

# MSM623-24

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## 8/16/24 channels HDMI Tuner to RF Modulator

DVB-S2 DVB-S2X DVB-C DVB-T DVB-T2 ISDB-T ATSC

HDMI H.264 MPEG-4 AVC



**MSM623-24** H.264 encode modulator up to 8/16/24 HD-MI or HD-MI plus DVB-S2/S2X/C/T/T2/ISDB-T mix tuner sources From Satellite Receiver, PC, Blue ray, Local Payout, the latest new device which integrate encoding (MPEG-4 AVC/ H.264) and modulation (DVB-C QAM/ DVB-T Cofdm/ATSC/ ISDB-T) to convert Video/Audio signals into RF over Single Coax Cable. MSM623-24, which includes encoding, multiplexing, and modulation, supports 8/16/24 HD-MI inputs, DVB-S2/S2X /C/T/T2/ISDB-T tuner, 1 ASI input, 1 USB payer input and 128 IP inputs via the GE port.

This unit is designed especially for high channel density Distribution Video Engineering project, which can support rapid deployment, OSD/Logo Insertion and DVB-C RF out with 12 non-adjacent carries, or ISDB-T RF out with 6/16 non-adjacent carries or 8/16 DVB-T, 8 ATSC RF out (optional). It used in some of Hotels in the world, it is an ideal solution for environments where displays to an unlimited number of displays over almost any distance, such as Small Digital TV system, Hotel, Stadiums, Campus, Entertainment facilities, Education Markets.

MSM623-24, Integrate All in One Multiplexer MPEG-TS out Over MPTS as mirrored of RF Channels over LAN network. It is also characterized with high integrated, high performance and breakthrough price.

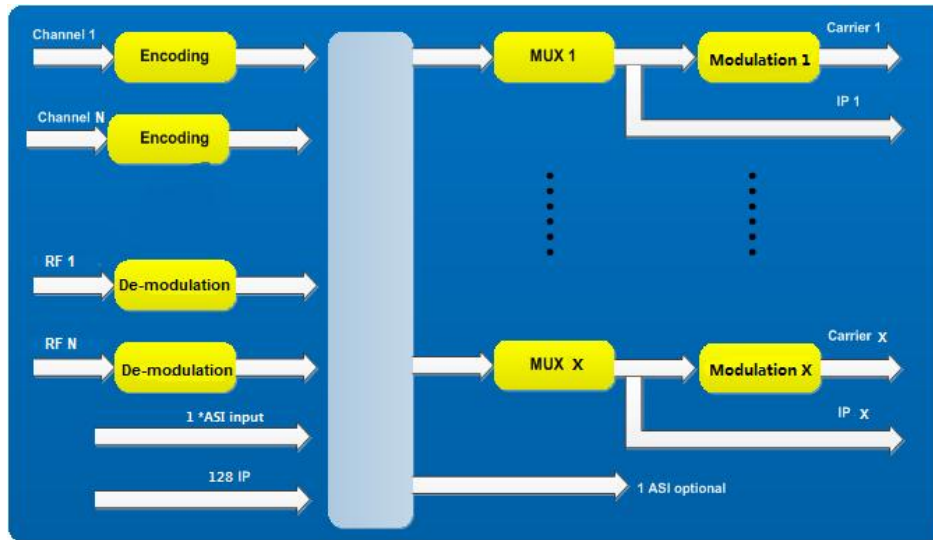
### Features

- 8/16/24 HD-MI (or HD-MI plus DVB-S2/S2X/ C/T/T2/ISDB-T tuner) inputs, MPEG-4 AVC/H.264 Video encoding
- 1 ASI input for re-mux
- 128 IP input over UDP and RTP via GE port
- 1 USB Player (Insert the USB Flash drive with “xxx.ts” videos in MSM623-24 and play back the content in an easy way; file system FAT 32. )
- Each carrier out channel process maximum 32 IP from the GE port(UDP&RTP protocol)
- MPEG1 Layer II, LC-AAC and HE-AAC Audio encoding, AC3 Pass Through and audio gain adjustment
- 12 groups multiplexing/DVB-C modulating
- 8 groups multiplexing/ATSC modulating---Optional
- 8 (or 16) groups multiplexing/DVB-T modulating---Optional
- 6 (or 16) groups multiplexing/ISDB-T modulating---Optional
- 1\*ASI out as mirror of one of RF output carriers---Optional
- 12\*MPTS IP output over UDP, RTP/RTSP –DVB-C RF out
- 8\*MPTS IP output over UDP, RTP/RTSP-- DVB-T/ATSC RF out
- 6 (or 16) \*MPTS IP output over UDP, RTP/RTSP-- ISDB-T RF out
- Support LOGO, Caption and QR code insertion(Language Supported: 中文, English, العربية, русский, اردو, for more languages please consult us...)
- PID remapping/ accurate PCR adjusting/PSI/SI editing and inserting
- Easy-to-Use System Management via Web, easy updates via web

### Applications

- Distribute Full-HD Video to All TVs Over Existing TV Coax
- Advertising, monitoring, training and educating
- Upgrade all your analog Head-ends to digital TV Solution
- Enterprise, Hotel, campus, hospital, Public Place
- Works with Digital TV transmitter in wireless TV broadcasting

### Principle Chart



	IP input	IP output	RF carriers
DVB-C out	128	12	12
DVB-T out	128	8 or 16	8 or 16
ATSC out	128	8	8
ISDB-T out	128	6	6
	128	16	16

Input Section	HD-MI	DVB-S2/S2X	DVB-C/T/T2/ISDB-T
Optional 1	8	/	/
Optional 2	16	/	/
Optional 3	24	/	/
Optional 4	8	8	/
Optional 5	8	16	/
Optional 6	16	8	/
Optional 7	8	/	8
Optional 8	8	/	16
Optional 9	16	/	8
Optional 10	8	8	8
Optional 11	16	4	4

## TECHNICAL SPECIFICATIONS

### INPUT

8/16/24 HD-MI input  
Or HD-MI and different tuners mix inputs  
1 ASI in for re-mux  
1 USB Player input for re-mux  
128 IP input over UDP and RTP, GE port, RJ45---  
DVB-C/DVB-T/ATSC/ISDB-T RF out

### Video Processing

Input Resolution 1920×1080\_60P, 1920×1080\_60i,  
1920×1080\_50P, 1920×1080\_50i,  
1280×720\_60P, 1280×720\_50P,  
720×576\_50i,720×480\_60i  
Output Resolution 1920×1080\_30P, 1920×1080\_25P,  
1280×720\_30P, 1280×720\_25P,  
720×576\_25P,720×480\_30P  
Encoding MPEG-4 AVC/H.264  
Bit-rate 1Mbps~13Mbps each channel  
Rate Control CBR,VBR  
GOP Structure IP...P (P Frame adjustment, without B Frame )

### Audio Processing

Encoding MPEG-1 Layer 2, LC-AAC, HE-AAC and AC3 Pass through  
Sampling rate 48KHz  
Resolution 24-bit  
MPEG-1 Layer2/LC-AAC  
Bit-rate 48/56/64/80/96/112/128/160/192/224  
/256/320/384 kbps  
LC-AAC Bit-rate 48/56/64/80/96/112/128/160/192/224  
/256/320/384 kbps  
HE-AAC Bit-rate 48/56/64/80/96/112/128 kbps  
Audio Gain 0-255 Adjustable

### Tuner Section

#### DVB-S

Input Frequency 950-2150MHz  
Symbol Rate 0.5~45 Msps  
Constellation QPSK  
FEC 1/2, 2/3, 3/4, 5/6, 7/8

#### DVB-S2

Input Frequency 950-2150MHz  
Symbol Rate QPSK/8PSK/16APSK: 0.5~45 Msps  
32APSK:0.5~40 Msps  
Constellation QPSK/8PSK/16APSK/32APSK  
FEC QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9,9/10  
8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10  
16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10  
32APSK: 3/4, 4/5, 5/6, 8/9  
Max input bitrate per tuner ≤170 Mbps

#### DVB-S2X

Symbol Rate QPSK/8PSK/16APSK: 0.5~45 Msps;  
8APSK/32APSK: 0.5~40 Msps  
Constellation QPSK/8PSK/16APSK/8APSK/32APSK  
FEC QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10,  
13/45,9/20, 11/20  
8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10, 23/36, 25/36,  
13/18  
8APSK: 5/9-L, 26/45-L  
16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10,1/2-L, 8/15-L,  
5/9-L, 26/45, 3/5, 3/5-L, 28/45, 23/36, 2/3-L,  
25/36, 13/18, 7/9, 77/90  
32APSK: 3/4, 4/5, 5/6, 8/9, 2/3-L, 32/45, 11/15,  
7/9

Max input bitrate per tuner ≤170 Mbps  
Signal Strength -65 ~ -25dBm

#### Optional

##### DVB-C

Standard J.83A(DVB-C), J.83B, J.83C  
Frequency In 60~890MHz  
Constellation 16/32/64/128/256 QAM

##### DVB-T/T2

Frequency In 60~890MHz  
Bandwidth 6/7/8 M bandwidth

##### ISDB-T

Frequency In 60~890MHz

### Multiplexing

Maximum PID Remapping 255 input per channel  
PID remapping by automatically or manually  
Generate PSI/ SI table automatically  
Accurate PCR adjusting

### General RF Modulation

Connector F-Type, 75 Ω

#### DVB-C Mode

QAM Encoding EN300 429& ITU-T J.83 Annex A (DVB), Annex B  
QAM Channel 12 non-adjacent carriers output  
(maximum bandwidth 192MHz)  
MER ≥40db  
Bandwidth 6Mhz(Annex B) or 8 Mhz (Annex A)  
Symbol Rate 5.0Msps~7.0Msps, 1ksps stepping  
RF frequency 50~960MHz, 1KHz step  
QAM Constellations 16/32/64/128/256QAM (Annex A)  
64/256QAM(Annex B)  
RF output level -20~ +3dBm, 0.1db step

#### DVB-T Mode

Standard EN300744  
DVB-T channel 8 or 16 non-adjacent carriers output  
(maximum bandwidth 192MHz)  
FFT mode 2K, 4K, 8K  
Bandwidth 6Mhz, 7Mhz, 8Mhz  
Constellation QPSK, 16-QAM, 64-QAM  
Guard Interval 1/4, 1/8, 1/16, 1/32  
FEC 1/2, 2/3, 3/4, 5/6, 7/8  
MER ≥42 dB  
RF frequency 50~960MHz, 1KHz step  
RF output level -20~ +3dBm, 0.1db step

#### ATSC Mode

Standard ATSC A/53  
ATSC channel 8 non-adjacent carriers output  
(maximum bandwidth 192MHz)  
Bandwidth 6M  
Constellation 8VSB  
FEC RS(208 188)+Trellis  
MER ≥40dB  
ACL -55 dBc  
RF frequency 50~960MHz, 1KHz step  
RF output level -20~+3dbm (for all carriers), 0.5db stepping

**ISDB-T Mode**

Standard	ARIB STD-B31
ISDB-T channel	6 (or 16) non-adjacent carriers output (maximum bandwidth 192MHz)
Bandwidth	6M
Constellation	QPSK, 16QAM, 64QAM
Guard Interval	1/32, 1/16, 1/8, 1/4
Transmission Mode	2K, 4K, 8K
Code rate	1/2, 2/3, 3/4, 5/6, 7/8
MER	≥40dB
RF frequency	50~960MHz, 1KHz step
RF output level	-20~+3dbm, 0.1db stepping

**Stream output**

ASI Optional	1*ASI output as mirror of one of RF output carriers
DVB-C OUT	12*MPTS output over UDP and RTP/RTSP as mirror of 12*DVB-C carriers
ATSC OUT (Optional)	8*MPTS output over UDP and RTP/RTSP as mirror of 8 ATSC carriers

DVB-T OUT (Optional)	8/16 MPTS output over UDP and RTP/RTSP as mirror of 8/16 DVB-T carriers(Optional)
ISDB-T OUT (Optional)	6*MPTS output over UDP and RTP/RTSP as mirror of 6 ISDB-T carriers(Optional) 16*MPTS output over UDP and RTP/RTSP as mirror of 16 ISDB-T carriers(Optional)
1*1000M Base-T Ethernet interface, GE port	

**System function**

Web Network management  
Chinese/English language  
Ethernet software upgrade

**Environment**

Dimension(W×L×H)	482mm×328mm×44mm
Approx weight	8kg
Temperature	0~45℃(Operation); -20~80℃ (Storage)
Voltage range	AC 110V± 10%, 50/60Hz, AC 220 ± 10%, 50/60Hz