Quality&**Precise**

MAXWELLON
4082

2Hz~8.4GHz/18GHz/26.5GHz/45GHz/50GHz/67GHz/90GHz/110GHz

Signal/ Spectrum Analyzer

2023

MAXWELLON

4082 series Signal/Spectrum Analyzer is a new signal/Spectrum analyzer product launched by Maxwellon.

It has excellent RF performance in DANL, Phase Noise, Intermodulation Suppression, Dynamic Range, Amplitude Accuracy, and Testing Speed. It Has Powerful Spectrum Analysis, Standard Power Measurement Suite, I/Q Analysis, Transient Analysis, Pulse Signal Analysis, Real-Time Spectrum Analysis, Analog Modulation Analysis, Vector Signal Analysis and other measurement functions.

Good scalability, capable of building test systems or conducting secondary development through various digital and analog output interfaces. The analysis bandwidth of up to 2GHz, combined with corresponding software analysis options, meets your stringent requirements for signal and equipment testing in fields such as mobile communication, satellite communication, Internet of Things, and semiconductors.

Key Feature

- 2Hz~110GHz Broadband Coaxial Coverage (External Spread Spectrum Can Reach 750ghz)
- Phase Noise: -134dBc/Hz (1GHz Carrier At 10KHz Frequency Offset)
- Built In 2GHz Analysis Bandwidth
- 2GHz Bandwidth I/Q Data Stream Interface
- Abundant Wireless Communication Signal Analysis Functions
- Powerful Satellite Rf Testing Function
- Comprehensive Pulse Signal Analysis Function
- 15.6 Inch Multi-Mode On Screen Display, Multi-Touch Operation

Excellent Spectrum Measurement Performance

Ultra Wide Frequency Coverage

The frequency measurement range covers 2Hz~110GHz, meeting the testing requirements from RF to millimeter wave.

110GHz Full Band Mirror Suppression

Equipped with a preselector in the full frequency range, it can effectively suppress mirroring and interference.

Excellent Low-Frequency Signal Measurement

The frequency band below 30MHz adopts RF direct acquisition technology, which has better low-frequency signal measurement capabilities.

Extremely Low DANL

1GHz: -154dBm/Hz; -167dBm/Hz (preamplifier on); -172 dBm/Hz (turning on the noise cancellation function)
110GHz: -140dBm/Hz

Excellent Phase Noise Performance

Excellent phase noise performance, it can meet the extreme requirements of users in communication signal measurement. 1GHz carrier, with a frequency offset of 1kHz, the phase noise is better than -125dBc/Hz; 10kHz frequency offset, with phase noise better than -134dBc/Hz.

Measurement results of DANL (101GHz~110GHz)

1.2GHz Analysis Bandwidth

Multiple Analysis Bandwidth Configuration Options

Provide a total of 7 bandwidth configuration options, including 10MHz/40MHz/200MHz/400MHz/600MHz/1.2GHz/2GHz, to meet the needs of different testing application scenarios such as 5G NR and WLAN.

Excellent SFDR

-75dBc(at 200MHz analysis bandwidth)

-65dBc(at 1.2GHz analysis bandwidth)

-55dBc(at 2GHz analysis bandwidth)

1.2GHz Real-Time Analysis Bandwidth

Real time spectrum analysis of 1.2GHz bandwidth, the shortest duration of 100% probability of interception (POI) signal is better than 0.28 μs. Can be used for capturing and measuring various transient burst signals such as pulse signals, burr signals, intermittent signals, etc

Real Time Spectrum Analysis Interface

Comprehensive Spectrum Analysis Capabilities

Frequency Sweep and FFT

Sweep points can be selected between 101 and 120001, with a maximum sweep time of 16000s, Zero bandwidth minimum sweep time 1 μs

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Abundant Track and Detection Modes

It supports 6 track configurations, 6 detection modes and 3 average types, has abundant mark measurement functions such as noise marking, bandwidth power, power Spectral density, and supports track statistics, automatic track saving and calling.

Waterfall Chart Display of Historical Tracks

Supports saving 10000 frames of waterfall plot tracks, clearly displaying the changes in signal spectrum.

One Click Power Measurement Kit

Equipped with testing functions such as bandwidth occupation, adjacent/channel power, power statistics, burst power, harmonic distortion, third-order intermodulation, spurious emission, spectrum emission mask, etc.

Adjacent channel power measurement interface

Abundant Wireless Communication Signal Analysis Functions

5G NR Signal Analysis

The 5G NR measurement function can perform in band demodulation analysis on the 5G NR uplink and downlink signals of 3GPP Rel 15 and Rel 16 versions. It supports two duplex modes, FDD and TDD, QPSK to 256QAM modulation formats, Test Model and custom parameter settings, and provides measurement results such as error vector amplitude (EVM), frequency error, and power for different channels and signals. It has constellation diagrams, error summary tables Various display graphs such as resource allocation.

LTE,NB-IoT,WCDMA,GSM Signal Analysis

Paired with Maxwellonr's dedicated protocol analysis software, it can perform in band modulation analysis on LTE, LTE-Advanced, NB IoT, WCDMA, GSM, EDGE communication signals, providing various measurement results such as EVM, constellation diagram, frequency error, etc.

Analysis of Out of Band Characteristics

In terms of out of band measurement, it can provide a wide range of standards and limit line one click setting capabilities, and efficiently perform measurements such as Adjacent Channel Leakage Ratio (ACLR) and Spectrum Emission Mask (SEM).

5G NR signal analysis interface

Comprehensive Pulse Signal Analysis Function

Abundant Pulse Parameter Measurement

Pulse signal spectrum and time domain characteristic test can simultaneously analyze and display pulse parameters such as pulse width, pulse period, pulse rise and Fall time time, pulse power drop, peak power, minimum power, top value, bottom value, pulse amplitude, pre shock, overshoot, peak frequency error, effective value of frequency error, frequency offset, etc

Intrapulse Characteristic Analysis

Detailed analysis of amplitude, intra pulse frequency/phase characteristics, and spectral characteristics can be performed on any selected pulse.

Interpulse Characteristic Analysis

Equipped with pulse parameter trend analysis and statistical analysis functions, it can analyze the trend and distribution characteristics of inter pulse characteristic parameters.

Pulse signal analysis interface

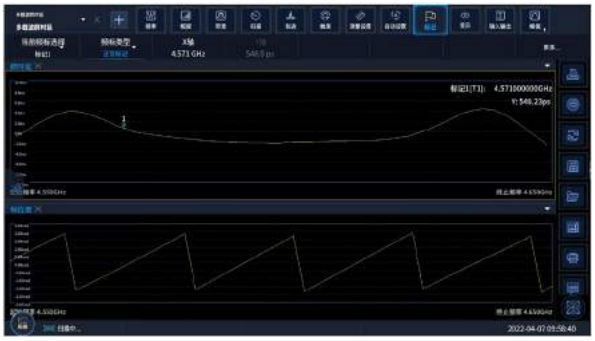
Powerful Satellite RF Testing Function

Multi Carrier Group Delay Measurement

Quickly measure the absolute and relative group delay of components such as satellite frequency converters and transponders. Measure the frequency response of the tested equipment and display the relationship between amplitude, phase, group delay, and frequency.

Measurement of Noise Power Ratio

Conveniently and intuitively measure the noise power ratio of broadband systems, thereby helping to measure the extent to which idle channels are affected when multiple channels are occupied.



Multi carrier group delay measurement interface

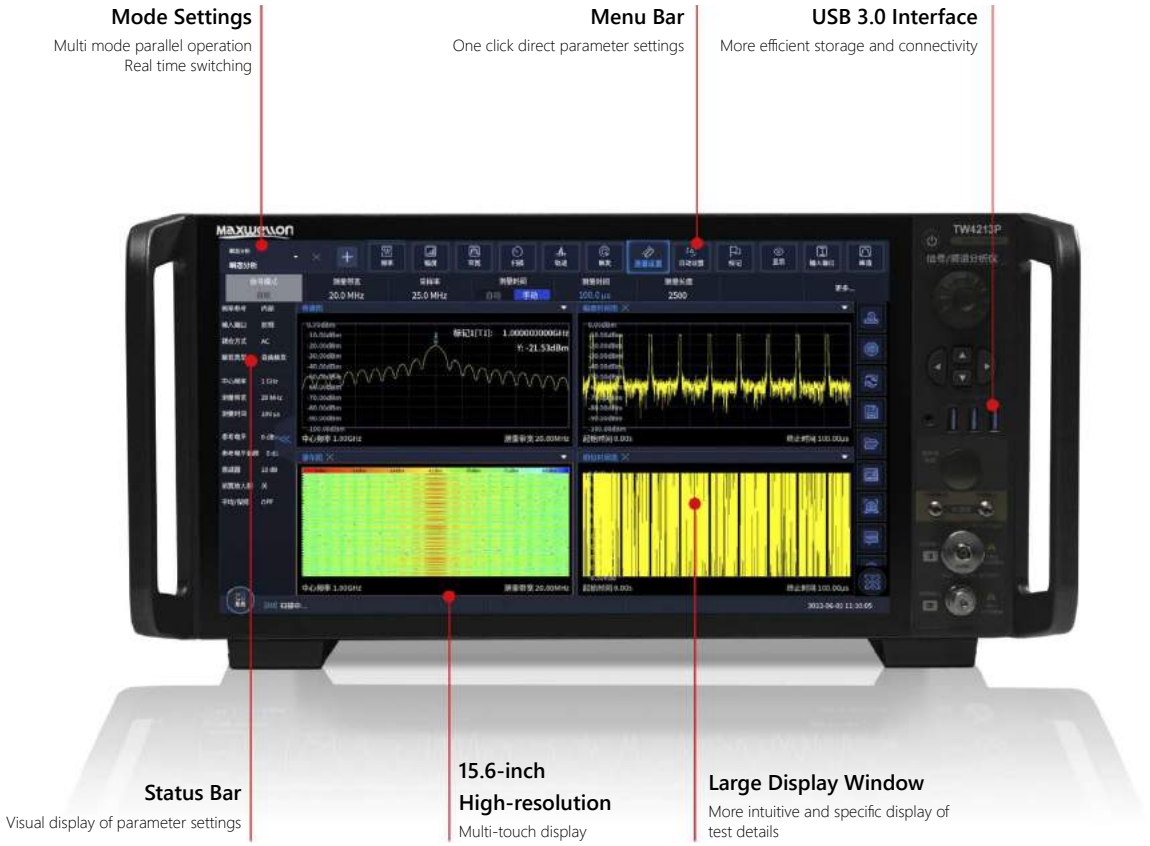
Large Touch Screen For More Convenient Operation

High Performance Processor, Large Memory

i7 processor and 16GB of memory, it runs smoother and ensures efficient long-term testing.

15.6-inch Large Touch Screen

A variety of measurement results can be seen at a glance, supporting Multi-touch, simple and efficient operation. Support dynamic adjustment of interface area layout and customization of menus. Multiple measurement modes run and display in parallel, with convenient and flexible mode switching.



Forward-looking Interface Configuration

Two Coupling Methods of AC/DC

Support both AC/DC coupling modes can reach up to 67GHz, providing flexible selection of RF input ports in higher frequency bands.

10 Gigabit Network Control Interface

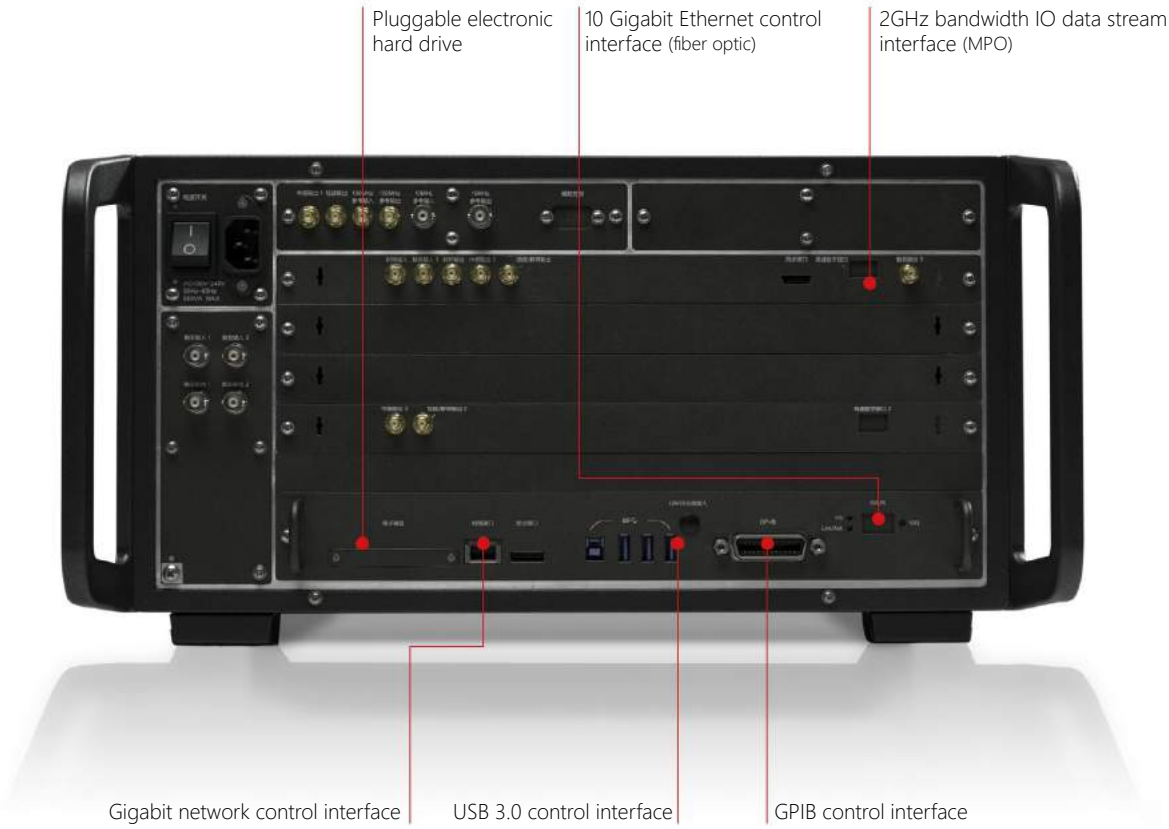
Configurable 10 Gigabit Ethernet interface, providing you with higher bandwidth, faster rate, and more stable data transmission.

4TB built-in Electronic Hard Drive

It can be equipped with a built-in 4TB electronic hard drive, providing convenience for storing massive data during the measurement process.

Fiber Optic Interface With 2GHz Bandwidth

Configurable with a 2GHz ultra wideband digital interface, achieving real-time broadband data acquisition and output with a 2GHz bandwidth.



Specification

Frequency Range	Model	DC Coupling	AC Coupling
	4082B	2Hz~8.4GHz	10MHz~8.4GHz
	4082D	2Hz~18GHz	10MHz~18GHz
	4082E	2Hz~26.5GHz	10MHz~26.5GHz
	4082F	2Hz~45GHz	10MHz~45GHz
	4082H	2Hz~50GHz	10MHz~50GHz
	4082L	2Hz~67GHz	10MHz~67GHz
	4082N	2Hz~90GHz	/
	4082P	2Hz~110GHz	/
10MHz Frequency Reference	Frequency Accuracy: ±(up to the last calibration date × aging rate+temperature stability+calibration accuracy)		
	Aging Rate: $\pm 5\times10^{-10}$/day		
	Temperature Stability: $\pm 5\times10^{-8}$		
Frequency Reading Accuracy	±(frequency reading × frequency reference accuracy+0.1% bandwidth+5% resolution bandwidth+2Hz+0.5 horizontal resolution*) **Horizontal resolution=bandwidth/(scan points -1)*		
Frequency Counting Accuracy	±(frequency reading × Frequency reference accuracy+0.1Hz)		
Bandwidth	Range: 0Hz (zero bandwidth), 10Hz to the highest frequency range of this model		
	Accuracy: ± (0.1%) × Bandwidth+Bandwidth/(Sweep Points -1)		
Sweep Time Range	Bandwidth ≥ 10Hz: 3μs~16000s		
	Bandwidth=0Hz: 1μS~16000s		
Sweep Points	101~120001		
Resolution Bandwidth	Range: 0.1Hz~20MHz (1, 2, 3, 5 steps)		
	Conversion Uncertainty(Based on RBW=300kHz as a reference): ± 0.10dB 1Hz~1MHz (1, 2, 3, 5 steps) ± 0.30dB 2MHz~10MHz (1, 2, 3, 5 steps) ± 1.00dB 20MHz		
Analyze Bandwidth	Standard configuration: 10MHz		
	Option H38-40: 40MHz		
	Option H38-200:200MHz		
	Option H38-400:400MHz		
	Option H38-600:600MHz		
	Option H38-1200:1.2GHz		
	Option H38-2000:2GHz		
Video Bandwidth	1Hz~20MHz (1, 2, 3, 5 steps)		
Trigger Method	Freedom, Power, Video, External Trigger 1/2, Timer		
Detection Mode	Normal, Positive Peak, Negative Peak, Sampling, Video Averaging, Power Averaging, Voltage Averaging		
Phase Noise (Carrier 1GHz, 20°C to 30°C)	Frequency Offset	Nominal	Typical Value
	100Hz	-107dBc/Hz	-115dBc/Hz
	1kHz	-125dBc/Hz	-128dBc/Hz
	10kHz	-134dBc/Hz	-135dBc/Hz
	100kHz	-136dBc/Hz	-137dBc/Hz
	1MHz	-138dBc/Hz	-140dBc/Hz
	10MHz	-152dBc/Hz	-154dBc/Hz
Residual FM	≤ 0.25Hz × N (10Hz resolution bandwidth, 10Hz video bandwidth, rated value within 20 ms, specific N values refer to harmonic frequency division)		

DANL

(Input terminal matching load, trajectory average, average type is video average, detection method is video average detection, 0dB input attenuation, normalized to 1Hz RBW, 20°C~30°C)

4082B preamplifier off		
Frequency Range	Nominal	Typical Value
10MHz ≤ f ≤ 100MHz	-149dBm	-151dBm
100MHz<f ≤ 1.2GHz	-152dBm	-154dBm
1.2GHz<f ≤ 2.2GHz	-151dBm	-153dBm
2.2GHz<f ≤ 3.25GHz	-150dBm	-153dBm
3.25GHz<f ≤ 5.25GHz	-148dBm	-150dBm
5.25GHz<f ≤ 6.5GHz	-144dBm	-148dBm
6.5GHz<f ≤ 8.4GHz	-142dBm	-145dBm
4082B preamplifier on		
Frequency Range	Nominal	Typical Value
10MHz ≤ f ≤ 100MHz	-156dBm	-158dBm
100MHz<f ≤ 3.25GHz	-161dBm	-163dBm
3.25GHz<f ≤ 5.25GHz	-160dBm	-162dBm
5.25GHz<f ≤ 8.4GHz	-156dBm	-159dBm
4082D/E/F/H preamplifier off		
Frequency Range	Nominal	Typical Value
10MHz ≤ f ≤ 100MHz	-147dBm	-150dBm
100MHz<f ≤ 1.2GHz	-151dBm	-153dBm
1.2GHz<f ≤ 2.2GHz	-150dBm	-152dBm
2.2GHz<f ≤ 3.25GHz	-148dBm	-150dBm
3.25GHz<f ≤ 5.25GHz	-145dBm	-148dBm
5.25GHz<f ≤ 6.5GHz	-142dBm	-147dBm
6.5GHz<f ≤ 8.2GHz	-140dBm	-143dBm
8.2GHz<f ≤ 18GHz	-143dBm	-145dBm
18GHz<f ≤ 26.5GHz	-137dBm	-141dBm
26.5GHz<f ≤ 40GHz	-130dBm	-133dBm
40GHz<f ≤ 50GHz	-127dBm	-129dBm
4082D/E/F/H preamplifier on		
Frequency Range	Nominal	Typical Value
10MHz ≤ f ≤100MHz	-155dBm	-158dBm
100MHz<f ≤ 3.25GHz	-162dBm	-164dBm
3.25GHz<f ≤ 5.25GHz	-160dBm	-163dBm
5.25GHz<f ≤ 8.4GHz	-156dBm	-158dBm
8.2GHz<f ≤ 18GHz	-157dBm	-159dBm
18GHz<f ≤ 26.5GHz	-154dBm	-156dBm
26.5GHz<f ≤ 40GHz	-151dBm	-153dBm
40GHz<f ≤ 50GHz	-148dBm	-151dBm
4082L preamplifier off		
Frequency Range	Nominal	Typical Value
10MHz ≤ f ≤ 100MHz	-147dBm	-150dBm
100MHz<f ≤ 1.2GHz	-150dBm	-152dBm
1.2GHz<f ≤ 2.2GHz	-149dBm	-152dBm
2.2GHz<f ≤ 3.25GHz	-148dBm	-150dBm
3.25GHz<f ≤ 5.25GHz	-145dBm	-148dBm
5.25GHz<f ≤ 6.5GHz	-142dBm	-149dBm
6.5GHz<f ≤ 8.2GHz	-140dBm	-143dBm
8.2GHz<f ≤18GHz	-143dBm	-145dBm
18GHz<f ≤ 26.5GHz	-137dBm	-141dBm

DANL

(Input terminal matching load, trajectory average, average type is video average, detection method is video average detection, 0dB input attenuation, normalized to 1Hz RBW, 20°C~30°C)

4082L preamplifier off		
Frequency Range	Nominal	Typical Value
26.5GHz<f ≤ 40GHz	-130dBm	-133dBm
40GHz<f ≤ 50GHz	-127dBm	-129dBm
50GHz<f ≤ 54.8GHz	-135dBm	-139dBm
54.8GHz<f ≤ 63.6GHz	-133dBm	-137dBm
63.6GHz<f ≤ 67GHz	-131dBm	-135dBm
4082L preamplifier on		
Frequency Range	Nominal	Typical Value
10MHz ≤ f ≤100MHz	-157dBm	-160dBm
100MHz<f ≤ 3.25GHz	-162dBm	-164dBm
3.25GHz<f ≤ 5.25GHz	-161dBm	-163dBm
5.25GHz<f ≤ 8.2GHz	-154dBm	-156dBm
8.2GHz<f ≤ 18GHz	-156dBm	-159dBm
18GHz<f ≤ 26.5GHz	-154dBm	-157dBm
26.5GHz<f ≤ 40GHz	-151dBm	-153dBm
40GHz<f ≤ 48GHz	-145dBm	-150dBm
48GHz<f ≤ 54.8GHz	-146dBm	-152dBm
54.8GHz<f ≤ 63.6GHz	-142dBm	-148dBm
63.6GHz<f ≤ 67GHz	-140dBm	-143dBm
4082N/P preamplifier off, RF Port 2		
Frequency Range	Nominal	Typical Value
10MHz ≤ f ≤ 100MHz	-145dBm	-148dBm
100MHz<f ≤ 1.2GHz	-148dBm	-149dBm
1.2GHz<f ≤ 2.2GHz	-146dBm	-148dBm
2.2GHz<f ≤ 3.25GHz	-144dBm	-147dBm
3.25GHz<f ≤ 5.25GHz	-141dBm	-146dBm
5.25GHz<f ≤ 6.5GHz	-140dBm	-146dBm
6.5GHz<f ≤ 8.2GHz	-138dBm	-141dBm
8.2GHz<f ≤ 18GHz	-141dBm	-143dBm
18GHz<f ≤ 26.5GHz	-135dBm	-139dBm
26.5GHz<f ≤ 40GHz	-127dBm	-133dBm
40GHz<f ≤ 50GHz	-122dBm	-125dBm
50GHz<f ≤ 54.8GHz	-133dBm	-135dBm
54.8GHz<f ≤ 63.6GHz	-130dBm	-133dBm
63.6GHz<f ≤ 67.2GHz	-128dBm	-131dBm
67.2GHz<f ≤ 74GHz	-138dBm	-141dBm
73.8GHz<f ≤ 82.8GHz	-143dBm	-145dBm
82.6GHz<f ≤ 91.6GHz	-142dBm	-144dBm
91.4GHz<f ≤ 99.6GHz	-141dBm	-144dBm
99.4GHz<f ≤ 110GHz	-138dBm	-141dBm
4082N/P preamplifier on, RF Port 1		
Frequency Range	Nominal	Typical Value
10MHz ≤ f ≤100MHz	-155dBm	-158dBm
100MHz<f ≤ 3.25GHz	-160dBm	-162dBm
3.25GHz<f ≤ 5.25GHz	-159dBm	-161dBm
5.25GHz<f ≤ 8.2GHz	-152dBm	-154dBm
8.2GHz<f ≤ 18GHz	-154dBm	-157dBm
18GHz<f ≤ 26.5GHz	-151dBm	-155dBm

DANL (Input terminal matching load, trajectory average, average type is video average, detection method is video average detection, 0dB input attenuation, normalized to 1Hz RBW, 20°C~30°C)	4082N/P preamplifier on, RF Port 1		
	Frequency Range	Nominal	Typical Value
	26.5GHz<f ≤ 40GHz	-149dBm	-151dBm
	40GHz<f ≤ 48GHz	-147dBm	-149dBm
	48GHz<f ≤ 54.8GHz	-146dBm	-149dBm
	54.8GHz<f ≤ 63.6GHz	-142dBm	-145dBm
	63.6GHz<f ≤ 67GHz	-135dBm	-137dBm
Frequency response and absolute amplitude accuracy (10dB attenuation, 20°C~30°C)	4082B preamplifier off		
	Frequency Range	Nominal	Typical Value
	10MHz ≤ f ≤ 100MHz	±0.50dB	±0.34dB
	100MHz<f ≤ 3.25GHz	±0.40dB	±0.30dB
	3.25GHz<f ≤ 5.25GHz	±0.50dB	±0.31dB
	5.25GHz<f ≤ 8.4GHz	±0.50dB	±0.33dB
	4082B preamplifier on		
	Frequency Range	Nominal	Typical Value
	100kHz ≤ f ≤ 100MHz	±0.80dB	±0.50dB
	100MHz<f ≤ 3.25GHz	±0.70dB	±0.50dB
	3.25GHz<f ≤ 5.25GHz	±0.80dB	±0.60dB
	5.25GHz<f ≤ 8.4GHz	±0.90dB	±0.70dB
	4082D/E/F/H preamplifier off		
	Frequency Range	Nominal	Typical Value
	10MHz ≤ f ≤ 100MHz	±0.50dB	±0.34dB
	100MHz<f ≤ 3.25GHz	±0.40dB	±0.30dB
	3.25GHz<f ≤ 5.25GHz	±0.50dB	±0.31dB
	5.25GHz<f ≤ 8.2GHz	±0.50dB	±0.33dB
	8.2GHz<f ≤ 18GHz	±1.50dB	±0.95dB
	18GHz<f ≤ 26.5GHz	±1.80dB	±0.95dB
	26.5GHz<f ≤ 40GHz	±2.50dB	±1.50dB
	40GHz<f ≤ 50GHz	±2.80dB	±1.60dB
	4082D/E/F/H preamplifier on		
	Frequency Range	Nominal	Typical Value
	100kHz ≤ f ≤ 100MHz	±0.50dB	±0.34dB
	100MHz<f ≤ 3.25GHz	±0.70dB	±0.50dB
	3.25GHz<f ≤ 5.25GHz	±0.80dB	±0.60dB
	5.25GHz<f ≤ 8.2GHz	±0.90dB	±0.70dB
	8.2GHz<f ≤ 18GHz	±2.00dB	±1.35dB
	18GHz<f ≤ 26.5GHz	±2.30dB	±1.55dB
	26.5GHz<f ≤ 40GHz	±2.80dB	±1.86dB
	40GHz<f ≤ 50GHz	±3.00dB	±2.00dB
	4082L/N/P preamplifier off		
	Frequency Range	Nominal	Typical Value
	10MHz<f ≤ 100MHz	±0.50dB	±0.34dB
	100MHz<f ≤ 3.25GHz	±0.40dB	±0.30dB
	3.25GHz<f ≤ 5.25GHz	±0.50dB	±0.31dB
	5.25GHz<f ≤ 8.2GHz	±0.50dB	±0.33dB
	8.2GHz<f ≤ 18GHz	±1.50dB	±0.95dB
	18GHz<f ≤ 26.5GHz	±1.80dB	±0.95dB
	26.5GHz<f ≤ 40GHz	±2.50dB	±1.50dB
	40GHz<f ≤ 48GHz	±2.80dB	±1.60dB

Frequency response and absolute amplitude accuracy (10dB attenuation, 20°C~30°C)	4082L/N/P preamplifier off		
	Frequency Range	Nominal	Typical Value
	48GHz<f ≤ 67GHz	±3.0 0dB	±1.50dB
	67GHz<f ≤ 110GHz	±4.00 dB	±2.50dB
	4082L/N/P preamplifier on		
	Frequency Range	Nominal	Typical Value
	100kHz ≤ f ≤ 100MHz	±0.50dB	±0.34dB
	100MHz<f ≤ 3.25GHz	±0.70dB	±0.50dB
	3.25GHz<f ≤ 5.25GHz	±0.80dB	±0.60dB
	5.25GHz<f ≤ 8.2GHz	±0.90dB	±0.70dB
	8.2GHz<f ≤ 18GHz	±2.00dB	±1.35dB
	18GHz<f ≤ 26.5GHz	±2.30dB	±1.55dB
	26.5GHz<f ≤ 40GHz	±2.80dB	±1.86dB
	40GHz<f ≤ 48GHz	±3.00dB	±2.00dB
	48GHz<f ≤ 67GHz	±3.50dB	±2.50dB
	Absolute Amplitude Accuracy (10 dB attenuation, 20 ° C to 30 ° C, 1 Hz ≤ resolution bandwidth ≤ 1 MHz, input signal -10 to -50 dBm): ±0.24dB (500MHz calibration frequency) ±(0.24dB+frequency response) (All frequencies excluding 500MHz calibration frequency)		
1dB Gain Compression (Dual tone method test, resolution bandwidth 5kHz, 3MHz frequency interval, 20 ° C~30 ° C)	4082B		
	Frequency Range	Input Mixer Level	Typical Value
	20MHz ≤ f ≤ 8.4GHz	≥+5dBm	≥+10dBm
	4082D/E/F/H		
	Frequency Range	Input Mixer Level	Typical Value
	20MHz ≤ f ≤ 3.25GHz	≥+5dBm	≥+10dBm
	3.25GHz < f ≤ 50GHz	≥+7dBm	≥+11dBm
	4082L/N/P		
	Frequency Range	Input Mixer Level	Typical Value
	20MHz < f ≤ 5.25GHz	≥+5dBm	≥+10dBm
	5.25GHz < f ≤ 8.2GHz	≥+7dBm	≥+11dBm
	8.2GHz < f ≤ 67GHz	≥+6dBm	≥+11dBm
	67GHz < f ≤ 90GHz	≥-3dBm	/
	90GHz < f ≤ 110GHz	≥-1dBm	/
Third Order Interception Point (TOI) (input two -10dBm signals to the mixer for testing, with a frequency interval of 50kHz, 20 ° C~30 ° C)	4082B		
	Frequency Range	Nominal	Typical Value
	10MHz ≤ f ≤ 100MHz	+14dBm	+16dBm
	100MHz<f ≤ 3.25GHz	+18dBm	+20dBm
	3.25GHz<f ≤ 5.25GHz	+18dBm	+20dBm
	5.25GHz<f ≤ 8.4GHz	+17dBm	+19dBm
	4082D/E/F/H/L/N/P		
	Frequency Range	Nominal	Typical Value
	10MHz ≤ f ≤ 100MHz	+14dBm	+16dBm
	100MHz<f ≤ 3.25GHz	+18dBm	+20dBm
	3.25GHz<f ≤ 5.25GHz	+20dBm	+23dBm
	5.25GHz<f ≤ 8.2GHz	+21dBm	+23dBm
	8.2GHz<f ≤ 50GHz	+18dBm	+20dBm
	50GHz<f ≤ 67GHz	+18dBm	+20dBm
Residual Response (Input terminal matching load, 0dB attenuation)	≤-98dBm (1MHz ≤ f ≤ 8GHz RF input 1)		

IQ Data	Storage Depth (IQ length): Analysis bandwidth ≤ 40MHz: 500M IQ samples, IQ byte length: 32-bit I, 32-bit Q Analysis bandwidth>40MHz: 1000M IQ samples, IQ byte length: 16 bit I, 16 bit Q
Dimensions(Width×Height×Depth)	(426 ± 4) mm × (222 ± 4) mm × (450 ± 4) mm (excluding handles, feet, pads, and side straps)
Max. Weight	Approximately 35kg (with different options and weights)
Power	AC 100~240V, 50~60Hz
Consumption	Max. power consumption 450W (standard) Max. power consumption 850W (fully configured option)
Temperature	Working temperature: 0 ° C~+50 ° C Storage temperature: -40 ° C to+70 ° C
RF Interface	B/D type: N type (female), 50 Ω E type: 3.5mm (male), 50 Ω F/H type: 2.4mm (male), 50 Ω L type: 1.85mm (male), 50 Ω N/P type: 1.85mm (male), 50 Ω (RF input 1) 1.00mm (male), 50 Ω (RF input 2)

Ordering Information

Model

Model	Name	Description
4082B	Signal/ Spectrum Analyzer	2Hz~8.4GHz
4082D	Signal/ Spectrum Analyzer	2Hz~18GHz
4082E	Signal/ Spectrum Analyzer	2Hz~26.5GHz
4082F	Signal/ Spectrum Analyzer	2Hz~45GHz
4082H	Signal/ Spectrum Analyzer	2Hz~50GHz
4082L	Signal/ Spectrum Analyzer	2Hz~67GHz
4082N	Signal/ Spectrum Analyzer	2Hz~90GHz
4082P	Signal/ Spectrum Analyzer	2Hz~110GHz

Standard

No.	Name	Description
1	Power Cord Components	Standard three core power cord
2	Qualification Certificate	/

Options

Option Model	Name	Description
4082-H02	Auxiliary intermediate frequency output	Output the second intermediate frequency signal, with a frequency range related to the analysis bandwidth, a frequency resolution of 1Hz, and a variable gain of 15dB in 1dB steps. Output frequency range: 425MHz ± 40MHz (≤ 40MHz analysis bandwidth) 750MHz ± 600MHz (200MHz~1.2GHz analysis bandwidth) 1.5GHz ± 1000MHz (2GHz analysis bandwidth).
4082-H08	Broadband logarithmic detection output	Output a logarithmic detection signal that reflects the level characteristics of the input signal.
4082-H11	10 Gigabit Network Control and Data Interface	A 10 Gigabit Ethernet interface based on optical fiber, with a transmission rate of 10Gbit/s, used for fast remote control.
4082-H19-2T	Local storage space expansion	Support up to 2TB of storage space (electronic hard drive).
4082-H19-4T	Local storage space expansion	Support up to 4TB of storage space (electronic hard drive).

Option Model	Name	Description
4082-H33-08	Electronic attenuator	Frequency range: 9kHz~8GHz, attenuation range: 30dB, in 0.5dB steps.
4082-H34-08	Low noise preamplifier	The preamplifier is selected based on the upper frequency limit of the selected signal analyzer host, such as the 4082B preamplifier, please select H34-08.
4082-H34-18	Low noise preamplifier	The preamplifier is selected based on the upper frequency limit of the selected signal analyzer host. For example, for 4082D preamplifier, please choose H34-18.
4082-H34-26	Low noise preamplifier	The preamplifier is selected based on the upper frequency limit of the selected signal analyzer host. For example, for the 4082E preamplifier, please choose H34-26.
4082-H34-45	Low noise preamplifier	The preamplifier is selected based on the upper frequency limit of the selected signal analyzer host, such as the 4082F preamplifier, please choose H34-45.
4082-H34-50	Low noise preamplifier	The preamplifier is selected based on the upper frequency limit of the selected signal analyzer host, such as the 4082H preamplifier, please choose H34-50.
4082-H34-67	Low noise preamplifier	The preamplifier is selected based on the upper frequency limit of the selected signal analyzer host, such as 4082L/N/P. Please select H34-67 for the preamplifier.
4082-H34A-08	Low noise preamplifier	Only the 4082B host can be configured, and cannot be selected at the same time as the 4082-H34-08.
4082-H36	Preselector bypass	Bypass the tracking preselector in the receiving channel. (Note: Except for 4082B, other models are equipped with the H38 series analysis bandwidth option, and the H36 preselector bypass option is required to provide the best broadband signal reception characteristics.)
4082-H38-40	40MHz analysis bandwidth	Supports 10Hz to 40MHz analysis bandwidth. (Note: In addition to 4082B, the H38 series option is optional, and the H36 preselector bypass option is required to provide the best broadband signal reception characteristics.)
4082-H38-200	200MHz analysis bandwidth	Support 10Hz~200MHz analysis bandwidth. (Note: In addition to 4082B, the H38 series option is optional, and the H36 preselector bypass option is required to provide the best broadband signal reception characteristics.)
4082-H38-400	400MHz analysis bandwidth	Supports 10Hz to 400MHz analysis bandwidth. (Note: In addition to 4082B, the H38 series option is optional, and the H36 preselector bypass option is required to provide the best broadband signal reception characteristics.)
4082-H38-600	600MHz analysis bandwidth	Support 10Hz~600MHz analysis bandwidth. (Note: In addition to 4082B, the H38 series option is optional, and the H36 preselector bypass option is required to provide the best broadband signal reception characteristics.)
4082-H38-1200	1.2GHz analysis bandwidth	Supports 10Hz to 1.2GHz analysis bandwidth. (Note: In addition to 4082B, the H38 series option is optional, and the H36 preselector bypass option is required to provide the best broadband signal reception characteristics.)
4082-H38-2000	2GHz analysis bandwidth	Supports 10Hz to 2GHz analysis bandwidth. (Note: In addition to 4082B, the H38 series option is optional, and the H36 preselector bypass option is required to provide the best broadband signal reception characteristics.)
4082-H40	External frequency extension function	Provide the ability to extend the frequency testing range using external mixing methods. This option will provide local oscillator output and intermediate frequency input interface functions, as well as signal recognition capability. (This option is only available when the host model is not 4082B; the extended frequency range depends on the selected spread spectrum module; the spread spectrum module needs to be purchased separately.)
4082-H41-200	Real time spectrum analysis function	It provides digital fluorescence spectrum with a maximum bandwidth of 200MHz and seamless waterfall map function, including frequency template trigger and broadband real-time spectrum analysis. (H38 option needs to be selected at the same time. When configuring H38-200, H38-400, H38-600, H38-1200, H38-2000, this option is optional.)
4082-H41-400	Real time spectrum analysis function	It provides digital fluorescence spectrum with a maximum bandwidth of 400MHz and seamless waterfall map function, including frequency template trigger and broadband real-time spectrum analysis. (H38 option needs to be selected at the same time. When equipped with H38-400, H38-600, H38-1200, H38-2000, this option is optional.)

Option Model	Name	Description
4082-H41-600	Real time spectrum analysis function	It provides digital fluorescence spectrum with a maximum bandwidth of 600MHz and seamless waterfall map function, including frequency template trigger and broadband real-time spectrum analysis. (H38 option needs to be selected at the same time. When equipped with H38-600, H38-1200, and H38-2000, this option is optional.)
4082-H41-1200	Real time spectrum analysis function	It provides the maximum 1.2GHz bandwidth digital fluorescence spectrum and seamless waterfall map functions, including frequency template triggering and broadband real-time spectrum analysis. (H38 option needs to be selected at the same time. When configuring H38-1200 and H38-2000, this option is optional.)
4082-H48	Noise coefficient testing function	Provide noise source driving and noise coefficient testing functions. 4082N/P only supports noise figure testing up to the highest frequency of 67GH. (Note: To select this option, it is necessary to simultaneously purchase the H34 low noise preamplifier option corresponding to the frequency band of the entire machine, as well as the corresponding 1660X noise source probe, to jointly complete the noise coefficient testing function.).
4082-H96	User manual (paper version)	Provide a detailed user manual in hard copy.
4082-H97	Shelf Kit	Shelf mounting handle and accessories, used for mounting 4082 in standard cabinets.
4082-H98	English kit	English panel, English manual, English operation interface, and English operating system.
4082-H99	Aluminum alloy transport box	High strength and lightweight aluminum alloy transport box with handles and rollers for easy transportation.
4082-S01	Absolute power measurement	High precision measurement of RF signal power is achieved by connecting an external USB power probe. (Corresponding 8723X series power probes need to be configured.)
4082-S02	Noise power ratio testing function	Provide noise power ratio testing capability.
4082-S04	Phase noise testing function	Provide single sideband phase noise curve and single point phase noise testing capability.
4082-S05	EMC pre compatibility testing function	Provide EMC pre compatibility testing capabilities.
4082-S09	Analog demodulation	AM, FM, ΦM Analysis of modulation and distortion characteristics
4082-S10	Transient analysis function	Realize the testing and analysis of the instantaneous parameter spectrum, spectrum, and time-varying characteristics of the signal, and support the playback of recorded data.
4082-S10H	Frequency hopping signal analysis	Provide automatic measurement of characteristics such as dwell time, switching time, frequency, and error of frequency hopping signals. (S10 option needs to be selected at the same time)
4082-S10F	FMCW signal analysis	Provide automatic measurement of FMCW signal slope, deviation, power, and other characteristics. (S10 option needs to be selected at the same time)
4082-S12	Vector signal analysis function	Provide flexible demodulation functions for various single carrier digital modulation signals, which can provide rich graphs such as vector maps, constellation maps, eye maps, spectrum maps, etc. to analyze the characteristics of modulation signals. Through demodulation, the modulation error of the signal can be obtained, helping to determine the cause of signal error.
4082-S13	Pulse signal analysis function	Realize automatic measurement of time, level, and modulation parameters of pulse waveforms, as well as statistical analysis of pulse sequences.
4082-S16	Multi carrier group delay measurement function	Provide absolute and relative group delay measurement capabilities for broadband signals.
4082-S40	WLAN 802.11a/b/g measurement function	Broadband wireless LAN protocol physical layer testing (802.11a/b/g), covering RF, modulation analysis, and modulation quality testing.
4082-S40N	WLAN 802.11n measurement function	Broadband Wireless LAN Protocol Physical Layer Testing (802.11n), covering RF, modulation analysis, and modulation quality testing. (S40 option needs to be selected at the same time)
4082-S40AC	WLAN 802.11ac measurement function	Broadband Wireless LAN Protocol Physical Layer Testing (802.11ac), covering RF, modulation analysis, and modulation quality testing. (S40 option needs to be selected at the same time)

Option Model	Name	Description
4082-S40AX	WLAN 802.11ax measurement function	Broadband Wireless LAN Protocol Physical Layer Testing (802.11ax), covering RF, modulation analysis, and modulation quality testing. (S40 option needs to be selected at the same time)
4082-S46D	5G NR downlink signal measurement function	Supporting 5G NR downlink signal demodulation, providing measurements such as EVM and spectral flatness; Support power measurement functions such as ACP, spectrum transmission template, CCDF, etc; Supports multiple bandwidth and multiple TM.
4082-S46U	5G NR uplink signal measurement function	Support 5G NR uplink signal demodulation, provide EVM, spectrum flatness and other measurements; Support power measurement functions such as ACP, spectrum transmission template, CCDF, etc; Supports multiple bandwidth levels.

Power Probes (requires 4082-S01 option)

Option Model	Name	Description
87230	USB continuous wave power probe	9kHz~6GHz power probe
87231	USB continuous wave power probe	10MHz~18GHz power probe
87232	USB continuous wave power probe	50MHz~26.5GHz power probe
87233	USB continuous wave power probe	50MHz~40GHz power probe

Millimeter Wave Spread Spectrum Module (requires 4082-H40 option)

Option Model	Name	Description
82407NA	Spectrum Analyzer Spread Spectrum Module	50GHz~75GHz
82407NC	Spectrum Analyzer Spread Spectrum Module	60GHz~90GHz
82407PA	Spectrum Analyzer Spread Spectrum Module	75GHz~110GHz
82407QA	Spectrum Analyzer Spread Spectrum Module	90GHz~140GHz
82407QB	Spectrum Analyzer Spread Spectrum Module	110GHz~170GHz
82407RA	Spectrum Analyzer Spread Spectrum Module	140GHz~220GHz
82407SA	Spectrum Analyzer Spread Spectrum Module	170GHz~260GHz
82407S	Spectrum Analyzer Spread Spectrum Module	220GHz~325GHz
82407TA	Spectrum Analyzer Spread Spectrum Module	260GHz~400GHz
82407R	Spectrum Analyzer Spread Spectrum Module	325GHz~500GHz
82407U	Spectrum Analyzer Spread Spectrum Module	500GHz~750GHz

Noise Source (requires TW4082-H48 option, TW4082-H34 option)

Option Model	Name	Description
16603DB	Noise Source	10MHz~18GHz
16603EB	Noise Source	10MHz~26.5GHz
16603FB	Noise Source	10MHz~40GHz
16603HB	Noise Source	10MHz~50GHz
16604DB	Intelligent Noise Source	10MHz~18GHz
16604EB	Intelligent Noise Source	10MHz~26.5GHz
16604FB	Intelligent Noise Source	10MHz~40GHz
16604HB	Intelligent Noise Source	10MHz~50GHz

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