

17020

Dual Digital MCA

The Model 17020 Dual Digitizing MCA provides two independent data acquisition channels for digitizing signals from scintillating detectors. The 17020 provides digital shaping and 1024 channel histogram collection for each channel. The 17020 provides these high density functions within a business card form factor design.

The 17020 accepts two analog signals and provides independent analog coarse gain to each. It digitizes each input signal using a 10 bit ADC and forms a trapezoidal signal via digital filtering algorithms. Each channel has an independent digitally set rise time, fine gain, apex dwell time, pole zero compensation, and noise floor threshold. A 1024 channel histogram is collected simultaneously with data in 16 definable ROIs for each channel. An onboard DAC provides a means to view the trapezoidal shaped signals on an oscilloscope simplifying calibration. A large number of digital I/O lines enable implementation of custom parallel or serial interfaces to user hardware.

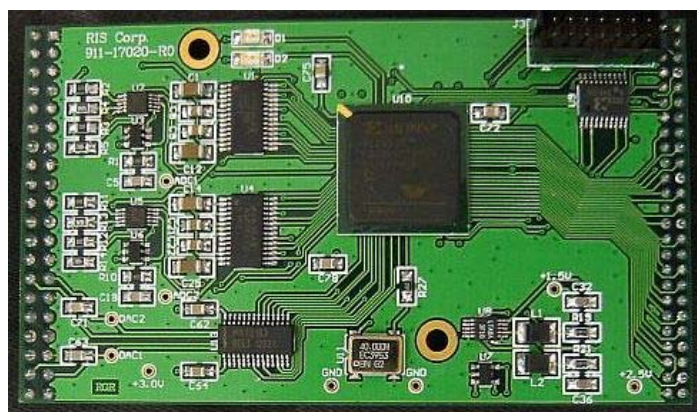


Figure 1: Model 17020 - Full Scale

PERFORMANCE	Rise Time	0.5 us, 1 us, 2 us, 3 us digitally selectable
	Apex Time	25 ns through 425 ns in 25 ns increments
	Coarse Gain	x1, x2, x4, x8, x16 analog
	Fine Gain	1.000 through 2.000 with 10 bit resolution implemented digitally
	Noise Floor Threshold	1 through 1023 in 1 channel increments
	Polarity	Digitally settable + or -
	ROIs	16 per channel, user defined boundaries which may overlap
	Histogram	1024 channels
	Gain Stability	Automatic, user defined control channel, window, update interval
	Preamp Inputs	AC coupled high impedance. Passive RC can provide tail pulses.
ELECTRICAL	Power	< 660 mW from + 3.3 V Supply, typically < 500 mW
	Current	< 200 mA from + 3.3 V Supply, typically < 150 mA
MECHANICAL	Dimensions	5.06 X 8.89cm (2.00 X 3.50 in.)
	Weight	25 g (0.06 lb)
CONNECTORS	Digital	50 pin 2 mm dual row header – SPI port for control and readout
	Analog	40 pin 2.54 mm dual row header
	JTAG	14 pin 2 mm shrouded header for in circuit programming
DISPLAYS	LED	Green LED for each channel indicates detected events