



5256C

5G Communication Terminal Integrated Tester



China Electronics Technology Instruments Co., Ltd

Product Overview

5256C 5G Communication Terminal Integrated Tester is mainly used in research and development, manufacture, calibration, testing, certification, maintenance and teaching in the fields of 5G terminal and baseband chip. It has 5G signal generation function, 5G signal power characteristics, demodulation characteristics and spectrum characteristic analysis functions, supports high-speed test of 5G terminals production lines, and can transmit downlink 5G NR signals to achieve receiver test of 5G terminals. It also supports 3GPP TS38 521 Release 15 version, Sub-6GHz, multi-domain parallel synchronization testing, and analyzes 5G terminal signals from perspective angles and dimensions.

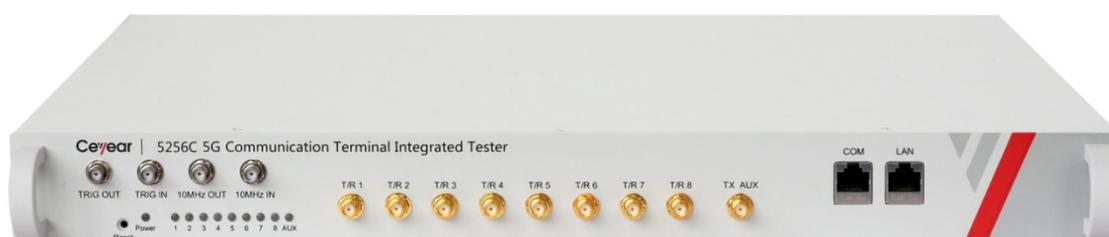


Fig. 1 5256C 5G Communication Terminal Integrated Tester

The Tester meets a variety of test requirements through different option configurations, including the terminal RF conformance test with 3GPP TS38 521-1 protocol standard, and can also support 4G / 3G / 2G and WIFI terminal RF conformance test through software upgrading.

The Tester contains functional units such as a power control time base module, a transmitting local oscillator module, a transmitting channel module, a receiving local oscillator module, a receiving channel module, a switching power division module, and a baseband processing module. It supports external 10MHz reference signal input and output, and simultaneous operation of transmission and reception. The working frequency range covers 70MHz to 7.1GHz, and the maximum transmission and reception bandwidth is 200MHz.

As the core unit of 5G terminal production test, this Tester is 1U in height, and is installed in the standard test cabinet to form the terminal test system. The Tester can be configured and controlled by upper controller through COM port or network port. The Tester has high-standard RF transceiver channels, wide bandwidth acquisition and processing capabilities, and rich test computing resources. The RF interface has 8 test transceiver ports (8T8R), which can meet the testing needs of modern 5G terminal production lines.

Main Characteristics

- Support 5G terminal production line fast non-signaling test
- Test cases covering 3GPP TS38 521-1 standard transmitters and receivers
- Also support 4G / 3G / 2G and WiFi series version test of 3GPP through software upgrade
- GUI graphical interface and multi-domain parallel test design
- Frequency range 70MHz to 7.1GHz
- Max. input power +30dBm
- 200MHz and 20MHz analysis bandwidth

Input/Output Ports:

- COM port: 1
- Network port: 1
- TRIG IN: 1, SMA, 50Ω
- TRIG OUT: 1, SMA, 50Ω
- 10MHz IN: 1, SMA, 50Ω
- 10MHz OUT: 1, SMA, 50Ω
- RF T/R port: 8, SMA, 50Ω
- RF TX AUX port: 1, SMA, 50Ω

Typical applications

Ceyear 5256C tester is designed according to the 5G standards and can meet the test needs of different users in 5G terminal testing area. Multi-domain parallel analysis design can analyze 5G terminal signals from multiple perspectives, making testing more comprehensive and efficient. It can be used for 5G terminal production line production, test and certification, 5G terminal and baseband chip R & D test, as well as 5G related research in institutes and teaching experiments in universities.

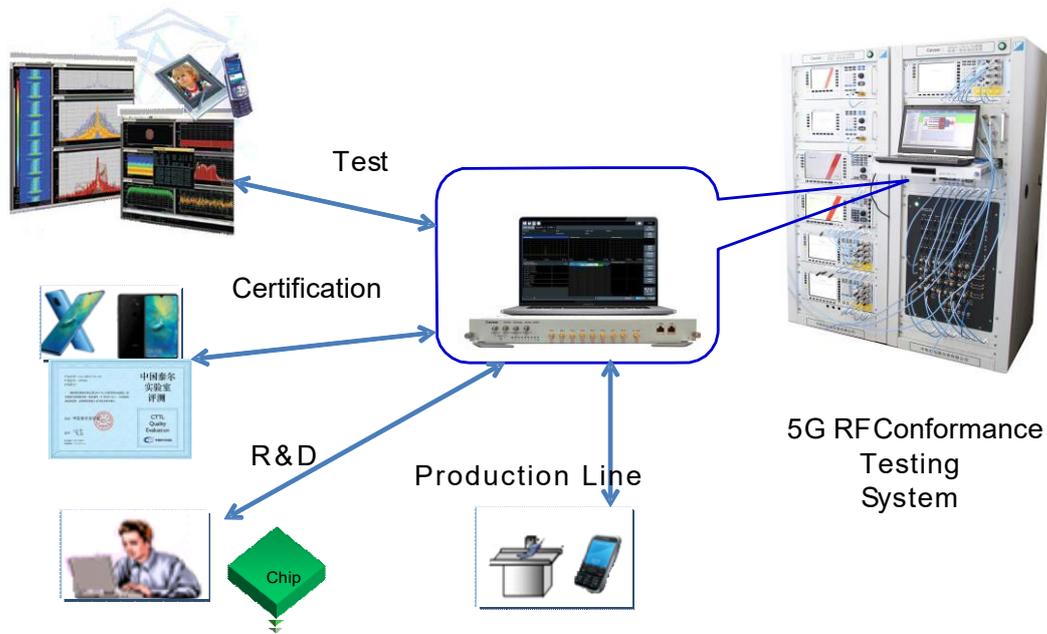


Fig. 2 Typical applications

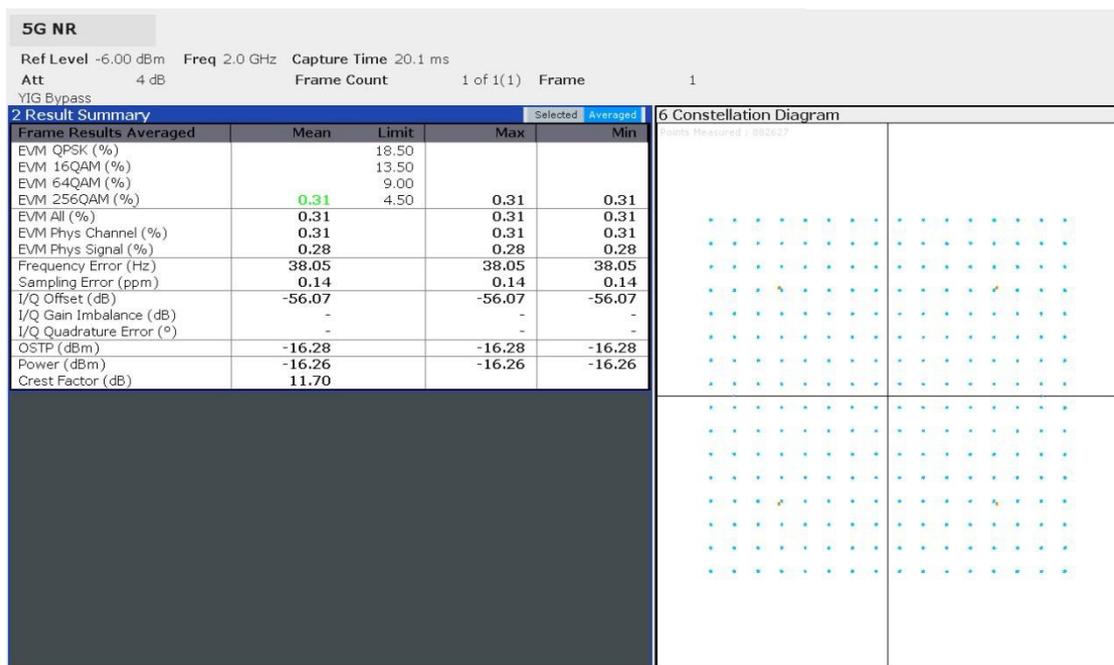


Fig. 3 Signal quality test

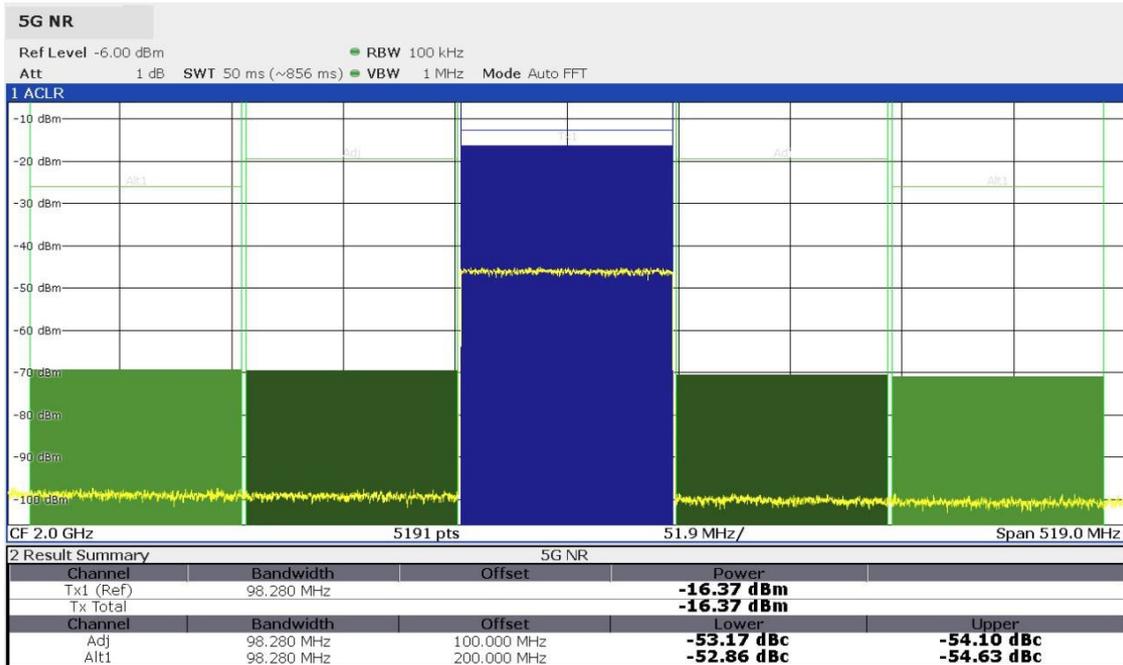


Fig. 4 Terminal signal ACLR test

Typical application areas are as follows,

- Comprehensive tester for 5G smart phone production line
- Production, testing and certification of 5G terminals
- Research and Development of 5G devices and baseband chips
- 5G related research or teaching in institute and universities



Fig. 5 5256C Typical Application Scenario

Technical specifications

Receiving Specifications		
No	Item	Specifications
1	Port	SMA, 8 COM
2	Frequency range	70MHz~7.1GHz
3	Frequency resolution	0.1Hz
4	Frequency accuracy	$\leq 0.05\text{ppm} + 0.1\text{Hz}$
5	Max. power	+30dBm (CW, lasting time<1min)
6	RF attenuation range	30dB, 1dB step
7	Channel bandwidth	20MHz (70MHz~7.1GHz) 200MHz (400MHz~7.1GHz)
8	Port impedance	50Ω
9	Port VSWR	≤ 1.5
10	DANL	$\leq -149\text{dBm/Hz}$ receiving amplifier on
11	Signal EVM	$\leq 1.0\%$ (RMS,5GNR,-30dBm<P<10dBm)
Transmitting Specifications		
No.	Item	Remarks
1	Port	SMA, 8COM
2	Frequency range	70MHz~7.1GHz
3	Frequency resolution	0.1Hz
4	Frequency accuracy	$\leq 0.05\text{ppm} + 0.1\text{Hz}$
5	Phase Noise	Better than: -105dBc/Hz@10kHz -104dBc/Hz@100kHz -110dBc/Hz@1MHz -135dBc/Hz@10MHz
6	Output Power Range (CW)	70MHz-6GHz: -130dBm~-5dBm 6GHz-7.1GHz: -130dBm~-12dBm

7	Uncertainty of output power	-70dBm to 0dBm: <0.6dB -100dBm to -70dBm: <1.2dB -120dBm to -100dBm: <1.5dB
8	Power resolution	≤0.1dB
9	Output Noise	≤-55dBc (70MHz-6GHz, clutter frequency point excludes)
10	Second harmonic distortion	≤-30dBc (>200MHz, -10dBm)
11	Third harmonic distortion	≤-40dBc (>200MHz, -10dBm)
12	In-band flatness (BW:100MHz)	≤1.5dB (600MHz~6GHz) ≤ 5dB (6GHz~7.1GHz)
13	Signal EVI	≤1.0%(RMS,5GNR,-30dBm<P<-22dBm)

Others		
1	Operation interface	GUI
2	Remote control interface	LAN port (standard)
3	External power supply and Power Adapter	AC: 100~240VAC, 50~60Hz; 48V DC, 4.6A
4	Weight	≤16kg

Ordering Information

Main unit: 5256C 5G Communication Terminal Integrated Tester

Standard package:

No.	Designation	Remark
1	Power line assembly	Standard Power cord
2	User manual	-
3	Product certificate of conformity	-
4	Power adapter	48V DC, 4.6A

Options:

Seri	Designation	Functi
5256C-001	5G NR terminal test	5G test functions of terminal transmitter and receiver
5256C-002	LTE terminal test	LTE test functions of terminal transmitter and receiver
5256C-003	WCDMA terminal test	WCDMA test functions of terminal transmitter and receiver
5256C-004	CDMA2000 terminal test	CDMA2000 test functions of terminal transmitter and receiver
5256C-005	GSM/EDGE terminal test	GSM/EDGE test functions of terminal transmitter and receiver
5256C-006	WIFI terminal test	WIFI test

Note: if the configuration or options of different models are different, the purchase contract shall prevail.

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CHINA ELECTRONICS TECHNOLOGY INSTRUMENTS CO., LTD
Tel: +86 532 86896691
Email: sales@ceyear.com
<http://www.ceyear.com>