TELEDYNE | SP Devices

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PCI Express

PXI Express

USB 3.2

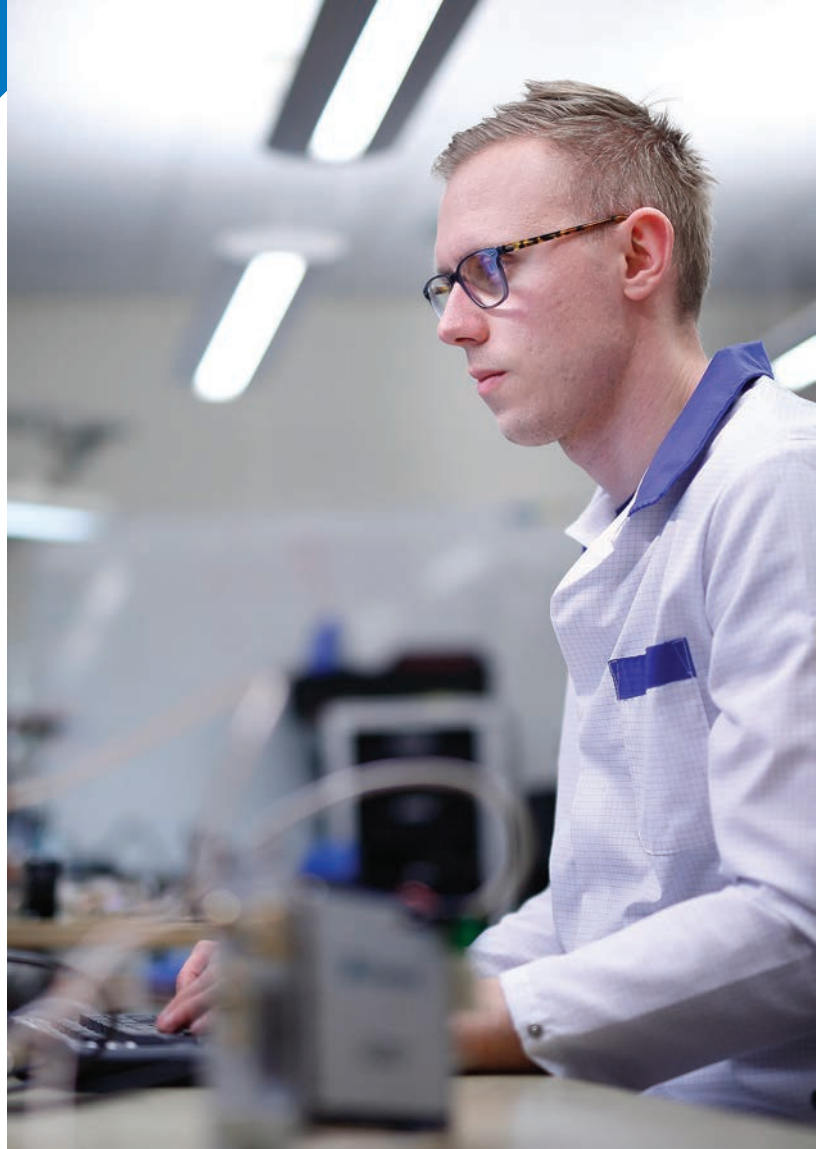
PRODUCT OVERVIEW

INTRODUCTION

At Teledyne SP Devices we design and produce high-performance modular data acquisition and signal generation instruments. Our performance advantage is enabled by patented calibration logic, the latest data converters, and state-of-the-art FPGA technology resulting in an unrivalled combination of high sampling rate and resolution.

Our team of experts provide novel digital signal processing (DSP) solutions for a wide range of applications, and the products are equipped with a generous set of application-specific features and real-time DSP. The powerful on-board field-programmable gate arrays (FPGAs) are open to the user and we also provide design services in order to help shorten design time.

SP Devices operate under the Instrumentation segment of Teledyne Technologies which contributed 24% of the total sales of approximately 6.12 billion USD in 2025.



APPLICATIONS

Our products provide performance benefits to a wide variety of applications including LiDAR, time-of-flight mass spectrometry, swept-source OCT, distributed fiber optical sensing, automated test equipment (ATE), big physics, and more.

Customers can develop custom application-specific real-time DSP by using the optional firmware development kit and/or utilize the stand-alone firmware packages for pulse detection, waveform averaging, software defined radio, and ultra-high-speed data transfer.

The software suite include support for multiple programming languages and operating systems as well as drivers and tools for commonly used environments such as LabVIEW™ and MATLAB™.

System-level integration is simplified by the availability of many different form factors, and the products offer highly accurate synchronization and trigger capabilities which makes them ideal for multi-channel applications.

OEM CAPABILITIES

At Teledyne SP Devices we understand that the needs of original equipment manufacturers (OEMs) goes beyond high-performance products.

Throughout the years we have built the infrastructure and business models required to support all aspects of OEM business, and we are proud to serve many such customers already today.

Together with world-leading partners we provide cost-efficient high-quality products that are assembled locally in Sweden, and our current production capability supports thousands of boards per month.

Our OEM services include everything from algorithm development and implementation to custom software, firmware, and hardware. We work closely with our customers during all stages of the development cycle to help ensure high-quality results and timely delivery.

14-BIT DIGITIZERS

PRODUCT	RES. (bits)	CHANNEL COUNT	SAMPLING RATE (MS/s)	ANALOG BANDWIDTH (MHz)	COUPLING (AC or DC)	IMPEDANCE (Ohm)	MEMORY (Mbyte)	FPGA (Model)	USB	PXIe	PCIe
ADQ14AC-2A	14	2	500	1200	AC	50	2048	K325T[1]	✓	✓	✓
ADQ14DC-2A	14	2	500	250	DC	50	2048	K325T[1]	✓	✓	✓
ADQ14DC-2A-VG[2]	14	2	500	250	DC	50	2048	K325T[1]	✓	✓	✓
ADQ14AC-4A	14	4	500	1200	AC	50	2048	K325T[1]	✓	✓	✓
ADQ14DC-4A	14	4	500	250	DC	50	2048	K325T[1]	✓	✓	✓
ADQ14DC-4A-VG[2]	14	4	500	250	DC	50	2048	K325T[1]	✓	✓	✓

1 AMD Kintex 7 K325T
2 Models "VG" offers variable gain (configurable voltage input range)

14-BIT DIGITIZERS

PRODUCT	RES. (bits)	CHANNEL COUNT	SAMPLING RATE (MS/s)	ANALOG BANDWIDTH (MHz)	COUPLING (AC or DC)	IMPEDANCE (Ohm)	MEMORY (Mbyte)	FPGA (Model)	USB	PXIe	PCIe
ADQ14AC-2C	14	2	1000	1200	AC	50	2048	K325T[1]	✓	✓	✓
ADQ14DC-2C	14	2	1000	700	DC	50	2048	K325T[1]	✓	✓	✓
ADQ14DC-2C-VG[2]	14	2	1000	500[3]	DC	50	2048	K325T[1]	✓	✓	✓
ADQ14AC-4C	14	4	1000	1200	AC	50	2048	K325T[1]	✓	✓	✓
ADQ14DC-4C	14	4	1000	700	DC	50	2048	K325T[1]	✓	✓	✓
ADQ14DC-4C-VG[2]	14	4	1000	500[3]	DC	50	2048	K325T[1]	✓	✓	✓

1 AMD Kintex 7 K325T
2 Models "VG" offers variable gain (configurable voltage input range)
3 Analog bandwidth vary with gain setting, see datasheet for details

14-BIT DIGITIZERS

PRODUCT	RES. (bits)	CHANNEL COUNT	SAMPLING RATE (MS/s)	ANALOG BANDWIDTH (MHz)	COUPLING (AC or DC)	IMPEDANCE (Ohm)	MEMORY (Mbyte)	FPGA (Model)	USB	PXIe	PCIe
ADQ14AC-1X	14	1	2000	1000	AC	50	2048	K325T[1]	✓	✓	✓
ADQ14DC-1X	14	1	2000	1200	DC	50	2048	K325T[1]	✓	✓	✓
ADQ14DC-1X-VG[2]	14	1	2000	900[3]	DC	50	2048	K325T[1]	✓	✓	✓
ADQ14AC-2X	14	2	2000	1000	AC	50	2048	K325T[1]	✓	✓	✓
ADQ14DC-2X	14	2	2000	1200	DC	50	2048	K325T[1]	✓	✓	✓
ADQ14DC-2X-VG[2]	14	2	2000	900[3]	DC	50	2048	K325T[1]	✓	✓	✓
ADQ7DC	14	2 1	5000 10000	3000	DC	50	4096	KU085[4]	✓	✓	✓

1 AMD Kintex 7 K325T
2 Models "VG" offers variable gain (configurable voltage input range)
3 Analog bandwidth vary with gain setting, see datasheet for details
4 AMD Kintex Ultrascale KU085

12-BIT DIGITIZERS

PRODUCT	RES. (bits)	CHANNEL COUNT	SAMPLING RATE (MS/s)	ANALOG BANDWIDTH (MHz)	COUPLING (AC or DC)	IMPEDANCE (Ohm)	MEMORY (Mbyte)	FPGA (Model)	USB	PXIe	PCIe
ADQ30	12	1	1000	1000	DC	50	8192	KU040[1]	✓		✓
ADQ32-S2G0	12	2 1	2000 4000	1000	DC	50	8192	KU040[1]	✓		✓
ADQ32-S2G5	12	2 1	2500 5000	1000 2500[2]	DC	50	8192	KU040[1]	✓		✓
ADQ32-PDRX	12[3]	1	2500	760	DC	50	8192	KU040[1]	✓		✓
ADQ33	12	2	1000	1000	DC	50	8192	KU040[1]	✓		✓
ADQ33-PDRX	12[3]	1	1000	760	DC	50	8192	KU040[1]	✓		✓
ADQ35	12	2 1	5000 10000	2500	DC	50	8192	KU115[4]	✓		✓
ADQ35-PDRX	12[3]	1	5000	2000	DC	50	8192	KU115[4]	✓		✓
ADQ36	12	4 2	2500 5000	2500	DC	50	8192	KU115[4]		✓	
ADQ7WB	12	2	5000	6500	AC	50	4096	KU085[5]		✓	✓
ADQ35-WB	12	2 1	5000 10000	9000[6]	AC	50	8192	KU115[4]	✓		✓

1 AMD Kintex Ultrascale KU040
2 With analog bandwidth option, "BW2G5"
3 PDRX utilize a dual-gain configuration in order to achieve a dynamic range equivalent to 12 ENOB
4 AMD Kintex Ultrascale KU115
5 AMD Kintex Ultrascale KU085
6 Usable analog bandwidth

MULTI-CHANNEL SYSTEMS

PRODUCT	RES. (bits)	CHANNEL COUNT	SAMPLING RATE (MS/s)	ANALOG BANDWIDTH (MHz)	COUPLING (AC or DC)	IMPEDANCE (Ohm)	MEMORY (Mbyte)	FPGA (Model)	USB	PXIe	PCIe
DPS16-PCIe	12	Up to 64	1000 - 10000	Up to 9000	DC, AC	50	8192	KU040[1] KU115[2]			✓
DPS7-PCIe	12	Up to 14	1000 - 10000	Up to 9000	DC, AC	50	8192	KU040[1] KU115[2]			✓
ADQ35-INT X 2	12	1	20000	Up to 9000	DC, AC	50	8192	KU040[1] KU115[2]			✓

1 AMD Kintex Ultrascale KU040
2 AMD Kintex Ultrascale KU115

10-BIT DIGITIZERS

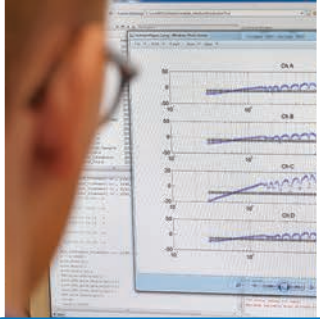
PRODUCT	RES. (bits)	CHANNEL COUNT	SAMPLING RATE (MS/s)	ANALOG BANDWIDTH (MHz)	COUPLING (AC or DC)	IMPEDANCE (Ohm)	MEMORY (Mbyte)	FPGA (Model)	USB	PXIe	PCIe
ADQ8-8C-VG[1]	10	8	1000	500	DC	50 1M[2]	1024	K325T[3]		✓	
ADQ8-4X-VG[1]	10	4 2	2000 4000	1000	DC	50	1024	K325T[3]		✓	

1 Models "VG" offers variable gain (configurable voltage input range)
2 Software-configurable input impedance.
3 AMD Kintex 7 K325T

WAVEFORM GENERATORS

PRODUCT	RES. (bits)	CHANNEL COUNT	SAMPLE RATE (MS/s)	ANALOG BANDWIDTH (MHz)	COUPLING (AC or DC)	OUTPUT IMPEDANCE (Ohm)	MEMORY (Mbyte)	FPGA (Model)	USB	PXIe	PCIe
SDR14TX	14	2	2 000	1000[1] 1800[2]	DC	50[3] 100[4]	1024	LX240T[5]		✓	✓

1 In 1st Nyquist band
2 In 2nd Nyquist band with lower bandwidth 1 GHz
3 In single-ended output mode
4 In differential output mode
5 AMD Virtex 6 LX240T



Everywhere You Look

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