ANRITSU

69167B

The Anritsu 69167B is a high-performance Synthesized Signal Generator belonging to the renowned 69B Family, covering a carrier frequency range from 10 MHz to 40 GHz. Specifically optimized for Automated Test Equipment (ATE) and radar/communications testing, it combines comprehensive analog modulation capabilities (AM, FM, Phase, and Pulse) with excellent spectral purity, fast switching times of less than 5 ms, and a compact 3 RU chassis. The instrument is highly configurable, with optional upgrades for ultra-low phase noise, 0.1 Hz frequency resolution, and low-frequency extension down to 0.1 Hz.

SPECIFICATIONS

Frequency

Minimum Frequency	10 MHz (0.1 Hz with Option 4) Hz
Maximum Frequency	40 GHz Hz
Frequency Resolution	1 kHz (0.1 Hz with Option 11)
Phase Offset Range	-180° to +180°
Phase Offset Resolution	0.1°

Output

Maximum Output Power	up to +13 dBm (frequency dependent) dBm
Output Power Range	-120 dBm to +13 dBm (frequency and attenuator dependent)
Phase Noise	<-88 dBc/Hz @ 10 kHz offset (10 GHz carrier, standard); <-103 dBc/Hz @ 10 kHz offset (10 GHz carrier, Option 3)

Modulation

Modulation	AM, FM, Phase (ØM), Pulse
Sweep Modes	Step Sweep, List Sweep, Manual Sweep
Internal Pulse Generator Width Range	50 ns to 65 ms (with Option 10)
Internal Pulse Generator Delay Range	0 to 65 ms (with Option 10)
Internal Pulse Generator Resolution	100 ns (with Option 10)

General

Reference Oscillator	Internal 10 MHz
Interfaces	GPIB (IEEE-488.2)
Display	Front-panel LCD with menu-driven softkeys
Save/Recall Setups	10 complete front panel setups

Physical

Power Supply	90 to 264 VAC, 47 to 440 Hz
Dimensions (W×H×D)	429 mm x 133 mm x 546 mm mm
Weight	23 kg kg

Frequency Specifications

Frequency Range	10 MHz to 40 GHz (0.1 Hz to 40 GHz with Option 4)
Internal Reference Aging Rate	<1 x 10^-9/day (<5 x 10^-10/day with Option 16)
Internal Reference Temperature Stability	±2 x 10^-8 over 0 to 55 °C
External Reference Input Frequency	10 MHz (±100 Hz)
External Reference Input Amplitude	-10 dBm to +20 dBm (0.15 V to 2.2 V rms)

Amplitude Specifications

Maximum Output Power (10 MHz to 2 GHz)	+13 dBm
Maximum Output Power (2 GHz to 20 GHz)	+13 dBm
Maximum Output Power (20 GHz to 40 GHz)	+6 dBm
Minimum Leveled Output Power	-120 dBm
Amplitude Resolution	0.01 dB
Amplitude Accuracy	±1.0 dB (from 10 MHz to 40 GHz, level >-90 dBm)
Output Voltage SWR (Typical)	<2.0:1 (2 GHz to 40 GHz)
Attenuator Range	110 dB in 10 dB steps (standard on 691XXB series)
Attenuator Type	Step Attenuator

Spectral Purity

Harmonics (10 MHz to 2 GHz)	<-30 dBc
Non-Harmonics (Spurious) (>2 GHz)	<-60 dBc
Sub-Harmonics	None (<20 GHz), <-40 dBc (20 to 40 GHz)
Power Sweep Range	At least 15 dB

Analog Modulation

Frequency Modulation (FM) Maximum Deviation	up to 10 MHz (frequency dependent)
Phase Modulation (PM) Maximum Deviation	up to 40 rad (frequency dependent)
Amplitude Modulation (AM) Depth Range	0% to 90% (leveled)
Amplitude Modulation (AM) Rate Range	10 Hz to 100 kHz
Pulse Modulation On/Off Ratio	>80 dB
Pulse Modulation Minimum Pulse Width	100 ns
Pulse Modulation Rise/Fall Time	<15 ns
Pulse Modulation External Input Impedance	50 ohms

Sweep and Operating Modes

Step Sweep Number of Points	2 to 1601
List Sweep Number of Points	up to 2000 points
Sweep Range	Full frequency coverage (10 MHz to 40 GHz)
Dwell Time Range	1 ms to 99 seconds
Trigger Modes	Auto, External, Single, GPIB

System Connectivity and Interfaces

RF Output Connector Type	K (female) (2.92 mm)
RF Output Impedance	50 ohms
GPIB Interface	IEEE-488.2
External Reference Input Connector	BNC (female), rear panel
Reference Output Connector	BNC (female), 10 MHz, rear panel
Pulse Modulation Input Connector	BNC (female), front panel
AM Modulation Input Connector	BNC (female), front panel
FM Modulation Input Connector	BNC (female), front panel
Trigger Input Connector	BNC (female), rear panel
Sweep Output Connector	BNC (female), rear panel

Physical and Environmental Specifications

Operating Temperature Range	0 °C to +50 °C
Storage Temperature Range	-40 °C to +75 °C
Rack Unit (RU) Height	3 RU
Cooling	Forced air, internal fans

Power Requirements

Line Voltage Range	90 to 264 VAC (auto-ranging)
Line Frequency Range	47 Hz to 440 Hz
Power Consumption	350 VA maximum

Hardware and Software Options

Option 4	Delete Pulse Modulation
Option 10	Option 3 = Ultra-Low Phase Noise
Option 11	0.1 Hz Frequency Resolution
Option 16	High Stability Ovenized Reference Oscillator

Reference Oscillator

Internal Reference Output Frequency	10 MHz
Internal Reference Output Level	> 2 dBm (nominal into 50 Ω)

Interfaces

GPIB Address Range	1 to 30
GPIB Programming Languages	SCPI, Native (Anritsu 6000/6600B/6700B)

Options

Option 1	Rack mount slides and front panel handles
Option 2A	Rear panel RF output
Option 7	Deletes AM/FM modulation capability
Option 8	Deletes pulse modulation capability
Option 9	Option 2B = Rear panel RF output with step attenuator
Option 15A	High power output
Option 17	Deletes step attenuator
Option 3	Ultra-low phase noise
Option 6	Option 17 = Deletes step attenuator

Compliance

Electromagnetic Compatibility	Meets EN55011:1991 Class A and EN50082-1:1992
Safety Standards	Meets EN61010-1:1993

Performance

Leveled Flatness (10 MHz to 2 GHz)	±0.8 dB
Leveled Flatness (2 GHz to 20 GHz)	±0.6 dB
Leveled Flatness (20 GHz to 40 GHz)	±0.8 dB
Non-Harmonics (Spurious) (10 MHz to 2 GHz)	<-60 dBc

Inputs & Outputs

External ALC Input	BNC female, accepts -1 mV to -1 V nominal for leveling
External ALC Input Impedance	10 kΩ nominal

TECHNOLOGY

Synthesized RF/Microwave Signal Generation

APPLICATIONS

Automated Test Equipment (ATE), RF/Microwave Receiver Testing, Radar and EW Simulation, Spectral Purity Measurement