Users of Standard Architecture Embedded Computer Boards are expecting more accurate Roadmaps
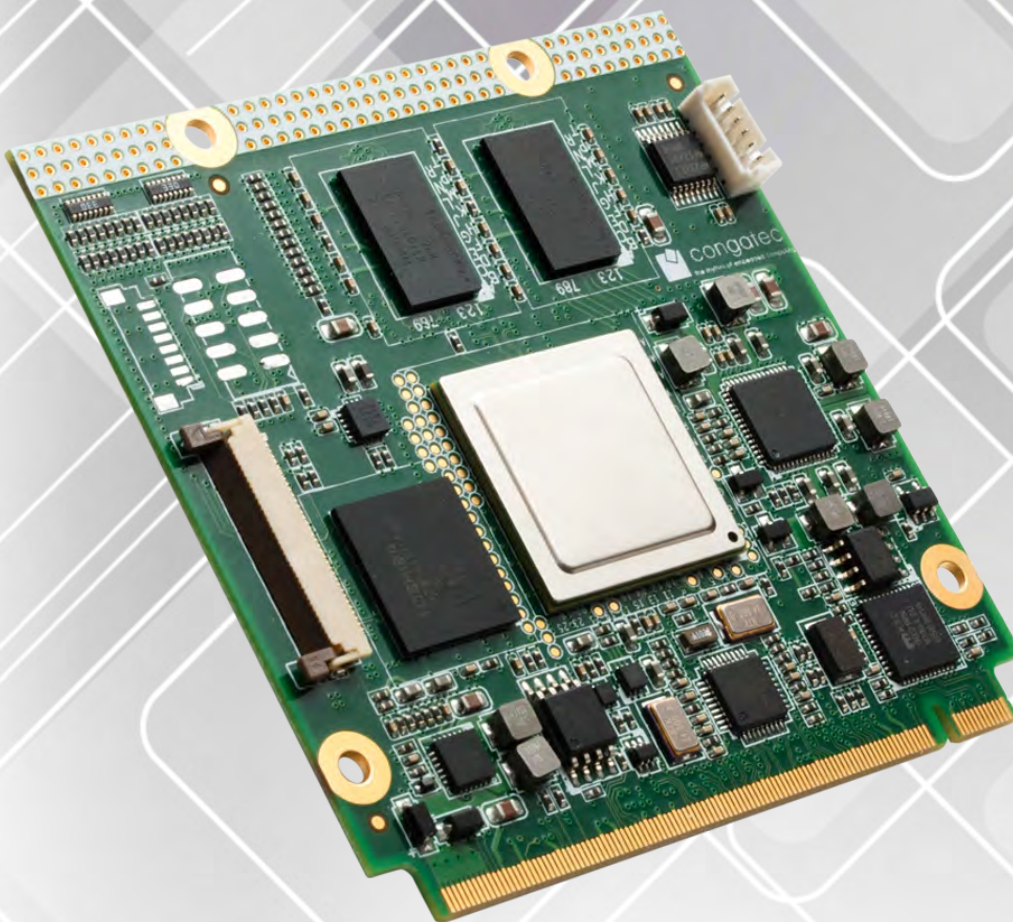
Photo courtesy of congatec

HEADLINES

COTS Solutions
for Train Control
Rail Signaling
and Automation
from Adlink

congatec puts
AMD Ryzen on
COM Express

Wind River and
Hyundai Autron
create safety platform
for autonomous
vehicles

Mercury Announces
Next-Gen High Density
Server Modules for
C4ISR Applications

Top 15 Chip Suppliers
Outgrew Market in
First Half of Year

Chip Market Forecast
by Region and
by Product Group

Reliance Industries
acquires Radisys

Rich Templeton to reassume
President and CEO roles
at Texas Instruments

News from the Field, Customers are talking back

Users of Standard Architecture Embedded Computer Boards are expecting Vendors to show better Roadmaps … and more

By Daniel Dierickx, e2mos

Foreword

This article is in response to requests and comments from a large number of OEM customers, who have expressed that they are not always happy with the content of road maps, white papers, LTB/EOL timing, PCN's, market reports. Customers want more reliable information to be well prepared for their next design and ensure solid business continuity instead of dealing with mistakes. So, let's see if we can help with this article. We will also make sure that a copy will be sent directly to the "Embedded Computing Board" vendors; we have over 100 in our list.

Methodology – Facts versus Fiction

The content of this article is based on information coming directly from the field, either from face-to-face meetings and/or from phone conversations with relevant users. **We talk with hundreds of engineers and directors working at OEM's Worldwide.** Our findings are based on relevant opinions and are not coming from a typical survey from uninvolved parties. Instead they are simply the reality directly from the right sources. We have clear evidence on file about the cases below. For obvious reasons, we are not mentioning company names, but we are willing to talk on a one-to-one basis depending of the case. Please feel free to contact me at mgt@e2mos.com

Customers are talking back – Here are some cases and problem we've found (in bullet style)

■ ROADMAPS – ARE STRATEGIC FOR LARGE & MEDIUM SIZE OEM's
Not always available, unclear product strategy, products are appearing and disappearing.
We have multiple documented cases, affecting all architectures: Qseven, SMARC, VME, VPX, CompactPCI, PC/104, ATCA, for example.
Vendors able to present clear concise roadmaps would score much higher during customer meetings.
What is a product roadmap: A product roadmap is a high-level visual summary that maps out the vision and direction of your product offering over time. A product roadmap communicates the why and what behind what you're building. It's a guiding strategic document as well as a plan for executing the strategy. Roadmaps are given to customers under a NDA.

■ WHITE PAPERS (WP) – LIMITED ADDED VALUE – TOO MANY e-mails JUST FOR LEAD GENERATION
The basic goal of a whitepaper is to inform and persuade the reader based on facts and evidence, not tell the world why people need to buy your product right now. By overtly pitching one's own products you risk turning off your readers, unfortunately this is happening quite often and is killing the impact of the WP. A good example is the competitive battle between Qseven, SMARC and COM Express vendors, the WP's are clearly tuned to what they make. WP's should be neutral, but today many have a specific bias. There is someone in the US who would call it 'Fake News"

■ WEBINARS - LIMITED ADDED VALUE – TOO MANY e-mails FOR LEAD GEN.
Not enough added value, content too often has a "déjà vu" quality, same remark as for WP's.
As a result quality of leads are degrading, based on our analysis of hundreds of lists of attendees Worldwide. Extremely poor results are becoming commonplace, e.g., the number of attendees (registrants) is going from nearly 1.000 (some years ago) down to 15 (fifteen); this particular one of 15 (15) was a very good subject and presentation "The need of an RTOS as second OS in Telecom Systems using Linux"

... to next page

Daniel Dierickx
CEO & co-Founder
at e2mos
Acting Chief Editor

*Over 3 decades
Chips & Embedded
Systems Market Expertise*

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News from the Field, Customers are talking back

■ PRODUCT CHANGE NOTICE (commonly known as PCN)

PCN is a document issued by a manufacturer to inform customers about a change to a mass-produced product or its manufacturing process. In the semi-conductor industry, the JEDEC standard JESD46 describes the requirements for product change notifications and examples of types of changes that should be notified.

In the board business customers are mentioning the lack of PCN's for FIRMWARE Updates; using different FIRMWARE Revision on the same CPU boards deployed in a network can create severe problems (I have seen too many). Of course there is a cost issue for the upgrade.

■ LEGACY PRODUCTS "Legacy or Not"

For example: VME (introduced by Motorola in 1981) has been often quoted by journalists as a dying architecture at least in the last 10 years, we have many of these articles, including a recent one. VPX & OpenVPX were routinely predicted to replace VME for 100% but it did not happen and will not. For example, in Industrial and Military applications for driving actuators, relays and motors there is no need for VPX's enhanced capabilities, VME remains a better choice (with a reliable and proven RTOS) at a much lower cost.

As a consequence many customers made the mistake to move from VME to VPX while NOT actually needed for their specific applications, but costing twice the price.

It is clear that for higher performance (if needed) VPX is the right choice, CompactPCI Serial missed the boat here.

Great News for VME: Today all major VME vendors are introducing new VME boards because of the strong demand including: Abaco (formerly GE IP), Artesyn, Aitech, Concurrent Technologies, Curtiss-Wright, Extreme Engineering Solutions, Interface Concept, Kontron, MEN, North Atlantic Industries … and many suppliers of I/O boards and PMC/XMC's. Please take a look at **VITA: Open Standards, Open Markets** at https://www.vita.com/

PC/104 and ATCA have also been mishandled in the press, but they are still there.

There are many suppliers of PC/104 and lots of functions and I/O's, and price points are aggressive. Please take a look at the **PC/104 Consortium** https://pc104.org/

Comparing Qseven - SMARC & COM Express
Source congatec (picture related to previous page)

ATCA is now winning back designs from HP and Dell in high-end applications like Defense and Chip Manufacturing Equipment. The strong adoption of ATCA by Huawei was instrumental in their rise to first place in the Telecom IT Business leaving Alcatel-Lucent, Nokia and Ericsson behind, even with the handicap for Huawei of being banned from the US market. Huawei has published a huge number of ATCA success stories in the Telecom Market Worldwide featuring: standard architecture – lower power – higher performance – smaller footprint – modular – in-service upgradable – high availability FIVE NINE (99,999%).

■ LTB & EOL

Last Time Buy & End Of Life should be always managed by the manufacturers (in cooperation with the distributors); however, too many customers are not informed properly neither on time or never, and as a result customers are moving these vendors to the "Non Preferred Supplier List"

Some distributors have made big (but unfair) business out of it.

Unbelievable example: As a consultant I've many times organized meetings (I was often present) between leading board vendors and large OEM's.

Here is a case at a large Aerospace & Defense contractor in France - The subject of the meeting was new project discovery, and the customer was asking the status of VME and said he was disappointed about the EOL of VME. Actually, that was a big misunderstanding, since VME was absolutely NOT in EOL, it was only for a range of boards based on the 68K CPU and already replaced by the PPC CPU, in the meantime a distributor gave the wrong info and booked a large order as LTB for VME CPU's 68K-based. Even so, that customer is still using VME today and even special designs.

An effective procedure for LTB & EOL is to make sure that all current customers are informed on time officially and to request an acknowledgement of receipt of the LTB offer letter (content should be written by the manufacturer and clearly monitored)

News from the Field,
Customers are talking back

■ MARKET REPORTS – VERY EXPENSIVE – TOO MANY NOT WORTH THE MONEY

We have on file several Market Reports with substantial mistakes and with MISSING leading suppliers. At several occasions we have notified the writers of these errors in the report with the necessary corrections, we were surprised that they confirmed the mistakes but did not communicate the corrections by publishing an update (we have it confirmed by e-mail). This is really not acceptable behavior and does not demonstrate operating in their customer's best interests. Everyone can make a mistake, but once aware there must be a clear corrective actions in such cases.

■ ANALYST PRESENTATIONS – NOT BUG FREE

Same remarks as for Market Reports, see below three unacceptable cases:

(1) At an **Embedded Computer Conference in the UK** someone presented a product from his company (major vendor) but the product was OBSOLETE for at least 2 years (notified on their web) the major customer was IBM

(2) At the **Convention Center of Santa Clara** (Silicon Valley San Francisco) an analyst presented the ranking of the major vendors of the specific computer architecture. The Director of Marketing of the number #1 listed supplier was in the room, sitting next to me at the first row, we were looking at each other very surprised, and then this person said to the presenter "I'm sorry but we do not make those products anymore for the last two years" the presenter said "sorry I will correct it, I am newly hired!!!"

Please understand that attendees have to pay a high fee for the conference, plus 3 to 4 days travel/hotel/entertainment expenses and some of them are flying over oceans to hear total non-sense.

(3) At the **Embedded World in Germany** a well-known Marketing Company presented two years in a row a very detailed listing of Hardware and Software vendors by category and applications, but for the two years at least one major HW vendor and a major SW vendor were missing (I did mentioned it the first year but it did not help). Moreover the figures by world region were presented in 3 columns: UK – EUROPE and ROW; so US, Japan & China and more were together part of Rest-Of-World!!!

■ CONCLUSION

It is time to review the Marketing Communication models, it will benefit all of us.

It is also time for CEO's to stick their nose in and pay close attention to what their company is really doing to find new projects and new customers, and how they are doing it.

About the Author

I am not used to write this kind of article as I concentrate on business for technology, but it is time for a correction.

I am happy to confirm that my network around the world is supporting it.

Please let me know what you think to mgt@e2mos.com

Daniel Dierickx has over 30 years experience in Embedded Computing, Chips & Software across industry, government and academia, and is acknowledged as one of the leading Business Development Executives on breaking design-wins records and growth with his teams for leading vendors of Hi-end Hardware & Software.
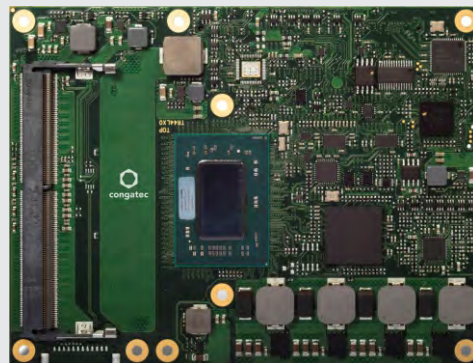
Since 2008 Daniel is leading e2mos a Business Development Services company helping those vendors to acquire more new business and much faster Worldwide

More at www.e2mos.com
Company presentation on request mgt@e2mos.com

RELIANCE INDUSTRIES TO ACQUIRE RADISYS

Radisys Corporation (Nasdaq:RSYS), a global leader of open telecom solutions ("Radisys" or "the Company"), and Reliance Industries Limited, India's largest private sector company ("RIL" or "Reliance"), have entered into a definitive agreement under which Reliance will acquire Radisys for US$1.72 per share in cash.

Radisys is a leader in providing open telecom solutions to service providers worldwide. Headquartered in Hillsboro, Oregon, Radisys has nearly 600 employees with an engineering team based out of Bangalore, India, and sales and support offices globally. Radisys delivers value to service providers and telecom equipment vendors by providing disruptive open-centric software, hardware and service capabilities that enable the migration to next-generation network topologies.

"Reliance and Jio have been disrupting legacy business models and establishing new global benchmarks. Radisys' top-class management and engineering team offer Reliance rapid innovation and solution development expertise globally, which complements our work towards software-centric disaggregated networks and platforms, enhancing the value to customers across consumer and enterprise segments," said Akash Ambani, Director of Reliance Jio. "This acquisition further accelerates Jio's global innovation and technology leadership in the areas of 5G, IOT and open source architecture adoption."

Brian Bronson, CEO of Radisys said, "The backing and support of India-based global conglomerate Reliance, will accelerate our strategy and the scale required by our customers to further deploy our full suite of products and services. The Radisys team will continue to work independently on driving its future growth, innovation and expansion. The addition of Reliance's visionary leadership and strong market position will enhance Radisys' ability to develop and integrate large-scale, disruptive, open-centric end-to-end solutions."

Terms and Financing

The transaction is subject to certain customary closing conditions, including regulatory approvals and approval of Radisys' shareholders, and is expected to close in the fourth quarter of 2018. RIL intends to finance the transaction through its own internal accruals.

Advisors

Covington & Burling LLP is acting as legal advisor and Ernst & Young provided diligence and tax advisory services to RIL.

Raymond James & Associates, Inc. is acting as financial advisor and Baker & McKenzie LLP is acting as legal advisor to Radisys.

About Reliance Industries Limited

Reliance Industries Limited (RIL) is India's largest private sector company, with a consolidated turnover of USD 66.1 billion, operating cash profit of USD 9.8 billion and net profit of USD 5.5 billion for the year ended March 31, 2018. It had cash & equivalent balance of USD 12 billion as of March 31, 2018. It is the first private sector company from India to feature in Fortune's Global 500 list of 'World's Largest Corporations'. The Company's business interests span petroleum refining and marketing, petrochemicals, retail, hydrocarbon exploration and production, digital services and telecommunications.

The Group's digital communications and services initiatives under Jio brand, have been redefining benchmarks, setting new milestones, inspiring unprecedented adoption, usage and service metrics.

For more information, visit www.ril.com

About Radisys

Radisys (NASDAQ: RSYS), a global leader in open telecom solutions, enables service providers to drive disruption with new open architecture business models. Radisys' innovative disaggregated and virtualized enabling technology solutions leverage open reference architectures and standards, combined with open software and hardware to power business transformation for the telecom industry, while its world-class services organization delivers systems integration expertise necessary to solve communications and content providers' complex deployment challenges.

For more information, visit www.radisys.com
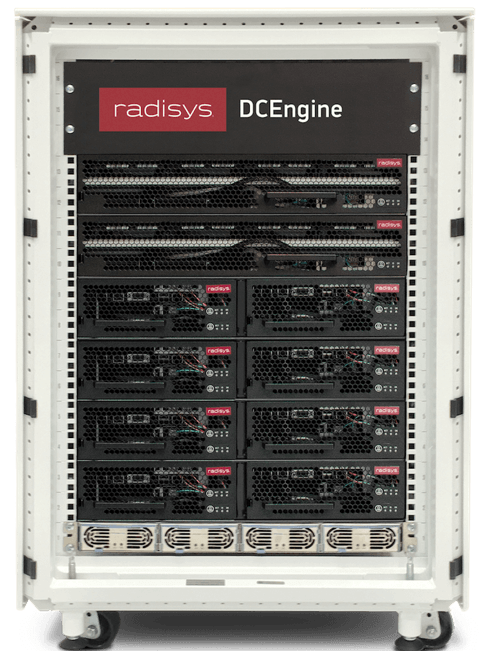
Rugged Embedded Product Lines Focused on Reliable Railway Solutions

Radio Block Center (RBC)

Onboard Rugged Storage System

Automatic Train Operation (ATO)

Centralized Traffic Control (CTC)

Driver Machine Interface (DMI)

ADLINK to Showcase Leading COTS Solutions for Train Control, Rail Signaling and Automation at InnoTrans 2018

As a premier supplier to the rail market for decades, ADLINK enables a wide range of wayside and onboard applications with its extensive rugged, cost-effective COTS portfolio and best-in-class ODM solutions.

ADLINK Technology, Inc., a global provider of advanced Edge Computing products, will exhibit its latest rail products at InnoTrans, Booth 203, Hall 7.1b, from Sept. 18 - 21 in Berlin (www.innotrans.de).

Located in the event's Railway Technology area, ADLINK will exhibit multiple field-proven platforms deployed for Communications Based Train Control (CBTC), Automatic Train Protection (ATP), Automatic Train Operation (ATO), Automatic Train Supervision (ATS), Computer Based Interlocking (CBI) and Train Control Center (TCC). ADLINK will also introduce its latest rail products:

CCU-5500: an **EN50155 compliant, fanless onboard Wi-Fi communication** control platform, supporting up to six 3G/4G LTE/ 5G/WLAN

PIS-5500: an onboard real time video analysis fan-less system with NVIDIA GPGPU MXM module

DMI-1210: an IP65 rated at front and IP42 at rear, 12.1'' driver machine interface (DMI), featuring integrated MVB or CAN bus and wide range DC power input

DCS-210: a 1/1.5U 19" data collection rack server with MVB option, equipped with 8 channels isolated digital input and output ports and a wide range DC power supply unit

cPCI-3630: a low power, high performance 3U CompactPCI CPU blade powered by the latest Intel Atom® processors, supporting various I/O interfaces through a series of front plates

By leveraging more than 20 years of expertise in developing highly reliable and available embedded computing systems, ADLINK is a premier supplier to the rail market, enabling both wayside and onboard applications by offering not only an industry leading, cost-effective and extensive CompactPCI® based commercial-off-the-shelf (COTS) portfolio, but also a variety of fast time-to-market custom solutions with its best-in-class ODM capabilities. By leveraging its long-standing strategic partnerships with major processor and software vendors, ADLINK ensures best practices in product obsolescence and lifecycle management to deliver the industry desired supply longevity. ADLINK offers design services in every major geographic region, benefiting customers with increased responsiveness, short delivery lead-time and ease of doing business.

Designed to meet harsh operating requirements, ADLINK's industry standard compliant, rugged product portfolio provides customers with a great level of flexibility in technology and roadmap planning. ADLINK focuses on continued development to build an even more comprehensive and cost-effective product portfolio to help customers effectively mitigate budget constraint, and smoothly and seamlessly take on technology migration and product integration. ADLINK is committed to helping customers gain competitive advantages by allowing them to focus their development efforts on differentiating end applications.

Taking place every two years in Messe Berlin, InnoTrans is the largest international trade fair for rail transport technology subdivided in five trade segments: Railway Technology, Railway Infrastructure, Public Transport, Interiors and Tunnel Construction. InnoTrans takes the space of all 41 halls and also features 3,500-meter outdoor track display spanning from urban trams to tank wagons to high-speed trains. It is expected that more than 3,000 exhibitors and 140,000 trade visitors around the globe will attend InnoTrans 2018.

For more information about ADLINK's rail solutions, please visit www.adlinktech.com/en/RuggedRailwaySystems.aspx.

Wind River Selected by Hyundai Autron to Develop Safety Platform for Autonomous Vehicles

ALAMEDA, CA – Aug. 27, 2018 – Wind River®, a leader in delivering IoT software for safety-critical domains including automotive, announced today collaboration plans with Hyundai Autron to develop a software framework for safe, automated and autonomous driving leveraging intellectual property from Wind River's automotive software portfolio and the HYUNDAI AUTRON ODIN product offering. Wind River software can help teams rapidly develop, build and deploy highly safe, secure and reliable vehicle systems for connected and autonomous cars.

Using IP from both companies, the new platform will provide a framework for integrating advanced compute features found in connected and autonomous driving applications such as advanced sensing, Ethernet based communication and artificial intelligence applications. The new platform will run on top of the **VxWorks safety certified real-time operating system (RTOS)** and leverage advanced system partitioning via hypervisor technology. This partitioning allows automakers to take software that is essential to safety critical functions like vehicle controls, actuation and sensing and place it alongside less critical functions like infotainment and telemetry onto the same hardware architecture. As a result, this also reduces the systems' dependence on any particular set of hardware. The net outcome is a software system with mixed criticality functions that is both more flexible and cost effective for the automaker without jeopardizing safety or security.

"The demands of the autonomous car are driving up the complexity and cost of vehicle systems. Simultaneously, the issue of safety must always be kept the top priority," said Marques McCammon, vice president of Automotive at Wind River. "Together with Hyundai Autron, we're providing the market with a safe and reliable software foundation which will help car makers accelerate their innovation and enjoy design flexibility."

Hyundai Autron is a leading research and development company specializing in the field of electronic automotive control solutions, including the development of automotive semiconductors, control units, and software for automotive electric and electronic control. Hyundai Autron has grown their research and development to efficiently develop intelligent automotive platforms. In particular, beginning in 2012, Hyundai Autron has worked with Hyundai, Kia Motors, Hyundai Mobis and other global leaders, to develop the Hyundai Motor Standard Software Platform based on the international AUTOSAR standard. They've since provided this platform to Hyundai and Kia, with continued plans to deliver future platforms, including those developed with Wind River.

"The rise of autonomous driving is creating a variety of new safety considerations for car makers," said Chang Jae Ho, senior vice president of Automotive Fusion Control Group at Hyundai Autron. "By aligning our research and development capabilities with Wind River's experience in deploying safety domain software, we are able to deliver highly advanced, reliable and secure automobile control solutions to help our customers quickly and flexibly respond to changing market trends."

VxWorks is a high-performance, market-leading RTOS tuned for both determinism and responsiveness with a proven track record in safety- and security-certified environments, making it an ideal solution for quickly commercializing ADAS, autonomous and other safety-critical applications. For less critical functions within an automobile's mixed computing environment, Wind River also delivers Wind River Linux and other commercial-grade open source technologies, world-class technical support and maintenance to help customers stay up-to-date on the latest innovations.

More information about Wind River automotive solutions and technologies is available at: http://www.windriver.com/markets/automotive/.

About Wind River

Wind River is a world leader in delivering software for the Internet of Things. The company has been pioneering computing inside embedded devices since 1981, and its technology is found in more than 2 billion products. Wind River offers the industry's most comprehensive embedded software portfolio, supported by world-class global professional services and support and a broad partner ecosystem. Wind River delivers the technology and expertise that enables the innovation and deployment of safe, secure, and reliable intelligent systems. To learn more, visit Wind River at www.windriver.com.

Mercury Systems Announces Next-Generation High Density Server Modules

Composable XR6 RES HD modules maximize performance for C4ISR applications

ANDOVER, Mass., July 24, 2018 (GLOBE NEWSWIRE) -- Mercury Systems, Inc. (NASDAQ: MRCY, www.mrcy.com) today announced the launch of its third generation RES HD modules featuring the newest Intel® Xeon® Scalable processors and three additional storage, PCIe expansion, and managed switch modules. The new XR6 RES HD modules maximize performance with the latest commercial-off-the -shelf (COTS) components and plug into three scalable and extendible RES HD chassis.

"Mercury's RES HD servers were designed to reduce the overall costs associated with technology upgrades, logistics, lifecycle management, and total cost of ownership," said Michael Schneider, Vice President of Mercury's Trusted Mission Solutions group (formerly Themis Computer). "The new XR6 RES HD modules offer higher performance and additional capabilities without requiring users to rip and replace existing systems."

XR6 RES HD Module Highlights

High Performance: Each compute, storage, and PCIe expansion module embeds two Intel Xeon Scalable processors with up to 20 cores per socket and 2666MHz DDR4 ECC memory–delivering superior workload-optimized performance and hardware-enhanced security in the same small footprint. A 3U server could be configured to deliver 8 Intel Xeon Scalable CPUs, 6TB of memory, and 480TB of storage.

Supercomputing and Virtualization: The newest PCI expansion module (HDP) increases throughput for high demand workloads accommodating a full sized NVIDIA® Tesla® (e.g. V100) and Quadro® (e.g. GV100) graphics card in addition to two half-length PCIe 3.0x16 cards. Additional PCIe configuration options are also available.

Optimized High Density Storage: The new RES HDS4 double slot module features 4 front-access SATA, SAS3 or U.2 storage drives to deliver up to 120TB of storage per module. Additional storage options include the HDS8 double slot and HDSE single slot modules that accommodate up to 8 SATA/ SAS3 drives each. Secure storage options are also available. A configured 2U or HDslim server can deliver four Intel Xeon Scalable processors and 720TB of storage with 24 direct attached HDD/SSD drives.

100GbE Switch Module: The new 100GbE managed switch module (HDN100) integrates Mellanox® switching technology to pack 18 ports of 10/25GbE and 4 splittable ports of 40/100GbE, to deliver up to 1.7Tb/s aggregate throughput and 300ns consistent latency for 100GbE.

Minimum SWaP: RES HD servers double the compute density as each module takes half the rack space and reduces total system weight by 50% when compared to standard commercial hardware. With per module weights as low as 10lbs, XR6 RES HD modules cut costs associated with spares.

RES HD Server Features

A part of Mercury's EnterpriseSeries™, RES HD is a high-density multi-server platform that delivers long-term sustainability with high performance modules and backward compatible chassis.

Modular and Composable: Users can achieve optimum performance and precise functionality for a multitude of applications by mixing, matching, and configuring over six module types that plug into the chassis in any combination. Each combination creates a new type of functionality, allowing modules to be reconfigured and repurposed as applications require.

Eliminates rip and replace: Users simply "plug and pull" modules during technology maintenance or upgrades without removing the chassis from the rack. Each RES HD chassis has a typical 15-year lifespan and accommodates current, previous, and future generation RES HD modules.

Three Chassis Options: RES HD modules plug into three different chassis. The Themis RES HD 2U and 3U chassis fit into 19" wide server racks and feature four or six module bays. The 9.9" (25.1cm) wide, four bay HDslim fits in a commercial airline bin and can be carried aboard aircrafts and vehicles with ease. Both rear I/O and front I/O chassis options are available.

Enhanced Reliability: Designed for mission critical applications, RES HD servers operate from 0°C to +50°C, with greater temperature extremes available for special configurations. Advanced thermal and mechanical design features deliver superior resilience to shock, vibration, dust, sand, and temperature extremes. Multiple power supply options are available including redundant AC/DC power. The servers meet MIL-STD-810G specifications.

For additional product information or purchase inquiries, visit www.mrcy.com/HD

ADLINK CTO Angelo Corsaro Recognized as a Top Influencer, Expert in Edge Computing

Data Economy Magazine ranks Corsaro as one of Top 5 Edge leaders worldwide

Angelo Corsaro, Ph.D., ADLINK Technology's chief technology officer, has been recognized as one of the world's most influential leaders in Edge Computing by Data Economy Magazine. The magazine described Dr. Corsaro as "an expert in high-performance and large-scale distributed systems crucial to the edge."

Dr. Corsaro earned recognition as one of the Top 5 Edge Computing leaders on the publication's list, "EDGE 50: The World's First Top 50 Edge Computing Influencers." The EDGE 50 designation names "the personalities who are leading edge computing through charting new innovations or technological
 breakthroughs, sheer investment or business acumen, or exceptional entrepreneurial skillsets."

ADLINK is a global provider of leading Edge Computing solutions, offering a unique combination of industrial hardware, advanced data connectivity, industry leading partner software and vendor-agnostic cloud compatibility for end-to-end industrial IoT (IIoT) solutions at the Edge. ADLINK is an active member of the Eclipse Foundation, where it runs some of the key projects driving Edge/Fog computing technologies, such as Eclipse Cyclone DDS and Eclipse fog∅5. The company also is active in the European Commissions's 5G City project to build and deploy a common, multi-tenant, open platform that extends the (centralized) cloud model to the extreme edge of the network.

"It's an honor to be recognized for my efforts in Edge Computing and to be considered among the leaders and influencers in this important area," said Dr. Corsaro. "Edge Computing is continuing to gain acceptance and grow in momentum; we are working with passion and dedication to make it happen!"

Well-known and respected in the industry, Dr. Corsaro has close to one hundred referred journal, conference and magazine publications and is consistently cited in top academic and technology publications. He also regularly provides keynote addresses and presentations at conferences and workshops worldwide in areas relating to Fog Computing, Edge Computing, IoT and extremely large-scale distributed systems. As the company's CTO, Dr. Corsaro leads the Advanced Technology Office and plays a pivotal role in the corporate technology strategy and innovation activities. Learn more about ADLINK at https://www.adlinktech.com/en/index.aspx

Rich Templeton to reassume President and CEO roles in addition to his current role as Chairman; Brian Crutcher resigned as CEO

DALLAS, July 17, 2018 /PRNewswire/ -- Texas Instruments Incorporated (TI) (NASDAQ: TXN) today announced the resignation of Brian Crutcher as president, CEO and a member of the TI board. The board has named Rich Templeton, the company's chairman, to reassume the roles of president and CEO on an ongoing, indefinite basis, in addition to continuing as chairman. Templeton's appointment is not temporary, and the board is not searching for a replacement.
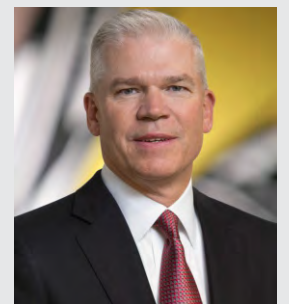
Crutcher resigned due to violations of the company's code of conduct. The violations are related to personal behavior that is not consistent with our ethics and core values, but not related to company strategy, operations or financial reporting.

"For decades, our company's core values and code of conduct have been foundational to how we operate and behave, and we have no tolerance for violations of our code of conduct," said Mark Blinn, lead director of the TI Board. "Over the past 14 years, Rich has successfully led TI to become the company it is today, and we have great confidence in his values and ability to continue to lead this company forward."

"I have tremendous pride in this company, and passion for continuing to make TI even stronger and better," said Rich Templeton, TI chairman, president and CEO. "I remain dedicated to moving TI forward with an unwavering commitment to operate ethically and conduct ourselves professionally in everything we do."

TI also reported second-quarter revenue of $4.02 billion, up 9 percent from the same quarter a year ago, and earnings per share of $1.40. EPS included a 3 cent discrete tax benefit not in the company's original guidance. TI will provide full second-quarter results and third-quarter guidance in its earnings release and conference call on July 24.

About Texas Instruments
Texas Instruments Incorporated (TI) is a global semiconductor design and manufacturing company that develops analog ICs and embedded processors. By employing the world's brightest minds, TI creates innovations that shape the future of technology. TI is helping approximately 100,000 customers transform the future, today.
Learn more at www.ti.com.

Top 15 Chip Suppliers
Outgrew Market in First Half of Year

1H18 Top-15 Semiconductor Sales Leaders ($M, Including Foundries)

1H18 Rank	1H17 Rank	Company	Headquarters	1H18 Tot semi	1H17 Tot Semi	1H18/1H17 % Change
1	1	Samsung	South Korea	39.785	29.181	36%
2	2	Intel	U.S.	32.585	28.839	13%
3	4	SK Hynix	South Korea	17.754	11.393	56%
4	3	TSMC (1)	Taiwan	16.312	14.601	12%
5	5	Micron	U.S.	15.406	10.653	45%
6	6	Broadcom Ltd. (2)	U.S.	9.144	8.404	9%
7	7	Qualcomm (2)	U.S.	7.984	7.728	3%
8	9	Toshiba/Toshiba Memory	Japan	7.717	6.159	25%
9	8	Texas Instruments	U.S.	7.346	6.595	11%
10	10	Nvidia (2)	U.S.	6.243	4.083	53%
11	15	WD/SanDisk	U.S.	4.725	3.715	27%
12	13	Infineon (formerly Siemens)	Europe	4.581	3.896	18%
13	11	NXP (formerly Philips)	Europe	4.559	4.413	3%
14	12	STMicroelectronics	Europe	4.464	3.732	20%
15	16	MediaTek (2)	Taiwan	3.728	3.726	0%
		Top - 15 Total		**182.333**	**147.118**	**24%**

(1) Foundry   (2) Fabless

Source: Company reports, IC Insights' Strategic Reviews database

Ranking and Growth Analysis: by Daniel Dierickx, e2mos www.e2mos.com

1 - Memory Vendors enjoy high growth, Samsung, SK Hynix, Micron, Toshiba Memory and WD/SanDisk thanks to high demand and prices

2 - May be Intel (now Nr 2) should have been more involved in DRAM and FLASH

3 - Nvidia in Top-10 boosted by leading GPU Business

4 - No EUROPEAN Vendor in Top-10, ... and ARM UK is now Softbank Japan

5 - EUROPE: Infineon without acquisition of IR (leading in PowerMos) out of Top-15

6 - EUROPE: NXP without acquisition of FREESCALE (strong in Micro's) out of Top-15. FREESCALE & ON Semi booth spin-off 's of Motorola Semiconductors (Nr 2 in 1982)

7 - Toshiba in Top-10 thanks to Memory Business

8 - JAPAN: only ONE Vendor in Top-15, there was a time that 4 JAPANESE Vendors were in the Top-5

9 - TI and ST good performance and large portfolio

10 - Do you remember HP as the Leader in Optoelectronics? Is now Broadcom

Chip Global Market - By Region & By Product Group
WSTS raises 2018 chip market forecast

The World Semiconductor Trade Statistics (WSTS) organization has raised its forecast for the value of the chip market in 2018 and 2019 for the second time in a couple of months.

Sustained high prices and undersupply for numerous component types and memory in particular continue to surprise WSTS and has required the group to lift up growth figures across all geographical markets and general component types that it measures.

Spring 2018 - Q2 Update	Amounts in US$M			Year on Year Growth in %		
	2018	**2019**		**2017**	**2018**	**2019**
Americas	88.494	102.290	107.516	35,0	15,6	5,1
Europe	38.311	44.377	46.651	17,1	15,8	5,1
Japan	36.595	41.166	43.301	13,3	12,5	5,2
Asia Pacific	248.821	289.268	304.572	19,4	16,3	5,3
Total World - $M	412.221	477.101	502.040	21,6	15,7	5,2
Discrete Semiconductors	21.651	24.143	25.398	11,5	11,5	5,2
Optoelectronics	34.813	38.097	40.960	8,8	9,4	7,5
Sensors	12.571	13.609	14.536	16,2	8,3	6,8
Total O-S-D - $M	69.035	75.849	80.894	N.A.	9,8	6,6
Analog IC's	53.070	59.419	62.624	10,9	12,0	5,4
Micro	63.934	69.053	72.380	5,5	8,0	4,8
Logic IC's	102.209	111.016	116.987	11,7	8,6	5,4
Memory	123.974	161.763	169.156	61,5	30,3	4,6
Total IC's - $M	343.186	401.252	421.146	24,0	16,9	5,0
Total Products - $M	412.221	477.101	502.040	21,6	15,7	5,2

WSTS updated Spring 2018 forecast summary. Note: numbers in the table are rounded to whole millions of dollars, which may cause totals by region and by product groups to differ slightly. Source: WSTS.

The global chip market is now expected to be up 15.7 percent in 2018 after 21.6 percent growth in 2017. In 2019 the market is expected to grow by 5.2 percent. Nonetheless these figures have been raised from 12.4 percent for 2018 and 4.4 percent for 2019 given as recently as June 2018 (see WSTS raises chip market forecast for 2018).

WSTS has recalculated the Spring forecast given in June using the actual figures for 2Q18.

The worldwide semiconductor market was up 21.6 percent in 2017 to US$412.2 billion. The year 2018 is now forecasted to rise 15.7 percent growth to US$477 billion. The strongest growth during 2018 is expected across memory, analog ICs, discretes, and optoelectronics with all products and regions contributing to growth.

Related links and articles: www.wsts.org

For further information please consult the WSTS Vice Chair in your region.

Region	Name	Function	Phone
In the Americas	Kathy Ta	Americas	+1-(408) 601-5697
In Europe	Elise Lafond	Europe Vice Chair	+41-22-929-6955
In Japan	Akemi Takigawa	Japan Vice Chair	+81-3-3457-3917
In Asia Pacific	William Kelley	Asia Pacific Vice Chair	+1-909-263-3059
For the World	Gabriel Chou	World Chair	+886-3-578-6688x75459

Embedded Computing Boards Overview
Direct Link Click on the Pictures

ADLINK TECHNOLOGY INC.

Qseven

Intel-based: several CPU 's
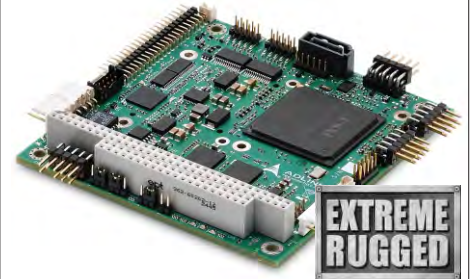Standard Size (70 mm x 70 mm)

SMARC
Smart **M**obility **ARC**hitecture

Intel-based: several CPU 's
Short Size (82 mm x 50 mm)
Full Size (82 mm x 80 mm)

PC/104
PCI/104 Express

EXTREME RUGGED

Intel-based: several CPU 's
PCI/104-Express (V3.0)
Size (117.4 mm x 96 mm)

COM Express

Type 6
Basic Size (125 x 95 mm)
Compact (95 x 95 mm)
Type 7 - Intel Xeon-based
Basic Size (125 x 95 mm)
Type 10
Mini Size (84 x 55 mm)
Type 2
Basic Size (125 x 95 mm)
Compact (95 x 95 mm)

Intel-based: several CPU 's

3U-6U VPX
**Conduction & Air-cooled**

3U-6U CompacPCI,
Plus & Serial

Conduction & Air-cooled

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ADLINK vigorously promotes the advantages of the ATCA technology by providing complete platform solutions that offer high-density processing power, faster data throughput, and intelligent system management. Designed for next-generation telecom, datacom, and equipment manufacturers, ADLINK's ATCA platforms significantly reduce over-all development costs, come with extended operating lifecycles, and speed up critical time-to-market.
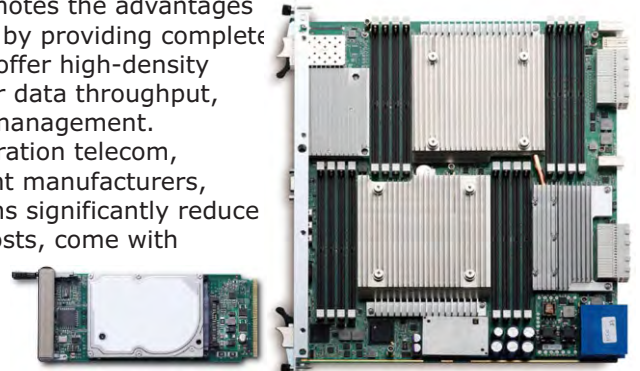
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