

September 2020



The McHale Report, by militaryembedded.com Editorial Director John McHale, covers technology and procurement trends in the defense and aerospace electronics community. [View our archive](#) of recent and past issues of the McHale Report e-mail newsletter.

EXECUTIVE OUTLOOK

Military IC aftermarket trends -- a Q & A with Dale Lillard, president of Lansdale Semiconductor



Decades-old military platforms like the Aegis weapon system and the Patriot missile defense systems, as well as key systems for fighter jets like the F-16, continue to go through modernizations and embrace open architecture designs, but critical integrated

circuits (ICs) used in these systems have not changed since they were originally designed in the 1970s and 1980s. In this Q&A with Dale Lillard, president of Lansdale Semiconductor, he shares how the military IC aftermarket performs compared to the rest of the defense electronics market, how this market segment is impacted by the global pandemic, and the vagaries of counterfeit-part mitigation.

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TOP STORY

Curtiss-Wright Defense Solutions to acquire PacStar, provider of battlefield network operations solutions



Curtiss-Wright's Defense Solutions division announced that it intends to acquire the stock of Pacific Star Communications (PacStar --

Portland, Oregon), in a move that Curtiss-Wright officials say will boost its position in and commitment to the U.S. and global battlefield network operations (NetOps) markets.

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TOP STORY

NVIDIA to acquire chipmaker Arm in \$40 billion deal



NVIDIA and SoftBank Group Corp. (SBG) announced a definitive agreement under which NVIDIA will acquire Arm Limited from SBG and the SoftBank Vision Fund (together known as "SoftBank") in a transaction valued at \$40 billion.

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INDUSTRY SPOTLIGHT

ITAR compliance and the great regulatory maze



Substantial penalties wait for global defense and aerospace manufacturers and contractors that fail to comply with

International Traffic in Arms Regulations (ITAR), which exist to track military- and defense-sensitive material and to keep that material out of the hands of adversaries. Many organizations opt to mitigate this regulatory-heavy environment by using manual, labor-intensive internal processes or employing third-party compliance entities. Another approach: Enterprise software built on ITAR principles can help organizations overcome compliance concerns and ensure data, supply-chain information, products, and services are available to a global audience.

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[6 GHz Ultra-Wideband Talon RF/IF Recorder Extends Recording Bandwidths](#)

The [Talon RTR 2742](#) is a turn-key record and playback system for ultra-wideband analog RF/IF signals. Using two 12-bit, 6.4 GHz A/D converters, this system can achieve sustained recording of 2.4 GHz bandwidth signals at rates up to 6 GBytes per second. Complemented by a 16-bit, 6.4 GHz D/A converter, the RTR 2742 is capable of playing back analog signal bandwidths up to 1.28 GHz. Built-in digital down- and up-converters provide flexible bandwidth and tuning frequency selection for both record and playback.

[Download Datasheet](#)

TOP STORY

Keeping up to date with CSfC capability packages



Since its introduction in 2014, the National Security Agency Commercial Solutions for Classified (CSfC) program has proven very effective in lowering the cost and speeding the accessibility of encryption for critical data-at-rest (DAR). Compared to the time and expense associated with acquiring certification and approval for Type 1 encryption solutions, CSfC has provided a breakthrough for defense and aerospace system integrators by establishing an approved means for using commercial encryption to protect critical data.

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WEBCAST

Signal integrity for electronic warfare Oct 8 at 2pm est



As military radar, signals intelligence (SIGINT) and electronic warfare systems get more complex so does the associated signal integrity challenges. These signal integrity concerns didn't even exist 10-15 years ago. As signal density for connectors continues to get tighter as footprints get smaller problems such as crosstalk and geometry of launch greatly affect backplane performance. This webcast titled, "Signal Integrity in Military Radar and Electronic Warfare Systems," to be held on Thursday, October 8, at 2 pm Est., will address these challenges and how VITA standards and open architecture solutions are helping solve them.

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MIL TECH TRENDS

Expanding software-defined radio versatility for the digital battlefield



On the increasingly connected battlefield, the electromagnetic spectrum is a critical resource that can mean the difference between victory and defeat. In recent conflicts, simply geolocating the source of enemy communications signals gave a competitive advantage to the victor. On the battlefield, software-defined radio (SDR) is used for sensors, communications, and electronic warfare – in short, it's almost everywhere. SDR's single-technology architecture and reprogrammable nature make it ideal for a broad range of applications.

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TOP STORY

Sonar system program awarded to L3Harris Technologies

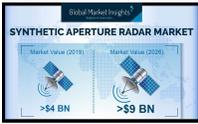


L3Harris Technologies has been awarded a multi-million-dollar contract to deliver two Low-Frequency Active Towed Sonar (LFATS) systems to a NATO member. The LFATS system is used on ships to detect, track, and engage all types of submarines.

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MARKET RESEARCH

Synthetic aperture radar market to witness steady growth of 10% during 2020-2026



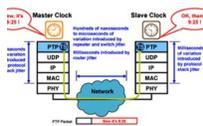
According to a recent study from market research firm Global Market Insights, the synthetic aperture radar market is set to grow from its current market value of more than \$4 billion to over \$9 billion by 2026, gaining remarkable traction over the 2020 to 2026 period.

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GUEST BLOG

Timing is everything when mobilizing an Ethernet network

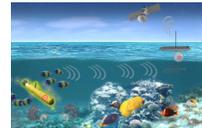


Today we are going to discuss timing and synchronization of devices on an Ethernet network. Synchronization of packet cadence is necessary for time-sensitive applications work like they're supposed to.

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TOP STORY

DARPA program to leverage marine organisms for DoD maritime hardware



DARPA's Persistent Aquatic Living Sensors (PALS) program aims to leverage how marine organisms observe changes in their environment through sensing to augment the Department of Defense's (DoD) existing, hardware-based maritime monitoring capabilities. The program, launched in November 2018, is now entering its second phase.

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INDUSTRY SPOTLIGHT

Counterfeit components: Risky business



The challenge of microelectronics counterfeit prevention is to detect fake OEM parts, but what if the part is an actual OEM's part and yet still counterfeit? Not only is it possible, it's common. The most counterfeited product in the global microelectronics market is not always a fake. Very often it is a true OEM original but has been altered and is not suitable for the full requirements of system performance and use in a critical military system.

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TOP STORY

Integrating AI into military operations discussed at Time Machine 2020



Fighter pilot shortages, operation security concerns, and the need for rapid experimentation in the military have acted as driving forces behind the implementation of artificial intelligence (AI) in the Department of Defense (DoD). These themes were discussed by military industry AI leaders and data scientists to highlight how AI can bolster mission readiness at SparkCognition Government Systems' (SGS) virtual Time Machine 2020 AI Sessions event, held this week.

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TOP STORY

TT Electronics gains U.S. defense

MARKET RESEARCH

Military radar systems market in flux

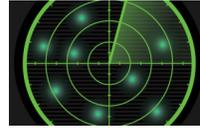
footprint with acquisition of Torotel



Performance-critical electronics engineering firm TT Electronics will acquire Torotel (Olathe, Kansas), a U.S.-based designer and manufacturer of high-reliability power and electromagnetic assemblies and components for defense and aerospace, in an agreement worth \$43.4 million.

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due to defense budget cuts, report says



The world market for military radar systems is currently in a state of transition due mainly to extensive cuts in defense budgets in many markets that previously had a major impact on procurement, according to a new report from Visiongain, "Military Radar System Market Report 2020-2030."

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TOP STORY

Self-protection system for infantry vehicles to undergo sensor improvements



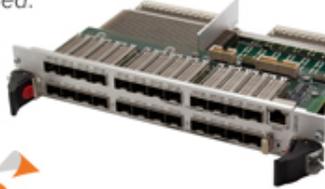
HENSOLDT, a German corporation with a focus on sensor technologies for protection and surveillance, announced that its Multifunctional Self-Protection System (MUSS) will undergo further developments and improvements.

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TOP STORY

A800 3D C-UAS radar powered by AI to detect drones



Blighter Surveillance Systems, British designer and manufacturer of electronic-scanning radars and surveillance solutions, has announced the launch of the latest in its range of counter-unmanned aerial system (C-UAS) radars, the A800 3D drone detection radar for land, air, and sea surveillance.

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TOP STORY

Integrated Battle Station cockpit modifications completed on B-1B fleet



The U.S. Air Force has announced the completion of the Integrated Battle Station (IBS) on the B-1B Lancer fleet. The eight-year project has been completed earlier than anticipated, and 60 aircraft went through the modification process that began in late 2012.

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TOP STORY

Electronic attack system completes testing on EA-18G Growler



Built by Raytheon Intelligence & Space, a Raytheon Technologies business, the Next Generation Jammer Mid-Band flew on an EA-18G Growler – its first flight test on the aircraft. The U.S. Navy's NGJ-MB is an advanced electronic attack system that is

TOP STORY

Hypersonics research and development led by UTA and Ansys



The University of Texas at Arlington (UTA) and Ansys are developing an advanced design and analysis workflow for validating system models in the U.S. government's current and next-generation hypersonic vehicles. The workflow is intended to fast-

designed to deny, disrupt, and degrade enemy technology, including communication tools and air-defense systems.

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TOP STORY

Electronic attack system to be integrated into Army ground vehicles



In August, Flyer Defense, LLC (Flyer), company specializing in mission-specialized, lightweight, high mobility, all-terrain tactical wheeled vehicles, delivered vehicles contracted by General Dynamics Mission Systems for integration with the Tactical Electronic Warfare Light (TEWL) system which fills a critical electronic warfare requirement for U.S. Army airborne units.

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GUEST BLOG

Origins of the Kill Web



DARPA (Defense Advanced Research Projects Agency) officials announced the concept of the Kill Web at the C4ISRNET Conference in May 2018.

Throughout the history of war, many elements of the Kill Web were being developed independently, but the dots were not connected until Admiral William Owens wrote a paper about a “system of systems”. He proposed integrating command-and-control, the intelligence from the sensors, and the weapons together in the mid 1990s. He also coined the acronym ISR (for intelligence, surveillance, and reconnaissance).

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track certification of simulation software codes, help decrease hypersonic technology development spending, and increase engineering productivity.

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TOP STORY

AI and cloud computing focus of DoD C4ISR spending



Frost & Sullivan's recent analysis, Assessment of the US DoD C4ISR Market, Forecast to 2025, highlights the U.S. Department of Defense (DoD) command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) budget spending and technology trends.

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TOP STORY

Radio frequency research is being conducted by the Army Research Lab



Studies being conducted by the U.S. Army Combat Capabilities Development Command Army Research Laboratory are using findings on electromagnetism and radio frequency to ensure U.S. defense forces obtain spectrum dominance on the battlefield.

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Signal Integrity in Military Radar and Electronic Warfare Systems

Sponsored by: Abaco Systems, Elma Electronic, Pentek

Date: October 8, 2:00 p.m. ET

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