flightPAC30

30 Terabytes
OCulink Direct Attached Storage – Small, Portable

Overview

The *flightPAC* storage accessory is a direct-attached device capable of 4 GBytes/sec sustained read/write. The interface is via two 8-lane OCulink connections direct to the PCIe bus of the host computer. The physical size of the flightPAC is the size of a full-height CDROM. The unit is sized to actually fit in a CDROM bay of a standard computer case.

Features

- OCulink PCIe Dual 8-Lane connections
- Quad 4-Lane NVMe accessibility
- Standard File Structure with EXT4/XFS
- Available ICEFS for direct-to-device access (Record/Play)
- ICEFS is fully integrated into Linux®
- 60-Watt maximum draw at maximum write rates
- 4+ GBytes/sec sustained write
- Carrying handle for ease in portability
- CDROM-size physical profile / fits in full height CDROM bay
- Integrated quiet fans for active cooling
- Included Power Supply with locking 4-pin Molex 12V connection
- OCulink cables included
- Use with the ICE-PEX-OC4 Dual OCuLink Adapter card (sold separately) to connect to x86 host

Applications

- Extreme Speed Digital Recording
- Portable Mass Storage
- Mobile archive availability
- Eliminate the need for data offload
- Scenario Library Playback Availability
- Instant Mass Storage Scenario Playback
- Dynamic Shift between scenarios
- Analog or Signal Scenario libraries

ICE-PEX-OC4 Adapter
(16-Lane PCIe)

1GHz Bandwidth Analog Scenario

The above figure shows the flightPAC30 atop a short 15inch depth 1U (Not Included) with the ICE-A2Dm20 (Not Included). This configuration is used for recording 1 GHz of bandwidth for 1.5 hours. The data is then easily portable. Offloading 30 Terabytes of data over a 10GbE link would take nearly 10 hours.

This same Record-Offload scenario applies to direct-digital scenarios.

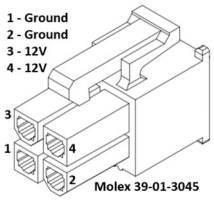
Specifications

Functional

Connector	Manufacturer	Part Number	Description	J-Number
Signal Connections				
8-Lane OCulink	Amphenol	G14B801X1XXXXHR	OCulink 8x	J2
8-Lane OCulink	Amphenol	G14B801X1XXXXHR	OCulink 8x	J3
Board Connection				
Power Connection on *flightPAC*	Molex	Molex 50-36-2306	12 Volt 4-pin female	J1
Mating Connection to *flightPAC*	Molex	Molex 39-01-3045	4-pin male (For Pinout See figure below)	
Cable (2 Required)				
8-Lane to 8-Lane Cable	Amphenol	OCL4-8X-8X-0.5M	2 Cables Included	
Physical Connection				
See Signal Connections				

Electrical

Parameter	Voltage				Unit
Power Supply Input	120 V	100-240	50-60Hz	1.3A – 0.5A	Volts
Power Supply Output	12 V			7.5A	Volts
Typical Power Consumption(Idle)	12 V			1.6A (20 Watts)	
Typical Power Consumption(Max)	12 V			~5.0A (60 Watts)	
Typical Power Consumption(4GB/S)	12 V			~4.4A (53 Watts)	
Power Supply (AC to DC) included	12 V	90 W	7.5 A	ME90A1250F02	



Mechanical Dimensions and Weight

Width	5.75 in (without handle) 6.3125 (with handle folded) 7.375 (with handle unfolded)
Length	8.00 in
Height	1.625 in
Weight	2 Pounds and 2 Ounces

Environmental

Operating Temperature Range	0 to +55	°C	Airflow required[1]
Non-Operating Temperature Range	-20 to +70	°C	
Relative Humidity Range (Operating)	10 to 80 %		non-condensing

PCI-express 16 Lane Interface Card

Connector	Manufacturer	Part Number	Description	Designation
Signal Connections				
16-Lane PCIe Gen 3	ICE	PEX-OC4	PCIe Card	16 Lane PCIe Slot
8-Lane OCulink	ICE	PEX-OC4	PCIe Card	Port 1
8-Lane OCulink	ICE	PEX-OC4	PCIe Card	Port 2

Notes

- The headers and components are static sensitive: Do not handle without observing proper procedures for the handling of ESD sensitive materials.

[1] Airflow: Air flow is provided with 3, always on, quiet fans.

- Make sure all connectors are properly oriented before installation

Revisions

Revision No.	Date	Description
1.0.0	13 May 2021	Data Sheet
1.0.1	22 Oct 2021	Added Power pinouts and additional environmental info
1.0.2	14 Jul 2022	Updated features list

ICE Enterprises *Entering The 3rd Decade of Innovative Solutions*

1997 — *Decade 1* — 2007 — *Decade 2* — 2017 — *Proven* 2018 — *Forward* 2019 — *Clear* 2020 — *Thinking*

PCIe Cards

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, ICE-PIC8 / PCIe Gen3

Eight Generations of ICE Hardware

ICE-DPI8 (Deep Packet Inspection)
PCI Express Card / Dual 40G or Quad 10G - Intel® XL710 Interface — ICE-DPI8 / PCIe Gen3

Infrastructure

ICE-PIC8Q (Quad 10G)
PCI Express Card / Dual QSFP+ Quad 10G Full Gate Array Control of I/O — ICE-PIC8Q / PCIe Gen3

Digitizers and Processor Modules

L-Band 900-2200 MHz Tuner — 900-2200 MHz, 85 MHz BW ICE-LB2Dr2 — ICE-LB2Dm3 900-2200 MHz, 120 MHz BW

I/O Modules for the The ICE Hardware

Digital to Analog / DAC — 160 MS/sec ICE-D2Ar2; 200 MS/sec ICE-D2Ar9; ICE-D2AWGr2 110 MHz BW 0-500MHz IF; ICE-D2RF 50 MHz BW 70-4000MHz RF — ICE-D2AWG-m3 5GSPS DAC / 500 MHz BW 1-2500 MHz Direct RF

L-Band Tuners, IF and Wideband Digitizers

Analog to Digital IF and Baseband digitizer A2D 14 Bit / 125 MHz Bandwidth — 105 MS/sec ICE-A2Dr7; 125 MS/sec ICE-A2Dr8; 500 MS/sec ICE-A2Dr10; 250 MS/sec ICE-A2Dr13 — 250 MS/Sec ICE-A2Dm14

Analog to Digital w/ 4 Digital Down Convertors (DDC)
A2D 14 Bit / Up to 1.0 GHz Bandwidth (See ICE-A2Dm20 Data Sheet for details) — ICE-A2Dm20 Dual Channel 3.0 GSPS Digitizer, Up to Dual 500MHz or Single 1GHz Instantaneous BW

Large Gate Array Processor Modules Xilinx and Altera "Customer Sandbox" — DTDM; DTDMX; V5M; V6M Vertex — Xilinx UltraScale (ICE-K8M); Altera/Intel® Arria 10 (ICE-A8M)

Dev/CEs

ICEPOD
Ultra Portable High Speed Recorder (HSR) "Shoe Box Size" — ICEPOD6; ICEPOD6.5 — ICEPOD8 2600MB/sec, Removable Storage

Rugged / Fast

icePAC
Ultra Portable Device / Quad 10 GbE Network Output — ICEPAC 400MB/sec Dual I/O Site

Highly Portable Low SWaP

superPAC
superPAC with a dual processor module capability — superPAC

uPAC
microPAC simply add an FPGA to your existing hardware for real-time processing — uPAC

ICE-Tray A laptop sized enclosure with room for an RF frontend while maintaining full Quad Core XEON processing and Dual 500MHz input 16 Channel Tuning and Post processing — ICE-Tray

PCIe and Network Appliances

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 ICEPIC8 Cards

Fits is a 1U

ICE COOLer (PCIe Remoting w/Fiber ICE-Cards/Modules)
Advanced Connection Over Optically Linked er — PCIe Bus Remoting 1U Chassis Hosting / Dual ICEPIC Cards

Rack Mount Solutions

ICE 1G and 10G GigEXD (Set and Forget Data Conversion)
1/10 Gigabit Data Conversion device (Stand Alone and upto 4-Channels in 1U Chassis) — GigEXD 1Gbit; TenGigEXD 10Gbit with 4 Tuners

SynchronICE I/II (GPS 1PPS/10MHz/IRIG Option Available)
Synchronize and Reference multiple devices with 1PPS / 10MHz Ref / IRIGB — SynchronICE; SynchronICE II

Rack and Portable Recorders

ICE Recorder Technology — Up to Dual 5 Gigabytes/sec

Turn-key

Speed Progression (Megabytes/sec): 20 — 80 — 320 — 1250 — 1400 — 2800

Analog Recorders Call for a Solution — ICECAP20; ICECAP80; ICECAP320; ICECAP1250; ICECAP 1600 Quad 400MB/s; ICECAP 1400 — ICECAP10000 (5GBytes/sec x2); Analog A2Dm20 - ICECAP 10000

Rack Mount Optical/Packet Recorders — Tandem OC192 / 10G ICEPIC8|SONETR7|UDP10Gr3

Portable Small Analog Recorders
LBAND In / LBAND Out Applications — IF-in: IF Out up to Dual 1000 MB/S

Portable Small 12 Volt DC Optical Recorders — ICEPOD8 HSR SONET OC192 10GICE-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® 8th Generation XEON V4 Series - 128GB RAM Hosting Dual ICEPIC8 Cards/Modules

High Speed Recorders for Packets or Pre-D

Custom Packet Recorders
(4 Channel / 400 Megabytes/sec - 2U) — ICE-CSC-M2012 Quad 400MB/s; ICE-CSC-M2012R-2U Quad 500MB/s RAID5

ICE-GNSS-450|*flightPAC* Global Navigational Satellite System(GNSS) Recorder
Full Simultaneous L1/L2/L5 (GPS/GLO/GAL/BDS All Frequencies/All GNSS MEO Satellites)
flightPAC30 30TeraByte data pack for 3.5 Hours of full spectrum recording — ICE-GNSS-450R/P; *flightPAC30*

ICE-8T1U-2R(Recorder) / 2P(Player) Appliance (Dual 500MHz analog in/Dual 500MHz analog out) — ICE-8T1U-2R/2P; *flightPAC30*

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