

# 3313B-002

8 VSB MODULATOR

Digital TV development & production facilities



## General

This unit is 8 VSB modulator conforming to ATSC format. By combining with Eiden's 4220C-006 ALL CHANNEL UP CONVERTER, this unit is the most suitable measuring equipment for development and production of DVT receivers.

## Features

- Stable and low cost are realized by employing digital VSB filter and SAW filter.
- Selection of serial TTL input and DVB-SPI input is possible for interface of input transport stream. In addition, SMPTE310M interface is equipped as the standard.
- Possible to switch master operation and slave operation.
- PRBS23 pattern generator is built-in.
- Possible to generate only pilot signal (Only in INT mode).
- Provided segment sync., field sync. and symbol clock output as trigger signal.

## Composition

Main Unit	.....	1
Dimensions	425(W) × 99(H) × 480(D) mm (Excluding projections)	
Weight	Approx. 9 kg	
Accessories		
Power Cable (Including 3pin 2pin converter)	.....	1
Rack Mount Adapter	.....	1set
Instruction Manual and Test Result Sheet	.....	1
Power Source		
Input Voltage Allowable Range	: AC90V ~ AC250V (50Hz/60Hz)	
Power Consumption	: Approx. 50VA	
Operating Environment		
Temperature	: +0 ~ +40	
Humidity	: Less than 90%RH (No dew generation)	

## Rating

### • Serial Data, Serial Clock Input

Logical Level	TTL
Input Impedance	50
Input Connector	BNC-R
Data Rate	19.392658 Mbps
Allowable Input Rate Tolerance	± 56Hz (Min.) At the time of slave operation.
Input Format	Serial data complying with MPEG2 transport stream (1 packet = 188 bytes) Transport stream of packet length of 1504 bits.

← 1Packet=1504Bits →				
TS Packet Format	SYNC	DATA	SYNC	DATA
Serial Data	8Bits	1496Bits	8Bits	1496Bits

### • DVB-SPI Input

Logical Level	LVDS (Conforming to TIA/EIA-644)
Input Connector	Dsub-25 (Female)
Data Rate	2.424082 Mbytes/s
Allowable Input Rate Tolerance	± 7Hz (Min.) At the time of slave operation.
Input Format	DVB parallel interface Parallel data (1 packet = 188 bytes)

← 1Packet=188Bytes →				
TS Packet Format	SYNC	DATA	SYNC	DATA
Parallel Data	1Byte	187Bytes	1Byte	187Bytes

### • SMPTE310M Input

Input Impedance	75
Input Connector	BNC-R

Data Rate	19.392658 MHz
Allowable Input Rate Tolerance	± 56Hz (Min.)
Automatic Cable Compensation	1/ f (1 ~ 38.785315 MHz)
Allowable Cable Length	150m (Min. : With 75 BNC cable)

### • Clock Output

Logical Level	TTL
Output Impedance	50
Output Connector	BNC-R
Output Frequency	19.392658MHz (At the time of serial master operation) 2.424082MHz (At the time of parallel master operation)
Output Frequency Tolerance	± 193Hz (Max. : At the time of serial master operation) ± 24Hz (Max. : At the time of parallel master operation) (But, no signal at the time of slave operation)

### • Status Output

Field Sync. Output	
Logical Level	TTL
Output Impedance	50
Output Connector	BNC Panel Jack
Cycle	24.2 msec.
Logical HI Time	77.3 μ sec.
Segment Output	
Logical Level	TTL
Output Impedance	50
Output Connector	BNC Panel Jack
Cycle	77.3 μ sec.
Logical HI Time	370nsec.

### Symbol Clock Output

Logical Level	TTL
Output Impedance	50
Output Connector	BNC Panel Jack
Clock Frequency	10.762238 MHz
DUTY	45 ~ 55%

### • IF Output (Modulated Wave Output)

Output Impedance	50
Output Connector	BNC Panel Jack
Output Frequency Range	41 ~ 47MHz (6MHz Band Width)
Output Return Loss	20dB (Min.) (Within output frequency range)
Roll-off Characteristic	11.52% (Sqrt raised cosine)
Pilot Frequency	46.690559 MHz
Pilot Frequency Tolerance	± 200Hz (Max.)
Carrier Phase Noise	- 109dBc/Hz (Max.) 20kHz offset
Output Level	- 11 ~ - 9dBm (Including deviation by temperature)
Output Level Adjusting Range	± 1dB (By trimmer of rear panel)
Channel Edge Attenuation	- 60dBc (Max.)
SNR	Measured at RBW : 30kHz against average power. 27dB (Min.) Measured by HP89440A Vector Signal Analyzer.
Spurious	- 70dBc (Max.) Against average power.

### • GP-IBinterface is equipped.