



# Sumavision

The 10K502 is the high quality QAM Modulator of Sumavision. It allows receiving various input (ASI, E3, DS3), completes QAM modulation with RF upconverter, and transmits the signal to conventional CATV RF network, MMDS/MUDS, VOD, etc.



## 10K502 QAM Modulator

### Features

#### QAM with upconverter

- ITU-T J.83, Annex A(DVB), B(OpenCable) and C(Japan)
- Full frequency agile 52 ~ 866 MHz
- 16, 32, 64, 128, 256, 512 and 1024 QAM
- Variable data rates, bandwidths and constellations

#### Processing

- PID (Program Identifier) filtering and remapping
- PCR (Program Clock Reference) de-jittering and restamping
- PSI / SI extraction, generation and insertion
- Re-multiplexing of ASI and DS3
- ASI / DS3 input loop through
- MPTS / SPTS / PID stream input

#### Monitoring and Management

- ASI monitoring, for ASI / SDH input, or the modulated TS
- Detailed bit rate measurement
- PSI / SI viewers embedded
- Real-time remote control and diagnostics with SNMP management system

## Business Benefits

### High Performance

Innovatively apply Digital Pre-correction technique in cable network  
Excellent MER, Out-of-band Rejection, CNR, PCR correction, etc

### Strong Background Processing

Support edition of all PSI / SI tables; PID filtering and remapping; Software upgrade

### Cost Effective

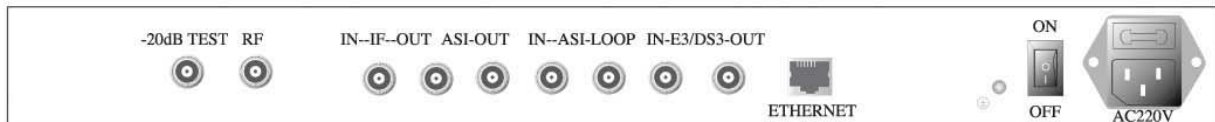
Input support DS3 / E3, could save one adapter; Support Re-multiplexing

### Stability

4000 QAM, 6 years operating experience tested by clients

### Flexible Assembly

Compact 1U structure, flexible in building up the system



## INPUTS

### ASI

- 1 x ASI
- Type: Asynchronous Serial Interface, EN 50083-9
- Connector: BNC, 75Ω
- Packet Format: Auto detection 188 / 204 byte packets
- Bit Rate: 1 ~ 216 Mbit/s
- Syntax: SPTS / MPTS, ISO / IEC 13818

### SDH

- 1 x DS3 / E3
- Type: 44.736M DS3, 34.368M E3
- Connector: BNC, 75Ω
- Syntax: SPTS / MPTS

### IF (optional)

- 1 x IF
- Connector: F-type, 75Ω / BNC, 50Ω
- Frequency: 36.15 MHz (ITU-A), 44 MHz (ITU-B&C)
- Bandwidth: 8 MHz (ITU-A), 6 MHz (ITU-B&C)

## QAM-RF

- 1 x RF output + 1 x RF test-point
- Connector: F-type, 75Ω
- Frequency Range: 52 ~ 866 MHz
- Tuning Step: 12.5 KHz
- Return Loss: ≥ 15 dB
- Channel Bandwidth: 8 MHz (ITU-A), 6 MHz (ITU-B&C)
- Output Level: 95 ~ 120 dBuV RMS, step size 0.5 dB
- Channel Encoding: Randomisation, RS, Trellis and Interleaving according to ITU-T Annex A, B or C
- QAM Constellations: All constellations up to 1024 QAM
- Symbol Rate: 1 ~ 7 Mbaud (ITU-A) or 1 ~ 5.5 Mbaud (ITU-B&C)
- MER (after equalizer): ≥ 41 dB @ RF
- MER (before equalizer): ≥ 34 dB @ RF
- BER: ≤ 1.0 x 10<sup>-9</sup> (pre FEC @ 256 QAM)
- SNR: ≥ 50 dB in band
- Phase Noise: ≤ -95 dBc/Hz @ 10 KHz

## RF TEST POINT

- Connector: F-type, 75Ω
- Return Loss: ≥ 15 dB
- RF Level: -20 dBc ± 0.5 dB

## PROCESSING

- PID filtering and remapping
- PSI / SI extraction, generation and insertion
- PSI / SI transparent transmission
- PSI / SI viewers embedded
- PCR de-jittering and restamping
- Detailed bit rate measurement

## OUTPUTS

### ASI

- 1 x ASI (Monitoring) + 1 x ASI loop through
- Type: Asynchronous Serial Interface, EN 50083-9
- Monitor: ASI input, SDH input, or modulated TS
- Connector: BNC, 75Ω
- Bit Rate: 1 ~ 216 Mbit/s
- Syntax: SPTS / MPTS

### SDH

- 1 x DS3 / E3 loop through
- Type: 44.736M DS3, 34.368M E3
- Connector: BNC, 75Ω
- Syntax: SPTS / MPTS

### IF (optional)

- 1 x IF Output or 1 x IF Loop
- Connector: F-type, 75Ω / BNC, 50Ω
- Frequency: 36.15 MHz (ITU-A), 44 MHz (ITU-B&C)
- Bandwidth: 8 MHz (ITU-A), 6 MHz (ITU-B&C)
- Output Level: 35 ~ 40 dBmV RMS
- Return Loss: ≥ 18 dB

## CONTROL AND MANAGEMENT

- 6 button keys LCD panel
- TCP / IP for remote control
- 10 / 100M Base-T Ethernet interface for SNMP management
- Real-time remote control and diagnostics with SNMP management

## PHYSICAL AND POWER

### DIMENSIONS (H x W x D)

- 1RU (19" rack)
- 4.4cm x 48.3cm x 35.2cm (1.75" x 19" x 14")

### POWER INPUT

- Voltage 80 ~ 150 V or 180 ~ 250 V
- -48 V DC (optional)

### CONSUMPTION

- 50 W MAX

### APPROX WEIGHT

- 4.5kg / 9Lbs

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