

# FNIRSI TSG6020 Function Generator



Model: TSG6020

Manufacturer: FNIRSI

EAN: 5905156108189

Product Code: 1107715

## R6,995

### FNIRSI TSG6020 Function Generator

Precise signal generation, extensive configuration options, and advanced measurement features make the FNIRSI TSG6020 ideal for use in laboratories, as well as for service work and electronic circuit design. Its dual-channel design, output frequency up to 60 MHz, and a sampling rate of 200 MSa/s with 14-bit resolution ensure faithful waveform reproduction and high operational accuracy. The generator supports many types of modulation, allows you to create your own arbitrary waveforms, and offers a frequency sweep function and a built-in frequency counter. An intuitive touchscreen, quick access to saved settings, and a robust design ensure that the device remains easy to use even during intensive, extended operation.

### High-quality generated signals

The FNIRSI TSG6020 is equipped with two independent output channels, allowing it to generate two different signals simultaneously and conveniently perform more advanced tests and analyses. The

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generator offers an output frequency of up to 60 MHz, and thanks to a sampling rate of 200 MSa/s and 14-bit vertical resolution, it ensures highly accurate waveform reproduction with minimal distortion. The output voltage range has been optimized for various load configurations—from 2 mVpp to 20 Vpp at high impedance for frequencies below 10 MHz, from 2 mVpp to 10 Vpp above 10 MHz, as well as from 1 mVpp to 10 Vpp and from 1 mVpp to 5 Vpp with a 50  $\Omega$  load. This flexibility allows the device to be used in many demanding laboratory and design applications.

## **Standard Waveforms and Advanced Modulations**

The generator supports all commonly used waveforms, such as sine, square, sawtooth, pulse, noise, and DC. In addition to predefined waveforms, it allows you to reproduce your own arbitrary waveforms using a point-by-point method, ensuring that all waveform details are preserved. VeriPoint technology uses a sampling rate ranging from 1  $\mu$ Sa/s to 200 MSa/s and very low jitter below 200 ps, ensuring precise reproduction of even the most complex signal shapes. The device also supports six types of modulation (AM, FM, PM, FSK, ASK, and PSK), making it ideal for testing digital communication circuits and radio systems.

## **Even Greater Precision**

The ZeroSurge technology significantly reduces overshoot in square, pulse, and sawtooth signals. Overshoot does not exceed 1%, and rise and fall times are a maximum of 13.5 ns, resulting in sharp edges and very high accuracy of the generated waveforms. The generator is also equipped with a seven-digit frequency counter that measures the frequency, period, and duty cycle of TTL-level signals in the range from 100 mHz to 100 MHz with an accuracy of  $\pm 51$  ppm. The high signal quality is also confirmed by parameters including a low phase noise level of up to -125 dBc/Hz at 10 MHz (10 kHz offset) and harmonic distortion below -40 dBc in the range from 30 to 60 MHz.

## **Frequency Sweeping and User-Friendly Operation**

The FNIRSI TSG6020 offers frequency sweeping in both linear and logarithmic modes. The sweep time can be adjusted from 1 ms to 500 s with an accuracy of  $\pm 0.1\%$ , which facilitates, among other things, the analysis of filter characteristics and the testing of the response of various electronic circuits. Operation is streamlined by a 4.3-inch color TFT-LCD touchscreen that works in conjunction with traditional physical buttons. The screen displays a real-time preview of the generated waveform

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and key operating parameters, allowing you to quickly check settings and make necessary adjustments.

**Stable operation even during long-term tests**

The generator is designed for reliable operation during intensive use. Effective heat dissipation is ensured by an aluminum heat sink supported by a quiet fan, which maintains the proper temperature of the components even during many hours of operation. The design also includes output channel protection, insulation, and ground protection, while the TTL-compatible synchronization output enhances integration capabilities with other measurement devices. Non-volatile memory allows you to store up to 24 custom arbitrary waveforms, which can be instantly recalled without the need for reconfiguration. The generator also supports multiple operating modes, including continuous, gated, modulation, and sweep modes, providing great flexibility when setting up even complex test benches.

**Included in the set**

- function generator
- charging adapter
- Type-C charging cable
- data cable
- measurement lead
- alligator clips
- user manual

|                                 |           |
|---------------------------------|-----------|
| <b>Manufacturer</b>             | FNIRSI    |
| <b>Model</b>                    | TSG6020   |
| <b>Maximum output frequency</b> | 60 mHz    |
| <b>Sampling rate</b>            | 200 MSa/s |
| <b>Vertical resolution</b>      | 14 bits   |
| <b>Channels</b>                 | 2         |

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**Maximum output amplitude** 20 Vpp (10 mHz) / 10 Vpp (>10 mHz)

**Sine wave frequency** 1 µHz-60 MHz

**Square wave frequency** 1 µHz-24 MHz

**Pulse wave frequency** 1 µHz-24 MHz

**Modulation types** AM, FM, PM, FSK, ASK, PSK

**Sweep modes** Linear sweep, logarithmic sweep

**Built-in frequency counter** 7-digit

**Display screen** 4.3" TFT LCD, 480 x 272

GPSR Link: [https://psr-assets.innpro.pl/tools/sg\\_tools\\_measuring\\_tools.pdf](https://psr-assets.innpro.pl/tools/sg_tools_measuring_tools.pdf), Gross weight: 1310, Net weight: 739, Box length: 21,50, Box width: 15,50, Box height: 13,50, PPWR: <https://ppwr.innpro.pl/fnirsi>

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