AIM & THURLBY THANDAR INSTRUMENTS

TGP110



10MHz pulse generator with delay

- *0.1Hz to 10MHz frequency range*
- *50ns minimum pulse width; fully variable pulse delay*
- *Squarewave, double pulse and delayed pulse modes*
- *Free-run, gated and triggered modes*
- *50 Ω output, variable 0.1V to 10V; TTL and sync outputs*

Aim-TTi

TGP110 10MHz pulse generator with delay

An essential instrument

The generation of pulses for the stimulus and control of electronic systems is beyond the capability of all but the most sophisticated of function generators.

The architecture of a dedicated pulse generator enables it to generate pulses of a set width regardless of the repetition rate offering duty cycles which can extend down to 1 in 100 million.

In addition to continuous operation, single or multiple pulses can be generated in response to trigger or gating signals with precisely defined timing relationships.

A dedicated pulse-waveform output amplifier provides flat top pulses with fast rise and fall times at variable amplitude.

Variable delay

The TGP110 offers selectable delay between the sync output and pulse output. In triggered mode this also sets the delay between a trigger signal and the start of the pulse.

Wide pulse range

The TGP110 can generate pulse widths in the range 50ns to 5s. There are eight overlapping decade ranges with vernier control within each range.

The period range is 100ns to 10s, equivalent to a repetition rate range of 10MHz to 0.1Hz. Delay is independently adjustable over the same range as pulse width.

A complement switch inverts the mark-space polarity.

Squarewave and double pulse

In square mode, squarewaves are generated at a frequency set by the period controls alone. This provides a convenient means of generating variable period edges where the pulse width is unimportant, for example.

In double pulse mode, a second pulse is generated within every period at a set delay after the start of the first pulse. The delay is independently adjustable.

PERIOD, PULSE WIDTH, DELAY

Each parameter is variable within 8 overlapping decade ranges with a vernier providing continuously variable control within each range.

PERIOD

Range:	100nsec to 10sec (10MHz to 0·1Hz).
Jitter:	<0.1%.

PULSE WIDTH

Range:	50nsec to 5sec
Jitter:	<0.1%.

DELAY

Range:	50nsec to 5sec

TRIGGER, GATE

RUN
Normal operational mode in which pulses are generated continuously at 0.1Hz to 10MHz.

TRIGGERED
DC to 10MHz pulse train in synchronism with external trigger pulses; pulse width determined by pulse width controls. Trigger can be generated manually from front panel button.

GATED
0·1Hz to 10MHz pulse train, parameters set by period and pulse width controls, starts synchronously with leading edge of gate input. Last pulse is completed at the end of gating period. Gating signal can be generated manually from front panel button.

PULSE MODES

NORMAL PULSE
One pulse is generated each period. The delay setting is ignored.

SQUAREWAVE
0·1Hz to 10MHz squarewave, frequency set by the period controls. Pulse width and delay settings ignored.
Mark : Space ratio: 1:1 ±10%.

DOUBLE PULSE
A second pulse is generated after a delay set by the delay controls; the delay is related to the leading edge of the first pulse.

DELAYED PULSE
A pulse is generated after a delay set by the delay controls; the delay is related to rising edge of the trigger signal.

INPUTS

GATE/TRIG INPUT

Frequency range:	DC - 10MHz
Signal range:	TTL threshold; max. input ±10V.
Min. pulse width:	>30nsec.
Input Impedance:	Typically 10kΩ.

OUTPUTS

50Ω OUTPUT

Amplitude:	Two switch selectable ranges of 0·1V - 1·0V and 1V - 10V from 50Ω. (50mV to 500mV and 500mV to 5V into 50Ω). Adjustable within ranges by a single turn vernier.
Rise/Fall Times:	Typically 10nsec into 50Ω load. Maximum 15ns.
Aberrations:	Typically <5% for output set at >20% of range maximum, into 50Ω.

AUX OUTPUT
Duplicates 50Ω output but at a fixed CMOS/TTL level.

SYNC OUTPUT

Amplitude:	A positive going pulse at CMOS/TTL level.
Timing:	Leading edge starts >20nsec before the TTL/50Ω output transition.
Duration:	Typically 30nsec.

COMPLEMENT SWITCH
Inverts the AUX and 50Ω outputs.

GENERAL

Power:	230V or 115V AC nominal 50/60Hz, adjustable internally; operating range ±14% of nominal; 20VA max.
Size:	140 x 220 x 230mm (HxWxD)
Weight:	1.6kg (3.5lb)
Operating Range:	+ 5°C to 40°C, 20-80% RH.
Storage Range:	- 40°C to 70°C
Safety:	Complies with EN61010-1.
EMC:	Complies with EN55081-1 and EN50082-1.

Thurlby Thandar Instruments Ltd. operates a policy of continuous development and reserves the right to alter specifications without prior notice.

Designed and built in Europe by:

TTi ltd

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Aim-TTi

Product Summary

Laboratory Power Supplies

Bench and system power supplies from 30 watts up to 1200 watts using linear, mixed-mode and PowerFlex regulation technologies.



Waveform Generators

Analog and digital (DDS) function generators, true arbitrary generators, arbitrary/function generators and pulse generators.



Precision Measurement Instructments

Benchtop DMMs, frequency counters, component measurement instruments (LCR), electronic dc loads, current probes.



RF and EMC Test Equipment

Spectrum analyzers, signal generators, frequency counters, power meters, emc measurement instruments.



Company name and product brands

Thurlby Thandar Instruments Ltd. (TTi) is one of Europe's leading manufacturers of test and measurement instruments.

Products have been sold under two brand names: TTi and Aim.

In the future, however, the full product range will be branded Aim-TTi.

This changeover will be gradual and many products will continue to carry the TTi or Aim brands for some time to come.

Web Addresses (URLs)

The preferred URL for obtaining information concerning Aim-TTi products is:

www.aimtti.com (international customers)

Customers in the UK should use the URL:
www.aimtti.co.uk

Customers in the USA should use the URL:
www.aimtti.us

Note that previous URLs such as www.tti-test.com will continue to operate for the time being.

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