



- ◆ Pulse widths as low as 200 ps
- ◆ Amplitudes to 100 Volts
- ◆ PRF to 25 MHz
- ◆ Low jitter

The AVMH family of low jitter, high amplitude impulse generators includes units providing pulse widths in the range of 200 ps to 1 ns, amplitudes from 10 Volts to 100 Volts, and pulse repetition frequencies as high as 25 MHz.

Model AVMH-1A-C generates a 0 to 10 Volt impulse. The pulse width (measured at the 20% rise point) is adjustable from 130 to 250 ps, for pulse repetition frequencies (PRFs) of up to 25 MHz. (Measured on an FWHM basis, the minimum pulse width is less than 100 ps).

Model AVMH-1-C is similar, with wider pulse widths (at the 20% rise point) of < 200 ps to > 1 ns.

Models AVMH-2-C provides 30 Volt impulses. The pulse width is adjustable over a narrow range around 400 ps. The maximum PRF is 25 MHz. The similar AVMH-3-C provides 600 ps, 50 Volt impulses, and the AVMH-6-C provides 0.5 to 1 ns, 65 Volt impulses.

Model AVMH-4-C provides a 100 Volt, 1 ns output at pulse repetition frequencies as high as 10 MHz. Model AVMH-5-C is similar, but offers wider pulse widths, adjustable from 2 to 4 ns, at PRFs to 1 MHz.

All units include a one-turn amplitude control and two pulse width controls (TR and TF) that are used to shape the output impulse after the operating pulse repetition frequency and the output amplitude are set.

The pulse repetition frequency is variable from 3 kHz

to 25 MHz (10 MHz for Model AVMH-4-C, and 1 MHz for the AVMH-5-C) using the internal clock oscillator, which is controlled by a one-turn fine control and a decade range switch. A delay control and a sync output is provided for sampling oscilloscope triggering purposes. The units can also be triggered externally using a TTL-level (or optionally ECL-level) pulse. The propagation delay in the externally triggered mode is typically 50 ns.

Either output polarity or an optional dual output polarity can be provided. Polarity inversion in dual polarity units is accomplished by means of an inverting transformer module which mates to the pulse generator output port. A DC offset or bias insertion option is also available with most units. Units with this option include a circuit similar to the Model AVX-T (see <http://www.avtechpulse.com/bias/avx-t>) at the output, and the required DC offset is applied to rear-panel solder terminals. AVMH units are also available with a monitor option that provides an attenuated (20 dB or x10) coincident replica of the main output impulse.

All models require 100-240V, 50-60 Hz prime power.

In some cases, the above specifications can be adapted to satisfy a particular requirement. For lower PRF applications, see the AVH series and for higher amplitudes, see the AVG series. Both are described in detail at <http://www.avtechpulse.com/impulse/>.



AVMH-2-C

SPECIFICATIONS

AVMH SERIES

Model ¹ :	AVMH-1A-C	AVMH-1-C	AVMH-2-C	AVMH-3-C	AVMH-6-C	AVMH-4-C	AVMH-5-C
Amplitude: (50Ω load ^{6,7})	0 to 10 V	0 to 10 V	0 to 30 V	0 to 50 V ⁸	0 to 65 V ⁸	0 to 100 V	0 to 100 V
Pulse width at 20% rise point ⁹ :	130 - 250 ps	0.2 - 1 ns	400 ps	600 ps	0.5 to 1 ns	1 ns	2 to 4 ns
PRF internal trigger: external trigger:	3 kHz - 25 MHz 0 - 25 MHz					1 kHz - 10 MHz 0 - 10 MHz	100 Hz - 1 MHz 0 - 1 MHz
Polarity ² :	Positive or negative or both (specify)						
Propagation delay:	≤ 40 ns (Ext trig in to pulse out)						
Jitter:	± 15 ps (Ext trig in to pulse out)						
DC offset:	Optional ³ : Apply the required externally-generated DC offset to back-panel solder terminals (+50 Volts, 250 mA max)						
Trigger required: (ext trig mode)	TTL (low = 0V, high = +3V to +5V), 10 ns or wider ⁴					TTL (low = 0V, high = +3 to +5V), 50 ns or wider ⁴	
Sync output:	+0.5 Volts, 20 ns, will drive 50 Ohm loads					+3V, 50 ns, into 50Ω	+3V, 200 ns, into 50Ω
Sync delay:	Variable 0 to 200 ns, Sync out to pulse out						
Monitor output:	Optional ⁵ . Provides a 20 dB attenuated coincident replica of main output						
Connectors:	Out, Monitor: SMA, Trig: BNC						
Power requirement:	100 - 240 Volts, 50 - 60 Hz						
Dimensions: (HxWxD)	All except AVMH-6-C: 100 x 215 x 375 mm (3.9" x 8.5" x 14.8") AVMH-6-C: 100 x 430 x 375 mm (3.9" x 17" x 14.8")						
Chassis material:	aAnodized aluminum, with gray plastic trim.						
Temperature range:	+5°C to +40°C						

- 1) -C suffix indicates stand-alone lab instrument with internal clock and line powering. (See <http://www.avtechpulse.com/formats> for additional details of the basic instrument formats).
- 2) Indicate desired polarity by suffixing model number with -P or -N (i.e. positive or negative) or -P-PN or -N-PN for dual polarity option where the suffix preceding -PN indicates the polarity at the mainframe output port.
- 3) For DC offset option add suffix -OS.
- 4) For units with the -ECL option, an ECL logic level pulse (i.e., -1.6V = ECL LOW, -0.8V = ECL HIGH) is required to trigger this input, and the input impedance is 50 Ω to -2V.

- 5) For monitor option add the suffix -M to the model number.
- 6) A 50 Ohm load is required. Other loads may damage the instrument. Consult Avtech (info@avtechpulse.com) if you need to drive other load impedances.
- 7) For operation at amplitudes of less than 20% of full-scale, best results will be obtained by setting the amplitude near full-scale and using external attenuators on the output.
- 8) Maximum amplitude falls by 10% for PRF above 20 MHz.
- 9) The FWHM pulse widths (i.e., at the 50% rise point) are lower. For example, the minimum FWHM pulse width for the AVMH-1A-C series is < 100 ps. Please see the typical test waveforms on the web site for actual results from shipped units.

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

Avtech frequently customizes models to meet
special requirements at near-stock prices!
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with your special requirements!