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STMicroelectronics and X2 Biosystems Celebrate Shipment of 5,000th Concussion Sensor System

Advanced sensing, computing, RF and power chips in action in an unprecedented range of activities, from youth sports to the NFL

Geneva, Switzerland, Seattle, WA, September 6, 2013 – As millions of fall sports participants take to the field to kick off the 2013 sports season, players in a wide range of activities are wearing electronic head-impact monitoring patches (“xPatches”) developed by X2 Biosystems with advanced technology from STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications.

In addition to surpassing the milestone of 5,000 xPatch sensor systems shipped, the X2 Biosystems’ Integrated Concussion Exam (ICE) software has been adopted by a broader audience. This customer list includes the NFL (National Football League), which has mandated the use of the X2 ICE in all practices and games of all 32 teams this season. A cloud-connected mobile application environment, the X2 ICE captures athlete concussion history and pre-season neuro-cognitive function, balance, and coordinate-performance data, which is then used as a baseline for comparison after a suspected injury event.

The X2 xPatch uses miniature sensors to monitor the impacts experienced by each player and transmits data to X2’s ICE software where sideline staff can examine it in context of the individual athlete’s recent impact history and lifetime concussion history.

X2 Biosystems worked with STMicroelectronics to build the wearable xPatches, which are smaller than an American Quarter (25-cent piece). They incorporate ST’s tiny [MEMS motion-sensing chips](#), [ultra low-power STM32L microcontroller](#), [SPIRIT1 low-power radio transmitter](#), and miniature power-supply and battery-charging ICs.

“The development of the X2 Biosystems xPatch would not have been possible without ST’s advanced technologies. The xPatch integrates all required functions for head-impact monitoring, analysis, and wireless data transmission in a small, inconspicuous, comfortably wearable format,” said Christoph Mack, CEO of X2 Biosystems. “Because it’s so small and lightweight, it can be attached easily and unobtrusively behind the player’s ear - athletes forget they’re wearing it within

minutes. This frees the athlete to perform at the limit of their abilities; playing hard, while playing safe.”

“We are delighted that our technologies, including MEMS precision movement sensing and ultra low-power radio and ICs, have enabled the creation of the X2 xPatch system, augmenting sports bodies’ efforts to safeguard the wellbeing of participants,” commented Benedetto Vigna, Executive Vice President and General Manager, Analog, MEMS and Sensors Group, STMicroelectronics. “The level of miniaturization, integration, and power efficiency ST has been able to deliver has allowed X2 to apply its systems at the professional, university, high-school and youth levels in Football, Soccer, Hockey, Lacrosse, Boxing and Field Hockey. Through capturing and analyzing over 600,000 head impact events so far, X2 and ST are helping to keep athletes safer.”

Medical professionals within sports, military, and industrial safety areas believe that better management of concussions can help prevent serious brain injuries, which are associated with conditions such as dementia and depression later in life. The evidence is strong that the brain can repair itself after most concussions, if the condition is recognized and managed appropriately. Information provided by the X2 Concussion Management System helps to monitor impact events, promote adherence to the standard of care, coordinate the return to play process, and improve both acute and long-term brain health outcomes.

About STMicroelectronics

ST is a global leader in the semiconductor market serving customers across the spectrum of sense and power and automotive products and embedded processing solutions. From energy management and savings to trust and data security, from healthcare and wellness to smart consumer devices, in the home, car and office, at work and at play, ST is found everywhere microelectronics make a positive and innovative contribution to people's life. By getting more from technology to get more from life, ST stands for life.augmented.

In 2012, the Company’s net revenues were \$8.49 billion. Further information on ST can be found at www.st.com.

About X2 Biosystems

X2 Biosystems, Inc. has developed the world’s first systems for comprehensive, end to end management of concussion and other brain injuries. X2’s xPatch products provide real time 6 axis measurement of head impact events that cause sports brain injury (SBI) and present impact information in an athlete’s individuated head impact history and brain injury risk profile. X2 Biosystems’ mission is to provide useful,

affordable product systems to help stop the epidemic of SBIs in Athletics, Military, and Industrial Safety. For more information, please visit www.X2bio.com

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