Rise	Fall	Width	Amplitude	Main Size
				2ns/div
138.78 ps	119.51 ps	10.0407 ns	20.000 V	Main Pos 37.05ns

- Amplitudes to 10 or 20 Volts
- < 200 ps rise times
- Pulse widths variable from 0.4 ns to 1us
- IEEE-488.2 GPIB Control
- Ethernet port for VXI-11.3 support

The AVPP series combines the pulse circuitry used in the AVP and AVMP families to provide extended pulse width ranges, going as low as 400 ps and as high as 1 us.

The AVPP-1-B provides amplitudes of up to 10V, for pulse widths of 0.4 to 100 ns. The rise time is less than 120 ps for pulse widths greater than 5 ns, and less than 150 ps for narrower pulses. The fall time is less than 150 ps for pulse widths greater than 10 ns, and less than 420 ps for narrower pulses. The maximum duty cycle is 10%.

For applications requiring wider pulses, the AVPP-1A-B provides pulse widths of 0.5 ns to 1 us, amplitudes to 10V, and rise times of 200 ps. The maximum repetition rate is 500 kHz, and the maximum duty cycle is 5%.

The higher-voltage AVPP-2-B provides 200 ps rise times for amplitudes to 20V, and pulse widths variable from 0.5 to 100 ns.

The wider-pulse AVPP-2A-B provides pulse widths of 0.5 ns to 1 us, with amplitudes to 20V, rise times of 200 ps, and fall times of 200 ps (500 ps for pulse widths below 8 ns). The maximum repetition rate is 100 kHz, and the maximum duty cycle is 5%.

All models include an internal oscillator, adjustable using the front-panel controls. A delay control and a sync output are provided for oscilloscope triggering purposes. All models can also be triggered externally with a TTL-level pulse.

Positive, negative, and dual polarity models can be provided. Polarity in dual-polarity units is controlled by front-panel settings (or by computer command).

A bias insertion option is available, which provides a bias-tee circuit similar to Model AVX-T at the output. The DC offset/bias is applied to rear panel solder terminals. Another option provides an internally-generated DC offset (0 to ±5V), which is adjustable using the front-panel controls. All AVPP units are also available with a monitor output option that provides an attenuated coincident replica of the main output pulse.

These instruments include a complete computer control interface. 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 backlit LCD displays the output amplitude, polarity, frequency, pulse width, and delay. (For additional details, please see http://www.avtechpulse.com/gpib). To allow easy integration into automated test systems, the programming command set is based on the SCPI standard, with LabView drivers freely available for download at http://www.avtechpulse.com/labview.

A standard rear-panel Ethernet connector allows the instrument to be remotely controlled using the VXI-11.3, ssh, telnet, and web protocols. In particular, the VXI-11.3 feature allows software like LabView to control an instrument using standard VISA communications drivers and network cabling, instead of using older-style GPIB cabling and GPIB controller cards. For more details, see http://www.avtechpulse.com/options/vxi.

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

Typical waveforms from shipped units are available online. For example, see:

http://www.avtechpulse.com/speed/avpp-1/#testresults
http://www.avtechpulse.com/speed/avpp-1a/#testresults
http://www.avtechpulse.com/speed/avpp-2/#testresults
http://www.avtechpulse.com/speed/avpp-2a/#testresults

AVPP-2-B

Model[1]:	AVPP-1-B	AVPP-1A-B	AVPP-2-B	AVPP-2A-B
Amplitude[2]: (50Ω load)	< 1 - 10 Volts		< 2 - 20 Volts	
Pulse width (FWHM):	0.4 ns - 100 ns	0.5 ns - 1 us	0.5 ns - 100 ns	0.5 ns - 1 us
PRF:	1 Hz - 1 MHz	1 Hz - 500 kHz	1 Hz - 100 kHz	1 Hz - 100 kHz
Maximum duty cycle:	10%	5%	1%	5%
Rise times (20%-80%)[7]:	120ps, > 5ns PW 150ps, < 5ns PW	≤ 200 ps	≤ 200 ps	
Fall times (80%-20%)[7]:	< 150ps, for > 10ns PW < 420ps, for < 10ns PW	<200ps, >10ns PW <420ps, <10ns PW	< 200ps, for > 8 ns PW < 500ps, for < 8 ns PW	
GPIB & RS-232 control[1]:	Standard on -B units			
Required load impedance:	50 Ohms[6]			
Polarity[3]:	Positive or negative or both (specify)			
LabView Drivers:	Check http://www.avtechpulse.com/labview for availability and downloads			
Ethernet port, for remote control using VXI-11.3, ssh, telnet, & web:	Included. Recommended as a modern alternative to GPIB / RS-232. See http://www.avtechpulse.com/options/vxi for details.			
Calibration:	Not calibrated. For high-accuracy applications requiring traceable calibration, verify the output parameters with a calibrated oscilloscope.			
DC offset:	Optional[4]. Apply required DC offset to back panel solder terminals(250 mA / ±50V maximum).			
Propagation delay:	≤ 150 ns (Ext trig in to pulse out)			
Jitter:	± 35ps ± 0.015% of sync delay			
Trigger modes:	Internal trigger, external trigger (TTL level pulse, > 10 ns, 1 kΩ input impedance), front-panel "Single Pulse" pushbutton, or single pulse trigger via computer command			
Variable delay:	0 to 1.0 seconds, for all trigger modes (including external trigger)			
Sync output:	+3 Volts, > 50 ns, will drive 50 Ohm loads			
Monitor output option[5]:	Provides a 20 dB attenuated coincident replica of main output			
Connectors:	Out, Monitor: SMA female. Trig, Sync, Gate: BNC female.			
Optional accessory kit: (attenuators and terminators)	Add the suffix "-AK1" to the model number to include the recommended accessory kit. Consists of three SMA, 18 GHz, 2 Watt attenuators (10, 20 & 30 dB) for use on the output, and two 50 Ohm, 1 GHz, 1 Watt feed-through terminators (one SMA, one BNC) for use on external trigger inputs.			
Optional accessory kit: (coaxial cables and adapters)	Add the suffix "-AK8" to the model number to include the recommended accessory kit. Consists of one 12-inch SMA-M/SMA-M PE-SR405FL coaxial cable, one 12-inch SMA-M/SMA-M RG-316 coaxial cable, one 36-inch SMA-M/SMA-M RG-316 coaxial cable, one 24-inch SMA-M/BNC-M RG-316 coaxial cable, one 36-inch BNC-M/BNC-M RG58C/U coaxial cable, one SMA-F to BNC-M adapter, one SMA-M to BNC-F adapter, one SMA-F to SMA-F adapter, and one SMA-F to solder cup adapter			
Power requirements:	100 - 240 Volts, 50 - 60 Hz			
Dimensions (H x W x D):	100 mm x 430 mm x 375 mm (3.9" x 17" x 14.8")			
Chassis material:	cast aluminum frame & 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) 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 the desired polarity by suffixing model number with -P or -N (i.e. positive or negative) or -PN for the dual polarity option.
4) The -OS option adds an internal bias tee circuit to the output, allowing an externally-generated DC offset (±50V/250mA max) to

be added the output signal. The -OT option includes the -OS function, and adds the ability to generate a ±5V/100mA offset internally (controlled from the front panel, or by computer command on -B units).
5) Add -M to model number for monitor option.
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) The pulse width thresholds are approximate.