APMSXXG-(1 to 8) Target Specification 1.11

A compact, 10 MHz to 6.2, 12.5, or 20 GHz ultra low phase noise, phase coherent signal generator with up to 8 independent outputs

Introduction

The APMSXXG is a phase coherent multi-output fast switching and low phase noise signal generator with a frequency range from 10 MHz to 6.2, 12.5 or 20.0 GHz and is ideally suited for a wide range of application, where good signal quality accurate and wide output power range is required. Excellent phase noise is combined with spurious and harmonic rejection.

A high-stability OCXO reference provides excellent frequency accuracy and stability. The generator accepts external 10, 100 or 1000 MHz references.

The APMSXXG comes in standard 19 inch 1U (up to 3 channels) or 3U (4 to 8 channels) enclosure and offers various control interfaces like USB, LAN, or GPIB. Each interface allows easy and fast communication using SCPI 1999 command set. Remote control of the instrument can be quickly attained from any host system. A customer-supplied application programming interface (API) or programming examples for Matlab, Labview, C++, and other commercially available tools make implementation very straightforward.

Specifications

The specifications in the following pages describe the warranted performance of the signal generator for 25 ± 10 °C after a 30 minute warm-up period. Typical specifications describe expected, but not warranted performance. Min and Max specifications are warranted.

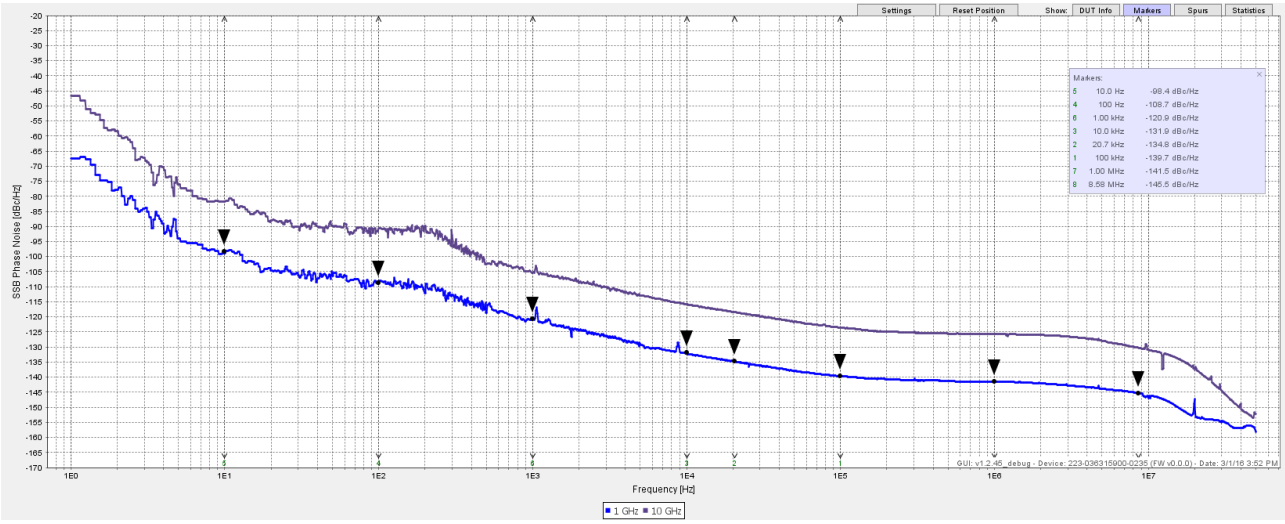
Parameter	Min.	Typ.	Max.	Note
Frequency range	10 MHz 10 MHz 10 MHz		6.2 GHz 12.5 GHz 20.0 GHz	APMS06G APMS12G APMS20G
resolution		0.1 Hz		
Frequency update rate		0.3 ms	 0.05 ms	 Option FS
SSB Phase noise at 500 MHz				
At 10 Hz from carrier 20 kHz 100 kHz		-105 dBc/Hz -141 dBc/Hz -147 dBc/Hz		scales with frequency at 20 dB/dec
Power level				
Range -20 dBm -20 dBm			 +18 dBm +15 dBm	 <6.5 GHz <12.5 GHz
Resolution		0.01 dB		
Thermal drift		0.015 dB / degC		
Level uncertainty		0.25 dB	±1.0 dB	
Output impedance		50 Ohms		
VSWR		1.5	2	
Reverse Power Protection				
DC Voltage		15 V		
RF power			+26 dBm	
Spectral purity Output harmonics			 -35 dBc	 at + 5 dBm output power
Non-harmonic spurious			-60 dBc	offsets > 1 kHz
Internal reference frequency				
Temperature stability (10 to 45 degC)			±0.01 ppm	
Reference IN/OUT		10 MHz / 100 / 1000 MHz		
Frequency sweep Sweep type: linear, logarithmic, random				
Step time	0.3 ms 0.05 ms			 Option FS
Dwell time	0.3 ms 0.05 ms		10 s	 Option FS

Modulation Capabilities

Any combination of sweeps and internal/external AM and pulse modulation is allowed

Parameter	Min.	Typ.	Max.	Note
Pulse Modulation On/off ratio		>70 dB		at +10 dBm
Repetition frequency	0.1 Hz		20 MHz	Internal or external
Duty cycle	1 % to 99 % in 1% steps			within specified minimum pulse width
Minimum Pulse width	50 ns			
Pulse rise/fall time		10 ns		
External input amplitude	TTL			

1 and 10 GHz SSB Phase Noise



General Characteristics

Remote programming interfaces

Ethernet 100BaseT LAN interface,
USB 2.0 , USBTMC
GPIB (IEEE-488.2,1987) with listen and talk (optional)

Control language SCPI Version 1999.0

Power requirements 100 or 240 VAC, 50 or 60 Hz
Operating temperature range 0 to 45 °C
Storage temperature range –40 to 70 °C
Operating and storage altitude up to 15,000 feet

CE notice
Safety/EMC complies with applicable Safety and EMC regulations and directives.

Recommended calibration cycle 24 months
ISO compliant Instrument is manufactured in an ISO-9001 registered facility under high quality standards.

Document History

Version/Status	Date	Author		Notes

V10	2015-06-15	jk		first release
V1.01	2015-08-15	jk		Updated power ranges
V1.02	2015-09-15	jk		Added harmonic and spurious specs
V1.10	2016-02-15	jk		Refined parameters
V1.11	2016-02-22	jk		Added phase noise plot