

TECHNICAL SPECIFICATION MCA527 vs. MCA527 V

DIFFERENCES HIGHLIGHTED IN BLUE



Technical Specification	MCA527	MCA527 V
<b>Spectrometric Performance</b>		
Throughput into memory (input rate 150kcps, 0.2µs shaping time)	>100.000cps	>100.000cps
<b>Operation Modes</b>		
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	✓	
<b>Digital Signal Processing</b>		
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 <sup>32</sup> - 1	2 <sup>32</sup> - 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
<b>Amplifier Unit</b>		
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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<b>Analog Digital Converter</b>		
Sample Rate	10 MS/s	10 MS/s
Resolution	14 bit	14 bit
Integral non-linearity	≤0.05%	≤0.05%
<b>MCA Power Supply</b>		
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
<b>Power supply for Detector</b>		
Preamp Power Supply	±12V, ±60mA ±24V, ±60mA	±12V, ±60mA
HV Supply	up to (+) or (-) 5000V	up to (+) or (-) 3600V
<b>Mechanical</b>		
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	anodized aluminum	anodized aluminum
<b>Communication</b>		
Computer Interfaces	USB, Ethernet, RS232	USB, Ethernet, RS232*
Sockets & connections	SHV for HV, BNC for signal-in, D-SUB9 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, D-SUB9 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>
Extra connections	D-SUB9/ pin3: aux analog input D-SUB9/ pin5: HV inhibit or ohmmeter D-SUB9/ pin8: 1-wire for temp.-sensor Bluetooth (adapter @ext. port, optional) GPS (adapter @ext. port, optional)	<i>D-SUB9/ pin3: aux analog input* D-SUB9/ pin5: HV inhibit or ohmmeter* D-SUB9/ pin8: 1-wire for temp.-sensor* Bluetooth (adapter @ext. port, optional)* GPS (adapter @ext. port, optional)*</i>
<b>Environmental Conditions</b>		
Operation Temperature Range	0°C – 50°C	0°C – 50°C
Humidity	≤90%, non condensing	≤90%, non condensing
IP Protection Class	IP42	IP42

\* ) useable after upgrade to Full Version