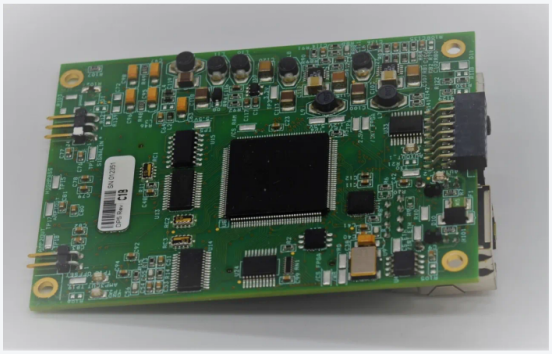
AMPTEK

Digital Pulse Processors

Digital pulse processing

Amptek digital pulse processors and MCAs (DP5, DP5X, PX5) with the PC5 power and interface board, for X-ray and gamma-ray spectroscopy.



Spectral channels (DP5/PX5)

Up to 8k [2]

Specifications

ELECTRONICS & SIGNAL

Spectral channels (DP5/PX5)	Up to 8k	[2]
Preamplifiers (DP5/PX5)	Reset or feedback; either polarity	[2]
ADC (DP5/PX5)	12 bit; 20 or 80 MHz	[3]
Pulse shape (PX5)	Trapezoidal or cusp	[4]
Detector bias (PX5)	±100 V to ±1.5 kV	[4]
SCA outputs (PX5)	8	[4]

CONNECTIVITY & INTERFACE

Interfaces (DP5/PX5)	USB, Ethernet, RS-232	[2]

MECHANICAL

Weight (DP5 board)	32 g	[2]
Weight (PX5)	750 g	[4]

ENVIRONMENT & RATINGS

perating temperature (DP5/PX5)	−40 to +85 °C	[2]

ORDERING & ACCESSORIES

Family processors and supply board	DP5, DP5X, PX5; PC5 power/interface board	[2]

GENERAL

Functions	Digital pulse shaping and MCA	[1]

Models

Model	Functions	Preamplifier	ADC	Pulse shape

DP5	Digital pulse shaping and MCA [3]	Reset or feedback; either signal polarity [2]	12 bit; 20 or 80 MHz [3]	Trapezoidal [2]
DP5X	Digital pulse shaping, MCA and detector supplies [5]	–	–	–
PC5	–	–	–	–
PX5	Digital pulse shaping, MCA and detector supplies [1]	Reset or feedback; either signal polarity [4]	12 bit; 20 or 80 MHz [1]	Trapezoidal or cusp [4]

Model	Overall gain	Spectrum channels	Periodic input signal	Dead time per pulse
DP5	0.84–127.5× [2]	256, 512, 1024, 2048, 4096 or 8192 [2]	4 MHz at 0.2 µs peaking time [2]	1.05 × peaking time; no conversion time [2]
DP5X	–	–	–	–
PC5	–	–	–	–
PX5	0.75–516× [4]	256, 512, 1k, 2k, 4k or 8k [4]	4 MHz at 0.2 µs peaking time [4]	1.05 × peaking time; no conversion time [4]

Model	Communication	Supply voltage	Typical board power	Operating temperature
DP5	USB 2.0 full speed; RS-232; Ethernet 10base-T [3]	+4 to +5.5 V DC; +5 V nominal [3]	1 W at 80 MHz; 0.9 W at 20 MHz [3]	−40 to +85 °C [2]
DP5X	–	4–12 V DC; 5 V nominal [5]	–	–
PC5	–	–	–	–
PX5	USB 2.0 full speed; RS-232; Ethernet 10base-T [4]	+4 to +5.5 V DC; +5 V nominal [7]	–	−40 to +85 °C [1]

Model	Board dimensions	Board weight	Detector compatibility	Preamplifier requirement
DP5	3.5 × 2.5 in [2]	32 g [3]	–	–
DP5X	–	–	Amptek Si-PIN, SDD and FAST SDD; not CdTe [5]	Compatible PA210/PA230 configurations; older versions cannot be assumed compatible [5]
PC5	3.5 × 2.5 in [2]	–	–	–
PX5	–	–	–	–

Model	Power supply	Bias polarity configurations	Temperature control	USB connection
DP5	–	–	–	–
DP5X	External DC supply; cannot be powered over USB [5]	Positive for Si-PIN; negative for SDD/FAST SDD [5]	Closed-loop thermoelectric cooler control [5]	USB mini-B; separate power [5]
PC5	–	–	–	–
PX5	–	–	Closed-loop thermoelectric cooler control [7]	–

Model	Ethernet	Diagnostic DAC output	Heat sinking	Function
DP5	–	–	–	–

DP5X	Only in the special e valuation option per the m anual [5]	Only in the special e valuation option per the m anual [5]	Board must be mounted to a heat sink through its corner posts [5]	–
PC5	–	–	–	Detector/preamplifier power and interface board [2]
PX5	–	–	–	–

Model	Pulse processor	Detectors	Nominal supply	Power source with detector
DP5	–	–	–	–
DP5X	–	–	–	–
PC5	DP5 [2]	Compatible Amptek XR-100 and OEM c onfigurations [3]	+5 V DC [2]	External DC source; USB is insufficient for XR-100 [2]
PX5	–	–	–	–

Model	Configuration options	Typical gain stability	Detector bias	Maximum bias current
DP5	–	–	–	–
DP5X	–	–	–	–
PC5	XR-100; X-123; PA210/PA230; detector-specific configuration [6]	–	–	–
PX5	–	<30 ppm/°C [1]	±100 V to ±1.5 kV [4]	30 µA [4]

Model	SCA outputs	Dimensions in manufacturer metric table	Weight
DP5	–	–	–
DP5X	–	–	–
PC5	–	–	–
PX5	8; LVCMOS 3.3 V, TTL compatible [4]	165 × 135 × 40 mm [7]	750 g [1]

Sources

[1] PX5 Digital Pulse Processor, MCA and Power Supply – specifications
Amptek · datasheet · p. 1; p. 2; p. 3 · checked 2026-10-16
https://www.amptek.com/-/media/ametekamptek/documents/resources/products/specs/px5-specs.pdf?la=en&revision=...

[2] DP5 OEM Digital Pulse Processor & MCA
Amptek · product-page · product page · checked 2026-10-16
https://www.amptek.com/products/digital-pulse-processors/dp5-digital-pulse-processor-and-mca

[3] DP5 Digital Pulse Processor – specifications
Amptek · datasheet · p. 2; p. 1; p. 3 · checked 2026-10-16
https://www.amptek.com/-/media/ametekamptek/documents/resources/products/specs/dp5-spec.pdf?la=en&revision=6...

[4] PX5 DPP, MCA and Power Supply
Amptek · product-page · product page; product page – specifications · checked 2026-10-16
https://www.amptek.com/products/digital-pulse-processors/px5-digital-pulse-processor

[5] DP5-X User Manual, Rev B0
Amptek · manual · p. 2–3; p. 9; p. 2 · checked 2026-10-16
https://www.amptek.com/-/media/ametekamptek/documents/resources/products/user-manuals/dp5x-user-manual.pdf?l...

[6] PC5 Power Board
Amptek · product-page · product page · checked 2026-10-16
https://store.amptek.com/pc5-power-board/

[7] PX5 User Manual
Amptek · manual · p. 10; p. 9; p. 4 · checked 2026-10-16
https://www.amptek.com/-/media/ametekamptek/documents/resources/products/user-manuals/px5-user-manual-b2.pdf…

Every value is taken from the manufacturer’s own document; the number after the value refers to the source list. Always check against the latest datasheet before ordering.

The data comes from the manufacturer’s published documents. Manufacturers may change specifications; the current configuration and performance are confirmed in the quotation.