

# **GOMACTech 2023**

**~ EXHIBIT GUIDE ~**



**Welcome to the 47th Annual  
GOMACTech Conference**

Microelectronics: The Engine  
to Keep the US Moving Forward

**Conference: 20-23 March 2023**

**Exhibition: 21-22 March 2023**

**San Diego, CA**

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# Unleash Imagination

The only EDA company accredited by the DoD as a trusted supplier. Our digital microelectronic engineering capabilities enable electronic systems that are future proofed, on budget, on schedule, sustainable, and modernizable.

- ▶ System analysis
- ▶ 5G for the DoD
- ▶ Emulate before you fabricate
- ▶ Digital twinning
- ▶ AI on the edge
- ▶ Security



**3D Glass Solutions, Inc.** 616

3D Glass Solutions (3DGS) is a pure-play glass foundry empowering high-performance electronics. The company leverages the unique properties of its patented APEX glass-ceramic material, which enables performance not possible with traditional 2D components.

<https://3dgsinc.com>



**Advanced Test Equipment Corp.** 712

Advanced Test Equipment Corp. (ATEC) is a leading provider of test and measurement equipment rentals, sales, calibration, and service. Since 1981, test engineers, government agencies, and Fortune 500 companies have relied on ATEC to guide them to the right equipment, ship it quickly, and offer the industry's best technical expertise and customer care. ATEC's broad inventory includes EMC, power supplies and loads, RF safety, electrical, NDT, environmental, communications, and general-purpose test equipment.

[www.atecorp.com](http://www.atecorp.com)

**Alphacore, Inc.** 210

Alphacore enables engineers to develop ultra-high performance and ultra-low-power microelectronic components and systems with its products and design services. It develops data-converter IP and RF, analog and mixed-signal ASIC solutions, power-management ICs, and image sensors and complete imaging systems. It also offers radiation-hardened and radiation-tolerant versions of its products. Its robust designs serve the defense, aerospace, automotive, communications, and scientific instrumentation markets.

[www.alphacoreinc.com/en](http://www.alphacoreinc.com/en)

**Andes Technology Corp.** 315

Seventeen years in business and a founding premier member of RISC-V International, Andes is a publicly listed company and a leading supplier of high-performance/low-power 32/64-bit embedded processor IP solutions, and the driving force in taking RISC-V mainstream. Andes' fifth-generation AndeStar architecture adopted the RISC-V as the base. Its V5 RISC-V CPU families range from tiny 32-bit cores to advanced 64-bit cores with DSP, FPU, Vector, Linux, superscalar, and/or multicore capabilities. The annual volume of Andes-Embedded SoCs exceeded 3 billion in 2021 and continues to rise. By the end of 2021, the cumulative volume of Andes-Embedded SoCs surpassed 10 billion.

[www.andestech.com](http://www.andestech.com)

**Astronics Test Systems** 504

Astronics Test Systems ensures optimal performance of mission-critical systems through innovative test solutions. Leveraging 60 years' experience, it offers automatic test expertise to electronics manufacturers in aerospace, military, mass transit, urgent communications, and space industries. Its test solutions ensure the world's most advanced electronics perform as designed, every time.

[astronictestsystems.com](http://astronictestsystems.com)

**Avalanche Technology** 518

Avalanche Technology is a leader in next-generation perpendicular STT-MRAM technology, accepted as the frontrunner to replace traditional Flash and SRAM for unified memory architectures in future SOC systems, delivering high performance and low power at 55, 40, 28, and 22nm with scalability beyond 14nm. With a proven STT-MRAM portfolio at multiple geometry nodes, combined with an intellectual property portfolio of over 300 patents and applications, Avalanche Technology is delivering on the promise of enabling the next generation of scalable unified memory architecture for industrial, IoT, aerospace, and storage applications.

[www.avalanche-technology.com](http://www.avalanche-technology.com)

**BAE Systems** 617

BAE Systems and its 34,000 people are part of a global defense, aerospace, and security company. BAE Systems delivers products and services for air, land, sea, and space, as well as advanced electronics, intelligence, security, and IT solutions and support services. Its dedication shows in everything it designs, produces, and delivers — to protect those who protect us in a high-performance, innovative culture. The company pushes the limits of possibility to provide a critical advantage to customers where it counts.

[www.baesystems.com](http://www.baesystems.com)

**Battelle** 202

Battelle provides focused expertise and advanced R&D to establish root-of-trust verification to secure the nation's most critical systems. Using its unparalleled expertise and advanced laboratory capabilities, Battelle has developed state-of-the-art trust and assurance tools and techniques to secure military and civilian microelectronics.

[www.battelle.org/markets/national-security/cyber](http://www.battelle.org/markets/national-security/cyber)

**Boeing** 716

Boeing is the world's largest aerospace company and a leading manufacturer of commercial jetliners, defense, space, and security systems, as well as a service provider of aftermarket support. As one of America's biggest manufacturing exporters, the company supports airlines and US and allied government customers in more than 150 countries. Boeing products and tailored services include commercial and military aircraft, satellites, weapons, electronic and defense systems, launch systems, advanced information and communication systems, and performance-based logistics and training.

[www.boeing.com](http://www.boeing.com)

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**Bruker** 508

Bruker offers dependable semiconductor fabrication and characterization solutions, including wafer cleaning and nondestructive defect detection. Unlike conventional wet- and plasma-cleaning techniques, its cryogenic CO<sub>2</sub>-wafer cleaning uses a liquid-free dry-cleaning process that is low-cost and environmentally safe. This unique method can be used for particulate removal, lift-off processing, fence and edge metal removal, cleaning of SiC surfaces, and more. Bruker also offers inline, non-destructive defect detection for edge cracks, dislocations, and other crystallographic features using fast, innovative transmission X-ray imaging that detects strain fields surrounding the defects.

[www.bruker.com/semi](http://www.bruker.com/semi)

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**C&D Semiconductor Services, Inc.** 706

C&D Semiconductor is a leading US domestic provider of semiconductor manufacturing equipment including photoresist coaters and developers and other wafer-processing tools. C&D's vertically integrated product lines allow for complete customization of software and hardware to fit any scale of operation from small R&D facilities to high-volume production foundries. Its engineering team allows full software and hardware customization of any process tool, and its modular tool design allows the addition of capabilities and technological advantages to customer processes.

[www.cdsemi.com](http://www.cdsemi.com)

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**Cactus Materials, Inc.** 405

Cactus Materials is a developer of next-generation particle detectors, IR detectors, and space power. It provides foundry services (III-V and silicon) to government entities and commercial companies.

[www.cactusmaterials.com](http://www.cactusmaterials.com)

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**Cadence** 517

Cadence is a pivotal leader in electronic systems design, building upon more than 30 years of computational software expertise. The company applies its underlying Intelligent System Design strategy to deliver software, hardware, and IP that turn design concepts into reality. Cadence customers are the world's most innovative companies, delivering extraordinary electronic products from chips to boards to complete systems for the most dynamic market applications, including hyperscale computing, 5G communications, automotive, mobile, aerospace, consumer, industrial, and healthcare. For eight years in a row, *Fortune* magazine has named Cadence one of the 100 Best Companies to Work For.

[www.cadence.com](http://www.cadence.com)

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**Caspia Technologies** 306

Caspia Technologies offers innovative solutions to ensure end-to-end security and integrity for today's complex electronics supply chain, servicing the industrial and government markets. Its solutions include EDA assurance tools, security IP primitives, and IC/PCB level physical assurance tools and methodologies. Caspia Technologies also provides comprehensive training and consulting services.

<https://caspiatechnologies.com/>

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**Central Semiconductor Corp.** 305

Since 1974, Central Semiconductor has excelled at providing excellent customer service and developing solutions for engineers' design requirements. Products include standard and custom small-signal transistors, bipolar power transistors, MOSFETs, JFETs, diodes, rectifiers, protection devices, current limiting diodes, bridge rectifiers, and thyristors. Custom capabilities include custom device configurations, special wafer diffusion, alternate metallization, and parametric screening. Central can up-screen packaged devices to MIL-PRF-19500 for equivalent JAN, JANTX, JANTXV, and JANS test levels, or to customer-specific requirements.

[www.centalsemi.com](http://www.centalsemi.com)

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**Checkpoint Technologies** 802

Checkpoint Technologies develops and manufactures innovative optical failure-analysis tools used by semiconductor manufacturers in laser scanning and photon emission microscopy. Checkpoint Technologies' InfraScan product line includes laser probing, visible laser probing, frequency mapping, photon emission, lock-in TIVA and OBIRCH, dual-beam LTM-S probing, SIL technologies, dual SIL systems, femtosecond pulsed laser stimulus, 2-photon LADA, TR-LADA, and pulsed laser probing – to reflect the company's fundamental commitment to maximizing value by adapting technology to meet specific market needs within the field of semiconductor device physics analytics.

[www.checkpointtechnologies.com](http://www.checkpointtechnologies.com)

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**Chip Scan, Inc.** 416

Chip Scan is a US company specializing in hardware cybersecurity. It is a DMEA accredited Trusted Supplier specializing in assurance and design of secure digital microelectronics. In addition to assurance, it develops cybersecurity improvements for mission systems based on embedded technologies. The company services a variety of government and commercial clients.

[www.chipscan.us](http://www.chipscan.us)

**Codasip** 804

Codasip was founded on a simple belief – that we could bring together the brilliance of microprocessor architects and software engineers and capture it in tools that made design simpler, faster, and less expensive.

<https://codasip.com>

**CoolCAD Electronics** 217

CoolCAD Electronics designs and fabricates wide bandgap silicon carbide (SiC) semiconductor transistors and integrated circuits (ICs) for applications in power electronics, green energy, high-temperature electronics, and deep ultraviolet (UV) optical electronics. SiC-based semiconductor devices significantly outperform traditional Si (silicon) devices and are a major driver in the transition from an outdated fossil fuel energy infrastructure to a more sustainable infrastructure based on renewable energy technologies. CoolCAD SiC semiconductor devices operate at temperatures up to and beyond 400°C, significantly above the 200°C capabilities of ordinary silicon-based chips. CoolCAD has developed proprietary SiC formulations and manufacturing processes for achieving superior performance with high temperature tolerance. Its deep ultraviolet SiC-based optical electronics for UV sensing and imaging function in broad daylight without the need of a special filter required by traditional silicon-based optical sensors.

<https://coolcadelectronics.com>

**Cryptography Research at Rambus** 303

Cryptography Research at Rambus provides a wide array of tamper-resistant, quantum-safe security IP cores for defense-grade SoCs, ASICs, and FPGA systems. Its “soft IP” security cores include low-level protocol cores (e.g., symmetric, secure digest, public key, post-quantum), fully integrated Root of Trust/Root of Security cores, and high-level networking protocol cores (e.g., MACsec and IPsec). Several of the Rambus Root of Trust IP cores have been certified to meet FIPS 140 CMVP requirements, and Rambus is the only merchant supplier of FIPS CMVP-certified Root of Trust IP available for licensing. Cryptography Research at Rambus also provides a secure manufacturing platform that scales from key provisioning for prototype system exploration

(dozens of devices), to full SoC production at mass-production scale (dozens of mass production facilities).

[www.rambus.com](http://www.rambus.com)

**Cycurity** 711

Cycurity was created as Tortuga Logic in 2014 by co-founders with a shared vision: to revolutionize cybersecurity with trusted microelectronics. Today, the company remains committed to the belief that a secure design lifecycle is essential – from the design and verification chain into post-silicon. Silicon chip vulnerabilities like Spectre and Meltdown have the potential to exploit weaknesses in chip design and firmware and cause irreparable damage to companies that build or rely on semiconductor technology. At Cycurity, we’re working toward a world where the products that enrich, inform, and protect our lives aren’t just secure – they’re backed by the confidence of hardware security assurance.

[www.cycurity.com](http://www.cycurity.com)

**Defense Technical Information Center (DTIC)** 808

The Defense Technical Information Center (DTIC) has collected and disseminated GOMACTech conference proceeding papers dating back to 1968. As the DoD’s central authority for collecting, safeguarding, analyzing, and disseminating defense-related scientific and technical (S&T) information, DTIC facilitates innovation across the DoD research and engineering enterprise. DTIC offers many resources devoted to microelectronics, including an access-controlled page with conference proceeding papers from previous year’s GOMACTech conferences (see below). Via its Horizons tool, DTIC delivers capabilities to evaluate completed and ongoing research through spending by program element and Congressional funding data. DTIC also includes support for workspaces for the microelectronics industry and the DoD to connect via the Defense Innovation Marketplace.

<https://go.usa.gov/xeFHC>

**DMEA TAPO** 612


The DMEA Trusted Access Program, TAPO, provides access to leading-edge IC technologies under the multiproject wafer and dedicated prototype programs, with engagement models available from standard ASIC to full custom design services. Through Trusted accreditation, customers have access to suppliers who can support their design, aggregation, foundry, mask manufacturing, post processing, packaging, and assembly requirements.

[www.dmea.osd.mil](http://www.dmea.osd.mil)

**ENGIN-IC, Inc.** 411

ENGIN-IC provides advanced MMIC and integrated microwave assembly solutions. MMICs are developed using GaN, GaAs, InP, SiC, and more. ENGIN-IC, founded in 2014, is located in Plano, TX, and San Diego, CA. The founders of the company bring a century of microwave product design experience, from MMICs to complex RF subsystems primarily in the defense and hi-rel market. The company has an excellent understanding of both defense market trends and RF designer needs for advanced RF products.

[www.engin-ic.com](http://www.engin-ic.com)



**Evatec North America** 406

Evatec is a supplier of thin-film deposition systems and process know-how across applications in advanced packaging, power, MEMS, wireless, optoelectronics, and photonics.

[www.evatecnet.com](http://www.evatecnet.com)

**Exodus Advanced Communications** 304

Exodus Advanced Communications is a “best-in-class” SSPA manufacturer delivering products from 10kHz to beyond 51GHz. The company’s extremely ruggedized product line consists of LDMOS, GaN (HEMT), and GaAs devices. It also uses cleanrooms for manufacturing the latest advancements in technology, designing and fabricating low-, medium-, and high-power amplifiers with chip and wire technology. The company has a very wide range of stand-alone modules, integrated amplifier chassis configurations, and full turn-key systems as needed to satisfy customers. Exodus brings decades of combined experience in the RF/microwave field for many applications, including military jamming, communications, radar, EMI/EMC, and various commercial projects. Its SSPAs provide unprecedented reliability and performance and simplify EMC testing with the latest features for user-availability. With its in-house engineering capabilities and fully equipped manufacturing facilities, Exodus is committed to providing the best in RF products, leading in quality along with excellent lead times.

[www.exoduscomm.com](http://www.exoduscomm.com)

**Extreme Waves** 402

Extreme Waves develops high-performance custom phased-arrays and transceivers for SATCOM, 5G, and point-to-point communication links at 8–110 GHz, including X, Ku, and Ka-band SATCOM, Ku-band

CDL, and all of the 5G frequencies up to 110 GHz. Its product portfolio also includes low- and medium-power X, Ku, and Ka-band radars (pulsed and FMCW) with multiple phase centers. SiGe and CMOS chip design services and chip design reviews are also available for partners. Its customer list includes medium and large commercial and defense companies in the US, and several federal laboratories. Extreme Waves runs as a lean company with great engineers building great products. The company is passionate about RF and systems.

[www.extreme-waves.com](http://www.extreme-waves.com)

**Finetech USA** 607

Finetech supplies sub-micron accuracy bonders for die attach, advanced packaging, and micro assembly applications. Manual to fully automated models provide process flexibility within one platform. Bonding technologies include thermo-compression, ultrasonic, eutectic, epoxy, sintering, ACF/ACP, indium, vacuum die bonding, and laser-assisted bonding. Finetech also provides precision dispensers and advanced rework systems for today’s challenging applications.

[www.finetechusa.com](http://www.finetechusa.com)



**Flex Logix, Inc.** 618

Flex Logix is a reconfigurable computing company providing leading eFPGA and AI inference IP and software for SoCs and ASICs. One hundred percent of its hardware and software is developed in the US. Flex Logix’s embedded FPGA (eFPGA,) EFLX technology is licensed to chip designers as intellectual property (IP) and enables customers’ semiconductor chips to flexibly handle changing protocols, interfaces, and algorithms, and to accelerate key workloads, and provide mechanisms to avoid costly chip re-spins. The adoption of eFPGA technology in semiconductor devices is growing rapidly and Flex Logix is a market share leader for eFPGA technology with more than 25 chips working in silicon and more in design. EFLX eFPGA is available today in popular 12, 16, 22, 28, and 40nm process nodes with 7 nm in design and more advanced nodes in planning.

<https://flex-logix.com>



**Frontgrade** 609

Frontgrade pioneers the future and underpins many of the world's most critical missions. Its radhard microelectronics empower the world's leading spacecraft: from high-throughput commercial communications satellites, earth observation satellites, and manned space, to high priority national security missions, deep space exploration to Mars and beyond, and the latest new space constellations. Its RF transmission and antenna solutions enable space signal transmission, search and surveillance, satellite communications, missile defense radars, missile seekers, electronic warfare systems that keep warfighters safe, and civil aviation radars that ensure the safety of the flying public. Its highly complex motion control products enable satellite solar panel actuation, Mars Rover actuation, and optical steering. And its power management solutions convert and distribute power in the harshest environments.

<https://frontgrade.com>

**GDSI** 714

GDSI, a wholly owned subsidiary of Akoustis Technologies, is based in San Jose, CA. GDSI is a premier back-end supplier, offering advanced wafer processing techniques to commercial enterprise and the defense industrial base. It carries a Trusted Supplier accreditation (Cat-1A) and maintains a secret safeguarded facility. GDSI addresses the critical gap between proto and production phases, offering same-day service.

[www.dieprepservices.com](http://www.dieprepservices.com)

**Globalfoundries U.S., Inc.** 503

GF is one of the world's leading semiconductor manufacturers and one of the only ones with a truly global footprint. It is redefining innovation and semiconductor manufacturing by developing feature-rich process technology solutions that provide leadership performance in pervasive high-growth markets. As a steadfast partner, with a unique mix of design, development, and fabrication services, GF works collaboratively alongside customers to bring a broad range of innovative products to market. With a global customer base, a talented and diverse workforce, and an at-scale manufacturing footprint spanning three continents, GF is delivering a new era of more.

[www.gf.com](http://www.gf.com)

**Golden Altos Corp.** 502

Golden Altos is an onshore IC assembly and test facility that is committed to providing the semiconductor, military, and aerospace communities with quality service building both single chip and multichip modules. Whether it's turnkey monolithic or hybrid assembly, complete burn-in services, or final qualifications, Golden Altos has the ability to take your design and ensure timely delivery of mission critical

devices. As a small business that has served the commercial, military, and aerospace industries for over 30 years, Golden Altos understands the importance of putting its customers first.

[www.goldenaltos.com](http://www.goldenaltos.com)

**Graf Research Corp.** 713

Graf Research produces Enverite PV-Bit and Trace, EDA tools for FPGA and ASIC assurance that uniquely address emerging DoD best practices.

[www.grafresearch.com](http://www.grafresearch.com)

**HRL Laboratories LLC** 215

HRL is a state-of-the-art research lab in Malibu, California, that specializes in a wide variety of technology in realizing groundbreaking advances in ultra-high-performance circuitry, robust computing and communications, automated data extraction, and innovative architected materials. With an in-house foundry, HRL offers industry-leading 40 nm gate-length T3 GaN services through MPW (multi-project wafer) and dedicated wafer runs.

[www.hrl.com](http://www.hrl.com)

**IBM** 319

IBM Consulting is a new partner for the new rules of modern business. It embraces an open way of working by bringing together a diverse set of voices and technologies. As a Trusted advisor and Accredited Trusted Foundry Broker for the DMEA, IBM Consulting has the depth and breadth of knowledge and experience necessary to work with defense industrial base clients and business partners to solve today's most complicated and challenging Trusted and Assured supply chain security Issues. This includes facilitating new business avenues with current accredited vendors or assisting as companies journey to Trust. Working with DMEA, IBM Consulting can assist with everything from consulting studies and surveys to delivery.

[www.ibm.com](http://www.ibm.com)

**Indiana Integrated Circuits LLC** 717

IIC is a technology development company focused on advanced microelectronics that decrease SWAP-C while simultaneously increasing system performance. IIC is pioneering Quilt Packaging (QP), a revolutionary, patented, edge-to-edge chip interconnect technology that enables true heterogeneous integration through the "quilting" together of many small high-yielding "chipllets" of disparate materials/processes into planar, 2.5D and complex 3D configurations. IIC's customers/partners are applying its technology to applications as diverse as low-energy computing, hardware security, RF/microwave, IR, digital, power, biomedical, and integrated-optical systems.

[www.indianaic.com](http://www.indianaic.com)

**Integra Technologies LLC 418**

Integra Technologies LLC, a DMEA Trusted and employee-owned company, is one of the largest semiconductor die prep, assembly, test, and qualification facilities in the United States. Integra's operations have been satisfying customers for over 40 years by providing a wide variety of semiconductor services including: die prep, assembly (plastic and ceramic), test development, final test, characterization, wafer probe, volume production test, qualification services (HTOL, HAST, temp cycle), DPA, CSAM, failure analysis, PEM qualifications, up-screening, counterfeit detection, obsolescence management, and Trusted processing. Integra has one of the largest and most experienced test engineering organizations, offering support for every device technology including FPGA, microprocessor, ASIC, RF, mixed signal, digital, linear, analog, SiP, and MCMs. Integra provides 24x7 high or low volume US-based manufacturing capacity and has demonstrated industry-leading quality and on-time delivery performance.

[www.Integra-tech.com](http://www.Integra-tech.com)

**Intrinsic ID 317**

Intrinsic ID is a leading provider of hardware security IP for embedded systems based on physical unclonable function (PUF) technology. Intrinsic ID's IP has been deployed to protect defense and government data and systems for over 10 years. Over 500 million devices are currently protected and authenticated using Intrinsic ID's IP. The technology provides an additional level of hardware security utilizing the inherent uniqueness in each and every silicon chip. The IP can be delivered in hardware (RTL) or software and can be applied easily to almost any chip – from small ASICs/SOCs to high-performance FPGAs – and at any stage of a product's lifecycle. It is scalable across all foundries and process nodes.

[www.intrinsic-id.com](http://www.intrinsic-id.com)

**Intrinsix Corp. 602**

Intrinsix Corp. offers IC design services and intellectual property for advanced electronics. The company leverages its experience with commercial semiconductor companies (complex processor-based digital, mixed-signal, or RF designs at advanced nodes) into unique solutions for emerging DoD applications. The company, a wholly owned subsidiary of CEVA, Inc. (a US-headquartered top supplier of sensor and connectivity IP), has over 65 employees in the business unit and is based in the US – accredited, trusted, and focused since 1986.

[www.intrinsix.com](http://www.intrinsix.com)

**JEOL USA, Inc. 603**

This year, JEOL is celebrating 55 years of continuous production of the highest performing electron beam lithography systems. Applications range from mask/reticle production and nano-lithography research to reliable and repeatable direct-write exposures for communication devices. JEOL offers unsurpassed technical reliability, application assistance, and service expertise.

<https://www.jeolusa.com/>

**Jazz Semiconductor Trusted Foundry 316**

JSTF (a DMEA accredited company) was created to provide Trusted and ITAR access to all Tower Semiconductor Newport Beach technologies for mil/aero and intelligence communities. Available Tower/Jazz Semi technologies range from 130nm high-speed SiGe and CMOS to 0.5um CMOS and support applications ranging from ROICs to mmWave. ITAR runs in Japan for 45nm and 65nm technologies are available.

[www.jazztrusted.com](http://www.jazztrusted.com)

**Kansas City National Security Campus 614**

The Kansas City National Security Campus provides engineering, manufacturing, and operational national security solutions for government organizations as part of its global security mission.

<https://kcncsc.doe.gov/>

**Keyence Corp. of America 801**

KEYENCE strives to develop innovative products to meet the needs of its customers. With quality standards increasing, KEYENCE's advanced microscope and surface measurement systems ensure that customers are able to meet those standards. High-resolution imaging, ISO-certified roughness, elemental analysis, and 2D/3D measurement are coupled with easy-to-use interfaces for an elevated inspection experience. KEYENCE offers a full range of services: free on-site demonstrations and sample testing, training, after-sale support, and overnight shipping so customers can improve their processes as quickly as possible.

<https://www.keyence.com>

**Keysight Technologies 704**

Keysight provides among the world's most advanced, best-in-class electronic test and measurement products. The same world-class technology and engineering enabling these products can also be leveraged into your solution.

[keysight.com](http://keysight.com)



**Knowles Precision Devices 409**

Knowles Precision Devices is a quickly growing division of Knowles Corp., a leading provider of high-performance audio solutions founded in 1946. Its division engineers a wide-variety of specialty components including multilayer ceramic, single-layer, high-reliability, and precision variable capacitors; EMI filters; and microwave devices such as RF filters, splitters, and couplers. But Knowles is not designing standard commodity components. Its high-performance components are designed for systems that cannot fail or that operate at extremely high voltages, temperatures, or frequencies across military, medical, electric vehicle (EV), and 5G market segments.

[www.knowlesc capacitors.com](http://www.knowlesc capacitors.com)

**Linear Integrated Systems 209**

Linear Systems is a full-service, privately held, 36-year-old US designer and manufacturer of world-class small-signal discrete semiconductors. The Fremont, CA-based company was founded by John H. Hall, co-founder of Intersil and founder of Micro Power Systems. Products are fabricated in Silicon Valley. Linear Systems' product line consists of: ultra-low-noise N-channel and P-channel dual and single JFETs, high-speed lateral DMOS switches, bipolar transistors, current-regulating diodes, and low-leakage diodes.

[linearsystems.com](http://linearsystems.com)

**Marvell Government Solutions 516**

Marvell Government Solutions (MGS) is a DMEA-accredited fabless semiconductor company, focused on advanced solutions for the aerospace and defense market. MGS is a bridge for the defense industrial base to access true commercial technologies and expertise in a secure environment. MGS collaborates with customers to create bespoke silicon, truly innovative packaging solutions, and access to vetted internally developed and third-party IP. MGS is a one-stop-shop for customers' silicon chip and packaging needs, leveraging deep partnerships with wafer fabs, assemblers, and advanced packaging technology. MGS offers a variety of supply chain flows at levels up to Trust to meet the needs of customers. MGS customers have access to the full portfolio of Marvell IP, standard products, ASIC capabilities, and chiplets.

[www.marvell.com/products/custom-asic/marvell-government-solutions.html](http://www.marvell.com/products/custom-asic/marvell-government-solutions.html)

**Menta eFPGA, Inc. 605**

Menta eFPGA is a worldwide leader of disruptive reprogrammable eFPGA IPs for ASIC and SoC designers who need power-efficient and right-the-first-time design for quick volume production. The company introduced standard cell eFPGA IP in 2015 and has been providing the only eFPGA soft IP available today in the market since 2021 to its customers. Menta's eFPGA IP technology has been licensed to Trusted Semiconductor Solutions to deliver the best system designs on any CMOS process technology. The resulting eFPGA IP solution, production proven, is highly efficient, adaptive, and incorporates optional embedded custom blocks, memory, and adaptable DSPs. The design adaptive eFPGA IP is available as a soft RTL IP or as a hard GDSII IP, in rad-hard or non-rad-hard versions. Menta eFPGA products allow integrated circuits to be reconfigured at will, post-production.

[www.menta-efpga.com](http://www.menta-efpga.com)

**Mercury Systems 606**

Mercury Systems is a technology company that makes the world a safer, more secure place. Mercury pushes processing power to the tactical edge, making the latest commercial technologies profoundly more accessible for today's most challenging aerospace and defense missions. From silicon to system scale, Mercury enables customers to accelerate innovation and turn data into decision superiority.

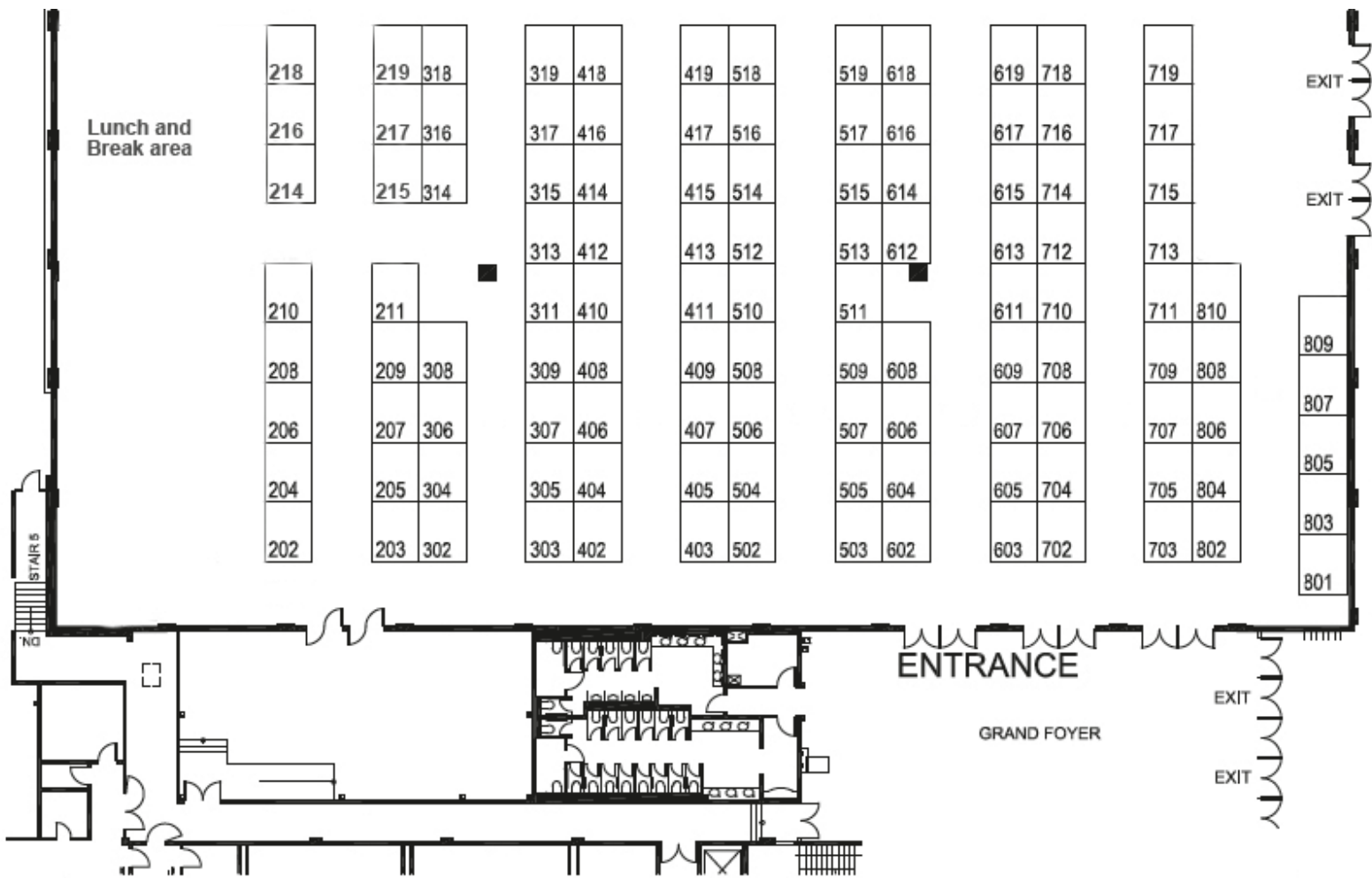
[www.mrcy.com](http://www.mrcy.com)

**Metamagnetics 613**

Metamagnetics is revolutionizing wireless and microwave system design and deployment. It has developed next-generation materials and is a leader in the integration of these materials into the RF and microwave components you need to overcome front-end power and noise interference challenges like never before. The company's products are designed to enhance the performance and effectiveness of mission-critical radar, communication, and power supply systems. Its mission is to ensure unfettered access to the electromagnetic spectrum and enable microwave and RF system designers to make a true "quantum leap" into the future.

[www.mtmgx.com](http://www.mtmgx.com)

# GOMACTech-23 EXHIBITION FLOOR PLAN



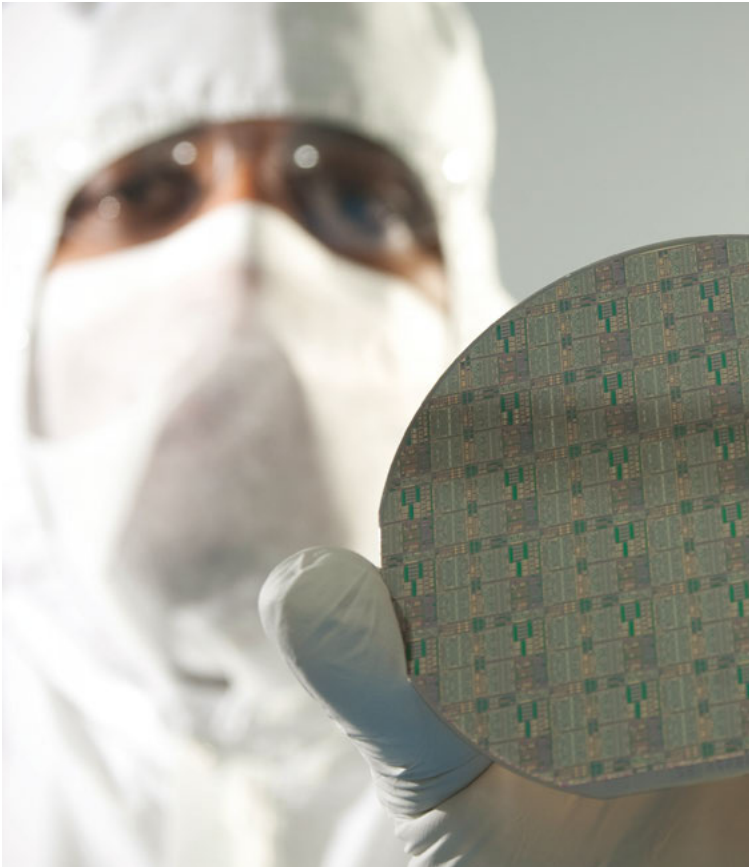
## Innovation for a more connected world

Join us at booth 710 to learn about our enabling initiatives in microelectronics.

[rtx.com](http://rtx.com)



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# GOMACTech-23 EXHIBITORS

<b>Company Name</b>	<b>Booth Number</b>	<b>Company Name</b>	<b>Booth Number</b>
3D Glass Solutions, Inc.	616	Microsanj	805
Advanced Test Equipment Corp.	712	Micross Components	719
Alphacore, Inc.	210	MIT Lincoln Laboratory	810
Andes Technology Corp.	315	The MOSIS Service, ISI, USC	414
Astronics Test Systems	504	Nano OPS, Inc.	308
Avalanche Technology	518	Nimbis Services, Inc.	511
BAE Systems	617	Noble Metal Services	807
Battelle	202	Northrop Grumman	604
Boeing	716	NSTXL	203
Bruker	508	onsemi	514
C&D Semiconductor Services, Inc.	706	Otava	207
Cactus Materials, Inc.	405	Ozark Integrated Circuits, Inc.	206
Cadence	517	PacTech USA, Inc.	718
Caspia Technologies	306	Palomar Technologies, Inc.	211
Central Semiconductor Corp.	305	Penn State University Applied Research Laboratory	715
Checkpoint Technologies	802	Photronics, Inc.	318
Chip Scan, Inc.	416	QML, Inc.	407
Codasip	804	QP Technologies	302
CoolCAD Electronics	217	Quantum Design International	309
Cryptography Research at Rambus	303	QuickLogic Corp.	403
Cycuity	711	Raith America, Inc.	417
Defense Technical Information Center (DTIC)	808	Raytheon Technologies Research Center	710
DMEA TAPO	612	Real Intent	507
ENGIN-IC, Inc.	411	Riscure	510
Evatec North America	406	Rochester Electronics LLC	506
Exodus Advanced Communications	304	Rogers Corp.	509
Extreme Waves	402	Siemens	513
Finetech USA	607	Silicon Assurance	707
Flex Logix, Inc.	618	Silitronics Solutions, Inc.	611
Frontgrade	609	SkyWater Technology	404
GDSI	714	Special Design + Test, Inc.	410
Globalfoundries U.S., Inc.	503	Spirit Electronics	307
Golden Altos Corp.	502	SRI International	419
Graf Research Corp.	713	StratEdge Corp.	702
HRL Laboratories LLC	215	Sumitomo Electric USA	208
IBM	319	Synopsys	703
Indiana Integrated Circuits LLC	717	Tektronix Component Solutions	809
Integra Technologies LLC	418	Tenet 3 LLC	204
Intrinsic ID	317	Top Talent Search Experts LLC	512
Intrinsic Corp.	602	TopLine Corp.	615
JEOL USA, Inc.	603	Toppan Photomasks Round Rock, Inc.	515
Jazz Semiconductor Trusted Foundry	316	Trusted Semiconductor Solutions, Inc.	311
Kansas City National Security Campus	614	University of California, Davis	709
Keyence Corp. of America	801	Vistec Electron Beam	313
Keysight Technologies	704	VORAGO Technologies	411
Knowles Precision Devices	409	Wolfspeed	806
Linear Integrated Systems	209	XTREME Semiconductor	408
Marvell Government Solutions	516		
Menta eFPGA, Inc.	605		
Mercury Systems	606		
Metamagnetics	613		
Microchip Technology, Inc.	314		
Micropac	708		

**Microchip Technology, Inc.** 314

Microchip Technology is a leading provider of smart, connected, and secure embedded control solutions. Its easy-to-use development tools and comprehensive product portfolio enable customers to create optimal designs, which reduce risk while lowering total system cost and time to market. The company's solutions serve more than 120,000 customers across the industrial, automotive, consumer, aerospace and defense, communications, and computing markets. Headquartered in Chandler, Arizona, Microchip offers outstanding technical support along with dependable delivery and quality.

[www.microchip.com](http://www.microchip.com)

**Micropac** 708

Micropac Industries manufactures and designs microelectronic and optoelectronic components and modules for the hi-rel industrial, medical, military, aerospace, and space markets. Micropac offers standard and custom products, including optocouplers, LEDs, Hall Effect sensors, solid-state relays, power controllers, high-temperature voltage regulators, and multi-chip modules.

[micropac.com](http://micropac.com)

**Microsanj** 805

Microsanj is a leading provider of high-resolution transient thermal imaging solutions and services for commercial and research applications. The systems are based on optical thermoreflectance characterization, digital signal processing, and advanced software algorithms to support electronic and optoelectronic components measurement, thermal design validation of ICs, defects, and failure analysis.

[www.microsanj.com](http://www.microsanj.com)

**Micross Components** 719

Micross is a complete provider of advanced microelectronic services and component, die, and wafer solutions. With among the broadest authorized access to die and wafer suppliers, and comprehensive advanced packaging, assembly, modification, and test capabilities, Micross is uniquely positioned to provide unparalleled high-reliability solutions from bare die to fully packaged devices, to complete program lifecycle sustainment. For more than 40 years, Micross has been a trusted source for the aerospace, defense, space, RF, power, medical, energy, and industrial markets. Micross brands include: semidice; silicon turnkey solutions; advanced interconnect technologies; hi-rel components; hi-rel RF solutions (KCB Solutions); hi-rel diodes;

hi-rel data bus products (PAAL Technologies); component modification services; and die and wafer solutions.

[www.micross.com](http://www.micross.com)

**MIT Lincoln Laboratory** 810

The Microelectronics Laboratory is a state-of-the-art semiconductor research and fabrication facility that supports the design, fabrication, and packaging of novel devices.

[www.ll.mit.edu](http://www.ll.mit.edu)

**The MOSIS Service, ISI, USC** 414

The MOSIS Service was founded in 1981 at Information Sciences Institute, Viterbi School of Engineering of University of Southern California. DARPA provided the contract for The MOSIS Service to facilitate the first manufacturing projects for fabless organizations. The MOSIS Service pioneered the multi-project wafer (MPW) model. The MOSIS Service has processed over 60,000 designs at more than a dozen foundries. Customers of The MOSIS Service have included US Government Laboratories, foreign and domestic corporations, and foreign and domestic universities. MOSIS has enabled IC designers to prototype innovative semiconductor designs in CMOS FinFET, FD-SOI, bulk, III-V compound GaAs and GaN, high-voltage BCD, and other specialty processes.

[www.themosisservice.com](http://www.themosisservice.com)

**Nano OPS, Inc.** 308

Nano OPS provides a purely additive manufacturing platform, "Factory-in-a-Tool" for advanced packaging and semiconductor manufacturing applications. The company's patented, highly versatile manufacturing platform delivers nano and microscale manufacturing capabilities in a single tool. The patented processes can be used to make devices using a variety of materials such as semiconductors, metals, and dielectrics. Nano OPS' "Fab-in-a-Tool" brings to the manufacturers of semiconductors, advanced packaging, displays, and sensors a disruptive solution to make high-end products at substantially lower capital and manufacturing costs.

[nano-ops.net](http://nano-ops.net)

**Nimbus Services, Inc.** 511

Nimbus Services is a trusted name in secure, large-scale, high-performance, and technical cloud computing, with a proven record of identifying, developing, and transitioning novel technology to the DoD microelectronics community. The Emulation Foundry, new in 2022, provides cycle-accurate accelerated verification, hardware/software co-development, and second-order effects analysis of integrated circuit (IC) digital twins. The Virtual Lab for Workforce Development provides a platform for interactive, hands-on learning for state-of-the-art IC hardware assurance methods to ensure the DoD microelectronics workforce has the knowledge and experience to address emergent threats. Since 2018, the Trusted Silicon Stratus (TSS) has powered collaborative R&D, analysis, verification, and tapeout of advanced-node analog, digital, mixed signal, photonics, radiation hardened, and RF ICs for the DoD.

[www.NimbusServices.com](http://www.NimbusServices.com)

**Noble Metal Services** 807

Noble Metal Services offers the following: precious metal refinery, reclamation, metal supply, vacuum deposition shield, and fixture cleaning

[www.noblemetalservices.com](http://www.noblemetalservices.com)

**Northrop Grumman** 604

Northrop Grumman is a leading global aerospace and defense technology company. Its pioneering solutions equip customers with the capabilities they need to connect and protect the world and push the boundaries of human exploration across the universe. Driven by a shared purpose to solve customers' toughest problems, its 95,000 employees define possible every day.

[www.northropgrumman.com](http://www.northropgrumman.com)

**NSTXL** 203

The Strategic & Spectrum Missions Advanced Resilient Trusted Systems (S2MARTS) is the DoD's premier, rapid OTA contracting vehicle for flexible acquisition in trusted microelectronics, strategic and spectrum mission, and other critical mission areas.

<https://s2marts.org>

**onsemi** 514

onsemi is driving disruptive innovations to help build a better future. With a focus on automotive and industrial end-markets, the company is accelerating change in megatrends such as vehicle electrification and safety, sustainable energy grids, industrial automation, and 5G and cloud infrastructure. onsemi offers a highly differentiated and innovative product

portfolio, delivering intelligent power and sensing technologies that solve the world's most complex challenges and lead the way to creating a safer, cleaner, and smarter world.

[www.onsemi.com](http://www.onsemi.com)



**Otava** 207

Otava is a fabless RF semiconductor company based in Moorestown, NJ, composed of industry veterans in RF front-end integrated circuit designs in SiGe, SOI, GaN, and GaAs designs for 5G, satellite communications, and defense platforms. Its multi-year series of product launches of 6 RF/mmWave chips in silicon and reference design kits with AMD-Xilinx RFSoc Gen 3 evaluation boards inform state-of-the-art technologies in RF components and subsystems. Otava's chips include 24-40GHz beamforming chips, silicon tunable filters spanning from 2.5 GHz to 40 GHz, and wideband RF switches. Otava will unveil its 24-30GHz phased active antenna array module at this show.

[www.otavainc.com](http://www.otavainc.com)

**Ozark Integrated Circuits, Inc.** 206

Ozark is a provider for rugged system solutions for all environments.

[ozarkic.com](http://ozarkic.com)

**PacTech USA, Inc.** 718

PacTech USA in Silicon Valley comprises three business units: Equipment Manufacturing: manual and automatic ENIG and ENEPIG plating tools, laser solder jetting equipment, wafer-level solder ball transfer systems, laser-assisted flip-chip bonders. Subcontract Services: flip-chip and wafer-level package bumping services including ENIG or ENEPIG for UBM (solder bumping) or OPM (wirebond). Other services include electroplating, laser solder jetting, solder rework and solder reballing, wafer-level solder balling, re-passivation, RDL, backmetal, wafer thinning, wafer dicing, tape and reel, AOI, X-ray, SEM, FIB. Chemistry: pre-treatment and process chemistry for electroless plating.

<https://pactech.com>



**Palomar Technologies, Inc.** 211

Palomar Technologies makes the connected world possible by delivering its Total Process Solution for advanced photonic and microelectronic device assembly processes utilized in today's smart, connected devices. With a focus on flexibility, speed and accuracy, Palomar's Total Process Solution includes Palomar die bonders, Palomar wire and wedge bonders, SST vacuum reflow systems, and Innovation Centers for outsourced manufacturing and assembly, as well as Customer Support services, which together deliver improved production quality and yield, reduced assembly times, and rapid ROI. With its deep industry expertise, Palomar equips customers to become leaders in the development of complex, digital technologies that are the foundation of the connected world and the transmission of data generated by billions of connected devices.

[www.palomartechnologies.com](http://www.palomartechnologies.com)

**Penn State University Applied Research Laboratory** 715

The Pennsylvania State University's (PSU) Applied Research Laboratory (ARL) delivers advanced science, technology, and systems to the Department of Defense. PSU ARL is a designated University Affiliated Research Center and comprises four offices: Fluid Dynamics and Acoustics, Materials and Manufacturing, Communications/Information and Navigation, and Undersea Systems. PSU ARL is also designated the ManTech Electronics Manufacturing Center of Excellence (EMCOE) for the Office of Naval Research (in 2021). The core mission of the EMCOE is to identify, develop, and facilitate the transition of electronic manufacturing technologies for electrical and electronic (digital and analog) systems and devices and support power storage and distribution infrastructure solutions for naval applications.

[www.arl.psu.edu](http://www.arl.psu.edu)



**Photronics, Inc.** 318

For more than 50 years, Photronics has done one thing and done it well. With laser focus, an unwavering commitment to quality, dedicated employees, and constructive customer collaboration, the company has grown into a leading global enterprise. Its photomask products, services, and technologies have provided the manufacturing foundation for state-of-the-art mobile devices, PCs, TVs, displays, and a host of other products that people rely on every day.

[www.phptronics.com](http://www.phptronics.com)

**QML, Inc.** 407

QML is a premier source for precious metal reclamation and recycling services, with over 50 years of experience helping customers maximize the value of their gold, silver, platinum, palladium, rhodium, iridium, ruthenium, and copper waste streams. Whether through global sourcing or processing in its 50,000-square-foot secure and environmentally friendly facility in North Smithfield, Rhode Island, QML is committed to conducting business responsibly, and in a manner that protects the safety of its employees, customers, community, and the environment.

[www.qml.us](http://www.qml.us)

**QP Technologies** 302

QP Technologies (formerly Quik-Pak) offers a range of services to meet your packaging and assembly requirements. These include wafer preparation (backgrinding, dicing, die sort, and inspection); IC assembly for a variety of package types and materials, as well as die attach, wire bonding, flip chip, encapsulation, and marking; advanced assembly for new and complex packaging structures; laser micromachining; and design and engineering. In addition, QP supports design, fabrication, and assembly of PCBs for MCM and SiP applications. The company's PCB supply chain is solid and supports FR-4 to ABF, fine line/spacing. QP Technologies has added wire bond equipment to support heavy AI wire and challenging RF requirements.

[www.qptechnologies.com](http://www.qptechnologies.com)

**Quantum Design International** 309

Quantum Design manufactures automated material characterization systems (PPMS, MPMS3), providing temperatures from 0.05 to 1000 K, magnetic fields up to 16 Tesla, and a wide range of measurements, including: magnetometry, electrical transport, heat capacity, thermal transport, and FMR spectroscopy. In addition, Quantum Design manufactures helium liquefiers and recovery systems, and an innovative 7 Tesla magneto-optical cryostat (OptiCool). Quantum Design recently introduced FusionScope a novel microscopy platform designed from the ground up to add the benefits of SEM imaging to a wide range of AFM measurement techniques. FusionScope offers characterization techniques ranging from high-resolution AFM and SEM imaging to analyzing topographical, nanomechanical, chemical, electrical, and magnetic properties with the power of correlative microscopy. The company also distributes a unique top-loading cADR system offering continuous cooling at 300 mK and one-shot operation to 100 mK, Direct Write lithography system, quantum education kits, nitrogen vacancy (NV) based scanning magnetometer and superconducting nanowire based single photon detectors, and associated time tagging electronics.

[www.qdusa.com](http://www.qdusa.com)



**QuickLogic Corp.****403**

QuickLogic is a publicly traded, US-owned, trusted supplier of FPGA and eFPGA cores with a proven 30+ year track record in delivering millions of units for commercial, ruggedized, and mission-critical applications. Five of the top five and eight of the top ten DoD primes use QuickLogic's technology today. The company's Australis eFPGA IP generator leverages foundry standard cell libraries, enabling it to go from concept to tapeout of a customized FPGA/eFPGA for any process node in as little as days. In addition to its proprietary Aurora FPGA User Tools, QuickLogic is one of the first FPGA vendors to ship products with 100% open-source FPGA user tools, supporting RTL-to-bitstream for fully transparent and inspectable FPGA user tools.

[www.quicklogic.com](http://www.quicklogic.com)

**Raith America, Inc.****417**

Raith develops leading-edge lithography systems enabling compound semiconductor customers to drive innovation and production. Its maskless electron beam, laser beam, and focused ion beam patterning solutions cover the full range, from  $\mu\text{m}$  structures to sub 10nm critical device fabrication. The Raith product portfolio is complemented by automated SEM-based chip analysis and process control systems. Its worldwide service and customer support structures are backed by experienced experts in Raith's international applications and development centers. The company is fully committed to further pushing the limits of nanofabrication in close collaboration with its outstanding customer base.

[www.raith.com](http://www.raith.com)

**Raytheon Technologies Research Center 710**

As the central innovation hub for Raytheon Technologies and its businesses, the Raytheon Technologies Research Center puts technical vision to work. Its engineers, scientists, and researchers anticipate the discoveries destined to change everything, and they help the company's businesses – Collins Aerospace, Pratt & Whitney, Raytheon Intelligence & Space, and Raytheon Missiles & Defense – transform that research into solutions and products that shape the future of aerospace and defense. The research center is empowering innovation across the company, solving customers' critical problems, developing breakthroughs for a safer, sustainable, and more connected world, partnering with universities and national laboratories on groundbreaking research projects in complex integrated systems, advanced materials and manufacturing, autonomy-enabling technologies, electrification and sustainability, and disruptive technologies.

[www.rtx.com/our-company/what-we-do/transformational-technologies/rtrc](http://www.rtx.com/our-company/what-we-do/transformational-technologies/rtrc)

**Real Intent****507**

Real Intent provides intent-driven static sign-off EDA software tools to accelerate early functional verification and advanced sign-off of digital designs. Its static sign-off product capabilities include multi-mode clock domain crossing; multi-scenario reset domain crossing; multi-test mode DFT; multi-policy RTL linting, connectivity and glitch, design initialization, and formal linting. Real Intent customers include more than 50 major semiconductor and systems companies.

[www.realintent.com](http://www.realintent.com)

**Riscure****510**

Riscure is a large global security evaluation lab and market leader for side-channel and fault injection test equipment. Riscure provides security services, tools, and training to help customers around the world enhance the resilience of their solutions, protect sensitive information, and speed up the process of development and certification. Riscure challenges the security of embedded systems through its leading test equipment, by using thorough and inventive testing to discover security weaknesses in both hardware and software.

[www.riscure.com](http://www.riscure.com)

**Rochester Electronics LLC****506**

Rochester Electronics is one of the world's largest continuous sources of semiconductors – 100% authorized by over 70 leading semiconductor manufacturer stocking distributors. As an original manufacturer stocking distributor, Rochester has over 15 billion devices in stock, encompassing more than 200,000 part numbers, providing the world's most extensive range of end-of-life (EOL) semiconductors and the broadest range of active semiconductors. As a licensed semiconductor manufacturer, Rochester has manufactured over 20,000 device types. With over 12 billion die in stock, Rochester has the capability to manufacture over 70,000 device types. Rochester offers a full range of manufacturing services including design, wafer processing, assembly, test, reliability, and IP archiving, providing single solutions through to full turnkey manufacturing, enabling faster time-to-market.

[www.rocelec.com](http://www.rocelec.com)

**Rogers Corp.** 509

Rogers delivers advanced material solutions solving design issues such as signal integrity, radio frequency (RF) signal management, power efficiency, and thermal management to deliver improved device and system reliability. These solutions include high-frequency laminates, bondplys, and prepregs. Rogers operates manufacturing facilities in the United States, Asia and Europe.

<https://rogerscorp.com>

# SIEMENS

**Siemens** 513

Siemens is driving transformation to enable a digital enterprise for electronic systems, including 2.5D/3D heterogeneous integration, packaging, and multi-domain system design and verification. Xcelerator, the integrated portfolio of software and services from Siemens, helps companies of all sizes create and leverage a comprehensive digital twin that provides organizations with new insights and opportunities to drive innovation. See the latest in Questa formal and verification, emulation with Veloce, system-level packaging with XSI/XPD, high level design and synthesis with Calypto, physical design implementation with Aprisa, circuit simulation and verification with AFS/Solido, DFT for chip and 2.5/3DIC modules with Tessent, and signoff with the Calibre product solutions.

[siemens.com](https://siemens.com)

**Silicon Assurance** 707

Silicon Assurance develops hardware security software to address trust and assurance issues in silicon chips designed by semiconductor companies and system OEMs. Its automated tool will reduce the time required by verification and hardware security engineers to check the security of chip design, prevent data leakage from the system by detecting vulnerabilities, and save revenue for companies by protecting IP blocks.

<https://siliconassurance.com>

**Silitronics Solutions, Inc.** 611

Silitronics offers value-added IC package design and assembly services from concept to NPI to high-volume production, guided by a "First Time Right" philosophy. Silitronics' team has the expertise to propose, develop, and implement cost-effective solutions from concepts to finished products while meeting schedules and exceeding specifications. Silitronics has fully automated equipment: flip chip with +/- 0.5um placement, auto dispensing and pick/place within +/- 3um accuracy, automatic wire bonders for tight pitch of 45um, 200um wire length and 50um loop height, automatic eutectic,

and hermetic sealing, SMT line for PCBA, 3D laser microscope, die shear, X-ray and wire pull tester for quality control. One of Silitronics' key differentiated services is assembly process development. Many NPI package assemblies are so advanced that there is no precedence and they do not fit in a standard assembly template. This requires development of test vehicles, identification of right material sets, careful process control, monitoring of assembly parameters through well-crafted design of experiments (DOE), and even investments in new equipment.

[www.silitronics.com](https://www.silitronics.com)

**SkyWater Technology** 404

SkyWater is a US investor-owned semiconductor manufacturer and a DMEA-accredited Trusted supplier. SkyWater's technology as a service business model streamlines the path to production for customers with development services, volume production, and heterogeneous integration solutions in its world-class US facilities. This pioneering model enables innovators to co-create the next wave of technology with diverse categories including mixed-signal CMOS, ROICs, rad-hard ICs, power management, MEMS, superconducting ICs, photonics, carbon nanotubes and interposers. SkyWater serves growing markets including aerospace and defense, automotive, biomedical, cloud and computing, consumer, industrial and IoT.

[www.skywatertechnology.com](https://www.skywatertechnology.com)

**Spectral Design + Test, Inc.** 410

Spectral Design and Test (SD&T) is a worldwide leader in specialized embedded memory. Its products target the commercial and mil/aero/DoD markets. Spectral offers intellectual property (IP) for IOT/5G/ML applications, in the form of specialized embedded SRAM memories as part of its MemoryIP portfolio. Spectral has a broad portfolio of offerings, from AI-optimized SRAMs, low-power IoT memories, and radiation-hardened-by-design memories (RHBD) to other specialized memory architectures like TCAMs. The company's Memory Development platform software enables mil/aero companies to build their own RHBD memory compiler solutions. Using MemoryCanvas, the flagship memory development software, memory compilers can be developed with an ease of use and productivity level unmatched in the industry. The MemoryTime product enables designers to model, analyze, and characterize embedded memory compilers and macros to generate the most advanced timing/noise/power/test EDA views required for a complete SOC implementation.

[www.spectral-dt.com](https://www.spectral-dt.com)

**Spirit Electronics 307**

Spirit Electronics offers contract manufacturing and value-added services along with component distribution. Its services include circuit board assembly and rework, BOM management, and component and system level test, all under one roof. It can provide many electronic components from multiple suppliers so customers can place one order and track one shipment instead of many. Product lines include bare die and wafers, power, memory, FPGAs, ASICs – everything you need to build out a high-reliability board that can perform in even the harshest environments. Spirit Electronics is a certified veteran-owned, woman-owned business with HUBZone certification serving the aerospace and defense industries for more than 40 years. Its team and business have expanded to offer tailored packaging, screening, order management, and logistics services, including SMI (supplier managed inventory).

[www.SpiritElectronics.com](http://www.SpiritElectronics.com)

**SRI International 419**

SRI International designs and manufactures form, fit, and function replacements for obsolete microcircuits. Utilizing a Trusted wafer foundry and specialized design and test approaches, SRI provides QML-certified (MIL-PRF-38535) units. Through the generalized emulation of microcircuits (GEM) and the advanced microcircuit emulation (AME) programs sponsored by DLA, a permanent solution is provided.

[www.gemes.com](http://www.gemes.com)

**StratEdge Corp. 702**

StratEdge designs, manufactures, and provides assembly services for a complete line of high-frequency and high-power semiconductor packages operating from DC to 63+ GHz. StratEdge offers post-fired ceramic, low-cost molded ceramic, and ceramic QFN packages, and specializes in packages for extremely demanding gallium arsenide (GaAs) and gallium nitride (GaN) devices. Markets served include telecom, VSAT, broadband wireless, satellite, military, test and measurement, automotive, clean energy, and down-hole. All packages are lead-free and most meet RoHS and WEEE standards. StratEdge assembly services have a Class 1000 cleanroom with Class 100 work areas for performing sensitive operations. It is fully equipped with the most modern assembly equipment, enabling high-speed, deep access, fine-wire wedge, and ribbon bonding. The component placement die attach system is the fastest and most reliable multiple die-type bonder on the market. It enables StratEdge to offer highly accurate, repeatable placement and includes a station for automated eutectic die attach utilizing proprietary processes that yield ultra-thin, low void solder joints.

[www.stratedge.com](http://www.stratedge.com)

**Sumitomo Electric USA 208**

Sumitomo offers advanced thermal management materials for heat spreaders, carriers, submounts, and shims. Materials include silver diamond, copper diamond, copper moly and copper tungsten, single crystal diamond, CPC laminates, and ceramics.

<https://sumitomoelectric.com/all-products>

**Synopsys 703**

Synopsys enables government, aerospace, and defense companies, as well as their partners and ecosystems, to build and deploy advanced systems that exceed mission requirements and address challenging application demands, including C4ISR, EW, security, safety, longevity, and reliability in extreme environments with low size, weight, and power (SWaP) from sea to space. Synopsys is a US DoD-trusted design service supplier.

[www.synopsys.com/aerospace-government.html](http://www.synopsys.com/aerospace-government.html)

**Tektronix Component Solutions 809**

Tektronix Component Solutions is a DMEA Category 1A Microelectronics Trusted Source specializing in wafer test, package assembly and test, 2.5D/3D packaging, and design and simulation. It has a rich history of delighting customers by solving tough technical challenges through its microelectronics design, test, and manufacturing services. In addition, the company takes pride in – and is known for – its deep collaboration and responsiveness to delight customers. It has more than 50 years of manufacturing experience across a diverse range of products and customers, specializing in partnerships with the defense industry.

[www.tek.com/en/component-solutions](http://www.tek.com/en/component-solutions)

**Tenet 3 LLC 204**

Tenet 3 specializes in revealing hidden security risks in systems, software, and hardware. As a model-based systems engineering (MBSE) firm focused on analytics and security, Tenet 3 provides data driven models of systems and software/hardware supply chains. Its graph-based approach to MBSE unlocks value from legacy and proprietary data formats to provide human understandable and machine-readable models capable of supporting a flexible range of analyses across the lifecycle: forming a digital thread of your system from an as-designed, as-built, and as-operating perspective. Its DevSecOps Cloud Team can support secure cloud infrastructure and on-premises delivery options for sensitive data curation and analytics.

[www.tenet3.com](http://www.tenet3.com)

**Top Talent Search Experts LLC 512**

Top Talent Search Experts helps clients in the test and measurement, power electronics, aerospace, avionics, and semiconductor industries find the most talented engineers, managers, executives and technical sales professionals available in today's competitive marketplace.

[www.tt-se.com](http://www.tt-se.com)



**TopLine Corp. 615**

TopLine is a manufacturer of CGA solder columns for FPGA and ASIC devices for defense and space. It is also a manufacturer of vibration dampers and high-reliability gold bonding wire and ribbon for chips for defense electronics. BGA and CGA Daisy Chain test components are used for profiling and thermal life cycle studies.

[www.topline.tv](http://www.topline.tv)

**Toppan Photomasks Round Rock, Inc. 515**

Toppan Photomasks is a Round Rock F1A (Trusted) accredited photomask products and data services provider.

[www.photomask.com/](http://www.photomask.com/)

**Trusted Semiconductor Solutions, Inc. 311**

Trusted Semiconductor Solutions is a high reliability semiconductor design and product development company with expertise in radiation hardened microelectronics. Its fabless business model enables solutions utilizing state-of-the-practice (SOTP) and state-of-the-art (SOTA) technology through foundry partnerships. It specializes in IC design, semiconductor IP development, chiplet products, and high-density package solutions. Trusted Semiconductor Solutions is a Category 1A Trusted accredited small business and a non-traditional defense contractor. It is known for its exceptional flexibility and for being a single point of contact with customers for product development needs, offering services from design to delivery with unparalleled program management, consulting, and customer service.

[www.trustedsemi.com](http://www.trustedsemi.com)

**University of California, Davis 709**

University of California, Davis, features its Center for Hardware and Embedded Systems Security and Trust.

<https://iucrc.nsf.gov/center-for-hardware>

**Vistec Electron Beam 313**

Vistec Electron Beam GmbH is a leader in the design and manufacture of electron-beam lithography systems. The company provides systems to both key semiconductor manufacturers as well as advanced research. The application areas span a wide range of existing and emerging semiconductor and nanotechnology applications including silicon direct write, compound semiconductor, mask making, advanced research, integrated optics, and photonics. The company provides variable shaped beam lithography systems and is located in Jena, Germany. In addition to its production facility in Germany, Vistec Electron Beam maintains service and support centers in Europe, China, Taiwan and also in the US.

[www.Vistec-Semi.com](http://www.Vistec-Semi.com)

**VORAGO Technologies 411**

VORAGO Technologies is a privately held, high technology company based in Austin, Texas, with over 15 years of experience in providing radiation-hardened and extreme-temperature solutions for the hi-rel marketplace. VORAGO's patented HARDSLIL technology uses cost-effective high-volume manufacturing to harden any commercially designed semiconductor component for extreme environment operation and has created a number of solutions throughout aerospace, defense, and industrial applications, with a proven flight heritage. VORAGO has been named as one of Inc.'s 5000 Fastest Growing Companies in the US.

[voragotech.com](http://voragotech.com)

**Wolfspeed 806**

Wolfspeed leads the market in the worldwide adoption of Silicon Carbide and GaN technologies. We provide industry-leading solutions for efficient energy consumption and a sustainable future. Wolfspeed's product families include Silicon Carbide materials, power devices and RF devices targeted for various applications such as electric vehicles, fast charging, 5G, renewable energy and storage, and aerospace and defense. We unleash the power of possibilities through hard work, collaboration and a passion for innovation.

[wolfspeed.com](http://wolfspeed.com)

**XTREME Semiconductor 408**

A "solutions" company providing support for legacy systems, XTREME Semiconductor is a "MIL-PRF-38535 QML certified" manufacturer, providing re-manufacturing of legacy components. Its newest solution in the fight against product obsolescence is its "Chip Recovery (ChiPR) Product," a game changer in the fight against obsolescence. As a leader in counterfeit product detection, XTREME Semiconductor offers "Certified EOL Product" designation, providing peace of mind and assurance that you are receiving only authentic OCM material.

[www.xtremesemi.com](http://www.xtremesemi.com)

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# **GOMACTech-24**

**March 25-28, 2024**

**Embassy Suites by Hilton  
Charleston Convention Center**

**Charleston, SC**



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# Linear InGaAs Optical Receiver Lab Buddy with Automatic Gain Control up to 56 Gbaud

**RECOGNIZED IN THE MILITARY AND AEROSPACE ELECTRONICS INDUSTRY, DISCOVERY SEMICONDUCTORS DOES NOT FAIL TO DELIVER WHEN IT COMES TO THE DSC-R421.**

The DSC-R421 is a linear PIN + transimpedance amplifier that is primarily designed for 4-level Pulse Amplitude Modulation (PAM 4) and NRZ-ASK (PAM 2) modulation formats up to 56 Gbaud symbol rate in 1310 nm and 1550 nm single-mode systems. The R421 offers a variety of user-adjustable characteristics such as mode of operation (AGC or manual gain control), RF gain, output amplitude, and bandwidth.

The DSC-R421 is available in Discovery's computer-controlled Lab Buddy instrument, where several critical parameters can be controlled and monitored locally or remotely using Standard Commands for Programmable Instruments (SCPI) compatible commands via standard RS232C-over-USB interface. The DC photocurrent can be monitored continuously over a nano-ampere (nA) to milli-ampere (mA) range on the Lab Buddy's digital display or via a custom GUI provided by Discovery. Additionally, the GUI can be used to control different functions of the DSC-R421 Lab Buddy.

DSC-R421 is available in a standalone Lab Buddy, or as a line card in our Configurable Lab Buddy platform.

## OPERATING FEATURES

- Two modes of operation: AGC or manual gain control
- Differential conversion gain up to 3000 V/W
- High responsivity at 1310 nm and 1550 nm
- Maximum differential RF output >500 mVpp
- Low optical PDL (0.05 dB typical)

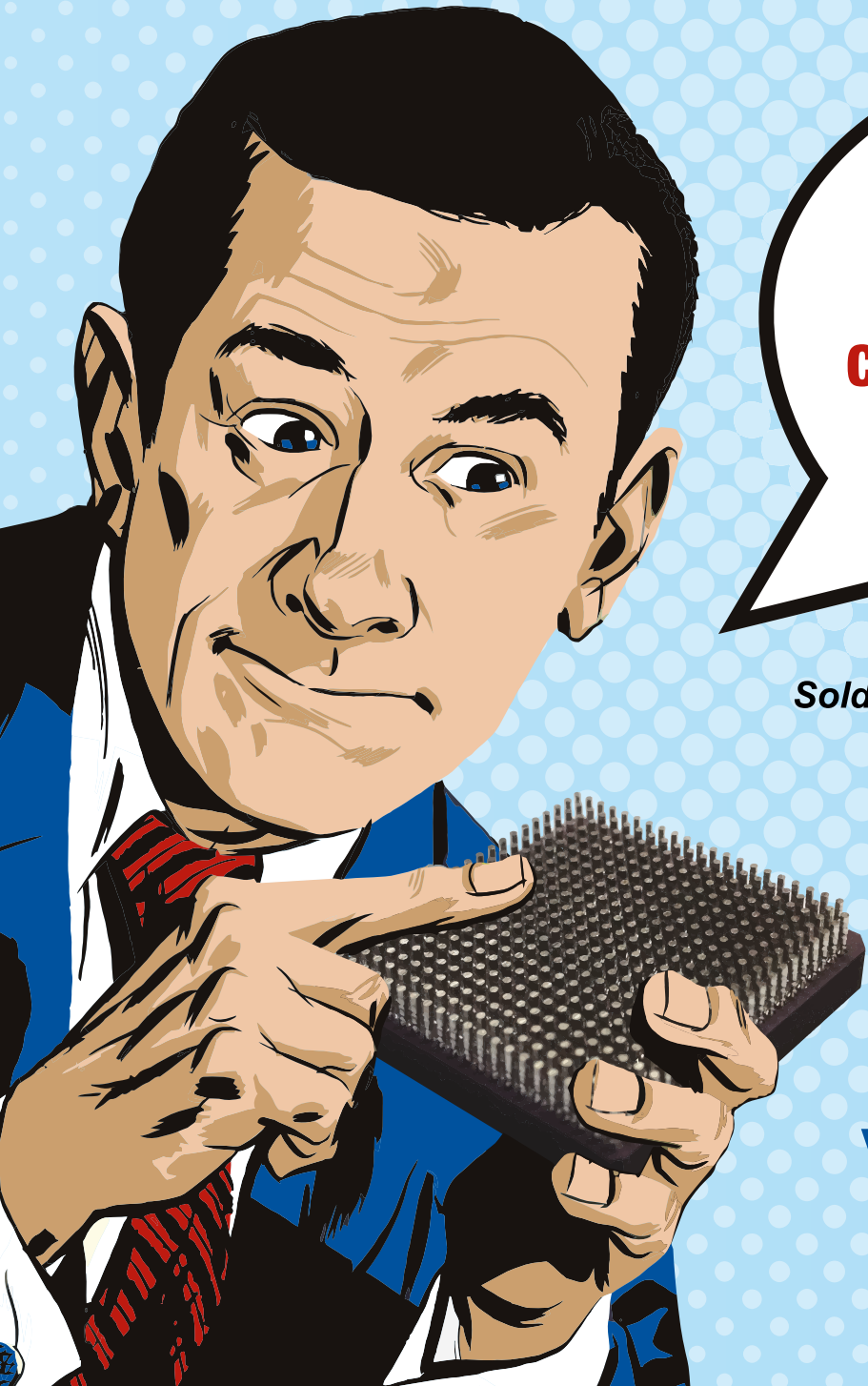
## APPLICATIONS

- Ideal test and measurement optical front-end
- Ethernet: 400 GbE, 800 GbE
- InfiniBand EDR, HDR, and NDR
- Direct detection for PAM4 and NRZ-ASK.
- Fiber Channel: 32GFC, 64GFC, and 128GFC
- RF-over-fiber link



# CCGA

## Column Grid Array



US Patent  
10,477,698

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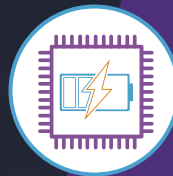
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# GOMACTech-23 Exhibitor Addendum

## **AARD Technology LLC**

**102**

AARD Technology is the North American representative for scia Systems GmbH, a manufacturer of ion beam and plasma process equipment for coating, etching, and finishing in microelectronics, MEMS, and optics industries.

[www.aardtechnology.com](http://www.aardtechnology.com)

## **Chiplytics**

**216**

Chiplytics is building automated and data-driven electrical inspection tools for the semiconductor supply chain, making it easier for companies to screen and validate chips.

<https://chiplytics.io>



## **ENGIN-IC, Inc. (updated booth number)**

**413**

ENGIN-IC provides advanced MMIC and integrated microwave assembly solutions. MMICs are developed using GaN, GaAs, InP, SiC, and more. ENGIN-IC, founded in 2014, is located in Plano, TX, and San Diego, CA. The founders of the company bring a century of microwave product design experience, from MMICs to complex RF subsystems, primarily in the defense and Hi-Rel market. The company has an excellent understanding of both defense market trends and RF designer needs for advanced RF products.

[www.engin-ic.com](http://www.engin-ic.com)



## **Idaho Scientific**

**105**

Idaho Scientific provides FPGA and ASIC security IP to combat physical and cyber threats. Idaho Scientific's portfolio includes platform and chip-scale security products that have been vetted and deployed across a range of DoD systems. Idaho Scientific is known for its work in DPA resistant encryption and x86 runtime security, and also for its RSIC-V secure processors.

[www.idahoscientific.com](http://www.idahoscientific.com)



## **LOCH Technologies**

**218**

LOCH is a global leader in next-generation wireless threat monitoring. The company provides actionable intelligence on all 5G cellular and wireless IoT devices to help organizations improve their security posture, reduce risk, and manage wireless data usage across the enterprise. Every wireless device needs to be visible and secure, regardless of what type of device it is, what protocol it uses, and who owns it. This guides everything LOCH does and why it aims to secure and enable the new world of wireless innovation that will drive the next generation of digital transformation.

[www.loch.io](http://www.loch.io)

## **RFMW**

**104**

RFMW is a premier pure-play technical distributor of RF and microwave components, semiconductors, passive devices, RF interconnect, and T&M accessories. It offers value-add services and design solutions through a focused technical sales and marketing organization ready to support your RF component engineering efforts. From antenna to baseband, RFMW is your source for RF and microwave solutions.

[www.rfmw.com](http://www.rfmw.com)

## **SecureFoundry**

**219**

SecureFoundry is an advanced, low-volume semiconductor manufacturer that provides on-demand, maskless lithography.

[www.securefoundry.com](http://www.securefoundry.com)

## **SiFive**

**100**

SiFive, a high-performance computing platform company at the forefront of RISC-V, delivers superior high-performance compute density for modern workloads, so you can confidently maximize innovation and differentiation for your technology, your products, and your business. Its solutions are ideal for aerospace and defense applications, offering low latency, low power, and a small footprint, supported by a large ecosystem of partners.

[www.sifive.com](http://www.sifive.com)

## **Signature IP Corp.**

**103**

Signature IP was founded in 2021 with 120+ person-years of engineering leadership in NoC solutions for SoC design. It designs coherent and non-coherent NoC designs that are fast, flexible, and configurable, allowing customers to change topology, experiment with settings, and simulate results. Pushbutton RTL generation connects directly with customers' EDA and FPGA environments for implementation. Signature IP's SaaS tool architecture makes tool access easy and reduces IT burden. The company's innovative approach to NoC design will revolutionize the SoC design process and bring new efficiency to the industry.

<https://signatureip.ai>

## **Varioscale, Inc.**

**214**

Varioscale was founded in 2004 to develop systems that would meet the needs of government and commercial semiconductor debug and failure analysis laboratories. Varioscale has taken on the challenge of developing advanced solutions for hardware cybersecurity, including an ambitious project to delayer and image an entire 10nm integrated circuit for verification and validation. It has developed novel tools (Variolon) and high-performance software and hardware systems (CROW) that use ion sputtering, gas chemistry, and optical measurement to delayer with < 10nm precision and stitch and analyze integrated circuit (IC) image layer data. Varioscale continues to provide leading edge tools and capabilities for backside sample preparation and laser-assisted copper deposition with the VarioEdit, ultrathinning IC sample preparation with the VarioMill, and backside IC metrology for remaining silicon thickness measurements with the VarioMetric.

[www.varioscale.com](http://www.varioscale.com)