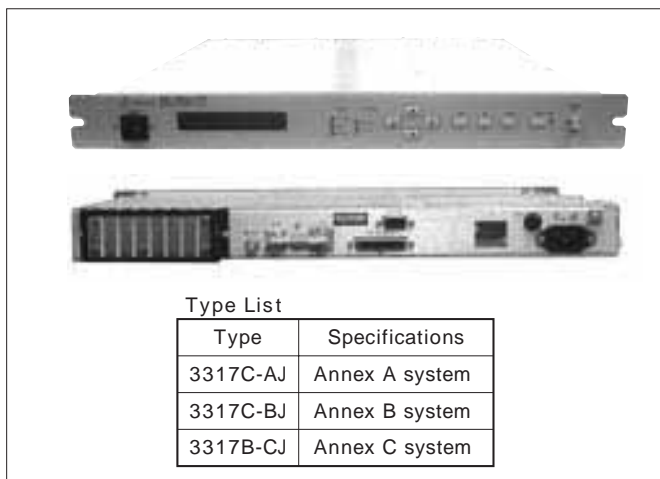


3317

QAM MODULATOR

Digital TV development & production facilities



Type List

Type	Specifications
3317C-AJ	Annex A system
3317C-BJ	Annex B system
3317B-CJ	Annex C system

General

This unit is 64 QAM modulator conforming to digital CATV broadcasting system. RF converter is built-in, so that setting of output frequency for 54MHz ~ 860MHz is possible voluntarily.

By input of MPEG-2 transport stream, this unit can be used as head-end system corresponded to down line digital cable television broadcasting or transmission device for data transmission (Cable modem).

This unit corresponds to also 256 QAM.

Features

- Corresponded to input TS data format of both 188 and 204 bytes rate (Automatic switching).
- Equipped generating function of PRBS ($2^{23}-1$, $2^{15}-1$) needed for BER measurement.
- Possible to turn ON/OFF (CW output at OFF) of modulation that eases RF output level setting.
- Possible to invert output wave phase in order to meet phase of set-top box.
- Possible to make setting and collection by RS-232C. (RS-232C interface specifications)
- Possible to switch internal/external of reference clock. (External : Referenced to TS clock) (Annex B)

Composition

Main Unit	1
Dimensions	425(W) × 49(H) × 450(D) mm (Excluding projections)
Weight	Approx. 6 kg
Accessories	
Power Cable (Including 3pin 2pin converter)	1
Instruction Manual and Test Result Sheet	1
Power Source	
Input Voltage Allowable Range	: AC90V ~ AC250V (50Hz/60Hz)
Power Consumption	: Approx. 56VA
Operating Environment	
Temperature	: +5 ~ +40
Humidity	: 45% ~ 85%RH (No dew generation)

Rating

- **Input**
 - DVB Parallel Input
 - Signal Configuration : MPEG-2 transport stream, byte parallel, 188 bytes or 204 bytes
 - Signal Level : LVDS (EIA/TIA SP3357)
 - Clock : Byte timing clock input
 - Connector : Dsub-25pin (Female), Rear side
- **Output**
 - IF Output
 - Output Center Frequency : 44.0MHz
 - Output Level : -10dBm ± 1dB
 - Output Impedance : 50
 - Connector : BNC-R, Rear side
 - RF Output
 - Output Frequency Range : 54MHz ~ 860MHz
25kHz resolution
 - Output Level Range : 100dB μV ~ 120dB μV
1dB resolution
 - Output Monitor Level : -20dB against output level
 - Output Impedance : 75
 - Connector : F-R, Rear side (Output monitor is front side)

Performance

RF Output Route	
Output Frequency	54 ~ 860MHz
Frequency Stability	Within ±5kHz for setting frequency (Annex C) Within ±10kHz for setting frequency (Annex B)
Frequency Response within Channel Band	Within 1dBp-p (fo ± 2.29MHz : Annex C) (fo ± 2.07MHz : Annex B 64QAM) (fo ± 2.36MHz : Annex B 256QAM)
Group Delay within Channel Band	Within 180nsp-p (fo ± 2.29MHz : Annex C) (fo ± 2.07MHz : Annex B 64QAM) (fo ± 2.36MHz : Annex B 256QAM)
Outside Band Characteristic	Annex C fo ± 2.98MHz ~ 3.15MHz : Less than -43dB fo ± more than 3.15MHz : Less than -53dB Annex B 64QAM fo ± 2.98MHz : Less than -43dB 256QAM fo ± more than 3.00MHz : Less than -43dB
Output Level	100 ~ 120dB μV (1 dB step)
Output Level Stability	Within ±1dB of room temperature setting
Phase Noise	Less than -85dBc/Hz (at 10kHz)
Monitor Output Level	Within -20dB ± 2dB of RF Output level
Harmonics and Spurious	Less than -60dB

MPEG2-TS Route

EVM (Error Vector Magnitude)	Less than 2.2% rms
IQ offset	Less than -50dB
Magnitude Error	Less than 2.0% rms
Phase Error	Less than 2.2deg.
MER (Modulation Error Ratio)	More than 30dB

Byte Data Clock Output (Used when this unit is operating with internal clock (only Annex B))

Clock Frequency	According to input byte data rate
Output Level	TTL (Byte data clock output)
Output Impedance	50
Connector	BNC-R

For Specifications of Annex A, consult with Eiden separately.