

HIGH-SPEED DIGITAL SIGNAL PROCESSING PLATFORM



AT A GLANCE

Versatile, high-end platform for real-time testing of digital signal processing algorithms. Based on the Micro-TCA standard, supporting various plug-in boards (ADC, DAC, 100G-Interfaces, FPGA processors)

Features

- 56 GSa/s, 8-bit ADC and 65 GSa/s, 8-bit DAC plug-in boards with real-time data interface
- Multiple ADC/DAC boards can be combined in one platform, to generate synchronized multi-channel (1 to 16) ADCs and DACs
- Free-programmable internal Virtex Ultrascale/Ultrascale+ FPGA plugin boards
- High-speed interfacing between boards within the platform and to external FPGA boards
- Platform supports third party modules based on Micro-TCA standard

- Built-in Gigabit Ethernet (GbE) service interface with FPGA access
- Ready-to-use IP cores for hardware interfacing and reference real-time DSP functions available

Applications

- Test of DSP algorithms in real time
- Online transmission performance evaluation of coherent optical transmission systems
- Online measurement and debugging
- Prototyping of FPGA-based real-time transceivers

Datasheet

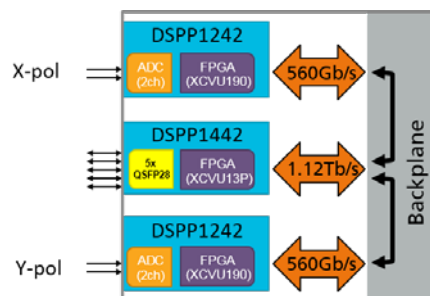
	DSPP 114x plug-in board	DSPP 124x plug-in board	DSPP 144x plug-in board	DSPP 154x plug-in board
Type of board	Digital-to-Analog Converter	Analog-to-Digital Converter	FPGA Processor	Electro-Optical Front-End
Number of channels per board	1x Full-Rate Analog Out 2x Half-Rate Analog Out	2x Full-Rate Analog Out 4x Half-Rate Analog Out	5 x 100G (QSFP28)	4 x Analog In/Out 1x Optical In/Out
Full rate per channel	54-65 GSa/s	56 GSa/s	-	Up to 32 GBd
Nominal resolution	8 bit	8 bit	-	-
Analog 3dB-bandwidth	15 GHz	15 GHz	-	> 15 GHz
Internal FPGAs	Virtex Ultrascale (XCVU190)	Virtex Ultrascale (XCVU190)	Virtex Ultrascale+ (XCVU13P)	-
Total available CLB LUTs	1,074,240	1,074,240	1,728,000	-
Total available CLB Flip-flops	2,148,480	2,148,480	3,456,000	-
Total available Block RAMs (36 Kb each)	3,780	3,780	2,625 + 10,000 UltraRAM	-
Total available DSP slices	1,800	1,800	12,288	-
Backplane Interface speed	up to 2560 Gb/s	up to 560 Gb/s	up to 1120 Gb/s	-
Front plate connector type	GPPO/SMPPM	GPPO/SMPPM	QSFP28	GPPO/SMPPM LC optical

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Example setup of High-Speed Digital Signal Processing Platform in Receiver Configuration

