



- ◆ IEEE-488.2 GPIB (and RS232) control is standard
- ◆ ±10 Volt output (TTL and ECL also) into 50Ω
- ◆ Variable DC offset to ±10 Volts
- ◆ 10 ns rise and fall times
- ◆ Variable delay with low jitter
- ◆ Dual channel version (Model AV-1021D-B)

Model AV-1021-B is a general-purpose 10 MHz lab pulse generator which includes IEEE-488.2 GPIB (and RS-232) computer control of amplitude, polarity, DC offset, pulse width, pulse repetition frequency, trigger mode and delay.

The unit features a front panel keyboard and adjust knob control of the output pulse parameters along with a four line by 40 character back-lit LCD display of the output amplitude, polarity, pulse width, pulse repetition frequency, DC offset and delay.

The output pulse amplitude and the DC offset are both variable from 0 to ±10V (above 5 MHz, the maximum amplitude falls to ±8V). The output impedance can be set at 50Ω (for transmission-line backmatching) or at 2Ω for maximum output voltage. (The amplitude and offset are reduced by a factor of two when the 50Ω setting is used with a 50Ω load.) The instrument can be triggered by its own internal clock, by an external TTL-level signal, by the front-panel "Single Pulse" pushbutton, or by a computer command. The internal clock is variable from 1 Hz to 10 MHz. A

double pulse mode is available and a gate input is provided for synchronous or asynchronous control of the triggering. The output pulse width and delay are variable from 20 ns to 0.5 sec. The rise time of the main output is 10 ns. The unit also provides logic and logic-complement outputs (TTL and ECL signals).

Model AV-1021D-B is similar but provides two independent 0 to ±10 Volt output channels. The two channels have separate pulse width, amplitude and polarity controls. One channel has adjustable delay, and one channel is synchronous with the sync output.

Models AV-1021-B and AV-1021D-B both require 100 - 240 Volts, 50 - 60 Hz prime power. All input and output connectors are BNC (female). A heavy-duty metal chassis insures low emissions.

For applications requiring faster rise times, consider the AV-1030 series (described at <http://www.avtechpulse.com/general/av-1030>). For applications not requiring GPIB computer control, see the general-purpose models AV-1020-C, AV-1022-C, or AV-1023-C at <http://www.avtechpulse.com/general>.

Model:	AV-1021-B	AV-1021D-B
GPIB and RS-232 control:	Included. See http://www.avtechpulse.com/gpib for details.	
LabView Drivers:	Check http://www.avtechpulse.com/labview/ for availability and downloads	
Number of main output channels:	One	Two
Auxiliary logic-level outputs:	Logic and Logic-Inverted. May be set to TTL or ECL levels.	Logic and Logic-Inverted, for both channels. May be set to TTL or ECL levels.
Amplitude and peak output (to 50 Ohms) ^{1,2} :	Main output: 0 to ±10 V (when Z _{OUT} =2Ω), 0 to ±5 V (when Z _{OUT} =50Ω). Resolution: < 0.025% of full-scale. Logic outputs: TTL: 0 and +5V. ECL: -0.8V and -1.6V.	
Pulse repetition frequency (PRF):	1 Hz to 10 MHz	
Pulse width (FWHM):	20 ns to 0.5 sec, or DC	30 ns to 0.5 sec
Rise time, fall time (20%-80%):	Main: ≤ 10 ns, TTL: 5 ns, ECL: 2 ns	
DC offset ¹ :	0 to ±10 V for Z _{OUT} =2Ω, 0 to ±5 V for Z _{OUT} =50Ω	
Source impedance Z _{OUT} :	Main output: 2Ω or 50Ω, switchable ² .	
Duty cycle (max):	70% (100% in PW DC mode)	
Waveform aberrations:	Overshoot and ringing are less than ≤ 10% at amplitudes of 1 V and higher with outputs terminating in 50Ω.	
Propagation delay:	< 120 ns (Ext trig in to pulse out, with delay set to zero)	
Trigger required (Ext trig mode):	+ 5 Volts, ≥ 4 ns TTL	
Trigger required (Gate in):	TTL, synchronous or asynchronous, active high or low	TTL, synchronous, active high or low
Delay jitter:	≤ ± 35ps ± 0.015% RMS (sync out to pulse out)	
Delay:	0 to ±0.5 sec (sync out to pulse out)	Channel 1: follows sync pulse by 0 to 0.5 sec Channel 2: synchronous with sync pulse
Sync output:	+2 Volts, 50 ns, will drive 50 Ohm loads	
Single pulse mode:	manual front-panel push button or computer command	
Double pulse mode:	yes	Channel 1 only
Signal connectors:	BNC. Main outputs and Sync are on the front panel. Logic outputs & Gate & Ext Trig inputs are on the rear.	
Telnet / Ethernet control ³ :	Optional. See http://www.avtechpulse.com/options/tnt for details.	
Power requirement:	100 - 240 Volts, 50 - 60 Hz	
Dimensions, Weight, Chassis:	100 x 430 x 375 mm (3.9" x 17" x 14.8"), 10 kg (22 lbs), anodized aluminum with blue-gray plastic trim	
Mounting & Temperature range:	Any, +5°C to +40°C	

1) Peak output = amplitude + offset. The amplitude and offset can not be set to maximum at the same time, or the peak output rating will be exceeded.
2) The output amplitude falls by up to 20% as the PRF is increased above 5 MHz. The

maximum amplitude falls to 8V above 5 MHz.
3) Add the suffix -TNT to the model number to specify the Telnet / Ethernet control option.



AV-1021D-B