TFN RMT Series Handheld Spectrum Analyzer

Product Introduction

The TFN RMT Series is a high-performance handheld spectrum analyzer designed for field testing, interference troubleshooting, and network optimization. Covering frequencies from 5kHz up to 40GHz, it integrates spectrum analysis, real-time spectrum monitoring, 5G NR/LTE demodulation, and interference detection into one portable device. With exceptional sensitivity (－170dBm/Hz), 100MHz real-time bandwidth, and support for multi-standard signals including 5G, 4G, 3G, and NB-IoT, the RMT Series provides accurate and reliable measurements for telecom operators, military, railway, and RF engineers. Its lightweight design, long battery life, and cloud remote control capability make it the ideal all-in-one solution for outdoor and indoor testing.

Product Key Selling Points

☑ Full-Band Coverage & Millimeter-Wave Testing

The RMT Series supports frequency ranges from 5kHz to 40GHz across multiple models, enabling testing from low-frequency signals to millimeter-wave applications. This wide coverage meets diverse field requirements, including 5G NR, satellite communications, and radar systems, without the need for multiple instruments.

☑ Ultra-Fast Scanning & Real-Time Spectrum Analysis

With a scan speed of 137GHz/s and 100MHz real-time analysis bandwidth, the RMT Series captures transient and burst signals with 100% probability of interception. This ensures no signal is missed during interference hunting or spectrum monitoring, even in dynamic RF environments.

☑ Multi-Standard Communication Analysis

The analyzer supports in-depth demodulation and analysis of 5G NR, LTE, GSM, WCDMA, and NB-IoT signals. It measures key parameters like EVM, beam ID, PCI, ACLR, and channel power, making it perfect for base station testing, network optimization, and signal quality validation.

☑ Professional Interference Hunting & Positioning

Integrated with AOA (Angle of Arrival) direction finding, GPS mapping, and multi-point location tracking, the RMT Series quickly identifies and locates interference sources. Features like waterfall display, afterglow spectrum, and time-gated analysis help visualize and isolate unwanted signals.

☑ Portable Design & Cloud Remote Control

Weighing under 2.3kg with over 6 hours of battery life, the RMT is truly handheld. Its 10.5-inch touchscreen supports day/night viewing modes, while cloud-based remote operation allows teams to collaborate and control the device from multiple locations, improving field efficiency.

Product Specifications

Item	Specification
Frequency range	RMT714A: 5KHz-4.5GHz RMT716A: 5KHz-6.32GHz RMT717A: 5KHz-7.5GHz RMT719A: 5KHz-9GHz RMT720A: 5KHz-20GHz RMT740A: 5KHz-40GHz
Phase noise	≤-105dBc/Hz @10kHz offset
Displays the average noise level	-170dBm/Hz (Sub-6G, preamplifier on)
Real-time bandwidth analysis	100MHz
Scan speed	137GHz/s (@25KHz RBW)
Level accuracy	±1.5dB (6GHz/9GHz/20GHz platform)
Maximum input power	+26dBm
Third-order intermodulation intercept point	≥+12dBm (3GHz～6.3GHz)
Display screen	10.5-inch high-definition capacitive touch screen
Weight	≤2.3kg
Battery life	≥6 hours
Operating temperature	0℃ ~ 40℃
Connectivity	USB, LAN, external reference input

Product Features

Feature 1: Wide Frequency Coverage & Real-Time Analysis

The RMT Series covers an extensive frequency range from 5kHz to 40GHz, supporting everything from AM/FM broadcasting to 5G millimeter-wave bands. Its 100MHz real-time bandwidth allows continuous monitoring of fast-changing signals, making it ideal for identifying intermittent interference, capturing transient events, and analyzing wideband modulation signals in real time.

Feature 2: Comprehensive Test Modes: Spectrum, Interference, Base Station, Drive Test

Beyond basic spectrum analysis, the RMT offers dedicated modes for interference analysis, LTE/5G NR cell measurement, GSM demodulation, and vector signal analysis. Whether you're measuring channel power, occupied bandwidth, ACLR, or performing EVM testing, this all-in-one platform eliminates the need for multiple test instruments.

Feature 3: Precise Signal Location with AOA & Mapping

When paired with directional antennas, the RMT supports AOA-based direction finding and GPS-integrated map plotting. You can perform single-point or multi-point positioning to accurately locate signal sources or interference emitters. The unit displays real-time RSSI, field strength, and trajectory on built-in maps for efficient field surveys.

Feature 4: 10.5-Inch Touchscreen with Day/Night Mode

The large high-definition capacitive touchscreen offers excellent visibility indoors and outdoors.

The day/night display mode adjusts contrast and brightness to suit different lighting conditions, reducing eye strain during prolonged field use. Intuitive menus and responsive controls streamline operation, even with gloves on.

Feature 5: Portable, Cloud-Ready Field Solution

Weighing only 2.3kg and offering over 6 hours of continuous operation, the RMT is designed for true portability. With optional cloud remote control, multiple users can access the device remotely for collaborative troubleshooting, data sharing, and real-time guidance—perfect for distributed teams and large-scale network deployments.

Detailed Parameter & Measurement Capabilities

☑ 5G NR Testing

The RMT performs comprehensive 5G New Radio analysis, including beam identification, SSB constellation evaluation, EVM measurement, and PCI tracking. It supports both FR1 and FR2 bands, enabling field engineers to validate base station performance, optimize beamforming, and troubleshoot 5G network issues with laboratory-grade accuracy.

☑ Field Strength Measurement

With optional calibrated antennas, the RMT measures field strength in dBμV/m or dBm units. It supports point frequency measurements and frequency-list scanning, helping users evaluate signal coverage, identify weak spots, and ensure compliance with radiation standards—essential for broadcast, cellular, and EMC testing.

☑ ACLR (Adjacent Channel Leakage Ratio) Testing

The analyzer measures ACLR to evaluate transmitter linearity and out-of-band emissions. It supports standard templates (e.g., LTE 20MHz) and user-defined channel settings, allowing precise assessment of power amplifier performance and ensuring compliance with regulatory spectral mask requirements.

☑ Zero-Span Time-Domain Analysis

In zero-span mode, the horizontal axis switches from frequency to time, enabling time-domain analysis of pulsed, TDMA, or intermittent signals. This is particularly useful for examining radar pulses, TDD frame structures, and transient events, providing insights into signal timing and power variations.

☑ Channel Power Measurement

Channel power measurement calculates the total power within a defined frequency channel. The RMT allows flexible bandwidth settings and supports both absolute power and power spectral density readings. This function is critical for verifying transmitter output, evaluating channel occupancy, and ensuring spectral efficiency.

Application Scenarios & Customer Pain Points Solutions

- 5G Network Deployment & Optimization

Pain Point: Field engineers struggle to quickly identify and diagnose 5G beam issues, PCI conflicts, or coverage gaps in complex outdoor environments, leading to prolonged deployment cycles and suboptimal network performance.

Solution: The RMT Series provides real-time 5G NR demodulation, beam ID tracing, and EVM/ACLR measurements. With GPS mapping and touchscreen operation, engineers can instantly validate signal quality, locate weak coverage zones, and optimize antenna alignment—significantly accelerating 5G rollout and ensuring high-quality service from day one.

- Interference Hunting & Spectrum Monitoring

Pain Point: Intermittent or unknown interference disrupts wireless services, but traditional tools lack portability, real-time analysis, and precise location capabilities, making source identification time-consuming and costly.

Solution: Featuring 100MHz real-time bandwidth, waterfall/afterglow displays, and AOA direction finding, the RMT quickly captures transient signals and visually isolates interference. Combined with GPS mapping, it enables accurate on-site localization, allowing operators to swiftly remove noise sources and restore network integrity.

- Drive Testing & Coverage Assessment

Pain Point: Conducting signal coverage surveys often requires bulky equipment, multiple instruments, and manual data logging, resulting in inefficient workflows and incomplete datasets.

Solution: This all-in-one handheld analyzer integrates spectrum scanning, LTE/5G demodulation, and GPS-based map plotting. Its lightweight design and long battery life support extended mobile surveys. Real-time RSSI, RSRP, and Cell ID logging on maps provide immediate visual insights into coverage quality, enabling faster and more accurate network planning.

- Military & Defense Signal Intelligence

Pain Point: Military and security teams need to detect, identify, and locate unknown or hostile signals in dynamic electromagnetic environments, but many analyzers lack the frequency range, sensitivity, and portability for field operations.

Solution: With coverage up to 40GHz, high sensitivity (-170dBm/Hz), and directional finding capabilities, the RMT is ideal for signal reconnaissance, spectrum surveillance, and emitter location. Its rugged, portable design ensures reliable performance in mobile or remote deployments, enhancing situational awareness and operational effectiveness.

- R&D, Education & Regulatory Compliance

Pain Point: Laboratories, universities, and compliance testers require versatile, accurate instruments for prototyping, teaching, and standards verification, but benchtop equipment is often expensive and not field-deployable.

Solution: The RMT combines lab-grade measurements with handheld convenience. It supports a wide range of standards (5G, LTE, GSM, WLAN) and offers comprehensive analysis functions like channel power, SEM, and harmonics. This makes it perfect for teaching wireless concepts, prototyping RF designs, and performing pre-compliance testing in both indoor and outdoor settings.

Q&A

Q1: What frequency model should I choose for 5G testing?
For Sub-6GHz 5G, the RMT716A (6.32GHz) or RMT719A (9GHz) is sufficient. If you work with millimeter-wave 5G (e.g., n257, n260 bands), the RMT740A (40GHz) is recommended for full coverage.

Q2: Can the RMT analyzer demodulate 5G NR signals?
Yes, it supports 5G NR demodulation, including beam analysis, PCI identification, EVM measurement, and SSB/PBCH decoding. It also performs LTE, GSM, and NB-IoT analysis.

Q3: How accurate is the interference location function?
When used with a directional antenna and GPS, the AOA-based positioning can achieve high directional accuracy. Multi-point mapping further improves location precision, ideal for tracking illegal transmissions or interference sources.

Q4: How long does the battery last during field use?
The built-in lithium battery provides ≥6 hours of continuous operation. An external power adapter or power bank can also be used for extended measurements.

Q5: Is software update supported?
Yes, TFN provides periodic firmware and software updates to add new features, support additional frequency bands, and improve measurement algorithms. Updates can be performed via USB or network connection.

Package Contents

Standard Configuration
1. Host
   1.1 Spectrum analyzer 5KHz~4.5GHz (RMT714A)
   1.2 Spectrum analyzer 5KHz~6.32GHz (RMT716A)
   1.3 Spectrum analyzer 5KHz~7.5GHz (RMT717A)
   1.4 Spectrum analyzer 5KHz~9GHz (RMT719A)
   1.5 Spectrum analyzer 5KHz~20GHz (RMT720A)
   1.6 Spectrum analyzer 5KHz~40GHz (RMT740A)
2. Battery charger (BC)
3. Omnidirectional antenna 600MHz~6GHz (OA660)
4. GPS antenna (GPSA)
5. Carrying bag (CB)
Optional Configuration
6. Tracking Generator
   6.1 Tracking generator for RMT714A (TG714)
   6.2 Tracking generator for RMT716A (TG716)

6.3 Tracking generator for RMT717A (TG717)
6.4 Tracking generator for RMT719A (TG719)
7. Color
7.1 Gray appearance spectrum analyzer 5KHz~6.32GHz (FAT750)
7.2 Gray appearance spectrum analyzer 5KHz~9GHz (FAT801)
7.3 Gray appearance spectrum analyzer 5KHz~20GHz (FAT811)
7.4 Gray appearance spectrum analyzer 5KHz~40GHz (FAT840)
8. Omnidirectional antenna 500MHz~7.5GHz (OA750)
9. Directional antenna
9.1 Directional antenna 9KHz-30MHz (TN315A)
9.2 Directional antenna 20MHz-200MHz (TN315B)
9.3 Directional antenna 200MHz-500MHz (TN315C)
9.4 Directional antenna 500MHz-8GHz (TN315D)
9.5 Directional antenna 6GHz-26.5GHz (TN315E)
9.6 Directional antenna handle (TN315F)
9.7 Directional antenna set 9KHz~26.5GHz (TM9265)
10. Directional horn antenna
10.1 Directional horn antenna 1GHz~6GHz (CK16D)
10.2 Directional horn antenna 6GHz~18GHz (CK618D)
10.3 Directional horn antenna 18GHz~40GHz (CK1840D)