2 | | C | PR20B | 2 | RDQ23 | C |
| L29 | PR20A | 2 | | T | PR20A | 2 | RDQ23 | T |
| M30 | PR19B | 2 | | C (LVDS)* | PR19B | 2 | RDQ23 | C (LVDS)* |
| L30 | PR19A | 2 | | T (LVDS)* | PR19A | 2 | RDQ23 | T (LVDS)* |
| K34 | PR18B | 2 | RDQ15 | C | PR18B | 2 | RDQ15 | C |
| K33 | PR18A | 2 | RDQ15 | T | PR18A | 2 | RDQ15 | T |
| GNDIO | GNDIO2 | - | | | GNDIO2 | - | | |
| K30 | PR17B | 2 | RDQ15 | C (LVDS)* | PR17B | 2 | RDQ15 | C (LVDS)* |
| K29 | PR17A | 2 | RDQ15 | T (LVDS)* | PR17A | 2 | RDQ15 | T (LVDS)* |
| J34 | PR16B | 2 | RDQ15 | C | PR16B | 2 | RDQ15 | C |
| J33 | PR16A | 2 | RDQ15 | T | PR16A | 2 | RDQ15 | T |
| VCCIO | VCCIO2 | 2 | | | VCCIO2 | 2 | | |
| J32 | PR15B | 2 | RDQ15 | C (LVDS)* | PR15B | 2 | RDQ15 | C (LVDS)* |
| J31 | PR15A | 2 | RDQS15 | T (LVDS)* | PR15A | 2 | RDQS15 | T (LVDS)* |

# LFE2M70E/SE and LFE2M100E/SE Logic Signal Connections: 1152 fpBGA (Cont.)

| LFE2M70E/SE | | | | LFE2M100E/SE | | | | |
|---|---|---|---|---|---|---|---|---|
| Ball Number | Ball/Pad Function | Bank | Dual Function | Differential | Ball/Pad Function | Bank | Dual Function | Differential |
| AE12 | NC | - | | | NC | - | | |
| AE13 | NC | - | | | NC | - | | |
| AE19 | NC | - | | | NC | - | | |
| AE21 | NC | - | | | NC | - | | |
| AE22 | NC | - | | | NC | - | | |
| AE23 | NC | - | | | NC | - | | |
| AF11 | NC | - | | | NC | - | | |
| AF21 | NC | - | | | NC | - | | |
| AF22 | NC | - | | | NC | - | | |
| AF24 | NC | - | | | NC | - | | |
| AF8 | NC | - | | | NC | - | | |
| AF9 | NC | - | | | NC | - | | |
| AG10 | NC | - | | | NC | - | | |
| AG11 | NC | - | | | NC | - | | |
| AG24 | NC | - | | | NC | - | | |
| AG25 | NC | - | | | NC | - | | |
| AG26 | NC | - | | | NC | - | | |
| AG3 | NC | - | | | NC | - | | |
| AG7 | NC | - | | | NC | - | | |
| AG8 | NC | - | | | NC | - | | |
| AG9 | NC | - | | | NC | - | | |
| AH10 | NC | - | | | NC | - | | |
| AH11 | NC | - | | | NC | - | | |
| AH13 | NC | - | | | NC | - | | |
| AH24 | NC | - | | | NC | - | | |
| AH25 | NC | - | | | NC | - | | |
| AH26 | NC | - | | | NC | - | | |
| AH27 | NC | - | | | NC | - | | |
| AH5 | NC | - | | | NC | - | | |
| AH6 | NC | - | | | NC | - | | |
| AH7 | NC | - | | | NC | - | | |
| AH8 | NC | - | | | NC | - | | |
| AH9 | NC | - | | | NC | - | | |
| AJ10 | NC | - | | | NC | - | | |
| AJ11 | NC | - | | | NC | - | | |
| AJ13 | NC | - | | | NC | - | | |
| AJ24 | NC | - | | | NC | - | | |
| AJ25 | NC | - | | | NC | - | | |
| AJ26 | NC | - | | | NC | - | | |
| AJ27 | NC | - | | | NC | - | | |
| AJ3 | NC | - | | | NC | - | | |
| AJ4 | NC | - | | | NC | - | | |
| AJ5 | NC | - | | | NC | - | | |
| AJ6 | NC | - | | | NC | - | | |
| AJ7 | NC | - | | | NC | - | | |
| AJ8 | NC | - | | | NC | - | | |
| AJ9 | NC | - | | | NC | - | | |
| AK10 | NC | - | | | NC | - | | |
| AK11 | NC | - | | | NC | - | | |

| Part Number | I/Os | Voltage | Grade | Package | Pins | Temp. | LUTs (K) |
|---|---|---|---|---|---|---|---|
| LFE2M100E-5F1152C | 520 | 1.2V | -5 | fpBGA | 1152 | COM | 100 |
| LFE2M100E-6F1152C | 520 | 1.2V | -6 | fpBGA | 1152 | COM | 100 |
| LFE2M100E-7F1152C | 520 | 1.2V | -7 | fpBGA | 1152 | COM | 100 |
| LFE2M100E-5F900C | 416 | 1.2V | -5 | fpBGA | 900 | COM | 100 |
| LFE2M100E-6F900C | 416 | 1.2V | -6 | fpBGA | 900 | COM | 100 |
| LFE2M100E-7F900C | 416 | 1.2V | -7 | fpBGA | 900 | COM | 100 |