

# Q3

# DIBVISION | DIBSYS



## 8/16/24\* HDMI H.264 Encoder(Modulator)

DVB-C CABLE DVB-T TERRESTRIAL ISDB-T ATSC DTMB



Q3 This platform, with H.264 video encoding mode by default, supports MPTS/SPTS/ASI independent multiplexing output and IP out channel switch.

With PSI/SI technology to modify the audio and video PID information of the output program, Q3 also supports to insert a NIT information table into the WEB to achieve better compatibility with the backend device.

Q3 supports to edit program number and name of the output video stream, and the logical channel number setting is also added to the encoder.

Overall Dibsyes 's encoder modulators with OSD/Logo/QR code Insertion function, which perfectly suit any professional SD/HD Video company, including TV Channels, Live broadcasters, Government applications, Hotel, Campus, Entertainment facilities, education broadcasting systems at schools and government buildings and many others.

Many outstanding features are integrated into Q3, making it a very suitable platform for the CATV, IPTV, OTT projects.

### Key Features

- Distribute Up to 8/12/16/20/24 channels of HD content over RF (DVB-T/DVB-C/DTMB/ISDB-T/ATSC) to an unlimited number of TVs
- Optional DVB-C (QAM), DVB-T (COFDM), ATSC-T, ISDB-T, DTMB Modulation, 4\*Carrier RF Out, 8/16\*carrier RF out (option) (16/32\*carriers DVBC QAM output optional)
- In modulation Mode, support 128\*IP input
- Two separate ASI input for External TS Multiplexing
- Simultaneously MPTS and SPTS over UDP/RTP IP out
- Audio encoding: MPEG-1 Layer 2, **Optional: AAC-LC, AAC-HE v1, AAC-HE v2**
- Audio gain adjustment supported
- 4 separate multiplexing and Up-converter modulating adjacent carrier out
- Selectable the Value of PCR PID same as Video PID
- CBR mode supported
- Selectable LOGO,QR code,OSD insertion for every, All or Each module of local channel
- Support TTL editing
- LCN (Logical Channel Number) support
- PSI/SI editing & inserting
- PID Remapping & Filtering
- Support PCR correct and PCR interval adjusting
- Easy-to-Use System Management via Web
- passed the EU CE&RoHS certification

### Highlights

**Works both Coax Cable & IPTV networks:** Distribute MPEG-4 AVC encoding to all kinds of Modulation and All SPTS/ MPTS Over UDP IP out.

**Operation via LCD Screen and Web Management :** easy to read LCD color front panel that makes it easy to setup and monitor your channels, check firmware, and identify IP addresses without a computer.

**Multi-Modulation:** Optional DVB-C (QAM), DVB-T (COFDM), ATSC-T, ISDB-T, DTMB Modulation (can selectable in one device).

**Flexible selection of different input modules:** four tuner, four HDMI encoding in one device.

# TECHNICAL SPECIFICATIONS

## Encoder Part

### HDMI inputs

Numbers of Boards	4 HDMI ports per module Up to 6 Modules in Back panel
Numbers of Ports	8; 12; 16; 20; 24 Channels
HDMI	1.4a HDCP

### DVB-ASI inputs

Connector	BNC female, 75Ω
Signal Level	200-800mVp-p
Packet Length	188 bytes
Maximum bit-rate per port	≤100Mbps
Number of Input Ports	Dual separate ASI ports (4*RF ISDB-T version only support 1*ASI in)

### Video Processing

Encoding Format	MPEG 4 AVC/H.264	
	input	output
<b>Resolution</b>	1920 × 1080@60/59.94P	1920 × 1080@60P, 1280*720@60P 1920 × 1080@30P, 1280*720@30P 720*480@30p
	1920 × 1080@60i/59.94i	1920 × 1080@30P, 1280*720@30P 720*480@30p
	1920 × 1080@50P	1920 × 1080@50P, 1280*720@25P 720*576@25p
	1920 × 1080@50i	1920 × 1080@25P, 1280*720@25p 720*576@25p
	1280 × 720@60/59.94P	1280 × 720@60P, 1280*720@30P
	1280 × 720@50P	1280 × 720@50P, 1280*720@25P
	720 × 576@50i	720 × 576@25P
	720 × 480@60i	720 × 480@25P

Encoding	MPEG-4 AVC/H.264
Bit-rate	1Mbps~13Mbps
Rate Control	CBR
GOP Structure	IPPPP (P Frame adjustment, without B Frame )
Select to configure Logo, Caption and QR Coder in any Position of Video Picture	

### Audio Processing

Encoding	MPEG-1 Layer 2 Optional: AAC-LC, AAC-HE v1(SBR), AAC-HE v2(SBR+PS),
Sampling rate	48KHz
Resolution	24-bit
Bit-rate	64kbps, 128Kbps, 192kbps, 224kbps, 256kbps, 320kbps, 384K(mpeg-1 layer 2)
Audio Gain	0-255

### Multiplexing

Maximum PID Remapping	180 input per channel
PID remapping by automatically or manually	
PSI/SI	SDI/PMT/TOT/PAT/BAT/CAT/TDT/NIT Accurate PCR adjusting
Max Numbers	7 Group 4 RF output (4 RF can Separate mux) in modulation mode 1 IP (MPTS) out ( Separate modulation channels or MTPS channels mux out)

### Stream Output

DVB-ASI	2 Separate ASI (Select from modulation Channels or MPTS channel) 75Ω, BNC, 188Bytes MPEG TS over DVB-ASI (EN 50083-9)
RJ45 Port	100/1000M GbE Port Simultaneous output with N*SPTS (from HDMI channels) and 1*MPTS ( modulation or MPTS channels)
<b>(Note: In modulation, 4RF support 1MPTS&amp;128SPTS / 8RF support 8MPTS&amp;512SPTS)</b>	
MPEG TS over UDP, unicast, and multicast streaming MPEG TS over RTP/RTSP Configurable packet size(2-7)x188Bytes Filter Null Packet	
Total Bitrate	1-200Mbps (Should be More than Encoding bitrate)

## Modulation Part

Connector	1 Port, F-Type, 75
Output Return Loss	14 dB
MER	≥40dB
RF output level	-24 ~ 0dbm, 1db step
RF frequency	50 ~ 960Mhz, 1KHz step
separate control	Frequency difference range (0-40M)
Numbers of RF Channel	4, 8/16(optional), 32(optional,only for DVBC)
Modulation Mode	4/16/32*DVB-C, 4/8/16*DVB-T, 4/8/16*ATSC, 4/8/16* ISDB-T, 4/8/16*DTMB

### DVB-T Standard

EN300744	
FFT mode	2K, 8K (4 RF mode only support 2K)
Bandwidth	6M, 7M, 8M
Constellation	QPSK, 16QAM, 64QAM
Guard Interval	1/4, 1/8, 1/16, 1/32
FEC	1/2, 2/3, 3/4, 5/6, 7/8

### DVB-C Standard

J83.A (DVB-C, J83.B, J83.C)

Carrier	ANNEX A	Annex B	Annex C	
Constellation (QAM)	16,32,64,128, 256	64	256	64/256
Bandwidth (Mhz)	8	6	6	6
Symbol Rate ( Mbaud)	5-7	5.057	5.361	4.2-5.3

### ISDB-T Standard

ARIB STD-B31	
Constellation	DQPSK, QPSK, 16QAM, 64QAM
Guard Interval	1/32, 1/16, 1/8, 1/4
Transmission Mode	2K, 4K, 8K (4 RF mode only support 2K)
Guard Interval	1/32, 1/16, 1/8, 1/4
Code rate	1/2, 3/4, 5/6, 7/8
BandWidth	6Mhz

### ATSC Standard

ATSC A/53	
Constellation	8 VSB

### DTMB Standard

GB20600-2006	
Constellation	4QAM, 16QAM, 32QAM, 64QAM
Code rate	0.4, 0.6, 0.8
Guard Interval	420, 595, 945

### System

Local interface	LCD + control buttons
Remote management	Web/NMS
NMS interface	RJ45, 100M
Language	English

### Environment

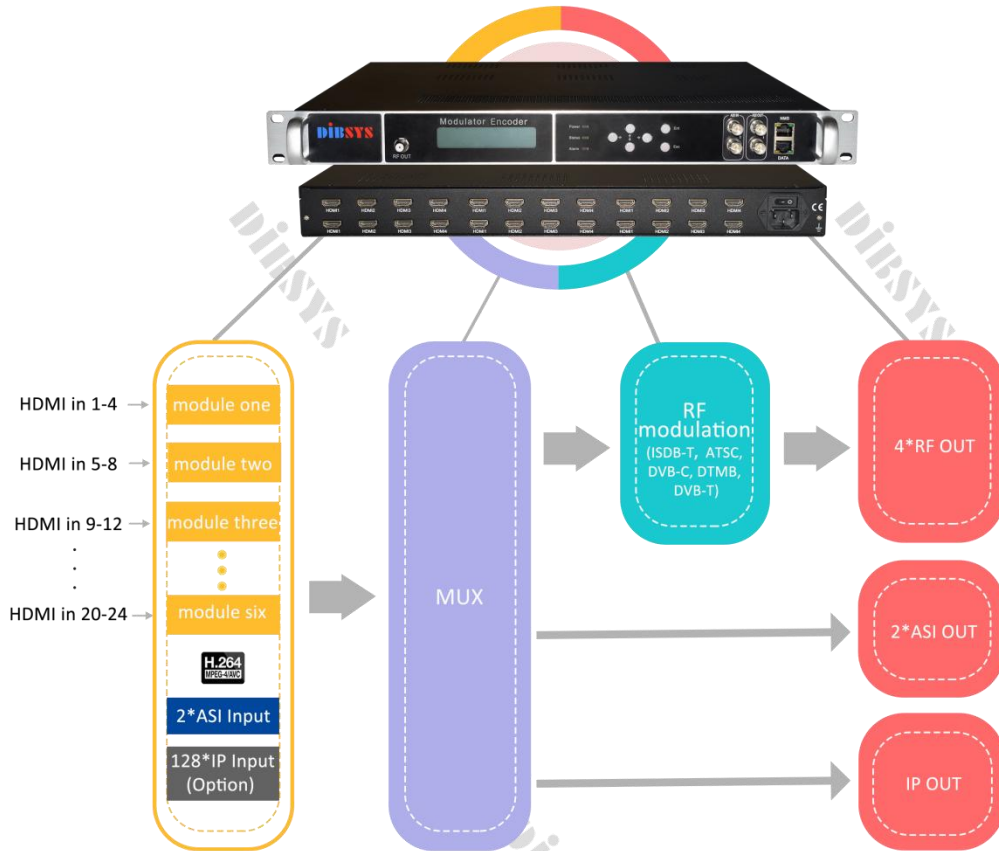
Voltage range	100 to 240V AC; 50/60Hz
Power consumption	60W
Operation Temperature	0 ~ 45℃
Storage Temperature	-20 ~ 80℃
Dimensions	482mm (L) * 380mm (W) * 44mm (H)
Weight	4.5 kg

### Typical Order Information

Model	HDMI	Modulation	IP out
Q304	4	Null	512*SPTS&8*MPTS
Q308	8	Null	
Q312	12	Null	
Q316	16	Null	
Q324	24	Null	
Q304M	4	QAM; ATSC; DVB-T; ISDB; DTMB	4RF support 1MPTS and 128SPTS;
Q308M	8	QAM; ATSC; DVB-T; ISDB; DTMB	8/16RF (32QAM) support 8MPTS and 512 SPTS
Q312M	12	QAM; ATSC; DVB-T; ISDB; DTMB	
Q316M	16	QAM; DVB-T; DTMB	

**Application**

- Distribute IP source 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
- Low cost Digital TV distribution



**Product Information**

Product category	Product Model	Detail Description	Application
Similar HD Modulator	Carrier 8Ch HDMI H.264 Modulator-1080P@60fps <b>EMI3381</b>	1*ASI Mux and 8/4 Ch HDMI H.264 1080p/1080i/720p/480i/ (576i/1080i->576,480i Downscale convert)@50/60/59.94 fps; MPEG1 L2 Audio; 4*DVB-C/4*ATSC/2*DVB-T/2*ISDB-T/8* SPTS UDP and 2*ASI out	--Distribute HD to Coax & IP TV; --Hotel, Campus
Similar HD Modulator	PREMIUM 4Ch HDMI/AV/YPbPr MPEG-2/AVC HD Encoder Modulator <b>EMI3440</b>	1*ASI Mux and 4 Ch HDMI/YPbPr/AV MPEG2/H.264 1080p/1080i/720p/480i@50/60/59.94 fps; MPEG1 L2/AAC/AC3; 4*DVB-C/4*ATSC/2*DVB-T/2*ISDB-T/4* SPTS udp and 2*ASI out	--Distribute MPEG-2 HD to Coax&IP TV; --DVB/ATSC off air --Hotel,Campus
Related products	4Channel Digital TV Transmodulator <b>QAM6248Plus</b>	12*FTA DVB-S2 or 12*FTA DVB-T2 or 8*FTA DVB-S2+4 *FTA T2 or 4*FTA DVB-S2+8*FTA DVB-T2 and 128*IP in; 4*DVB-T or 4*DVB-C (Scrambling,Annex A/B)/ 4*MPTS over UDP/RTP out	--Small Digital Cable TV System; --DVB-S2 To DVB-C/T Converter; --Upgrade Analog to Digital TV --Hotel, Campus
Related products	16 FTA dvbs2/IP QAM Transmodulator <b>IPQ6250S</b>	16*DVB-S2 FTA/512*IP Input, 16*DVB-C (Scrambling, Annex A/B/C) /MPTS over UDP/RTP out	
Related products	8/12/24Ch AV MPEG2 Digital TV Modulator <b>MSM620</b>	128*IP and 8/12/24 Ch AV MPEG2 SD@50/60 fps; 4*DVB-C/4*DVB-T/4*MPTS over UDP/RTP out	