VG3000E/VG6000 Specifications

Frequency

Frequency range

VG3000E	250kHz to 3.2GHz
VG6000	250kHz to 3.2GHz, 4.96GHz to 6.2GHz
Resolution	0.1Hz
Setting time	<100ms (10ms typical)

Reference Frequency

Aging rate: 1×10^{-6}/yr (standard)

8×10^{-8}/yr (high stability time base)

Temperature characteristic:

1×10^{-6}/yr (standard)

5×10^{-8}/yr (high stability time base)

Warm-up time: <30 minutes

Internal clock

Frequency: 10MHz

Level: TTL

External clock

Frequency: 10MHz ± 100Hz

Level: 1 to 5Vp-p

Input impedance: 1kΩ

Spectrum Purity

Spurious

Harmonics <-30dBc (3MHz to 3.2GHz)

Subharmonics <-50dBc (250kHz to 3.2GHz)

Non harmonics (CW, Carrier offset 100kHz to 100MHz)

<-60dBc (<350MHz)

<-70dBc (350MHz to2.6GHz)

<-60dBc (2.6GHz to3.2GHz)

Non harmonics (CW, Carrier offset 100kHz to 50MHz)

<-60dBc (4.96GHz to 5.4GHz)

<-40dBc (5.4GHz to 5.5GHz)

<-60dBc (5.5GHz to 6.0GHz)

<-50dBc (6.0GHz to 6.2GHz)

SSB phase noise typical characteristic (CW, 100kHz offset)

-120dBc/Hz (20MHz to 350MHz)

-130dBc/Hz (350MHz to 650MHz)

-124dBc/Hz (650MHz to 1.3GHz)

-118dBc/Hz (1.3GHz to 2.6GHz.)

-115dBc/Hz (2.6GHz to 3.2GHz)

-110dBc/Hz (4.96GHz to 6.2GHz)

Output

Output level

VG3000E	-115dBm to +13dBm	: <2GHz
	-115dBm to +10dBm	: 2GHz to 3.2GHz
VG6000	-115dBm to +10dBm	: <2GHz
	-115dBm to +5dBm	: 2GHz to 3.2GHz
	-115dBm to 0dBm	: 4.96GHz to 6.2GHz

Resolution 0.1dB

Level accuracy

VG3000E	3M-1.3GHz	1.3-3.2GHz
-35dBm to +13dBm(*)	±1dB	±1.5dB
-100dBm to +35dBm	±1.5dB	±1.5dB
-115dBm to +100dBm	±2.5dB	±4dB

VG6000	3M-1.3GHz	1.3-3.2GHz	4.96G-6.2GHz
-35dBm to +10dBm(**)	±1dB	±1.5dB	±2dB
-100dBm to -35dBm	±1.5dB	±1.5dB	±2dB
-115dBm to -100dBm	±2.5dB	±4dB	±4dB

(*) : -35 to +10dB (2G-3.2GHz)

(**) : -35 to +5dBm (2G-3.2GHz) / -35 to 0dBm (4.96G-6.2GHz)

Frequency Response(0dBm) < ±1dB

VG3000E : 0dBm output

VG6000 : 0dBm output / 250kHz to 3.2GHz

: -10dBm output / 4.96GHz to 6.2GHz

Output Impedance 50 Ω, N-Connector

Level setting time <30ms (15ms typical)

VSWR <2

Pulse Modulation

Mode External, Internal (AWG mode)

On/Off ratio >50dB (<3GHz)

>40dB (>3GHz)

Rise/Fall time time control of pulse : 1us to 30us

Time set accuracy : ±20% ±1us

Resolution : 0.5us

AM Modulation

Mode External DC, Internal (AWG mode)

Modulation frequency response 60MHz (-3dB)

Modulation Input Input impedance 50 Ω

Input voltage 0.5Vpeak (100%AM)

IQ Modulation

Mode External DC, Internal (AWG mode)

Modulation frequency response 60MHz (-3dB)

DC vector error <1%

Modulation Input (I/Q)

Input level $\sqrt{I^2+Q^2}=0.5Vrms$

Input impedance 50 Ω

VSWR <1.2 (DC~60MHz)

General Specifications

Operation temperature range 5 to 40 °C

Operation humidity range 20 to 80%RH

Power supply voltage 100 to 120VAC/220 to 240VAC

Power supply frequency 48 to 63Hz

Power requirement 250VA

External dimensions 426(W) × 176(H) × 450(D)mm

Weight 23.5kg

AWG Function Specifications(opt.)

IQ Signal Output

Output range -1.5V to +1.5V

D/A resolution 14bit

DC level accuracy ±(setting value x 1%) ±2mV

Filter Through, 30MHz,6MHz,500kHz,50kHz

Impedance 50 Ω

Event Output

Output level 3.3VCMOS level

Impedance 50 Ω

Pulse Modulation Output

Output level 3.3VCMOS level

Impedance 50 Ω

External Trigger Input

Input level TTL level / zero cross

Trigger Rise / Fall

Impedance 10k Ω

Clock

Frequency Range 1Hz to 100MHz / 1Hz resolution

Waveform Memory

Memory length 1 to max. 64Mpoints (/AG2)

1 to max. 16Mpoints (/AG1)

Header memory length : 1 to (memory - body data - 512)

Body data length : 1 to (memory - 256)

Waveform Output Control

Level 0% to + max. Amplitude

Phase -180 °C to +180 °C

Level error -30% to +30%

Phase error -30deg to +30deg

Offset -100mV to +100mV

Trigger delay 0 to 262143 clock

Trigger source External / Internal

Waveform output sequence

Body data continuos output after Header

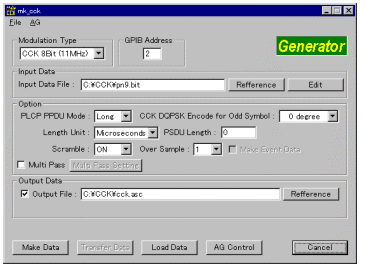
or Body data continuos

The Lineup of Versatile Parameter Setting Software Utility for Wireless

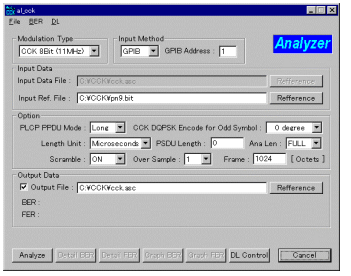
Utility Software	Model	Modulation	Functions
Digital IQ Waveform Generation Utility	B9972SA	BPSK,QPSK,OQPSK,π/4QPSK 16QAM,64QAM,128QAM,256QAM	Single Carrier
Digital IQ EVM Analyzing Utility	B9917UG	BPSK,QPSK,,π/4QPSK	EVM Analyzing
OFDM Waveform Generation Utility	B9972SD	IEEE802.11a OFDM	Modulation Waveform Generation
OFDM Analyzing Utility	B9972SF	IEEE802.11a OFDM	BER/EVM Analyzing
CCK Waveform Generation Utility	B9972SG	IEEE802.11b CCK	Modulation Waveform Generation
CCK Analyzing Utility	B9972SH	IEEE802.11b CCK	BER/FER Analyzing
W-CDMA Multiplex Data Generation Utility for 3GPP	703183	IMT-2000/3GPP	max. 128 Multiplex Generation
Bluetooth/GFSK Generation & Analyzing Utility	B9972SJ	GFSK	Frequency Drift, BER/EVM Analyzing

OFDM Generation Utility

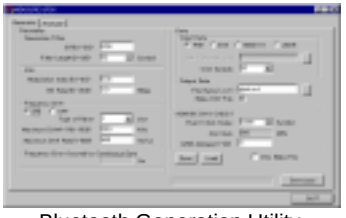
OFDM Analyzing Utility



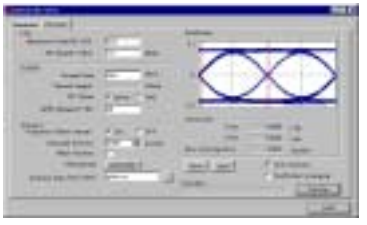
CCK Generation Utility



CCK Analyzing Utility

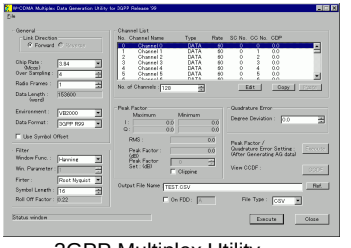


Bluetooth Generation Utility



Bluetooth Analyzing Utility

Digital IQ Generation Utility



3GPP Multiplex Utility

Model and Suffix code

Model	Suffix codes		Description
703220			VG3000E Synthesized Vector Signal Generator
703230			VG6000 Synthesized Vector Signal Generator
Power Cable	- D		UL, CSA standard
	- F		VDE standard
	- S		BS standard
	- R		SAA standard
Options	/HS		High Stability Time Base
		/AG1	16Mpoints memory (Arbitrary Waveform Generator Function)
		/AG2	64Mpoints memory (Arbitrary Waveform Generator Function)

VB2000 Digital I-Q Signal Generator

for W-CDMA Baseband Output

DL4200 Digital Oscilloscope

for EVM Analysis with PC Software

DL7200 Digital Oscilloscope

for BER Analysis with PC Software