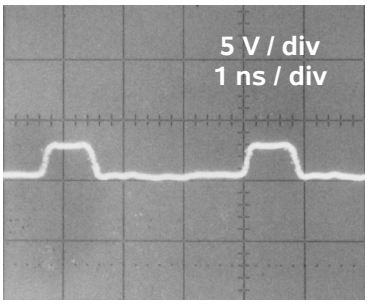
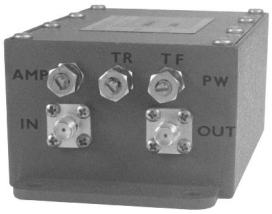
AVTECH

GPIB
IEEE-488

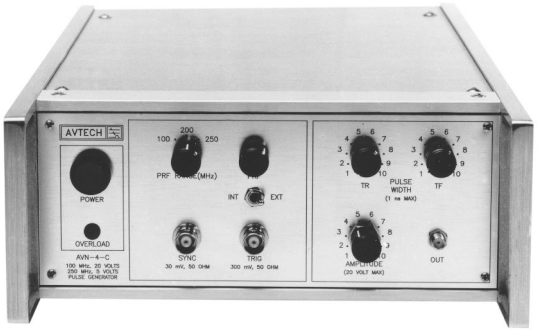
AVN SERIES

100 & 250 MHz PULSE GENERATORS WITH 100 ps RISE AND FALL TIMES AND AMPLITUDES TO 20 VOLTS





AVN-1



AVN-4-C

- 100 ps rise times, amplitudes to 20 Volts
- PRF of 20-100 MHz or 50-250 MHz
- PW 0.2 to 2.5 ns
- Stand-alone lab instruments or miniature modules

The AVN series provides pulses with very fast rise and fall times (100 or 150 ps) at repetition rates up to 100 or 250 MHz.

Model AVN-W-1-C operates from 20 MHz to 100 MHz, generating amplitudes of up to 5V with pulse widths variable from 0.2 to 2.5 ns. The rise and fall times are 100 ps.

All other models operate from 50 MHz to 250 MHz. Model AVN-1-C provides amplitudes of up to 5V with pulse widths variable from 0.2 to 1.0 ns. Model AVN-2-C provides amplitudes of up to 2V with pulse widths variable from 0.2 to 1.5 ns. For both models the rise and fall times are 100 ps.

The higher-amplitude models AVN-3-C and AVN-4-C offer pulse widths of 0.3 to 1.0 ns, with 150 ps rise and fall times. The AVN-3-C can generate amplitudes to 15V for repetition rates below 100 MHz, falling to 10V at 150 MHz and 5V at 250 MHz. The AVN-4-C operates to 20V for repetition rates below 100 MHz, falling to 15V at 150 MHz and 5V at 250 MHz.

On all models, the output amplitude is adjustable using a front-panel one-turn control. The output pulse width is adjusted using two one-turn controls that control the position of the leading and falling edges of the output pulse, respectively.

On all -C units, the pulse repetition frequency is variable from 50 MHz to 250 MHz using the internal clock oscillator (20 to 100 MHz for the AVN-W-1-C), which is controlled by a three-position front panel switch and a one-turn fine control. A sync signal coincident with the main output is provided for scope triggering purposes. The units can also be triggered externally using a 0.3V RMS sine wave or a 50% duty cycle square wave. The propagation delay in the externally triggered mode is typically 5 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. All units include an output DC offset or bias insertion function. The required DC offset or bias is applied directly to rear panel solder terminals. An available option provides an internally generated DC offset (0 to ±5 Volts) which is controlled by a one-turn front panel control. All -C models require 100-240V, 50-60 Hz prime power.

Two models are available in a DC-powered (+24V) miniature module form (AVN-1 and AVN-2). These modules require a 0.3V RMS sine wave or 50% duty cycle square wave input trigger signal and the output PRF equals the input trigger PRF. ECL logic-level triggering is available as an option.

The amplitude, pulse width, and frequency controls on all models interact. For some demanding applications, the user may wish to rely on external attenuators to control the amplitude to minimize such interactions.

In some cases, the specifications can be adapted to satisfy a particular requirement. Contact the factory for your special requirement, at info@avtechpulse.com.

Model:	AVN-W-1-C[1]	AVN-1-C[1] AVN-1	AVN-2-C[1] AVN-2	AVN-3-C[1]	AVN-4-C[1]
Maximum amplitude[2]: (50 Ohm load required)	5V	5V	2V	15V at ≤ 100 MHz, 10V at 150 MHz, 5V at 250 MHz	20V at ≤ 100 MHz, 15V at 150 MHz, 5 V at 250 MHz
Pulse width (FWHM):	0.2 to 2.5 ns	0.2 to 1.0 ns	0.2 to 1.5 ns	0.3 to 1.0 ns	
PRF:	20 to 100 MHz	50 to 250 MHz		50 to 250 MHz	
Rise, fall times (20%-80%):	100 ps	100 ps		150 ps	
Polarity[3]:	Positive or negative or both (specify)				
Propagation delay:	≤ 5 ns (Ext trig in to pulse out)				
Jitter:	± 15 ps (Ext trig in to pulse out)				
DC offset or bias insertion[4]:	Apply required DC offset to back panel solder terminals (± 50 Volts, 250 mA max)				
Trigger required:	Modules, and -C external trigger mode: 0.3 V RMS sine wave or 50% duty cycle square wave[5]				
Sync output: (-C only):	50 mV square wave				
Monitor output option[6]:	Provides a 20 dB attenuated coincident replica of main output				
Connectors: -C: Modules:	Out, Monitor: SMA Trig, Sync: BNC In, Out: SMA Power: solder terminals				
Power requirements:	-C units: 100 - 240 Volts, 50 - 60 Hz, Modules: +24 Volts				
Dimensions (H x W x D):	-C units: 100 x 215 x 375 mm (3.9" x 8.5" x 14.8") Modules: 43 x 66 x 107 mm (1.7" x 2.6" x 4.2")				
Chassis material:	-C units: anodized aluminum, with blue plastic trim. Modules: cast aluminum, blue enamel				
Temperature range:	+5°C to +40°C				

1) -C suffix indicates stand-alone lab instrument with internal clock and line powering. No suffix indicates miniature module requiring DC power and external trigger. (See http://www.avtechpulse.com/formats for details of the four basic instrument formats).
2) 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.
3) Indicate desired polarity by suffixing the 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. (-PN not available on modules).
4) For internally generated DC offset option (0 to ±5 V, one-turn control) add suffix -OT to the model number. Not available on modules.
5) For models with the -ECL option, an ECL-level 50% duty cycle square wave is required instead. In this case, the input is terminated internally with 50 Ohms to -2 Volts. ECL logic levels are -0.8V and -1.6V.
6) For monitor option add suffix -M. Not available on modules.