

MPEG-4 HD Encoder Modulator Solution

AM2002 Series

- **MPEG-2/MPEG-4/H.264**
- **2 × HDMI/YPbPr/CVBS to DVB-T/DVB-C/ATSC/ISDB-T**
- **Cost Effective 1RU HD Encoder Modulator**
- **Additional ASI Input, Output and UDP IP Port**
- **MER ≥ 42dB**
- **Intuitive Front Panel LCD Display**
- **Universal management through craft interface**



AM2002 1RU HD encoder modulator offers a flexible, compact and all-in-one device which integrate encoding (MPEG-2 HD, MPEG-4/AVC H.264) and modulation (DVB-C, DVB-T, ISDB-T, or ATSC) function and convert V/A signals into RF output. The versatile signal source could be from satellite receivers, closed-circuit television cameras, Blue-ray players, or antenna etc. Its output signals are to be received by TVs, STB with corresponding standard.

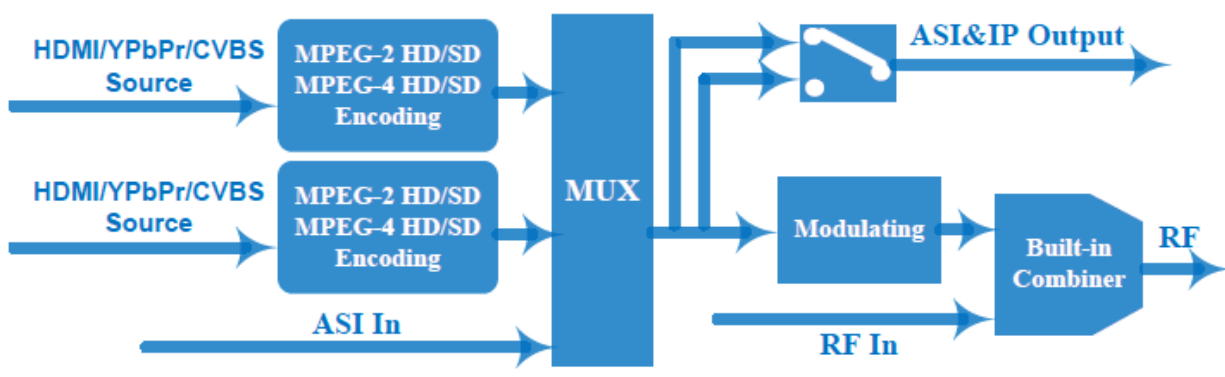
AM2002 1RU encoder modulator is designed with great input flexibility, which allows various encoding interface such as HDMI, CVBS, SDI, YPbPr... It is also equipped with 1 ASI input, and output with 2 ASI ports and 1 UDP IP port. AM2002 series converts HDMI/CVBS/SDI/YPbPr signals to DVB-T/DVB-C/ATSC/ISDB-T RF out in the frequency range of 30~960MHz.

AM2002 encoder modulator can be deployed for CATV operators, in hospitality market, schools, and government offices. It has intuitive front panel LCD display to make operator's life easier. The encoder modular is packaged in a self-contained 19" sub-rack of 1 RU with universal mains power supply and SNMP management.

Key Features

- 1 RU compact platform suitable for various video headend applications
- Cost effective solution with low cost per channel
- MPEG2 HD/MPEG4 AVC H>264 HD/SD video encoding
- MPEG4-AAC; MPEG2-AAC; MPEG1 Layer II audio encoding
- 2* HDMI/YPbPr/CVBS channel in
- Modular design, pluggable encoding modules
- 1*ASI in for re-mux; 1*RF in for RF mix
- Optional DVB-T, DVB-C, ATSC, ISDB-T RF out
- LCN (Logical Channel Number) support(DVB-C/DVB-T/ISDB-T); VCT support(ATSC)
- Excellent modulation quality $MER \geq 42\text{dB}$
- LCD display, Remote control and firmware
- Web NMS management; Updates via web

Application Diagram



Specifications

AM2002 MPEG-4 HD Encoder Modulator Solution - 19" 1RU

Encoding Section

Video (HDMI)

Encoding	MPEG-2; MPEG-4 AVC/H.264
Interface	HDMI × 1
Resolution	1920*1080_60P, 1920*1080_50P (for MPEG-4 AVC/H.264 only) 1920*1080_60i, 1920*1080_50i 1280*720_60p, 1280*720_50p

Audio (HDMI)

Encoding	MPEG-1 Layer II; MPEG-2 AAC; MPEG-4 AAC
Interface	HDMI × 1
Sample Rate	48 kHz
Bit Rate	64/96/128/192/256/320/384 kbps

Video (YPbPr/VBS)

Encoding	MPEG-2; MPEG-4 AVC/H.264
Interface	YPbPr × 1, CVBS × 1
Resolution	CVBS: 720*576_50i (PAL) 720*480_60i (NTSC) YPbPr: 1920*1080_60i, 1920*1080_50i 1280*720_60p, 1280*720_50p

Audio (L/R)

Encoding	MPEG-1 Layer II; MPEG-2 AAC; MPEG-4 AAC
Interface	1 × stereo, 2 × mono
Sample Rate	48 kHz
Bit Rate	64/96/128/192/256/320/384 kbps

Modulator Section

DVB-T

Standard	DVB-T COFDM
Bandwidth	6M, 7M, 8M
Constellation	QPSK, 16QAM, 64QAM
Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/32, 1/16, 1/8, 1/4
Transmission Mode	2K, 8K
MER	≥42 dB
RF Frequency	30 MHz to 960 MHz, 1kHz step
RF Out	1 × DVB-T, 2 × DVB-T carriers combined output (optional)
RF Output Level	-30 dBm to -10 dBm (77 dBμV to 97 dBμV), 0.1 dB step

DVB-C

Standard	J.83a (DVB-C), J.83B, J.83C
MER	≥43 dB

RF Frequency	30 MHz to 960 MHz, 1 kHz step		
RF Output Level	-30 dBm to -10 dBm (77 dBμV to 97 dBμV), 0.1 dB step		
Symbol Rate	5.000 Msps to 9.0000 Msps adjustable		
RF Out	1 × DVB-C, 4 × DVB-C carriers combined output (optional)		
	J.83A	J.83B	J.83C
Constellation	16/32/64/128/256QAM	64/256QAM	64/256QAM
Bandwidth	8M	6M	6M
ATSC			
Standard	ATSC A/53		
MER	≥42 dB		
RF Frequency	30 MHz to 960 MHz, 1 kHz step		
RF Output Level	-26 dBm to -10 dBm (81 dBμV to 97 dBμV), 0.1 dB step		
RF Out	2 × ATSC, 4 × ATSC carriers combined output (optional)		
Constellation	8VSB		
ISDB-T			
Standard	ARIB STD-B31		
Bandwidth	6M		
Constellation	DQPSK, QPSK, 16QAM, 64QAM		
Guard Interval	1/32, 1/16, 1/8, ¼		
Transmission Mode	2K, 4K, 8K		
MER	≥42 dB		
RF Frequency	30 MHz to 960 MHz, 1 kHz step		
RF Output Level	-30 dBm to -10 dBm (77 dBμV to 97 dBμV), 0.1 dB step		
System			
Local Interface	LCD + control buttons		
Remote Management	Web NMS		
Stream Out	2 × ASI out (BNC type) IP (MPTS/SPTS) out (RJ45, 100M)		
NMS Interface	RJ45, 100M		
Language	English		
General			
Power Supply	100 V _{AC} to 240 V _{AC}		
Dimensions (W × D × H)	482 mm × 300 mm × 44 mm		
Weight	3.5 kg		
Operating Temperature	0 °C to +45 °C		

Ordering Information

Model No.	Description
AM-20-EC-YHC2-1DC-AC	AH2002 Encoder 2 YPbPr-HDMI-CVBS to DVB-C Encoder Modulator, AC

AM-20-EC-YHC2-1DT-AC

AH2000 Encoder 2 YPbPr-HDMI-CVBS to DVB-T Encoder Modulator, AC

Encoding modules include:

- MPEG2 SD encoding with 1 or 2 CVBS in (MS2C)
- H.264 SD encoding with 1CVBS in (HS1C)
- MPEG4 AVC /H.264 encoding with 1 or dual SDI in (MH2S)
- YPbPr +HDMI +CVBS input (YHC2)
- MPEG4 AVC/H.264 encoding with 1 or 2 HDMI input
- MPEG2 SD YPbPr +S-Video +CVBS input
- MPEG2 HD encoding with 1 SDI input
- HDMI + VGA input (HV

Modulation modules include:

- ISDB-T RF (single/dual carriers) out module(IT)
- DVB-C RF (single/dual/quad carriers) out module (DC)
- ATSC RF (single/dual/quad carriers) out module (AR)
- DVB-T RF (single/dual carriers) out module (DT)

Note: Contact ACT for additional product variations on input & output options.

Contact Information



Ascent Communication Technology Ltd

AUSTRALIA

140 William Street, Melbourne
Victoria 3000, AUSTRALIA
Phone: +61-3-8691 2902

CHINA

Unit 1933, 600 Luban Road
200023, Shanghai CHINA
Phone: +86-21-60232616

EUROPE

Pfarrer-Bensheimer-Strasse 7a
55129 Mainz, GERMANY
Phone: +49 (0) 6136 926 3246

HONG KONG SAR

Unit 9, 12th Floor, Wing Tuck Commercial Centre
177 Wing Lok Street, Sheung Wan, HONG KONG
Phone: +852-2851 4722

USA

2710 Thomes Ave
Cheyenne, WY 82001, USA
Phone: +1-203 816 5188

VIETNAM

15 /F TTC Building, Duy Tan Street
Cau Giay Dist., Hanoi, VIETNAM
Phone: +84 243 795 5917

WEB: www.ascentcomtec.com

EMAIL: sales@ascentcomtec.com

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