

TECHNICAL SPECIFICATION MCA527 vs. MCA527 V

DIFFERENCES HIGHLIGHTED IN BLUE



Technical Specification	MCA527	MCA527 V
Spectrometric Performance		
Example:		
Resolution:	16k channels	2k channels
Detector:	HPGE 500mm ² planar, <10kcps	CZT 500mm ³ (hemispher.)<10kcps
Count rates:	Am241 @ 59keV	CS137 @662keV
Source:	(FWHM) @ 2μs shaping time <460eV	(FWHM) @ 1μs shaping time 2.2%
Throughput into memory (input rate 150kcps, 0.2μs shaping time)	>100.000cps	>100.000cps
Operation Modes		
PHA (Pulse Height Analysis)	✓	✓
MCS (Multichannel Scaling)	✓	✓
Sample Mode (TransientRecord)	✓	✓
Oscilloscope Mode	✓	✓
Gate Mode (by state)	✓	
Gate Mode (by time)	✓	
Firmware Repeat Mode	✓	✓
Autonomous Repeat Mode	✓	
Digital Signal Processing		
Trigger Filter	single and double differential filtering	double differential filtering
Differential non-linearity	< 1 % (@4K and 1μs shaping time)	<1% (for 2k, @ 1μs shaping time)
Pile Up Rejection	✓	✓
Pulse Pair Resolution	~400ns	~400ns
Trigger Threshold Adjustment	automatically / manually	automatically / manually
Shaping Time	0.1μs to 25.5μs, step 0.1μs	0.1μs to 2μs, step 0.1μs
Flat Top Time	0μs to 15μs, step 0.1μs	0μs to 15μs, step 0.1μs
Fine Gain Adjustment	0.5 to 6.5, step 0.0001	0.5 to 6.5, step 0.0001
Channel Splitting	128, 256, 512, 1024, 2048, 4096, 8192, 16384	128, 256, 512, 1024, 2048
Max. counts in a channel	2 ³² - 1	2 ³² - 1
Base Line Restorer	BLR with adjustable averaging	BLR with fixed averaging
Pole Zero Adjustment	Decay time down to 40μs can be compensated	Decay time down to 40μs can be compensated
Peak Stabilization Modes	standard mode, LED mode	standard mode
Amplifier Unit		
Amplifier Type	DC coupled, offset adjustable	DC coupled, offset adjustable
Bandwidth (3dB)	0 -1.4Mhz	0 -1.4Mhz
Linearity	< 0.1%	< 0.1%
Temperature Stability	TK50	TK50
Course Gain Steps	2, 5, 10, 20, 50	10
Full Scale Input Ranges / Volt	12.5, 5, 2.5, 1.25, 0.5	2.5
DC Offset Adjustment Range	(-10% to 90%) of full scale for positive input signals (-90% to 10%) of full scale	(-10% to 90%) of full scale for positive input signals (-90% to 10%) of full scale

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Analog Digital Converter		
Sample Rate	10 MS/s	10 MS/s
Resolution	14 bit	14 bit
Integral non-linearity	≤0.05%	≤0.05%
MCA Power Supply		
Input Voltage DC	9V - 14V	9V - 14V
Li - Ion rechargeable batteries	up to 2 pieces (38.8Wh)	up to 2 pieces (38.8Wh)
Power consumption (running, without detector, HV off)	0.7W	0.7W
Power supply for Detector		
Preamp Power Supply	±12V, ±60mA ±24V, ±60mA	±12V, ±60mA
HV Supply	up to (+) or (-) 5000V	up to (+) or (-) 1000V
Mechanical		
Dimensions L x W x H (mm)	181 x 111 x 45	181 x 111 x 45
Weight (equipped with 2 batteries)	820g	820g
Housing Material	eloxated aluminum	eloxated aluminum
Communication		
Computer Interfaces	USB, Ethernet, RS232	USB, Ethernet, RS232*
Sockets & connections	SHV for HV, BNC for signal-in, SUB_D9 for preamp supply and AUX-IN, power supply connector (bayonet lockable), Lemo (00) for gate Input μSD holder, Lemo 9pin (extension port), 6pin (RS232)	SHV for HV, BNC for signal-in, SUB_D9 for preamp supply and AUX-IN, power supply connector (bayonet lockable), <i>Lemo (00) for gate Input*, μSD holder*, Lemo 9pin (extension port)*, 6pin (RS232)*</i>
		*) sockets present, accessible with firmware upgrade
Extra connections	SUB_D9/ pin3: aux analog input SUB_D9/ pin5: HV inhibit or ohmmeter SUB_D9/ pin8: 1-wire for temp.-sensor Bluetooth (adapter @ext. port, optional) GPS (adapter @ext. port, optional)	<i>SUB_D9/ pin3: aux analog input* SUB_D9/ pin5: HV inhibit or ohmmeter* SUB_D9/ pin8: 1-wire for temp.-sensor* Bluetooth (adapter @ext. port, optional)* GPS (adapter @ext. port, optional)*</i>
		*) present, accessible with firmware upgrade
Environmental Conditions		
Operation Temperature Range	0°C – 50°C	0°C – 50°C
Humidity	≤90%, non condensing	≤90%, non condensing
IP Protection Class	IP42	IP42