

Model 835-M Specification

A compact 9 kHz to 3.0 GHz RF Signal Generator



The Model 835-M is a fast-switching RF Signal Generator with dedicated modulation and trigger capabilities. The 835-M covers a frequency range from 9 kHz to 3.0 GHz and is ideally suited for a wide range of application, where good signal quality, fast-switching, and accurate and wide output power range is required.

The Model 835-M offers various control interfaces like USB, LAN, or (optionally and in different enclosure) 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 examples for Matlab, Labview, C++, and other commercially available tools make implementation very straightforward.

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Specifications

The specifications in the following pages describe the warranted performance of the signal generator for $25 \pm 10^\circ\text{C}$ 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	9 KHz		3.0 GHz	
resolution		0.1 Hz		
Phase resolution				
Switching speed		5 ms		
SSB Phase noise at 1 GHz				
at 20 kHz from carrier at 1 MHz		-102 dBc/Hz -130 dBc/Hz		scales with frequency at 20 dB/dec
Power level				
Range 9 kHz to 10 MHz >10 MHz	-65 dBm -65 dBm		+5 dBm +10 dBm	
Resolution		0.1 dB		
Level uncertainty			± 1.0 dB	over specified power range
Output impedance		50 Ω		
VSWR f < 200 MHz 200 MHz < f < 2 GHz		1.4	1.8	
Spectral purity Output harmonics (> 10 MHz)			-30 dBc	at + 5 dBm output power
Non-harmonic spurious			-50 dBc	f < 137 MHz
			-60 dBc	f > 137 MHz
Internal reference frequency				
Temperature stability (10 to 45 degC)			± 5 ppm	
Frequency sweep Sweep type: linear, logarithmic, random				
Step time	2 ms			
Dwell time	1 ms		10 s	
Off-time (incl. transient time)	1 ms			

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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 0.1 Hz		500 kHz 100 kHz	External Internal
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			
AM Modulation Modulation rate resolution	0.1 Hz 1 Hz	0.02 Hz	10 kHz 30 kHz	for RF>1 MHz for RF< 1 MHz; ALC hold
Modulation depth Resolution	0 %	1 %	90 %	
Distortion		1.5 % at 30% 2.5 % at 80%		
Modulation waveforms	Sinusoidal, triangular, square			

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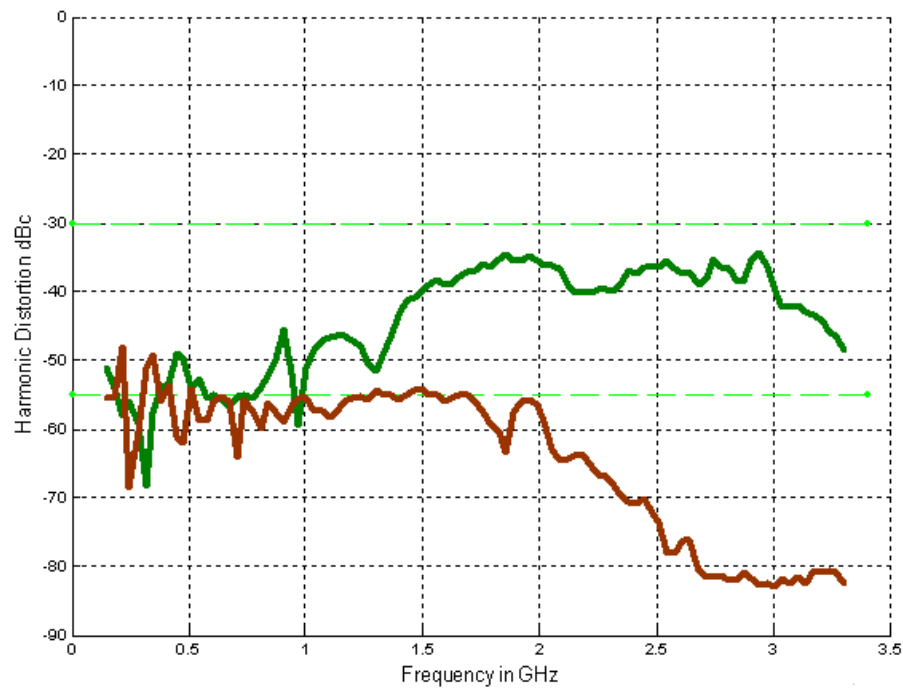
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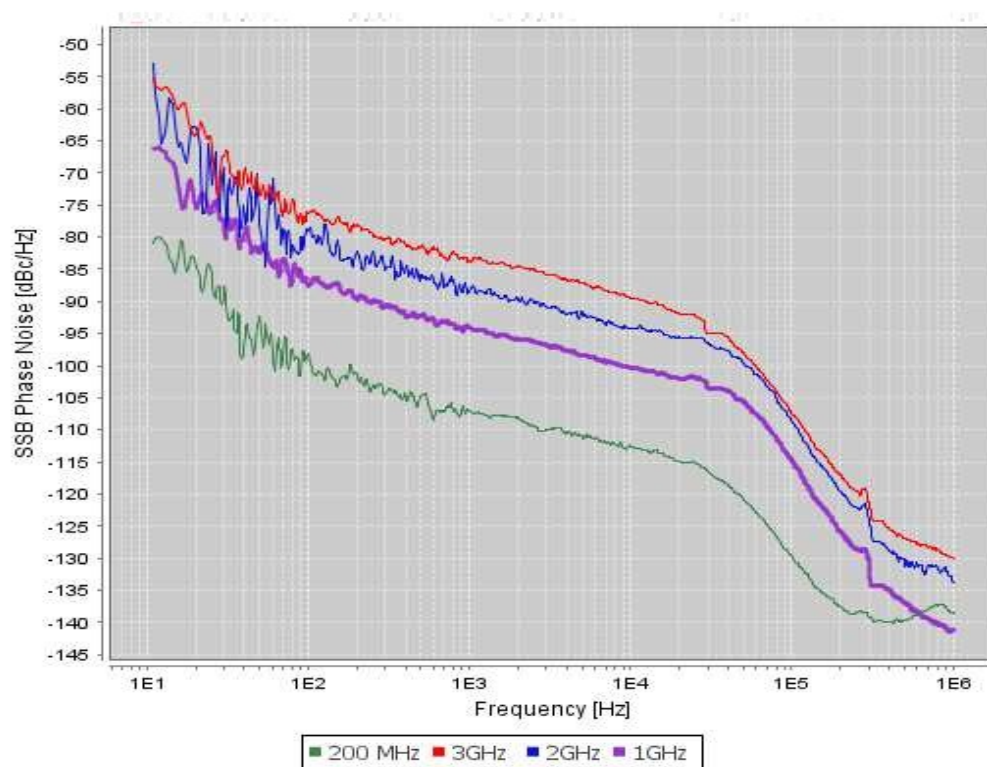
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Measurements

2nd (green) and 3rd (brown) harmonics at +10 dBm output power



SSB phase noise



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Housing

Weight ≤ 1 kg (2 lbs) net, ≤ 1.5 kg (3 lb.) shipping

Dimensions 60 mm H x 106 mm W x 220 mm L

Connectors

Front panel:

1. RF output: N female
2. RF on/off button
3. Power on/off switch
4. AM modulation input: BNC female
5. Pulse modulation: BNC female
6. Function output: BNC female
7. Trigger input: BNC female



Rear

Rear panel:

1. LAN connection: RJ-45
2. USB 2.0 host and device
3. DC Power plug (6V, 2.5A)

General Characteristics

Remote programming interfaces

- Ethernet 100Base T LAN interface
- USB 2.0 host & device
- GPIB (IEEE – 488.2, 1987) with listen and talk (optional)
- Control language SCPI Version 1999.0

Power requirements: 6 VDC; 20 W maximum

Main adapter supplied: 100-240 VAC in/ 6V 2.5A DC out

Operating temperature range: 0 to 45° C

Storage temperature range: -40 to 70° C

Operating and storage altitude: up to 15,000 feet



Notice

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