

DIRECTOR SPOTLIGHT



A spinout of Intersil in 2012, ElevATE's heritage goes back to early 2000 as PlanetATE where many of their solutions were first architected. Their customers include the largest semiconductor test companies, startup test firms, test houses, and semiconductor manufacturers. They have procured products which were designed over 10 years ago and continue to ship on production boards today - ElevATE anticipate their new designs to be available for at least that long, going forward.

Our Editor recently caught up with David Kenyon, President + CEO and Frederick Miller, Vice President, Engineering at ElevATE Semiconductor – who were excited to tell us about the challenges they have today, what will be driving change to the test industry in the future and how ElevATE are ready to meet these demands.

Q: DAVID, FIRSTLY CAN YOU TELL OUR READERS, 'WHAT IS HAPPENING IN THE TEST INDUSTRY AND HOW DOES THAT IMPACT ELEVATE?'

A: DK: Test is changing rapidly, arguably at a faster rate than any time in the past 20-30 years. Technologies like 5G, autonomous vehicles, cameras in and on every device, OLED screens getting larger and larger.. we could go on and on. All of this technology needs to be tested, and with silicon content going up in these products, density and cost of test become key areas for companies – they need to test as many channels as they can in parallel - and do it for the lowest possible cost/in the shortest amount of time. We build the world's most dense test ICs, designed to address this need

specifically. We've been working with our customers, the largest names in test, for the past 15 years in various forms, to address these challenges.

On top of all this, you have a semiconductor industry that is consolidating. The big players are getting even bigger, this has come to our segment of the world as well, with the ADI and Maxim merger. However, unlike the multi-billion-dollar conglomerates with small groups that do ATE ICs as an afterthought, it is our entire business and focus. Our customers look to us to work closely with them and think through the challenges that they are facing, not just today but the ones they see coming down the road. Over time, what we've seen is that public companies often tire of the test space – it requires long, complicated development programs, lots of investment, inventory, and is subject to cyclical swings in the semiconductor capital equipment cycle. Private companies like ours, well-funded with patient money behind them and who are customer focused, stand to prevail in the end.

Q: ON THAT TOPIC – HOW DOES ELEVATE FIT INTO THE TEST ECOSYSTEM AND HOW IS IT POSITIONED FOR THE FUTURE?

A: DK: Elevate is the largest standalone provider of ATE ICs and products for the test and measurement market. We sell into the world's largest test companies, the largest semiconductor design companies and into all types of other non-traditional applications that need analog ICs. During the most recent downturn in 2019, we took the long view of the market and industry and invested in new development, hired new talent and expanded. As we move into 2021,

ELEVATE: WORLD LEADER IN INTEGRATED TEST TECHNOLOGY

BY SMT TODAY EDITOR

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after a crazy 2020 with the pandemic, we are bringing more new products to market than we ever have. We see more and more opportunity for development as we work with tester designers, wanting to use custom or semi-custom ICs, to bring unique capability to their test floors. Having arguably the largest IP library of analog test circuits, we can modify an existing design at a much lower cost than competitors or create a new design that is custom built for a provider looking to hit a particular specification on cost/density/power/etc, for far less investment than others in the industry. We believe this is the right formula for the future – partnering with our customers to address their unique needs.

Q: WHAT TYPES OF ATE SILICON SOLUTIONS ARE NEEDED TO MEET TODAY'S TEST CHALLENGES?

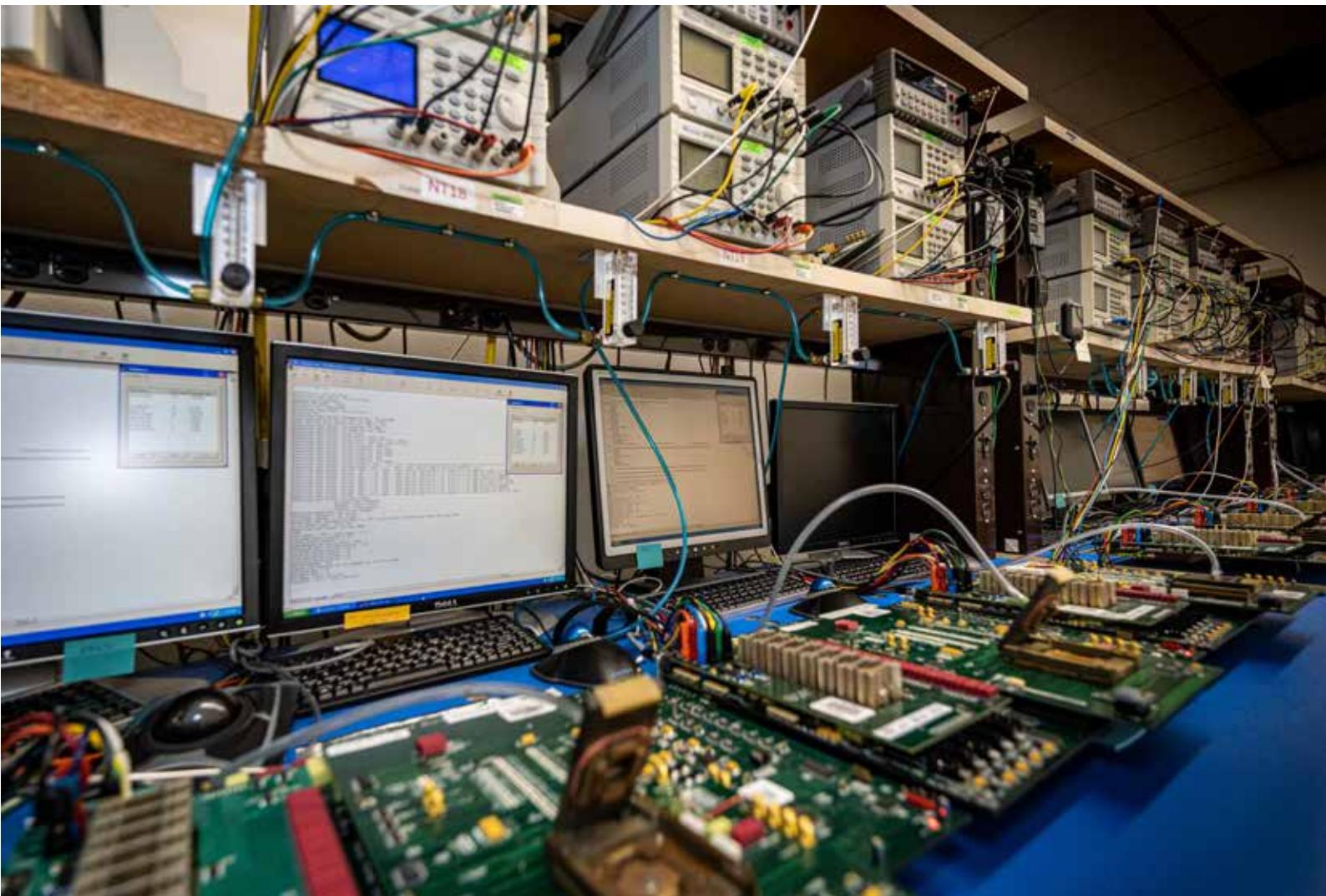
A: FM: Huge growth in Automotive, 5G, IOT and other areas is driving the need for higher speeds, higher voltages and ever higher density ATE solutions. Some ATE systems can have tens of thousands of pins requiring not only smaller devices but to achieve the required channel density you need very low power solutions. ElevATE, since its inception, has pioneered the use of low power CMOS technology in developing fully integrated, high density pin electronics and DPS products with industry leading power dissipation. Our circuit architectures are carefully designed and optimized to get the perfect balance of performance, accuracy and efficiency that only CMOS only process technologies can deliver. With some of the recent performance

advances in CMOS power management process technology, we are able to rival the performance that was once only achievable using Bipolar or BiCMOS technologies, while at the same time cutting the power dissipation by 60% or more. Our latest pin electronic design matches the performance of the previous industry standard design, but at about 1/3 of the power dissipation and 1/2 of the board space.

Q: WHAT TECHNOLOGIES DO YOU SEE AS BIG GROWTH OPPORTUNITIES?

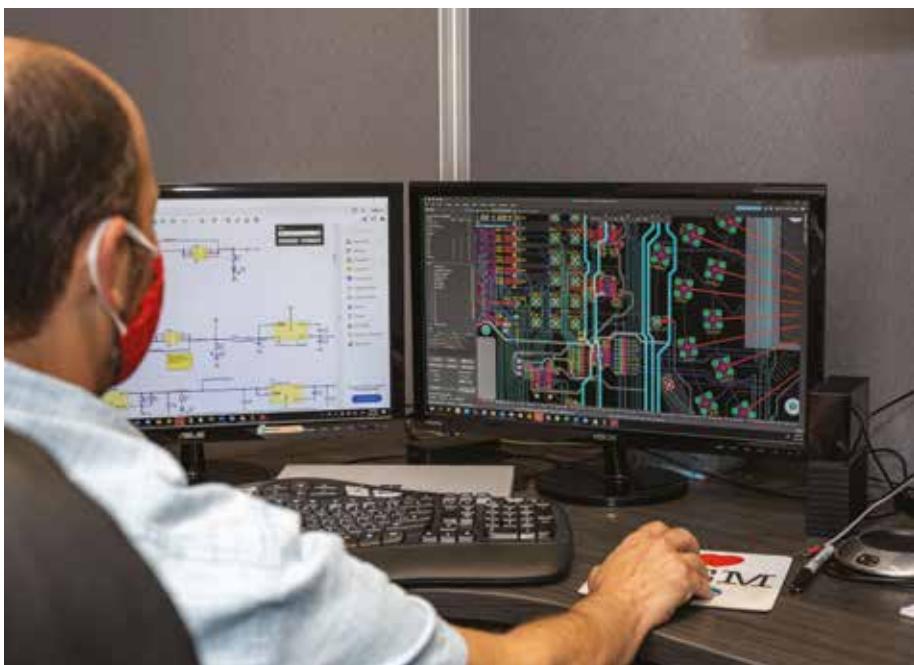
A: FM: There is a growing demand for fully integrated higher voltage pins for automotive and industrial applications. Our customers are building systems that incorporate more and more high voltage pins. They can no longer meet their cost or density needs with discrete solutions and are looking for flexible integrated solutions at even higher voltages. ElevATE has been an industry leader in pushing the technological limits for integrated high voltage devices. Our Saturn high voltage driver was a first and has been a very successful product for ElevATE. Our most recent addition to our high voltage portfolio is the Mt. Whitney which is a fully integrated 60V DPS/PMU. Our proven high voltage architecture will allow us to take advantage of new advances in high voltage process technologies, to move to even higher voltages in the future. We will soon be introducing a new high voltage, high current DPS, Kilauea, which is based on our proven architecture and extends our voltage range to -2V to +26V and up to 1A of current.

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FEATURECONT.

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Q: CAN YOU TELL US 'HOW IS ATE SYSTEM DESIGN EVOLVING?'

A: FM: We see more and more of our customers coming to us trying to solve unique problems with more specific application requirements. Many new ATE systems are being designed for specific applications rather than being designed to meet very broad or universal usage. Being able to focus the instrument design, on only the needs of that specific application, allows faster time to market, significantly lower development costs and lower costs to manufacture that system. The end result to the customer is not only a lower cost of test, but also higher quality test, as there is no need to potentially sacrifice performance in one area to enable the support of a feature or function that might never get used in that application. Our unique ability to enable customers with a cost-effective path to semi-custom designs, when the standard product is not quite right for their application, empowers ATE companies to design products with silicon that they could not otherwise get access to.



Well that has been really interesting, thank you for your time gentlemen. I love how your customer's evolving challenges basically dictate your next generation of products and puts ElevATE in a very unique position.

Q: DAVID WOULD YOU LIKE TO ADD ANY CLOSING COMMENT?

A: DK: Sure! We focus on test and know importance of quality is for our design, manufacturing, and support processes. ElevATE is ISO9001 certified and a continuous improvement organization. Our products go through rigorous qualification thorough testing and characterization before finding their homes on customer boards – in fact, each chip can go through over 3,000 analog tests before being made ready for shipment. As we have demonstrated, we offer numerous ways to customize our products to meet the wide variety of our customer's technical needs.

If you have state of the art technology, you need the best test circuits in the world to test it – engage us and see why our experience, portfolio of world class products and our team are the best in the industry!

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Q: HOW DOES ELEVATE SOLVE THESE TECHNICAL CHALLENGES FOR CUSTOMERS?

A: FM: With our significant portfolio of CMOS optimized portable IP we can move quickly to respond to our customers' needs, if there is a requirement for something we don't currently offer. In addition to all of the standard products we offer, we also provide our customers options for fully custom or semi-custom designs. If there is an application that needs a new feature, a performance extension, or even merging in some of our customers own unique IP, we are able to do that. An advantage that the CMOS technologies we use afford us is that the proven IP can be moved from one process technology to another with less effort and lower risk. We have the flexibility in both our technology and business model that allows our customers to achieve unique solutions they may never have thought they could afford.



At ElevATE, we design and build integrated circuits which test all functions of a semiconductor from the key parametrics: power, speed, voltage, plus the overall system in which the chip is designed to operate.



ELEVATE SEMICONDUCTOR

Technology Leader in Semiconductor Test



Learn More!

Semiconductor ICs for Testing



5G solutions for IoT, WiFi, LTE



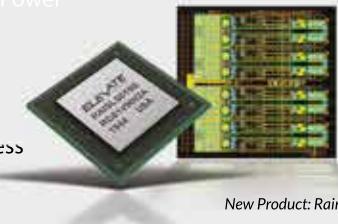
Artificial Intelligence
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5nm Testing
Support Down to 5nm Process



New Product: Rainier



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