

SD/HD Receiver/Decoder

UMH160R



WAV-UMH160R-BS



WAV-UMH160R-IP



OVERVIEW

The UMH160R is a powerful and cost-effective broadcast level decoder. It supports signal receiving, multi-channel descrambling, multiplexing, external table/data insertion, transcoding and transmodulating. It also supports MPEG2/MPEG4 SD/HD program decoding with two audio channels. With a remote, web-based management interface, it is ideal to support advanced content distribution, real-time signal conversion and transmission for any headend system.

ORDERING INFORMATION

Module	Feature
WAV-UMH160R-RL	Decode MPEG2/4, HD&SD w/DVB-S2 In and A/V, HDMI Out 608CC support
WAV-UMH160R-BS	RL + 2 ASI (Input & Output)
WAV-UMH160R-SDI	BS + 2 SDI (HD & SD Output)
WAV-UMH160R-IP	Receiving, Descrambling, HD&SD decoding, 4 ASI (2In + 2Out), 2 TSIP (In + Out) and SDI (Out)
WAV-UMH160R-AD	IP + Multiplexing (2 Tuner Receiving)
WAV-UMH160R-TC2	IP + Transcoding to MPEG2 (4 SD Programs)
WAV-UMH160R-TC4	IP + Transcoding to MPEG4 (4 SD Programs/2 HD Programs)
WAV-UMH160R-IP-G	IP + Genlock, 708CC support
WAV-UMH160R-QAM	AD + QAM/OFDM Modulator (4 for QAM or 2 for OFDM)
WAV-UMH160R-BISS	BISS Descrambling License
WAV-UMH160R-MULTISTREAM	DVB-S2 Multi-stream Option (Factory Installed)

KEY FEATURES

Receiving and Input

- RF inputs support multiple standards of signal receiving including DVB-S2/T2/C, 8VSB and ISDB-T
- Supports DVB-S2 Multi-stream receiving (Optional)
- Supports ASI and TS-IP input and redundancy

Data Processing

- Two separate common interfaces support multi-channel descrambling and makes the unit compliant with various popular CAM cards
- Embedded BISS-1 & BISS-E support TS & Service level descrambling
- PID filtering, PCR re-mapping and filling (VBR/CBR)
- VBI subtitle insertion on analog video
- PSI/SI processing and regeneration
- Supports TS & Service multiplexing
- Supports TS & EIT pass-through

Output

- MPEG2 or MPEG4 HD/SD video decoding
- HDMI, SD/HD SDI and CVBS output
- SDI output with 2 embedded audios
- 1 audio decoding through AES/EBU digital audio output, 2 pairs of balanced and unbalanced analog audio output
- Multicast and unicast broadcasting in LAN and WAN network
- GPI alarm and cue tone output
- 4 channels QAM or 2 channels OFDM output
- 2 channels HD or 4 channels SD, MPEG2 to/from MPEG4 transcoding

Management

- 1 Ethernet 10/100Base-TX, RJ45
- Web-based user interface
- Front panel keypad and LCD
- SNMP supported for system integration



SPECIFICATIONS

SD/HD Receiver/Decoder UMH160R

DVB-S/S2 INPUT

Input:	1xRF (F-type, single input), 75Ω 2xRF (F-type, dual input), 75Ω
Constellation:	QPSK, 8PSK
Symbol Rate:	1~45 Msps
Input Frequency:	950~2150 MHz
Max bitrate:	150Mbps
Signal Level:	-65~-25 dBm
LNB PS:	DC 13/18V
22K Switch:	on/off

DVB-C INPUT

Input:	1xRF (F-type, single input), 75Ω 2xRF (F-type, dual input), 75Ω
Symbol Rate:	3.6 ~ 6.952 MBauds
QAM Type:	J.83 A/B/C
Input Frequency Range:	48 - 862 MHz
Max bitrate:	55Mbps
Signal Level:	40 ~ 80 dBuV

DVB-T/T2 INPUT

Input:	1xRF (F-type, single input), 75Ω 2xRF (F-type, dual input), 75Ω
DVB-T:	
Constellation:	QPSK/16/64QAM
Bandwidth:	6/7/8MHz
Input Frequency Range:	48 ~ 862 MHz
Max bitrate:	31.67Mbps
Transmission Mode:	2K, 8K

DVB-T2:

Constellation:	16/32/64/128/256QAM
Bandwidth:	1.7/5/6/7/8/10 Mhz
Input Frequency Range:	48 ~ 862 MHz
Max bitrate:	50Mbps
Transmission Mode:	1K, 2K, 4K, 8K, 16K, 32K

ISDB-T/TB INPUT (OPTIONAL)

Input:	1xRF (F-type, single input), 75Ω 2xRF (F-type, dual input), 75Ω
Constellation:	QPSK/16/64QAM DQPSK
Bandwidth:	1.7/5/6/7/8/10 Mhz
Input Frequency Range:	48 ~ 862 MHz
Carriers Mode:	1K ~ 42K, 3K

ATSC INPUT

Input:	1xRF (F-type, single input), 75Ω 2xRF (F-type, dual input), 75Ω
Constellation:	8VSB
Bandwidth:	6Mhz
Input Frequency Range:	57 ~ 803 MHz (Fixed freq)
Max bitrate:	19.39Mbps

TS/IP

Interface:	GbE level RJ45 Port
Speed:	Up to 1000Mbps
Package Format:	UDP & RTP(auto detection)
Traffic Types:	Unicast: (ARP) Multicast: V2, V3 (optional)
FEC:	ProMPEG CoP3v2
TCP/IP Protocol:	IPv4, IPv6 (future option)

DVB-ASI

Interface:	4 BNC, 75Ω (2 x ASI input, 2 x ASI output)
Max Bitrate:	100Mbps
Packet Type:	188/204 Bytes
Input Mode:	byte and burst
Output Mode:	byte burst

DVB DE-SCRAMBLING

DVB Common Interface:	2 slots
Bit-rate:	Max 100Mbps
CAM supported:	NEOTION, SMIT, ASTON and other major CAMs
CAS supported:	CONAX, IRDETO, Novel-Super TV, CTI and other CAS
BISS 1& BISS E:	TS & Program level

RF MODULATION OUTPUT

Interface:	1 RF for 4 channels (DVB-C modulation, F-type, 75Ω) 1 RF for 2 channels (DVB-T modulation, F-type, 75Ω) 1 for RF monitor output (F-type, 75Ω)
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DVB-C MODULATION

Standard:	ITU-T J.83 Annex A/C, Annex B
Constellation:	16/32/64/128/256QAM
Symbol Rate:	4.4~6.952MBaud
Output Level:	90~115dBuV (depending on the channel numbers)
Frequency Range:	48~862 MHz
EMR:	38

DVB-T MODULATION

Standard:	ETSI EN 300 744
Constellation:	QPSK/16/64QAM
Carriers Mode:	2K,8K
Bandwidth:	6MHz, 7MHz, 8MHz
Output Level:	90~115dBuV (depending on the channel numbers)
Frequency Range:	48~862 MHz

VIDEO DECODING

Decoding Format:	MPEG2 SD 4:2:0 MP@ML MPEG2 HD 4:2:0 MP@ML MPEG4 AVC SD MP@L3 MPEG4 AVC HD MP@L4.0/HP@4.0
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AUDIO DECODING

Audio Format:	MPEG1 Layer II Dolby Digital (AC-3) Dolby Digital Plus (E/AC-3) AAC (MPEG2, MPEG4/HE v1,2 ,MPEG4/LC)
Adjustable Volume Level:	-63~0dB

TS TRANSCODING

Processing channels:	4 programs
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INPUT

Video:	H.264 (MPEG4 part 10) or MPEG2
Video Format:	Up to 1080p30
Aspect Ratio:	4:3, 16:9, auto
Audio:	MPEG1 Layer I/II MPEG2 Layer II Dolby Digital(AC-3) (optional) AAC (optional)
Audio Mode:	Stereo, dual mono, Single Mono

OUTPUT

Video:	H.264(MPEG4 part 10) 4:2:0 MP@L4 MPEG2 4:2:0 MP@ML
Resolution:	576i, 480i (BT.656) 1080i50,1080i60,1080i59.94 720P50, 720P60, 720P59.94
Audio:	MPEG1 Layer-I/II AAC (optional)
Subtitle and audio:	Passthrough
Bitrate:	MPEG2 video: 2.0~15Mbps(CBR & VBR) Audio: 64~384Kbps MPEG4 Video: 1.0~20Mbps(CBR & VBR) Audio: 64~384Kbps
Adjustable Volume:	-63~0dBm

PHYSICAL & ENVIRONMENT

Input Voltage:	100 ~ 240 VAC
Power Consumption:	Approx. 40W
Rack Space:	1 RU
Dimensions (WxHxD):	19"x1.7"x17.3"
Operating Temperature:	0° C to 50° C
Storage Temperature:	-10° C to 70° C
Operating Humidity:	<95%
MTBF:	>150,000 hours