



ICE ENTERPRISES, INC

OCTOBER 2017

CORPORATE HISTORY

- Innovative Computer Engineering established 1994 in Tucson, AZ
- Relocated to Fairfax, VA 1998
- July 2008 Innovative Computer Engineering merged with two other Virginia based companies:
 - LowNoiseFloor, LLC
 - rumeL Incorporated
- July 2014 Innovative Computer Engineering, Inc becomes ICE Enterprises



NEW ICE PRODUCTS

- PCIe Interface Cards

- ICE-PIC8, ICE-PIC8-L

- Packet Processing Engines

- ICE-QIC8-L
- ICE-DPI8-L

- I/O Modules

- ICE-A2D-m20
- ICE-D2AWGm3
- ICE-LB2D-m3

- Processor Modules

- A8M (Altera Arria 10)
- K8M (Xilinx UltraScale)

- Appliances

- ICE-BLOCK
- ICE-COOLer
- SynchronICE

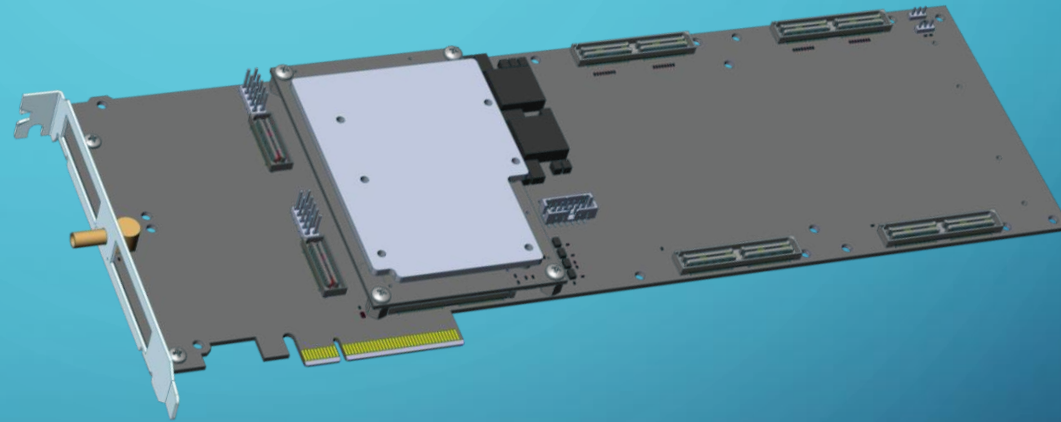
- Integrated Rugged Devices

- ICE-POD8
- ICE-PAC
- 10GIGEXD



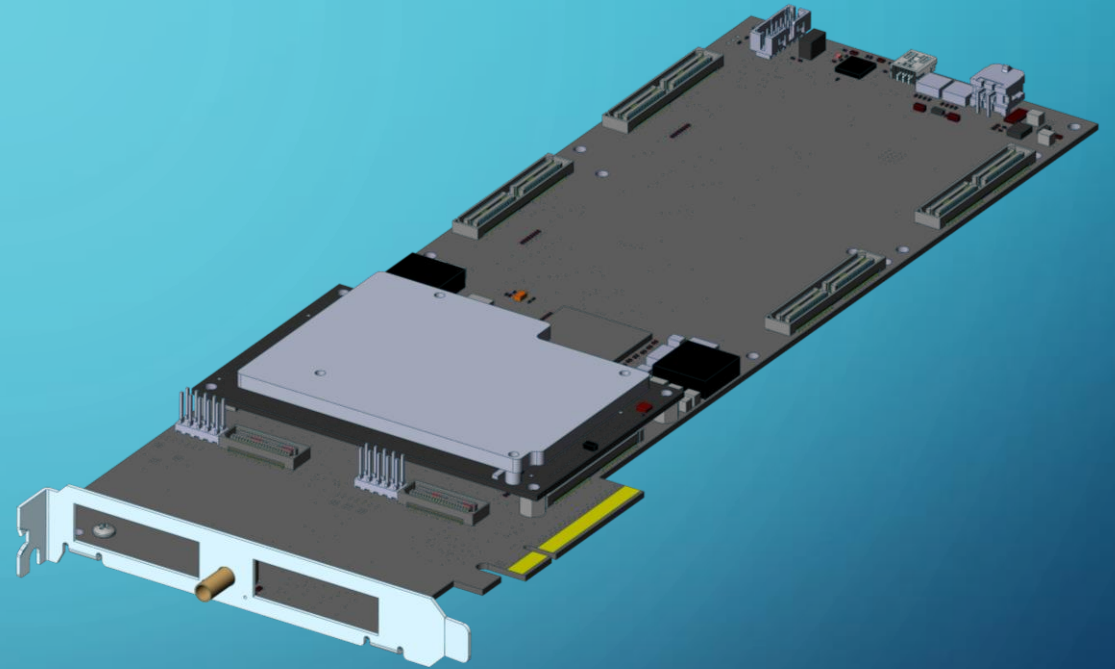
ICE-PIC8

- PCIe Gen 3
- Up to 6GB/sec
- 8 Lanes
- Xilinx crossbar
- Supports up to 2 K8M or A8M processor modules
- ICE-PIC8 9.0 inches long
- ICE-PIC8-L 12.3 inches long



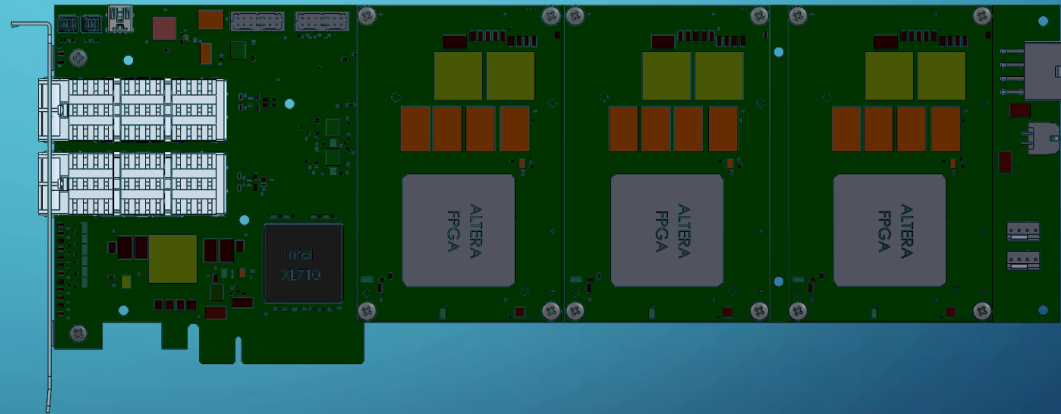
ICE-QIC8L

- PCIe Gen 3, 8 lanes
- Network packet engine
- Dual I/O module sites
- Up to dual 10G (module specific)
- Altera crossbar
- Supports up to 2 A8M processor modules
- 12.3 inches long



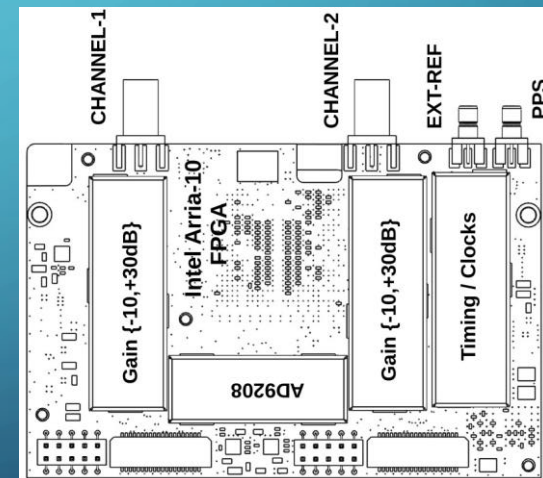
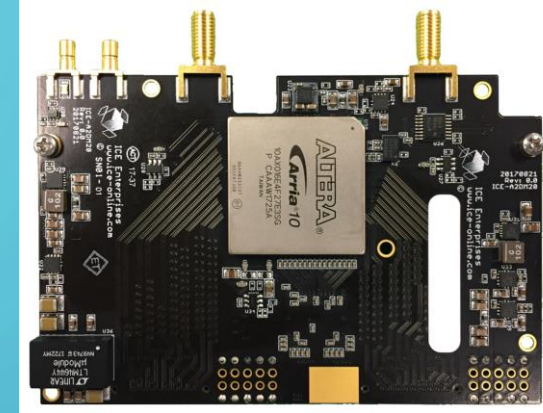
ICE-DPI8-L

- PCIe Gen 3, 8 lanes
- Deep Packet Inspection and processing card
- 40G or 4x 10G
- Three FPGAs available
- FPGA source code available
- 12.3 inches long (Standard Full Length)



ICE-A2D-M20

- Two channel, 14-bit resolution, 3GBs/sec
- -10dB to +30 dB variable gain
- External 1 PPS input for precision time stamp
- Dual site module



ANALOG INPUT MODULE COMPARISON

ICE-A2D-M20

- 14-bit resolution
- Dual Channel
- 3000M samples/sec
- 3dB sample and hold bandwidth > 3 GHz

ICE-A2D-M18

- 12-bit resolution
- Dual channel
- 1600M Samples/sec
- 3dB sample and hold bandwidth 5 MHz – 2.7 GHz
- 12dB sample and hold bandwidth 1.2 MHz – 4.0 GHz

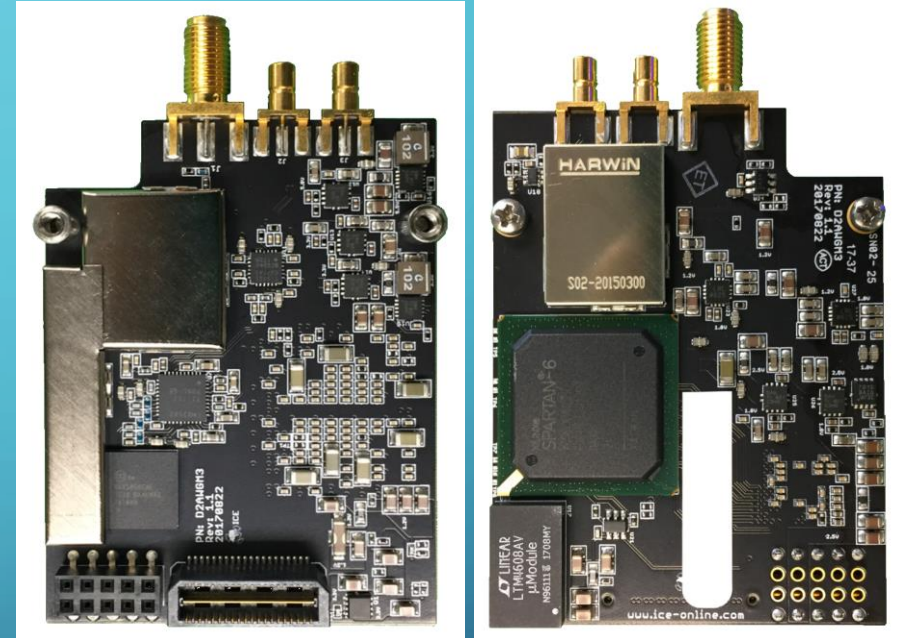
ICE-A2D-M14

- 14-bit resolution
- Single channel
- 250M Samples/sec
- 3dB sample and hold bandwidth 40 KHz - 405 MHz



ICE-D2AWG-M3

- Single channel, 14 bit , 5GSamples/sec DAC
- Up to 400M signal bandwidth
- 1 MHz -2500MHz Direct path
- Digital upconverter
- AC Coupled
- 34 dB gain range
- -20dBm nominal output
- Hardware interpolation



ANALOG OUTPUT MODULE COMPARISON

ICE-D2AWG-M3

- 14-bit resolution
- Single Channel
- 5 GSamples/sec DAC
- 34 dB gain range

ICE-D2AWG-R2

- 14-bit resolution
- Single channel
- 1GSamples/sec DAC
- 32 dB gain range

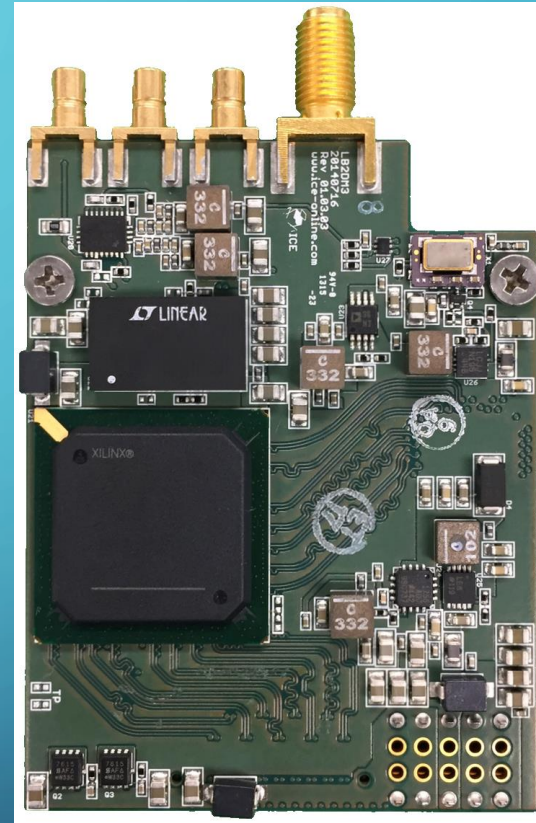
ICE-D2RF

- 12-bit resolution
- Up to 50 MHz signal bandwidth
- Analog I/Q modulation
- RF coverage to 4GHz



ICE-LB2D-M3

- Input Frequency Range: 800 to 2300 MHz
- Selectable Bandwidth: 10 to 110 MHz
- Input Power Range: -104 to 0 dBm
- Adjustable Gain Range: 0 to 70 dB
- Integrated Switched LNA (+15 dBm/2.7 dB NF)



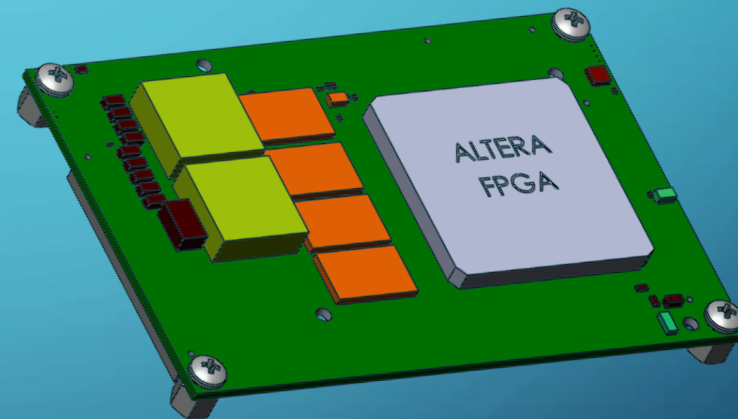
ICE-K8M

- Xilinx UltraScale FPGA Processor Module
- 2 GB DRAM
- 1920 fixed point multiplier
- 22 Mb block RAM
- 242K logic elements



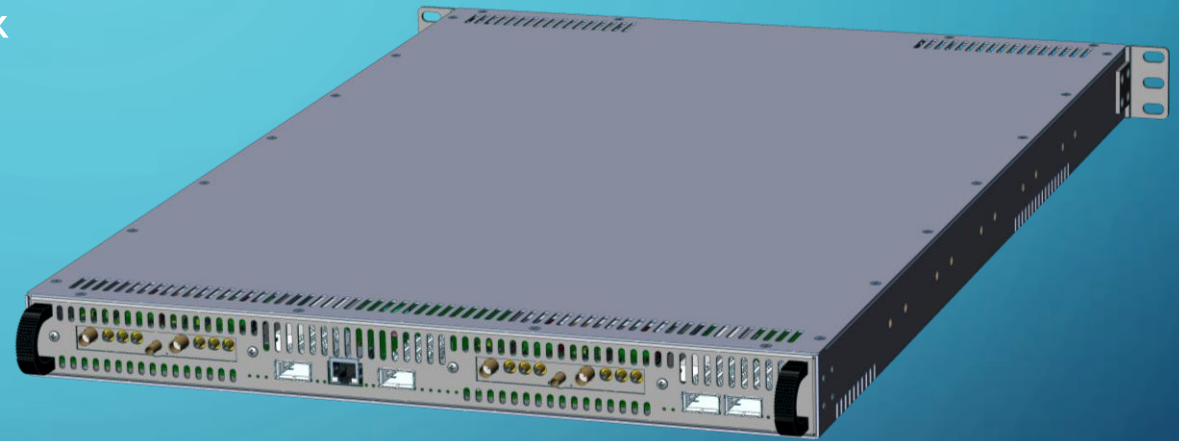
ICE-A8M

- Altera (Intel) Arria10 FPGA processor module
- 4 GB DRAM
- 3379 fixed point multiplier
- 1688 floating point multiplier
- 660K logic elements



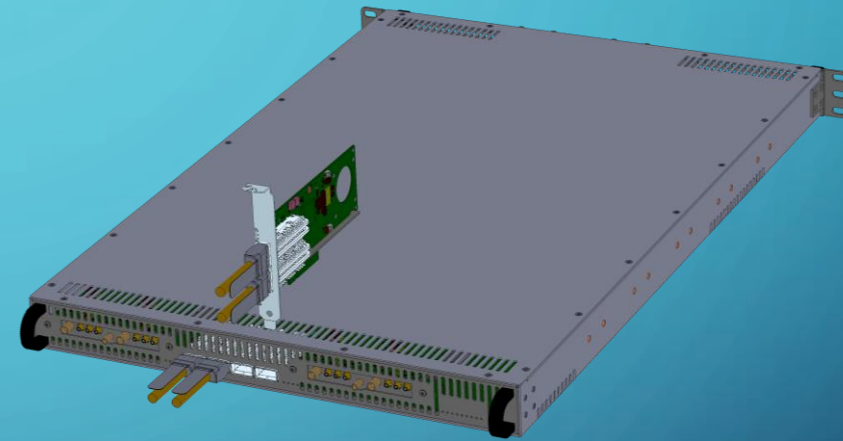
ICE-BLOCK

- Preconfigured, bootable embedded Linux with stand-alone processor
- Powerful single board computer (Intel® Core™ i7 Quad-core, 16 GB RAM)
- Mirrored solid-state system and data drives (RAID1)
- Holds up to 2 ICE-PIC7/8 series cards
- 1U Form Factor, Redundant PS



ICE-COOLER

- PCI-Express Gen3 endpoint connection over optical link
- Expands a single internal x8 PCIe Gen3 server slot to two (or more) external slots
- External chassis accommodates up to 2 ICE-PIC6/7/8 cards (including long format cards)
- 1U form factor

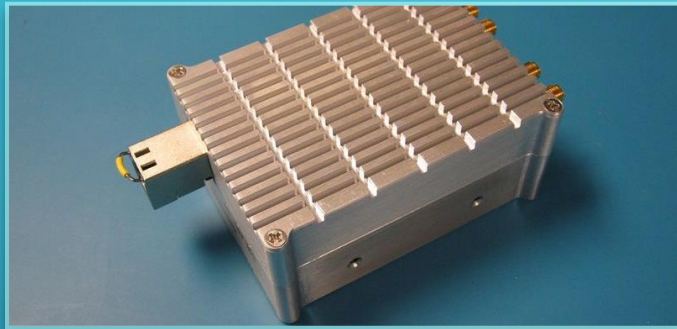




- Four-Channel Distribution of TTL and Analog channels
 - Dual 1:8 logic TTL channels
 - Dual 1:8 analog channels
- Option for embedded, low phase noise fixed oscillator
- Forward or reverse rack-mountable
- Cold swap AC power supply (DC available as accessory)
- Turn on unit instant operation immediately up and active (no booting/no computers)



INTEGRATED RUGGED DEVICES



ICE-10G GIGEXD



ICE-PAC



ICE-POD8



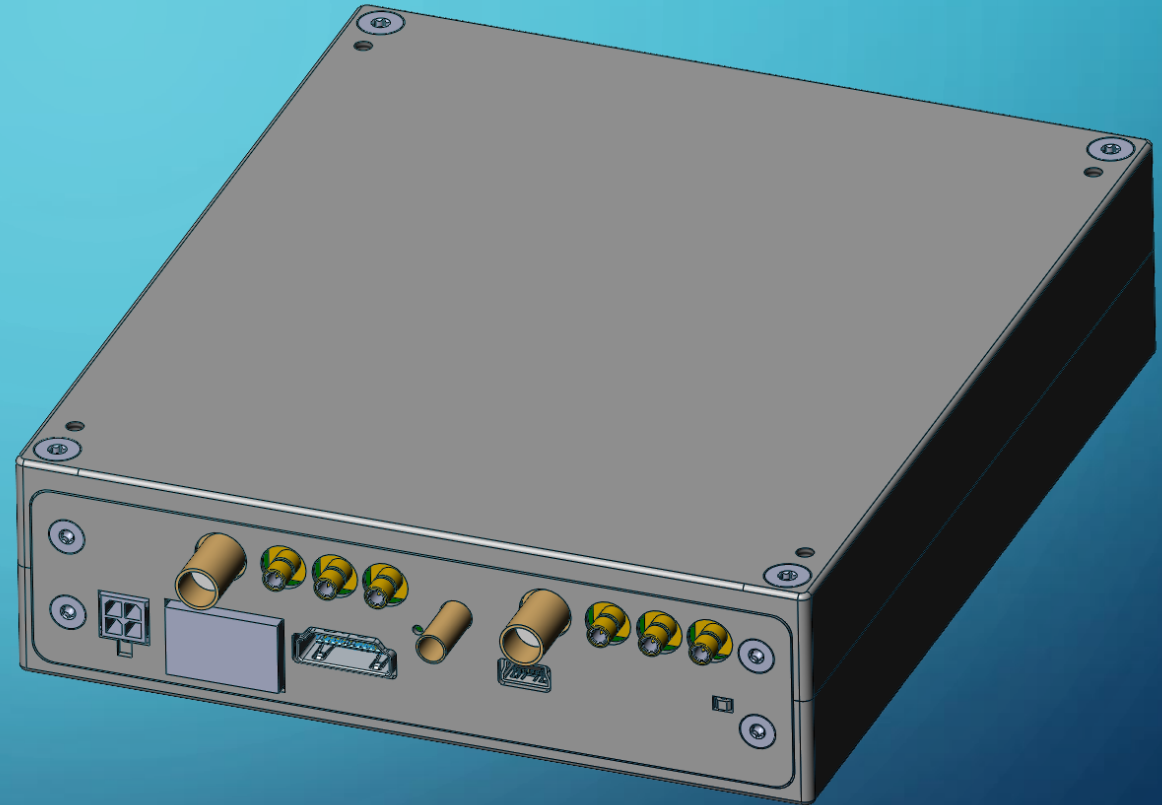
ICE-10G-GIGEXD

- 10GbE to ICE I/O module converter
- Supports 10GbE (1.1 GByte/Sec) transfer rates to I/O module electrical standards
- Both Input and Output modules supported
- Standard input configuration: AA2DR1
module-dual channel 16-bit 300MHz A/D
- 4 Internal DDC Tuning channels
- IRIG Timecode insertion into 10GbE packets



ICE-PAC

- Low Power 25W ~ 40W
- 6061-T6 Machined Housing
- 4x10G network output available
- Dual I/O site available
- Low power SBC



ICE-POD8

- Rugged, 6061-T6 housing
- Preconfigured, bootable embedded Linux with stand-alone processor
- Expansion Bay houses optional storage (8TB SSD, 4GB/s) or additional processor modules
- Two I/O module sites available
- 12V DC

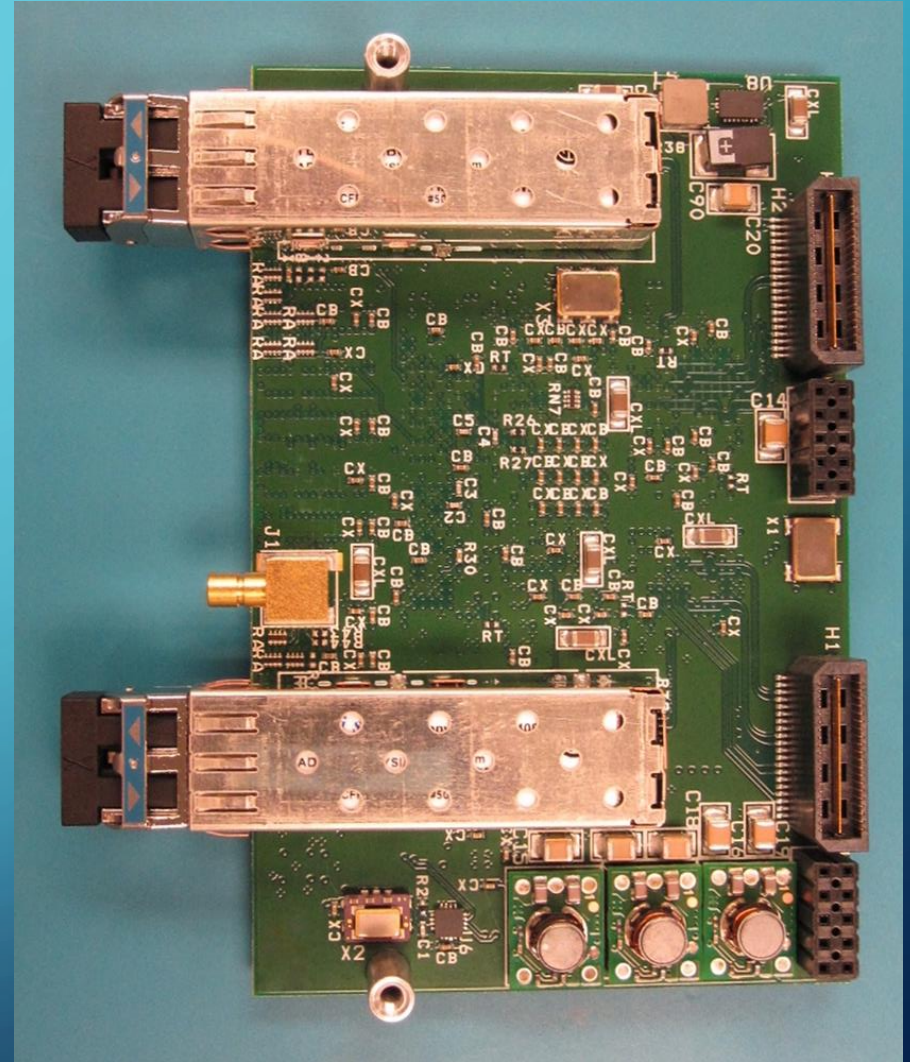


EXTRA SLIDES



ICE-UDP-10G-R3

- Any line rate from 600Mb/sec to 11.7Gb/sec dual bidirectional fiber optic module (raw acquisition or playback)
- Firmware embedded protocol support for SONET OC12/48/192 and FEC G.709 protocols
- 850nm, 1310nm, or 1550nm transceivers available, (standard as shipped is 1310nm)



SERVICES AND TEST STATIONS

ICE Enterprises can provide complete Server/Test Station Solutions

- 2U up to 53 TB actual space (2.5" Enterprise SAS)
- 2U up to 48 TB actual space (2.5" Enterprise NVMe)
- 3U up to 89 TB actual space (3.5" Enterprise SATA)
- 4U up to 134 TB actual space (3.5" Enterprise SATA)
- ICE-PIC8 Card/module integration and full testing
- Full High Speed RAID array validation
- NAS/DAS High Speed ICE-RAID Arrays up to sustained *4GBytes/sec*
- Red Hat Enterprise Linux (RHEL) 6+ and 7+ Operating Systems are currently shipping
- ICE Enterprises part of the Red Hat Partner community and is a Red Hat Ready

Registered Red Hat System Builder

