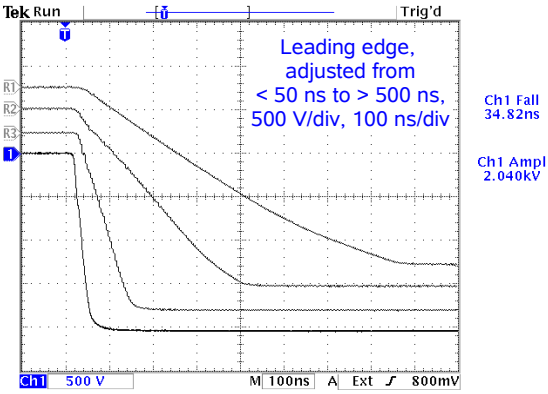
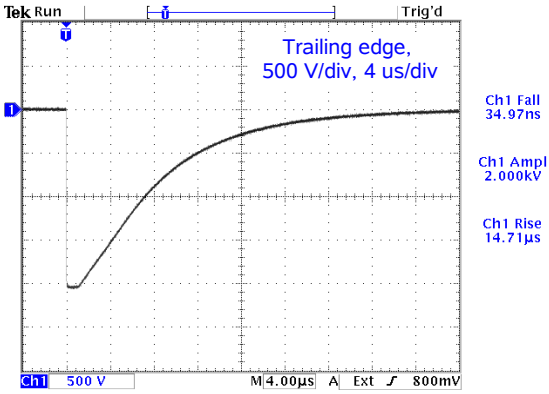
AVRQ SERIES

1 kV and 2 kV PULSE GENERATORS WITH ADJUSTABLE RISE TIMES FOR SLEW RATE TESTS





- Linear rise to -1000V or -2000V
- Adjustable 50 ns to 500 ns transition time
- Includes IEEE-488.2 GPIB, RS-232
- Ideal for slew rate testing of optocouplers & optoisolators
- Ideal for high-voltage sweep applications

The AVRQ family provides a high voltage pulse with a linear leading edge, followed by a slower exponential decay back to zero. The transition time (10%-90%) of the leading edge is variable from 50 ns to 500 ns. The adjustable linear edge makes the AVRQ ideal for testing the common mode transient immunity of optocouplers and other devices. The AVRQ series is also suitable for a range of other applications requiring a high-voltage "sweep" waveform, such as sweep-control of particle beam systems.

The AVRQ-1-B generates a -1000 V pulse into capacitive loads of up to 40 pF. The 10%-90% rise time of the leading edge is variable from < 50 ns to > 500 ns. Approximately 1 microsecond after the start of the leading transition, the voltage starts to decay back to zero. The fall time of this decay is at least ten times greater than the rise time of the leading edge. The pulse repetition frequency is adjustable from 1 Hz to 10 Hz, using the front panel controls or by computer command. This instrument may also be triggered by an external TTL trigger pulse (10 Hz maximum), by a computer command, or by a front-panel pushbutton.

The AVRQ-2-B is identical to the AVRQ-1-B, except that it generates amplitudes of -2000V.

The AVRQ-1A-B is identical to the AVRQ-1-B as well, except that the leading edge rise time is variable over a range of 25 ns to 400 ns (instead of 50 to 500 ns), providing amplitude / rise time ratios of up to 40 kV / us.

On all models, the output will only remain active for 90 seconds after being enabled from the front panel or by computer command. After that time, the output will be disabled. The output must be re-enabled from the front panel or by computer command for the next test.

The standard output connector is SHV female, and is located on the rear panel. Other connector types can be provided upon request.

A delay control and a sync output are provided for oscilloscope triggering purposes. The sync output (a BNC connector located on front panel) provides a TTL pulse with 100 ns pulse width, and will drive 50 Ohms. The delay between the main output signal and the sync output is variable from 0 to 1.0 seconds.

These models require a high-impedance load. They will not operate correctly into lower resistances, or into loads with more than 40 pF of capacitance (including the cabling and oscilloscope probe capacitance). If the load capacitance is significantly less than 40 pF, some capacitance may need to be added to the device under test to achieve the full rise time adjustment range. The rise time is not a calibrated value due to the influence of the load capacitance – it must be measured with an appropriate high-voltage oscilloscope probe system.

Both models include a complete computer control interface (see http://www.avtechpulse.com/gpib for details). This provides GPIB and RS-232 computer-control, as well as front panel keypad and adjust knob control of the output pulse parameters. A large back-lit LCD displays the output amplitude, frequency, pulse width, and delay. To allow easy integration into automated test systems, the programming command set is based on the SCPI standard, and LabView drivers are available for download at the Avtech web site (http://www.avtechpulse.com/labview).



AVRQ-2-B

Model:	AVRQ-1A-B[1]	AVRQ-1-B[1]	AVRQ-2-B[1]
Amplitude: (not adjustable)	-1000V, +/- 5%		-2000V, +/- 5%
Load resistance:	> 10 Megohms (Not a 50 Ohm system.)		
Load capacitance:	≈ 40 pF total, including cabling and probes. (Note that typical coaxial cabling has a capacitance of 30 pF/foot)		
Leading edge rise time[2]: (10% - 90%):	< 25 ns to > 400 ns, variable.	< 50 ns to > 500 ns, variable.	
Leading edge shape:	Linear, approximately. See the typical waveform photos on the previous page.		
Trailing edge fall time[3]: (90% - 10%):	At least ten times greater than the leading edge rise time. Not adjustable.		
Trailing edge shape:	Exponential decay, approximately. See the typical waveform photo on the previous page.		
Pulse width:	1 us (measured between the start of the leading edge and the start of the falling edge). Not adjustable.		
PRF:	Internal trigger: 1 to 10 Hz External trigger: 0 to 10 Hz		
Output protection:	Short-circuit protected.		
Output enable timer:	The output will only remain active for 90 seconds after being enabled from the front panel or by computer command. After that time, the output will be disabled. The output must be re-enabled from the front panel or by computer command for the next test sequence.		
Propagation delay:	≤ 200 ns (Ext trig in to start of output pulse)		
Jitter (Ext trig in to pulse out):	± 200 ps ± 0.03% of sync delay		
Trigger required (ext trig mode):	TTL levels (0 and +3V to +5V), 50 ns or wider		
Sync delay:	Variable 0 to ± 1.0 seconds		
Sync output:	TTL levels (0 and +3V to +5V), 100 ns, will drive 50 Ohm loads		
Gate input:	Synchronous, active high or low, switchable. Suppresses triggering when active.		
Connectors:	Out: SHV (rear-panel). Trig, Sync, Gate: BNC (rear-panel)		
GPIB and RS-232 control:	Yes. (Visit http://www.avtechpulse.com/labview for LabView drivers.)		
Telnet / Web control:	Optional[4]. See http://www.avtechpulse.com/options/tnt for details.		
Power requirements:	100 - 240 Volts, 50 - 60 Hz		
Dimensions: (H x W x D)	100 mm x 430 mm x 475 mm (3.9" x 17" x 18.8")		
Chassis material:	cast aluminum frame and handles, blue vinyl on aluminum cover plates		
Temperature range:	+5°C to +40°C		

1) -B suffix indicates IEEE-488.2 GPIB and RS-232 control of amplitude, pulse width, PRF and delay (See http://www.avtechpulse.com/gpib/).
2) Refers to the leading edge, which swings from 0 to -1000V or -2000V. Valid into a 40 pF load. The rise time is affected by the load capacitance. As such, a high-voltage high-bandwidth oscilloscope probe such as the Tektronix P5100 should always be used to verify the actual output rise time, rather than relying on the programmed value.
3) Refers to the trailing edge, which swings from -1000V or -2000V to 0V
4) Add the suffix -TNT to the model number to specify the Telnet / Web control option.

Use the "Pick the Perfect Pulser" parametric search engine
at http://www.avtechpulse.com/pick
to find the best pulser for your application!