AG100
Media Platform

INTRODUCTION

The most powerful video headend packed in 4 RU! Perfect for hotels, schools, hospitals, and MDUs yet fexible 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 AG100 makes it easy to support high-density delivery requirements including receiving, descrambling, encoding, multiplexing and modulating.

RELIABLE & ENVIRONMENT FRIENDLY

AG100 provides 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, AG100 saves more space while lowering operating costs for years to come.

FEATURES

- Dense design: 4 RU with up to 16 functional modules
- Supports 120 IP inputs and 120 IP outputs, SPTS/MPTS
- Service level multiplexing
- PSI/SI analysis and regeneration
- Low noise design
- Supports reception of up to 64 coax channel frequencies (QAM, DVB-S/S2/S2X, 8VSB and more)
- 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

- Hot-swappable modules
- Service-level monitoring
- Dual redundant power supplies
- Flexible and scalable
- User-friendly web-interface setup and module upgrades
- Low power consumption and high reliability with MTBF (Mean Time Between Failure) ≥100,000 hours

Commercial IPTV Solution
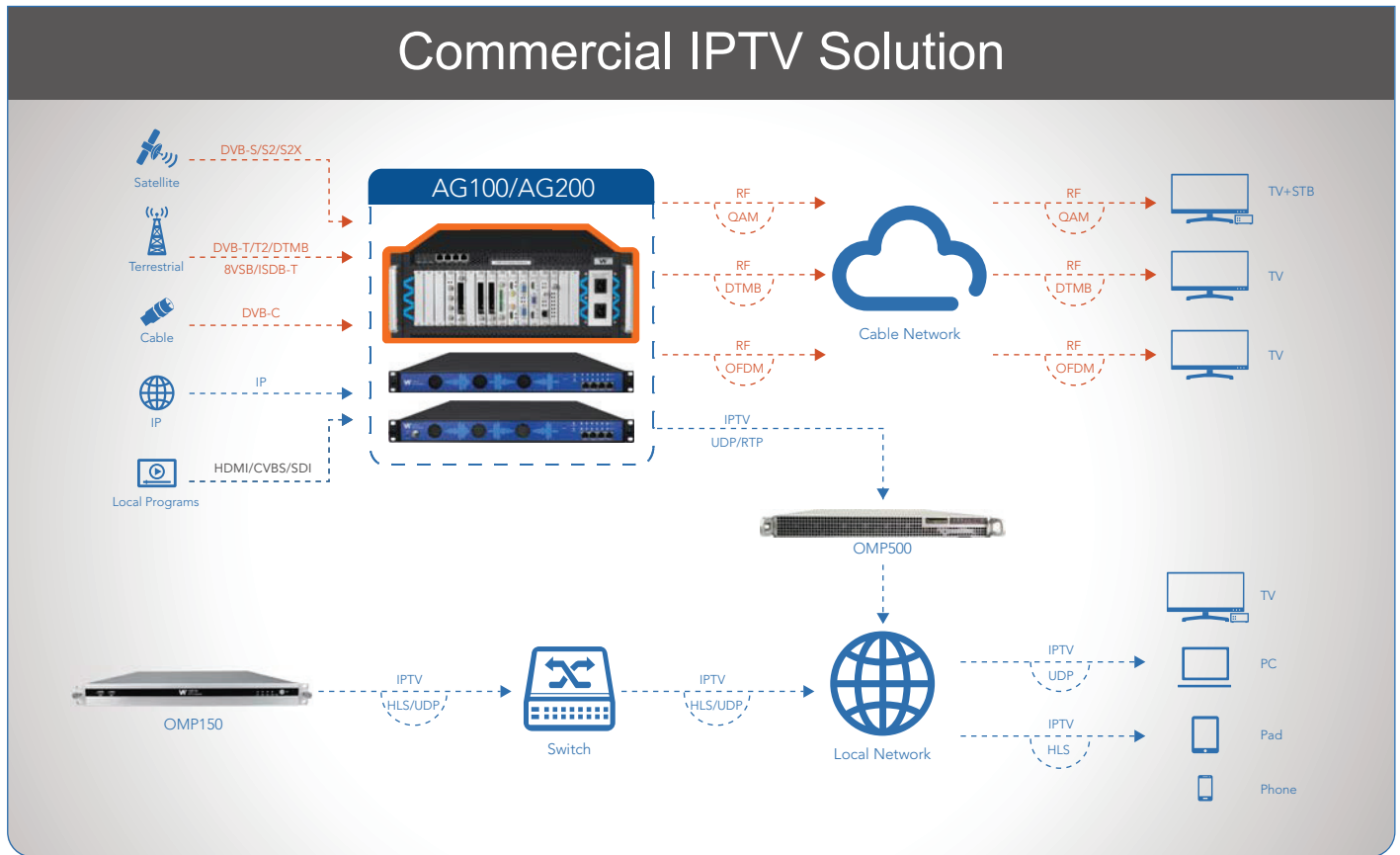
AG100 is the next generation of modular video processing by Wellav The chassis comes with dual power supply and accommodates up to sixteen modules. Using a built-in IP switch and diverse range of hot-swappable input/output options, AG 100 is a highly flexible solution perfect for a variety of applications including Hospitality, Education, Government, MDU, and more. Offering an excellent balance of performance VS value, the AG100 is ideal for dense multi-channel encoding, signal reception, digital turn around, and simultaneous IPTV + QAM distribution without an excessive price tag. Backed by a worldwide based support team and a intuitive Web-Interface, the AG100 is easy for any organization to deploy and operate.

Chassis
4RU with 16 slots for hot-swappable modules
Dual redundant power supplies
Service level multiplexing
4 x Gigabit RJ45 (embedded) : • MPEG TS over UDP/RTP multicast/unicast • SPTS/MPTS • Max. 120 inputs and 120 outputs

| Physical & Environment	
Input Voltage	100~240 VAC/50-60Hz
Power Consumption	Max. 350W
Chassis Dimension (W x H x D)	480mm x 177mm x 345mm (18.90" x 6.97" x 13.58"), 4RU
Operating Temperature	0°C~50°C (32°F ~ 122°F)
Storage Temperature	-10°C~70°C (14°F ~ 174.2°F)
Operating Humidity	<95%
MTBF	≥100,000 hours

SPECIFICATIONS
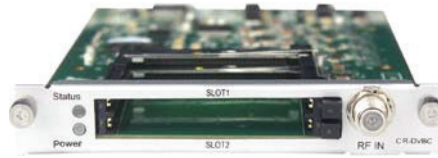
CR2-DVBC-00:
DVB-C/DTMB Receiver Module

DVB-C	
Input	4 channels via1 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
Power Consumption	Max. 9W

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~-25dm
Power Consumption	Max. 9W
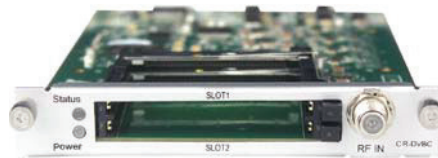
CR2-DVBC-01:
DVBC Annex B/ISDB-T Receiver Module

| DVBC Annex B	
Input	4 channels via1 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
Power Consumption	Max. 9W

ISDB-T	
Input	4 channels via1 RF female connector
CI	2 x PCMCIA CI slots
CAM	Descrambled channel quantity depends on CAM capability, 2 CAMs could be different
Frequency Range	177.143-863.143 MHz
Bandwidth	6/8MHz
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
Power Consumption	Max. 9W
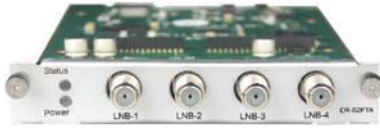
CR2-DVBS2FTA-01:
DVB-S/S2/S2X FTA Receiver Module

DVB-S/S2/S2X	
Input	C/Ku Band, 4 channels via 4 RF female connectors
LNB Power	Independent power supplies for each LNB
LNB Voltage	13V/18V
LNB Current	Max. 400mA
Constellation	DVB-S: QPSK DVB-S2: QPSK, 8PSK, 16APSK DVB-S2X: QPSK, 8PSK, 16APSK, 32APSK, 64APSK
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 DVB-S2X: 1~34 Msps
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-S2X: 11/15, 7/9, 4/5, 5/6 (Normal FEC FECFRAME)
Power Consumption	Max. 38W

CR2-DVBS2FTA-01A
DVB-S/S2/S2X FTA Receiver Module

| DVB-S/S2/S2X	
Input	C/Ku Band, 8 channels via 8 RF female connectors
LNB Power	Independent power supplies for each LNB
LNB Voltage	13V/18V
LNB Current	Max. 400mA
Constellation	DVB-S: QPSK DVB-S2: QPSK, 8PSK, 16APSK, DVB-S2X: QPSK, 8PSK, 16APSK, 32APSK, 64APSK
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 DVB-S2X: 1~34 Msps
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-S2X: 11/15, 7/9, 4/5, 5/6 (Normal FEC FECFRAME)
Power Consumption	Max. 70W

CR2-DVBS2CI-01:
DVB-S/S2/S2X with CI Receiver Module

DVB-S/S2/S2X	
Input	C/Ku Band, 4 channels via 2 RF female connectors CH1 & CH2 via LNB-1, CH3 & CH4 via LNB-2
LNB Power	CH1 & CH2 share LNB-1, CH3 & CH4 share LNB-2
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	DVB-S: QPSK DVB-S2: QPSK, 8PSK, 16APSK DVB-S2X: QPSK, 8PSK, 16APSK, 32APSK, 64APSK
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 DVB-S2X: 1~34 Msps
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-S2X: 11/15, 7/9, 4/5, 5/6 (Normal FEC FECFRAME)
CA System	Supports mainstream CAS
Power Consumption	Max. 22W

CR2-DVBT2CI-00:
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
Guard Interval	DVB-T: 1/4, 1/8, 1/16, 1/32 DVB-T2: 1/128
FFT Size	DVB-T: 2K, 8K DVB-T2: 8K, 16K, 32K
Signal Level	-80~-20dBm
CA System	Supports mainstream CAS
Power Consumption	Max. 8W
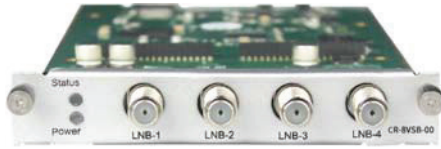
CR2-8VSB-00:
8VSB Receiver Module

8VSB	
Input	4 channels via 4 RF female connector
Frequency Range	Off-Air:57MHz - 803MHz; STD: 57MHz - 816MHz; IRC: 57MHz – 816MHz; HRC:55.75HMz – 859.75MHz
Bandwidth	6MHz
Modulation	8VSB
Signal Level	-80~-20dBm
Power Consumption	Max. 9.5W

CP2-EIT-00
Processing Module

Encoding	
Input	DVB-S/S2/S2X/T/T2/C/ISDB-T/DTMB/IP
Output	QAM/OFDM/ISDB-T/DTMB/IP
Standard	DVB standard
Processing Capability	32 TS stream input, 16 TS stream output Up to 100 services depending on the EIT complexity of signal source
Content Processing	Automatic update for Original Network ID, TS ID and Service ID
EIT Table Generation	EIT table with PID 18 will be generated after the processing
TDT/TOT Table	TDT/TOT table with PID 20 will be passed through to the output
EIT Enable/Disable Control	Module Level, TS Level, Service Level
Supported EIT Module in Each Chassis	1
Status Display	Service name and service list Signal source and output module EIT multiplexing success/failure display at service level
Configuration	Configuration can be exported and imported to the module
Software Upgrade	Web-based software upgrade
Log	Support Enable/Disable control, Live logging and log file export
License	License control is available for authorization time control
Power Consumption	Max. 5W

CP2-CAM-00:
CI Scrambler/Descrambler module

CI	
Standard	EN 50221
Interface	2 x PCMCIA CI slots
CAM Scrambling	Support Xcrypt CAMCAS
CAM Descrambling	Supports mainstream CAS Descrambled channel quantity depends on CAM capability, 2 CAMs could be different
Power Consumption	Max. 6W

CM2-8VSB-R01/R01A:
8VSB Modulation Module

8VSB	
Output	4/8 frequencies via 1 RF female connector 75Ω
Standard	ATSC A/35
Frequency Range	50~860 MHz
Bandwidth	6MHz
Constellation	8VSB
Output Level	Max. 105dBµV
MER	≥40dB
Power Consumption	4CH: Max. 12W; 8CH: Max. 14W

CM2-DTMB-R01/R01A:
DTMB Modulation Module

DTMB	
Output	4/8 frequencies via 1 RF female connector 75Ω
Standard	DTMB GB20600-2006
Frequency Range	47~862MHz
Constellation	4QAM/16QAM/32QAM/64QAM
Output Level	Max. 105dBµV
MER	≥32dB
Power Consumption	4CH: Max. 12W; 8CH: Max. 14W

CM2-OFDM-R01/R01A:
OFDM Modulation Module

OFDM	
Output	4/8 frequencies via 1 RF female connector 75Ω
Standard	ETSI EN 300744
Frequency Range	47~862MHz
Bandwidth	6/7/8MHz
Constellation	QPSK/16QAM/64QAM
Guard Intervals	1/4, 1/8, 1/16, 1/32
FFT Size	2K
Code Rates	1/2, 2/3, 3/4, 5/6, 7/8
Output Level	Max. 105dBμV
MER	≥32dB
Power Consumption	4CH: Max. 12W; 8CH: Max. 14W

CM2-QAMB-R01/R01A:
QAMB Modulation Module

| QAMB	
Output	4/8 frequencies via 1 RF female connector 75Ω
Standard	ITU-T J.83 Annex B
Frequency Range	48~862MHz
Bandwidth	6/8MHz
Constellation	64QAM/256QAM
Symbol Rate	5.057 Ms/s (64QAM), 5.360 Ms/s (256QAM)
Output Level	Max. 105dBμV
MER	≥40dB
Power Consumption	4CH: Max. 12W; 8CH: Max. 14W

CM2-QAMA-R01/R01A:
QAMA Modulation Module

QAMA	
Output	4/8 frequencies via 1 RF female connector 75Ω
Standard	ITU-T J.83 Annex A/C
Frequency Range	47~862MHz
Bandwidth	6/7/8MHz
Constellation	16QAM/32QAM/64QAM/128QAM/256QAM
Symbol Rate	4.035~6.9 Ms/s
Output Level	Max. 105dBμV
MER	≥32dB
Power Consumption	4CH: Max. 12W; 8CH: Max. 14W
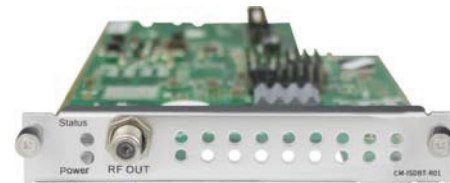
CM2-ISDB-T-R01/R01A:
ISDB-T Modulation Module

ISDB-T	
Output	4/8 frequencies via 1 RF female connector, 75Ω
Standard	ARIB STD-B31
Frequency Range	47~862MHz
Bandwidth	6MHz
Constellation	QPSK, 16QAM, 64QAM
Transmission Mode	2K
RS Code	RS(204.188)
FEC	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/4, 1/8, 1/16, 1/32
Hierarchy Mode	Layer A
Segment Mode	Full Seg
Output Level	Max. 104dBμV
MER	≥40dB
Power Consumption	4CH: Max. 12W; 8CH: Max. 14W
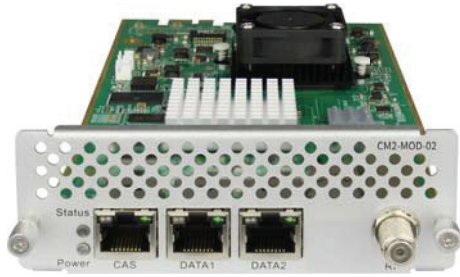
CM2-QAMA-02/02A
IPQAM Module

IPQAM	
IP input	2x100/1000Mbps ports
IP Encapsulation	MPEG TS over UDP/RTP
MPEG TS	MPTS and SPTS
I/O Processing	Up to 512 channels either via 2xGbE input
Addressing	Unicast and multicast
IGMP Version	IGMP v2, IGMP v3

QAM Output	
Output	1xRF port, max 16/32 agile channels QAM modulation
Standard	ITU-T J.83 Annex A/B/C
QAM Constellation	64/256 QAM, configurable for each frequency
Symbol Rate	3.6~6.956Mbauds
Output Level	90dBuV~115dBuV according to modulation frequency quantity
Output Range	47~862MHz
Bandwidth	6/7/8MHz
MER	≥43dB (equalized)
PCR Correction	Support

Multiplexing	
Table Supported	SI/PSI
PID Processing	Pass-through, remapping, filtering
EIT Processing	Pass-through
External Data	EPG, PID and SI insertion

Scrambling	
Interface	1x100/1000 Mbps port
Scrambling Algorithms	CSA
SCS	Internal
CAS Connections	Up to 4 different CA systems
Supported CAS	Support major CA systems
Max. TS rate	1.6Gbps
EMM Bitrate	Up to 3Mbps
Power Consumption	Max. 45W

CM2-QAMA/B-R00:
QAM Modulation Module

QAM	
Output	16 agile frequencies via 1 RF female connector 75Ω
1 x RJ45	Reserved for scrambling
Standard	ITU-T J.83 Annex A/B
Frequency Range	47~862MHz
Bandwidth	Annex A: 6/7/8MHz Annex B: 6MHz
Constellation	Annex A: 16QAM/32QAM/64QAM/128QAM/256QAM Annex B: 64QAM/256QAM
Symbol Rate	Annex A: 4.4~6.9Ms/s Annex B: 5.056Mbauds(64QAM), 5.361Mbauds(256QAM)
Output Level	Max. 105dBμV
MER	>40dB
Power Consumption	Max .21W
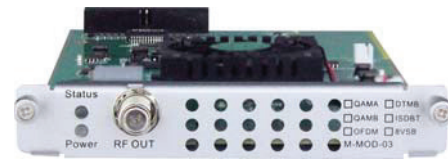
CM2-QAMA-03
QAM Modulation Module

QAMA	
Output	8 agile frequencies via 1 RF female connector 75Ω
Standard	ITU-T J.83 Annex A/C
Frequency Range	47~862MHz, non adjacent
Bandwidth	8MHz
Constellation	16QAM/32QAM/64QAM/128QAM/256QAM
Symbol Rate	3.6~6.9 Ms/s
Output Level	Max. 105dBμV
MER	≥32dB
Power Consumption	Max. 23W

CM2-OFDM-03
OFDM Modulation Module

OFDM	
Output	8 agile frequencies via 1 RF female connector 75Ω
Standard	ETSI EN 300744
Frequency Range	47~862MHz
Bandwidth	6/7/8MHz
Constellation	QPSK/16QAM/64QAM
Guard Intervals	1/4, 1/8, 1/16, 1/32
FFT Size	2K
Code Rates	1/2, 2/3, 3/4, 5/6, 7/8
Output Level	Max. 105dBµV
MER	≥32dB
Power Consumption	Max. 23W

CM2-ISDBT-03
ISDBT Modulation Module

ISDB-T	
Output	8 frequencies via 1 RF female connector 75Ω
Standard	ETSI EN 300744
Frequency Range	47~862MHz, non adjacent
Bandwidth	6MHz
Constellation	QPSK/16QAM/64QAM
Guard Intervals	1/4,1/8,1/16,1/32
Transmission Mode	2K
Code Rates	1/2,2/3,3/4,5/6,7/8
Output Level	Max .105dBuV
MER	≥40dB
Power Consumption	Max. 23W

CM2-DTMB-03
DTMB Modulation Module

DTMB	
Output	8 frequencies via 1 RF female connector 75Ω
Standard	DTMB GB20600-2006
Frequency Range	47~862MHz, non adjacent
Constellation	4QAM/16QAM/32QAM/64QAM
Output Level	Max. 105dBµV
MER	≥32dB
Power Consumption	Max. 23W

CM2-QAMB-03
QAMB Modulation Module

QAMB	
Output	8 frequencies via 1 RF female connector 75Ω
Standard	ITU-T J.83 Annex B
Frequency Range	47~862MHz, non adjacent
Bandwidth	6/7/8 MHz
Constellation	64QAM/256QAM
Symbol Rate	5.057MBaud: 64QAM 5.361MBaud: 256QAM
Output Level	Max. 108dBµV
MER	≥40dB
Power Consumption	Max. 23W

CE2-HDMI-R01:
Commercial HDMI Encoder Module

HDMI	
Input	4 channels via 4 HDMI female connectors (HDMI 1.4)
Video	H.264/AVC HD: MP/HP@L4.2 （1080P） H.264/AVC HD: MP/HP@L3.1(720P) SD: MP/HP@L3.0 (480/576)
Resolution	Input: 1080p@25/29.97/30/50/59.94/60, 　　　　1080i@50/59.94/60, 720p@50/59.94/60, 　　　　720x576i, 720x480i Output: 1080p@29.97/30, 720p@50/59.94/60, 　　　　720x576i, 720x480i *Output resolution supports up to 1920*1080p30
Bitrate Control	CBR
Video Bitrate	600~12,000Kbps
GOP Structure	IPPP
GOP Size	1~60
Aspect Ratio	Automatic or Manual
Audio	MPEG-1 Layer II, AC3 (optional), AAC (optional)
Audio Bitrate	96~192Kbps
Audio Mode	Stereo (2.0, including downmix)
Audio Sampling Rate	48kHz
Audio Volume Leveling	-20dB~20dB
Power Consumption	Max. 12W

CE2-HDMI-02:
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	Input: 1080p@25/29.97/30/50/59.94/60, 　　　　1080i@50/59.94/6, 720p@50/59.94/60, 　　　　720x576@50i, 720x480@60i Output: 1080p@29.97/30, 1080i@50/59.94/60, 　　　　720p@50/59.94/60, 720x576@50i/25p, 　　　　720x480@60i/30p *The maximum output resolution is 1080i60.
Bitrate Control	CBR
Bitrate	800~18,000Kbps
GOP Structure	IBBP, IPPP, IBP
GOP Size	18~48
Audio	MPEG-1 Layer II, AC3, AAC
Audio Mode	Stereo (2.0, including downmix)
Sampling Rate	48kHz
Power Consumption	Max. 17W

CE2-HDMI-02C:
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	Input: 1080p@25/29.97/30/50/59.94/60, 　　　　1080i@50/59.94/6, 720p@50/59.94/60, 　　　　720x576@50i, 720x480@60i Output: 1080p@29.97/30, 1080i@50/59.94/60, 　　　　720p@50/59.94/60, 720x576@50i/25p, 　　　　720x480@60i/30p *The maximum output resolution is 1080i60.
Bitrate Control	CBR
Bitrate	800~18,000Kbps
GOP Structure	IBBP, IPPP, IBP
GOP Size	18~48
Audio	MPEG-1 Layer II, AC3, AAC
Audio Mode	Stereo (2.0, including downmix)
Sampling Rate	48kHz
Power Consumption	Max. 17W

CE2-HDMI-R05
HEVC HDMI Encoder Module (4-CH)

HDMI	
Input	4 channels via 4 HDMI female connectors (HDMI 1.4)
Video	H.264/AVC MP/HP@4.1（1080P） H.264/AVC MP/HP3.1（720P） H.265/HEVC MP@L4.1（1080P） H.265/HEVC MP@L3.1（720P）
Resolution	HD: 1080p-29.97/30/50/59.94/60, 　　　1080i-29.97/30/50/59.94/60, 　　　720p-50/59.94/60 SD: 576i50, 576p50, 480i-59.94/60 *Output supports progressive only
Bitrate Control	CBR
Video Bitrate	600~10000 Kbps
GOP Structure	IPPP
GOP Size	1~60
Aspect Ratio	Automatic or Manual
Audio	MPEG-1 Layer II, AC3 (optional), AAC (optional)
Audio Bitrate	32~192 Kbps
Audio Mode	Stereo 2.0
Audio Sampling Rate	48kHz
Audio Volume Leveling	-20dB~20dB
OSD Overlay	Text, Image, QR Code
Power Consumption	Max. 19W

CE2-HDMI-05A:
HEVC HDMI Encoder Module (8-CH)

HEVC	
Input	8 channels via 8 HDMI female connectors (HDMI 1.4)
Video	H.264/AVC MP/HP@3.1（720P） H.265/HEVC MP@L3.1（720P） H264 MP/HP@L4.2（1080P） H.265/HEVC MP@L4.1（1080P）
Resolution	HD: 1080p-29.97/30, 1080i-29.97/30/50/59.94/60 720p-50/59.94/60 SD: 576i50, 576p50, 480i-59.94/60, 480p-59.94/60 *Output supports progressive only, and resolution supports up to 1080p30.
Bitrate Control	CBR
Video Bitrate	600~10000 Kbps
GOP Structure	IPPP
GOP Size	1~60
Aspect Ratio	Automatic or Manual
Audio	MPEG-1 Layer II, AC3 (optional), AAC (optional)
Audio Bitrate	96~192 kbps
Audio Mode	Stereo 2.0
Audio Sampling Rate	48kHz
Audio Volume Leveling	-20dB~20dB
OSD Overlay	Text, Image, QR Code
Power Consumption	Max. 21W

CE2-SDI-01:
SDI Encoder Module

SDI	
Input	2 channels via 2 SDI SDI via BNC 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: 576i50, 480i59.94 HD: 1080p@25/29.97/30, 1080i@50/59.94/60, 720p-50/60 *The maximum output resolution is 1080i60.
Bitrate Control	CBR
Bitrate	800~18,000Kbps
GOP Structure	IBBP, IPPP, IBP
GOP Size	6~63
Audio	MPEG-1 Layer II, AC3, AAC
Audio Mode	Stereo (2.0, including downmix)
Audio Channel	2 x audio pairs for each channel
Sampling Rate	48kHz
Power Consumption	Max. 16W

CE2-HDMI-06
Professional HDMI Encoder Module

HEVC	
Input	4 channels via 4 HDMI female connector (HDMI 1.4)
Video	H.264/AVC HD: MP/HP@ L4.0/4.1/4.2/5.0/5.1/5.2 H.265/HEVC HD: MP (High Tier) @L4.0/4.1/4.2/ 5.0/5.1/5.2
Resolution	Input: 1080i-50/59.94/60, 1080P-25/29.97/30/50/59.94/60, 720P-50/59.94/60 Output: 1080P-25/29.97/30/50/59.94/60, 720P-50/59.94/60
Bitrate Control	CBR
Video Bitrate	600Kbps-12Mbps
GOP Structure	IPPP, IBBP
Aspect Ratio	16:9
Audio	MPEG-1 Layer II, AC3 (optional), AAC (optional)
Audio Bitrate	32~192 Kbps
Audio Mode	Stereo
Audio Sampling Rate	48KHz
Audio Volume Leveling	-20dB~20dB
OSD Overlay	2*Logo/QR code overlay (40*40 to 256*256) Or 1*static OSD overlay
Power Consumption	Max.20W

Notes: CE2-HDMI-06 will forcefully output 4 HD programs with same video resolution which follows the largest video resolution among the input source and SD encoding is not supported yet.

CE2-CVBS-00:
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: 576i50, 480i59.94
Bitrate Control	CBR
Bitrate	1,000~6,000Kbps
GOP Structure	IBBP, IPPP, IBP
GOP Size	15
Aspect Ratio	Automatic or Manual
Audio	MPEG-1 Layer II
Audio Bitrate	64~384Kbps
Audio Mode	Stereo (2.0, including downmix)
Audio Sampling Rate	48kHz
Audio Volume Leveling	0dB~8dB
Power Consumption	Max. 17W

CE2-CVBS-R01:
Commercial CVBS Encoder Module

CVBS	
Input	8 channels via 2 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
Resolution	SD: 576i50, 480i59.94
Bitrate Control	CBR
Bitrate	1,000~8,000Kbps
GOP Structure	IPPP
GOP Size	1~60
Aspect Ratio	Automatic or Manual
Audio	MPEG-1 Layer II
Audio Bitrate	32~192Kbps
Audio Mode	Stereo (2.0, including downmix)
Sampling Rate	48kHz
Audio Volume Leveling	-20dB~20dB
OSD Overlay	Text, Image, QR Code
Power Consumption	Max. 18W

* Does NOT support PAL-N

CP2-EAS-00:
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: 480i59.94
ASI	500Kbps to 100Mbps
Contact Closure	3PIN Connector with Dry Contact or 5~24V 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, AC3, AAC
Audio Mode	Stereo (2.0, including downmix)
Sampling Rate	48kHz
Power Consumption	Max. 5.5W

CE2-CVBS-03
CVBS Encoder Module

CVBS	
Interface	Input 2 channels via 2 CVBS CVBS via BNC connector
Video	H.264: High/Main/Baseline/2.2-4.2
Resolution	720x576@50i 、720x480@60i
Bitrate Control	CBR
Bitrate	800~20,000Kbps
CC	CEA 608/708(Under development)
Audio	MPEG-1 Layer II/AC3/MPEG2_AAC/MPEG2_AAC4
GOP Structure	IBBP, IPPP, IBP
GOP Size	18~48
Audio Bitrate	32~384Kbps
Audio Mode	Stereo (2.0, including downmix)
Sampling Rate	48kHz
Closed Caption Input	Support
Power Consumption	Max. 16W

CP2-IP-00:
Multi-protocol IP Module

IP	
Network	3 x RJ45 ports, 100/1000M
Input Protocols	UDP/RTP/SRT/RIST/Zixi/ *RTMP/RTMPS (future option)
Output Protocols	UDP/RTP/SRT RIST/Zixi/RTMP/RTMPS (future option)
Processing Capability For Typical Applications	HLS to UDP – up to 20 input streams , max 150mbps SRT to UDP – up to 20 input streams, max 150mbps UDP to SRT – up to 20 streams, max 150mbps
Number of Gateways	Default: 10 gateways, UDP/RTP/HLS input, UDP/RTP output Notice: Additional license are required to support more gateways and network protocols
Power Consumption	Max. 16 W

*HDMI/USB: Only for module debugging function use, not for input/output

CP2-IP-02
Multi-channel IP Module

IP	
Ethernet	2 x RJ45, 100/1000Base-T
Input	UDP/RTP via Unicast/Multicast
Output	UDP/RTP via Unicast/Multicast
Channels	DATA 1: 128 input & output DATA 2: 120 input & output
Effective Bitrate	Maximum 700Mbps (Single input or output) Maximum 420Mbps (Simultaneous input and output)
Power Consumption	Max. 7 W

CP2-ASI-00:
5-Port ASI Module

ASI	
Connector	5 x ASI port, BNC female
Bit rate	500Kbps to 150Mbps
Reception/ Transmission mode	Byte mode(Continuous mode)
Packet Length	188 Bytes or 204 Bytes
Working mode	3 ASI input ports, 2 ASI output ports by default, each port can be redefined as ASI input or ASI output port
Multiplexing	Support PSI/SI or PSIP table regeneration PID filtering External PID insertion
Power Consumption	Max. 12 W