

DIGITAL MULTI CHANNEL ANALYZER

MCA527_{OEM} / OEM+



DESCRIPTION

The MCA527_{OEM} / OEM+ is a compact and low power consuming multichannel analyzer PCB. Designed for the use of NaI- and CdZnTe- detectors, but it may be also usable for other applications such as neutron counters or CsI detectors and other low or medium resolution gamma detectors.

The OEM+ Version operates with 16k channel resolution and is usable for high-resolution HPGE detector purposes.

The range of application can be in portal monitors, handheld devices or any other's where an OEM Version meets customer equipment integration- and budget requirements.

The MCA527_{OEM} / OEM+ is equipped with a RJ45 Ethernet socket and USB-B socket for flexible and immediate computer communication. The OEM is prepared for autonomous measurement modes with its on board μ SD-card holder and software support.



The software programs of our MCA family are available free of charge and allow to run in several operation modes such as a universal counter, oscilloscope, Gate Mode Autonomous Repeat Mode, Sample Mode or Multi Channel Scaling Mode.

KEY FEATURES	BENEFITS
<i>Cost-effective, high integrated design</i>	<ul style="list-style-type: none">• Offers outstanding price-performance ratio and very low power consumption of 0.6W
<i>2k / 16k channel resolution (OEM+)</i>	<ul style="list-style-type: none">• Best performance with NaI, CdZnTe, LaBr / HPGE detectors
<i>Ethernet, RS232 & USB Interface on board</i>	<ul style="list-style-type: none">• Immediate & flexible computer communication
<i>Dimensions in compact format (140 x 60 x 18mm)</i>	<ul style="list-style-type: none">• Easy integration in housings or devices
<i>Equipped with 2x RS232 and further interface- and power supply ports.</i>	<ul style="list-style-type: none">• Development of additional applications, e.g. GPS receiver, sensors or microcontroller around the board possible

Technical Specification

MCA527OEM / OEM+



Spectrometric Performance		Channel Splitting	(OEM+)	128, 256, 512, 1024, 2048, 4096, 8192, 16384
<u>Example: (OEM+)</u> Resolution: 16k channels Detector: HPGE 500mm ² planar, Count rates <10kcps Source: Am241 @ 59keV	(FWHM) @ 2μs shaping time <460eV	Base Line Restorer		Fixed averaging (OEM) Adjustable averaging (OEM+)
<u>Example 2:</u> Resolution 2k channels Input: Test generator signal	(FWHM) <<0.1%	Pole Zero Adjustment		Decay time down to 40μs can be compensated
Throughput into memory (input rate 150kcps, 0.2μs shaping time)	>100.000cps	Peak Stabilization Modes		standard mode LED mode
Operation Modes		Amplifier Unit		
PHA (Pulse Height Analysis)	✓	Amplifier Type		DC coupled, offset adjustable
MCS (Multichannel Scaling)	✓	Linearity; Bandwidth (3dB)		<0.1% ; 0 – 1.4Mhz
Sample Mode (Transient Record)	✓	Coarse Gain Steps		10 (OEM) 2, 5, 10, 20, 50 (OEM+)
Oscilloscope Mode	✓	Full Scale Input Ranges /Volt		2.5 (OEM) 12.5, 5, 2.5, 1.25, 0.5 (OEM+)
Firmware Repeat Mode	✓	DC Offset Adjustment Range		(-10% to 90%) of full scale for positive input signals (-90% to 10%) of full scale for negative input signals
Autonomous Repeat Mode	✓	Analog Digital Converter		
Gate Mode (by time)	✓ (OEM+)	Sample Rate		10MS/s
Gate Mode (by state)	✓ (OEM+)	Resolution		14bit
List Modes (optional)	✓ (OEM+)	Integral non-linearity		≤ 0.05%
Digital Signal Processing		Power Supply		
Trigger Filter	double differential filtering	Input Voltage DC (via JST PH06)		4V – 9V
Trigger Filter (OEM+)	single and double differential filtering	Power consumption (running, without detector, HV off)		0.6W
Differential non-linearity	<1% (for 2k, @ 1μs shaping time)	Mechanical		
Pile Up Rejection	✓	Dimensions (in mm)		140 x 60 x 18
Pulse Pair Resolution	~400ns	Weight		48g
Trigger Threshold Adjustment	automatically / manually	Communication & Connections		
Shaping Time	0.1μs to 2μs, step 0.1μs 0.1μs to 25.5μs, step 0.1μs (OEM+)	Computer Interfaces		USB, Ethernet, 2xRS232
Flat Top Time	0μs to 15μs, step 0.1μs	Sockets: USB (Type B), RJ45(Ethernet), 3x MCX plug FEMALE for Signal-IN, Gate-IN, Counter-IN (TTL) JST PH06 for Power supply, μSD card holder, 2xRS232 @ 26pin pin header, Pitch 1.27mm for ext. devices e.g. GPS Mouse, Bluetooth		
Fine Gain Adjustment	0.5 to 6.5, step 0.0001	Environmental Conditions		
Channel Splitting	128, 256, 512, 1024, 2048	Operation Temperature Range		-20°C – 60°C
		Humidity		≤90%, non condensing
		IP Protection Class		IP00