Tektronix Newsroom

Tektronix, IEMN Collaborate to Demonstrate World's Fastest Wireless to Optical Bridge

Major French Laboratory Taps Tektronix Instrumentation to Enable First QAM-16 THz Wireless Communication at 0.4 THz

BEAVERTON, Ore., June 9, 2015 /PRNewswire/ -- Tektronix, the world's leading manufacturer of oscilloscopes, and IEMN, a major French research laboratory, today announced the world's first demonstration of a world record breaking wireless system capable of transmitting data at 400 GHz (0.4 THz) using advanced signal coding (up to QAM-16) and key advanced THz devices.

Using a combination of optical coherent technologies and THz transceivers, the record breaking demonstration showcases the advances being made toward operational wireless links with THz frequencies and optical-equivalent data rates. The demonstration involved sending 32 Gbit/s signals over distances of 25 m and will provide the basis for future THz communications applications.

"As we have shown in this demonstration, the gap between the worlds of fiber-optics and radio can be bridged using photonic-based THz circuits," said Guillaume Ducournau, an assistant professor at IEMN/CNRS/University Lille 1 working on THz communication systems. "Based on this first demonstration, the way forward for real-life THz communication systems is now open."

The demonstration was accomplished within the framework of the COM'TONIQ French national project (grant ANR-13-INFR-0011-01) involving five partners coordinated by IEMN (http://photoniquethz.iemn.univ-lille1.fr/contrat-anr-comtoniq/). "Research such as the French equipex "FLUX" (high-speed guided fiber/wireless-based advanced data coms) and "ExCELSIOR" (advanced characterization of nano-devices and systems) programs are all coming together to support the development of these advanced networking technologies," assistant professor Ducournau added.

"Tektronix is delighted to be working in such close collaboration with IEMN on achieving this prestigious breakthrough," said Dr. Klaus Engenhardt, CTO Tektronix EMEA. "It's exciting to see our industry-leading end-to-end transmit and receive solution *(including Tektronix AWG70001A 50Gs/S waveform generator, OM5110 46Gbaud multi-format complex optical transmitter, Tektronix DPO77002SX ATI 70GHz real time oscilloscope)* used to help bridge coherent optical and THz transceiver technologies. Advanced test tools are needed today to generate and characterize signals at 100G, 400G and beyond and Tektronix offers a wide portfolio of optical communication test solutions."

Wondering what else Tektronix is up to? Check out the Tektronix Bandwidth Banter blog and stay up to date on the latest news from Tektronix on Twitter and Facebook.

About IEMN
The Institute of Electronics, Microelectronics and Nanotechnology (IEMN) is a major French laboratory, with ~500 people working on micro-nanoelectronics, MEMS, optics and acoustics. Medium-term joint programs with industrial partners or other national institutions and long-term research initiatives stimulate the resourcing of research projects. Thanks to the constant financial support of the Nord Pas de Calais Regional Council combined with those of our trustees, IEMN can boast exceptional technical facilities: Micro and nano fabrication cleanroom (1600m², French Renatech network), very high frequency (DC-2.5 THz) RF and MEMS characterization platform, Near-field microscopy platform (AFM/STM), Telecom and EMC platforms. IEMN has also a key contribution on higher education, through doctoral and masters programs.

IEMN scientific policy not only contributes to scientific research and its applications but also has the goal of bringing social, cultural and economic benefits for society through collaborations with industry. http://exploit.iemn.univ-lille1.fr/

About Tektronix
For more than sixty five years, engineers have turned to Tektronix for test, measurement and monitoring solutions to solve design challenges, improve productivity and dramatically reduce time to market. Tektronix is a leading supplier of test equipment for engineers focused on electronic design, manufacturing, and advanced technology development. Headquartered in Beaverton, Oregon, Tektronix serves customers worldwide and offers award-winning service and support. Stay on the leading edge at www.tektronix.com.

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