ICE Enterprises
Innovative Computer Engineering

At ICE Enterprises, we design and manufacture low-cost, high-performance computer solutions for digital signal processing applications. Our OEM solutions are used by corporations, research institutions, and government labs around the world to solve many of their most demanding data-acquisition and signal-processing problems. Our unique mix of experience, technical skills, and corporate agility allows us to meet the needs of a diverse customer base in the face of uncertain requirements and timelines.

Our analog spectrum digitizing and recording products continue to push the boundaries of available technology. Wider bandwidths, deep memory, and streaming recordings are provided. Spectrums of interest can be easily captured for analysis. We also provide synchronized multi-channel recorders for time/location applications.

ICE optical recorders provide capabilities to record and reproduce scenarios for test and analysis. Our newest SONET-r7, dual 10G optical module coupled with our ICE-POD8 recorder provides users with the smallest, lowest power, dual 10G recorder available in the industry.

Need to capture raw network/packets? Use the ICE-UDP10G-r3 module coupled with an ICE-POD8, ICE-Briefcase, or a rack mount 140TB 4U recorder to provide powerful network activity time-line reconstruction capabilities.

Packet analysis required? Use our new FPGA packet processing engines on our newly released Deep Packet Inspection (ICE-DPI8) card to provide solutions for the most demanding and heavily loaded packet flow processing requirements.

Complete, ready-to-use, rackmount subsystems in 1U - 4U formfactors can be provided. Portable, briefcase, shoe-box size, or the very small ICE-PAC or TGiGEXD sizes are also available depending on your mission profile.

Contact us for your mission needs. Let us provide you immediate solutions. We are ready to meet your requirements and provide reliable solutions to exceed your expectations.

ICE-Briefcase

ICE-BLOCK

ICE-COOLer

ICE-POD8

ICE-PAC

TGigEXD

ICE-RAID (2U-48TB/3U-96TB/4U-140TB available)

Analog/SONET/Packet/Network Recording

ice-online.com

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ICE Enterprises - *20 Years of Innovative Computer Engineering*

Cards/Appliances

Cards / Devices / Appliances / Packet Engines

ICEPIC
PCI Express Card

| ICEPIC1 PCI 32bit | ICEPIC2 PCI 32bit | ICEPIC3 PCI 32bit | ICEPIC4 PCI 64bit | ICEPIC5 PCIX 64bit | ICEPIC6 PCIe Gen1 | ICEPIC7 PCIe Gen2 | ICEPIC8 PCIe Gen3 — 6GB/sec |

ICEPOD
Ultra Portable High Speed Recorder (HSR) "Shoe Box Size"

ICEPOD6 | ICEPOD6.5 | **ICEPOD8 M8-HSR 2600MB/sec** — Removable Storage

ICEPAC
Ultra Portable Device "Pocket Size" / Quad 10 GbE Network Output

ICEPAC 400MB/sec Dual I/O Site

ICE BLOCK (Network Attached ICE-Cards/Modules)
Dual 40 GbE or Quad 10 GbE Network-Attached Appliance
(8TB Record/Playback option available)

Network Attached 1U Appliance Hosting Dual ICEPIC Cards

ICE COOLer (PCIe Attached over Fiber ICE-Cards/Modules)
Advanced **C**onnection **O**ver **O**ptically **L**inked **er**

PCIe Remote Attached 1U Chassis Hosting Dual ICEPIC Cards

ICE GigEXD / TGigEXD
1 Gigabit and 10 Gigabit Data Conversion device (Stand Alone and up to 4-Channel 1U Chassis)

GigEXD 1Gbit | Works w/ ICE-AA2D | **TenGigEXD** | Works w/ D2AWGr2 | **10Gbit with 4 Tuners**

ICE-DPI8 (Deep Packet Inspection)
PCI Express Card / Dual 40G or Quad 10G - Intel® XL710 Interface

Heavy Load Packet Processing/Inspection

Modules – Analog / Digital / Optical / Network / Packet Engine

Analog Digitizers

Timeline: 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018

Analog to Digital A2D 12 Bit
- 250 MS/sec ICE-A2Dr9
- 500 MS/sec ICE-A2Dr10
- 250 MS/sec ICE-A2Dr13
- **Dual 1.6 GS/sec 750 MHz BW ICE-A2Dm18**

Analog to Digital A2D 14 Bit
- 105 MS/sec ICE-A2Dr7
- 125 MS/sec ICE-A2Dr8
- **250 MS/sec ICE-A2Dm14**
- *Currently in Prototype* — **Dual 3 GS/sec 1500 MHz BW ICE-A2Dm20**

L-Band 900-2200 MHz Tuner
- 900-2200 MHz 85 MHz BW ICE-LB2Dr2
- **900-2200 MHz 120 MHz BW ICE-LB2Dr3**

Digital to Analog DAC
- 160 MS/sec ICE-D2Ar2
- 200 MS/sec ICE-D2Ar9
- ICE-D2AWG 110 MHz BW 0-500MHz IF
- **ICE-D2RF 50 MHz BW 70-4000MHz RF**
- **ICE-D2AWG-m3 5GSPS DAC / 400+ MHz BW 0-2500 MHz CF Direct RF Up to 7000 MHz Mixed**

Processors

Processor Modules Xilinx and Altera Gate Array "Sandbox"
- DTDM
- DTDMX
- V5M
- V6M Vertex
- **K8M Xilinx UltraScale**
- **A8M Altera/Intel® Arria 10**

Optical

SONET Optical Modules
- SONETr1 OC3
- SONETr2 OC12
- SONETr4 OC48
- SONETr5 Dual OC48
- SONETr6 Dual OC192
- **SONETr7 Dual OC192 Enhanced**

Packet Engines

Raw Packet I/O Modules [Dual 10G]
- UDP 10Gr2
- **UDP 10Gr3**

Packet Processing Modules (For ICE-DPI8 Card) [Quad 10G / Dual 40 GbE]
- **Deep Packet Inspection Processor**

Recorders – Rackmount and Portable Technology

Analog/Optical/Packet Rack and Portable Recorders

Timeline: 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018

ICE Recorder Technology
Speed Progression (Megabytes/sec)

20 MB/S | 80 MB/S | 320 MB/S | 1250 MB/S | 1400 MB/S | 2800+ MB/S | 4000+ MB/S

Custom Analog Recorders
Many Models-Call for a Solution
- ICECAP20 | ICECAP80 | ICECAP320 | ICECAP1250 | ICECAP WB1400 | **ICECAP 1600 Quad 400MB/s**

Rack Mount Optical Recorders
- **Tandem OC192 SONET OC192/10G | Dual 1400MB/s ICEPIC8 | SONETR7**

Portable Small 12 Volt DC Analog Recorders
- **ICEPOD8 HSR Dual 1400 MB/S (2800 MB/S)**

Portable Small 12 Volt DC Optical Recorders
- **ICEPOD8 HSR Tandem SONET OC192 10G ICE-SONETr7**

Portable ICE Briefcase Recorders
"Server-in-a-Briefcase"
- Original QT360 Briefcase 2003
- ICE Briefcase XEON Series 48GB RAM Hosting Dual ICEPIC6 Cards
- **ICE Briefcase Intel® XEON V4 Series 128GB RAM Hosting Dual ICEPIC8 Cards**

Custom Packet Recorders (4 Channel / 400Megabyte/sec/channel Packet Recorder)
Example Model listed here - Many Models-Call for a Solution
- **ICE-CSC-M2012 Quad 400MB/s**

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