



TFN TG40A Microwave Signal Source (9kHz–42GHz)

Ultra-Wideband, Precise Output, Redefining High-Performance Testing



Product Overview

The TFN TG40A is an ultra-wideband, high-performance microwave signal generator covering frequencies from 9kHz to 42GHz . It features high dynamic power output from -120dBm to +17dBm , excellent spectral purity , and fast frequency switching . Designed for advanced applications such as millimeter-wave communications, satellite systems, radar, quantum technology, and terahertz front-ends , it is suitable for full-scale testing from device verification to system integration.



Core Feature Highlights

- Ultra-wideband coverage, reaching the forefront of millimeter waves
Frequency range : 9kHz ~ 42GHz, fully supporting high-frequency applications such as 5G/6G, Ka/Ku/Q bands, etc.
Frequency resolution : 0.001Hz, achieving extremely high-precision frequency setting.
- Large dynamic power range, flexible adaptation to multiple scenarios
Output power : -120dBm ~ +17dBm, taking into account both weak signal reception and high-power stimulus testing.
Power resolution : 0.1dB, precise control of output level.
- Excellent spectrum purity to ensure test accuracy
Phase noise : -112dBc/Hz@10kHz (10GHz), ensuring stable and pure high-frequency signals.
Spurious suppression : ≤ -80 dBc, harmonic suppression ≤ -50 dBc, effectively avoiding interference.
- Fast scanning and pulse modulation to improve test efficiency
Frequency switching speed : fastest 300 μ s, supporting high-speed automated testing.
Pulse modulation : minimum pulse width 100ns, on-off ratio ≥ 65 dB, meeting the needs of radar and communication pulse simulation.
- High stability time base, long-term reliable operation
Internal reference aging rate : ± 0.3 ppm/year, calibration accuracy ± 0.1 ppm, ensuring long-term test consistency.



External reference input : supports 10MHz external reference, easily integrated into synchronous test system.

- Compact structure design, easy integration and space saving

Dimensions : 360mm × 360mm × 89mm, the compact body frees up more workspace.

Standard control interface : fully supports SCPI commands, facilitating system integration and remote control.

Technical Parameters Summary

category	parameter
Frequency range	9kHz ~ 42GHz
Frequency resolution	0.001Hz
Output power range	-120dBm ~ +17dBm
Phase noise	-112dBc/Hz@10kHz (10GHz)
Harmonic suppression	≤ -50dBc (10GHz)
Spurious suppression	≤ -80dBc (10GHz)
Minimum pulse width	100ns
Dimensions	360mm × 360mm × 89mm
weight	10kg

Why choose TFN TG40A?

- Solve customer pain points:
 1. Coverage up to 42GHz : No multiple investments are required, and a single device can meet all frequency band testing needs from baseband to millimeter wave.
 2. High power + high purity : Maintaining low harmonics and phase noise at +17dBm output, balancing power and accuracy.
 3. Compact size without sacrificing performance : Breaking through the limitations of traditional large size, it combines high performance with a compact design.
 4. Fast response pulse modulation : supports 100ns narrow pulses, perfectly simulating modern radar and communication signals.
- Typical application scenarios:
 1. Millimeter wave communication module R&D and acceptance testing
 2. Phased Array Radar (AESA) and Electronic Countermeasures System
 3. Satellite payload and ground receiving equipment debugging



4. High frequency/ultra-high frequency research in universities and research institutes
5. Automotive radar and terahertz front-end device testing

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