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Exceptional Price

Professional signal generator for production, laboratory and service

3GHz Vector RF Signal Generator



LPT-3SVG

The LPT-3SVG, Wideband and High Performance Vector Signal Generator, supports digital modulation of signals for all major wireless communication systems.

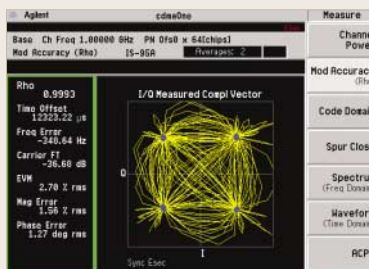
The analog arbitrary waveform generator, EXT IQ modulation and digital modulation of signals for wireless communication systems are standard functions built into the LPT-3SVG. With optional Internal Digital Baseband Generator, the LPT-3SVG has the performance to provide signal generation for CDMA2000, WCDMA, GPS and other multi-carrier wireless communication systems. Its applications include educational institutions, repeater manufacturing companies, laboratories, AS centers, and EMC testing facilities.



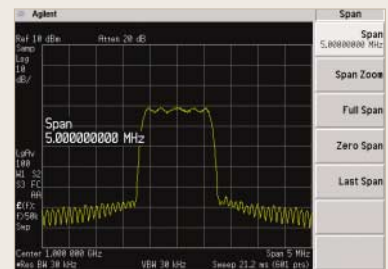
Features

- Wide Frequency Range :
300 kHz ~ 3.0 GHz, LF : 20 Hz ~ 80 kHz
- High Frequency Resolution : 0.1 Hz
- Modulation Mode : FM, AM, PM, Pulse,
EXT IQ, Internal IQ(Option)
- Amplitude Range : -125 dBm ~ 13 dBm
- Amplitude Resolution : 0.1 dB
- Single-sideband(SSB) Phase Noise :
< -95 dBc (@ 1 GHz, 20 kHz Offset)
- Internal Modulation Signal : 20 Hz ~ 80 kHz
- Internal Digital Modulation Signal : CDMA2000,
WCDMA, Software Upgrade

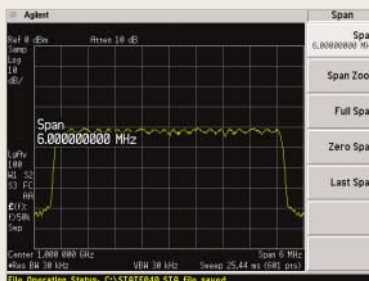
Internal Digital Modulation Performance



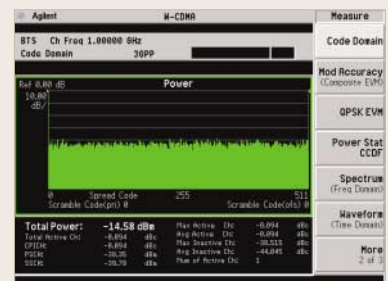
<CDMA2000 Modulation Quality>



<CDMA 2000 Modulation Spectrum>



<CDMA2000 4 Carriers>



<WCDMA Code Domain Power>

LPT-3SVG

3GHz Vector RF Signal Generator

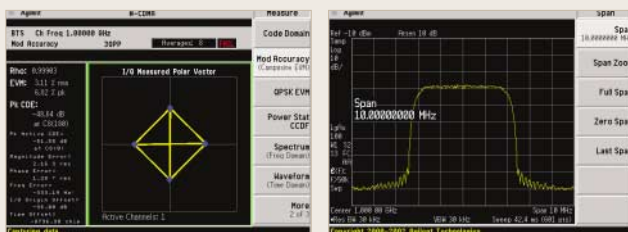


1 High definition 800 x 480 color TFT LCD

High resolution LCD display allows users to monitor the status of the current signals and the graphical display of the step-by-step process of signal modulation.

2 Various Modulation Mode

The LPT-3SVG Vector Signal Generator, supports analog modulations such as AM, FM, PM as well as EXT IQ modulation and digital quadrature modulation. With optional Internal Digital Baseband Generator, LPT-3SVG has the performance to provide signal generation for CDMA2000, WCDMA, GPS and other multi-carrier wireless systems. Additional waveform patterns are offered as optional software upgradeable using USB.



· WCDMA Error Vector Magnitude

· WCDMA IQ Modulation Spectrum

3 USB Interface

USB port allows users to store or download setup data and IQ modulation data.

4 LAN, GPIB Interface

To remotely control the unit or transfer long patterns at high speed, LPT-3SVG supports LAN connection. UPT cable is provided for 1:1 waveform pattern transfer.

5 LF Out

Low frequency output (20 Hz and 80 kHz) allows users to use LPT-3SVG as a low frequency signal source.

6 Large Internal Memory Space

The large-capacity waveform memory can save many waveform patterns. Waveform patterns can easily be read from the memory or saved.

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Specifications

Frequency	Range	300 kHz to 3.0 GHz
	Resolution	0.1 Hz
	Setup Time	< 10 ms
Reference Frequency	Stability	< ± 0.5 ppm/year Aging, < ± 0.5 ppm Temperature 0 to 45
	Frequency	10 MHz
	Output level	+ 5dBm Typically
	Input Level	> -10dBm
Spectral Purity	Connector, Impedance	50 ; BNC female
	Phase Noise	< -100 dBc / Hz Typical, Fc = 1 GHz ; @20 kHz
	Residual FM	< 10 Hz rms
	Harmonic	< -30 dBc, Level ; 0 dBm, Fc > 1 MHz
	Spurious	< -50 dBc
Amplitude Level	Range	-125 to +13 dBm
	Resolution	0.1 dB
	Accuracy	< ± 1 dB ; -120 to +13dBm
	Setup Time	< 10 ms
	VSWR	< 1.6 ; 1.5 MHz < Fc < 2.5 GHz, < 1.8 ; 2.5 GHz < Fc < 3 GHz typically
	Connector, Impedance	N-type ; 50 Ohm Nominal
AM	Operating Mode	Internal, external AC/DC
	Depth	0 to 100%
	Resolution	0.1%
	Modulation Range	DC/20 Hz to 20 kHz
	Accuracy	< \pm (4 % of setting +0.2%) 1 kHz, 0 dBm, 80% modulation
	Distortion	< 2% 1 kHz, 0 dBm, 80% modulation
	EXT Input	MOD IN connector
	EXT Input Sensitivity	1 V peak Input voltage for 100% modulation depth
FM	Input Impedance	BNC; > 100 k
	Operating Mode	Internal, external AC/DC
	Deviation	20 Hz to 100 kHz
	Resolution	< 0.1%
	Modulation Range	AC/20 Hz to 80 kHz
	Distortion	< 1% 1 kHz rate, Deviation = 50 kHz
	Deviation Accuracy	< \pm (5 % of FM deviation +300 Hz) @1 kHz, 0 dBm and 50 kHz deviation
	EXT Input	MOD IN connector
PM	EXT Input Sensitivity	1 V peak Input voltage for 100 kHz modulation deviation
	Input Impedance	BNC; > 100k
	Operating Mode	Internal
	Phase Deviation	0 to 10 rad Rate \leq 10 kHz, 0 to 5 rad 10 kHz < Rate \leq 20 kHz
	Resolution	< 1%
	Modulation Range	300 Hz to 20 kHz
	Accuracy	< \pm (5% of FM deviation +0.2 rad) @1 kHz rate
	Distortion	< 1.5% @1 kHz rate, THD, Deviation = 5 rad
EXT Input	EXT Input	MOD IN connector
	EXT Input Sensitivity	1 V peak Input voltage ; 10 rad modulation deviation
	Input Impedance	BNC; > 100 k

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Pulse Modulation	Operating Mode	Internal, external, AC/DC
	On/Off Rate	≥60 dB
	Rise/Fall Time	< 500 ns
	Pulse Width	1 μs to 1s Internal, external
	Pulse Period	2 μs to 2s Internal
	Time Resolution	100 ns
Internal Modulation Source	Input Connector	BNC female
	Input Voltage Level	TTL
	Waveform	Sine
	Frequency Range	20 Hz to 80 kHz
LF Output	Resolution	0.1 Hz
	Amplitude	0 to 3 V peak
	Amplitude Resolution	< 1% 1 mV minimum resolution
	Frequency Response	< ± 0.2 dB @20 Hz to 300 kHz
	Distortion	0.1% 20 Hz to 300 kHz
IQ Modulation	Connector, Impedance	BNC female; < 1 ohm Front panel
	Operating Mode	External I/Q inputs, Internal I/Q(Options)
	VSWR	< 1.5
	Max Input	$\text{Root}(I^2+Q^2) = 0.5\text{V RMS}$
	Modulation Frequency	DC to 40 MHz @ 3 dB points
	Carrier suppression	40 dBc Typical
Reverse Protection	QPSK EVM	3% Typical ; 1Msps, 0.22 RRC Filter
	Connector, Impedance	BNC female ; 50 ohm Rear pane
	DC voltage	30 V
	RF power	+36 dBm 1 minute
	USB	A Plug ; V 1.1 protocol
General Specifications	AC Power	100~240 VAC ; 50~60 Hz Auto-ranging
	Power Consumption	80W
	Temperature Range	5 ~ 40 °C ; Operating, -20 to 70 °C ; Storage
	Weight	12 kg Approximately
	Dimensions	350(W) x 195(H) x 375(D) mm

Options

- Internal Digital Modulation (Refer page 6~7)
- GPIB Interface
- Ethernet Interface
- Soft Carrying Case
- General Kit Set

Internal Digital Modulation (Option)

Dual arbitrary waveform generator		
Number of channels	2	
Resolution	14 bits (1/16384)	
Waveform memory	Length (playback)	1 Megasample/channel
Clock	Sample rate	1 Hz to 40 MHz
	Resolution	1 Hz
	Accuracy	Same as timebase
Output reconstruction filters	Type	butterworth
	Frequency cutoff (nominal, 3 dB)	1MHz, 3MHz, 5MHz, 10MHz
Triggers	Types	Continuous, Single
	Source	Trigger key, external
	External polarity	Negative, positive
Multichannel, Multicarrier CDMA personality		
Chip (symbol) rate	1.2288MHz	
Modulation	QPSK (forward)	with Walsh and short code spreading
Pre-defined channel configurations (power levels per IS-97-A)	Pilot channel	Includes IS-95 filter, with equalizer
	9 channel	Includes pilot, paging, sync, 6 traffic and IS-95 filter, with equalizer
Rho	0.99(≤ 4 dBm, IS-95 filter, ≤ 2 GHz, typical)	
Pilot time offset	≤ 2 μs, typical	
User-defined CDMA (Channel table editor)	Number of channels	1 to 64
	Walsh codes	0 to 63
	Channel power	0 to -40 dB
	PN Offset	0 to 511
	Data	00-FF(HEX) or random
Walsh code power selection	IS-97 compliant	
	Equal channel power	
	Scaled to 0 dB	
IS-95 filter selection	IS-95	
	IS-95 with equalizer	
Oversample ratio	4	
Multicarrier	Number of carriers	up to 5
	Carrier channels	Pilot, 9 channel, custom
	Frequency offset	±4MHz
	Offset resolution	1KHz
	Carrier power	0 dB to -40 dB