

National Instruments (NI) has launched the baseband model of the second-generation vector signal transceiver (VST) called PXIe-5820. The PXIe-5820 combines a wideband I/Q digitiser, wideband I/Q arbitrary waveform generator and high-performance user-programmable, field-programmable gate array (FPGA) into a single two-slot PXI express module. Further, the 1 GHz complex I/Q bandwidth of the baseband VST supports a wide range of applications including baseband I/Q testing of wireless and cellular chipsets as well as envelope tracking of digitally pre-distorted waveforms, and generation and analysis of new wireless standards such as 5G, 802.11ax and long term evolution-advanced pro. The device is the industry's first baseband VST with 1 GHz of complex I/Q bandwidth, which has been designed to address the most challenging radio frequency (RF) front-end module and transceiver test applications such as envelope tracking, digital pre-distortion and 5G tests.

According to NI, engineers can use the baseband VST with the LabVIEW system design software to address the evolving and changing needs of transceiver test applications. They can also use the software-designed architecture of NI's VSTs to help accelerate the pace of design, reduce the cost of tests and solve measurement problems that were previously unsolvable by traditional test approaches.

The key features of the new device are:

- 1 GHz of complex I/Q instantaneous bandwidth for generation and analysis
- Measurement accuracy to measure 802.11ax error vector magnitude performance of -54 dB
- FPGA-based measurement acceleration for 10x faster measurements along with highly optimised measurement software
- Compact size and tight synchronisation of baseband and RF VSTs allowing for 2x2, 4x4, 8x8 or higher multiple input, multiple output configurations in the PXI form factor

- User-programmable FPGA that engineers can customise to add application-specific functionalities

- Ease of programming with a consistent software experience between RF and baseband VSTs.

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