

# FNIRSI TSG3020 Function Generator



Model: TSG3020

Manufacturer: FNIRSI

EAN: 5905156108172

Product Code: 1259053

## R4,924

### FNIRSI TSG3020 Function Generator

The FNIRSI TSG3020 combines high signal generation accuracy with intuitive operation, making it ideal for use in laboratories, workshops, and in the field. Its dual-channel design, output frequency up to 60 MHz, 200 MSa/s sampling rate, and 14-bit resolution enable the generation of high-quality signals with minimal distortion. The device offers a wide selection of standard and arbitrary waveforms, supports six types of modulation and a frequency sweep function, and the built-in frequency counter further enhances its measurement capabilities. The package is rounded out by a clear touchscreen, advanced signal-quality enhancement technologies, and a robust design built for heavy-duty use.

### Two Independent Channels

The generator is equipped with two independent output channels, enabling the simultaneous generation of two different signals and facilitating more advanced measurements. The maximum

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output frequency is 60 MHz, and the amplitude range has been optimized for various load and frequency configurations. For high impedance, the range is from 2 mVpp to 20 Vpp at frequencies below 10 MHz and from 2 mVpp to 10 Vpp above 10 MHz. With a 50  $\Omega$  load, the generator offers a range from 1 mVpp to 10 Vpp below 10 MHz and from 1 mVpp to 5 Vpp at frequencies exceeding 10 MHz. A sampling rate of 200 MSa/s and 14-bit vertical resolution ensure accurate waveform reproduction, preservation of the finest details, and very low distortion.

## **Standard and Arbitrary Waveforms**

The TSG3020 generates the most commonly used waveforms, such as sine, square, ramp (sawtooth), pulse, noise, and DC. It also supports custom arbitrary waveforms created point by point, allowing for the precise reproduction of even highly complex signals. The VeriPoint technology enables the generation of arbitrary waveforms with a sampling rate ranging from 1  $\mu$ Sa/s to 200 MSa/s, while maintaining full signal detail and very low jitter below 200 ps. ZeroSurge technology ensures the highest quality of square, pulse, and sawtooth waveforms by limiting overshoot to a maximum of 1% and providing very short rise and fall times of up to 13.5 ns. The result is sharp edges and greater accuracy when testing electronic circuits.

## **Advanced Modulation**

The generator supports six modulation types (AM, FM, PM, FSK, ASK, and PSK), making it ideal for testing digital communication systems and radio equipment. The frequency sweep function operates in linear or logarithmic mode, and the sweep time can be adjusted from 1 ms to 500 s with an accuracy of  $\pm 0.1\%$ . These capabilities allow for convenient analysis of filter characteristics and the frequency response of the systems under test. The built-in 7-digit frequency counter supports TTL signals in the range from 100 mHz to 100 MHz, measuring frequency, period, and duty cycle with an accuracy of  $\pm 51$  ppm.

## **Convenient operation for every task**

The FNIRSI TSG3020 ensures very high signal quality even in demanding applications. It offers an amplitude ranging from 1 mVpp to 10 Vpp at a 50  $\Omega$  load, phase noise not exceeding -125 dBc/Hz at 10 MHz and a 10 kHz deviation, and harmonic distortion below -40 dBc in the 30 to 60 MHz range. The device is easy to operate thanks to a 4.3-inch color TFT-LCD touchscreen, supported by physical

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buttons that allow for quick parameter changes. During operation, the display shows a preview of the waveforms and the current status of the generator, which facilitates the configuration and monitoring of all settings.

### Extensive Configuration Options

The generator is equipped with comprehensive output protection features, including channel isolation, ground protection, and a TTL-compatible synchronization output, ensuring safe and stable operation even under demanding conditions. An efficient cooling system with an aluminum heat sink and a quiet fan maintains optimal temperature, ensuring that the device maintains stable performance even during prolonged use. Non-volatile memory allows you to save up to 24 custom arbitrary waveforms and recall them instantly without reconfiguration. The TSG3020 supports continuous operation mode, gated output, modulation, and a sweep function, providing great flexibility when building measurement setups and automated test systems.

### Included in the set

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

|                          |           |
|--------------------------|-----------|
| Manufacturer             | FNIRSI    |
| Model                    | TSG3020   |
| Maximum output frequency | 30 mHz    |
| Sampling rate            | 200 MSa/s |
| Vertical resolution      | 14 bits   |
| Channels                 | 2         |

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

**Sine Wave Frequency** 1 µHz–24 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

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