

ROHDE & SCHWARZ

SMIQ03E

The Rohde & Schwarz SMIQ03E is a high-performance vector signal generator belonging to the renowned SMIQ family. Designed to cover a frequency range from 300 kHz to 3.3 GHz, it is optimized for mobile communication design, base station testing, digital video systems, and wideband CDMA development. It features versatile analog and digital modulation capabilities, an optional internal fading simulator, and a highly stable internal reference oscillator.

SPECIFICATIONS

Frequency

Minimum Frequency	300 kHz Hz
Maximum Frequency	3.3 GHz Hz
Frequency Resolution	0.1 Hz

Output

Maximum Output Power	13 dBm dBm
Output Power Range	-144 dBm to +13 dBm

Modulation

Modulation	AM, FM, Phase, Pulse, Digital I/Q
Sweep Modes	Linear, Logarithmic, List

General

Reference Oscillator	10 MHz external reference input; internal reference stability 1e-6/year
Interfaces	GPIB (IEEE 488.2), RS-232, External I/Q inputs/outputs
Display	Backlit Graphic LCD
Warm-Up Time	approx. 10 min (30 min for oven-controlled reference oscillator)

Physical

Power Supply	100 V to 240 V AC, 47 Hz to 440 Hz
Dimensions (W×H×D)	435 mm × 192 mm × 460 mm mm
Weight	< 18 kg kg

Frequency Specifications

Frequency Range	300 kHz to 3.3 GHz
Frequency Switching Speed	< 10 ms
Internal Reference Aging Rate	1 × 10 ⁻⁶ per year
External Reference Frequency	10 MHz

Amplitude Specifications

Minimum Output Power	-144 dBm
Power Resolution	0.1 dB
Output Impedance	50 Ohm

Spectral Purity

Harmonics	-30 dBc
Non-Harmonics	-60 dBc

Analog Modulation

External Modulation Inputs	Yes
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Vector Modulation and Baseband

Universal Modulation Coder	Supported / Included
Fading Simulator	Supported / Integrated capability

System Connectivity and Interfaces

Primary Remote Interfaces	GPIO (IEEE-488.2), RS-232
RF Output Connector	N-type (female), 50 Ohm

Power Requirements

Line Voltage Range	100 V to 240 V AC
Line Frequency Range	47 Hz to 440 Hz

Physical and Environmental Specifications

Operating Temperature Range	0 °C to +55 °C
Rack Unit Height	4 RU

Vector Modulation

I/Q Modulation Bandwidth (3 dB)	> 60 MHz
Static Error Vector (RMS)	< 1 % (at 2 GHz, 1 Msymb/s QPSK, typical < 0.5 %)
Carrier Leakage	< -40 dBc (typical < -50 dBc)
I/Q Image Suppression	> 40 dB

Amplitude Modulation

AM Depth Range	0 % to 100 %
AM Distortion	< 1 % (at 1 kHz, m = 30 %)

Frequency Modulation

FM Distortion	< 0.1 % (at 100 kHz deviation, f_mod = 1 kHz)
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Pulse Modulation

Pulse Modulation On/Off Ratio	> 80 dB
Pulse Rise/Fall Time	< 20 ns

Level Accuracy	
Level Error	< 0.5 dB (for levels > -120 dBm, f < 2 GHz)
Power	
Power Consumption	approx. 250 VA (fully equipped)
Modulation Source	
Internal LF Generator Waveforms	Sine, triangle, square, trapezoid, noise
Internal LF Generator Frequency Range (Sine)	0.1 Hz to 1 MHz
Internal LF Generator Frequency Range (Other Waveforms)	0.1 Hz to 50 kHz
Internal LF Generator Frequency Resolution	0.1 Hz
LF Output Voltage Range	1 mV to 4 V (peak, open circuit)
Environmental	
Storage Temperature Range	-40 °C to +70 °C
Compliance	
EMC/EMI Compliance	Meets EN 55011 Class B, EN 50082-1
Safety Compliance	Meets EN 61010-1
Inputs & Outputs	
LF Output Connector	BNC female, front panel

TECHNOLOGY	
RF Vector Signal Generator	
APPLICATIONS	
Mobile communication testing, Wideband CDMA development, Base station testing, Fading simulation	

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.