

3511B

ISDB SYSTEM SIGNAL GENERATOR



General

This unit is signal generator corresponding to Japanese terrestrial digital television broadcasting (ISDB-T) and Japanese terrestrial digital audio broadcasting (ISDB-T_{SB}), TS signal generator and all channel up converter are equipped as the standard, so that to realize operating confirmation, contents confirmation and etc. for digital television broadcasting now on air and digital audio (Radio) broadcasting which is considered rapid correspondence in the future, is possible by only this unit.

Also, interface possible to connect with Eiden's fading simulator is equipped, so that output of fading signal occurred in mobile reception, mobile phone reception and etc, is possible.

In addition, ISDB-S system can be added as an option. For ISDB-S system, IF signal (1GHz band) of BS and ND (110° CS) channel is output, so that direct connection with receiver is possible, and when this option is equipped, TS signal generating part can output 2 routes of satellite independently (Contents and TS output) other than terrestrial route, so that generation of signals of ISDB-T and ISDB-S is possible simultaneously by only this unit.

Features

<ISDB-T>

- Output Frequency
OFDM signal of VHF/UHF band (J1~J62 channel) and CATV MID/SUB band (C13~C63 channel) can be output.
- Output Level
Range of -99.9dBm~0dB can be set. Min. resolution is 0.1dB.
Output impedance is 50Ω.
- Input TS
 - Digital Television Broadcasting
Input of broadcasting TS and MPEG-2 TS is possible. (Input packet format of broadcasting TS is 204bytes and 188/204 bytes automatic judgement is for MPEG-2 TS)
For MPEG-2 TS input, simplified RE-MUX function is equipped which corresponds to "A layer 13 segments 64 QAM" or "A layer 1 segment partial reception"
 - Digital Radio Broadcasting
In case of 3 segments 2 layer transmission of coupling transmission, individual TS can be input to A layer and B layer. For 8 segments transmission, this unit can generate same frequency of service trial of digital radio which is broadcasted at Tokyo and Osaka for utilization test, and receiver can receive all segments.
- TS generator is built-in
TS generator is built-in and 2 routes can be output independently. Writing-in of contents is made by transferring data to internal flash memory from compact flash card (CF card). Data capacity of internal flash memory is each *File size of contents is up to max. 1,000,000,000 bytes.
- TS clock can be output
TS clock is output for synchronization with external TS generator.
Byte clock; 256/63 MHz \approx 4.063MHz
- Synchronization with external 10MHz is possible.
To synchronize digital processing part of this unit with 10MHz from external is possible.
- Noise signal generator is equipped.
ON/OFF of noise signal and setting of C/N are possible. Noise level is calculated corresponding to system and noise is added simply by only C/N setting. Setting range of C/N is possible to set in range of 0~40dB. Min. resolution is 0.1dB.
- Generation of PRBS is possible.
Generation of test signal for transmission parameter fixing is possible.
Selection of 13 segments or 1+12 (Partial reception) segments of terrestrial digital TV is possible.
- Remote control
Remote control by GP-IB (IEEE-488.2) is possible.
Also, remote control by ETHERNET (10Base-T/100 Base-TX) is possible.
* Either [GP-IB] or [LAN] is selected. Use of both is impossible.
- Connection with fading simulator is possible.

By connecting IF signal with fading simulator, output of fading signal wave is possible.

- Equipping of ISDB-S system is possible as an option.
System of ISDB-S system is possible as an option.
(Simultaneous output of ISDB-T and ISD-S)

<ISDB-S> (Option)

- Output Frequency
Output of PSK signal to IF (1GHz) band of BS (Odd channel of BS1~BS23) and CS110° (ND1~ND24 channel) is possible.
- Output Level
Setting for the range of -65dBm~0dBm is possible. Min. resolution is 1dB.
- Input TS
It is framed TS input with TMCC. Input packet format is 204bytes and interface is ASI, 75Ω BNC-R connector.
- TS Generator
TS generator equivalent with ISDB-T is equipped.
- TS Clock Output
Switching to byte clock (7.07625MHz) or bit clock (56.61MHz) is possible.
- Possible to synchronize with external 10MHz.
To synchronize digital process part of this unit with 10MHz from external is possible.
- Noise Signal Generator
Setting range of C/N is possible to set in the range of 0~30dB. Min. resolution is 0.1dB.
- Possible to generate PRBS
Selection for 8PSK or QPSK 3/4 mode of 1TS 48 slots configuration is possible.
- Remote Control
Interface of GP-IB (IEEE-488.2) or ETHERNET (10Base-T/100Base-TX) is equipped.
* Either [GP-IB] or [LAN] is selected. Use of both is impossible.

Composition

Main Unit	.....	1
Dimensions	425(W)×99(H)×480(D) mm (Excluding projections)	
Weight	Approx. 12 kg	
Accessories		
Power Cable (Rectangular 3 pin with ground)	.....	1
CF Card [SDCFB-1024-J60 Sundisk made (1GB×2)]	.....	2
CF Card Reader [UCR-CF-LT/U2 (BUFFALO made)]	.....	1
Instruction Manual and Test Result Sheet	.....	1set
Power Source		
Input Voltage Allowable Range	: AC90V~AC250V (50Hz/60Hz)	
Input Voltage Range	: AC100V~AC240V	
Power Consumption	: Approx. 100VA (Temporarily)	
Operating Environment		
Temperature	: +5°C ~ +35°C	
Humidity	: 10%~85%RH (No dew generation)	

Rating

<Input>

• TS Input Terminal

Input for ISDB-T (TERRESTRIAL) [INPUT / ASI (75Ω)]

Input format is packet length of 204 bytes of broadcasting TS.

Input for ISDB-S (SATELLITE) [INPUT / ASI (75Ω)]

Input format is packet length of 204 bytes of framed TS with TMCC.

Connector : BNC Receptacle

Impedance : 75Ω

Signal Format : Conforming to DVB-ASI

Input TS is needed to be synchronized with this unit.

Make 10MHz as system synchronization or take synchronization of TS generating side with TS clock of this unit.

(TS output of this unit is synchronized internally, so that using by connecting to TS input terminal is possible.)

• 10MHz Input Terminal

For ISDB-T and ISDB-S system, digital process part of this unit is to be synchronized with this 10MHz.

Input for ISDB-T (TERRESTRIAL) Input for ISDB-S (SATELLITE)

Common Terminal [10MHz INPUT/0dBm (50Ω)]

Connector : BNC Receptacle

Impedance : 50Ω

Input Level : 0dBm \pm 3dB

<Output>

• TS output Terminal

Output for ISDB-T (TERRESTRIAL) [TS OUTPUT / ASI (75Ω)]

Output for ISDB-S (SATELLITE) [TS OUTPUT / ASI (75Ω)]

Connector : BNC Receptacle

Impedance : 75Ω

Signal Format : Conforming to DVB-ASI

• TS CLK Output Terminal

This is used in case that external TS is to be synchronized with this unit.

