

CSG9K20GA

9kHz-20GHz Signal Generator

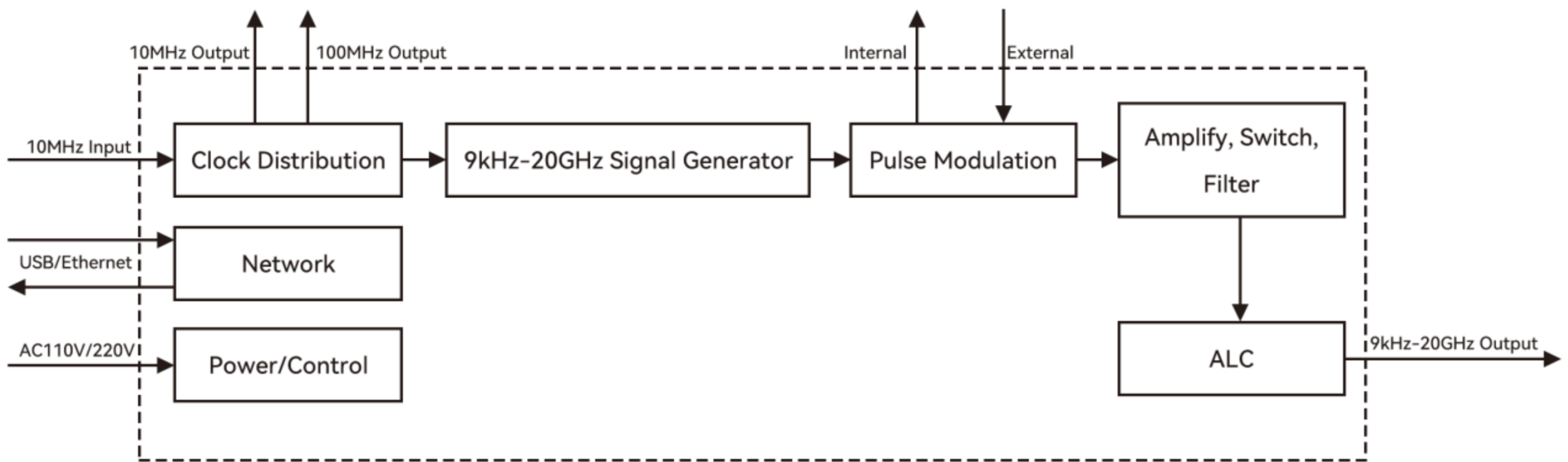


PRODUCT OVERVIEW

Corech Microwave CSG9K20GA series product is our miniaturized signal generators featured with high cost-effectiveness. Frequency ranges from 9kHz to 20GHz, dynamic output power extended from -120dBm to 17dBm. This state of art series of signal generator is excellent for its high spurious, low phase noise, wonderful signal purity and signal stability. Therefore, CSG9K20GA is capable to be applied to the Test & Measurement in the harsh environment of Semiconductor, Quantum Technology, Radar and Communication.



BLOCK DIAGRAM



PERFORMANCE

▼ Frequency Range

9kHz ~ 20GHz

▼ Frequency Resolution

0.001Hz

▼ Output Power

-120dBm ~ +17dBm

▼ Amplitude Resolution

0.1dB

▼ Spurious

-80dBc@10GHz

▼ Harmonics

-50dBc@10GHz

▼ Phase Noise

-112dBc/Hz@10kHz(10GHz)

▼ Dimensions

360mm×360mm×89mm

PRODUCT FEATURE

- Cost Effectiveness
- Compact Size
- Low Spurious
- Low Harmonics
- Low Phase Noise
- High Dynamic Output Power



ELECTRICAL SPECIFICATIONS

| Parameter | Min. | Typ. | Max. | Note |
|---------------------------------|----------------|------------------------------------|------------------|---|
| Frequency Range | 9kHz | | 20GHz | |
| Frequency Resolution | | 0.001Hz | | |
| Operating Mode | | CW / Sweep | | |
| Frequency Reference | | | | |
| Internal Reference Aging Rate | | ±0.3ppm/year | | |
| Initial Calibration Accuracy | | ±0.1ppm | | |
| External Reference (50Ω) | | | | |
| Input Frequency | | 10MHz | | |
| Input Power | +3dBm | +5dBm | +10dBm | |
| Lock Range | | ±0.5ppm | | |
| Wave | | Sine / Square | | |
| Internal Reference | | | | |
| Output Frequency | | 10MHz,100MHz | | |
| Output Power | +5dBm +5dBm | | +10dBm +10dBm | Output Freq.: 10MHz Output Freq.: 100MHz |
| Output Frequency Stability | | ±0.1ppm | | |
| SSB Phase Noise | | -145dBc/Hz@1kHz -155dBc/Hz@1kHz | | Output Freq.: 10MHz Output Freq.: 100MHz |
| Spurious | | -70dBc | | |
| Switching Speed | | | | |
| Sweep | | 10ms | | |
| Pulse | | 50ns 120ns | | ≥100MHz < 100MHz |
| Output Power | | | | |
| 1GHz | -120dBm | | +17dBm | |
| 10GHz | -120dBm | | +17dBm | |
| 20GHz | -120dBm | | +17dBm | |
| Output Power Resolution | | 0.1dB | | |
| Impedance | | 50Ω | | |

| Parameter | Min. | Typ. | Max. | Note |
|---|--------|------------------|------------|-----------------------------|
| Harmonics | | | | |
| 1GHz | | -50dBc | -40dBc | |
| 10GHz | | -55dBc | -40dBc | |
| 20GHz | | -45dBc | -40dBc | |
| 1/2 Harmonics | | | | |
| 1GHz | | -90dBc | -80dBc | |
| 10GHz | | -90dBc | -80dBc | |
| 20GHz | | -85dBc | -80dBc | |
| Spurious (Frequency Offset ≥ 5kHz) | | | | |
| 1GHz | | -85dBc | -80dBc | |
| 10GHz | | -80dBc | -75dBc | |
| 20GHz | | -74dBc | -70dBc | |
| Pulse Modulation | | | | |
| On/Off Ratio | | -65dBc | | |
| Min. Pulse Width | | 100ns | | |
| Min. Period | | 110ns | | |
| External Pulse Input | | | | |
| LVTTL | | +3.3V | | |
| Internal Pulse Generator | | | | |
| Square Wave Speed Rate | 0.1Hz | | 10MHz | |
| Period | 110ns | | 100s | |
| Pulse Width | 100ns | | 99.999999s | |
| Rise Time | | 25ns | | > 100MHz |
| Fall Time | | 25ns | | > 100MHz |
| Resolution | | 100ns | | |
| Delay | 20ns | | 100s | |
| Sweep | | | | |
| Operating Mode | | Step Sweep | | |
| Sweep Range | 9kHz | | 20GHz | |
| Dwell Time | 10ms | | 10s | |
| Time Resolution | | 1μs | | |
| Switching Speed | | 300μs | | Internal Source |
| General Specifications | | | | |
| Control | | | | Keyboard, Touchscreen, SCPI |
| Power Requirements | AC110V | | AC240V | |
| Operating Temperature | 0°C | | +50°C | |
| Weight | | | 10kg | |
| Dimensions | | 360mm×360mm×89mm | | Corner Pad Not Included |

SSB Phase Noise

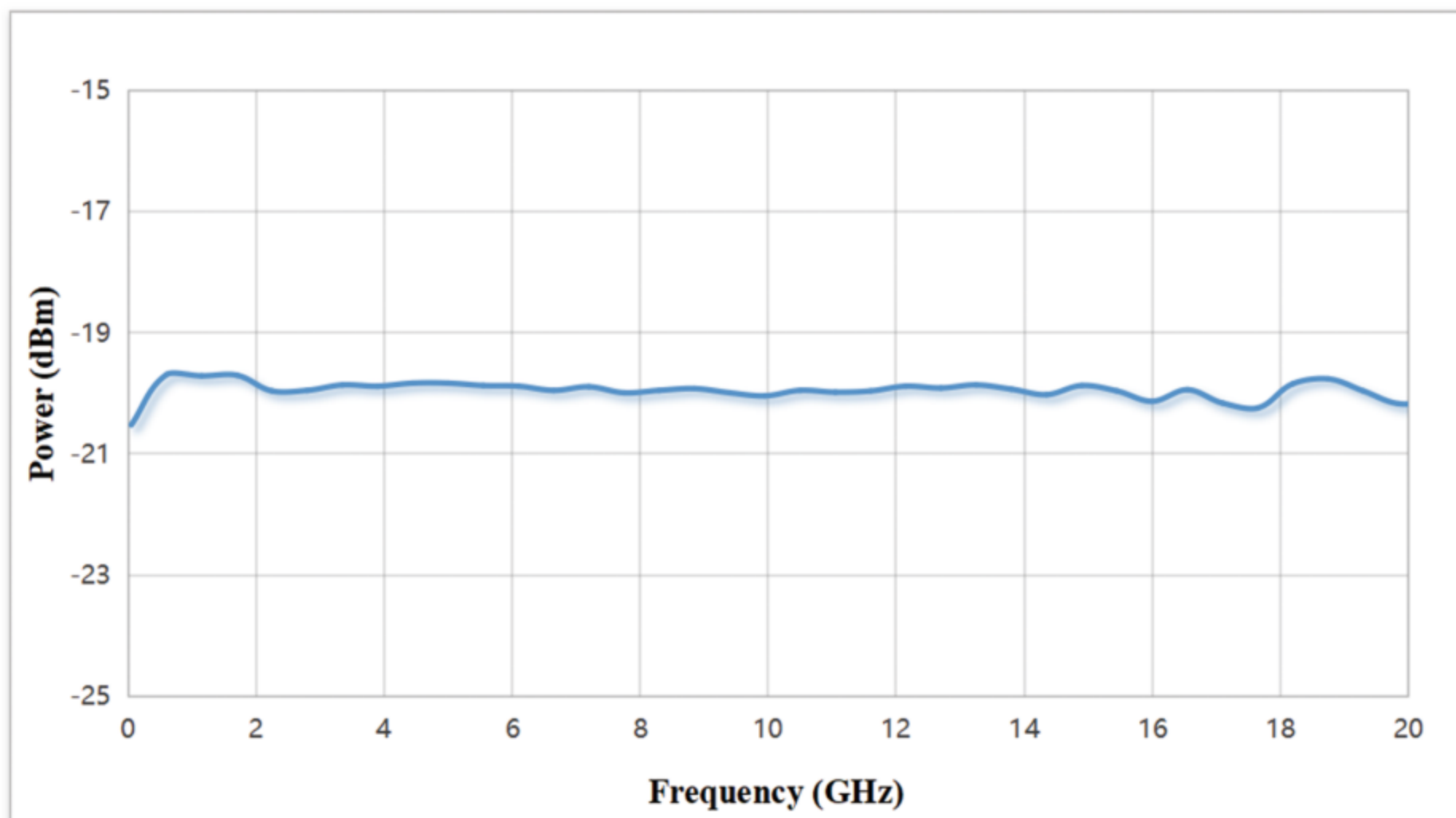
| Parameters | 100Hz | 1kHz | 10kHz | 100kHz | 1MHz |
|--------------|-------|------|-------|--------|------|
| dBc/Hz@1GHz | -104 | -132 | -131 | -130 | -134 |
| dBc/Hz@10GHz | -84 | -109 | -112 | -111 | -115 |
| dBc/Hz@20GHz | -79 | -100 | -106 | -105 | -109 |

Absolute Level Accuracy

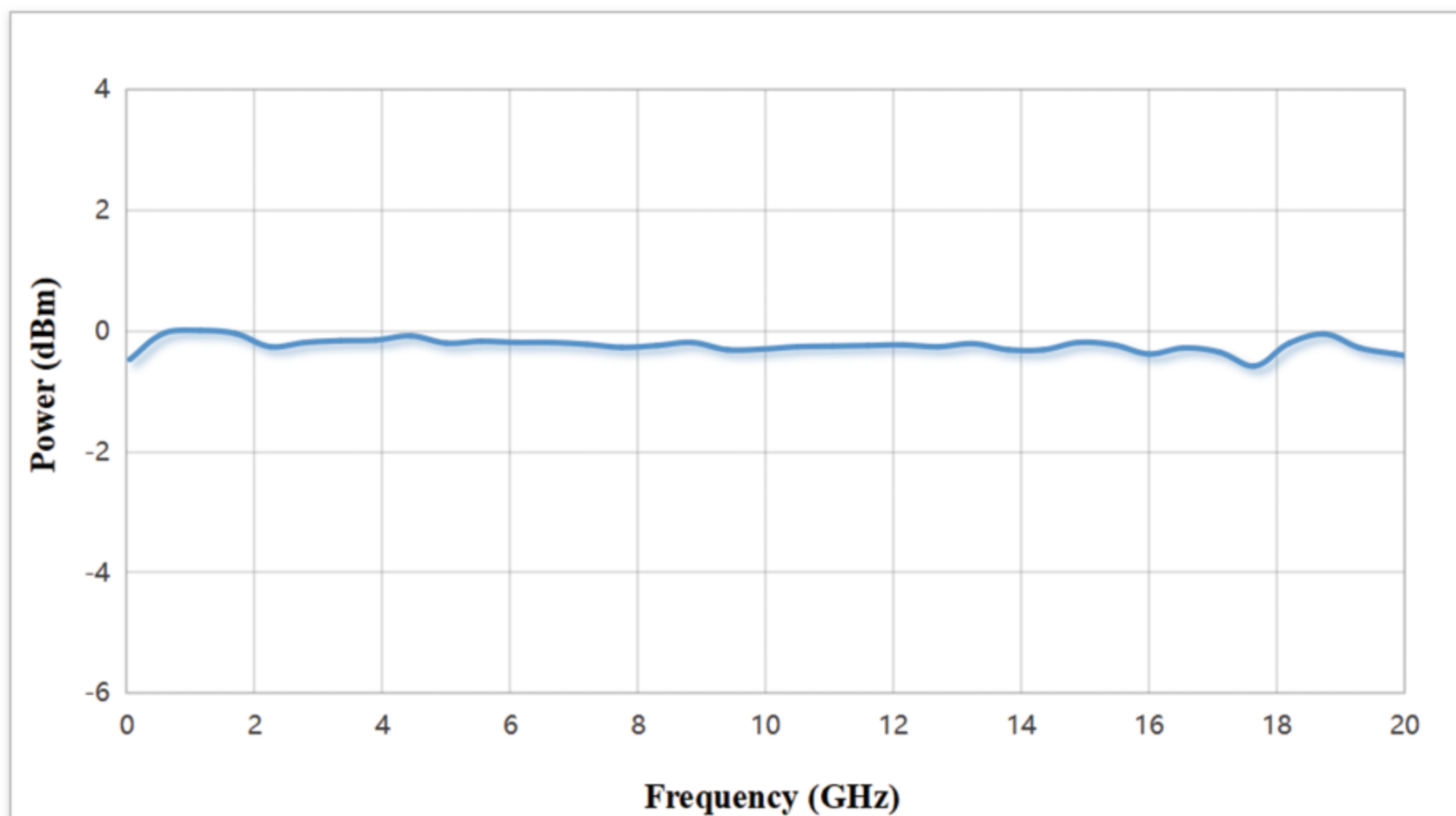
| Parameters | 0dBm < Pout | -20dBm < Pout ≤ 0dBm | -70dBm < Pout ≤ -20dBm | -70dBm ≥ Pout |
|-------------------|-------------|----------------------|------------------------|---------------|
| 9kHz < F ≤ 1GHz | ≤ ±0.5 | ≤ ±1.0 | ≤ ±2.0 | ≤ ±2.0 |
| 1GHz < F ≤ 10GHz | ≤ ±0.5 | ≤ ±1.0 | ≤ ±2.0 | ≤ ±2.0 |
| 10GHz < F ≤ 20GHz | ≤ ±1.0 | ≤ ±1.0 | ≤ ±2.0 | ≤ ±3.0 |

TYPICAL TEST CURVE

Output Power

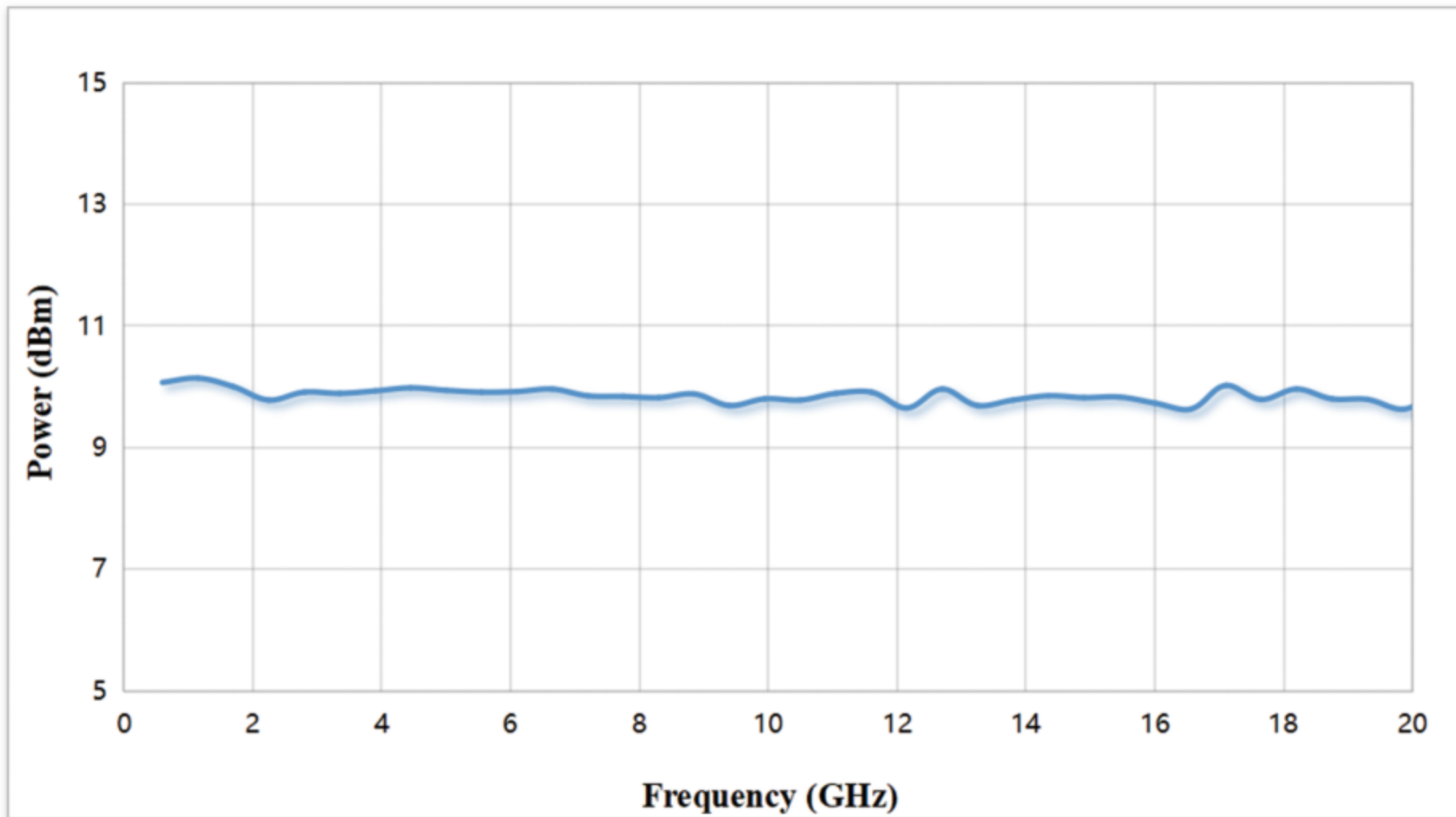


Output Power: -20dBm



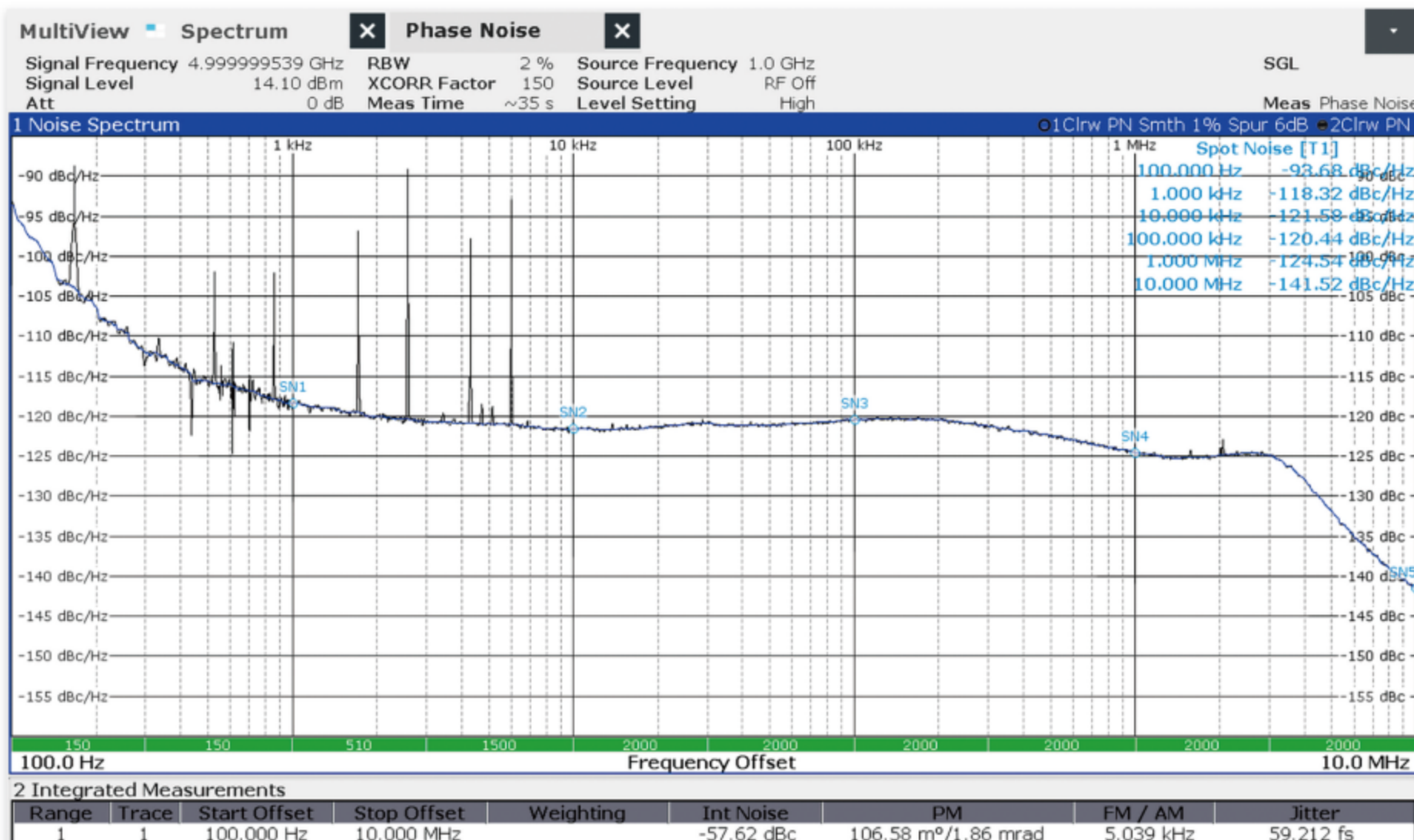
Output Power: 0dBm

Output Power



Output Power: +10dBm

SSB Phase Noise



Output Frequency: 5GHz

SSB Phase Noise

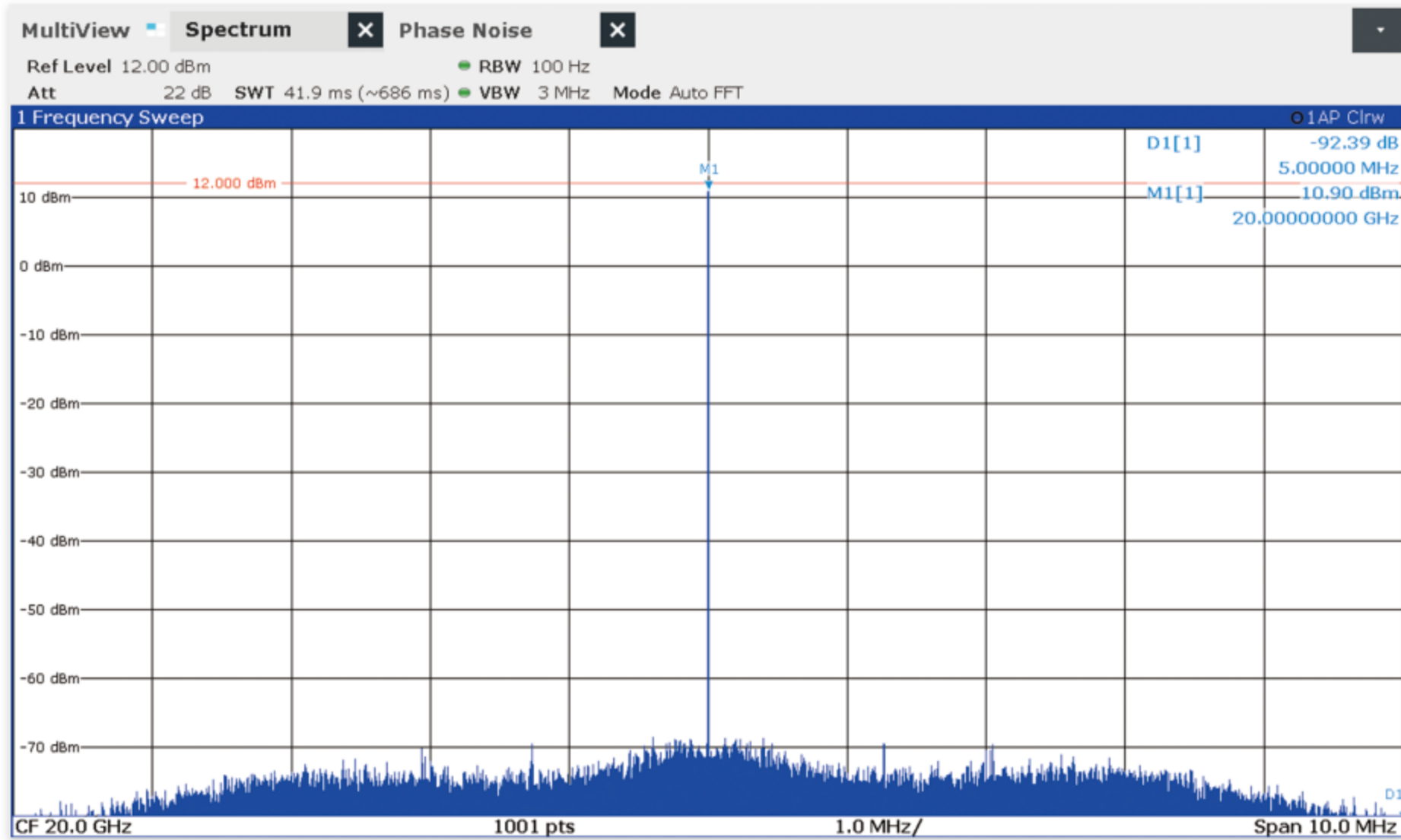


Output Frequency: 10GHz



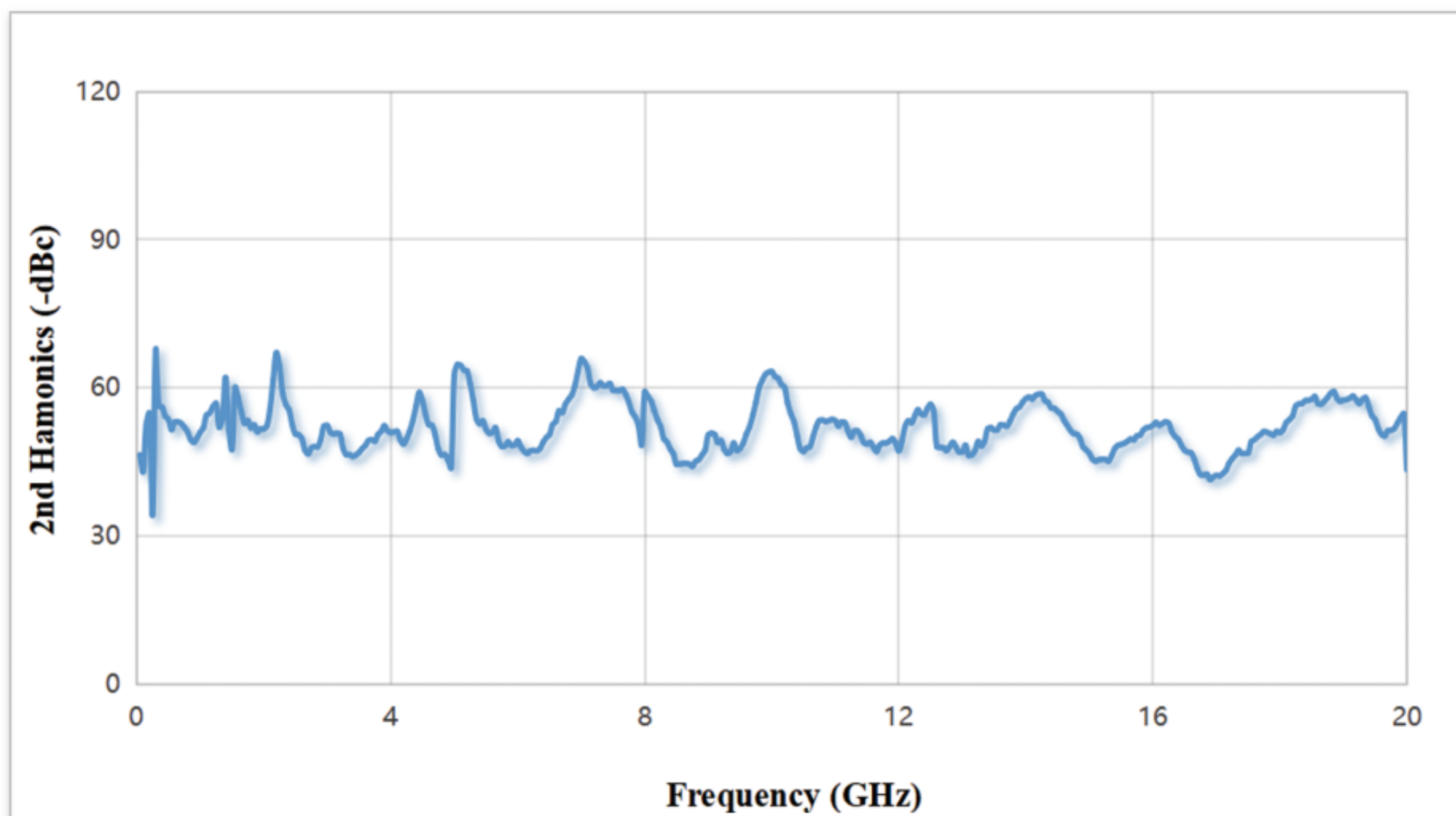
Output Frequency: 20GHz

Spurious



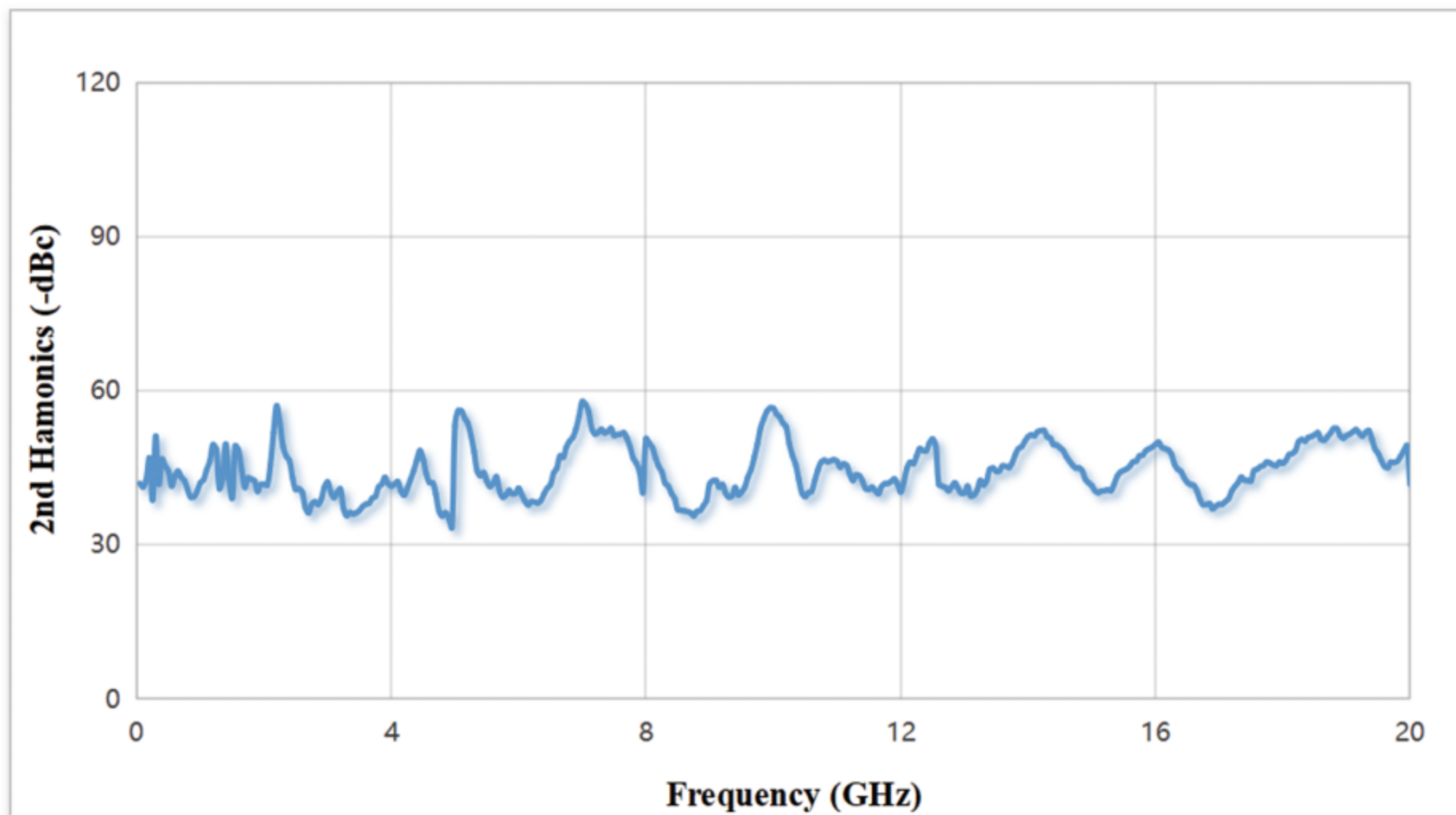
Output Frequency: 20GHz

Harmonics



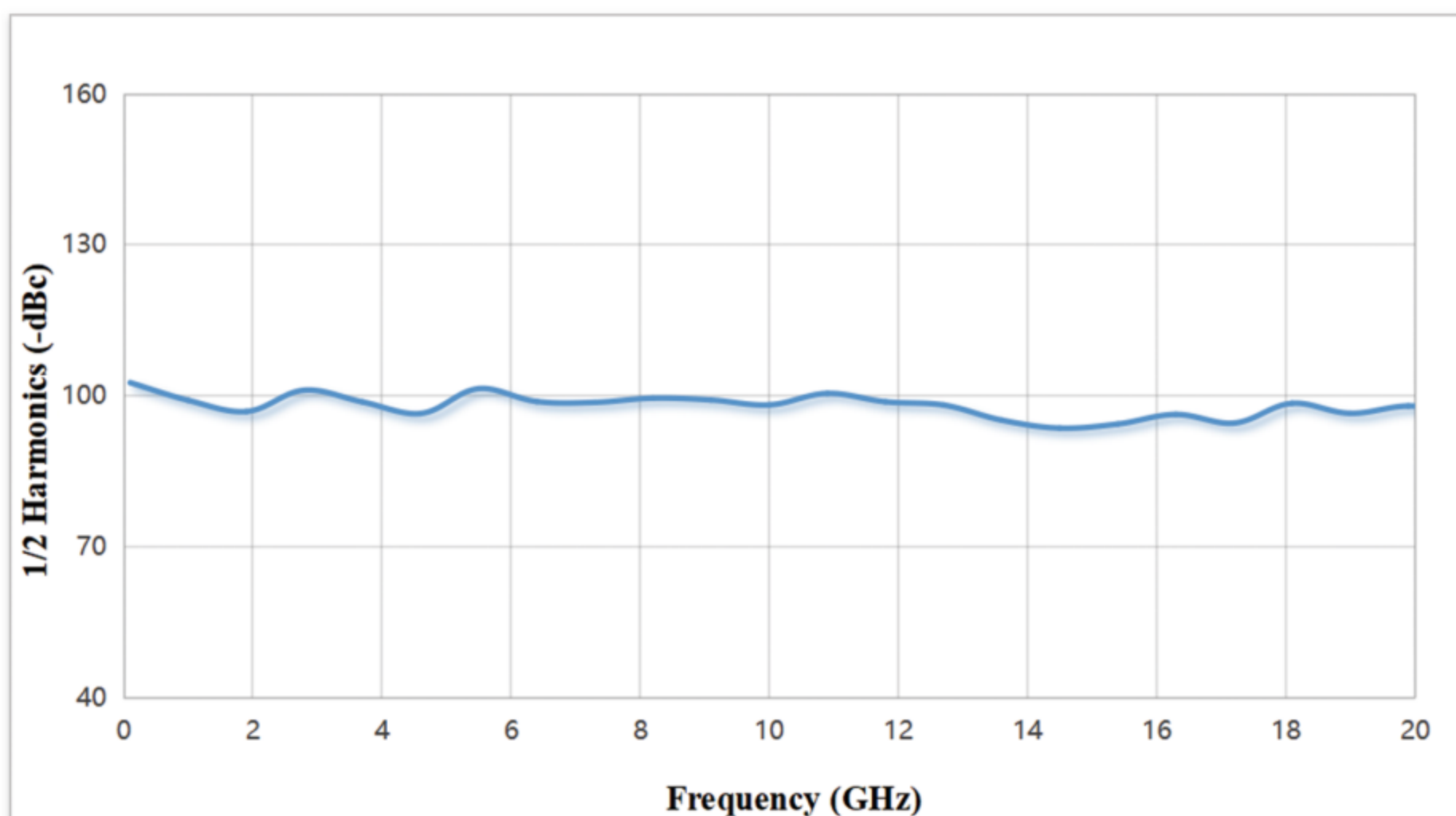
Output Power: +10dBm

Harmonics

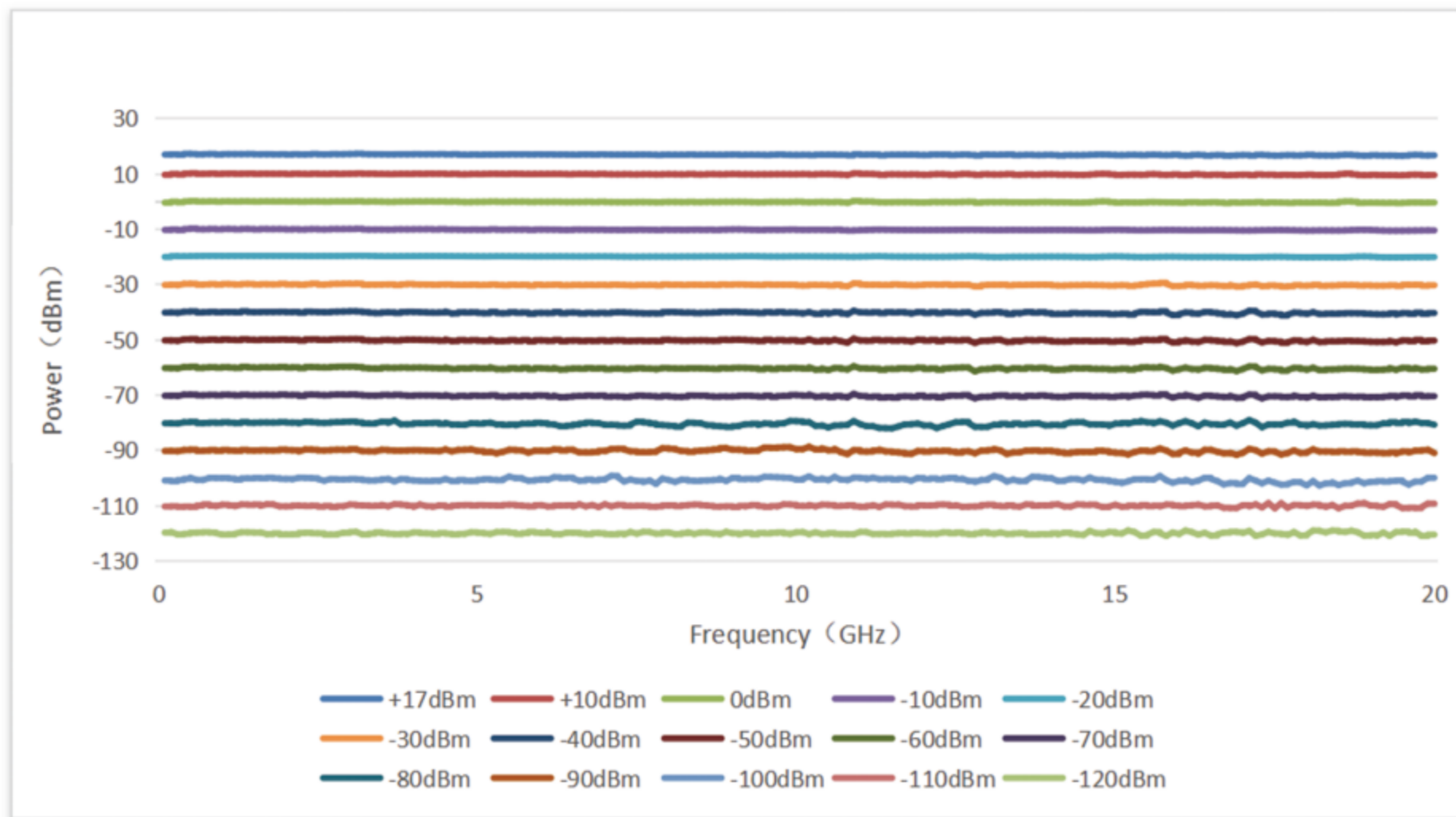


Output Power: +17dBm

1/2 Harmonics



Attenuation Accuracy



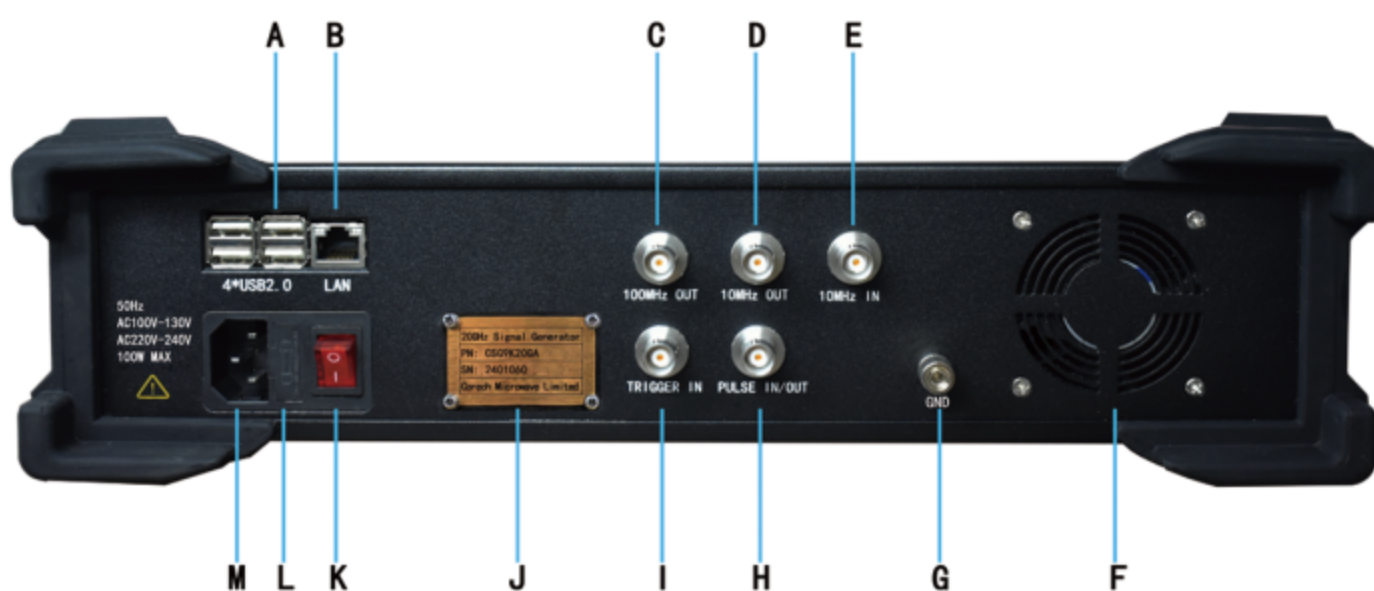
PRODUCT INTERFACE

Front



| Ref. | Function | Description |
|------|---------------|-------------|
| A | DC ON/OFF | |
| B | RF ON/OFF | |
| C | Menu | |
| D | Reset | |
| E | Keyboard | |
| F | Knob | |
| G | RF Output | 2.92mm-Male |
| H | Direction Key | |
| I | Screen | 5.0inch |

Back



| Ref. | Function | Description |
|------|---------------------------|-------------|
| A | USB Ports | 4xUSB2.0 |
| B | Ethernet Port | RJ45 |
| C | 100MHz Output | BNC-Female |
| D | 10MHz Output | BNC-Female |
| E | 10MHz Input | BNC-Female |
| F | Fan | Exhaust |
| G | GND Terminal | GND |
| H | Pulse Signal Input/Output | BNC-Female |
| I | Trigger Signal In | BNC-Female |
| J | Name Plate | |
| K | AC ON/OFF | |
| L | Fuse Holder | Replaceable |
| M | AC Power Port | AC110-240V |

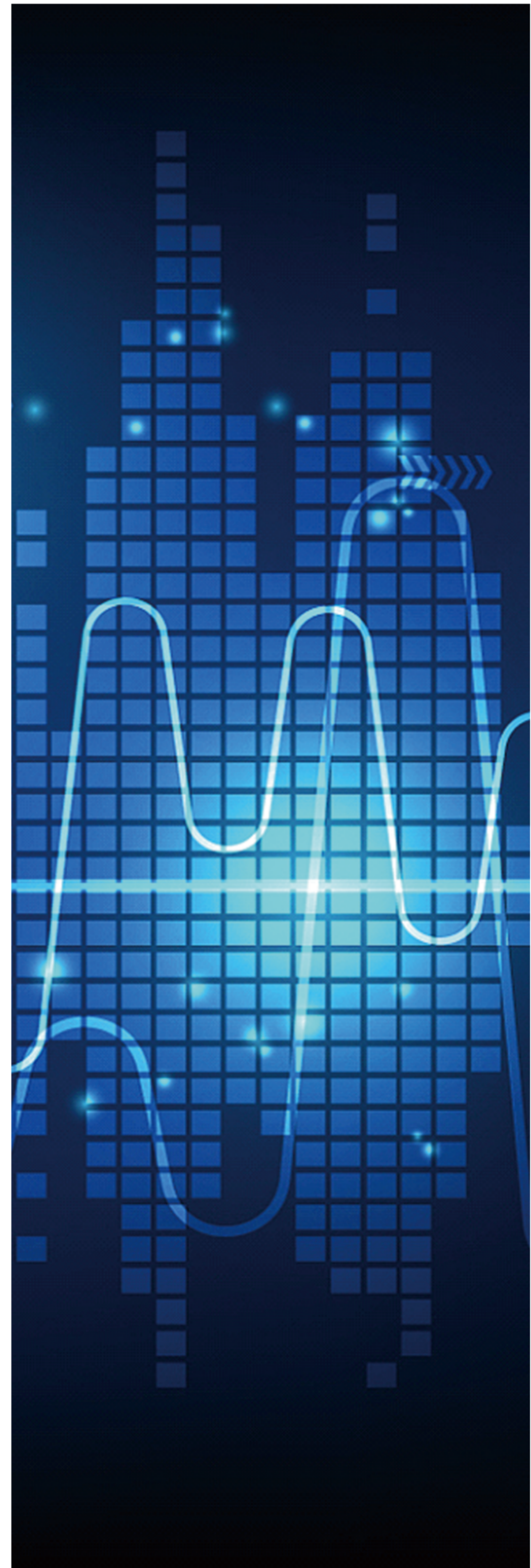
SCREEN

| | | | | |
|---|--|--|--|---|
| Frequency PULSE MOD ON SWP ON 10.400 000 000 000 GHz | | Level REF INT -10.00 dBm | | <input type="checkbox"/> MOD ON <input type="checkbox"/> RF ON |
| Modulation Pulse: Period: 20.00 us Width: 5.00 us <input checked="" type="checkbox"/> Mod SW | | Sweep RF Sweep: Mode: Continuous Start: 10.000 000 000 000 GHz Stop: 20.000 000 000 000 GHz | | |
| Frequency / Level X Frequency 10.000 000 000 000 GHz Level -10.00 dBm | | Channel Select Channel Select: <input checked="" type="checkbox"/> CH1 On <input type="checkbox"/> CH2 On MENU | | |

| Sweep | | X |
|--------------------|------------------------|---|
| Sweep State | Off | |
| Sweep Mode | Single | |
| Start Freq. | 10.000 000 000 000 GHz | |
| Stop Freq. | 20.000 000 000 000 GHz | |
| Freq. Step | 0.100 000 000 000 GHz | |
| Dwell Time | 10 ms | |
| Sweep Time | 1 010 ms | |

Options

| Model / PN | Description |
|-------------|---|
| CSG9K20GA | 9kHz-20GHz Single Channel Signal Generator |
| CSG9K40GA | 9kHz-40GHz Single Channel Signal Generator |
| CSG9K20GD40 | 9kHz-20GHz & 9kHz-40GHz Dual Channel Signal Generator |
| CSG9K20GD20 | 9kHz-20GHz & 9kHz-20GHz Dual Channel Signal Generator |
| CSG9K40GD40 | 9kHz-40GHz & 9kHz-40GHz Dual Channel Signal Generator |



About us

Corech Microwave deliveries one-stop RF solutions for our clients.

Our vision: Passion for the most advanced RF technologies, delivering the most satisfying RF solutions.

With over 15 years of experience, Corech excels in production speed, quality assurance, and cost control. We specialize in providing comprehensive RF solutions, leveraging cutting-edge signal generators to meet customer requirements with reliability and cost-effectiveness. With 25 invention patents and certifications including GJB9001C-2017 and Chengdu High-Tech Enterprise, we uphold the highest standards of quality and innovation.

Corech Microwave | One-stop RF & Microwave Solution



3-Year Warranty

Corech Microwave provides 3-Year Warranty Service for CSG9K20GA series products. Assist our clients on boosting test confidence, reducing cost and enhancing operating convenience.

Contact us

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