Silicom Connectivity Solutions

FB2CGT@A10T11 FPGA Programmable Acceleration Card

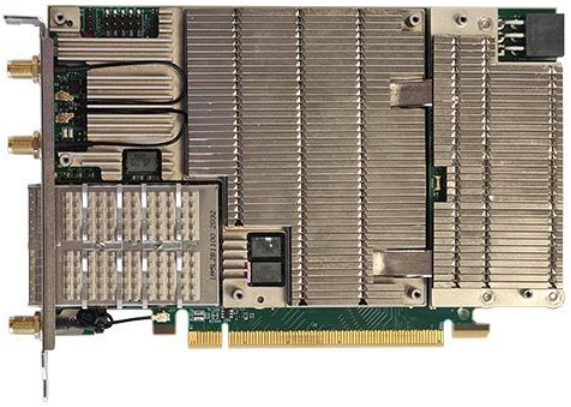
Programmable PCI Express Server Adapter Intel® based

Product Description

Silicom FB2CGT@A10T11 Oakham featuring the Intel® Arria® 10 GT FPGA.

The Silicom Oakham is supported by the Intel Acceleration Stack for Intel Xeon® CPU with FPGAs. The Intel Acceleration Stack provides a common developer interface to both application and acceleration function developers and includes drivers, Application Programming Interfaces (APIs) and an FPGA factory image.

Silicom validates each Oakham to support large scale deployments requiring FPGA acceleration. This platform is targeted for market-specific acceleration in applications such as:



- Network Function Virtualization (NFV)
- Multi-Access Edge Computing (MEC)
- Video Transcoding
- Cyber Security
- High-Performance Computing
- Finance

Key Features

Time Sync Key Feature

- Supports PTP Transparent Clock (TC) Boundary Clock (BC) OC (Master / Slave)
- PTP over IPv4 (IEEE-1588v2) / SyncE
- One step clock mode operation for PTP Master
- 10Mhz and 1PPS output for measurement purpose
- Full HW and SW TimeSync solution based on industry leading DPLL, Servo stack and PTP1588
- Based on Three DPLL channels
- Packet and physical-layer frequency, phase and time synchronization
- Physical-layer compliance ITU-T G.8262, G.8262., G.813, G.812, Telcordia GR-1244. GR-253
- Packet-timing compliance with ITU-T G.8261, G.8263, G.8273.2, G.8273.2 (class A, B &C), G.8273.4
- Enable 5G/Class C wireless application with sub 10nS time/ phase alignment requirements

Technical Specifications

General Technical Specifications Adapters:	
Interface Standard:	PCI-Express Base Specification Revision 3.0 (8 GTs)
Board Size:	Standard height add-in card 193.04mm X 111.15mm (6.6”X 4.376”)
PCI Express Card Type:	x16 Note: Can be plug only in 16xPCIe slot
PCI Express Voltage:	+12V ± 8% – Limited to 6A
On Board Connector Voltage	+12V ± 8% On board auxiliary power connector to support power over 75W – *The +12V must be installed when power is over 75W
PCIe Connector:	x16 Lanes
FPGA:	Intel FPGA Arria 1150 GT See ordering information Arria 10 GX/GT
Ethernet Controller:	2x Intel Fortville Ethernet Controller XL710-BM2
Memory:	Onboard DDR4, 2400MT, total memory 8GB
Ethernet Retimer PHY:	Dual 100G Retimer PHY with IEEE 1588v2 Timestamping and SyncE
DPLL:	1588 / SyncE
OCXO:	20MHz 20ppb 7.4 x 9.6 x 4.1 mm
Holdover:	Long-term Transient Response (Holdover) performance, without physical layer assist, in 50 +/-10°C TA: expected 25us TE over 4 hours
GPS:	u-Blox: NEO-M8T Time pulse accuracy (1-sigma): Clear Sky ≤20ns, Indoor ≤200ns Receiver type: GPS L1C/A, SBAS L1C/A, QZSS L1C/A, QZSS L1 SAIF, GLONASS L1OF, BeiDou B1, Galileo E1B/C
Power Consumption:	Maximum 150W Typical (TBD) The total power consumption of the card is depending on user application
Cooling:	Passive heat sink, or active heat sink solution Built-in thermal protection
Sensors/Monitors:	Thermal protection Voltage monitors Current protection
Operating Temperature:	0°C – 40°C (32°F – 113°F)
Air Flow Requirements:	Passive heat sink, short PCIe, single slot: 600 LFM. @ 40C, Max PCIe card power 100W, Max FPGA Core Current 60A, FPGA Core Temp 90C
Storage:	-40°C–65°C (-40°F–149°F)

Regulation:	CE, FCC Class B, ROHS requirements.
Connectors:	(2) QSFP28 Cages (1) SMA- GPS Antenna (2) MCX- 1PPS In, 1PPS Out

Order Information

P/N	Description	Notes:
FB2CGT@A10T11-11P810G	Oakham, 2xQSFP28 for 8x10GE, Altera A10 1150, Speed grade 1, DDR4 8GB, PCIe x16, Passive cooling, 2x Intel Fortville. TimeSync(1588 / SyncE), Full height, half length, external PPS, GPS	8x10G Intel FPGA A10 GT1150/ 10AT115S1F45E1SG Passive Heat-Sink. OX-6011 RMN: IP0400 RTN: IP0400.00
FB2CGT@A10T11-11P225G	Oakham, 2xQSFP28 for 2x 2x25G, Altera A10 1150, Speed grade 1, DDR4 8GB, PCIe x16, Passive cooling, 2x Intel Fortville. TimeSync(1588 / SyncE), Full height, half length, external PPS, GPS	2x2x25G Intel FPGA A10 GT1150/ 10AT115S1F45E1SG Passive Heat-Sink. OX-6011 RMN: IP0400 RTN: IP0400.01
FB2CGT@A10T11-11P425G	Oakham, 2xQSFP28 for 4x25G, Altera A10 1150, Speed grade 1, DDR4 8GB, PCIe x16, Passive cooling, 2x Intel Fortville. TimeSync (1588 / SyncE), Full height, half length, external PPS, GPS	4x25G Intel FPGA A10 GT1150/ 10AT115S1F45E1SG Passive Heat-Sink. OX-6011 RMN: IP0400 RTN: IP0400.02

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