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MU and STMicroelectronics Improve Medical Care in Remote Rural Areas of Africa with Miniature Ultrasound Diagnostic Device

ST's ultrasonic-pulser IC contributes to high portability and cost efficiency of MU's device with no compromise in performance

Tokyo, Japan, and Geneva, Switzerland, April 14, 2016 – MU, a medical-device manufacturer, and STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, today announced that MU's US-304 portable ultrasound imager, powered by ST's STHV800 pulser, is aiming to increase the quality of point-of-care medical diagnostics in remote rural areas of Africa.

MU's device has been developed for the "Doctor Car" mobile-clinic project to provide medical care in remote rural areas of Africa. In this project, medical workers use a special vehicle equipped with remote-healthcare systems to diagnose residents in remote rural areas where medical facilities are unavailable. The data obtained by the portable ultrasound device is transferred via mobile networks to healthcare entities in urban areas for detailed diagnosis and proper treatment. MU will start shipping ultrasound imagers to Doctor Cars and clinics in Africa this year.

The MU US-304 is a convex-type ultrasonic imager (3.5MHz) capable of performing abdominal diagnosis up to 15cm under the skin. It can be carried anywhere and simply connected via USB to a laptop or tablet. The MU device integrates ST's high-voltage, high-speed ultrasonic-pulser IC (integrated circuit) with an 8-channel transducer driver circuit[1] manufactured in ST's proprietary 200V SOI-BCD[2] semiconductor process. This process enables the integration of high-voltage CMOS technology, precise analog circuitry, and robust power stages on the same chip.

The industry's most highly integrated ultrasonic pulser, ST's STHV800 also offers low noise and tiny size to help produce accurate diagnostic images at a much lower cost and power consumption compared with stationary ultrasound equipment.

"The challenge in developing point-of-care ultrasound diagnostic devices is to achieve high portability and low cost without sacrificing performance. ST technology has proven an ideal solution to this problem," said Yasuhiro Tamura, President, MU. "As we continue to create products for medical care in developing regions, in cooperation with ST, we hope to expand our application scope to new areas including livestock care."

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[1] The sink / source current of each channel allows a ±2.0A, maximum ±90V transducer drive, making the STHV800 an ideal device for various types of ultrasound diagnostic equipment.

[2] Silicon on Insulator – Bipolar-CMOS-DMOS

“MU’s newest portable ultrasound device is on course to improve the quality of medical diagnostics in remote rural areas, where the need is great,” said Hiroshi Noguchi, Director, Analog, MEMS and Sensors Group, STMicroelectronics Japan. “The selection of ST technology confirms our commitment to providing ultrasound-equipment makers with the highest performing ICs in the market and positions ST as the go-to partner for creating innovative applications that make positive contributions to people’s health and quality of life.”

ST offers a cost-effective evaluation board (STEVAL-IME013V1) that integrates the STHV800 pulser IC with an STM32F4 ARM® Cortex®-M microcontroller. The board’s graphical user interface and preset waveforms make it simple for designers to test the pulser under different conditions.

About MU
Since its foundation, MU, as an OEM developer, has been developing medical devices such as biological sensors (ECG) and its peripheral systems, ultrasound imagers and sleep sensors, aiming to contribute the growth of remote medical care. These products are now in the market as OEM products. Further information can be found at http://llcmu.jp

About STMicroelectronics
ST is a global semiconductor leader delivering intelligent and energy-efficient products and solutions that power the electronics at the heart of everyday life. ST’s products are found everywhere today, and together with our customers, we are enabling smarter driving and smarter factories, cities and homes, along with the next generation of mobile and Internet of Things devices. By getting more from technology to get more from life, ST stands for life.augmented.

In 2015, the Company’s net revenues were $6.90 billion, serving more than 100,000 customers worldwide. Further information can be found at www.st.com.

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