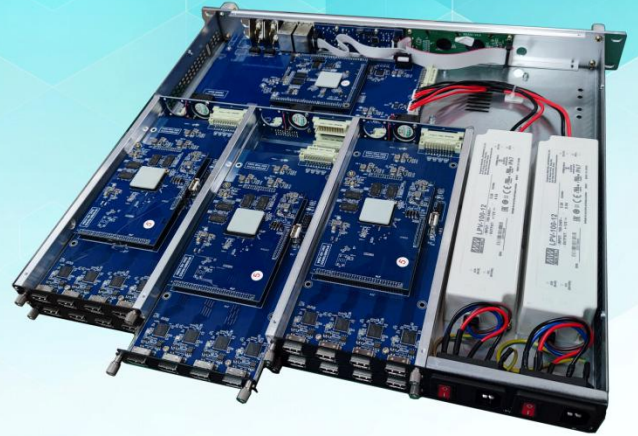


# Q9

# DIBVISION | DIBSYS

## Pluggable Multi-Channel 1080P60FPS/AAC H.264 H.265 Encoder Modulator

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



Q9 video platform, digital systems demand powerful, flexible, multipurpose video processing and compact solutions that allow the service provider to support new network architectures.

This 1RU case comes with 6 independent hot-swappable module slots, each module can be configured individually based on the applications including encoding, modulating processing and the combination of all these functions. Built in modulation board, Q9 support DVB-C (QAM), DVB-T (COFDM), ATSC-T, ISDB-T, DTMB Modulation.

Its pluggable and Hot-swappable module, flexible configuration is making it extremely scalable, reliable with high performance. Q9 is an efficient, low-cost digital TV headend device, which can be used in public place such as metro, market hall, theatre, hotels, resorts for advertising. It also can be used for monitoring, training and educating in company, campus, hospital.

### Focusing on benefits

#### high PCR precision

- audio and video synchronization
- code stream transmitting stably in the network
- smooth and stable video play

#### Low network jitter and PCR jitter

- up to 8\*MPTS with null packets
- each MPTS is less than 100Mbps
- can be used in 100Mbps network environment

#### powerful stream processing capability

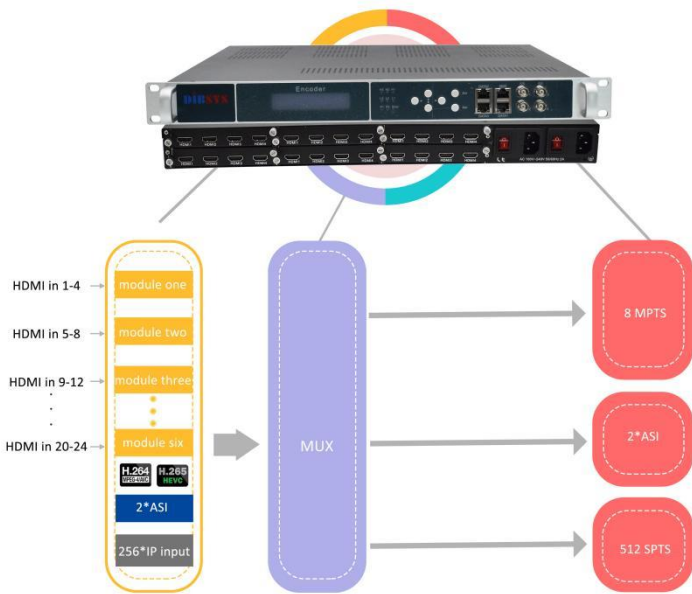
- Highly integrated--- ①24 channels HDMI encoding, ②up to 8\*MPTS build in MUX, ③512 \*SPTS Demux outputs
- Widely used in convert MPTS of DTV to SPTS of IPTV
- PID filtering, re-mapping and PSI/SI rebuilding and editing supported

**Key Features**

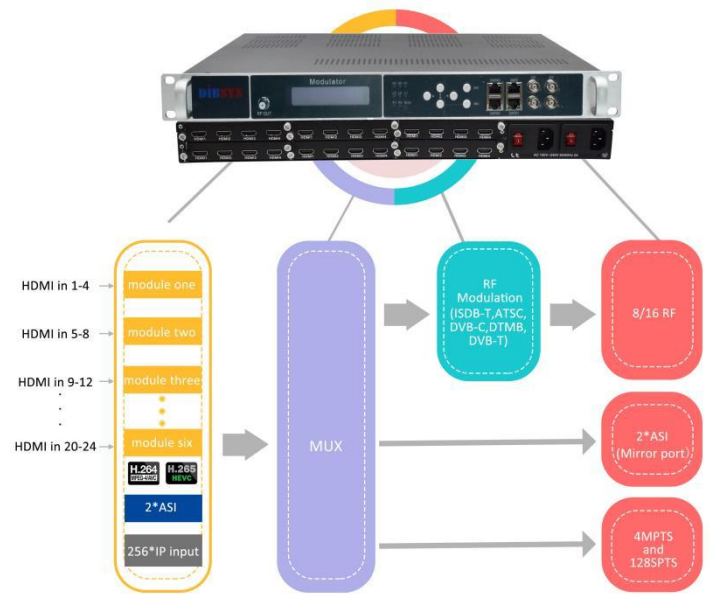
- 6 independent hot-swappable module, 4\* HD-MI per module
- flexible encoding&modulating board combination
- Optional DVB-C (QAM), DVB-T (COFDM), ATSC-T, ISDB-T, DTMB Modulation, 8/16 Carrier RF Out per port
- H.264/H.265 video encoding
- Two separate ASI input for External TS Multiplexing
- Simultaneously 4\*MPTS and 512\*SPTS over UDP/RTP IP out in modulation mode
- Simultaneously 8\*MPTS and 512\*SPTS over UDP/RTP IP out in encoder mode
- 8/16 separate multiplexing and Up-converter modulating adjacent carrier out
- support multiplexing function: multiplex any input to RF or MPTS output

- Audio encoding: MPEG-1 Layer 2, AAC-LC, AAC-HE v1(SBR), AAC-HE v2(SBR+PS), AC3 (H.265 version)
- Selectable the Value of PCR PID same as Video PID
- Non adjacent-frequency supported
- Support TTL editing
- PSI/SI editing & inserting
- PID Remapping & Filtering
- Selectable LOGO,QR code,OSD insertion for every, All or Each module of local channel
- Support PCR correct and PCR interval adjusting
- Easy-to-Use System Management via Web
- Redundancy Power Supply
- dual power supply
- Remote WEB reboot supported

**Encoder version**



**Encoder Modulator version**



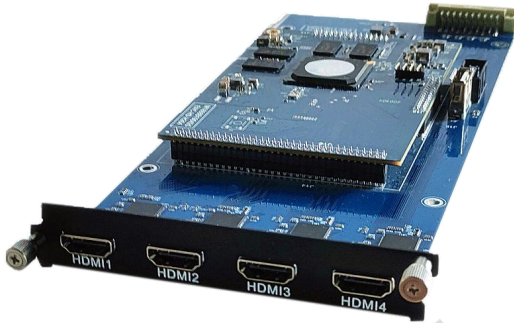
**independent hot-swappable Model Q9 series compare with Q3 series**

Model	Chassis	Power	Encoding format	Audio format	DATA port	TS IN/OUT	ASI IN/OUT	RF channels
<b>Q3</b>	Non Pluggable	Single power	H.264	MPEG-1 Layer 2, HE-AAC, LC-AAC	1*GBE	128*SPTS/MPTS input 4*MPTS + 512*SPTS output	2*in/2*out	None
<b>Q9</b>	Pluggable	Dual power	H.264 H.264/H.265 (optional)	MPEG-1 Layer 2, HE-AAC, LC-AAC AC3(only H.265 version)	3*GBE	256*SPTS/MPTS input 8*MPTS + 512*SPTS output	2*in/2*out	None
<b>Q3M</b>	Non Pluggable	Single power	H.264	MPEG-1 Layer 2, HE-AAC, LC-AAC	1*GBE	128*SPTS/MPTS input 1*MPTS + 512*SPTS output	2*in/2*out	4/8*RF
<b>Q9M</b>	Pluggable	Dual power	H.264 H.264/H.265 (optional)	MPEG-1 Layer 2, HE-AAC, LC-AAC AC3(only H.265 version)	3*GBE	256*SPTS/MPTS input 4*MPTS + 512*SPTS output	2*in/2*out	8/16*RF 32*RF for DVB-C optional

# TECHNICAL SPECIFICATIONS

## Independent hot-swappable module

### HD-MI H.264/H.265(optional) encode Module



Numbers of Boards 4 HD-MI ports per module  
Up to 6 independent hot-swappable module

Numbers of Ports 8; 12; 16; 20; 24 Channels

Encoding Format	HEVC/H.265, H.264	
Resolution	input	output
	1920×1080@60/59.94P	1920×1080@60P, 1280*720@60P 1920×1080@30P, 1280*720@30P
	1920×1080@60i/59.94i	1920×1080@30P, 1280*720@30P
	1920×1080@50P	1920×1080@50P, 1280*720@25P
	1920×1080@50i	1920×1080@25P, 1280*720@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 format MPEG-4 AVC/H.264  
H.264/H.265 (optional)

### Video Processing

Bit-rate 1Mbps~13Mbps  
Rate Control CBR  
Select to configure Logo, Caption and QR Coder in any Position of Video Picture (only for HD-MI inputs)

### Audio Processing

Encoding MPEG-1 Layer 2  
AAC-LC, AAC-HE v1(SBR),  
AAC-HE v2(SBR+PS)  
AC3 (H.265 version)

Sampling rate 48KHz  
Resolution 24-bit  
Bit-rate 64kbps, 128Kbps, 192kbps, 224kbps,  
256kbps, 320kbps, 384kbps

Audio Gain 0-255

## Built in Modulation module

Connector 1 Port, F-Type, 75  
Output Return Loss 14 dB  
MER ≥40dB  
RF output level -35 ~ -5dbm, 1db step  
RF frequency 50 ~ 960Mhz, 1KHz step  
separate control Frequency difference range (0-40M)

Numbers of RF Channel 8 carrier by default, 16 carrier Max.  
Modulation Mode DVB-C, DVB-T, ATSC, ISDB-T, DTMB

**DVB-T Standard** EN300744  
FFT mode 2K, 8K  
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(this mode do not support SPTS out)  
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

### Stream Input/Output

#### DVB-ASI outputs

2 Separate ASI (Select from modulation Channels or MPTS channel)  
75Ω, BNC, 188Bytes  
MPEG TS over DVB-ASI (EN 50083-9)  
1-200Mbps

Total Bitrate

#### DVB-ASI inputs

Connector 2\*BNC female, 75Ω  
Number of Input Ports Dual separate ASI ports  
Signal Level 200-800mVp-p  
Packet Length 188 bytes  
Maximum bit-rate per port ≤100Mbps

#### IP inputs/outputs

Number of port 3\*100/1000M GbE Port  
2\*RJ45 port (input) 128\*IP for each port  
1\*RJ45 port (output) simultaneously 4\*MPTS and 512\*SPTS  
Over UDP/RTP IP out in modulation mode simultaneously 8\*MPTS and 512\*SPTS over UDP/RTP IP out in encoder mode  
MPEG TS over UDP, unicast, and multicast streaming  
MPEG TS over RTP/RTSP  
Configurable packet size(2-7)x188Bytes  
Filter Null Packet

### Multiplexing

Maximum EIT Remapping 180 input per channel  
EIT remapping by automatically or manually  
PSI/SI SDT/PMT/TOT/PAT/BAT/CAT/TDT/NIT  
Accurate PCR adjusting

### 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°C  
Storage Temperature -20 ~ 80°C  
Dimensions 482mm (L) \* 380mm (W) \* 44mm (H)  
Weight 4.5 kg