**BER TESTER**

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**General**

This unit is an error rate measuring device to measure bit error rate from TS packet of various digital broadcasting.

**Features**

- Corresponding to measuring rate of max. 90Mbits/s.
- Possible to measure SPI input or serial input.
- For TS packet length of SPI input, 188bytes or 204bytes is recognized automatically.
- By using built-in PRBS of Eiden’s OFDM Modulator “3511B”, BER measurement in OFDM demodulator, that has no output function for TS output per each layer, is possible.
- Switching indication of various measurement information is possible.
- Null packet filtering function is equipped.
- Judging function by threshold value is equipped.
- Selection of measuring condition is possible.
- Control function by GP-IB interface is equipped.
- Compact design not taking space.

**Composition**

**Main Unit**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>215(W)×76(H)×280(D) mm (Excluding projections)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight</td>
<td>Approx. 2 kg</td>
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**Accessories**

- Power Cable (Including 3pin → 2pin converter) | .................................................. |

**Power Source**

- Input Voltage Range : AC100V ~ AC240V (50Hz/60Hz)
- Input Voltage Allowable Range: AC100V ~ AC250V (50Hz/60Hz)
- Power Connector : Rectangular 3P (With ground)
- Power Consumption : Less than 14VA (At 100V)

**Operating Environment**

- Temperature : +5°C ~ +40°C (Limited to in-door use)
- Humidity : 25% ~ 85%RH (No dew generation)

**Rating**

- **SPI Input**
  - Connector : Dsub-25 (Female), 4-440UNC, Inch screw
  - Interface : Conforming to DVB-SPI specifications
  - Signal Level : LVDS (Conforming to TIA/EIA-644)
  - Signal Rate : 31.25Kbytes/s ~ 11.25Mbytes/s

- **SER CLK Input**
  - Connector : BNC-R
  - Signal Level : TTL (50Ω)
  - Frequency : 250KHz ~ 500MH

- **SER DATA Input**
  - Connector : BNC-R
  - Signal Level : TTL (50Ω)
  - Signal Rate : 250KBits/s ~ 90MBits/s

- **SER ENABLE Input**
  - Connector : BNC-R
  - Signal Level : TTL (50Ω)
  - Signal Rate : 250KBits/s ~ 90MBits/s

- **GP-IB Interface**
  - Connector : GP-IB connector
  - Interface : GP-IB (Conforming to IEE488.2)

**Input TS Condition (Common for SPI input and SER input)**

**TS DATA**

- Connection with Eiden’s ISDB Generator "3511B (PRBS MODE)" and etc.
- SYNC (1Byte) + PRBS23 or PRBS15 (187Bytes)
- SYNC (1Byte) + PRBS23 or PRBS15 (187Bytes) + DUMMY (16 Bytes)

* For measurement of ISDB-S using "3511B", following setting is made.
* Measuring condition is to be following 2 kinds.
  - 48 SLOT IPSPK
  - 48 SLOT QPSK 3/4

**CONSTANT DATA**

- Connection with Eiden’s ISDB Generator "3511B (CONSTANT MODE)" and etc.
- HEADER (4Bytes) + CONSTANT (184Bytes)
- HEADER (4Bytes) + CONSTRAINT (184Bytes)+DUMMY (16 Bytes)

* For BER measurement with OFDM demodulator, that has no function of TS output per layer, setting is made to this mode.

* In case of "3511B", BER of A layer, 1 segment (Partial reception) is measured.

**Transmission Mode** : MODE 3
**Guard Interval Rate** : 1/8
**A Layer** : 1 segment (Partial reception)
**Carrier Modulation Scheme** : QPSK
**Convolution Coding Rate** : 1/2
**Time Interleave Length** : 2
**B Layer** : 12 segments
**Carrier Modulation Scheme :** 64 QAM
**Convolution Coding Rate :** 3/4
**Time Interleave Length :** 2

**PRBS DATA**

- Connection with general signal generator.
- Following 2 kinds can be selected.
  - 23^M-sequence pseudo random signal (Generating polynomial = \( X^2+X+1 \))
  - 15^M-sequence pseudo random signal (Generating polynomial = \( X^2+X+1 \))

**NULL Packet Filtering**

- In case that NULL packets are existed in input TS, they are excepted and put out of measurement.

- **Condition**
  - At the time of TS mode, pay load part of NULL packet is to be ALL “H” or ALL “L”.

**Issue of Alarm Sound**

- Alarm sound can be issued at the time of following condition.
  - Single tone is issued at every approx. 0.5 sec. under condition.
  - In case that bit error is occurred during measurement.
  - In case that judgment “GO/NO GO” during measurement becomes “NO GO” (LED : Red).

**Error Rate Measuring Range**

- Less than 1.00E-1

*In case of SYNC LOCK condition.

**Renewal of Measuring Value Indication**

- Even during measurement, each measuring data can be confirmed.
- Indication during measurement is renewed in every approx. 0.5 sec.

**Measuring Mode**

- Measured value can be obtained by changing measuring condition.

a) **CONTINUATION**

- Renewal is made in every approx. 0.5sec. during measurement.
- During stop condition, condition of last measured value is kept and indicated.

b) **SYNC LOCK**

- During measurement, measurement is made only in time of SYNC LOCK taken and renewal is made in every approx. 0.5 sec.

* If SYNC LOCK is not taken during measurement, measured data for such period are all cleared.
* At the time of stop condition, same condition as clear is indicated.

* Specifications and contents of description are changed without any prior notice.