ISDB-T

SIGNAL GENERATOR

Suitable for Inspection on Production Applications of Integrated Services Digital Broadcasting-Terrestrial (ISDB-T) Tuner and TV

GENERAL

The LG 3802(S1 version) ISDB-T Signal Generator with the OFDM capability conforms to Integrated Services Digital Broadcasting-Terrestrial (ISDB-T) standards for digital terrestrial TV system in Japan. This instrument features a channel coding/modulation, C/N generator, and up converter in a single package. Consequently, the modulated signal covering VHF and UHF channels can be output. Since a pseudo random signal source (PN) and BER counter are provided, the BER measurement of a TV set and tuner can be performed with this model only. In addition to the internal TS signal, the MPEG-2 TS can be externally applied. Therefore, the receiver can be checked visually and acoustically by using the existing TS. With such versatile capabilities, overall functions of the reception system can be tested.

FEATURES

All-in-one

This instrument features the signal generator capability and BER measurement capability in a single package. The BER function is used to measure the front-end section, the MPEG-2 TS function is used to visually check entire system. In addition to the digital terrestrial TV broadcasting, this instrument can also be used for the connected segment transmission of 1, 3, and 8 segments in digital terrestrial audio broadcasting.

Arbitrary transmission parameter settings

The transmission parameter can be arbitrary set via the front panel controls. The QVGA LCD graphically displays the setting conditions.

MPEG-2 TS encoding/modulation in realtime

The MPEG-2 TS applied from the DVB-ASI or DVB-SPI connector can be encoded/modulated in realtime. In addition to the MPEG-2 TS, broadcasting TS prescribed in the ARIB standards can also be used.

100 preset conditions

Up to 100 preset conditions can be stored in the memory. Since the stored contents can be categorized into 10 groups, the preset mode is convenient for inspection applications.

Shown with Option 71

+Option Various factory options

*LG 3802 (S1 version) only

OP71 USB STORAGE Option

The TS can be played back from the HDD drive connected via the USB, or internal HDD drive.

HDD Capacity:	80 GB
USB Specification:	USB2.0
Function:	To connect an external HDD applicable to USB2.0, or internal HDD drive
Play Back	
Loop Playback:	Possible (not applicable to seamless)
Memory Playback:	Possible (ON/OFF Selectable)
Playback Range:	Possible (settable in time)

OP72A Fading Option

The Fading noise can be added to a mobile and portable receivers to check a ghost and multipass.

Fading Generator

Settable Fading Mode
(Fading mode): Normal mode(Off), 6 Path mode(6 Path), 12 Path mode(12 Path)

Speed of Mobile Object
(Speed): Settable in the range converted from output frequency and maximum Doppler frequency In 0.01 km/h steps (common to each path)

Maximum Doppler Frequency
(Doppler): 0.1 to 200 Hz, in 0.1 Hz resolution (common to each path)

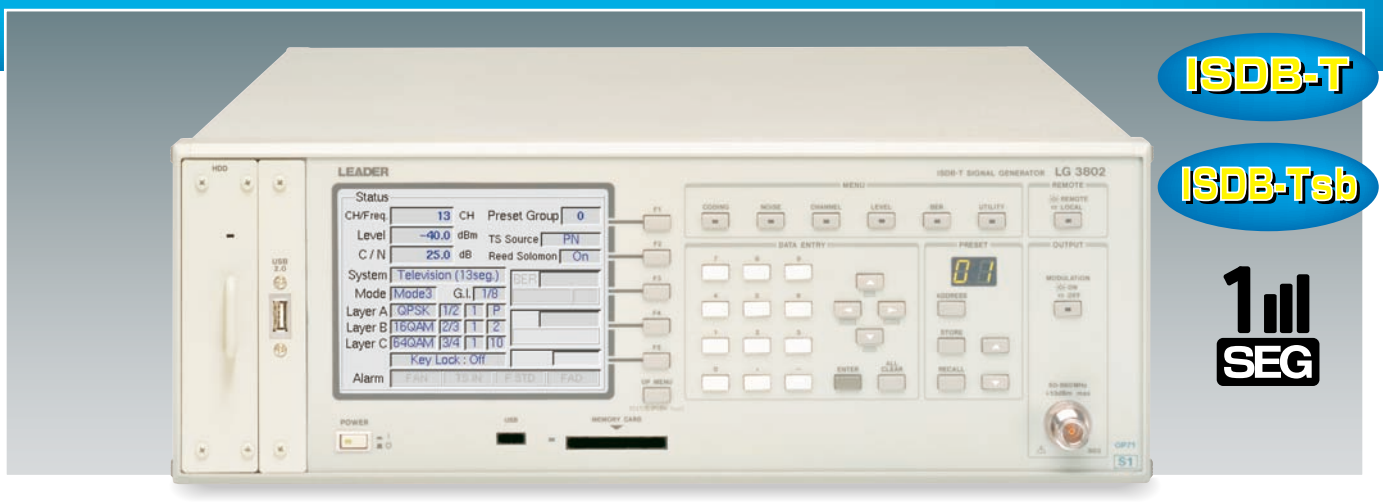
Path State
(Path State): Each path can be respectively set on/off.

Modulated Fading Type
(Fading Type): Rayleigh fading, Rician fading, Frequency Shift, Phase shift, Path through

Relative Delay Time
(Delay): 0 to 800 µs, in ≈ 0.1 µs

Relative Path Loss
(Loss): -30.0 to 0 dB

Option Low Phase Noise



Shown with Option 71

LG 3802 (S1 version)

SPECIFICATIONS — LG 3802 (S1 version)

Channel Coding Section

Broadcasting system

Digital Terrestrial TV:	ARIB STD-B31
Digital Terrestrial Sound:	ARIB STD-B29

Transmission Parameter

Hierarchical layer:	TV: 3 layers max. Sound 3 segment: 2 layers max. Sound 1 segment: 1 layer only
Mode:	MODE 1, MODE 2, MODE 3
Guard Interval:	1/4, 1/8, 1/16, 1/32
Carrier Modulation:	DQPSK, QPSK, 16QAM, 64QAM
Convolution Coding Rate:	1/2, 2/3, 3/4, 5/6, 7/8
Time Interleave Length:	0 to 32 (depends on broadcasting system and MODE)
Number of Segments:	TV: 13, each layer can arbitrary be set. Sound 3 segment: 3, each layer can arbitrary be set. Sound 1 segment: 1
Connected Segment Transmission:	Settable
Partial Reception:	Settable (*1)
Reed-Solomon Code:	ON/OFF, selectable

*1: For the TS not independent of PCR packet, the PCR of partial reception section cannot be updated.

RF Signal Generator Section

Frequency

Range:	50 to 860 MHz

Output

Range:	-100 to +13 dBm (into 50Ω) ON/OFF, selectable
Resolution:	0.1 dB
Connector:	N (50 Ω)

Input/Output Signal Sources

Internal Signal

Pseudo Random Signal:	PN23

Still Picture Pattern

Pattern (Common):	Color bar, ramp, monoscope (*2)
<12seg>	
Screen size:	1920 x 1080i, 1440 x 1080i (16:9), 720 x 480i (4:3)
Sound (Tone):	1 kHz (LR), 400 Hz, 1 kHz (L)+400 Hz(R)
<1seg>	
Screen size:	320 x 180(16:9)
Sound (Tone):	1 kHz (LR), 400 Hz (LR), 1 kHz (L)+400 Hz(R)

*2: 1440 x 1080 monoscope pattern is not provided.
Moreover, the monoscope screen for 1 seg becomes the subsize of 720 x 480(16:9).

DVB-ASI Signal Input

Input Connector:	BNC
Input Impedance:	75 Ω
Input Level:	0.8 Vp-p
Baud Rate:	270 Mbps

DVB-SPI Signal Input

Input Connector:	25-pin D-sub
Input Impedance:	100 Ω differential input
Input Level:	LVDS
Input Format:	MPEG-2 TS or BER count input, selectable

ASI, SPI Input Specifications

Input Packet Length:	188, 204 bytes
Applicable Stream:	MPEG-2 TS (ISO/IEC 13818-1)
Input Data Rate:	TV: 23.2347 Mbps max. (*3) Sound 3 segment: 5.3618 Mbps max. (*3) Sound 1 segment: 1.7872 Mbps max. (*3)
Update Parameter:	PCR (8 max.)

*3: Maximum number of segments is obtained under the conditions below:
Guard interval 1/32
Carrier modulation 64QAM
Coding rate 7/8
The Maximum number of input data rate depends on the modulation parameter.

External REF Input

Input Connector:	BNC
Input Impedance:	50 Ω
Input Level:	0.8 Vp-p
Input Frequency:	10 MHz

REF Output

Output Connector:	BNC
Output Impedance:	50 Ω
Output Level:	0 dBm
Output Frequency:	10 MHz

BER Counter Section

Input Section

Packet Length:	204 bytes
Input Connector:	DVB-SPI INPUT connector is used.

GO/NO-GO Function

Limit Settings:	Upper and lower limits of BER can be set.
GO/NO-GO Indication:	Displays GO/NO-GO on the screen.

C/N Generator Section

C/N Variable Range:	0 to 30 dB
Setting Resolution:	0.1 dB
Additional Controller:	ON/OFF, selectable

External Interface

Memory Card Interface

Memory Card:	Compact flash card (CFA TYPE-I)

ETHER Interface

Specifications:	10BASE-T, 100BASE-TX

USB Interface

Specifications:	USB1.1

GPIB

Connector:	24-pin square connector
Specifications:	Conforms to ANSI/IEEE Std. 488.1-1987.

Remote Control

Connector:	24-pin square connector 57LE-30240 (Amphenol)
Remote Mode:	Recalling preset memory (INC/DEC)
Input Level:	TTL

Display

LCD :	5.7" QVGA (320 x 240) TFT color

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 2000 m
Overvoltage Category:	II
Pollution Degree:	2

Power Requirements:	90 to 250 VAC universal, 50/60 Hz 1 140 Wmax.
Dimensions, Weight:	426 (W) X 150 (H) X 450 (D) mm, 14 kg
Accessories:	Power cord ..... 1 Instruction manual 1
Optional Accessory:	Rack Support (LR 2429 mm size) Rack Support (LR 2429-I inch size)