SIGNAL GENERATOR

LEADER

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

Shown with Option 70

LG 3802 ISDB-T SIGNAL GENERATOR

●GENERAL

The LG 3802 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 MPEG2-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 MPEG2-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.

■ MPEG2-TS encoding/modulation in realtime

The MPEG2-TS applied from the DVB-ASI or DVB-SPI connector can be encoded/modulated in realtime. In addition to the MPEG2-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.

■ Various factory options

The following factory options are available:

- OP70 Moving Picture Option
  By installing a HDD and DVD-ROM, a stream including HDTV content (i.e., requires large storage area) and long-time TS can be played back from the HDD.
- OP72 Fading Option
  The fading noise can be added to a mobile and portable receivers to check a ghost and multipass.

●SPECIFICATIONS LG 3802

Channel Coding Section

Broadcasting system

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

Transmission Parameter

Hierarchical layer:	TV: 3 layers max. Audio 3 segment: 2 layers max. Audio 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. Audio 3 segment: 3, each layer can arbitrary be set. Audio 1 segment: 1
Connected Segment Transmission:	Settable (*1)
Partial Reception:	Settable (*2)
Reed-Solomon Code:	ON/OFF, selectable

*1: Segment structure is fixed.
*2: 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)
Resolution:	0.1 dB
Impedance:	50 Ω

Input/Output Signal Sources

Internal Signal

Signal Format:	Pseudo random signal (PRBS23) Still picture (T.B.D.)

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:	MPEG2-TS or BER count input, selectable

ASI, SPI Input Specifications

Input Packet Format:	188, 204 bytes
Applicable Stream:	MPEG2-TS (ISO/IEC 13818-1)
Input Data Rate:	TV: 23.2347 Mbps max. (*3) Audio 3 segment: 5.3618 Mbps max. (*3) Audio 1 segment: 1.7872 Mbps max. (*3)
Update Parameter:	PCR (8 max.) PTS/DTS (8 max.) (*4) Continuity counter (64 max.) (*4)

*3: Maximum number of segments is obtained under the conditions below:
Guard interval 1/32
Carrier modulation 640QAM
Coding rate 7/8
The Maximum number of input data rate depends on the modulation parameter.
*4: This function can only be used when the internal TS is repeatedly played back.

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 (including 16-byte Reed-Solomon code)
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, TYPE-II)

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
Dimensions, Weight:	426 (W) X 150 (H) X 450 (D) mm (excluding projections), 14 kg
Accessories:	Power cord ..... 1 Instruction manual 1

■LG 3802 Rear Panel