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Q4

IP to RF Modulator

optional DVB-C/DVB-T/ISDB-T/ATSC/DTMB

Q4 IP to RF modulator, with ASI input, optional modulation (DVB-C, DVB-T, ATSC, ISDB-T, DTMB) to convert Video/Audio signals into RF over exist Coax Cable distribution. It provides a best-of-class modulator platform for Digital TV Owners and IPTV operators.

The platform can change the modulation signal by software upgrade, this flexible operation can help to reduce the cost in the operation of the project. Q4 supports modulation channel independent multiplexing, with DVB-T, ISDB-T, DVB-C, ATSC, DTMB modulation output, and can output different modulation signals.

By using PSI/SI technology, inserting NIT information table in WEB, Q4 series increased compatibility with terminal products in cable TV application.

This is an ideal solution used largely to Hotel, entertainment facilities, education broadcasting systems at schools and government buildings or IP Source signals convert to Cable TV broadcast environments.

Key Features

- High density, high quality, high performance, high flexibility
- Optional DVB-C (QAM), DVB-T (COFDM), ATSC-T, ISDB-T, DTMB Modulation, 8/16/24*Carrier RF Out
- supports 384*IP (SPTS/MPTS) inputs over 3*GbE Port
- 6 separate ASI input
- 8*MPTS (6*MPTS and 2*RF pass through) out over GE1
- 8/16/24 Channel Non-adjacent Carrier RF output
- **Supports non-adjacent frequencies in the whole frequency range, and solves a small number of isolated frequency points**
- Agile full-band: 96 ~ 864Mhz
- Selectable the Value of PCR PID same as Video PID
- LCN (Logical Channel Number) support
- PSI/SI editing & inserting
- PID Remapping & Filtering
- Support TTL editing
- PCR correct and PCR interval adjusting
- Superior Shoulders and Excellent modulation quality MER
- Low power consumption and high reliability with MTBF(Mean Time Between Failure) ≦87600 Hours
- Easy-to-Use System Management via Web
- passed the EU CE&RoHS certification

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

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TECHNICAL SPECIFICATIONS

IP Interfaces

Types	3* Gigabit Ethernet
Connector	providing 1000Base-T (twisted pair, RJ-45)
IP Encapsulation	MPEG-TS over UDP/RTP IP
I/O Speed (1Gbe ports)	840 Mbps per port

IP Input

Addressing & Protocols	Unicast,Multicast(IGMP V2/V3)
MPEG Format	188/204 Bytes per TS packet
Maxinumber of services	384*IP over 3*GBE
Transport stream	reception of MPTS and SPTS

IP Output

Maxinumber of services	8*MPTS (6*MPTS and 2*RF pass through)
TS out	GbE
Packet Length	1-7
MPEG Format	188 Bytes per TS packet
Null Packet Processing	Filtering & Insertion

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	6 separate ASI ports

Stream Output

RJ45 Port	100/1000M GbE Port MPEG TS over UDP, unicast, and multicast streaming MPEG TS over RTP/RTSP Configurable packet size(2-7)x188Bytes Filter Null Packet

Modulation Part

Connector	1 RF Port , F-Type, 75Ω
Output Return Loss	14 dB
MER	≥40dB
Default RF out level (8/16/32 Carrier)	-35 ~ -5dbm
High RF out level (16/32 Carrier)	-35 ~ 5dbm
RF frequency	96~ 864Mhz, 1KHz step
separate control	Frequency difference range (0 ~768M)
Numbers of RF Channel	8/16/24*Carrier RF Out, 16/32 Carrier DVB-C
Modulation Mode	DVB-C, DVB-T, ATSC, ISDB-T, DTMB

DVB-T Standard EN300744

FFT mode	2K, 4K, 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
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

Multiplexing

Maximum PID Remapping	180 input per channel
PID 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℃
Storage Temperature	-20 ~ 80℃
Dimensions	482mm (L) * 380mm (W) * 44mm (H)
Weight	4.5 kg

Principle Chart