Quality&**Precise**

MAXWELLON TW4202

9kHz~4GHz/6.5GHz/9GHz/20GHz/26.5GHz/32GHz/44GHz/50GHz/67GHz

Handheld Spectrum Analyzer

2023

Maxwellon

Maxwellon TW4202 series handheld/ portable spectrum analyzer has a wide operating band, high performance, fast scanning speed, multi-function test, easy operation and other advantages. Performance specification is excellent in average noise level, phase noise, and fast scanning speed.

Measurement function has a spectrum analysis, interference analysis, analog demodulation, power measurement, channel scan function mode and channel power, occupied bandwidth, adjacent channel power, audio demodulation, stray template, noise ratio measurement function. 8.4-inch integrated LCD and capacitive touch screen improves display clarity and ease of operation. Its hand-held, small size, light weight, power and flexible, easy to take and extremely suitable for field use.

Maxwellon TW4202 series handheld/ portable spectrum analyzer can be applied to the signal and equipment test in aerospace, microwave and satellite communications, wireless communications, radar surveillance, electronic warfare and electronic surveillance, precision-guided and other areas.

Key Feature

- Wide frequency range cover from 9kHz to 67GHz, 9 models
- Low displayed average noise level up to -163dBm @ 1Hz RBW (typical)
- Excellent phase noise performance:

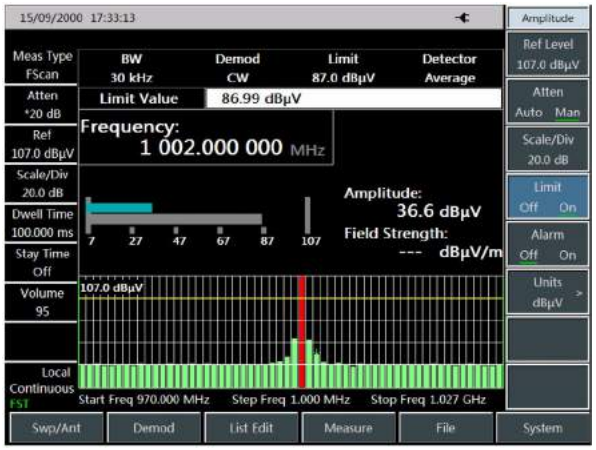
-112dBc/Hz@100kHz frequency offset@1GHz carrier (TW4202SA/SB/SC)

-106dBc/Hz@100kHz frequency offset@1GHz carrier (TW4202A/B/C/D/E/F)

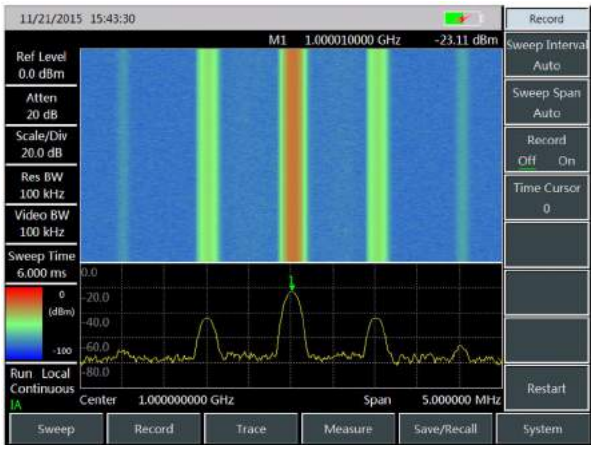
- Fast sweep speed: 1GHz span, fastest sweep time <20ms
- Resolution bandwidth: 1Hz - 10MHz
- Full-band pre-amplifier: Standard configuration
- A variety of measurement function modes: spectrum analyzer, interference analyzer (spectrogram, RSSI), AM/FM/PM analyzer, channel sweepner, high accuracy power meter,signal analyzer, high-precision USB power measurement etc.
- A variety of smart measurement functions: field strength measurement, channel power, occupied bandwidth, adjacent-channel power ratio, tune&listen, carrier-to-noise ratio,emission mask.
- A variety of Auxiliary Test Interface: 10MHz reference input/output interface, GPS antenna interface, zero span IF output interface, external triggering input interface etc.
- Convenient user experiences: 8.4-inch bright LCD screen and large font display and convenient operation touch screen, Integrated LCD and touch screen design, a variety of display modes and automatically adjusts the back-light brightness, etc.
- Operating temperature range is -10 °C - 50 °C
- Powered by battery or AC adapter

Features To Boost Your Efficiency

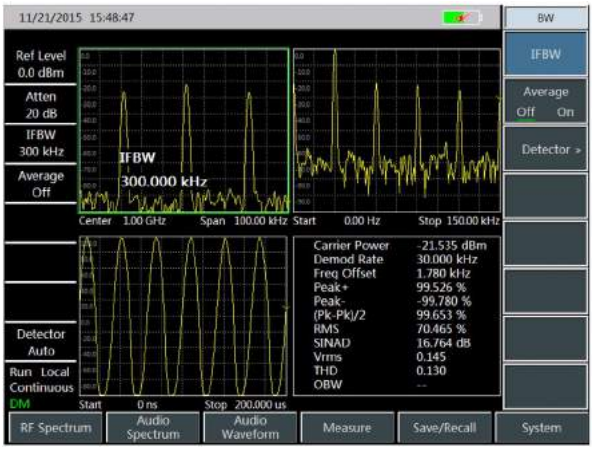
Field Strength



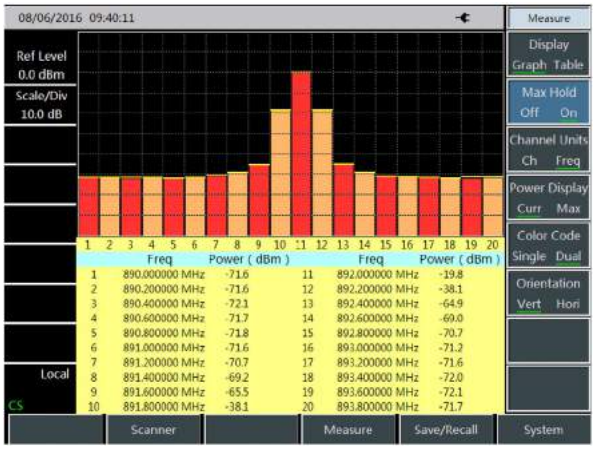
Interference Analyzer (Spectrogram)



AM/FM/PM Demodulation

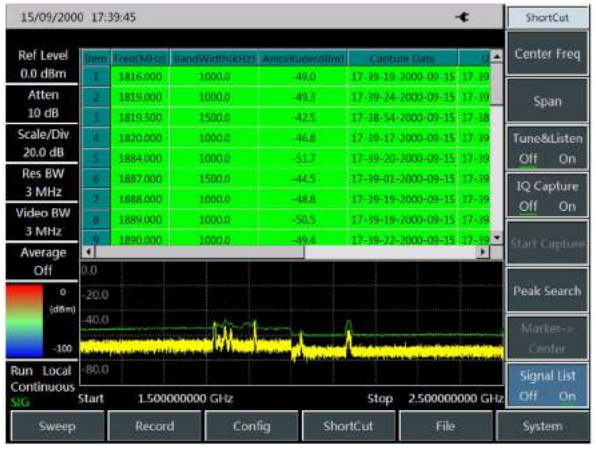


Channel Scanner

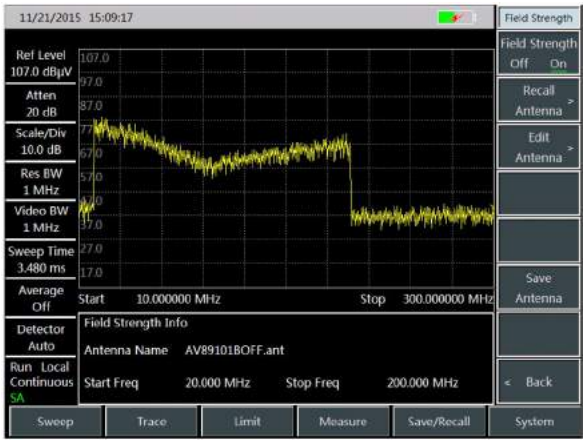


Power Meter (USB Power Probe)

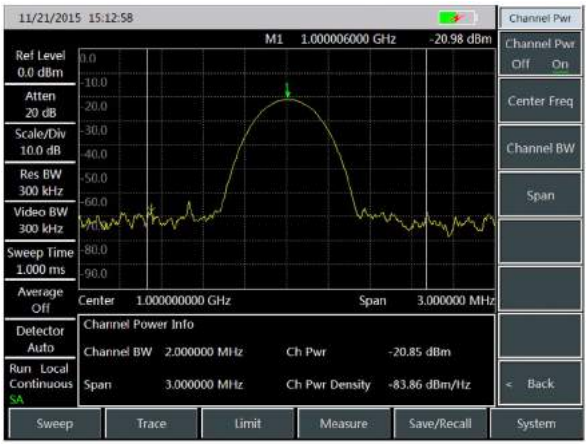
Signal Analyzer



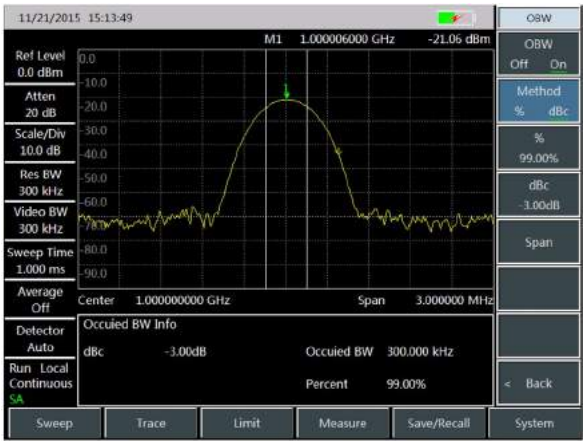
Field Strength Measurement



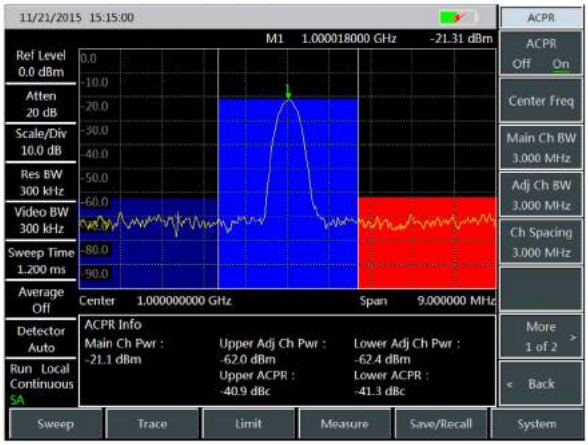
Channel Power



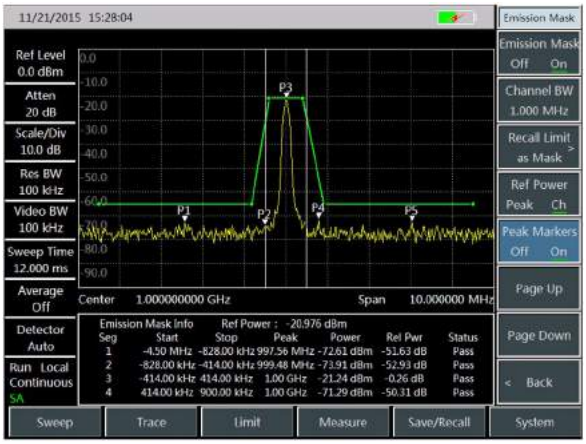
Occupied Bandwidth



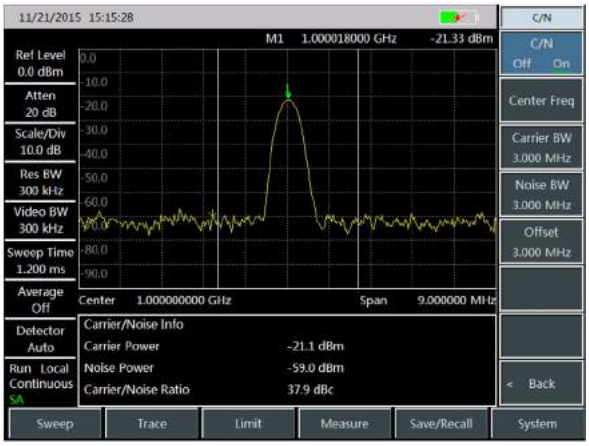
Adjacent Channel Power Ratio



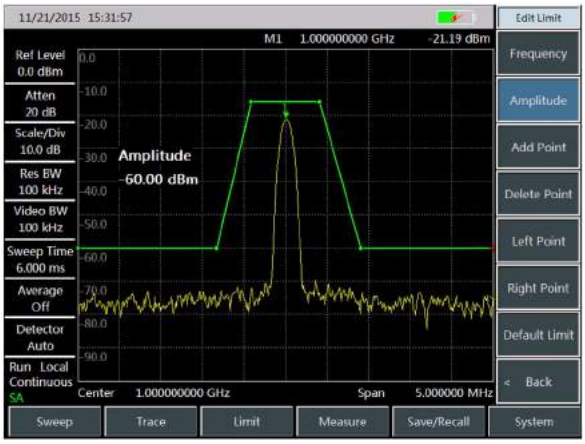
Emission Mask



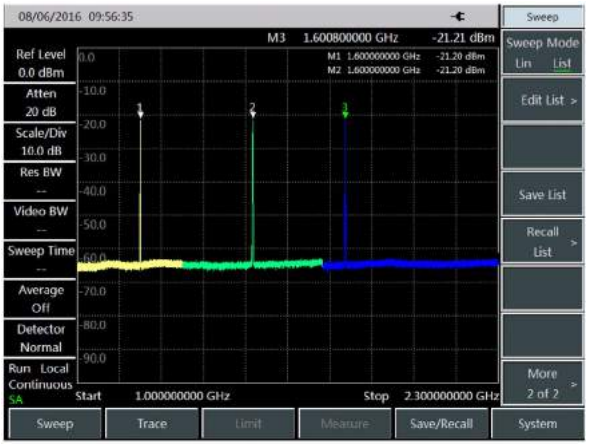
Carrier-to-Noise Ratio



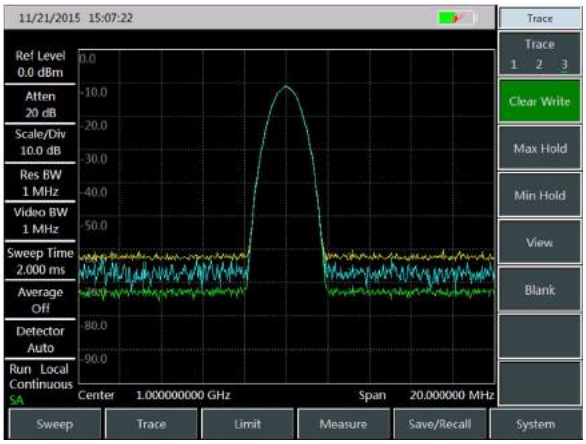
Limit Line



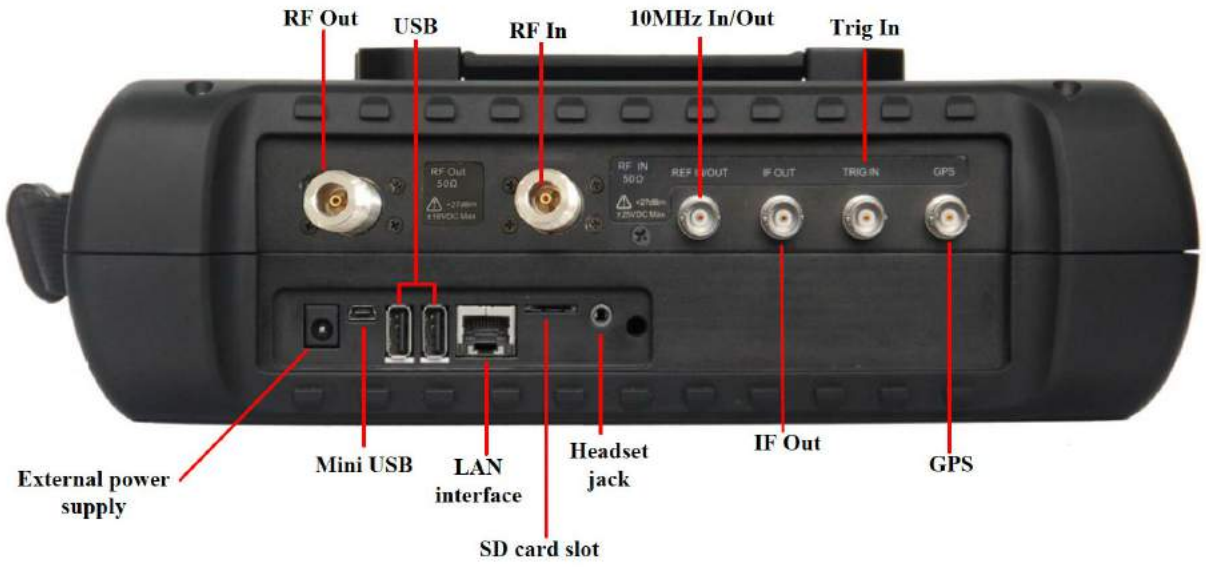
List Sweep



Multi-Traces

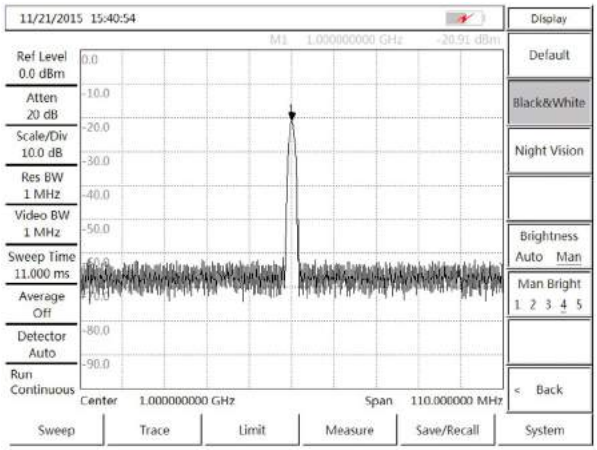


Various Auxiliary Test Interfaces

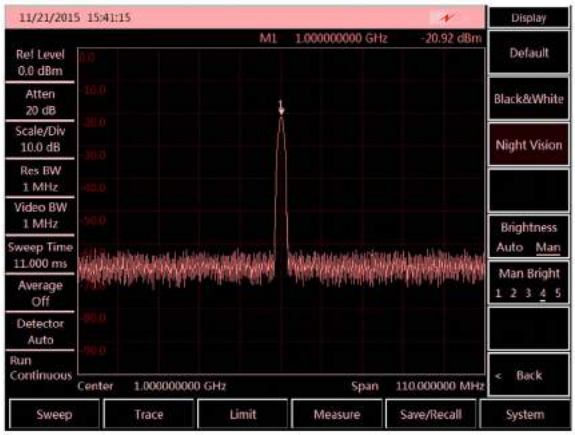


Easy & Convenient User Operation

One-click quick measurement
Storage and invocation of state and data
Combination of 8.4 inch LCD and capacitive touch screen,smaller light refraction and clearer display
Convenient capacitive touch screen operation
Various display modes,better experience under outdoor light and night vision
Backlight keys enable easy viewing in darkness



Outdoor Mode



Night Vision Mode

Typical Applications

Comprehensive Performance Evaluation of Electronic Weapon Equipment

TW4202 series spectrum analyzer has advantages of wide frequency range, high performance index, high sweep speed, multiple test functions, and easy operation. It is handheld, compact and light, which can be power supplied by battery. It can be used for the field installation & calibration, repair & maintenance of electronic weapon equipment in fields of radar, communication, electronic countermeasures & reconnaissance, and precision guidance etc.

Field Test and Diagnosis of Transmitter and Receiver

TW4202 series spectrum analyzers have various measurement function modes like spectrum analyzer, interference analyzer, AM/FM/PM analyzer, power meter, channel scanner etc., as well as various intelligent measurement functions such as channel power, occupied bandwidth, adjacent-channel power ratio, carrier-to-noise ratio, field strength measurement, emission mask etc.. It can provide comprehensive spectrum analysis and diagnosis service for the field test of transmitter and receiver.

Broadband Spectrum Monitoring, Interference Recognition

Connected with external directive antenna, TW4202 series spectrum analyzer can be used for electromagnetic environment detection, radio interference analysis, electromagnetic environment background assessment, spectrum monitoring and illegal channel interference signal recognition etc..

Specification

Frequency Range	TW4202A: 9 kHz to 20 GHz, TW4202B: 9 kHz to 26.5 GHz, TW4202C: 9 kHz to 32 GHz, TW4202D: 9 kHz to 44 GHz, TW4202E: 9 kHz to 50 GHz, TW4202F: 9 kHz to 67 GHz, Tuning Resolution:1Hz	
Frequency Reference	Frequency: 10MHz Aging: ±0.5ppm/Year Initial Frequency Accuracy: ±0.3ppm Temperature Stability:±0.1ppm(-10~50**℃**, Comparative to 25**℃**)	
Sweep Time	Range: 10μs~600s (Zero Span) Accuracy: ±2.00% (Zero Span)	
Frequency Readout Accuracy	±(Frequency Readout× frequency Reference +2%× Span +10%×Resolution Bandwidth)	
Frequency Span	Range: 100Hz~Upper Frequency Limit of Corresponding Model or 0Hz Accuracy: ±2.0%	
Resolution Bandwidth	1Hz~10MHz (1~3 Times of Stepping)	
Video Bandwidth	1Hz~10MHz (1~3 Times of Stepping)	
SSB Phase Noise (Carrier 1GHz)	**TW4202A/B/C:** ≤-108dBc/Hz@Frequency Offset 10kHz ≤-112dBc/Hz@Frequency Offset 100kHz ≤-118dBc/Hz@Frequency Offset 1MHz ≤-129dBc/Hz@Frequency Offset 10MHz	**TW4202D/E/F/GH/L:** ≤-102dBc/Hz@Frequency Offset 10kHz ≤-106dBc/Hz@Frequency Offset 100kHz ≤-111dBc/Hz@Frequency Offset 1MHz ≤-123dBc/Hz@Frequency Offset 10MHz
DANL (input port is connected with a 50Ω load, 0dB input attenuation, average detection, logarithm of video type, RBW normalized to 1Hz, tracking source off, 20**℃**~30**℃**)	**TW4202A/B/C:** Pre-amp Off: ≤-140dBm(10MHz~3GHz) ≤-138dBm(3GHz~9GHz)	Pre-amp On: ≤-160dBm(10MHz~3GHz) ≤-157dBm(3GHz~9GHz)
	TW4202D/E/F/G: Pre-amp Off: ≤-138dBm(10MHz~20GHz) ≤-135dBm(20GHz~32GHz) ≤-127dBm(32GHz~40GHz)	Pre-amp On: ≤-157dBm(10MHz~20GHz) ≤-154dBm(20GHz~32GHz) ≤-148dBm(32GHz~40GHz)
	TW4202H/L: Pre-amp Off: ≤-135dBm(10MHz~20GHz) ≤-134dBm(20GHz~32GHz) ≤-129dBm(32GHz~40GHz) ≤-120dBm(40GHz~46GHz) ≤-114dBm(46GHz~50GHz) ≤-114dBm(50GHz~60GHz) ≤-100dBm(60GHz~67GHz)	Pre-amp On: ≤-153dBm(10MHz~20GHz) ≤-152dBm(20GHz~32GHz) ≤-147dBm(32GHz~40GHz) ≤-142dBm(40GHz~46GHz) ≤-132dBm(46GHz~50GHz) ≤-132dBm(50GHz~60GHz) ≤-118dBm(60GHz~67GHz)
Residual Response	**TW4202A/B/C**(exceptional frequency: 3.2GHz): Pre-amp Off: ≤-82dBm(10MHz~9GHz)	Pre-amp On: ≤-95dBm(10MHz~9GHz)
	TW4202D/E/F/G(exceptional frequency: 3.2GHz): Pre-amp Off: ≤-90dBm(10MHz~13GHz) ≤-85dBm (13GHz~20GHz) ≤-80dBm (20GHz~44GHz)	Pre-amp On: ≤-100dBm (10MHz~32GHz) ≤-95dBm (32GHz~44GHz)
Second Harmonic Distortion (0dB attenuation, -30dBm input signal)	TW4202A/B/C/H/L: <-65dBc TW4202D/E/F/G: <-60dBc≤-80dBm (20GHz~44GHz)	
Absolute Amplitude Accuracy (input signal 0dBm~-50dBm, all settings are automatic couplings, 20**℃** ~30**℃**,30 minutes of preheating)	±1.8dB (10MHz~13GHz) ±2.3dB (13GHz~40GHz) ±2.7dB (40GHz~50GHz) ±3.0dB (50GHz~67GHz)	

Input Attenuator	TW4202A/B/C/H/L: Attenuation Range: 0dB~30dB, 5dB Stepping
	TW4202D/E/F/G: Attenuation Range: 0dB~50dB, 10dB Stepping
Max. Continuous Input	TW4202A/B/C/H/L:
	+27dBm Peak Typical(≥10dB Attenuation) +20dBm Peak Typical(<10dB Attenuation) +10dBm Peak Typical(Pre-amp On)
	TW4202D/E/F/G:
	+30dBm Peak Typical(≥10dB Attenuation) +23dBm Peak Typical(<10dB Attenuation) +13dBm Peak Typical(Pre-amp On)
Reference Level	Range: -120dBm~+30dBm Conversion Uncertainty: ±1.20dB
Dimension	314mm (W)×218mm (H)×91mm (D) (Excluding Handle, Stand) 338mm(W)×218mm (H)×100mm (D) (Including Handle, Stand)
Weight	TW4202A/B/C: ≤4.5kg TW4202D/E/F/G:≤5.1kg TW4202H/L: ≤5.3kg
Working Temperature	-10℃~+50℃ (the battery operation temperature is 0℃~45℃)
Storage Temperature	-40℃~+70℃ (the battery operation temperature is -20℃~60℃)
Electromagnetic Compatibility	Conforms to GJB3947A-2009 3.9.1 Requirements
Battery Operation Time	TW4202A/B/C: about 3h TW4202D/E/F/G: about 2.5h TW4202H/L: 2h
Power Consumption	TW4202A/B/C: ≤25W TW4202D/E/F/G: ≤33W TW4202H/L: ≤38W
Test Interface	RF Input: TW4202A/B/C/D/E: Type N Connector female TW4202F/G: 2.4mm Connector(male) TW4202H/L : 1.85 mm Connector(male) RF Output: Test interface of tracking generator option for TW4202A/B/C: Type N Connector female
Other Interfaces	10MHz Reference Input/Output: BNC (female) Connector External Triggering Input: BNC (female) Connector IF Output: BNC (female) Connector GPS Antenna Input: BNC (female) Connector

Ordering Information

Model

Model	Name	Description
TW4202A	Handheld Spectrum Analyzer	9 kHz~4 GHz
TW4202B	Handheld Spectrum Analyzer	9 kHz~6.5 GHz
TW4202C	Handheld Spectrum Analyzer	9 kHz~9 GHz
TW4202D	Handheld Spectrum Analyzer	9 kHz~20 GHz
TW4202E	Handheld Spectrum Analyzer	9 kHz~26.5 GHz
TW4202F	Handheld Spectrum Analyzer	9 kHz~32 GHz
TW4202G	Handheld Spectrum Analyzer	9 kHz~44 GHz
TW4202H	Handheld Spectrum Analyzer	9 kHz~50 GHz
TW4202L	Handheld Spectrum Analyzer	9 kHz~67 GHz

Standard

No.	Name
1	Standard 3-Phase Power Cord
2	Power Adapter
3	Quick guide
4	USB Cable
5	Built-In Rechargeable Lithium Ion Battery
6	Certificate of Conformity

Options

Option Model	Name	Description
TW4202-001	Optional Accessories of English Version	English Signs, Keys, Menu
TW4202-002	User Manual (Chinese)	--
TW4202-003	User Manual (English)	--
TW4202-004	Programming Manual (Chinese)	--
TW4202-005	Programming Manual (English)	--
TW4202-006	Power Adapter	Power Adapter
TW4202-007	Rechargeable Lithium Ion Battery	Standby Battery
TW4202-008	Purple Cat5e Cable	Point to Point, 2 Meters
TW4202-009	Micro SD Card	Class4, Capacity: 8G
TW4202-010	GPS Antenna	GPS exposed Antenna
TW4202-011	USB Power Meter Option	Provide USB Power Measurement Function (Requires USB Power Probe:012/013/014/015)
TW4202-012	87230 USB CW Power Probe	9kHz~6GHz Power Probe
TW4202-013	87231 USB CW Power Probe	10MHz~18GHz Power Probe
TW4202-014	87232 USB CW Power Probe	50MHz~26.5GHz Power Probe
TW4202-015	87233 USB CW Power Probe	50MHz~40GHz Power Probe
TW4202-016	Interference Analyzer Option	Provide Spectrogram, RSSI Measurement etc. Functions
TW4202-017	AM/FM/PM Analyzer Option	To Realize Modulation Characteristics Analysis of AM/FM/PM Signals
TW4202-018	Channel Scanner Option	To Realize Signal Power Measurement of Multiple Channels and Frequency
TW4202-019	List Sweep Option	To Realize Continuous Sweep Measurement of Various Frequency Bands
TW4202-020	Zero Span IF Output	Output the Third or Fourth IF Signal(Choose One of Two)
TW4202-021	89101A Antenna	Frequency Range:10kHz~20MHz(Requires Option 025)
TW4202-022	89101B Antenna	Frequency Range:20MHz~200MHz(Requires Option 025)
TW4202-023	89101C Antenna	Frequency Range:200MHz~500MHz(Requires Option 025)
TW4202-024	89101D Antenna	Frequency Range:500MHz~4GHz(Requires Option 025)
TW4202-025	89401 Antenna Amplifier	Frequency Range:10kHz~4GHz,N(f)(Requires Option 021/022/023/024)
TW4202-026	89901 Antenna	Frequency Range:1GHz~18GHz,N(f)
TW4202-027	89902 Antenna	Frequency Range:18GHz~40GHz,2.92mm(f)
TW4202-028	Functional Bag	Protect the Instrument
TW4202-029	Backpack	Easy to Carry
TW4202-030	Safety Instrument Carrying Case	Used to Carry
TW4202-031	89901 Antenna handle	Requires Option 026
TW4202-032	89902 Antenna handle	Requires Option 027
TW4202-034	Field Strength Option	Provide Pscan, Fscan, MScan etc.Functions
TW4202-035	4GHz Tracking Generator	Frequency Range 100kHz~4GHz(Only For TW4202A)
TW4202-036	6.5GHz Tracking Generator	Frequency Range 100kHz~6.5GHz(Only For TW4202B)
TW4202-037	9GHz Tracking Generator	Frequency Range 100kHz~9GHz(Only For TW4202C)

Option Model	Name	Description
TW4202-038	Location Analyzer Option	Internal software which requiresoption 010,option 050 and directional antenna for function realization
TW4202-039	Interference Map	Internal software which requires option 010 for function realization
TW4202-041	Omnidirectional Whip Antenna	Frequency Range: 700MHz~2700MHz,suitable for communication frequency band
TW4202-042	700MHz~4GHz Directional Antenna	Active Log Periodic Antenna, Frequency Range:700MHz~4GHz
TW4202-043	700MHz~6GHz Directional Antenna	Active Log Periodic Antenna, Frequency Range:700MHz~6GHz
TW4202-044	680MHz~10GHz Directional Antenna	Active Log Periodic Antenna,Frequency Range:680MHz~ 10GHz
TW4202-045	680MHz~20GHz Directional Antenna	Active Log Periodic Antenna,Frequency Range:680MHz~ 20GHz
TW4202-046	400MHz~4GHz Directional Antenna	Active Log Periodic Antenna, Frequency Range:400MHz~4GHz
TW4202-047	400MHz~6GHz Directional Antenna	Active Log Periodic Antenna, Frequency Range:400MHz~6GHz
TW4202-048	380MHz~10GHz Directional Antenna	Active Log Periodic Antenna,Frequency Range:380MHz~ 10GHz
TW4202-049	380MHz~20GHz Directional Antenna	Active Log Periodic Antenna,Frequency Range:380MHz~ 20GHz
TW4202-050	External Electronic Compass	External USB electronic compass, requires option 038 for function realization
TW4202-051	6GHz Omnidirectional Antenna	Portable Omnidirectional Antenna, Frequency Range:680MHz~6GHz
TW4202-052	8GHz Omnidirectional Antenna	Portable Omnidirectional Antenna, Frequency Range:300MHz~8GHz
TW4202-053	VHF/UHF Extension-Type Whip Antenna	Frequency Range:140MHz/430MHz
TW4202-054	Passive Directional Antenna(700MHz~4GHz)	Passive Log Periodic Antenna, Frequency Range:700MHz~4GHz
TW4202-055	Passive Directional Antenna(700MHz~6GHz)	Passive Log Periodic Antenna, Frequency Range:700MHz~6GHz
TW4202-056	Passive Directional Antenna(680MHz~10GHz)	Passive Log Periodic Antenna,Frequency Range:680MHz~10GHz
TW4202-057	Passive Directional Antenna(680MHz~18GHz)	Passive Log Periodic Antenna,Frequency Range:680MHz~18GHz
TW4202-058	Passive Directional Antenna(680MHz~25GHz)	Passive Log Periodic Antenna,Frequency Range:680MHz~25GHz
TW4202-059	Passive Directional Antenna (680MHz~35GHz)	Passive Log Periodic Antenna,Frequency Range:680MHz~35GHz
TW4202-060	N/SMA-JJ RF Cable (2m)	N/SMA RF Coaxial Cable (m-m), DC~18GHz,2m length
TW4202-061	N/SMA-JJ RF Cable (1m)	N/SMA RF Coaxial Cable (m-m), DC~18GHz,1m length
TW4202-067	ZE9080 Antenna Transportation Case	Special case for ZE9080 antenna, for the whole set of ZE9080 antenna and antenna amplifier,including option021, 022, 023, 024, 025

Typical Accessories

Optional Antenna Sets

- Antenna Amplifier

- 10kHz – 20MHz Antenna

- 20MHz – 200MHz Antenna

- 200MHz – 500MHz

- 500MHz – 4GHz

- 1GHz – 18GHz

- 18GHz – 40GHz

Option 30

HARD CASE

Option 29

SOFT BAG

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