



News Release

DNANUDGE SELECTS BENCHMARK FOR VOLUME MANUFACTURING OF RAPID, LAB-FREE COVID-19 TESTING SYSTEM

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TEMPE, Ariz., Sept. 9, 2020 /PRNewswire/ -- **Benchmark Electronics, Inc.** (NYSE: BHE), a global provider of engineering, design, and manufacturing services, and consumer genetic testing pioneers **DnaNudge**, today announced a key manufacturing partnership to deliver volume production of DnaNudge's rapid, lab-free reverse transcription polymerase chain reaction (RT-PCR) COVID-19 testing system. DnaNudge's ground-breaking consumer DNA testing innovation, which requires no lab and delivers results in just over an hour, has been re-engineered as a testing system to accurately detect COVID-19. In August, the U.K. government announced an order for 5.8 million CovidNudge testing kits to be rolled out in NHS hospitals and out-of-hospital locations across the U.K. starting September 2020, following successful validation.

Benchmark provided high-quality design, manufacturing, and supply chain services to accelerate the development and manufacturing of DnaNudge's CovidNudge device at lower costs.

"When the pandemic first hit, we realized that our DNA testing technology could be used to rapidly identify patients with COVID-19," said Regius Professor Chris Toumazou, CEO and co-founder, DnaNudge. "By combining our expertise in DNA testing with Benchmark's world-class design and production capabilities, and its ability to deliver complex medical technology manufacturing at scale, we are able to meet the huge global demand for this technology."

The CovidNudge test uses the gold-standard RT-PCR technique to test for the presence of the genetic material of the COVID-19 virus. The DnaNudge system works by placing a patient's swab sample into a low-cost, single use "DnaCartridge". The DnaCartridge extracts RNA from a sample which is then inserted into the NudgeBox for analysis and reverse transcribing to DNA, producing results in just over an hour. The cartridge has 72 tiny wells in its assay, known as a multiplex. This means the technology can detect the presence of human RNA, as well as viral



RNA, to eliminate 'false negatives.' It can also assess the presence of several of the COVID-19 genes, including both the WHO and CDC assays, to improve accuracy. The technology is also able to detect other viruses such as type A flu, type B flu, and RSV.

The new system is significantly faster than current lab-based COVID-19 PCR testing times, which take at least one to two days before a patient can receive results. Professor Toumazou and his team were recently honored with the Special Award for Pandemic Service from the Royal Academy of Engineering in recognition of this pioneering work.

DnaNudge engaged Benchmark to apply its design for excellence capabilities to manufacture the CovidNudge NudgeBox and optimize it for maximum reliability and manufacturability. Benchmark also optimized the supply chain in support of the design for excellence recommendations and to rapidly launch and ramp production to get the product in the hands of healthcare professionals as quickly as possible.

"As the COVID-19 pandemic continues, Benchmark is working closely with medical customers to help develop and manufacture key devices used to support patients when it matters most," said Jeff Benck, president and CEO, Benchmark. "We're proud of our partnership with DnaNudge to bring its innovative rapid testing system to volume production at speed and help meet the demand for COVID-19 testing across the world."

Benchmark has served the medical technology industry for more than 40 years. When the outbreak first began, Benchmark immediately went to work helping its customers in the healthcare industry solve complex challenges related to preventing, testing, and treating COVID-19. In addition to DnaNudge's RT-PCR testing system, Benchmark is involved in the production of other key medical devices, including ventilators, portable x-ray units, chest scanning devices, and nitric oxide treatment systems.

To learn more about Benchmark's contributions to the fight against COVID-19, please visit www.bench.com/covid19. For more information about DnaNudge's rapid, accurate, portable and lab-free RT-PCR test, CovidNudge, please visit: www.dnanudge.com/en/COVID-Nudge.

About Benchmark

Benchmark provides comprehensive solutions across the entire product life cycle; leading through its innovative technology and engineering design services; leveraging its optimized global supply chain; and delivering world-class manufacturing services in the following industries: commercial aerospace, defense, advanced computing, next generation telecommunications, complex industrials, medical, and semiconductor capital equipment. Benchmark's global operations include facilities in seven countries and its common shares trade on the New York Stock Exchange under the symbol BHE.

About DnaNudge (<http://www.dnanudge.com>)

