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

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

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*

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.

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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