SPECIAL REPORT

RF and microwave suppliers for military use face demands for innovation

EMMA HELFRICH, ASSOCIATE EDITOR

The U.S. military is quickly realizing that modernization efforts for RF [radio frequency] and microwave components are necessary in order to keep pace with advancing adversaries, and major component suppliers are ready for the challenge.

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SISTER PUBLICATION

Is Arm the future for airborne platforms in military and aerospace?

RICK HEARN CURTISS-WRIGHT DEFENSE SYSTEMS, MICHAEL SLONOSKY CURTISS-WRIGHT DEFENSE SOLUTIONS, GEOFFREY WATERS NXP SEMICONDUCTORS, LISA SARAZIN CURTISS-WRIGHT DEFENSE SYSTEMS

In recent years, Arm processors have made a quiet, understated entry into the military/aerospace market. With a well-established reputation in commercial markets for bringing high performance to low-power mobile devices ? such as smartphones, tablets, and wearables ? it?s no surprise that Arm?s potential was recognized in an industry where size, weight, and power (SWaP) constraints heavily influence technology selection.
GUEST BLOG

Expanding hardware security trust

JOE BRAND, FUTURA

As security threats continue to grow and undermine the trust in systems performing critical operations, the ability to detect and prevent changes to vital system components is necessary to maintain system integrity. In order to get ahead of these threats, organizations need to deploy hardware roots of trust to monitor and defend critical systems. Hardware roots of trust use encryption and digital-signature technology to ensure only legitimate changes are made to system components.

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MIL TECH TRENDS

Standard network interfaces, heterogeneous architecture, and COTS solutions: Recent trends in signal processing

DAVID JEDYNAK, CURTISS-WRIGHT DEFENSE SOLUTIONS

As the amount of signal-processing data used in defense
applications continues to grow, the challenge for system architects becomes less about hardware design and more about what to do with all that data, and how. Because commercial off-the-shelf (COTS) solutions can now be used to move the data, the system designer can better focus on what they are going to do with that data and concentrate on solving their higher-level problems.

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SISTER PUBLICATION

Mezzanine madness: The future of VITA mezzanines

JERRY GIPPER, EDITORIAL DIRECTOR

It has been several years since the introduction of a new mezzanine form factor for low-profile applications. The VITA membership has been doing some soul-searching to determine what should be next. Plenty of controversy is in the air, with everything from simple right-angle edge connections and optical links to the carrier being thrown into the fray.

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SPECIAL REPORT

Making noise power ratio measurements with real-world signals
DONALD VANDERWEIT, KEYSIGHT TECHNOLOGIES

A newly developed method to test satellite signals based on spectral correlation can produce better test results, as the traditional noise power ratio (NPR) test can overstate distortion during actual operation.

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MIL TECH TRENDS

Advancing radars for defense against missiles and hypersonic weapons
SALLY COLE, SENIOR EDITOR

Ground-based radars are currently undergoing modernization, and a space-based layer of sensors is under development to help defend against ongoing threats posed by ballistic missiles and a newer one in the form of hypersonic weapons.

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In order to fully appreciate the benefits of Software Defined Radio, conventional analog receiver and transmitter systems will be compared to their digital counterparts, highlighting similarities and differences.

The inner workings of the Software Defined Radio will be explored with an in-depth description of the internal structure and the devices used. Finally, some actual board- and system-level implementations and available off-the-shelf SDR products and applications based on such products will be presented.

The addition of apertures to the VITA 65 slot profiles has created a revolution in the types of available products, namely simplifying the configuration of the chassis and improving reliability. The flexible arrangements of contacts enabled by VITA 65 will help defense system integrators reduce size, weight, and power (SWaP) and improve interoperability.

The tri-services memo issued by the U.S. Army, Air Force, and Navy makes it clear that the need to rapidly share information from machine to machine requires common standards, and that these initiatives are no longer optional?they are vital and they are mandatory. Our white paper explores the benefits of an open standards approach and examines the open standards listed in the tri-services memo, such as OMS/UCI, SOSA, FACE, and VICTORY.
Air Force, Army, Navy Convergence on Military Open Architectures

Sponsored by: Annapolis Micro Systems, Elma Electronic, Kontron, Pentek

Expert Speaker: Dr. Ilya Lipkin, Steering Committee Chair, Sensor Open Systems Architecture (SOSA) Consortium, Air Force Life Cycle Management Center (AFLCM).

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