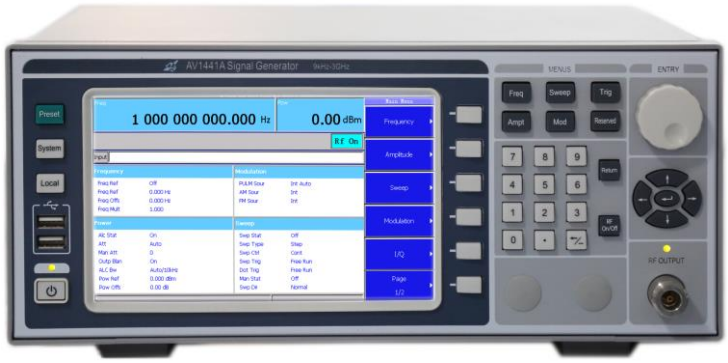
AV1441A/B　Signal Generator

(9kHz~3GHz/6GHz)



Product Overview

With frequency range low to 9 kHz, AV1441 Series Signal Generator are economical signal generators designed with portable case structure and featured by small size and convenient operation. AV1441 series have power output in wide dynamic range, and standard internal modulation signal generator, are capable of amplitude modulation (AM), frequency modulation (FM) and pulse modulation (Pulse). List sweep and Step sweep make test application more flexible. They deploy Chinese and English operation interface, and large LED TFT LCD.

AV1441 series can be used for performance test and failure point location of the receiver in the radar, electronic warfare and communication equipment for convenient test, as well as used as a local oscillator to substitute those in the equipment under test, such as transmitter and receiver, etc.. In the civilian market, the series can be applied to the R&D and manufacture of consumer electronic products. The economical RF signal generators are very suitable for teaching and experiment in universities. Portable design of the case makes it very suitable for outdoor operations.

Main Characteristics

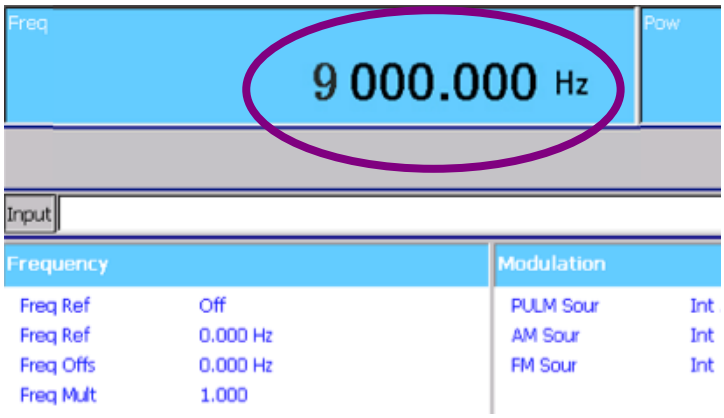
- **Portable design of cabinet, lightweight, easy to carry**
- **Frequency range of 9kHz~3GHz/6GHz**
- **High power output in -127dBm~+10dBm,large dynamic range**
- **Standard internal modulation signal generator and comprehensive AM, FM and pulse modulation functions**
- **Step sweep and List sweep**
- **Chinese/English operation interface, large LED TFT LCD**
- **Support wide range of AC power input**
- **With GPIB and LAN interfaces to enable operation under program control**

Portable Design of Cabinet, Lightweight, Easy to Carry

AV1441 Series Signal Generator employ portable design for the case; the size is greatly reduced compared to the ordinary desktop case. The integrated design reduces the weight, which will reduce the burden of outdoor detection and maintenance.

Frequency Range of 9kHz~3GHz/6GHz

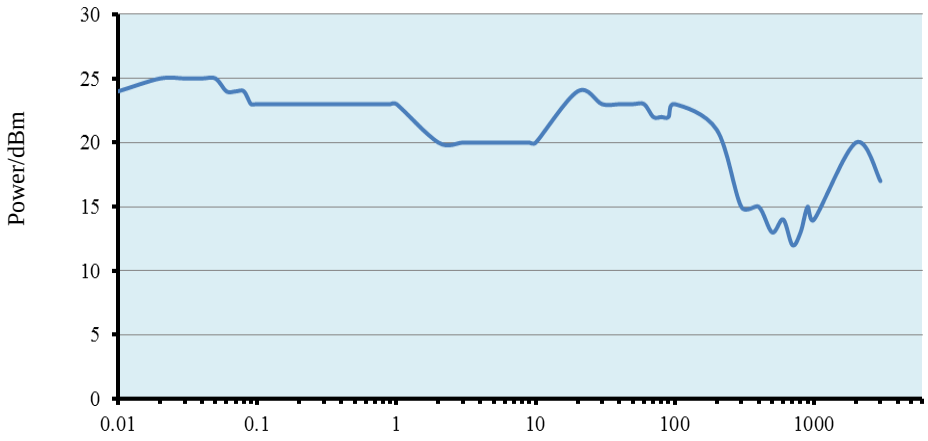
The frequency range of AV1441 series is 9kHz~3GHz/6GHz, the lowest frequency of 9kHz can meet your demand for low frequency band.



-127dBm ~+10 dBm Large Dynamic Range of Power Output

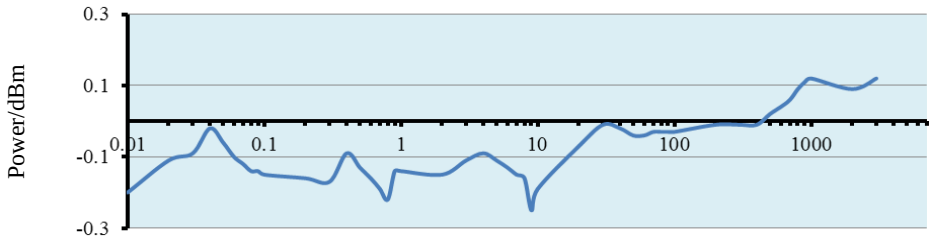
The series are provided with a built-in programmable step attenuator, could output -127dBm signal of min.power level with max output power >+10dBm.

AV1441B 10kHz～6GHz Max ALC Output Power



Tested Value of Maximum Output Power

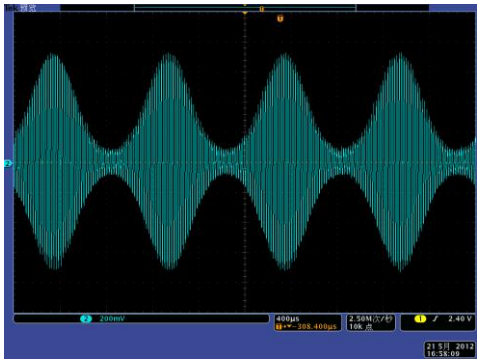
AV1441B 10kHz～6GHz, output power of 0dBm



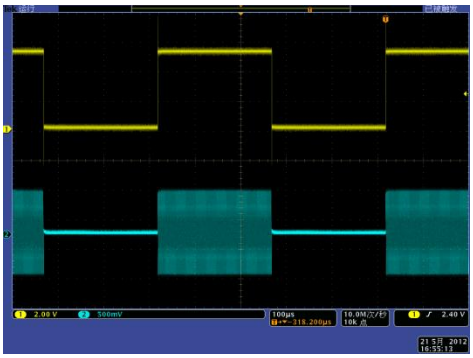
Tested Value under 0dBm Output Power

Internal Modulation Signal Generator and Comprehensive AM, FM and Pulse Modulation Functions

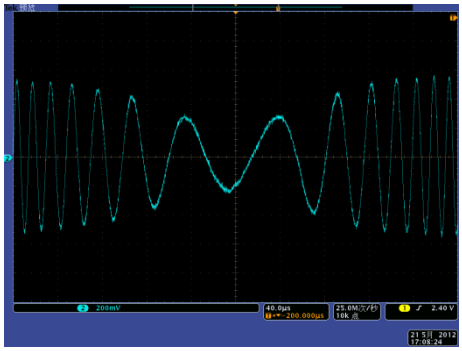
AV1441 series are configured with internal modulation signal generators, which adopt direct digital waveform synthesis technique to generate high-quality modulated signal with 20Hz-100kHz frequency range and 1Hz resolution and can provide complete analog signals capability, the standard internal pulse generator can meet your test requirements for high-performance pulse source.



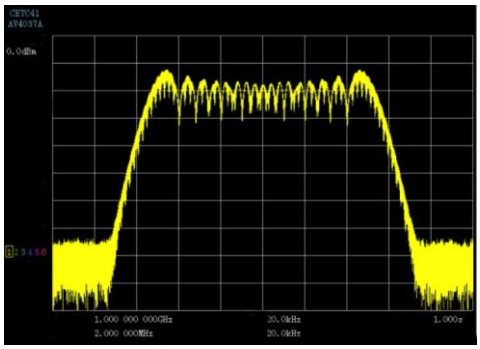
Amplitude Modulation



Pulse Modulation and Pulse Modulation Monitor Output



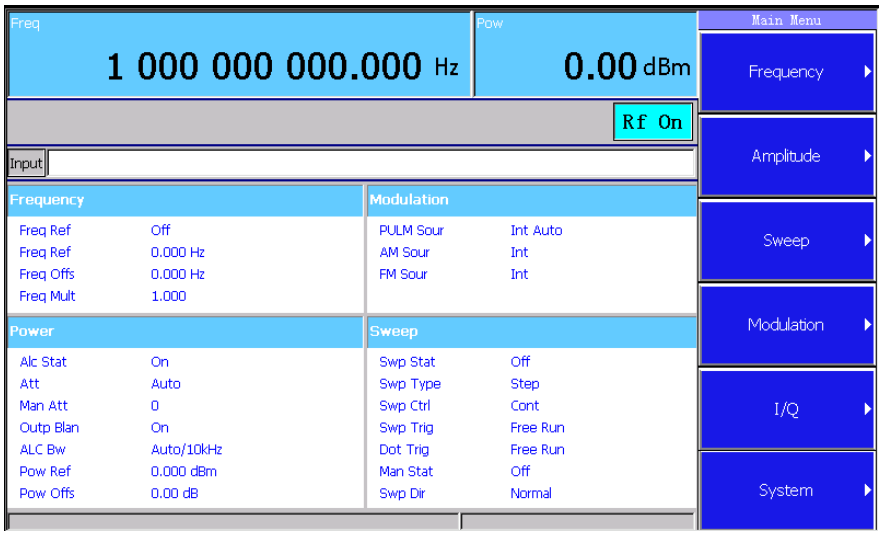
Time Domain Waveform of Frequency Modulation



Spectrum of Frequency Modulation

Chinese/English Operation Interface, Large LED TFT LCD

AV1441series use large screen and Chinese/English operation interfaces and have a direct and panoramic view of the current state. The operation interface can be switched between English and Chinese for your convenience.



Step Sweep and List Sweep

AV1441 series support Step sweep and List sweep, which will make your test more flexible.

Abundant Interfaces

AV1441 series provide RS232, GPIB and LAN interfaces for program control operation and network upgrading function.

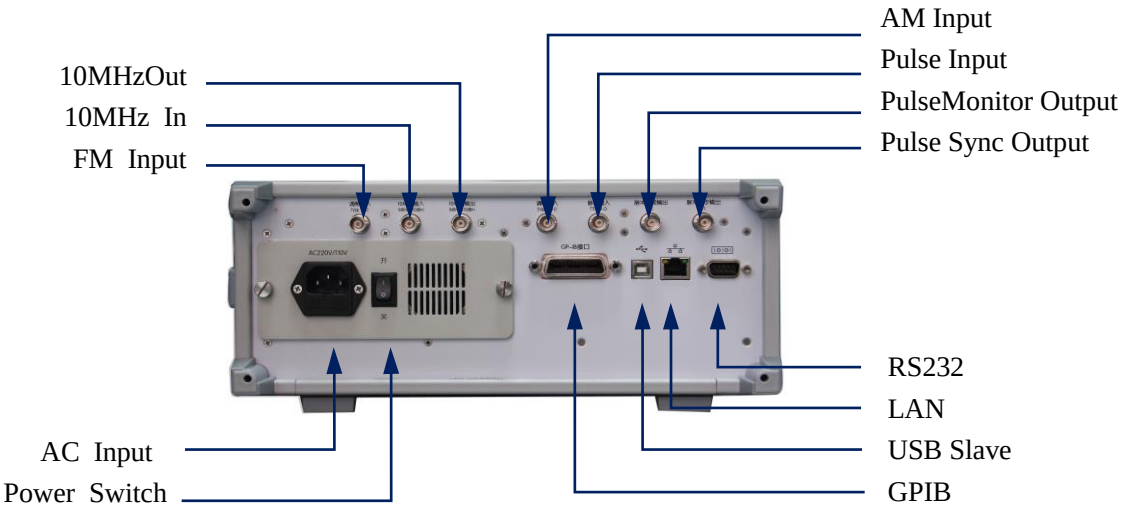
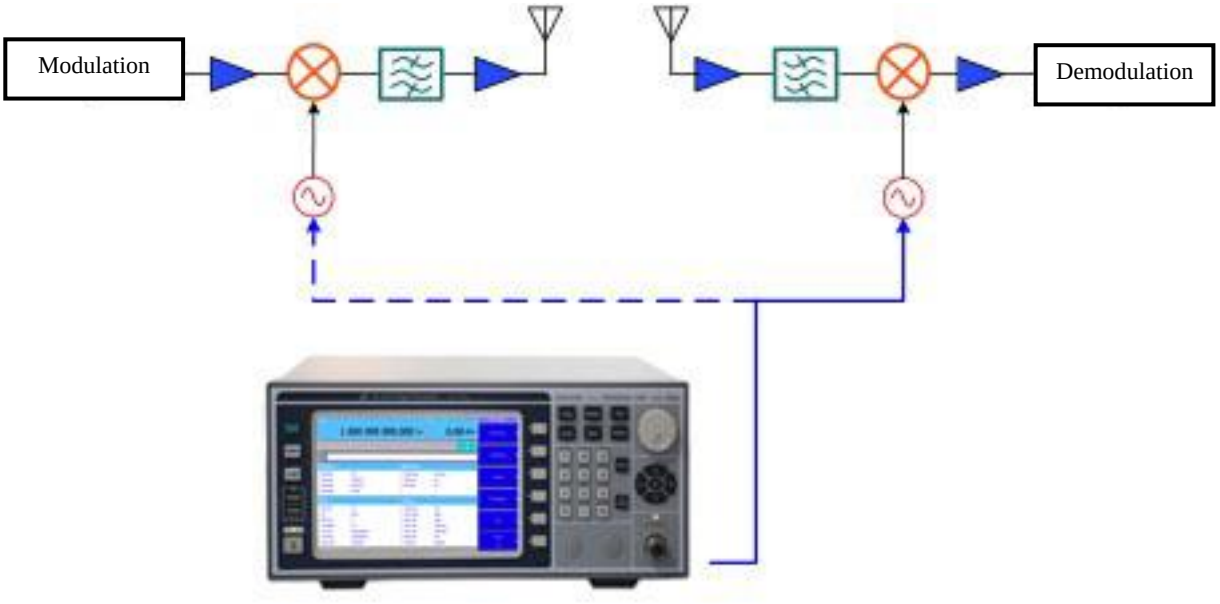


Diagram of Multiple Interfaces

Typical Applications

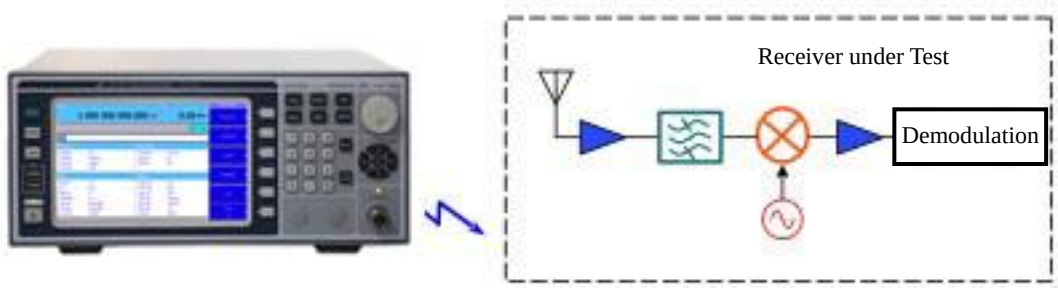
Local Oscillator (LO) Substitution

With wide output frequency range, AV1441 series can be used as local oscillator to substitute those in the equipment under test, such as transmitter and receiver, etc., and indirectly test performance and index of LO signal.



Receiver Performance Test

With more than 130dB output dynamic range and 0.01Hz frequency resolution, AV1441 series can output amplitude modulation signal, frequency modulation signal and pulse modulation signal which are used for performance test and failure point location of the receiver in the radar, electronic warfare and communication equipment for convenient test.



Technical Specifications

<table>
<tr><td rowspan="7">Frequency Range</td><td rowspan="7">AV1441A：
9kHz～3GHz

AV1441B：
9kHz～6GHz</td><td>Frequency</td><td>N(Internal YO Fundamental Wave Frequency Division Times)</td></tr>
<tr><td>9kHz ≤ f ≤ 250MHz</td><td>4</td></tr>
<tr><td>250MHz ＜ f ≤ 400MHz</td><td>16</td></tr>
<tr><td>400MHz ＜ f ≤ 800MHz</td><td>8</td></tr>
<tr><td>800 MHz ＜ f ≤ 1.6GHz</td><td>4</td></tr>
<tr><td>1.6GHz ＜ f ≤ 3.2GHz</td><td>2</td></tr>
<tr><td>3.2GHz ＜ f ≤ 6GHz</td><td>1</td></tr>
<tr><td>Frequency Resolution</td><td colspan="3">0.01Hz</td></tr>
<tr><td>Time-base Aging Rate(Typical)</td><td colspan="3">＜1×10^{-9}/day, 5×10^{-7}/year （after 30 days of continuous power ON）</td></tr>
<tr><td rowspan="4">Sweep Mode</td><td colspan="2">Sweep Way</td><td>Step sweep List sweep</td></tr>
<tr><td colspan="2">Sweep Range</td><td>AV1441A：9kHz～3GHz
AV1441B：9kHz～6GHz</td></tr>
<tr><td colspan="2">Sweep Points</td><td>2～1601</td></tr>
<tr><td colspan="2">Dwell Time</td><td>10ms～60s</td></tr>
<tr><td>Harmonic</td><td colspan="2">Output Power Less than +5dBm</td><td>＜–30dBc</td></tr>
<tr><td>Non-Harmonic</td><td colspan="2">Output Power Less than +5dBm,
30kHz Offset from Carrier</td><td>＜–60dBc</td></tr>
<tr><td rowspan="7">SSB Phase Noise</td><td colspan="2">Freq. ＼ Offset</td><td>20kHz</td></tr>
<tr><td rowspan="3">AV1441A</td><td>500MHz</td><td>＜-118dBc/Hz</td></tr>
<tr><td>1GHz</td><td>＜-112dBc/Hz</td></tr>
<tr><td>3GHz</td><td>＜-104dBc/Hz</td></tr>
<tr><td rowspan="3">AV1441B</td><td>500MHz</td><td>＜-118dBc/Hz</td></tr>
<tr><td>1GHz</td><td>＜-112dBc/Hz</td></tr>
<tr><td>3GHz</td><td>＜-104dBc/Hz</td></tr>
<tr><td></td><td>6GHz</td><td>＜-98dBc/Hz</td></tr>
<tr><td>Max. ALC Output Power (25±10℃)</td><td colspan="3">＞+10dBm</td></tr>
</table>

Power Accuracy	±1.5dB（-50dBm≤Output Power≤+10dBm） ±2.0dB（-110dBm≤Output Power＜-50dBm） ±3.0dB（-120dBm≤Output Power＜-110dBm）		
Modulation Performance	Pulse modulation	Pulse Modulation On/Off Ratio	9kHz≤f≤3GHz：＞80dB 3GHz＜f≤6GHz：＞60dB
		Pulse Modulation Rise/Fall Time	＜25ns, Output Frequency＞250MHz ＜80ns, Output Frequency≤250MHz
		Min. Pulse Width	ALC Loop On：＜2μs
	AM	Modulation Mode: Linear Max. Modulation Depth: 90％ Modulation Rate （3 dB Bandwidth, 30% Modulation Depth）:20Hz～80kHz Accuracy（1kHz Modulation Rate, Demodulation Bandwidth 300Hz～3kHz）:±10%	
	FM	Max. Frequency Deviation:>1.6MHz÷N Modulation Rate（3dB Bandwidth）:20Hz～100kHz Accuracy（1kHz Modulation Rate, 2kHz< Frequency Deviation≤1.6MHz÷N, Demodulation Bandwidth 300Hz～3kHz）：±10%	
RF Output Port	Type N port		
Display	7 inch LED		
Operation Interface	Simplified Chinese/English		
Size (W×H×D)	320mm×150mm ×390mm		
Max. Weight	9kg		
Operating Temperature	0℃～+50℃		
Power Input	85VAC～264VAC，47～63Hz		
Power Consumption	<90W		

Ordering Information

Main Unit：AV1441A Signal Generator 9kHz～3GHz

AV1441B Signal Generator 9kHz～6GHz

Standard Package

No.	Description	Remarks
1	Power Cord Assembly	Standard tri-prong power cord
2	User Manual	
3	Programming Manual	
4	Certificate of Conformity	

Options

Model No.	Description	Functions
AV1441-001	AV1441A Option in English	English label, panel, rubber keys, and operation modes.
AV1441-002	AV1441B Option in English	English label, panel, rubber keys, and operation modes.
AV1441-003	Aluminum Alloy Transit Case	High strength, Light aluminum alloy transit case with handle. Easy for transportation.