LG 3803

New

LG 3803 8VSB/QAM Signal Generator

Designed to address the challenges of DTV tuner testing, the LG 3803 provides all of the signal control necessary for testing the performance of ATSC compliant tuners and receivers.
The RF output can be set to emulate 8VSB, 64 and 256QAM modulation formats and the modulation frequency can be set from 50MHz to 900MHz covering the entire VHF and UHF spectrum. Output level ranges from -100 to +13dBm (50 Ohm) and it is settable with 0.1dB resolution; ideal for doing input sensitivity tests.
A pseudo-random (PN) generator and a BER counter are built into the instrument and facilitate easy BER measurements in a single unit.
The instrument can be modulated internally (2 built-in test patterns; color bars and ramp) or can be externally modulated (DVB-ASI or SPI input). An optional DVD drive is available to supply moving video playback for HD rates; an excellent way to test receivers in a "real life" simulation.

The QVGA display provides easy instrument control. The instrument can be Ethernet controlled. Remote control allows preset recall and increment; up to 100 presets can be set up and recalled aiding in the automatic testing process.

FEATURES

- **Ideal For The Production, Test And Alignment Of ATSC Compliant Tuners And Receivers/STBs.**
- **Includes 8VSB And 64QAM/256QAM Modulation Standards; Covers Both VHF And UHF Bands.**
- **Coding Modulator, C/N Generator And Upconverter Are Integrated In A Single Instrument.**
- **Built-in Pseudo-Random (PN) Signal Source And BER Counter Facilitate BER Measurements Using One Instrument.**
- **Real Time Coding And Modulation Provides Realistic Test Signals.**
- **Real Picture Playback Function Is Available As An Option**
- **Out-Of-Band Option Allows For CATV Return Path BER Evaluation**
- **Intuitive, Clear Display, 100 Presets And Ergonomic Design Make The LG 3803 The Perfect Choice For Manufacturing And Service Applications.**

LG 3803-01 Out-Of-Band Generator

The LG 3803-01 is a companion/accessory instrument for the LG 3803 8VSB/QAM Signal Generator. When the 2 instruments are connected, the LG 3803/3803-01 pair becomes capable of providing QPSK signals compliant to USA CATV Out-Of-Band Standard (ANSI/SCTE 55-1, 55-2). The testing features of the LG 3803 are extended to CATV Out of Band testing; for example, the built in C/N generator permits BER measurements while the variable output permits for sensitivity testing.

LG 3803 Rear Panel

LG 3803 8VSB/QAM SIGNAL GENERATOR SPECIFICATIONS

Broadcast System	
Terrestrial Digital TV Broadcast	ATSC A/53B
Cable TV Broadcast	ITU-T J.83 annex B
Modulation Format	8VSB/64QAM/256QAM
RF Signal Generator	
Frequency Range	50 to 900MHz
Output Range	-100 to +13dBm 50Ω terminator
Resolution	0.1dB
Impedance	50Ω
Input/Output Signal Source	
Pseudo Random Signal	PN23
Still Picture Pattern	color bar, ramp, monoscope
Screen Size	1920 x 1080i, 1280 x 720p (16:9), 720 x 480i (16:9), 720 x 480i (4:3)
Sound (tone)	1kHz (LR), 400Hz (LR), 1kHz (L) + 400Hz (R).
DVB-ASI Input	
Input Connector	BNC
Input Impedance	75Ω
Input Level	0.8 Vp-p
Transmission Rate	270Mbps
DVB-SPI Input	
Input Connector	D-sub 25-pin
Input Impedance	differential 100Ω
Input Level	LVDS
Input Format	MPEG2-TS, BER counter selectable
ASI, SPI Input Specification	
Input Packet Format	188Byte
Stream	MPEG2-TS (ISO/IEC13818-1)
Input Data Rate	Maximum 25Mbps
FREQ STD Input/Output	
Connector	BNC
Impedance	50Ω
Level	0.8 Vp-p
Frequency	10MHz
4-Line Serial BER Input	
Input Connector	BNC
Input Level	LVTTL 3.3V
Input Signal	SYNC, VALID, CLOCK, DATA
TS Clock Output	
Output Connector	BNC
Output Impedance	50Ω
Output Level	TTL
Output Frequency	2.424083MHz (8VSB), 3.371294MHz (64QAM), 4.851338MHz (256QAM)
BER Counter Input	
Packet Length	188Byte
Input Connector	DVB-SPI connector, serial
GO/NO-GO Judgment	
Judgment Value Setting	BER upper and lower limits settable
Judgment Display	GO/NO-GO indications displayed on the screen
C/N Generator Section	
C/N Adjustable Range	0 to 31dB
Setting Resolution	0.1dB
Additional Control	ON/OFF selectable
External Interface	
Memory Card Interface	
Memory Card	CFA TYPE-1 CF card
Ethernet Interface	10BASE-T/100BASE-TX
USB Interface	USB1.1
GP-IB	
Input Level	TTL
Connector	57LE-30240 (Amphenol)
Remote Function	Preset memory recall (INC/DEC)
Display	QVGA (320 x 240) 5.7 inch TFT color LCD

Environmental Conditions	
Operating Temperature	0 to 40 °C
Operating Humidity	≤85% RH (without condensation)
Spec-guaranteed Temperature	10 to 35 °C
Spec-guaranteed Humidity	≤85% RH (without condensation)
Operating Environment	Indoor use
Operating Altitude	Up to 2,000 m
Over Voltage Category	II
Pollution Degree	2
Power Requirements	90 to 250 VAC, 50/60 Hz, 140W Max
Dimensions and Weight	426(W) x 150(H) x 450(D) mm, Approx. 14kg 16.8(W) x 5.9(H) x 17.9(D) inch, Approx. 30.9 Lbs

LG 3803-01 OUT-OF-BAND (OOB) SPECIFICATIONS

Modulator Section	
Standard	ANSI/SCTE 55-1, 55-2
Modulation Format	QPSK
Symbol Rate	1.024Msps (ANSI/SCTE 55-1: Alternative) 0.772Msps (ANSI/SCTE 55-2:GRADE A) 1.544Msps (ANSI/SCTE 55-2:GRADE B)
RF SG Section	
Frequency Range	70 - 130MHz
Resolution	1kHz
Output Range	-100 - +13dBm 50Ω terminator
Resolution	0.1dB
Impedance	50Ω
Input/Output Signal Source	
Built-in Signal	
Pseudo Random Signal	PN23
BER Serial Input	
Input Connector	BNC
Input Level	LVTTL 3.3V
BER Counter Section	
Input Connetor	Serial input connector
GO/NO-GO Judgment	
Judge Limit Setting	BER upper and lower setting
Judgment Display	Display GO/NO-GO on the screen
C/N Generator Section	
C/N Variable Range	0-20dB
Resolution	0.1dB
Control	ON/OFF switch
External Interface	
Memory Card	CFA Type-1 CF card
Ethernet	10BASE-T, 100BASE-TX
Display	LCD
Display Contents	BER measurement value, GO/NO-GO judgment
Environmental Conditions	
Operating Temperature	0 to 40 °C
Operating Humidity	≤ 85% RH (without condensation)
Spec-guaranteed Temperature	10-35 °C
Spec-guaranteed Humidity	≤ 85% RH (without condensation)
Operating Environment	Indoor use
Operating Altitude	Up to 2,000 m
Over Voltage Category	II
Pollution Degree	2
Power Requirements	90 to 250 VAC, 50/60 Hz, Approx. 40W Max
Dimensions and Weight	426(W) x 99(H) x 450(D) mm, Approx. 7kg 16.8(W) x 3.9(H) x 17.9(D) inch, Approx. 15.5 Lbs

LG 3803-01

Out-Of-Band Generator

The LG 3803-01 is a companion/accessor y instrument for the LG 3803 8VSB/QAM Signal Generator. When the 2 instruments are connected, the LG 3803/3803-01 pair becomes capable of providing QPSK signals compliant to USA CATV Out-Of-Band Standard (ANSI/SCTE 55-1, 55-2). The testing features of the LG 3803 are extended to CATV Out of Band testing; for example, the built in C/N generator permits BER measurements while the variable output permits for sensitivity testing.

LG 3803-OP70

The LG 3803 OP70 Moving Picture Option is designed to install to the LG 3803 main frame. Since the 80-GB 2.5" HDD and DVD drives are provided, large file of HDTV or long time contents can be directly coded/modulated and output as a modulated RF signal.

FEATURES

- **MPEG-2 TS can be played back from the HDD.**
- **Since internal flash memory is used to start OS and applications, no problem will occur even if power is accidentally turned off. Entire capacity of HDD can be used for storing and playing back data.**
- **Description of the stream (e.g., packet size, bit rate) is analyzed and automatically set.**
- **Data stored on the disc media (e.g., DVD-ROM, CD-ROM) can be fetched to the HDD.**
- **TS data can be fetched via the LAN connector on the rear panel.**
- **Up to 419 MB data can be stored in the RAM and played back.**
- **The played back range (i.e., start to end) can be set by time length.**

SPECIFICATIONS

HDD	
Type, Format	2.5" IDE interface
Capacity	80 GB
Maintenance	Installing and detaching are possible from the front panel
DVD Drive	
Type, Format	Slim type CD/DVD-ROM drive
Applicable Media	CD-ROM, CD-R, CD-RW, DVD-ROM, DVD-R, DVD-RW
Speed	x8 for DVD, up to x24 for CD
Applicable Stream	
Format	MPEG-2 TS (ISO/IEC 13818-1)
Packet Length	188/204 bytes
File Size	Up to disc capacity
Playback	
Playback Format	MPEG-2 TS (ISO/IEC 13818-1)
Loop Playback	Possible (not applicable seamless)
Playback Range	Begin to end specified by time length
Memory Playback	Possible
Environmental Coditions	
Operating Temperature	5 to 40 °C
Operating Humidity	≤85%RH (without condensation)
Spec-Guaranteed Temperature	10 to 35 °C
Spec-Guaranteed Humidity	≤85%RH (without condensation)
Operating Environment	Indoor use
Operating Altitude	Up to 2000 m
Overvoltage Category	II
Pollution Degree	2

LG 3803-OP72

The LG 3803-OP72 is an option that is integrated within the LG 3803. The Option 72 allows for terrestrial multipath simulation. Control over the number of simulated paths (up to 12) and their various characteristics is available. Various multipath fading simulations are available as recommended by GSM and the ATSC.

FEATURES

- **Efficient and affordable multi-path terrestrial broadcast testing using built-in option.**
- **Fading parameters can be set from the front panel or via remote control.**
- **Various multipath simulations are available.**
- **Adheres to GSM and ATSC recommended EMR measurements.**

SPECIFICATIONS

Fading Generator	
Maximum Number of Path	12 (each path can be ON/OFF)
Moving Object Velocity	0.1 to 999.9 km/h
Setting Unit	0.1 km/h
Toppler Frequency	0.1 to 200.0 Hz
Setting Unit	0.1 Hz
Fading Type	Rayleigh, Rice, frequency shift, phase shift
Setting Range	-1.0 to 1.0 (frequency shift) 0.1 step 0 to 360° (phase shift) 1° step
Opposed Delay Time	0 to 800.0 us
Setting Step	Approximately 0.1us
Opposed Path Loss	0 to -29 dB
Setting Step	0.1 dB (0 to -10 dB) 0.5 dB (-10 to -20 dB) 1.0 dB (-20 to -29 dB)
RF Signal Generator	
Frequency	50 to 900 MHz 1 kHz step
Accuracy	$\pm 0.4 \times 10^{-6}$
Output Level	-100.0 to +13.0 dB (normal mode) -100.0 to +8.0 dB (6 paths mode) -100.0 to +3.0 dB (12 paths mode)
Setting Step	0.1 dB
Accuracy	±2.5 dB
C/N Generator	
C/N Variable Range	0 to 35 dB (normal mode) 0 to 30 dB (6 paths mode) 0 to 25 dB (12 paths mode)
Setting Step	0.1 dB
Control	ON/OFF switch
Environmental Coditions	
Operating Temperature	0 to 40 °C
Operating Humidity	≤85%RH (without condensation)
Spec-Guaranteed Temperature	10 to 35 °C
Spec-Guaranteed Humidity	≤85%RH (without condensation)
Operating Environment	Indoor use
Operating Altitude	Up to 2000 m
Overvoltage Category	II
Pollution Degree	2

LG 3803/3804/3803-01 SPECIFICATIONS

Model	LG 3803	LG 3804
Broadcasting System		
Terrestrial Digtal TV Broadcast	ATSC A/53B	DVB-T
Cable TV Broadcast	ITU-T J.83 annex B	--
Modulation System	8VSB/ 64QAM/ 256QAM	QPSK/16QAM/64QAM, hierarchical
Band Width	--	6MHz/7MHz/8MHz
Coding Rate	--	1/2, 2/3, 3/4, 5/6, 7/8
FFT Mode	--	2k, 8k
Guard Interval	--	1/4, 1/8, 1/16, 1/32
RF Signal Generator		
Frequency Range	50 to 900MHz	30 to 960 MHz
Output Range	-100 to + 13dBm (into 50Ω)	
Input/Output Signal Sources		
Pseudo Random Signal	PN15, PN23	
Still Picture Pattern	Color bar, ramp, monoscope	
Sound(Tone)	1kHz(LR), 400Hz(LR), 1kHz(L) +400Hz(R)	
Screen Size	1080i/ 720p/ 480p/ 480i(16:9)/ 480i(4:3)	(*1)
DVB-ASI Input		
Input Connector	BNC (Impedance; 75Ω)	
Input Level	0.8Vp-p	
Baud Rate	270Mbps	
DVB-SPI Input		
Input Connector/Impedance	25-pin D-sub/100Ω differential input	
Input Level	LVDS	
Input Format	MPEG-2 TS or BER count input	
ASI, SPI Input Specification		
Input Packet Format	188, 204 byte	
Applicable Stream	MPEG-2 TS (ISO/IEC 13818-1)	
FREQ STD Input/Output		
Input Connector	BNC (Impedance; 50Ω)	
Input Level	0.8 Vp-p	
Input Frequency	10 MHz	
4-Line Serial BER Input		
Input Connector	BNC	
Input Level	LVTTL 3.3V	
Input Signal	CLOCK, DATA, SYNC, VALID	
BER Counter Section		
Input Section		
Packet Length	188,204 byte	
Input Connector	DVB-SPI connector, Serial Input Connector	
GO/NO-GO Function		
Threshold Settings	Upper and Lower limits of BER	
GO/NO-GO Indication	Displays GO/NO-GO on the screen	
C/N Generator Section		
C/N Variable Range	0 to 35 dB (Setting Resolution: 0.1dB)	
On/Off	Selectable	
External Interface		
Memory Card Interface	Compact flash card (CFA TYPE-I)	
ETHER Interface	10BASE-T, 100BASE-TX	
USB Interface	USB1.1	
GP-IB	24-pin, ANSI/IEEE Std 488.1 - 1987	
Display Panel		
LCD	5.7" QVGA (320 x 240) TFT Color LCD	
Environmental Conditions		
Spec-Guaranteed Temperature	10 to 35 °C	
Spec-Guaranteed Humidity	≤85 %RH (without condensation)	
Power Requirements		
Voltage	90 to 250 VAC, 50/60 Hz	
Power Consumption	140W max.	
Dimensions	16.8(W)×5.9(H)×17.9(D) inch	
Weight	Approx 30.9 Lbs	

*1 : Picture pattern and sizes are subject to without notice.

Model	LG 3803-01
Modulator Section	
Standard	ANSI/SCTE 55-1, 55-2
Modulation System	QPSK
Symbol Rate	1.024Msps (55-1; Alternative)
	0.772Msps (55-2:Grade A)
	1.544Msps (55-2;Grade B)
RF Signal Generator	
Frequency Range	70 to 130MHz
Output Range	-100 to + 13dBm (into 50Ω)
Input/Output Signal Sources	
Pseudo Random Signal	PN15, PN23
BER Serial Input	
Input Connector	BNC (Impedance; 75Ω)
Input Level	LVTTL 3.3V
BER Counter Section	
Input Connector	Serial Input Connector
GO/NO-GO Function	
Threshold Settings	Upper and Lower limits of BER
GO/NO-GO Indication	Displays GO/NO-GO on the screen
C/N Generator Section	
C/N Variable Range	0 to 20dB
Setting Resolution	0.1dB
On/Off	Selectable
External Interface	
Memory Card Interface	Compact flash card (CFA TYPE-I)
ETHER Interface	10BASE-T, 100BASE-TX
Display Panel	
Environmental Conditions	
Spec-Guaranteed Temperature	10 to 35 °C
Spec-Guaranteed Humidity	≤85 %RH (without condensation)
Power Requirements	
Voltage	90 to 250 VAC, 50/60 Hz
Power Consumption	40W max.
Dimensions	16.8(w)×3.9(H)×17.9(D) inch
Weight	Approx 15.5 Lbs

LEADER
Technology Innovator

Leader Instruments Corporation
6484 Commerce Drive
Cypress, CA 90630

Toll Free : 1 (800) 645-5104
Phone : 1 (714) 527-9300
Fax : 1 (714) 527-7490

sales@LeaderUSA.com
www.LeaderUSA.com

Printed in USA