Triarchy Technologies CORP.
Vincit Omnia Veritas

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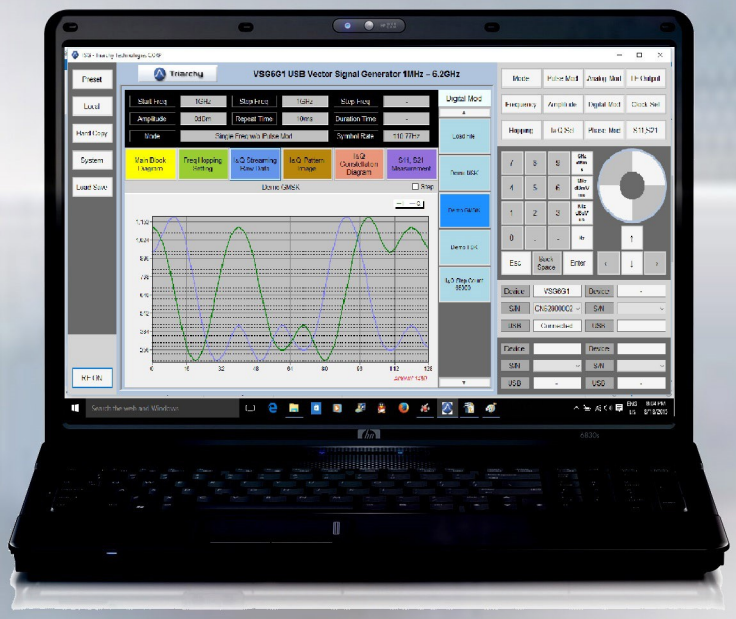
TSG4G1 USB Synthesized Signal Generator

TSG4G1 is a very cost effective USB RF signal generator. Its capabilities are comparable to the basic functions of a regular full size RF signal generator. TSG4G1 is miniature and portable equipment, but it has more features and functions with frequency range up to 4.4GHz, frequency sweep, frequency hopping and pulse modulation. You can configure this device to meet a wide variety of test tasks. TSG4G1 is very suitable for the field test, because it is very small and convenient to carry. It can also work at ATE system as module, being able to simulate a lot of RF system for test purpose.



Key features

Frequency range up to 4.4GHz
Output level up to 0dBm
Frequency in CW, sweeping and hopping mode
Built-in pulse generator and generate pulse modulation
Built-in arbitrary function generator to generator LF signal
Pulse output with pulse generator
Extra Low cost, extra low weight, best performance price rate
Expandable architecture
Reference clock input and output
USB power without extra battery pack
Device dimension is 100x25x25mm

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Specification for Frequency

Frequency range :

Band 1: 35MHz ~4400MHz

Frequency resolution:

1 KHz with PLL setting

Frequency stability

+/-2.5PPM over temperature -20~+60 degree

Frequency aging per year

+/-1PPM

Frequency reference output:

12MHz

Frequency reference input:

10MHz

Specification for amplitude

output level range :

Band 1: -31dBm~0dBm

*The output value can be more 15dBm at some frequency range when calibration file set to Zero.

output level resolution:

1dB

output level error:

<3dB

Phase noise:

-90dBc/Hz offset 10 KHz at 1GHz

-105dBc/Hz offset 100 KHz at 1GHz

-120dBc/Hz offset 1MHz at 1GHz

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Specification for Pulse modulation

Pulse modulation repeat time
400uS to 20s
Pulse modulation duration time
10us to 5S
Multiple pulse number
2~250
Multiple pulse delay
100us~5s (last pulse cannot be overlay with first pulse)
On/off ratio
>90dB

Specification for Frequency sweeping with/ without pulse modulation

Span range:
1 KHz to full span
Scan points range:
2 to 50000
Frequency step range:
1 KHz to 1GHz
Pulse period (setting at Pulse Mod) :
repeat time is from 400uS to 20s
Pulse width (setting at Pulse Mod):
duration time is from 10us to 10s
* If it is in “sweeping w/o Pulse mod”, this parameter no function

Specification for Frequency hopping with/ without pulse modulation

Frequency hopping range:
35MHz to 4.4GHz
Frequency hopping number:
2~4000
Pulse period (setting at Pulse Mod) :
Hopping repeat time is from 400uS to 20s
or 2500 hop/s to 0.05 hop/s
Pulse width (setting at Pulse Mod):
Pulse duration time is from 10us to 10s
* If it is in “hopping w/o pulse mod”, this parameter no function

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Specification for LF signal output

SIN Waveform in Demo:

Waveform pattern length: 72 points
Frequency range: 15.4Hz to 33.3 KHz
Signal level: 1VPP

Triangle Waveform in Demo:

Waveform pattern length: 36 points
Frequency range: 30.8Hz to 66.6 KHz
Signal level: 1VPP

Total arbitrary waveform(I&Q) raw data length:

4Kb

arbitrary waveform (I&Q) points range:

30 to 65000*

Define the arbitrary waveform (I&Q) data file, study different pattern, the arbitrary waveform can be generated at output port.

Output port:

From 4 MMCX connectors (IP, IN, QP, QN) at side of body.

Specification for Pulse signal output

Pulse signal level:

High level 3.3V, low level 0V

Pulse repeat time

400uS to 20s

Pulse duration time

10us to 5S

Multiple pulse number

2~250

Multiple pulse delay

100us~5s (last pulse cannot be overlay with first pulse)

Output port:

From MMCX connector (Pulse) at rear panel