



## INTRODUCTION

The most powerful video headend packed in 4 RU! Perfect for hotels, schools, hospitals, and MDUs yet flexible and feature rich to meet the needs of professional and commercial CATV and IPTV systems.

## POWERFUL & COMPACT

With up to 16 hot-swappable modules, the OmniHub makes it easy to support high-density delivery requirements including receiving, descrambling, encoding, multiplexing and modulating.

## RELIABLE & ENVIRONMENT FRIENDLY

OmniHub has module level redundancy and service level monitoring. Combine this with dual power supplies, and you are ready for 24/7 non-stop operation. With this condensed form factor and low power consumption, OmniHub saves more space while lowering operating costs for years to come.

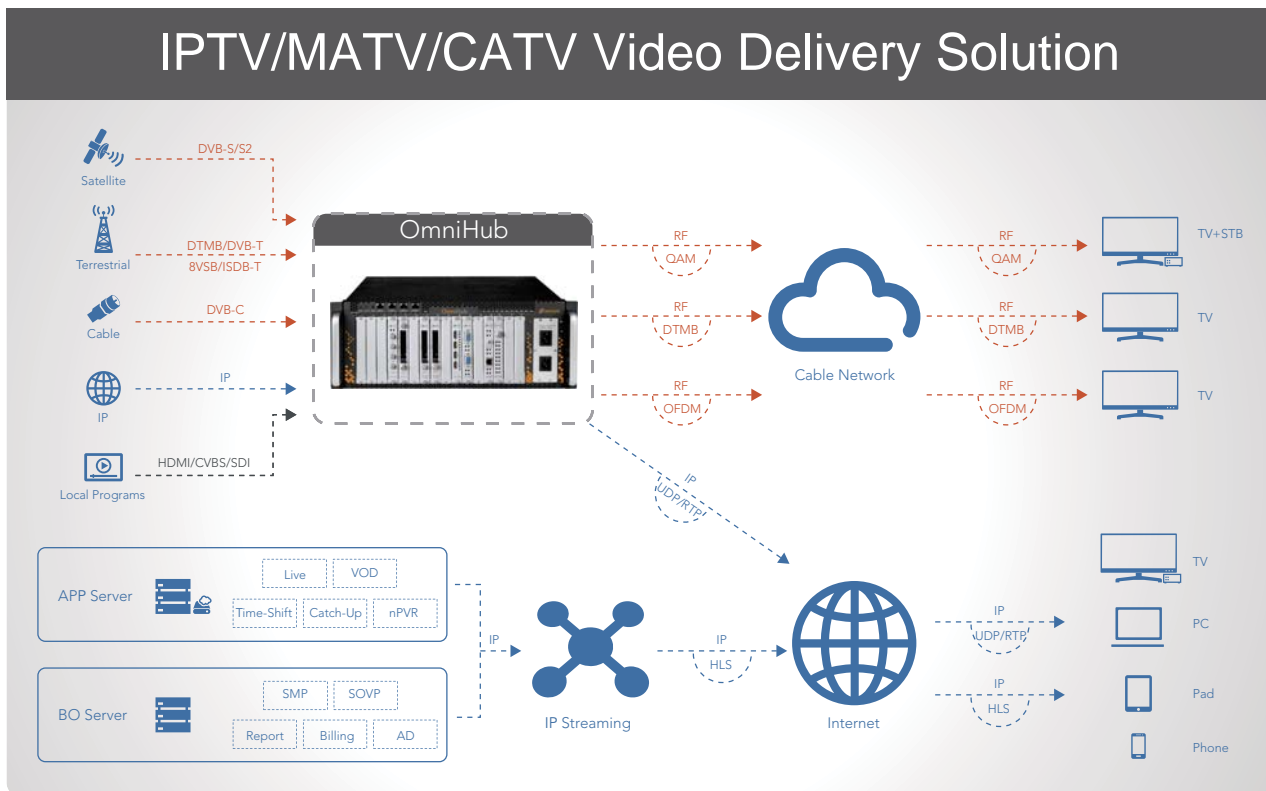
## FEATURES

- Dense design: 4 RU with up to 16 functional modules
- Service level multiplexing
- PSI/SI analysis and regeneration
- Web-based configuration
- Flexible and scalable
- Low noise design
- Up to 64 frequencies receiving, DVB-C/DTMB/ DVB-S/S2/DVB-T/T2/8VSB/ISDB-T
- Up to 64 channels HD encoding (via HDMI inputs)
- Up to 96 channels SD encoding (via CVBS inputs)
- Up to 256 QAM modulated frequency outputs

## RELIABILITY FEATURES

- Hot-swappable modules
- Service level monitoring
- Dual redundant power supplies
- Low power consumption and high reliability with MTBF (Mean Time Between Failure)  $\geq 100,000$  hours

## SOLUTION



OmniHub is the perfect choice for MATV/CATV/IPTV systems that require cost-effective distribution and centralized processing. The above example displays the following:

OmniHub receives signals from DVB-C/T/T2/S/S2, ISDB-T, 8VSB, DTMB, IP or baseband content, descrambles encrypted programs utilizing embedded CIs. The programs are then encoded, multiplexed into new streams and modulated to QAM/OFDM/ISDB-T/DTMB frequencies. The output frequencies are then easily delivered through traditional coaxial cable network or RJ45 outputs to an IP network. The IP output supports streaming content via UDP/RTP to Internet/Intranet. This allows operators the ability to deliver content to users' PC/TV or mobile devices. All of this in 4 RU, saving your space and operating costs. What's more, OmniHub seamlessly integrates with existing or third-party devices/systems (VOD, ad insertion or billing systems) offering a complete solution in less space and less operating expense.

Chassis	
16 hot-swappable slots	
Dual redundant power supplies	
Service level multiplexing	
4 x Gigabit RJ45 (embedded) :	
<ul style="list-style-type: none"> <li>• MPEG TS over UDP/RTP multicast/unicast</li> <li>• SPTS/MPTS</li> <li>• Max. 128-CH inputs and 128-CH outputs</li> </ul>	

Physical & Environment	
Input Voltage	90~240VAC
Power	350W
Chassis Dimension	480mm x 177mm x 345mm (W x H x D), 4RU
Operating Temperature	0°C~50°C
Storage Temperature	-10°C~70°C
Operating Humidity	<95%
MTBF	≥100,000 hours

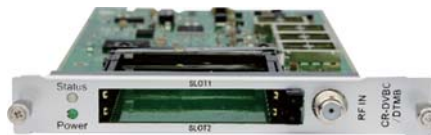
## SPECIFICATIONS



DVB-C/DTMB Receiver Module

DVB-C	
Input	4 channels via 1 RF female connector
CI	2 x PCMCIA CI slots
CAM	Descrambled channel quantity depends on CAM capability, 2 CAMs could be different
QAM Mode	Annex A/C
Frequency Range	47~862MHz
Bandwidth	6/7/8MHz
Constellation	16QAM/32QAM/64QAM/128QAM/256QAM
Symbol Rate	3.6~6.952Ms/s
Signal Level	40~80dBuV
CA System	Supports mainstream CAS

DTMB	
Input	4 channels via 1 RF female connector
CI	2 x PCMCIA CI slots
CAM	Descrambled channel quantity depends on CAM capability, 2 CAMs could be different
Modulation Mode	TDS-OFDM
Frequency Range	47~862MHz
Constellation	4QAM-NR/4QAM/16QAM/32QAM/64QAM
Signal Level	-65~-25dBm
CA System	Supports mainstream CAS



DVBC Annex B/ISDB-T Receiver Module

DVBC Annex B	
Input	4 channels via 1 RF female connector
CI	2 x PCMCIA CI slots
CAM	Descrambled channel quantity depends on CAM capability, 2 CAMs could be different
QAM Mode	Annex B
Frequency Range	47~862MHz
Bandwidth	6MHz
Constellation	64QAM, 256QAM
Symbol Rate	5.057Ms/s (64QAM) 5.360Ms/s (256QAM)
Signal Level	40~80dBuV
CA System	Supports mainstream CAS

ISDB-T	
Input	4 channels via 1 RF female connector
CI	2 x PCMCIA CI slots
CAM	Descrambled channel quantity depends on CAM capability, 2 CAMs could be different
Frequency Range	47~862MHz
Bandwidth	6/7/8MHz
Constellation	DQPSK, QPSK, 16QAM, 64QAM
FEC	1/2, 2/3, 3/4, 5/6, 7/8, Automatic
Signal Level	-80~-20dBm
CA System	Supports mainstream CAS

## SPECIFICATIONS



DVB-S/S2 FTA Receiver Module

DVB-S/S2	
Input	C/Ku Band, 4 channels via 4 RF female connectors
LNB Power	Independent power supplies for LNB-1 & LNB-3
LNB Voltage	13V/18V
LNB Current	Max. 400mA
Constellation	QPSK, 8PSK, 16APSK
Frequency Range	950~2150MHz
Signal Level	-70~-20dBm
Roll-off Factor	0.15, 0.20, 0.25, 0.35
Symbol Rate	DVB-S: 1~45Msps DVB-S2: 1~45Msps
FEC	DVB-S: 1/2, 2/3, 3/4, 5/6, 7/8 DVB-S2: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10



DVB-T/T2 with CI Receiver Module

DVB-T/T2	
Input	4 channels via 1 RF female connector
CI	2 x PCMCIA CI slots
CAM	Descrambled channel quantity depends on CAM capability, 2 CAMs could be different
Frequency Range	47~862MHz
Bandwidth	6/7/8MHz
Constellation	DVB-T: QPSK/16QAM/64QAM DVB-T2: QPSK/16QAM/64QAM/256QAM
Guard Interval	DVB-T: 1/4, 1/8, 1/16, 1/32 DVB-T2: 1/4, 1/8, 1/16, 1/32, 1/128 19/256, 19/128
FFT Size	DVB-T: 2K, 8K DVB-T2: 1K, 2K, 4K, 8K, 16K, 32K
Signal Level	-80~-20dBm
CA System	Supports mainstream CAS



DVB-S/S2 with CI Receiver Module

DVB-S/S2	
Input	C/Ku Band, 4 channels via 2 RF female connectors CH1 & CH2 via LNB-1 CH3 & CH4 via LNB-2
LNB Power	Independent power supplies for each LNB
LNB Voltage	13V/18V
LNB Current	Max. 400mA
CI	2 x PCMCIA CI slots
CAM	Descrambled channel quantity depends on CAM capability, 2 CAMs could be different
Constellation	QPSK, 8PSK, 16APSK
Frequency Range	950~2150MHz
Signal Level	-70~-20dBm
Roll-off Factor	0.15, 0.20, 0.25, 0.35
Symbol Rate	DVB-S: 1~45Msps DVB-S2: 1~45Msps
FEC	DVB-S: 1/2, 2/3, 3/4, 5/6, 7/8 DVB-S2: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10
CA System	Supports mainstream CAS



DVB-S/S2 FTA Receiver Module

DVB-S/S2	
Input	C/Ku Band, 8 channels via 8 RF female connectors
LNB Power	Independent power supplies for LNB-1 LNB-3, LNB-5 and LNB-7
LNB Voltage	13V/18V
LNB Current	Max. 400mA
Constellation	QPSK, 8PSK, 16APSK
Frequency Range	950~2150MHz
Signal Level	-70~-20dBm
Roll-off Factor	0.15, 0.20, 0.25, 0.35
Symbol Rate	DVB-S: 1~45Msps DVB-S2: 1~45Msps
FEC	DVB-S: 1/2, 2/3, 3/4, 5/6, 7/8 DVB-S2: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10

## SPECIFICATIONS



8VSB Receiver Module

8VSB	
Input	4 channels via 4 RF female connector
Frequency Range	50~860MHz
Bandwidth	6MHz
Modulation	8VSB
Signal Level	-80~-20dBm



QAM Modulation Module

QAM	
Output	16 non-adjacent frequencies via 1 RF female connector 75Ω
1 x RJ45	Reserved for scrambling
Standard	ITU-T J.83 Annex A/B/C
Frequency Range	47~862MHz
Bandwidth	6/7/8MHz
Constellation	16QAM/32QAM/64QAM/128QAM/256QAM
Symbol Rate	3.6~6.9Ms/s
Output Level	Max. 106dBμV
MER	>40dB
Return Loss	>12dB



OFDM Modulation Module

OFDM	
Output	4/8 frequencies via 1 RF female connector 75Ω
Standard	ETSI EN 300744
Frequency Range	47~862MHz
Bandwidth	8MHz
Constellation	QPSK/16QAM/64QAM
Guard Intervals	1/4, 1/8, 1/16, 1/32
FFT Size	2K, 8K
Code Rates	1/2, 2/3, 3/4, 5/6, 7/8
Output Level	Max. 100dBμV
MER	≥32dB
Return Loss	>12dB



QAMA Modulation Module

QAMA	
Output	4/8 frequencies via 1 RF female connector 75Ω
Standard	ITU-T J.83 Annex A/B/C
Frequency Range	47~862MHz
Bandwidth	6/7/8MHz
Constellation	16QAM/32QAM/64QAM/128QAM/256QAM
Symbol Rate	3.6~6.9 Ms/s
Output Level	Max. 100dBμV
MER	≥32dB
Return Loss	>12dB

## SPECIFICATIONS



DTMB Modulation Module

DTMB	
Output	4/8 frequencies via 1 RF female connector 75Ω
Standard	DTMB GB20600-2006
Frequency Range	47~862MHz
Constellation	4QAM-NR/4QAM/16QAM/32QAM/64QAM
Output Level	Max. 100dBμV
MER	≥32dB
Return Loss	>12dB



QAM Modulation Module

QAM	
Output	4/8 frequencies via 1 RF female connector 75Ω
Standard	ITU-T J.83 Annex B
Frequency Range	47~862MHz
Bandwidth	6/7/8 MHz
Constellation	64QAM/256QAM
Symbol Rate	3.6~6.9 Ms/s
Output Level	Max. 100dBμV
MER	≥32dB
Return Loss	>12dB



Professional HDMI Encoder Module

HDMI	
Input	4 channels via 4 HDMI female connectors (HDMI 1.4)
Video	H.264/AVC HD: MP/HP@L4.0 SD: MP/HP@L3.0 MPEG-2 SD: MP@ML
Resolution	SD: 576i@25fps, 480i@29.97fps HD: 1080p@25/30fps, 1080i@50/60fps 720p@50/60fps
Bitrate Control	CBR/VBR
Video Bitrate	1,000~14,000Kbps
GOP Structure	IBBP, IPPP, IBP
GOP Size	6~63
Aspect Ratio	Automatic or Manual
Audio	MPEG-1 Layer II, AAC (optional), AC3 (optional)
Audio Bitrate	32~384Kbps
Audio Mode	Stereo (2.0, including downmix)
Audio Sampling Rate	48kHz
Audio Volume Leveling	-20dB~20dB



Commercial HDMI Encoder Module

HDMI	
Input	4 channels via 4 HDMI female connectors (HDMI 1.4)
Video	H.264/AVC HD: MP/HP@L4.0/4.1/4.2 SD: MP/HP@L3.0/3.1/3.2
Resolution	SD: 576i@25fps, 480i@29.97fps HD: 1080p@25/30fps, 1080i@50/60fps 720p@50/60fps
Bitrate Control	VBR
Video Bitrate	600~12,000Kbps
GOP Structure	IPPP
GOP Size	1~99
Aspect Ratio	Automatic or Manual
Audio	MPEG-1 Layer II, AAC (optional), AC3 (optional)
Audio Bitrate	32~384Kbps
Audio Mode	Stereo (2.0, including downmix)
Audio Sampling Rate	48kHz
Audio Volume Leveling	-20dB~20dB
OSD Overlay	Text, Image, QR Code

## SPECIFICATIONS



HDMI Encoder Module with CC

HDMI	
Input	2 channels via 2 HDMI Female connectors (HDMI1.4) CC via RCA connector
Video	H.264/AVC HD: MP/HP@L4.0, SD: MP/HP@L3.0 MPEG-2 SD: MP @ML HD: MP@HL
Resolution	SD: 576i@25fps, 480i@29.97fps HD: 1080p@25/29.97/50/59.94 1080i@50/60fps, 720p@50/60fps *For mpeg-2 encoding, the maximum input resolution is 1080i@60fps
Bitrate Control	CBR
Bitrate	1,000~18,000Kbps
GOP Structure	IBBP, IPPP, IBP
GOP Size	6~63
Audio	MPEG-1 Layer II, AAC (optional), AC3 (optional)
Audio Mode	Stereo (2.0, including downmix)
Sampling Rate	48kHz



HDMI Encoder Module with YPbPr/CC

HDMI	
Input	2 channels via 2 HDMI or 2 component Female connectors (HDMI1.4) CC/Component input via DB15 port
Video	H.264/AVC HD: MP/HP@L4.0, SD: MP/HP@L3.0 MPEG-2 SD: MP @ML HD: MP@HL
Resolution	SD: 576i@25fps, 480i@29.97fps HD: 1080p@25/29.97/50/59.94 1080i@50/60fps, 720p@50/60fps *For component input or mpeg-2 encoding the maximum input resolution is 1080i@60fps
Bitrate Control	CBR
Bitrate	1,000~18,000Kbps
GOP Structure	IBBP, IPPP, IBP
GOP Size	6~63
Audio	MPEG-1 Layer II, AAC (optional), AC3 (optional)
Audio Mode	Stereo (2.0, including downmix)
Sampling Rate	48kHz



Professional CVBS Encoder Module

CVBS	
Input	6 channels via 2 DB15 connector each DB15 for 3 channels 2 x RCA-DB15 adaptor cables come along with module
Video	H.264/AVC SD: MP/HP@L3.0 MPEG-2 SD: MP@ML
Resolution	SD: 576i@25fps, 480i@29.97fps
Bitrate Control	CBR/VBR
Bitrate	1,000~6,000Kbps
GOP Structure	IBBP, IPPP, IBP
GOP Size	6~63
Aspect Ratio	Automatic or Manual
Audio	MPEG-1 Layer II
Audio Bitrate	32~384Kbps
Audio Mode	Stereo (2.0, including downmix)
Audio Sampling Rate	48kHz
Audio Volume Leveling	-20dB~20dB



Commercial CVBS Encoder Module

CVBS	
Input	8 channels via 2 DB15 connectors each DB15 for 4 channels 2 x RCA-DB15 adaptor cables come along with module
Video	H.264/AVC SD: MP/HP@L3.0/3.1/3.2
Resolution	SD: 576i@25fps, 480i@29.97fps
Bitrate Control	VBR
Bitrate	600~6,000Kbps
GOP Structure	IPPP
GOP Size	1~99
Aspect Ratio	Automatic or Manual
Audio	MPEG-1 Layer II
Audio Bitrate	32~384Kbps
Audio Mode	Stereo (2.0, including downmix)
Audio Sampling Rate	48kHz
Audio Volume Leveling	-20dB~20dB
OSD Overlay	Text, Image, QR Code

## SPECIFICATIONS



Commercial CVBS Encoder Module

CVBS	
Input	16 channels via 4 DB15 connectors, each DB15 for 4 channels 4 x RCA-DB15 adaptor cables come along with module
Video	H.264/AVC SD: MP/HP@L3.0/3.1/3.2
Resolution	SD: 576i@25fps, 480i@29.97fps
Bitrate Control	VBR
Bitrate	1,000~8,000Kbps
GOP Structure	IPPP
GOP Size	1~99
Aspect Ratio	Automatic or Manual
Audio	MPEG-1 Layer II
Audio Bitrate	32~384Kbps
Audio Mode	Stereo (2.0, including downmix)
Sampling Rate	48kHz
Audio Volume Leveling	-20dB~20dB
OSD Overlay	Text, Image, QR Code



SDI Encoder Module

SDI	
Input	2 channels via 2 SDI or CVBS SDI or CVBS via BNC connector Audio via phoenix connector
Video	H.264/AVC HD: MP/HP@L4.0, SD: MP/HP@L3.0 MPEG-2 SD: MP @ML HD: MP@HL
Resolution	SD: 576i@25fps, 480i@29.97fps HD: 1080p@25/29.97/50/59.94 1080i@50/60fps, 720p@50/60fps *For mpeg-2 encoding, the maximum input resolution is 1080i@60fps
Bitrate Control	CBR
Bitrate	1,000~18,000Kbps
GOP Structure	IBBP, IPPP, IBP
GOP Size	6~63
Audio	MPEG-1 Layer II, AAC (optional), AC3 (optional)
Audio Mode	Stereo (2.0, including downmix)
Sampling Rate	48kHz



EAS Processing Module

EAS	
Input	Digital EAS input (SCTE-18) via 1*RJ45 port Analogue EAS input via 3PIN contact closure CVBS input via 1*RCA connector Audio L/R input via 2*RCA connector TS input via 1*BNC connector
Video	H.264 SD: MP/HP@L3.0 MPEG-2 SD: MP @ML (By default)
Resolution	SD: 480i@29.97fps
ASI	500Kbps to 100Mbps
Contact Closure	3PIN Connector with Dry Contact or 5~12V DC input for EAS trigger
RJ45	10/100M Ethernet for SCTE-18 digital EAS input
Bitrate Control	CBR
Bitrate	5,00~8,000Kbps
GOP Structure	IBBP, IPPP, IBP
GOP Size	6~63
Audio	MPEG-1 Layer II, AAC-LC/HE, AC3
Audio Mode	Stereo (2.0, including downmix)
Sampling Rate	48kHz