

# UMH160U

4K UHD Receiver/Decoder



## INTRODUCTION

UMH160U is a powerful and cost-effective 4K UHD receiver/decoder that supports MPEG-2/H.264/H.265/AVS+/AVS2 SD/HD/UHD video decoding and major audio decoding. With ample tuner input options and multiple input/output interfaces, it can achieve the RF signal reception, program descrambling, multiplexing, downscaling and decoding output. With IP-based stream processing and management interfaces, it is ideal to support advanced content distribution, 4K decoding, content remultiplexing, digital signal turnaround and transmission via an all-IP-headend system.

## KEY FEATURES

### Receiving

- Multiple tuner options to support DVB-S2X/S2/S/T2/T/C, DTMB, 8VSB and ISDB-T
- Supports SRT/ZIXI/RIST/HLS/RTMP/RTSP input
- Supports redundant backup between any two input sources
- PID auto update
- Multiple presettings
- Supports T2-MI transport stream decapsulation

### Data Processing

- Two common interfaces support multi-channel descrambling, compatible with popular CAM modules
- Embedded BISS-1 & BISS-E supports TS & Service level descrambling
- Cherry Picking/PID Filtering
- PSI/SI/PSIP processing and regeneration
- Supports TS & Service multiplexing
- Supports TS & EIT pass-through

### Output

- MPEG-2/H.264/H.265/AVS+/AVS2 UHD/HD/SD video decoding
- HDMI2.0, 3G-SDI, CVBS output (Either HDMI/SDI or CVBS can be output)
- SDI output with 1 embedded audio and expandable to 2 embedded audios\*
- Up to 2 pairs of balanced analogue audio and 2 pairs of unbalanced AES/EBU audio output via DB15 connector\*
- Up to 2 pairs of unbalanced analog audio output via BNC connector\*
- Multicast and unicast broadcasting in LAN and WAN network via two GbE ports
- GPI alarm output (reserved for future use)
- Two TS over IP output ports
- Two ASI output ports

\* Currently supports 1 pair of audio, 2 pairs of audio is a future option.

### Management

- 1 Ethernet 10/100Base-TX, RJ45
- Web-based NMS
- Front panel LCD screen and press buttons
- SNMP support for system integration
- In-band remote control\*

\* Future

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## TECHNICAL SPECIFICATIONS

RF	
DVB-S/S2/S2X Input	
Input	RF (F-type), 75Ω
Constellation	QPSK, 8PSK, 16APSK, 32APSK, 64APSK
Symbol Rate	1~45 MSps
Input Frequency	950~2150 MHz
Max Bit-rate	150Mbps
Signal Level	-65~-25 dBm
LNB Power	DC 13/18V@350mA
Control Tone	22K on/off
Roll-off Factors	0.35, 0.25, 0.20, 0.15, 0.10, 0.05
DVB-C Input	
Input	RF (F-type), 75Ω
Symbol Rate	1~6.952 MBauds
QAM Type	J.83 A/B/C
Input Frequency Range	48-862 MHz
MaxBit-rate	55Mbps
Signal Level	40-100dBuV (64QAM) 44-100dBuV (256QAM)
DVB-T Input	
Input	RF (F-type), 75Ω
Constellation	QPSK/16QAM/64QAM
Bandwidth	6/7/8M
Input Frequency Range	48~862 MHz
Max Bit-rate	31.67Mbps
Signal Level	-65~-25dBm
Transmission Mode	2K, 8K
FEC Mode	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/4, 1/8, 1/16, 1/32

DVB De-scrambling	
DVB Common Interface	2 slots
Bit-rate	Max. 150Mbps (Depend on processing capability of CAM module)
CAM Supported	NEOTION, SMIT, ASTON and other major CAMs
CAS Supported	CONAX, IRDETO, Novel-SuperTV, CTI and other major CAS
BISS-1& BISS-E	Program level, Decoded Service only TS level (licensed option)
Number of Services	Limited by CAM

RF	
DVB-T2 Input	
Input	RF (F-type), 75Ω
Constellation	QPSK/16QAM/64QAM/256QAM
Bandwidth	6MHz, 7MHz, 8MHz
Input Frequency Range	48~862 MHz
Max Bit-rate	50.1Mbps
Transmission Mode	1K, 2K, 4K, 8K, 16K, 32K
FEC Mode	1/2, 3/5, 2/3, 3/4, 4/5,5/6
Guard Interval	1/4, 1/8, 1/16, 1/32, 1/128, 19/256,19/128
ISDB-T/Tb Input	
Input	RF (F-type), 75Ω
Constellation	QPSK/16QAM/64QAM
Bandwidth	6MHz
Input Frequency Range	48~862 MHz
Max Bit-rate	23.42Mbps
Signal Level	-65~-10 dBm
Carriers Mode	2K/4K/8K
FEC Mode	1/2, 2/3, 3/4, 5/6, 7/8
Guard Interval	1/4, 1/8, 1/16, 1/32
8VSB Input*	
Input	RF (F-type), 75Ω
Bandwidth	6MHz
Input Frequency Range	57~803 MHz (fixed frequency)
Signal Level	-83~-8dBm
Channel Plans	Broadcast
Max Bit-rate	19.39 Mbps

TS/IP	
GbE IP	
Interface	2 x GbERJ45 ports
Package Format	UDP/RTP/HLS/RTMP/SRT/ZIXI/RIST
Traffic Type	Unicast Multicast
Number of Channels	2 x input & 2 x output
FEC	ProMPEG CoP3v2 (input & output)*
TCP/IP Protocol	IPv4
IGMP	Version1, 2 & 3

\* Future

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## TECHNICAL SPECIFICATIONS

Decoder	
Interface	
Composite Video Output	1 x BNC, 75Ω PAL/NTSC
SD/HD/3G-SDI Output	2 x BNC, 75Ω
Digital Output	1 x HDMI 2.0 connector
Analog Audio Outputs	4 x BNC, 75Ω unbalanced 2 pairs of analogue balanced audio output via 1 x 15 Pin D-sub (4 x XLR Breakout Cable)*
AES/EBU	2 pairs of digital unbalanced AES/EBU output via 1 x 15 Pin D-sub (2 x BNC, Breakout Cable) *
Video Decoding	
Video Profile/Levels	MPEG-2 SD 4:2:0 MP@ML PRD: SP@ML
	MPEG-2 HD 4:2:0 MP@ML
	MPEG-4 AVC/H.264 SD MP@L3 PRD:SP@L0-3
	MPEG-4 AVC/H.264 HD MP@L4.1/HP@4.1
	H.265 Main/Main10 profile@Level5.1 High-tier (license option)
	AVS-P16 (AVS+)
	AVS2 P2 10 bit Profile @Level 8.2.60 (license option)
Output Format	720 x 576i@25 720 x 480i@29.97,30 720 x 480p@50,59.94,60 1280 x 720p@50,59.94,60 1920 x 1080i@25,29.97,30 1920 x 1080p@25,30,50,59.94,60 3840 x 2160@25,30,50,60 (license option)
Aspect Ratio Conversion	4:3 letterbox, 4:3 pan and scan
	16:9 letterbox, 16:9 pan and scan
Audio Decoding	
Number of Audio Pairs	1 by default, 2 is a future option
Audio Codecs Supported	Mpeg-1 Layer II
	Dolby Digital/AC-3 (license option)
	Dolby Digital Plus/E-AC3 (license option)
	AAC-LC, HE-AAC, & HE-AACv2 (license option)
SDI Embedded Audio Output	1 audio pair by default, 2 audio pairs*
Adjustable Volume Level	-63~0dB

\* 1 by default, 2 is a future option

DVB-ASI	
Interface	4 BNC, 75Ω (2 x ASI input, 2 x ASI output)
Max Bit-rate	150Mbps
Packet Type	188/204 bytes
Input Mode	Spread and burst
Output Mode	Spread
Supports MPEG-2/H.264/H.265/AVS+/AVS2 SD/HD/UHD stream bypass transmission	

Management	
Connector	RJ-45 10/100Mbps - auto negotiation
Protocols	HTTP, HTTPS and SNMP
User Interfaces	Full control via web GUI
	Front panel In-band remote control*
Automation Interfaces	Full status via SNMP
	Configurable SNMP traps
Firmware Updates	Via web GUI

\* Future

Physical & Environment	
Power Supply	100~240 VAC 50/60Hz Dual AC (hardware option) Dual 36~72V DC (hardware option)
Size	1RU rack mount chassis
Dimension	483mm x 312mm x 44mm
Operating Temperature	0 C ~50 C
Storage Temperature	-10 C ~70 C
Relative Operating Humidity	< 95% (non-condensing)

# UMH160U

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## ORDER INFORMATION

Model	Description
UMH160UIG	H.264/MPEG-2 Receiver decoder, 1 x RF input, IP/ASI in/out, HLS in, SDI/HDMI/CVBS decoding, MPEG1L2, IP management

License	Description
16001	AC3 Decoding License
16002	AAC Decoding License
16003	H.265 HD/SD License
16004	4K/HDR Decoding License (downconversion & HDMI output)
16005	Multiplexing License
16006	TS-level BISS Decryption License
16007	T2MI License
16008*	PID Auto-update License
16009	Input Redundant License
16010*	Multistream License
16011	SRT Input License
16012*	RTMP Input License
16013*	ZIXI Input License

\* Future