ANRITSU

69317B

The Anritsu 69317B is a synthesized high-performance signal generator from the 69B family, designed for RF, microwave, and automated test equipment (A.T.E.) applications. Offering exceptional spectral purity, ultra-low SSB phase noise, and an extensive suite of analog and pulse modulation capabilities, the 69317B covers a frequency range of 10 MHz to 20 GHz. With rapid switching times and accurate leveled output power down to -120 dBm, it is optimized for high-throughput receiver testing, radar simulation, and complex signal generation.

SPECIFICATIONS

Frequency

Minimum Frequency	10 MHz Hz
Maximum Frequency	20 GHz Hz
Frequency Resolution	1 kHz (0.1 Hz with Option 10)

Output

Maximum Output Power	+13 dBm dBm

Modulation

Sweep Modes	Step Sweep, List Sweep, Power Sweep

General

Reference Oscillator	Internal 10 MHz oven-controlled crystal oscillator (OCXO)
Interfaces	GPIB (IEEE-488.2)
Display	Front panel menu-driven LCD
Front Panel Setups Storage	10 complete operating states can be saved and recalled
Self-Test	Comprehensive self-test performed automatically at power-on or via GPIB

Physical

Power Supply	90 to 132 VAC or 180 to 264 VAC, 48 to 440 Hz
Weight	23 kg kg

Frequency Specifications

Frequency Range	10 MHz to 20 GHz
Frequency Resolution (Standard)	1 kHz
Frequency Resolution (with Option 10)	0.1 Hz
Internal Reference Stability	<2 x 10^-8 / day after warmup
External Reference Input Frequency	10 MHz (accepts 1, 2, 5, or 10 MHz)

Amplitude Specifications

Maximum Leveled Output Power	+13 dBm
Amplitude Resolution	0.01 dB
Output Impedance	50 Ω
Output SWR	<2.0 typical
Amplitude Accuracy	±1.0 dB (leveled)

Spectral Purity

Harmonics (10 MHz to 2 GHz)	<-50 dBc
Harmonics (2 GHz to 20 GHz)	<-60 dBc
Spurious Non-harmonics (10 MHz to 2 GHz)	<-60 dBc
Spurious Non-harmonics (2 GHz to 20 GHz)	<-60 dBc
SSB Phase Noise (1 MHz offset, 10 GHz carrier)	<-124 dBc/Hz
Residual FM	<120 Hz RMS typical (50 Hz to 15 kHz bandwidth at 10 GHz)

Analog Modulation

FM Modulation Types	FM, Broad-band FM, Low-noise FM
FM Maximum Deviation	10 MHz (locked or unlocked)
FM Rate (3 dB Bandwidth)	100 Hz to 1 MHz
FM Distortion	<1% at 100 kHz deviation and 1 kHz rate
AM Depth Range	0% to 90% (leveled)
AM Rate (3 dB Bandwidth)	10 Hz to 50 kHz
AM Distortion	<5% at 30% depth and 1 kHz rate
Pulse Modulation On/Off Ratio	>80 dB
Pulse Modulation Rise/Fall Time	<15 ns (typically <10 ns)
Pulse Modulation Repetition Rate	10 Hz to 1 MHz
Pulse Generator Delay Range	100 ns to 11 s
Internal Modulating Waveforms	Sine, Triangle, Square, Positive Sawtooth, Negative Sawtooth, Gaussian Noise, Uniform Noise, User-defined
Internal Modulating Frequency Range	0.1 Hz to 1 MHz (for sine wave)
Internal Modulating Frequency Resolution	0.1 Hz

Sweep and Operating Modes

Sweep Types	Step Sweep, List Sweep, Power Sweep
Number of Step Sweep Points	1 to 1801
Number of List Sweep Points	1 to 2000
Dwell Time Range	1 ms to 99 sec
Sweep Trigger Modes	Free Run, Single, External, GPIB

System Connectivity and Interfaces

RF Output Connector Type	Ruggedized K Female
GPIB Interface Command Set	IEEE-488.2 (SCPI compatible)
Auxiliary I/O Connector	25-pin D-sub
External Trigger Input Connector	BNC female
External AM Input Connector	BNC female
External FM Input Connector	BNC female
External Pulse Input Connector	BNC female
Horizontal Sweep Output	BNC female

Physical and Environmental

Operating Temperature Range	0 °C to +52 °C
Storage Temperature Range	-40 °C to +75 °C
Relative Humidity Range	5% to 95% non-condensing
Rack Unit Height	3 U

Power Requirements

Operating Line Voltage	90-132 VAC / 180-264 VAC (auto-ranging)
Line Frequency Range	48 to 440 Hz
Power Consumption	350 VA maximum

Hardware and Software Options

Option 3	Ultra-Low Phase Noise
Option 4	Delete Step Attenuator
Option 15	High Power Output
Option 20	Option 20 = Scan Modulation

Options

Option 1	Rack Mount Slides (with handles)
Option 2E	Electronic Step Attenuator (adds 110 dB attenuation in 10 dB steps, 10 MHz to 20 GHz)
Option 11	0.1 Hz Frequency Resolution
Option 14	Ultra-Low Phase Noise
Option 19	SCPI GPIB Programming Compatibility
Option 2A	Adds a 110 dB mechanical step attenuator in 10 dB steps
Option 16	High stability ovenized crystal reference oscillator (< 5 x 10^-10/ day aging)
Option 17	Delete Front Panel (for secure or automated ATE applications)
Option 18	Rear Panel RF Output (moves RF output connector from front to rear panel)

Scan Modulation (Option 20)

Option 20 Scan Modulation Depth	60 dB (2 GHz to 20 GHz)

Pulse Modulation

Internal Pulse Generator Modes	Free-run, delayed, gated, doublet, triplet, quadruplet
Internal Pulse Generator Resolution	100 ns
Internal Pulse Generator Width Range	100 ns to 410 ms

Inputs & Outputs

10 MHz Reference Output Connector	BNC female, rear panel
External Pulse Input Level	TTL compatible

Rear Panel Connections

V/GHz Output	0.5 V/GHz or 1 V/GHz, selectable (rear panel BNC connector)
Sequential Sync Output	TTL-compatible signal during sweep (rear panel BNC connector)
Memory Sequencing Input	TTL-compatible input to step through saved memory setups (rear panel BNC connector)

TECHNOLOGY

Synthesized Signal Generator

APPLICATIONS

Radar Simulation, Receiver Testing, RF and Microwave Test Systems