

Time-Interval/Pulse/Frequency Generator T5400W

High Performance Miniature Instrument with WiFi Interface

- ◆ Small box with wireless control by notebook or PC via *WiFi* interface
- ◆ Precisely controlled time interval between the leading edges of output pulses
- ◆ Precisely controlled width of pulses at a separate output
- ◆ Time interval/width range: 10 ns – 10 seconds
- ◆ Time interval/width resolution: 5 ps
- ◆ Jitter: **< 20 ps rms** at time interval from 10 ns to 50 ms
- ◆ Output pulses: positive, 2 V amplitude on 50 Ω load, rise- and fall time < 600 ps, selectable width (10, 20, 50 or 100 ns) and polarity
- ◆ Precisely controlled frequency of rectangular waveform at a separate output
- ◆ Internal trigger generator with variable frequency
- ◆ Clock generator: internal TCXO or external 10 MHz reference clock
- ◆ User-friendly software for Windows

WORLD'S FIRST TIME-INTERVAL GENERATOR WITH PICOSECOND PRECISION IN SUCH A SMALL, LIGHT, AND HANDY CASE WITH WiFi INTERFACE



The T5400W Generator produces precise and low-jitter time interval between the leading edges of pulses at two outputs (**A** → **B**) and simultaneously the pairs of such pulses are generated in the **Common** mode at a single output (**CW**). In the **Width** mode a pulse of width equal to preset time interval is generated at the **CW** output. Both the time interval and width can easily be varied using the mouse or by writing the needed value on the virtual control panel. The T5400W can also be used as a pulse generator of variable frequency.

The generator T5400W contains a *Temperature-Compensated Crystal Oscillator* (TCXO), which provides high accuracy and stability at reasonable cost. An external (for example, atomic) frequency standard can also be used (input **CK**).

The T5400W Generator is a small box with convenient wireless control by a computer (notebook, netbook, or PC) via the *WiFi* interface. It combines the digital control and picosecond precision of the time-interval generation with affordable cost and reliability for thorough industrial and scientific applications. All instrument functions can be accessed through a simple, intuitive, and user-friendly graphic interface. The supplied *Programmer's Guide* allows for easy custom programming in system applications.



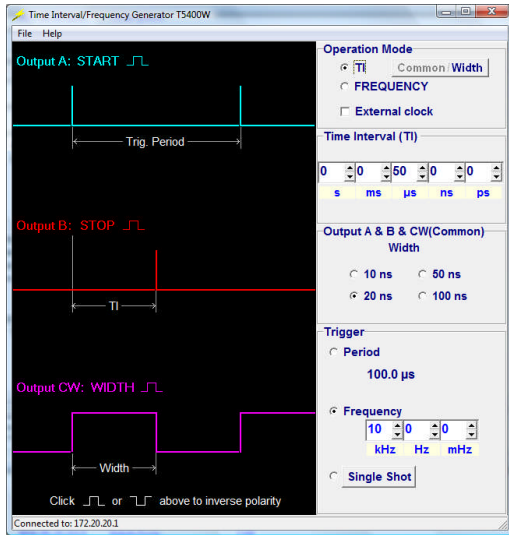
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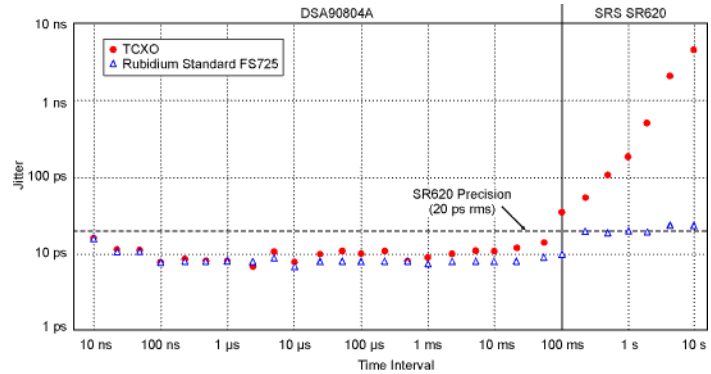
Sales: amaciak@vigo.com.pl
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Virtual Control Panel in **Time-Interval/Width** mode

Time Interval jitter - measured by *Agilent* oscilloscope DSA90804A (8 GHz, 40 GS/s, noise floor 2 ps rms) and *SRS* counter SR620 (precision 20 ps rms)



Specifications

Functions

- Time Interval** between the leading edges of two pulses appearing at the **A** and **B** outputs or between the leading edges of two pulses appearing consecutively at the **CW** output in **Common** mode
- Pulse Width** at the **CW** output in **Width** mode
- Frequency** of rectangular waveform generated at the **F** output

Time Interval & Width

- Range*
- Incremental Resolution*
- Jitter*

- 10 ns – 1 second (TI **A** → **B**, Common mode (**CW**), Pulse Width (**CW**))
- 5 ps
- < 20 ps rms at TI from 10 ns to 50 ms (internal TCXO timebase)
- < 20 ps rms at TI from 10 ns to 10 seconds (external atomic timebase)

Trigger generator

internal, with digitally variable frequency from 10 MHz to 1 MHz

Frequency

Output **F**

Range

- 0.1 Hz to 500 Hz with 1 μHz step; 500 Hz to 1 MHz with a 1 mHz step;
- 1 – 75 MHz with a 1 Hz step
- < 20 ps rms from 10 kHz to 75 MHz

Period jitter

Outputs A, B, CW, F

- Load*
- Amplitude*
- Rise & Fall time (20 – 80 %)*
- Polarity*
- Pulse width*

- 50 Ω, DC coupled; SMA sockets
- 2 V referred to ground
- < 600 ps
- selectable, positive or negative leading edge (except output **F**)
- 10, 20, 50 or 100 ns ± 0.5 ns at 1 V threshold (except outputs **F** and **CW/Width**)

Internal Clock Generator

10 MHz TCXO, stability 5×10^{-7} (-40 to +85 °C), ageing 1×10^{-6} /year

External Clock Generator

- Input **CK** - 50 Ω, DC coupled; SMA socket
- 10 MHz, sine or pulse, min. 100 mV on 50 Ω input impedance



WiFi Standard

Antenna

2.4 GHz, 2.0 dBi, 50 Ω, omni-directional, ¼ wavelength dipole configuration, VSWR < 2.0, height: 82.5 mm (supplied)

Power Supply

+5 V @ 0.55 A, provided by the separate box (supplied), 110 – 230 V, 50/60 Hz

Software

for *Windows*® XP/Vista/7, DLL file for other applications

Size

140 (L) × 70 (W) × 17 (H) mm

Weight

175 g