ORTEC

DSPEC 50/50A & 502/502A

Digital gamma spectrometer / MCA

Digital signal processing for laboratory HPGe gamma spectroscopy. The family includes single- and dual-MCA models, with options for advanced coincidence timing.



Spectrum channels
50/502: 512–16 k; 50A/502A: 256–64 k [1]

Weight
DSPEC 50: 11 kg; DSPEC 502: 11.7 kg [1]

Specifications

PERFORMANCE

Maximum throughput	>100,000 cps without LFR; >34,000 cps with LFR; depends on shaping settings	[1]

ELECTRONICS & SIGNAL

Detector inputs	1 MCA: 50/50A; 2 MCAs: 502/502A	[1]
Spectrum channels	50/502: 512–16 k; 50A/502A: 256–64 k	[1]
Digital filter rise time	0.8–23 µs, 0.2 µs steps	[1]
Flat-top time	0.3–2.4 µs, 0.1 µs steps	[1]
Detector bias	Internal: +500 to +5,000 V or −500 to −5,000 V	[1]

CONNECTIVITY & INTERFACE

Communication	USB 2.0 and 10/100 Mbit/s Ethernet, TCP/IP	[1]
Display	7-inch backlit colour LCD	[1]

POWER & BATTERY

Power supply	100–220 V AC, 47–63 Hz, 110 W	[1]

MECHANICAL

Weight	DSPEC 50: 11 kg; DSPEC 502: 11.7 kg	[1]
Dimensions, W × D × H	42.55 × 35.56 × 15.24 cm	[1]

ORDERING & ACCESSORIES

Included software	50/502: MAESTRO; 50A/502A: MAESTRO-Pro, single-user license	[1]

GENERAL

Acquisition modes	PHA, list mode and ZDT; Gate Route only on A models	[1]
List-mode timestamp	200 ns timestamp accuracy	[1]

Models

Model	Detector inputs	Spectrum channels	Acquisition modes	Included software
DSPEC-50	1 (single MCA with one internal HV supply) [2]	512–16 k [2]	PHA, list mode, ZDT [2]	MAESTRO [2]
DSPEC-50A	1 (single MCA with one internal HV supply) [2]	256–64 k [2]	PHA, list mode, ZDT; Gate Route [2]	MAESTRO-Pro [2]
DSPEC-502	2 (two MCAs with two internal HV supplies) [2]	512–16 k [2]	PHA, list mode, ZDT [2]	MAESTRO [2]
DSPEC-502A	2 (two MCAs with two internal HV supplies) [2]	256–64 k [2]	PHA, list mode, ZDT; Gate Route [2]	MAESTRO-Pro [2]

Model	Web interface
DSPEC-50	–
DSPEC-50A	Instrument-hosted web page and Web Services interface for basic MCA emulation, hardware configuration and programming [2]
DSPEC-502	–
DSPEC-502A	Instrument-hosted web page and Web Services interface for basic MCA emulation, hardware configuration and programming [2]

Sources

[1] **DSPEC 50/50A and DSPEC 502/502A Digital Signal Processing Gamma Spectrometers**
ORTEC (AMETEK) · product-page · Features / Ordering Information; Specifications; Specifications – Common · checked 2026-10-16
https://web.archive.org/web/20261016000000/https://www.ortec-online.com/products/electronic-instruments/mult…

[2] **DSPEC 50/50A, DSPEC 502/502A – Superior Digital Signal Processing Based Gamma-Ray Spectrometers**
RTEC (AMETEK) · brochure · p. 8, Ordering Information; p. 6, 'Specifications Common to Standard and Advanced Models'; p. 3, feature de scriptions · checked 2026-10-16
https://web.archive.org/web/20231020181835/https://www.ortec-online.com/-/media/ametekortec/brochures/d/dspe…

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.