



S1465-V Series Vector Signal Generator

Datasheet



Saluki Technology Inc.

The document applies to the Signal Generators of the following models:

- S1465C-V signal generator: 100kHz - 10GHz
- S1465D-V signal generator: 100kHz - 20GHz
- S1465F-V signal generator: 100kHz - 40GHz
- S1465H-V signal generator: 100kHz - 50GHz
- S1465L-V signal generator: 100kHz - 67GHz

Signal generator Standard pack and accessories:

| No. | Item |
|-----|------------------------|
| 1 | Main machine |
| 2 | Power cable assembly |
| 3 | User manual |
| 4 | Certificate of quality |

Options of the S1465V series Signal Generator in addition to standard accessories:

| Option ID | Description | Function | Match |
|-------------|------------------------------------|--|----------------------------|
| S1465V-H01A | 115dB programmable step attenuator | To expand output power dynamic range | For model S1465C/D/F-V |
| S1465V-H01B | 90dB programmable step attenuator | To expand output power dynamic range | For model S1465H/L-V |
| S1465V-H02A | Analog modulation | Additional analog modulation, including AM, FM, Φ M, and low-frequency output | All models |
| S1465V-H02B | Pulse modulation | Additional pulse modulation, with the minimum pulse width of 100ns | All models |
| S1465V-H02C | Narrow pulse modulation | Additional pulse modulation, with the minimum pulse width of 20ns | All models, including H02B |
| S1465V-H03 | Analog sweep | Additional analog sweep (slope sweep) | All models |
| S1465V-H04 | Ultra low phase noise | To reduce phase noise, 10GHz@10kHz: -120dBc/Hz | All models |
| S1465V-H05 | High-power output | To increase the maximum output power | All models |
| S1465V-H31 | Large Modulation Bandwidth | Internal demodulation extend to 200MHz | All models |

| | | | |
|------------|--|---|------------------------|
| S1465V-H32 | Internal Baseband large memory | Extend to 8GB | |
| S1465V-H33 | Broadband External IQ Input | Add wideband external IQ input function. | For model S1465C/D/F-V |
| S1465V-H35 | High-speed External Baseband Data Input (Optical Port) | Support user external arbitrary wave baseband data to be imported in real time through the optical fiber interface, a total of 4 optical fiber interfaces. | All models |
| S1465V-H80 | 87230 USB power probe | For power measurement and calibration (9kHz-6GHz) | All models |
| S1465V-H81 | 87231 USB power probe | For power measurement and calibration (10MHz-18GHz) | All models |
| S1465V-H82 | 87232 USB power probe | For power measurement and calibration (50MHz-26.5GHz) | All models |
| S1465V-H83 | 87233 USB power probe | For power measurement and calibration (50MHz-40GHz) | All models |
| S1465V-H90 | Electromagnetic compatibility | As specified in GJB-151A (touch screen disabled) | All models |
| S1465V-H91 | N RF output port | To change RF output port to N (female) | Only S1465D-V option |
| S1465V-H92 | Rear panel RF output | To move RF output port to rear panel | All models |
| S1465V-H93 | Front handle kit | Front panel mounting handle | All models |
| S1465V-H94 | Rack installation kit | Kit for installing instrument on the cabinet | All models |
| S1465V-H95 | Commercial calibration certificate | Instrument is entrusted to metrology service | All models |
| S1465V-H99 | Aluminum alloy transport case | For safety transportation | All models |
| S1465V-S01 | Arbitrary Wave | Support arbitrary wave data download and play, generate baseband signal or realize signal playback. | All models |
| S1465V-S02 | Linear Frequency Modulation | Support intra-pulse linear frequency modulation function. | All models |
| S1465V-S03 | Gaussian White Noise | Support pure noise generation, additive noise and continuous wave interference functions. | All models |
| S1465V-S04 | Dynamic Fading Function | Support general fading simulation and dynamic fading simulation of aviation channel. Need option S01. | All models |
| S1465V-S05 | Radar Signal Simulation | Can simulate radar radiation signals, echo signals, clutter signals and various deceptive and suppressive interferences of various systems, and has a hierarchical multi-radar simulation scene | All models |

| | | management function. Need option S01. | |
|------------|------------------------|--|------------|
| S1465V-S10 | Complex Pulse Sequence | The pulse generation pattern is extended to support complex pulse sequences such as double pulse, multiple pulses, repetition frequency jitter, repetition jitter, and repetition frequency slip. (Need option H02B/C) | All models |

Preface

Thank you for choosing S1465-V series vector signal generators produced by Saluki Technology Inc.

We devote ourselves to meeting your demands, providing you high-quality measuring instrument and the best after-sales service. We persist with “superior quality and considerate service”, and are committed to offering satisfactory products and service for our clients.

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Saluki Technology

Document Authorization

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Product Quality Assurance

The warranty period of the product is 36 months from the date of delivery. The instrument manufacturer will repair or replace damaged parts according to the actual situation within the warranty period.

Product Quality Certificate

The product meets the indicator requirements of the document at the time of delivery. Calibration and measurement are completed by the measuring organization with qualifications specified by the state, and relevant data are provided for reference.

Quality/Settings Management

Research, development, manufacturing and testing of the product comply with the requirements of the quality and environmental management system.

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1. Overview

S1465-V series vector signal generators has excellent vector modulation performance within the frequency range of 100kHz-67GHz. It has 200MHz internal modulation bandwidth and 2GHz external modulation real-time bandwidth, which can meet various modulation needs of wideband signals. The generator has excellent spectrum purity and output power specifications. The phase noise of 10GHz carrier @10kHz frequency offset can be reached to -126dBc/Hz, to meet high-level test needs which have strict requirements of testing signals. The generator also has excellent vector modulation accuracy and at the full frequency range the EVM is less than 1.4% (4MSPS), which makes the generator be used in metrology purpose. The baseband signal generator can be set easily with flexible performance and many modulation formats. More than 20 kinds of common modulation formats are supported, such as PSK, QAM, FSK, ASK and so on. The arbitrary wave modulation support 5 kinds of download file format, users can edit and download the waveform according to their own requirement. Thus various signal modulation can be accomplished and complex signals can be generated. Besides, the "airspace capsule" operation interface design and 10.1 inch high-brightness touch screen can bring a brand-new operation experience to users.

With wide frequency band and modulation bandwidth, S1465-V series vector signal generator can not only provide user with analog and vector modulated signal with great spectrum purity and modulation types, but also can help user edit arbitrary waves flexibly. It's an ideal choice for performance test of components, modules, communications, navigation, radar, and other electronic systems.

2. Main characteristics

- Broadband vector signal generation
- Large vector modulation bandwidth
- High compatible arbitrary wave data format download
- High purity spectrum
- Broadband and high-power output
- Metrology grade vector modulation accuracy
- Complete universal digital modulation format
- Convenient touch screen control
- Multiple control and function extension interfaces

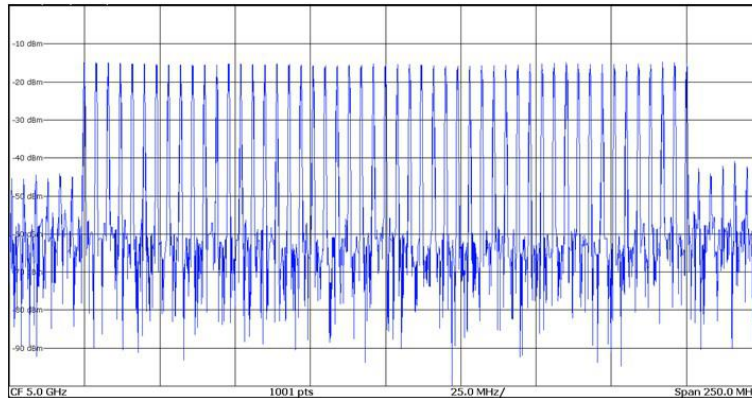
3. Advantage Characteristics

3.1 Broad vector signal generation

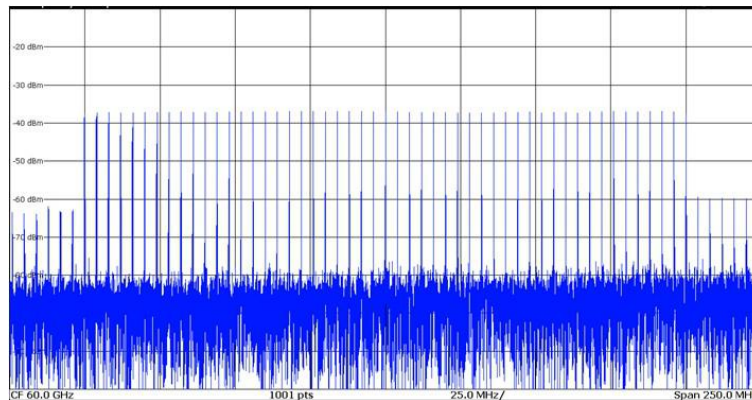
S1465-V series signal generators can provide various signal testing solutions covering 10GHz/20GHz/40GHz/50GHz/67GHz to meet user's specific needs in different fields. Especially, S1465L-V signal generator with 100kHz - 67GHz frequency range can meet test needs of most users .

3.2 Large vector modulation bandwidth

S1465-V series signal generators can provide 200MHz internal modulation bandwidth and 2GHz external modulation bandwidth (above 3.2GHz carrier) vector signal generation function.



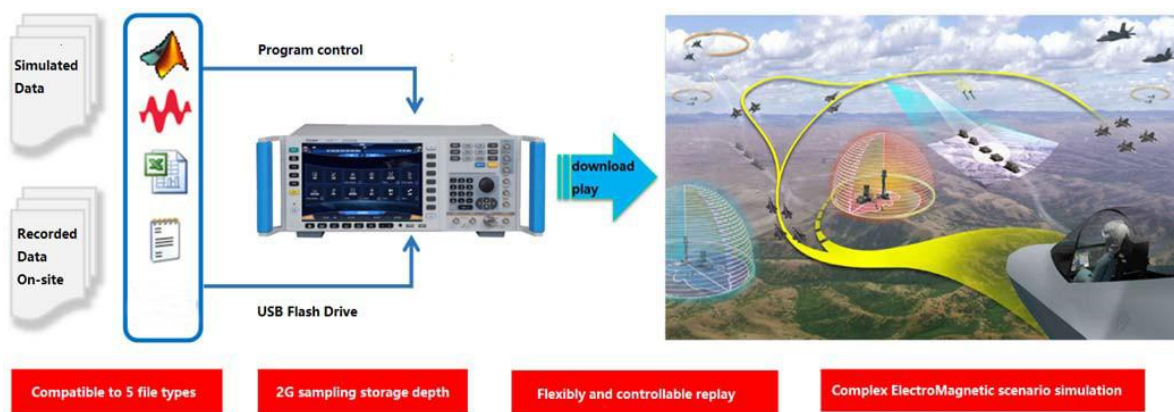
Multi-tone signal using 5GHz carrier and 200MHz modulation bandwidth



Multi-tone signal using 60GHz carrier and 200MHz modulation bandwidth

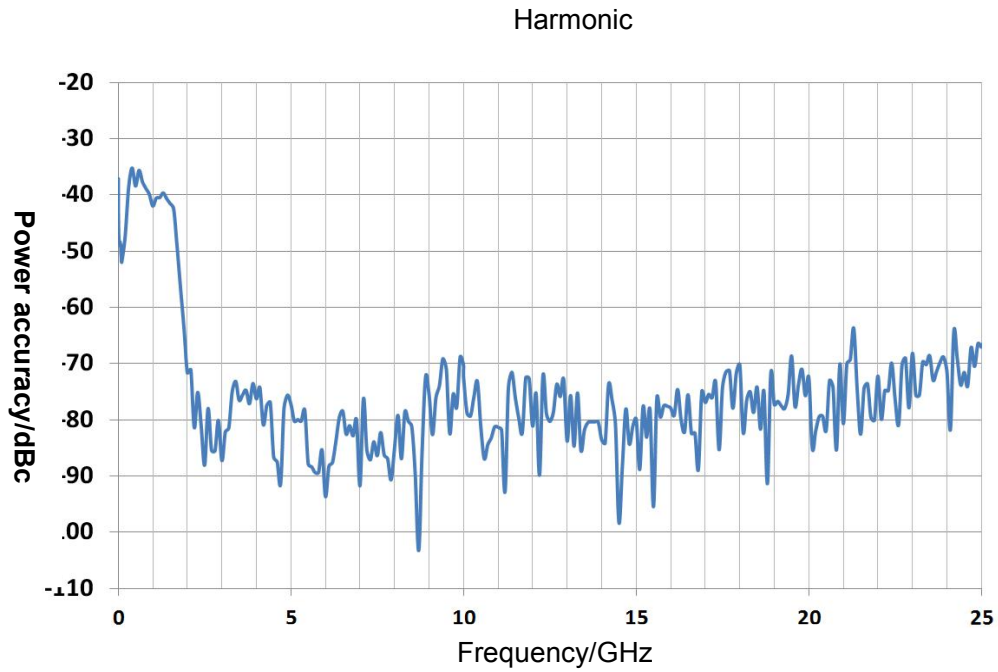
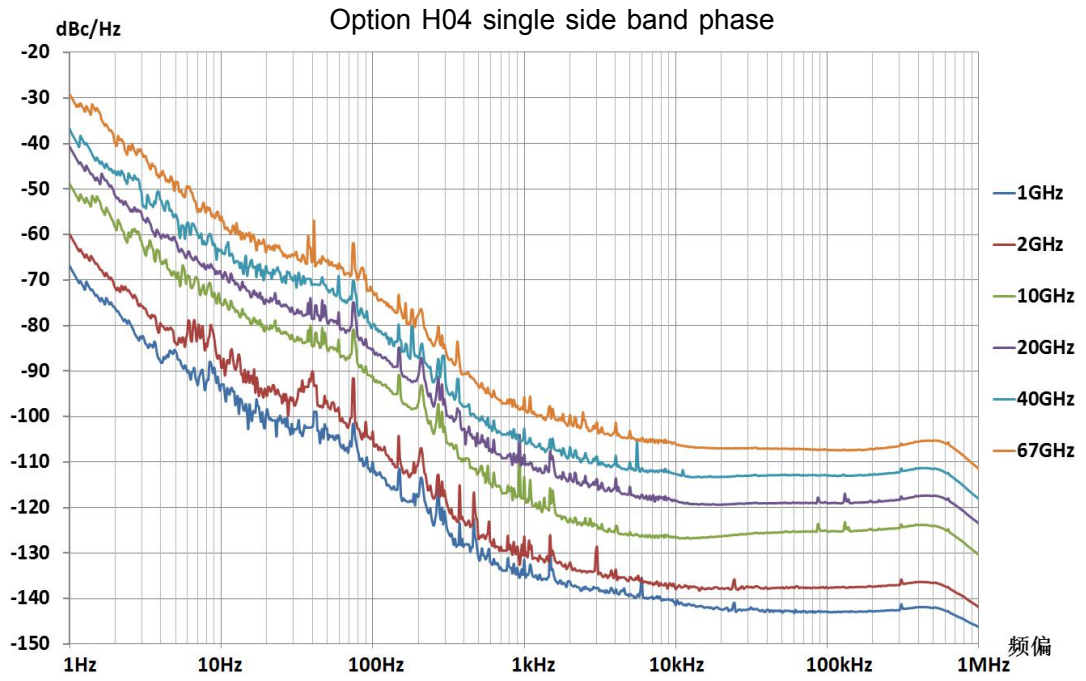
3.3 High compatible arbitrary wave data format download

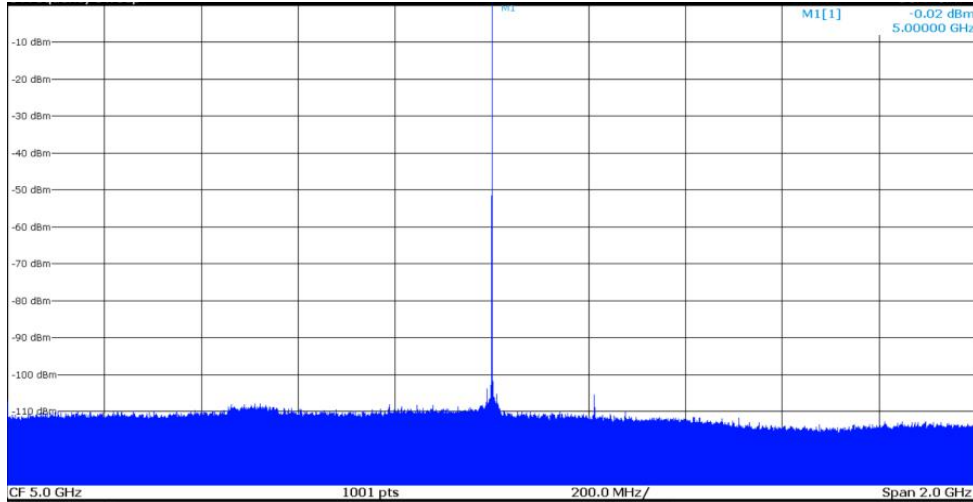
S1465-V series signal generators support direct download and display of arbitrary waveforms. The file formats include Mat-File 5, ASCII, Binary, cap and csv. The generator has a 2GSa storage depth.



3.4 High purity spectrum

S1465-V series signal generators are able to output extremely pure signal spectrum, typical single side band phase noise at 10GHz carrier and 10kHz frequency offset of -126dBc/Hz, and at 1GHz carrier and 10kHz frequency offset of -142dBc/Hz. This performance can be used in Doppler radar, high-performance receiver blocking and adjacent channel selectivity tests, and are ideal alternatives to local oscillator and low-jitter clock.

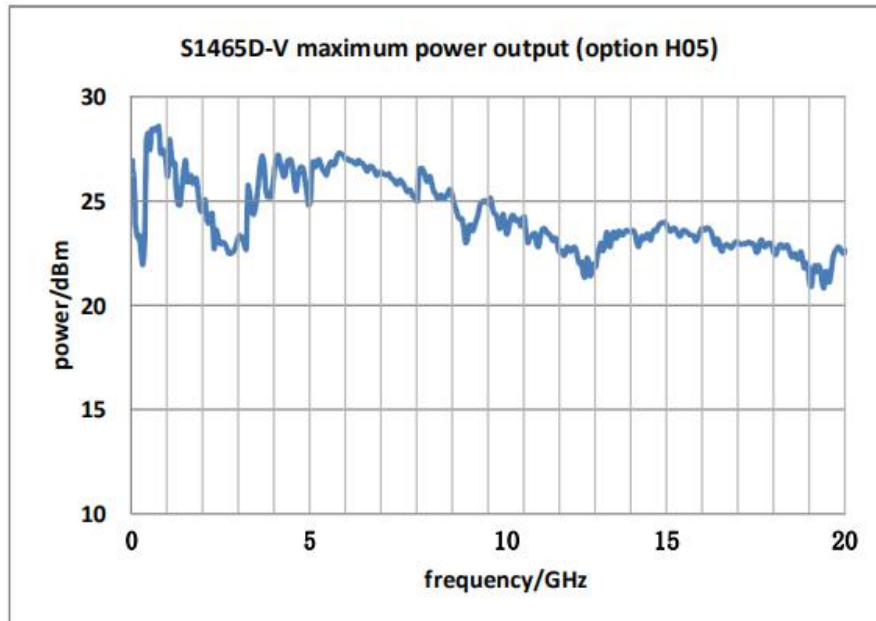


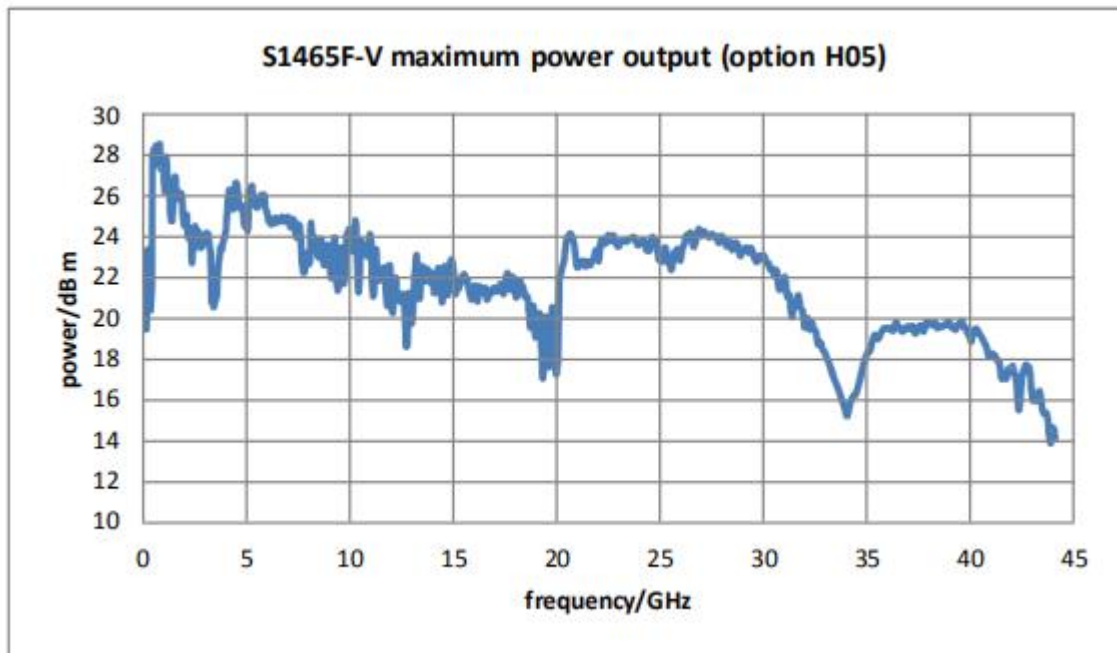


2GHz Sweep Width Non-harmonics

3.5 Broadband and high-power output

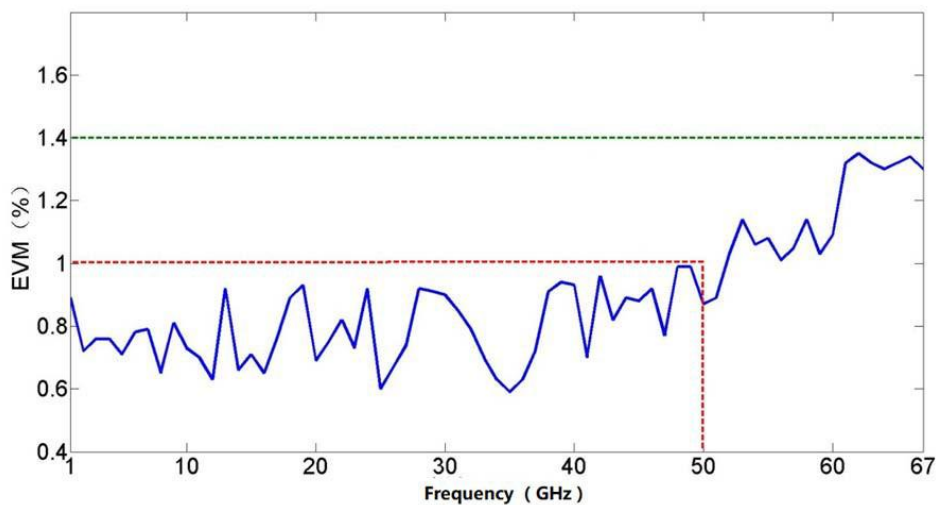
For H05 high-power options, typical values for the maximum output power are +22dBm at 20GHz and +16dBm at 40GHz. There's no need for an external amplifier when you need high power stimulus signal during test. And what's more, the power accuracy and stability are better.





3.6 Metrology grade vector modulation accuracy

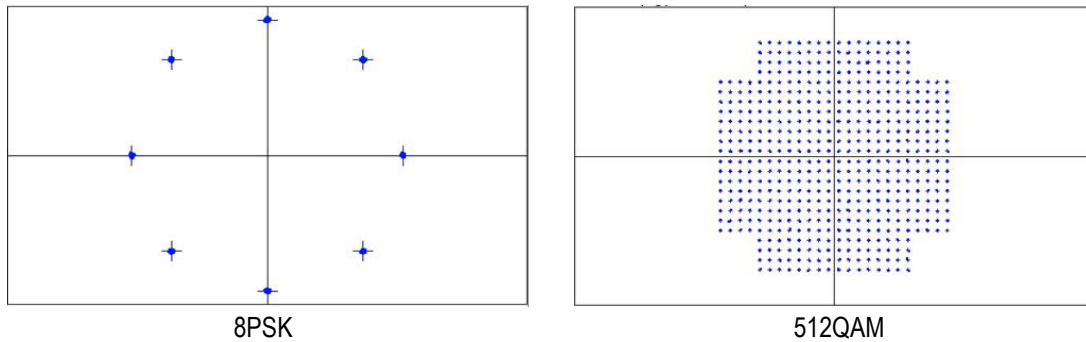
S1465-V series signal generators has excellent vector modulation accuracy. The EVM is less than 1.4% (typical value<1.0%) at the frequency range 100kHz - 40GHz, and EVM<2.5% (typical value<1.5%) at the frequency range 40GHz - 67GHz .



Symbol rate: 4Msps, root-Nyquist filter, $\alpha=0.3$, EVM test under QPSK

3.7 Complete universal digital modulation format

S1465-V series signal generators can provide real-time generation of universal digital modulation signals, including more than 20 kinds of modulations, such as PSK, QAM, FSK, MSK etc.



3.8 Convenient touch screen control

A 10.1-inch LED display screen of 1280×800 resolution shows the instrument status information clearly. Conspicuous color matching, proper function division and various function panel buttons provide a fresh sight of vision, easy operation and higher test efficiency for you. Besides with the panel buttons, the instrument can be controlled independently by operating with enter knob, sliding or clicking on the touch screen, and using external keyboard or mouse.

3.9 Multiple control and function extension interfaces

There are USB, LAN, GPIB, monitor interface and other auxiliary interfaces, in which USB is used to transmit data, and connect with keyboard/mouse etc., while LAN and GPIB are used for program control, and monitor interface for external display.

4. Applications

4.1 High-reliability Communication system Test

S1465-V series vector signal generator can generate high-performance user-defined modulation and basic digital modulation signal within frequency range of 100kHz - 67GHz. The instrument can provide repeatable and reliable test signals for satellite communication. Its external wide bandwidth vector modulation and user-defined data features as well as additive noise function can create a real-world signal and help users to make product performance confirmation.

4.2 To Simulate Various Application Scenes for Radar and EM Environment

S1465-V series vector signal generator has wide frequency range and high resolution(16bit)as well as powerful signal simulation function. It can generate complex sequences of various modulation formats by editing waveform segment under different scenes. Together with abundant functional synchronous trigger interface, it can simulate complex interference signal under actual environment and accomplish anti-interference test of radar equipment.

4.3 Provide Accurate Arbitrary Wave Modulation Signal

S1465-V series vector signal generator has 2G sampling point waveform storage capacity. This feature can allow designer to generate a long-time test data, which may be more close to the reality. User can create one of the kinds of arbitrary wave data using the third party tools or software.

4.4 High-performance Receiver Test

S1465-V series vector signal generator has a 140dB output dynamic range and extremely high frequency stability as well as 0.001Hz frequency resolution. It can output high-accuracy standard test signal which can solve parameter test problem such as sensitivity, dynamic range and channel selectivity to accomplish test of high-performance receiver used in radar, electronic warfare and communication equipment.

4.5 Local Oscillator Substitution

S1465-V series vector signal generator has extremely high signal quality, thus can be used as an ideal device to substitute LO when testing transmitter and receiver and other systems. It will guarantee your test accuracy and creditability by avoiding negative influences that low-quality LO brings in.

5. Technical specifications¹

| 5.1 Frequency properties | | | |
|--------------------------------------|---|---|---------------------------------|
| Frequency range | S1465C-V: 100kHz-10GHz S1465D-V:100kHz - 20GHz S1465F-V:100kHz - 40GHz (Max. frequency of 44GHz) S1465H-V:100kHz - 50GHz S1465L-V:100kHz - 67GHz | Frequency | N (internal YO harmonic number) |
| | | $100\text{kHz} \leq f \leq 250\text{MHz}$ | 1/8 |
| | | $250\text{MHz} < f \leq 500\text{MHz}$ | 1/16 |
| | | $500\text{MHz} < f \leq 1\text{GHz}$ | 1/8 |
| | | $1\text{GHz} < f \leq 2\text{GHz}$ | 1/4 |
| | | $2\text{GHz} < f \leq 3.2\text{GHz}$ | 1/2 |
| | | $3.2\text{GHz} < f \leq 10\text{GHz}$ | 1 |
| | | $10\text{GHz} < f \leq 20\text{GHz}$ | 2 |
| | | $20\text{GHz} < f \leq 28.5\text{GHz}$ | 3 |
| | | $28.5\text{GHz} < f \leq 50\text{GHz}$ | 5 |
| $50\text{GHz} < f \leq 67\text{GHz}$ | 10 | | |
| Frequency resolution | 0.001Hz | | |
| Frequency switching time | <20ms (typical value ²) | | |
| Timebase aging rate (typical value) | 5×10^{-10} /day (after 30-day continuous power-on) | | |
| Reference output | Frequency | 10MHz | |
| | Power | >+4dBm, to 50Ω | |
| Reference input | Frequency | 1-50MHz, 1Hz step | |

| | | | | | |
|---|---|--|--|------------------------------|---------------------|
| | Power | -5dBm to +10dBm, 50Ω impedance | | | |
| 5.2 Sweep properties | | | | | |
| Sweep mode | Step sweep, list sweep, analog sweep, power sweep | | | | |
| High-precision analog sweep (option H03) | Max. sweep speed | 100kHz≤f≤500MHz | 25MHz/ms | | |
| | | 500MHz<f≤1GHz | 50MHz/ms | | |
| | | 1GHz<f≤2GHz | 100MHz/ms | | |
| | | 2GHz<f≤3.2GHz | 200MHz/ms | | |
| | | 3.2GHz<f | 400MHz/ms | | |
| | Sweep accuracy | ±0.05% Sweep width (for 100ms, within the maximum width of 100ms as specified) | | | |
| 5.3 Power properties | | | | | |
| Min. power | Model | Standard | Option H01A/B | | |
| | S1465C/D/F-V | -20dBm | -110dBm (-135dBm configurable) | | |
| | S1465H/L-V | -20dBm | -90dBm (-110dBm configurable) | | |
| Max. power (25±10°C) | Frequency range | Standard | H01A/B programmable step attenuator option | H05 high-power output option | Options H01A/B+H05 |
| | S1465C/D-V | | | | |
| | 100kHz≤f≤20GHz | 15dBm | 15dBm | 20 ³ dBm | 20 ³ dBm |
| | S1465F-V | | | | |
| | 100kHz≤f≤9GHz | 10dBm | 10dBm | 18dBm | 18dBm |
| | 9GHz<f≤30GHz | 10dBm | 10dBm | 15dBm | 15dBm |
| | 30GHz<f≤40GHz | 10dBm | 10dBm | 12dBm | 12dBm |
| | S1465H/L-V | | | | |
| | 100kHz≤f≤15GHz | 5dBm | 5dBm | 15dBm | 15dBm |
| | 15GHz<f≤30GHz | 5dBm | 5dBm | 12dBm | 12dBm |
| | 30GHz≤f≤60GHz | 5dBm | 4dBm | 8dBm | 6dBm |
| | 60GHz≤f≤67GHz | 4dBm | 3dBm | 6dBm | 4dBm |
| Power accuracy (25±10°C) | Standard | | | | |
| | Power (dBm) | >20 | 10 to 20 | -10 to 10 | -20 to -10 |

| | | | | | | |
|---|--|-------------------------|----------|-----------|------------|------------|
| | Frequency | | | | | |
| | 100kHz≤f≤2GHz | --- | ±0.8dB | ±0.6dB | ±1.5dB | |
| | 2GHz<f≤20GHz | --- | ±0.8dB | ±0.8dB | ±1.5dB | |
| | 20GHz<f≤40GHz | --- | ±1.0dB | ±0.9dB | ±1.8dB | |
| | 40GHz<f≤50GHz | --- | --- | ±1.3dB | ±1.8dB | |
| | 50GHz<f≤67GHz | --- | --- | ±1.5dB | ±2.0dB | |
| | H01A/B programmable step attenuator option | | | | | |
| | Power (dBm) | >20 | 10 to 20 | -10 to 10 | -70 to -10 | -90 to -70 |
| | Frequency | | | | | |
| | 100kHz≤f≤2GHz | --- | ±0.8dB | ±0.6dB | ±0.7dB | ±1.5dB |
| 2GHz<f≤20GHz | --- | ±0.8dB | ±0.8dB | ±0.9dB | ±1.8dB | |
| 20GHz<f≤40GHz | --- | ±1.0dB | ±0.9dB | ±1.0dB | ±2.0dB | |
| 40GHz<f≤50GHz | --- | --- | ±1.3dB | ±1.5dB | ±2.5dB | |
| 50GHz<f≤67GHz | --- | --- | ±1.5dB | ±1.8dB | ±3.0dB | |
| Power resolution | 0.01dB | | | | | |
| Power temperature stability | 0.02dB/°C (typical value) | | | | | |
| Output impedance | 50Ω (Rating ³) | | | | | |
| VSWR (Internal fixed amplitude) (typical value) | 100kHz≤f≤2GHz | <1.4 | | | | |
| | 2GHz≤f≤20GHz | <1.6 | | | | |
| | 20GHz<f≤40GHz | <1.8 | | | | |
| | 40GHz<f≤67GHz | <2.0 | | | | |
| Max. reverse power | 0.5W (0V DC) (rating) | | | | | |
| 5.4 Spectrum purity⁴ | | | | | | |
| Harmonic (at +10dBm or Max. specified output power, whichever is lower) | Frequency | Standard | | | | |
| | 100kHz≤f≤10MHz | <-25dBc | | | | |
| | 10MHz<f≤2GHz | <-30dBc | | | | |
| | 2GHz<f≤20GHz | <-55dBc | | | | |
| | 20GHz<f≤67GHz | <-45dBc (typical value) | | | | |
| Sub-harmonic (at | 100kHz≤f≤10GHz | Non | | | | |

| | | | | | | | | |
|---|----------------------------------|------------------|------|-------|------------|-------|--------|--|
| +10dBm or Max. specified output power, whichever is lower) | 10GHz<f≤20GHz | <-60dBc | | | | | | |
| | 20GHz<f≤67GHz | <-45dBc | | | | | | |
| Non-harmonic(At 0dBm, beyond 3kHz offset) | Frequency | Standard package | | | Option H04 | | | |
| | 100kHz≤f≤250MHz | <-58dBc | | | <-58dBc | | | |
| | 250MHz<f≤3.2GHz | <-74dBc | | | <-80dBc | | | |
| | 3.2GHz<f≤10GHz | <-62dBc | | | <-70dBc | | | |
| | 10GHz<f≤20GHz | <-56dBc | | | <-64dBc | | | |
| | 20GHz<f≤28.5GHz | <-52dBc | | | <-52dBc | | | |
| | 28.5GHz<f≤40GHz | <-45dBc | | | <-45dBc | | | |
| | 40GHz<f≤60GHz | <-42dBc | | | <-42dBc | | | |
| Single side band phase noise (dBc/Hz, +10dBm or Max. output power, whichever is smaller) | Frequency | 1Hz | 10Hz | 100Hz | 1kHz | 10kHz | 100kHz | |
| | 100kHz≤f≤250MHz | --- | --- | -104 | -121 | -128 | -130 | |
| | 250MHz<f≤500MHz | --- | --- | -108 | -126 | -132 | -136 | |
| | 0.5GHz<f≤1GHz | --- | --- | -101 | -121 | -130 | -130 | |
| | 1GHz<f≤2GHz | --- | --- | -96 | -115 | -124 | -124 | |
| | 2GHz<f≤3.2GHz | --- | --- | -92 | -111 | -120 | -120 | |
| | 3.2GHz<f≤10GHz | --- | --- | -81 | -101 | -110 | -110 | |
| | 10GHz<f≤20GHz | --- | --- | -75 | -95 | -104 | -104 | |
| | 20GHz<f≤28.5GHz | --- | --- | -69 | -89 | -98 | -98 | |
| | 28.5GHz<f≤50GHz | --- | --- | -64 | -84 | -92 | -92 | |
| | 50GHz<f≤67GHz | --- | --- | -57 | -77 | -86 | -86 | |
| | H04 ultra low phase noise option | | | | | | | |
| | 100kHz≤f≤250MHz | -64 | -92 | -105 | -123 | -138 | -141 | |
| | 250MHz<f≤500MHz | -67 | -93 | -111 | -126 | -138 | -142 | |
| | 0.5GHz<f≤1GHz | -62 | -91 | -105 | -123 | -138 | -138 | |
| | 1GHz<f≤2GHz | -57 | -86 | -100 | -117 | -133 | -133 | |
| | 2GHz<f≤3.2GHz | -52 | -81 | -96 | -113 | -128 | -128 | |
| 3.2GHz<f≤10GHz | -43 | -72 | -85 | -105 | -120 | -120 | | |
| 10GHz<f≤20GHz | -37 | -66 | -79 | -98 | -114 | -114 | | |

| | | | | | | | |
|---|--|-----------------|-----|-----|------------------|------|------|
| | 20GHz<f≤28.5GHz | -31 | -60 | -73 | -91 | -108 | -108 |
| | 28.5GHz<f≤50GHz | -26 | -54 | -68 | -85 | -102 | -102 |
| | 50GHz<f≤67GHz | -20 | -48 | -62 | -79 | -96 | -96 |
| 5.5 Modulation properties | | | | | | | |
| Frequency modulation (10MHz<f≤50GHz, option H02A) | Maximum deviation: N×16MHz (N: YO harmonic number) Accuracy (at 1kHz, N×20kHz≤deviations<N×800kHz): $<\pm (3.5\% \times \text{set frequency offset} + 20\text{Hz})$ Modulation rate (3dB band width, 500kHz frequency offset): DC-10MHz Distortion (at 1kHz, N×20kHz≤ distortion <N×800kHz): <1% | | | | | | |
| Phase modulation (10MHz<f≤50GHz, option H02A) | Maximum deviation: Normal mode: N×16rad (N: YO harmonic number) Broadband mode: N×1.6rad (N: YO harmonic number) Accuracy (at 1kHz, N×0.2rad≤deviations<N×8rad, normal mode): $<\pm (5\% \text{ of deviation} + 0.01 \text{ rad})$ Modulation rate (3dB bandwidth): Narrowband mode DC - 1MHz (typical value) Broadband mode DC - 10MHz (typical value) Distortion (at 1kHz, N×0.8rad≤deviations<N×8rad, THD): <1% | | | | | | |
| Amplitude modulation (10MHz<f≤50GHz, option H02A) | Max. depth: >90% Modulation rate (3 dB bandwidth, 30% modulation depth): DC-100kHz Accuracy (1kHz modulation rate, 30% modulation depth): $\pm (6\% \text{ of setting} + 1\%)$ Distortion (1kHz modulation rate, linear mode, THD, 30% modulation depth): <1.5% | | | | | | |
| Pulse modulation (option H02B) | | 500MHz - 3.2GHz | | | >3.2GHz | | |
| | Switch ratio | >80dB | | | >80dB | | |
| | Rise and fall time | <20ns | | | <20ns | | |
| | Min. pulse width for internal fixed amplitude | 1μs | | | 1μs | | |
| | Min. pulse width for non fixed amplitude | 0.1μs | | | 0.1μs | | |
| Narrow pulse modulation (option H02C) | | 50MHz - 3.2GHz | | | More than 3.2GHz | | |
| | On/off ratio | >80dB | | | >80dB | | |
| | Rise/fall time | <15ns | | | <10ns | | |

| | | | |
|---|---|-----------------------------------|----------------|
| | Min. pulse width ALC on | 1 μ s | 1 μ s |
| | Min. pulse width ALC off | 30ns | 20ns |
| Internally modulated signal generator (option H02A/B/C) | <p>There are 3 independent signals respectively for frequency/phase modulation, amplitude modulation and low frequency output signals.</p> <p>Waveform: Sine, square, triangle, sawtooth, noise, double sine, sweep sine.</p> <p>Frequency range: DC -10MHz for sinusoidal wave, double sine, sweep sine wave; 0.1Hz-100kHz for square wave, triangular wave and sawtooth wave.</p> <p>Frequency resolution: 0.1Hz</p> <p>Low frequency output: Amplitude: 0-3V_{peak} (rating), to 50Ω load.</p> <p>Pulse modulation signal: Pulse width: 20ns - (42s-10ns), pulse period: 100ns-42s, resolution: 10ns</p> | | |
| Vector modulation Accuracy (4Msps, root-Nyquist, $\alpha =0.3$, QPSK, 0dBm) | S1465A/B/C/D/F-V | 50MHz-40GHz (or max.frequency) | EVM(RMS%)<1.4% |
| | S1465H/L-V | 50MHz-40GHz | EVM(RMS%)<1.4% |
| | | 40GHz-67GHz (or max.frequency) | EVM(RMS%)<2.5% |
| Internal modulation bandwidth | <p>(Carrier 900MHz, 1.8GHz, 2.4GHz, 6GHz, 18GHz, 35GHz, 50GHz)</p> <p>Standard:</p> <p>120MHz (Multi-tone, Tone quantity: 51, Frequency space: 2.4MHz, ± 3dB bandwidth);</p> <p>H3 large modulation bandwidth option:</p> <p>200MHz (Multi-tone, Tone quantity: 51, Frequency space: 4MHz, ± 3dB bandwidth).</p> | | |
| External modulation bandwidth | <p>(Carrier 900MHz, 1.8GHz, 2.4GHz, 6GHz, 18GHz, 35GHz, 50GHz)</p> <p>200MHz(ALC OFF, input 100mVrms sine to channel I, ± 4dB bandwidth)</p> | | |
| External wide modulation bandwidth (option H33) | <p>(6GHz, 18GHz, 35GHz, 50GHz)</p> <p>2GHz(ALC OFF, input 100mVrms sine to channel I, ± 4dB bandwidth)</p> | | |
| Internal baseband signal generator | <p>Channel quantities: 2 (I and Q)</p> <p>Max. symbol rate:</p> <p>standard: 60Msps(Max. 4bit/symbol)</p> <p>option H31: 125Msps(Max. 4bit/symbol)</p> <p>Baseband waveform internal memory:</p> <p>standard package: 1GSa</p> <p>option H32: 2GSa</p> | | |

| | |
|-------------------------------|---|
| | <p>Modulation format:</p> <p>PSK: BPSK, QPSK, OQPSK, $\pi/4$ DQPSK, D8PSK, 16PSK;</p> <p>QAM: 4, 16, 32, 64, 128, 256, 512, 1024;</p> <p>FSK: 2, 4, 8, 16;</p> <p>ASK;MSK; Arbitrary wave modulation.</p> <p>Dual-tone mode max. frequency offset: 200MHz</p> <p>EVM: <1.0%(typical value)(RMS%, Symbol rate 4Mpsps, root-Nyquist, $\alpha=0.3$, QPSK)</p> |
| 5.6 General properties | |
| RF output port | <p>S1465C-V: N (female), impedance: 50Ω</p> <p>S1465D-V: 3.5mm (male), N (female) (option H91), impedance: 50Ω</p> <p>S1465F-V: 2.4mm (male), impedance: 50Ω</p> <p>S1465H/L-V: 1.85 mm (male), impedance: 50Ω</p> |
| Dimensions | <p>W×H×D = 435mm×178mm×498mm (excluding. handle, foot mat and footing)</p> <p>W×H×D = 517mm×192mm×550mm (including handle (option H93), foot mat and footing)</p> |
| Weight | <28kg (as per model and option configuration) |
| Power supply | 100-120VAC, 50-60Hz; or 200-240VAC, 50-60Hz (self-adaptive) |
| Power consumption | less than 400W |
| Temperature range | Operating temperature: 0 - +50°C; storage temperature: -40 - +70°C |

Notes:

1. S1465-V series signal generators, after stored for 2h at the ambient temperature and preheated for 30min, meet all performance indexes, within the given operating range.
2. Typical value is a supplementary item given with a set value, only for reference by users.
3. Rating is a predicated performance, which is useful in product description, but not covered by product warranty.
4. Spectrum purity index is in dot frequency non modulation mode.
5. The test power is set to +15dBm for SSB phase noise of $100\text{kHz} \leq f \leq 250\text{MHz}$. For option H06, the frequency range is $100\text{MHz} \leq f \leq 250\text{MHz}$, and the frequency range less than 100MHz is not guaranteed.

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