



## General

This unit is OFDM modulator conforming to ISDB-T standard, which is the product enhanced functions of previous Eiden's model 3501C series.

TS generator equipped HDD, MUX of 8 inputs and high performance RF up-converter are built-in, so that this unit can be utilized for all evaluations relating to terrestrial digital broadcasting.

Not only confirmation of TV receiving, but also 1 segment and digital radio are corresponded and several unique functions are equipped to allow fine evaluation.



## Features

### •Possible to generate 8 segments coupling transmission signal with individual TS.

Output of 8 OFDM coupled waves of 1 segment modulated by individual TS is possible.

Accordingly, same evaluation with the case using on-air broadcasting wave is possible. Also, individual output with 1 segment and 3 segments is possible.

### •Built-in MUX of 8 channels.

MUX having inputs of 8 routes is built-in, so that allocation to A~C layer is possible by multiplexing max. 8 TS. Also, each input is possible to correspond to input signal of each segment of 8 segments coupled.

### •Voluntary setting for all parameters.

All parameters regulated by ARIB STD-B31 (Terrestrial digital TV) and ARIB STD-B29(Terrestrial digital radio) can be set voluntarily including at the time of generation of PRBS signal.

### •Built-in TS generator of HDD type.

TS generator of HDD type is equipped, so that contents of long hour is possible to reproduce. Also, DVD ROM is built-in, so that large volume of TS can be installed to this unit easily.

### •Attached moving picture of H. 264 as the standard.

Moving picture of H. 264 is attached as the standard, so that confirmation of receiving picture of 1 segment is possible by only this unit.

### •Equipping exclusive SAW filter for digital radio.

At the time of generation of 8 segments coupling transmission signal, by using SAW filter exclusive for 8 segments band, spectrum having satisfactory side-band characteristic is generated. In case that evaluation of receiver, modulated wave is output to adjacent channel, such as 7 channel and 7 channel of VHF, effect is exhibited.

### •Built-in high performance RF converter (IM: More than 55dB, MER: More than 44dB).

Same as that of Eiden's 3501C, high performance RF converter as reference modulator unavailable in others is built-in, so that evaluation of receiver can be made with relief.

### •Wide range of output level (+10dBm~-110dBm).

For verification of min. receiving level of 1 segment receiver, attenuator of 120dB is equipped in unit. By this, min. output level realizes -110dBm.

### •Equipping noise generator as the standard.

Noise generator convenient to BER measurement is equipped as the standard.

### •Possible to pass SAW filter.

By passing SAW filter, it is possible that in-band characteristic of modulated wave is to be more flat. Such as evaluation of 1 segment receiver, this is effective in case that in-band characteristic is regarded as important than influence of adjacent channel.

### •Possible to connect with fading simulator (4 diversity corresponded).

In addition to previous Eiden's fading simulator (4401A, 4408A, 4409A), connection with fading simulator corresponded to 4 diversity (4410A) is possible also, so that it is most suitable for evaluation of receiver targeted to mobile unit, such as 1 segment receiver for car.

### •Employing large indication panel.

Instead of previous 4 lines liquid crystal indication, operational nature is improved greatly by GUI using large Vacuum Fluorescent Display (VFD) that is superior for visual recognition.

Main unit	.....1
	425(W) x 200(H) x 580(D) mm Weight 28kg
Accessories	Power cable( Including 3 pin →2 pin converter) ...1
	Instruction Manual • Quality Guarantee Sheet ...1
Power Source	
	Input Voltage Allowable Range AC90V~AC250V (50/60Hz)
	Power Consumption: Approx. 180VA
Operating Environment	
	Temperature: 0°C~+45°C
	Humidity: Less than 90% RH (No dew generation)

## Rating

### ● Input/Output Interface

- ASI Input : BNC-R (75 Ω) × 8 routes
- TS Clock Output : BNC-R (50 Ω)  
Bit clock (2048/63MHz) Byte clock (256/63MHz)
- SPI → ASI Converter: : 1 route is equipped on rear panel.
- 10MHz Input : BNC-R (50 Ω) \*To be used for external synchronization.
- 10MHz Output : BNC-R (50 Ω)
- 512/63 MHz Input : BNC-R (50 Ω)
- IF Input/Output : BNC-R (50 Ω)/ fo = 37.15 MHz ※Normally, connected by U link
- 2nd IF Input/Output : BNC-R (50 Ω)/ fo = 287.15 MHz ※Normally, connected by U link
- RF Output : N-R. (50 Ω)
- Remote : GP-IB and 100 BASE-TX or RS-232C, either 1 is selected.

### ● Function of RF

- Frequency Setting : 30MHz~1000 MHz  
or channel designation (VHF/UHF, and MID/SMB of CATV)
- Frequency Setting Resolution : 0.1Hz
- Level Setting Range : +10dBm~-110dBm
- Level Setting Resolution: : 0.01dB \*Linear variation in set range of voluntary 10dB.

## Peripheral

### 4409A Fading Simulator



This unit is inexpensive fading simulator specialized to broadcasting, that is used by combining with OFDM modulator (3529A). Number of path is 40, not only profile of 20 paths model of 3GPP standard, but also more than such number of path can be corresponded. Also, noise generator is built-in, so that noise can be added to signal after processing fading.

#### ~Features~

- Absolute delay amount is ±1ms (Min. delay resolution is 1ns).  
Phasesetting is ±180° (Min. resolution is 1° ),  
Attenuator amount is 0~50dB  
(Min. resolution is 0.1dB)
- Rayleigh wave is realized in all 40 paths.  
Also, Doppler frequency can be set in  
1Hz~2000Hz (Min. resolution is 0.1Hz).

Type	Number of path
4409A-201/ -202	20paths
4409A-401/ -402	40paths

### 7708A-001 BER Measuring Equipment



This unit can measure BER with format of TS packet signal. BER of 1+12 segments of terrestrial digital broadcasting and framed satellite digital broadcasting can be measured.

#### ~Features~

- Serial interface of 2 wire type or 4 wire type and SPI interface are equipped as the standard.
- GO/NO GO judgment by setting threshold is possible.
- Polarity reverse of clock and setting of MSB/LSB of leading bit of serial data are possible.
- Input of 188 BYTE/204 BYTE is corresponded (Automatic judgment).
- Compact design for easy carrying.
- Corresponding to remote.