ECRIN Systems Launches New Remote Embedded Modular Computer - myOPALE™ - at Embedded World 2018

MYOPALE™ OFFERS DISRUPTIVE TECHNOLOGY TO MULTIPLY CAPABILITIES OF YOUR NEXT EMBEDDED COMPUTERS IN A SMALLER FOOT PRINT THANKS TO PCI EXPRESS® OVER CABLE INTERCONNECT, STANDARD 5.25'' BUILDING BLOCKS WITH MINI-SAS HD CONNECTORS.

Paris – February 21, 2018

In their first official participation at Embedded World (27/02 to 1/03/2018) in Nuremberg, **ECRIN Systems** will launch a brand new product for Embedded and Industrial IoT markets.

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The new computer could be considered revolutionary when we remember that for three decades Industrial PC's always used the same two types of architecture from the 1980s: ATX/miniITX motherboard or PICMG® passive backplane. In both cases, the CPU board and its I/O cards stayed physically and mechanically linked through Peripheral Component Interconnect PCB - PCI Express®.

The **myOPALE** Concept was born from four simple ideas:

- Breaking mechanical link between CPU and I/O cards thanks to PCI Express Over Cable interconnection;
- Building blocks in a standard 5.25'' form factor;
- Re-Use of widely deployed interconnect standards from SNIA/SFF Technology Affiliate that encompass cables, connectors, form factor sizes and housing dimensions;
- Integrated thermal solution at building blocks level.

The CPU module incorporates all the features of an embedded computer into a small form factor 5.25'' site with less than 8" depth.

The design is based on COM Express Type 6 that integrates Embedded Low Power SKU's with 10 years life support. In Skylake and Kaby Lake versions, Intel Core i7 or Xeon E3-1500 CPU with Chipset platforms are selected, which directly drive 24 PCIe Gen3 lanes as their expansion bus.

Today, PCIe is very popular as backplane, but it is less known as a high speed cabling interface. The serial technology and embedded clocking within each differential signal pair allow PCIe protocol to be used at full speed across a motherboard, backplane or over a cable with the benefits of high performance, low power and reduced costs. The cabled version of PCIe contains same high-speed differential pairs that transfer data on PCB, as well as a number of additional signals – known as Sideband Signals. One PCIe lane consists of two pairs individually shielded for EMI protection– one transmit pair and one receive pair. Sideband signals provide additional functionalities, but are not directly involved in the PCIe data transfers.

myOPALE integrates most advantages of PCIe over cable inside the rack. In **myOPALE**, the PCIe backplane bus is conceptually stretched to operate over a cable from CPU's to secondary I/O backplanes, physically located anywhere in the chassis. In that way, **myOPALE** offers to its user many advantages in small foot print 1U 19'' rackmount, but also very interesting capabilities for other integration format beyond the limits of legacy IPC.

The choice of Mini-SAS HD (SFF-8643) connectors and associated cable authorises high bandwidth 12Gbps for PCIe Gen3 protocol with 8 differential pairs for x4 PCIe lanes between myOPALE-CPU, myOPALE-IO building block and the new NVMe storage media that offers up to 7x SATA throughput, thanks native PCIe x4 Gen3 lanes.

The choice of standard 5.25'' drive bay form factor is well adapted for 1U/2U/4U 19'' rackmount integrations.

myOPALE-CPU integrates a complete Autonomous Embedded Computer (146 x 42 x 200mm for 1.45kg only) based on INTEL® Core™ or Xeon® E3 with 32Go DDR4 ECC, 2 DP, GigE, 4 USB 3.0, 3 USB 2.0, 2 SATA3, internal 2.5'' SATA SSD, I2C, ext. RTC Batt and 24x PCIe Gen3 lanes to connect up to 5 expansions (PCIe x4 / x8 cards or NVMe) via its 6 Mini-SAS HD connectors.

myOPALE-IO building blocks allows 2 PCIe x4 or 1 PCIe x8 to be integrated independently up to 50cm from the CPU box into chassis.

With myOPALE cubes, you can imagine 5 full height I/O cards in a 1U/19'' when legacy IPC authorized only two; you can imagine full-redundant 1+1 system in a 1U/19'' impossible with legacy IPC; you can imagine 6 Industrial PC's with 2 I/O slots extansion each, in a 4U/19'' rack, and many others cases which you never dared to dream with legacy IPC before.

The **myOpale** will be demonstrated at Embedded World on the ECRIN booth 2-449 and on the PICMG® booth 3A-624.

About ECRIN Systems

Founded in 1976, ECRIN Systems has built its development around three main activities to become nowadays one of the major Embedded electronics players for Mil/Aero, Transport, Info-com and Industry markets:

- Subcontracting with Computer-on-Demand products and services based on Embedded Open Standards like COM Express®, SMARC, SHB Express™, MicroTCA®, VPX™, XMC™, FMC™, PCI Express®
- Design and manufacturing of Qualified COTS systems with Modified services:
- - ONYX™ & TOPAZE™ series for multi-mission computing and HPEC applications in extreme environment;
- OPALE™ V2 SMART series with 1U/2U/4U 19'' Rackmount Trusted Servers & IPC's for Mil/Navy/Cybersecurity, Info-com, transport and Industry applications;
- CRYSTAL™, a Control-Command Console for Navy and Ground Mobile Control Station;
- myOPALE™, a new line of Embedded Modular Computers based on PCI Express over Cable Inside to offer high density and extreme flexibility

  COTS modules with associated systems integration services

This triple competency makes ECRIN Systems a unique partner in the Embedded market, with high innovation potential and strong expertise.

ECRIN Systems is an active member of PICMG®, VITA® and PCI-SIG® organizations and community