

iQ2

DIBVISION | DIBSYS

Multi-Channel IPTV Network Device tuner and HDMI/CVBS content to RF Encoder Modulator

DVB-C DVB-T2 ISDB-T ATSC DTMB

UDP/RTP/RTMP/HTTP/RTSP/HLS/SRT



iQ2 is a flexible encoding&modulating board combination of IPTV Network Device, this AV/HDMI/RF to RF EncoderModulators headend units are an ideal product to create your own digital TV channels over existing coax. The channel sources from any RF tuner (FTA or encrypted channels), AV and HDMI devices can be easily distributed to all your televisions quickly and efficiently, and the best quality SD/HD picture allows you to broadcast any AV/HDMI/RF device into your RF modulated channel at the lowest cost per channel.

iQ2 is an all-in-one device integrated encoding (MPEG-2/ H.264 /H.265), multiplexing and modulation functions in one standard 1 Ru case. It has total 6 module, each module can support 4 tuner or 4 AV/ HDMI input. In a word, it can convert AV/HDMI and RF signals input to RF out. It is also equipped with ASI ports to input and output, and IP port to output TS. IP output supports UDP/RTP protocol (MPTS/STPS), and supports IP outputs over **RTMP/HTTP/RTSP/HLS/SRT protocol**.

iQ2 is an efficient, low-cost digital TV headend device, which can be used for all kinds of digital TV transmission systems

Key Features

- Distribute **FTA or encrypted Tuners**, SD or HD content over RF to an unlimited number of TVs
- flexible encoding&modulating board combination
- Selectable DVB-S2/S2X, ISDB-T, DVB-C, DVB-T/T2, DTMB, ATSC free to air Tuners inputs
- Optional DVB-C (QAM), DVB-T (COFDM), ATSC-T, ISDB-T, DTMB Modulation, 8/16*carrier RF out (option) (16/32*carriers DVBC QAM output optional)
- MPEG-2 encoding supported in AV input
- H.264/H.265 (optional) encoding supported in HDMI input
- Two separate ASI input for External TS Multiplexing
- **DATA1**:IP output over RTMP/HTTP/RTSP/HLS/SRT protocol,when RTMP/RTSP/HTTP/HLS out,H264+AAC(LC),TS bitrate is 4.5Mbps,out about 36 channels;When SRT out,H264+AAC(LC),TS bitrate is 2.5Mbps,out about 32 channels.
- **DATA2**: Simultaneously 5*MPTS and 512*SPTS over UDP/RTP IP out
- **DATA3**: 128 IP address inputs
- Selectable the Value of PCR PID same as Video PID
- LCN (Logical Channel Number) support
- support DVB-T2 Multi PLP select
- DVB-S2 support receive T2MI stream and PLS value setting
- 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 (encoding)
- Support PCR correct and PCR interval adjusting
- Easy-to-Use System Management via Web

TECHNICAL SPECIFICATIONS

Tuners Inputs Part

FTA Tuner Module



Numbers of Boards	4 Tuners ports per module Up to 6 Modules in Back panel
Numbers of Ports	8; 12; 16; 20; 24 Channels
Tuner Types	DVB-S2/S2X, ISDB-T, DVB-C, DVB-T/T2, DTMB, ATSC
Connector	F-female type

CI Module



Numbers of Boards	2 Tuners ports per module Up to 6 Modules in Back panel
Numbers of Ports	2, 4, 6, 8, 10, 12 Channels
Tuner Types	DVB-S2/S2X, ISDB-T, DVB-C, DVB-T/T2, DTMB, ATSC
Connector	F-female type

DVB-S/S2/S2X Tuners

Input Frequency	950-2150Mhz
Symbol rate	1~54 MSps (DVB-S QPSK) 1~60 MSps (DVB-S2 QPSK) 1~60 MSps (8PSK) 1~58 MSps (DVB-S2 16APSK) 1~55 MSps (DVB-S2 32APSK) 1~34 MSps (DVB-S2 64APSK)
Signal Strength	-65 ~ -25dBm
FEC Demodulation	1/2, 2/3, 3/4, 5/6, 7/8(DVB-S QPSK) 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 (DVB-2 QPSK/8PSK)
Roll Off	0.35 for DVB-S 0.15 to 0.35 for DVB-S2 0.05 to 0.35 for DVB-S2X
Demodulation Mode	DVB-S QPSK: 1/2, 2/3, 3/4, 5/6, 7/8 DVB-S2 QPSK: 1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 DVB-S2 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 DVB-S2 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 DVB-S2 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10 DVB-S2X 64APSK: 11/15, 7/9, 4/5, 5/6
LNB Polarity Selection Vol	0, 13V, 18V Selectable
LNB Band Selection Tone	0/22Khz Selectable
Input Impedance	75 Ω
FEC (Code Rate)	1/2, 2/3, 3/4, 5/6, 7/8
Satellite Selection	Command DiSEqC 1.0

ATSC Tuners

Frequency range	50 - 860 MHz
Key reference specification	ATSC A/53
Input level	-34 to +40 dBmV
Constellation	8-VSB
Bandwidth	6Mhz

DVB-C Tuner Input

Connector Type	8*F type female 75Ω for Input
Input Frequency Range	51 ~ 862MHz
Input Level	51 ~ 75dBμV
Symbol Rate	1 ~ 7MBaud (ITU J.83 Annex A, B, C)
Constellation	16QAM, 32QAM, 64QAM, 128QAM, 256QAM
Bandwidth	6MHz, 7MHz, 8MHz
Input Return Loss	7dB (typ.)

DTMB Tuner Input

Connector Type	8*F type female 75Ω for Input
Input Frequency Range	46.5 ~ 866MHz
Input Level	-87 ~ -29dBm
Symbol Rate	7.56MBaud
Bandwidth	6MHz, 7MHz, 8MHz
Constellation	4QAM-NR, 4QAM, 16QAM, 32QAM, 64QAM
Guard Interval	PN420, PN595, PN945
Roll-off Factor	0.05
Interleaving Depth	240, 720
FEC Code Rate	0.4, 0.6, 0.8

DVB-T/T2 Tuners

Frequency Range	30MHz-1000Mhz
Bandwidth	6MHz, 7MHz, 8MHz
Level	-87 ~ -20dBm

Constellation	QPSK, 16QAM, 64QAM
FEC Demodulation	DVB-T: 1/2, 2/3, 3/4, 5/6, 7/8, DVB-T2: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6
Guard Interval	DVB-T: 1/4, 1/8, 1/16, 1/32, DVB-T2: 1/4, 5/32, 1/8, 5/64, 1/16, 1/32, 1/64, 1/128

ISDB-T Tuners

Input frequency range	30 ~ 900MHz
Bandwidth	6MHz
Constellation	DQPSK, QPSK, 16QAM, 64QAM
Interleave	0, 4, 8, 16
Guard Interval	1/32, 1/16, 1/8, 1/4
Transmission Mode	2K, 4K, 8K (FFT)
FEC (Code Rate)	1/2, 2/3, 3/4, 5/6, 7/8

Encoder Inputs Part

HDMI H.264/H.265(optional) encode Module



Numbers of Boards	4 HDMI ports per module Up to 6 Modules in Back panel
Numbers of Ports	8; 12; 16; 20; 24 Channels NOTE: Up to 24 channels in FTA tuner / encoder inputs
Input Resolution	1920×1080@60P, 1920×1080@60i, 1920×1080@50P, 1920×1080@50i, 1920x1080@59.94P, 1920x1080@59.94i, 1920×1080@30P, 1280×720@60P, 1280×720@50P 720×576@50i, 720×480@60i
Output Resolution	19201080P@60P, 1920×1080@30P, 1920×1080@50P, 1920×1080@25P 1920x1080@59.94P, 1920x1080@29.97P 1280x720@60P, 1280x720@50P 720×576@25P, 720×480@30P
Encoding format	MPEG-4 AVC/H.264 H.264/H.265 (optional)
GOP Structure	IPPPP (P Frame adjustment, without B Frame)

AV MPEG-2 encode Module



Input Resolution	720*576i / 720*480i (PAL/NTSC)
Output Resolution	720*576 / 720*480 (PAL/NTSC) 544*576 / 544*480 (PAL/NTSC) 480*576 / 480*480 (PAL/NTSC) 352*576 / 352*480 (PAL/NTSC) 352*288 / 352*240 (PAL/NTSC) 176*144 / 176*112 (PAL/NTSC)
Encoding format	MPEG-2
GOP Structure	IBBP, IIIII, IPPPP, IBPBP

Input Resolution	720*576i / 720*480i (PAL/NTSC)
Output Resolution	720*576 / 720*480 (PAL/NTSC) 544*576 / 544*480 (PAL/NTSC) 480*576 / 480*480 (PAL/NTSC) 352*576 / 352*480 (PAL/NTSC) 352*288 / 352*240 (PAL/NTSC) 176*144 / 176*112 (PAL/NTSC)

Encoding format	MPEG-2
GOP Structure	IBBP, IIIII, IPPPP, IBPBP

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 HDMI inputs)	

Audio Processing

Encoding	MPEG-1 Layer 2
Sampling rate	48KHz
Resolution	24-bit
Bit-rate	64kbps, 128kbps, 192kbps, 224kbps, 256kbps, 320kbps, 384kbps
Audio Gain	0-255

Modulation Outputs Part

Modulation Module



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
 Numbers of RF Channel 8/16(optional), 32(optional,only for DVBC)
 Modulation Mode 16/32*DVB-C, 8/16*DVB-T, 8/16*ATSC, 8/16* ISDB-T, 8/16*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

Application

- Advertising, monitoring, training and educating
- Upgrade all your analog Head-ends to digital TV Solution
- Enterprise, Hotel, campus, hospital, Public Place
- Low cost Digital TV distribution

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

DVB-ASI inputs
 Connector 2*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

IP inputs
 DATA3 128*IP (UDP/RTP) Input

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

IP outputs
 DATA1 IP output over RTMP/HTTP/RTSP/HLS/SRT protocol
 DATA2 5*MPTS and 512*SPTS over UDP/RTP IP out

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
 Max Numbers 5 MPTS supported

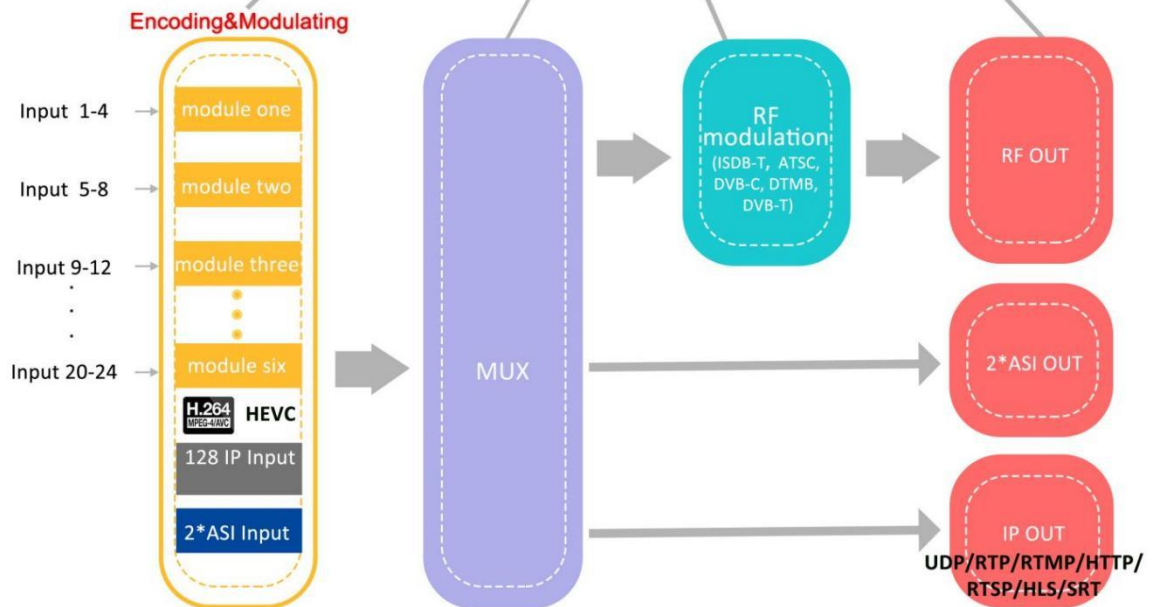
System
 Local interface LCD + control buttons
 Remote management Web/NMS
 NMS interface RJ45, 100M
 Language English

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

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