Silicom

Silicom Denmark A/S FPGA SOLUTIONS

Connectivity Solutions

fb2CGhh@KU15P FPGA Card

Half Height, Dual Port QSFP28 100 Gigabit FPGA Card

Product Description

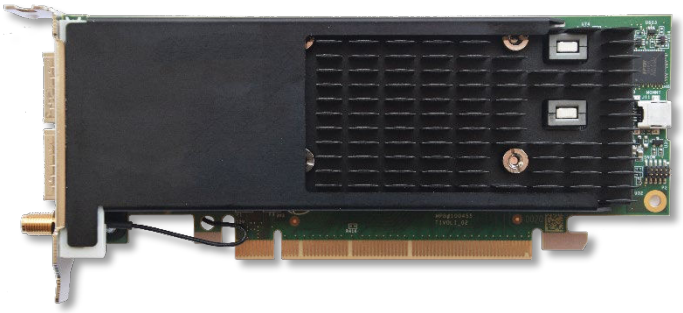
The fb2CGhh@KU15P is a low-profile high performance OEM hardware platform intended for 10/40/25/50/100 Gigabit Ethernet via its dual QSFP28 slots.

The standard configuration is based on the Xilinx® Kintex UltraScale+ KU15P FPGA, to provide ample capacity for the dual QSFP28 interface. The card features the KU15P to keep the solution as cost effective as high performance computing allows.

The card is mounted with 2 x 72-bit DDR4 ECC RAM, 4GB for a total of 8 GB.

Key Features

- Xilinx® Kintex UltraScale+ XCKU15P FPGA
- 2 x QSFP28 ports
- 2 x 72-bit DDR4@2666MT/s (4 GB per bank with ECC)
- Configuration flash RAM for boot images
- PCIe form-factor: Half height, half length (68.9 x 167.65 mm with bracket)
- On-board power and temperature sensors
- FPGA controlled link and status LEDs
- Passive cooling solution



Technical Specifications

Network Interface	
IEEE standard	IEEE 802.3 10GE, 40GE, 25GE, 100GE
Interfaces	▪ Physical interface: 2 x QSFP28 slots ▪ Supports QSFP+/QSFP28 modules: including fan-out modules for 4x10G/4x25GE per slot, Multimode SR4 (850nm), singlemode LR4 (1310nm), singlemode PSM4 (1310nm), multimode LRM4 (1310 nm), or Direct Attached Copper (Twinax) and others ▪ Data rate: 8x10, 2x40, 8x25, 2x100 Gbps ▪ Support for SyncE
Host Interface	
PCI bus	▪ 16 lanes PCIe Gen3 ▪ PCIe compliant ▪ Support for SMBUS

General Technical Specifications		
Configuration	▪ Quad SPI fast parallel programming interface from supporting preprogrammed controller ▪ Configuration flash supports two boot images with automatic fallback to fail safe image if first image fails ▪ Upload of FPGA configuration to flash via PCIe or directly from Xilinx Vivado via the onboard JTAG dongle ▪ Direct FPGA configuration from Xilinx via the onboard JTAG dongle ▪ Supports Tandem PROM boot	
On-board Memory	▪ 2 x 72-bit DDR4@2666MT/s (4 GB per bank with ECC) ▪ User configurable space in flash RAM for permanent storage ▪ Configuration flash RAM for boot images	
On-board Clock	▪ PCIe clock: 100 MHz ▪ 2 x differential 161.13 MHz SerDes clock for Ethernet ▪ 2 x differential 266.67 MHz clock for Memory ▪ 50 MHz clock	
FPGA Details	▪ FPGA Xilinx® Kintex UltraScale+ XCKU15P	
Environment	▪ ½ height, ½ length 68.90 x 167.65 mm with bracket ▪ Storage temperaure: -30 - 70°C, -22 – 158°F ▪ Operating temperature: 0 – 55°C, 30 – 130°F ▪ Operating humidity: 20 – 80% ▪ Hardware compliance: RoHS, CE	
Additional Board Support	▪ On-board power and temperature sensors ▪ FPGA controlled Link and Activity LED for each port. 4 for each QSFP ▪ Board status LEDs ▪ Failsafe button on bracket ▪ PPS clock synchronization connector (optional, see ordering information)	
Power	▪ Max 75W ▪ Passive cooling solution ▪ Power, temperature and FAN tacho sensor reading	
Time Synchronization	▪ PTP: Yes, with PTP4L on x86 ▪ Support Sync-E/ 1588 standard ▪ PLL: SI5345A-D	
On-board Microcontroller	▪ Board management Microcontroller for various internal control tasks as well as external communication ▪ SMbus/I2c ▪ Possible to readout telemetry parameters	
Ordering Information	fb2CGhh@KU15P-2	½ height mounted, full height spare, PPS
	fb2CGhh@KU15P-2-0-H	½ height bracket mounted, full height spare, PPS
	fb2CGhh@KU15P-2-0-F	Full height bracket mounted, ½ height spare, PPS
	fb2CGhh@KU15P-2-N-H	½ height bracket mounted, full height spare, No PPS
	fb2CGhh@KU15P-2-N-F	Full height bracket mounted, ½height spare, No PPS

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www.silicom-usa.com

Silicom Ltd.
International Headquarters
14 Atir Yeda St.
Kfar Sava 4464323
Israel
Tel: (972)-9-764-4555

Silicom Connectivity Solutions Inc.
USA Office
6 Forest Ave, Paramus
New Jersey 07652
USA
Tel: 18004silicom (Toll Free no.)

www.silicom.dk

Silicom Denmark A/S
Poppelgaardvej 11
DK-2860 Soeborg
Denmark
Phone +45 46 32 74 55
contactus@silicom.dk