

DDS Function Generator

TFG3500E/3200E Series



TFG-3505E/TFG-3205E



► Introduction

The TFG3500E series are function generators with maximum frequency of 5MHz, 10MHz, 15MHz and 20MHz. TFG3200E series are LOW-COST function generator with exactly same specifications as TFG3500E series. The TFG3500E and TFG3200E series are based on DDS (Direct Digital Synthesis) technology providing flexible performance and system features for basic scientific and industrial requirements.

The 8 bits resolution, 100MSa/s sampling rate, 1024 pts memory length, 32 built-in waveforms create various waveforms for different needs. A free PC software for RS-232 interface control for system control. The TFG3500E and TFG3200E series have additional functions of multiple modulations (FM, FSK, ASK, PSK), 200MHz external counter, 40 sets memories and multiple protections. Stable output frequency, high accuracy and low distortion make TFG3500E and TFG3200E series an ideal solution for an accurate and affordable signal source for industrial, scientific research and educational applications.

► Features

- ✓ Max. output frequency 5MHz/10MHz/15MHz/20MHz
- ✓ 2 output channels
- ✓ TFG3500E series with 3.5-inch TFT LCD display, TFG3200E series with Mono LCD display
- ✓ Direct Digital Synthesis technology (DDS)
- ✓ Sampling rate 100MSa/s, vertical resolution 8 bits, waveform length 1024 points
- ✓ Min.1mV (50Ω) waveform output with good stability
- ✓ 32 built-in waveforms
- ✓ 40 sets panel setting save & recall
- ✓ Modulations: FM, FSK, ASK, PSK
- ✓ Frequency sweep, amplitude sweep, burst and TTL output functions
- ✓ Over voltage protection, over current protection, short circuit protection, reverse voltage protection
- ✓ Standard parts: 200MHz frequency counter
- ✓ Optional parts: RS-232 interface, power amplifier

| Model | | | TFG-3505E | TFG-3510E | TFG-3515E | TFG-3520E |
|----------------------------|-------------------------|--------|---|------------|------------|------------|
| | | | TFG-3205E | TFG-3210E | TFG-3215E | TFG-3220E |
| Main output | Output frequency | Sine | 1μHz~5MHz | 1μHz~10MHz | 1μHz~15MHz | 1μHz~20MHz |
| | | Square | 1μHz~5MHz | | | |
| | | Other | 1μHz~1MHz | | | |
| | Output waveform | | 32 built-in waveforms, including Sine, Square, Triangle, Ramp, Pulse, etc. | | | |
| | Output amplitude | | 2mVpp~20Vpp (high impedance) | | | |
| | Output modulation | | Single frequency, Sweep frequency, Sweep amplitude, FM, FSK, ASK, PSK and Burst | | | |
| | Waveform length | | 1024 points | | | |
| | Vertical resolution | | 8 bits | | | |
| | Sampling rate | | 100MSa/s | | | |
| | Frequency resolution | | 1μHz | | | |
| | Frequency accuracy | | ±5×10 ⁻⁵ | | | |
| | Amplitude resolution | | 20mVpp (amplitude>2Vpp); 2mVpp (amplitude<2Vpp) | | | |
| | Amplitude accuracy | | ± (1%+2mVrms) (high impedance, RMS, frequency 1kHz) | | | |
| | Amplitude flatness | | ±5% (frequency <10MHz); ±10% (frequency >10MHz) | | | |
| | Output impedance | | 50Ω | | | |
| | Offset range | | ±10V (high impedance, attenuation 0 dB) | | | |
| | Offset resolution | | 20mVdc | | | |
| | Offset accuracy | | ±(1%+20mVdc) | | | |
| | FM deviation | | 0%~20% | | | |
| | PSK modulation range | | 0~360° | | | |
| Phase resolution | | 1° | | | | |
| Sine | Harmonic distortion | | ≥40dBc (<1MHz); ≥35dBc (1MHz~20MHz) | | | |
| | Total distortion | | ≤1% (20Hz~200kHz) | | | |
| Square | Rise/fall time | | ≤35ns | | | |
| | Duty cycle of square | | 1%~99% | | | |
| TTL output | Rise/fall time | | ≤20ns | | | |
| | Low level | <0.3V | | | | |
| | High level | >4V | | | | |
| Sweep | Sweep time | | 100ms~900s | | | |
| | Sweep direction | | Up, Down, Up-Down | | | |
| | Sweep mode | | Linearity, Logarithmic | | | |
| CHB output | Output frequency | Sine | 1μHz~1MHz | | | |
| | | Other | 1μHz~100kHz | | | |
| | Output waveform | | 32 built-in waveforms, including Sine, Square, Triangle, Ramp, Pulse, etc. | | | |
| | Output amplitude | | 50mVpp~20Vpp (high impedance) | | | |
| | Waveform length | | 1024 points | | | |
| | Vertical resolution | | 8 bits | | | |
| | Sampling rate | | 12.5MSa/s | | | |
| | Frequency resolution | | 1μHz | | | |
| | Frequency accuracy | | ±1×10 ⁻⁵ | | | |
| | Amplitude resolution | | 20mVpp | | | |
| Output impedance | | 50Ω | | | | |
| Frequency counter | Testing frequency range | | 1Hz~200MHz | | | |
| | Input signal amplitude | | 100mVpp~20Vpp | | | |
| Power amplifier (optional) | Max. output power | | 7W (8Ω), 1W (50Ω) | | | |
| | Max. output voltage | | 22Vpp | | | |
| | Frequency bandwidth | | 1Hz~200kHz | | | |
| General | Remote control | | RS-232 interface (optional) | | | |
| | Display | | TFG3500 series: TFT LCD; TFG3200 series: Mono LCD | | | |
| | Power source | | AC110V/220V±10% selectable, 50/60Hz, Max. 45VA | | | |
| | Standard accessories | | Power cord ×1, Operation manual ×1, BNC-BNC cable ×1, Test lead ×1 | | | |
| | Dimension | | 415×295×195mm | | | |
| Weight | | 3.5kg | | | | |