


# AimTTi True Pulse Generator TGP3100 Series

Best Buy Pulse Generators:

Excellent value for money



Aim-TTi has launched a series of high performance pulse generators that achieves a new price/performance point.

The four models in the new TGP3100 Series are true pulse generators, single or dual channel, operating at up to 50MHz.

## TGP3151 Comparison with other generators

	<b>TGP3151 (single channel)</b>	<b>Agilent 81101A (single channel)</b>	<b>BK4033 (single channel)</b>	<b>Tabor PM8571A (single channel)</b>
<b>Price</b>	<b>£1225</b>	£6000	£4723	£5200
<b>Frequency</b>	1mHz – 50MHz	1mHz – 50MHz	100mHz – 50MHz	100mHz – 50MHz
<b>Width</b>	10ns - ~1000s	10ns - ~1000s	10ns - ~10s	8ns – 10s
<b>Delay</b>	0ns - ~ 1000s	0ns - ~1000s	0ns - ~10s	0ns to ~10s
<b>Edge</b>	5ns to ~ 800s Rise / fall times are truly independent of each other	5ns to 200ms (8 ranges – rise / fall time ratio cannot be greater than 1:20)	<6ns to 100ms (7 ranges – rise / fall time ratio cannot be greater than 1:20)	5ns to 5ms (6 ranges – rise / fall time ratio cannot be greater than 1:20)
<b>Amplitude</b>	100mVpp - 10Vpp +-5V window 50Ω into 50Ω  200mVpp - 20Vpp +-10V window 5Ω into 50Ω	100mVpp – 10Vpp +-10V window 50Ω into 50Ω  200mVpp – 20Vpp +-20V window 1kΩ into 50Ω	100mVpp – 10Vpp +-10V window 50Ω into 50Ω	16mVpp to 16Vpp +-8V window 50Ω into 50Ω (other options available. Maximum 20Vpp into 50Ω)
<b>Double Pulse / External Width</b>	Yes. Both delay and double delay in double pulse can be varied (this feature not available in others)	Yes	Yes	Yes
<b>Pulse Modulation</b>	AM, FM, PM, FSK, BPSK, SUM, PWM, PDM, SPDM	No	No	Only PWM on pulses.
<b>Function Waveforms</b>	Yes	No	No	Yes
<b>Arbitrary Waveforms</b>	Yes (DDS)	No	No	Yes (True Arb)
<b>Noise</b>	Yes	No	No	No
<b>PRBS / Bit Patterns</b>	Yes	No	No	No
<b>Multi bit digital patterns</b>	No	No	No	Yes
<b>Burst</b>	Gated or Triggered Count : 1 to 2147483647  Internal trigger: 20ns to 500s  External trigger: DC to 50MHz  Threshold: -3V to +3V Trigger to Output Delay: 440ns (typical) Fixed  External trigger to output uncertainty: 100ps (typical)	Gated or Triggered Count 1 to 65536  Internal Trigger : Not available External Trigger: DC to 50MHz  Threshold: -10V to +10V Trigger to Output Delay: 29ns Fixed  Trigger to output uncertainty: not mentioned and therefore assumed to be down to pulse jitter spec which is 15ps rms +0.01% of period	Gated or Triggered Count 1 to 999999  Internal Trigger : 100ns to 100s External Trigger: DC to 50MHz  Threshold: -10V to +10V Trigger to Output Delay: Not mentioned  Trigger to output uncertainty: not mentioned and therefore assumed to be down to pulse jitter spec which is 20ps rms +0.01% of period	Gated or Triggered Count 1 to 1000000  Internal Trigger : 100ns to 1s  External Trigger: DC to 50MHz  Threshold: -5V to +5V Trigger to Output Delay: 6 clock cycles + 150ns  Trigger to output uncertainty: 3% of period + 500ps

## 4-in-1 Universal Pulse Generator: Create pulse, noise, function and arbitrary



	<b>Aim-TTI TGP31xx (1 – 2 channel)</b>	<b>Keysight 33500B series (1 -2 channel)</b>
<b>Price</b>	<b>£1075</b> (starting price, 1ch)	£1170 (starting price, 1ch)
<b>Pulse Frequency Range</b>	1mHz – 50MHz [25MHz]	1uHz – 30 MHz [20MHz]
<b>Period</b>	<b>20ns</b> – 1000s	33ns – 1000000s
<b>Minimum Pulse Width</b>	<b>10ns</b>	16ns
<b>Rise &amp; Fall time</b>	<b>5ns – 799.99999989s</b>	8.4ns – 1us
<b>Delay</b>	<b>0ns – 999.99999980s</b>	Cannot set delay
<b>Setting resolution</b>	100ps	100ps (1ns for period)
<b>Width</b>	Width can be specified as absolute width, duty cycle or as fall time delay	Width can be specified as absolute width or duty cycle
<b>Rise &amp; Fall time</b>	Rise & Fall time can be set together or independently and can be entered as absolute time or as a percentage of width.	Rise & Fall time can be set together or independently and can only be entered as absolute time.
<b>Delay</b>	<b>Delay can be entered as absolute delay in time or as a percentage of period.</b>	Cannot set delay
<b>Phase</b>	-360 degrees to +360 degrees	-360 degrees to +360 degrees
<b>Double Pulse (2 pulse per period)</b>  Double delay is the delay from the start of the first pulse to the start of the second pulse  Width, Delay, Double Delay can be set in time or as percentage of period. Rise / Fall can be set in time or as percentage of width.	<b>Freq: 1mHz to 25MHz</b> <b>Period: 40ns to 1000s</b> <b>Width: 10ns to 499.9999999s</b> <b>Delay: 0ns to 999.9999996s</b> <b>Rise: 5ns to 399.99999989s</b> <b>Fall: 5ns to 399.99999989s</b> <b>Double Delay: 20ns to 99999998s</b>	Does not offer double pulse
<b>PRBS</b>	Bit rate: 1mbps to 50Mbps Edge time: 5ns to 799.99999989s Sequence: PN7, PN9, PN11, PN15, PN20, PN23, <b>PN29, PN31</b>	Bit rate: 1mbps to 50Mbps Edge time: 8.4ns to 1us PN7, PN9, PN11, PN15, PN20, PN23
<b>User defined Pattern</b>	<b>Bit rate: 1mbps to 50Mbps</b> <b>Edge time: 5ns to 799.99999989s</b> <b>Maximum length: 65536.</b> <b>4 patterns could be stored in non-volatile memory.</b>	Does not offer user defined patterns
<b>External Pattern (used for pulse shaping, recovery, amplification, etcetera)</b>  Also known as external width	<b>Applied at external modulation input. Up to 50Mbps. Pattern s sampled at 50Mbps. Threshold level : -2.5V to +2.5V</b>  <b>Applied at external trigger input. Indefinite pattern length. Up to 50Mbps. Threshold level: -3.0V to +3.0V. Fixed latency.</b>	Does not support external pattern

<b>Noise</b>	Bandwidth: 1mHz – 25MHz	Bandwidth: 1mHz – 30MHz
	Noise Distribution: Gaussian, User defined	Noise Distribution: Gaussian
	<b>Gaussian Crest Factor: 3.3, 4.8, 6.0, 7.0</b>	Gaussian Crest Factor: 4.6 fixed
	User defined distribution – user waveform defines how often a level will occur relative to others (max 2048 points)	Not offered
<b>Function / Arbitrary</b>	DDS	<b>True-Form</b>
	Sampling rate: <b>800Mbps</b>	Sampling rate: 250Mbps
	Length: 4096 points	Length: 1 million points
	Vertical resolution: 16 bits	Vertical resolution: 16 bits
	DDS Jitter: 1.25ns	Jitter: 40ps rms
	Not offered	Arb sequencing
<b>Modulation and Sweep</b>	AM, FM, PM, FSK, BPSK, SUM, PWM, <b>PDM, SPDM</b> Modulation frequency: 1mHz to 10MHz (internal)	AM, FM, PM, FSK, BPSK, SUM, PWM Modulation frequency: 1uHz to 30MHz (internal)
<b>Burst</b>	Triggered, Gated, Infinite	Triggered, Gated, Infinite
	Count : 1 to 2147483647	Count : 1 to 100000000
	Internal trigger: <b>20ns</b> to 500s	Internal trigger: 1us to 8000s
	External trigger: DC to <b>50MHz</b>	External trigger: DC to 1MHz
	External trigger to output uncertainty: <b>100ps</b> (typical)	External trigger to output uncertainty: 4ns typical
<b>Amplitude / Offset</b>	100mVpp to 10Vpp 50Ω into 50Ω 200mVpp to 20Vpp 5Ω into 50Ω	1mVpp to 10Vpp 50Ω into 50Ω
	+5V window 50Ω into 50Ω <b>+10V window 5Ω into 50Ω</b>	+5V window 50Ω into 50Ω