

# UMH160R Media Platform

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## Product Overview



## ▼ UMH160R Overview

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.

- ▶ Dual-tuner receiving with DVB-C/S2/T2, ISDBT, ATSC
- ▶ Multi-function
- ▶ Reliable design, remote control



Application:

Receiving, descrambling, transcoding and other secondary operating

Multiple functions and cost-effective

# Feature

## Flexible Tuner

- DVB-C
- DVB-T/T2
- DVB-S/S2 (MIS)
- ISDB-T
- ATSC

## BISS & CAS Decryption

- BISS-1/BISS-E
- Decoding/TS Level
- Mainstream CAS&CAM

## Various Models

- Base/RL/SDI
- AD
- IP
- TC2/4
- QAM/ATSCM
- Genlock&CC

## Special Function

- 2 pairs audio decoding
- GPI Alarm
- Analog/Digital Balanced audio decoding
- input port redundancy

# Benefit

## Quick Deployment

- Easy installation
- Succinct Web-GUI
- Simple configuration

## Wide Adaptability

- Support various inputs: IP, ASI and RF.
- Support various outputs: CVBS/SDI/HDMI, IP, ASI, RF, AES/EBU, Balanced audio
- Integrated function: decryption, transcoding, multiplexing, modulation

## Flexible Redundancy

- 2 x Tuner input
- IP, ASI, Tuner input
- IP, ASI output

## ▼ Chassis



Mainboard + Tuner + PSU + Reserved slot

## Models Overview

### UMH160R three Series :

#### ➤ UMH160R-BASE

- ① 160R-BASE
- ② 160R-RL
- ③ 160R-SDI

#### ➤ UMH160R-IP

- ① 160R-IP
- ② 160R-IP-G
- ③ 160R-TC2/TC4

#### ➤ UMH160R-AD

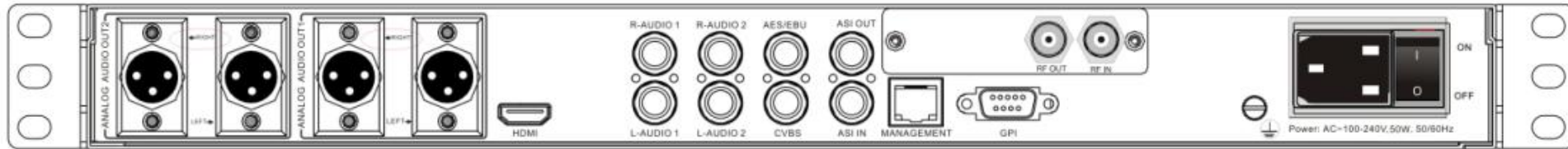
- ① UMH160R-AD
- ② UMH160R-QAM



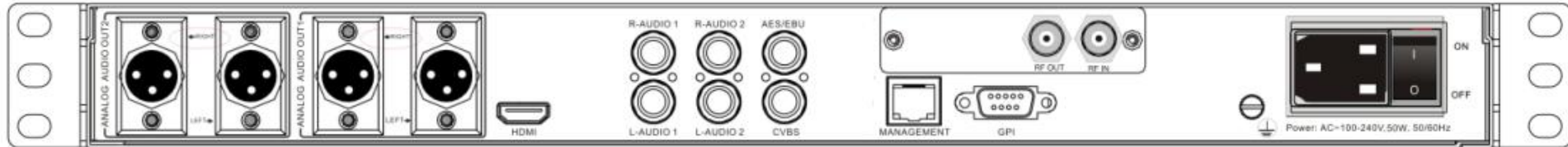


# UMH160R-BASE Series

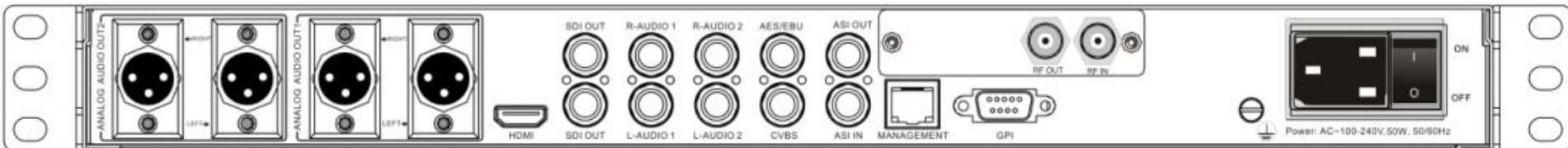
## ① 160R-BASE



## ② 160R-RL

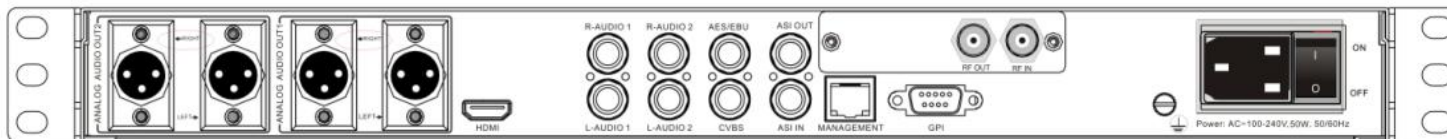


## ③ 160R-SDI



# UMH160R-Basic Specification

| Interface      | Description   |
|----------------|---|
| TUNER          | <b>Single</b> Tuner(RF In/RF Out) , -S2/S,-T2/T,-C,ISDB-T,8VSB Supported                |
| RJ45           | Used for Management , Support WEB Management and SNMP                                   |
| BNC x 6        | CVBS (1 video) , 4 unbalance audios ( L-Audio x 2+ R-Audio x 2),1 AES/EBU Digital audio |
| CANNON x 4     | 4 balance audios (L-Audio x 2 + R-Audio x 2)  |
| HDMI x 1       | 1 digital video/audio, HDMI1.3a supported   |
| DB9 x 1        | Male, GPI Alarm   |
| CI Slot x 2    | 2 independent CAM Slots   |
| <b>BNC x 2</b> | <b>2 SDI Output , UMH160R-SDI Only</b>  |
| <b>BNC x 2</b> | <b>2 ASI ( ASI In + ASI Out ) , UMH160R-BASE/UMH160R-SDI Only</b>                       |



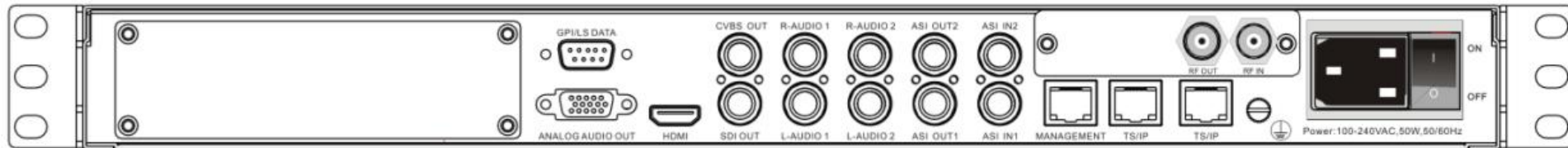


# UMH160R-BASE Series

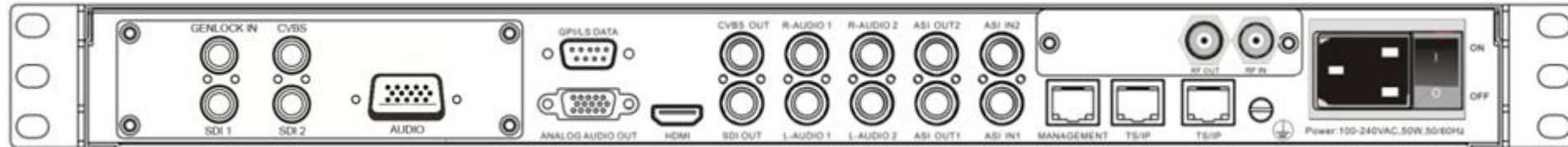
| Function        | Description   |
|-----------------|---|
| TS In           | ①Tuner or ASI In(UMH160R-BASE , UMH160R-SDI)<br>②Support DVB/ATSC MPEG-2 TS, Spread and Burst mode  |
| TS Out          | ASI out , UMH160R-BASE , UMH160R-SDI  |
| Video Output    | CVBS , HDMI , SDI( one as redundancy)   |
| Audio Output    | 4 balance and 4 unbalance analog audios, AES/EBU digital audio, HDMI, SDI with 2 embedded audios  |
| CI Descrambling | ①2 independent CI Slots<br>②Multicrypt / Simulcrypt<br>③CAM Brand : SMIT, ASTON, NEOTION<br>④CAS Manufacturer : Conax, Irdeto, Novel-SuperTV, CTI, Nagra<br>⑤Max Bit-Rate:100Mbps |
| AFD/WSS         | AFD: Active Format Description , WSS: Wide Screen Signaling   |
| BISS            | Support TS level BISS-1 and BISS-E  |

# UMH160R-IP Series

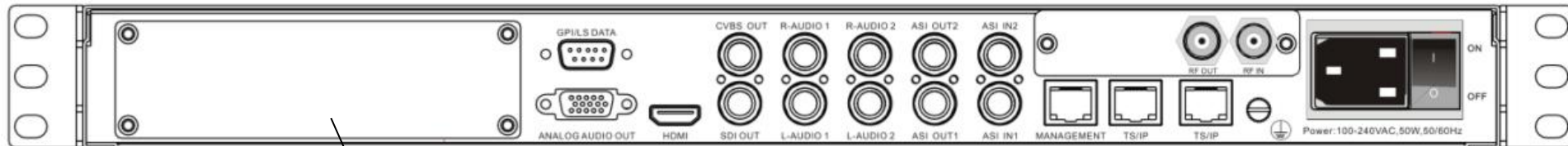
① 160R-IP



② 160R-IP-G



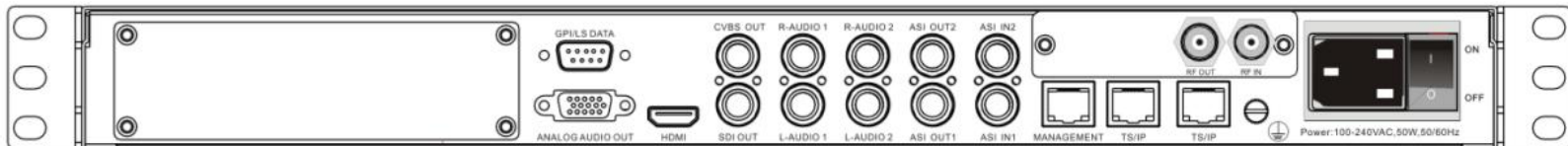
③ 160R-TC2/4



TC Module

# UMH160R-IP

| Interface | Description  |
|-----------|--|
| TUNER     | <b>Single</b> Tuner(RF In/RF Out) , -S2/S,-T2/T,-C,ISDB-T,8VSB Supported                               |
| RJ45 x 3  | 1 Management, 2 TSIP   |
| BNC x 10  | ASI In x 2 + ASI Out x 2; 4 unbalance audios ( L-Audio x 2+ R-Audio x 2); CVBS x 1(video); SDI Out x 1 |
| HDMI      | 1 digital video/audio, HDMI1.3a supported  |
| DB-9      | Male, GPI Alarm  |
| DB-15     | Female, 4 balance audios, 1 AES/EBU Digital audio  |

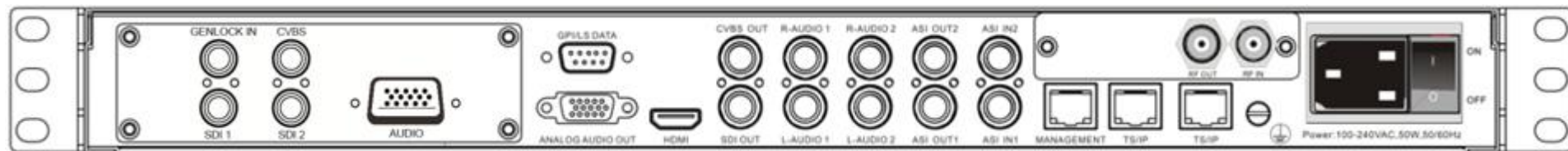


# UMH160R-IP

| Function            | Description  |
|---------------------|--|
| Tuner Input         | <b>Single</b> Tuner , -S2/S,-T2/T,-C,ISDB-T,8VSB Supported   |
| ASI Input / Output  | <ul style="list-style-type: none"> <li>①2 ASI Input simultaneously (1 for Backup)</li> <li>②2 ASI Output simultaneously (1 for Backup)</li> <li>③Max Bit-Rate: 100Mbps, Max transmission distance: 50M</li> </ul>  |
| TSIP Input / Output | <ul style="list-style-type: none"> <li>①1 IP Input/Output: 1 In 8 Out, Input Max Bit-Rate :72Mbps, Output Max Bit-Rate: 58Mbps / socket</li> <li>②1 Output for backup</li> <li>③Support Unicast(ARP) , Multicast(IGMP V2/V3) , IP V4</li> </ul>              |
| Video Output        | CVBS , HDMI , SDI  |
| Audio Output        | <ul style="list-style-type: none"> <li>①BNC: 4 unbalance analog audios</li> <li>②DB-15: 4 Balance analog audios, 1 AES/EBU digital audio</li> <li>③HDMI, SDI with 2 embedded audios</li> </ul>   |
| CI Descrambling     | <ul style="list-style-type: none"> <li>①2 independent CI Slots</li> <li>②Multicrypt / Simulcrypt</li> <li>③CAM Brand : SMIT, ASTON, NEOTION</li> <li>④CAS Manufacturer : Conax, Irdeto, Novel-SuperTV, CTI, Nagra</li> <li>⑤Max Bit-Rate: 100Mbps</li> </ul> |

# UMH160R-IP-G

| Interface | Description  |
|-----------|--|
| TUNER     | <b>Single</b> Tuner(RF In/RF Out) , -S2/S,-T2/T,-C,ISDB-T,8VSB Supported                               |
| RJ45 x 3  | 1 Management, 2 TSIP   |
| BNC x 10  | ASI In x 2 + ASI Out x 2; 4 unbalance audios ( L-Audio x 2+ R-Audio x 2); CVBS x 1(video); SDI Out x 1 |
| HDMI      | 1 digital video/audio, HDMI1.3a supported  |
| DB-9      | Male, GPI Alarm  |
| DB-15     | Female, 4 balance audios, 1 AES/EBU Digital audio  |



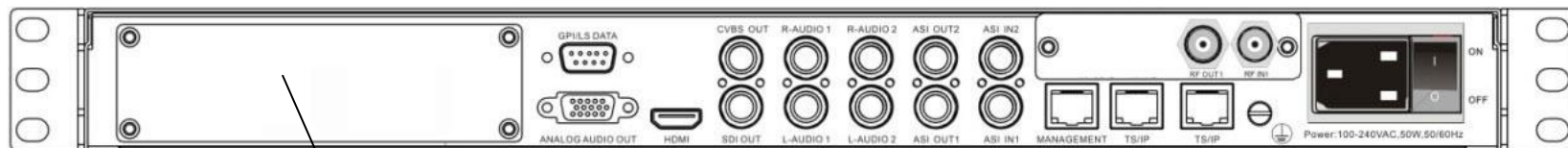


# UMH160R-IP-G

| Function            | Description  |
|---------------------|--|
| Tuner Input         | <b>Single</b> Tuner(RF In/RF Out) , -S2/S,-T2/T,-C,ISDB-T,8VSB Supported   |
| ASI Input / Output  | <ul style="list-style-type: none"> <li>①2 ASI Input simultaneously (1 for Backup)</li> <li>②2 ASI Output simultaneously (1 for Backup)</li> <li>③Max Bit-Rate: 100Mbps, Max transmission distance: 50M</li> </ul>  |
| TSIP Input / Output | <ul style="list-style-type: none"> <li>①1 IP Input / Output : 1 In 4 Out, Input Max Bit-Rate : 72Mbps, Output Max Bit-Rate: 58Mbps / socket</li> <li>②1 IP Output for backup</li> <li>③Support Unicast(ARP) , Multicast(IGMP V2/V3) , IP V4</li> </ul>       |
| Video Output        | CVBS , HDMI , SDI  |
| Audio Output        | <ul style="list-style-type: none"> <li>①BNC: 4 unbalance analog audios</li> <li>②DB-15: 4 Balance analog audios, 1 AES/EBU digital audio</li> <li>③HDMI, SDI with 2 embedded audios</li> </ul>   |
| CI Descrambling     | <ul style="list-style-type: none"> <li>①2 independent CI Slots</li> <li>②Multicrypt / Simulcrypt</li> <li>③CAM Brand : SMIT, ASTON, NEOTION</li> <li>④CAS Manufacturer : Conax, Irdeto, Novel-SuperTV, CTI, Nagra</li> <li>⑤Max Bit-Rate: 100Mbps</li> </ul> |
| Genlock&CC          | <ul style="list-style-type: none"> <li>1xGenlock IN</li> <li>1xCVBS output with CC</li> <li>2xSDI output with CC</li> </ul>  |

# UMH160R-TC2/TC4

| Interface | Description  |
|-----------|--|
| TUNER     | <b>Single</b> Tuner(RF In/RF Out) , -S2/S,-T2/T,-C,ISDB-T,8VSB Supported                               |
| RJ45 x 3  | 1 Management, 2 TS/IP  |
| BNC x 10  | ASI In x 2 + ASI Out x 2; 4 unbalance audios ( L-Audio x 2+ R-Audio x 2); CVBS x 1(video); SDI Out x 1 |
| HDMI      | 1 digital video/audio, HDMI1.3a supported  |
| DB-9      | Male, GPI Alarm  |
| DB-15     | Female, 2 balance audios, 1 AES/EBU Digital audio  |



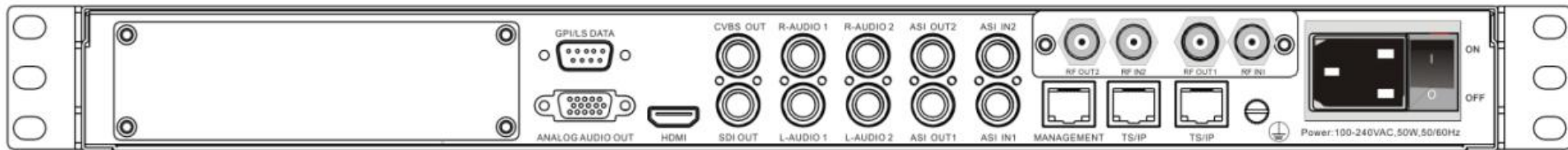
TC Module

# UMH160R-TC2/TC4

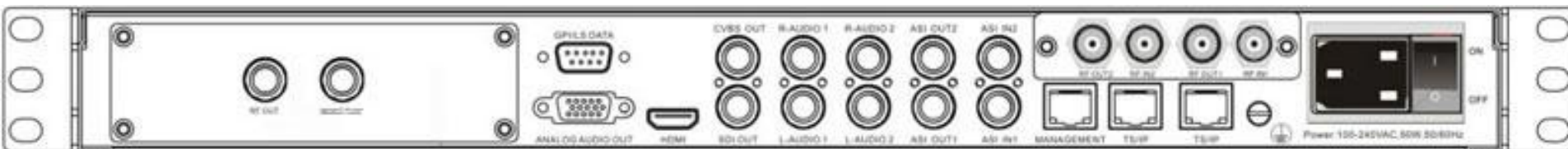
| Function            | Description  |
|---------------------|--|
| Tuner Input         | <b>Single</b> Tuner(RF In/RF Out) , -S2/S,-T2/T,-C,ISDB-T,8VSB Supported   |
| ASI Input / Output  | <ul style="list-style-type: none"> <li>①2 ASI Input simultaneously (1 for Backup)</li> <li>②2 ASI Output simultaneously (1 for Backup)</li> <li>③Max Bit-Rate: 100Mbps, Max transmission distance: 50M</li> </ul>  |
| TSIP Input / Output | <ul style="list-style-type: none"> <li>①1 IP Input / Output : 1 In 4 Out, Input Max Bit-Rate : 72Mbps, Output Max Bit-Rate: 58Mbps / socket</li> <li>②1 IP Output for backup</li> <li>③Support Unicast(ARP) , Multicast(IGMP V2/V3) , IP V4</li> </ul>       |
| Video Output        | CVBS , HDMI , SDI  |
| Audio Output        | <ul style="list-style-type: none"> <li>①BNC: 4 unbalance analog audios</li> <li>②DB-15: 4 Balance analog audios, 1 AES/EBU digital audio</li> <li>③HDMI, SDI with 2 embedded audios</li> </ul>   |
| CI Descrambling     | <ul style="list-style-type: none"> <li>①2 independent CI Slots</li> <li>②Multicrypt / Simulcrypt</li> <li>③CAM Brand : SMIT, ASTON, NEOTION</li> <li>④CAS Manufacturer : Conax, Irdeto, Novel-SuperTV, CTI, Nagra</li> <li>⑤Max Bit-Rate: 100Mbps</li> </ul> |
| Transcoder          | <p>TC2: Up to 4 MPEG-2 SD Programs transcoding</p> <p>TC4: Up to 2 MPEG-4(Part-10) HD/4 MPEG-4(Part-10)SD Programs transcoding</p>   |

# UMH160R-AD Series

## ① 160R-AD

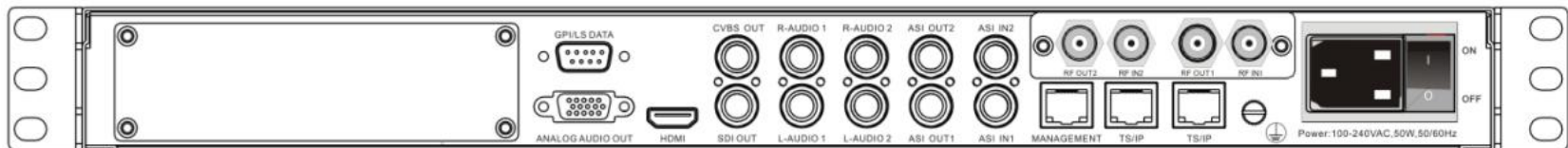


## ② 160R-QAM



# UMH160R-AD

| Interface | Description  |
|-----------|--|
| TUNER     | <b>Dual</b> Tuner(RF In/RF Out) , -S2/S,-T2/T,-C,ISDB-T,8VSB Supported                                 |
| RJ45 x 3  | 1 Management, 2 TSIP   |
| BNC x 10  | ASI In x 2 + ASI Out x 2; 4 unbalance audios ( L-Audio x 2+ R-Audio x 2); CVBS x 1(video); SDI Out x 1 |
| HDMI      | 1 digital video/audio, HDMI1.3a supported  |
| DB-9      | Male, GPI Alarm  |
| DB-15     | Female, 4 balance audios, 1 AES/EBU Digital audio  |



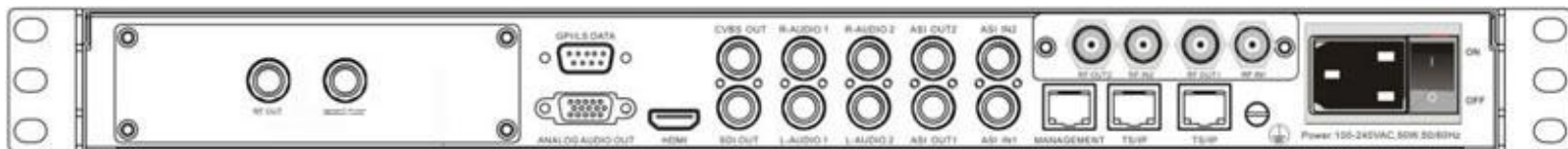


# UMH160R-AD

| Function            | Description  |
|---------------------|--|
| Tuner Input         | <b>Dual</b> Tuner , -S2/S,-T2/T,-C,ISDB-T,8VSB Supported   |
| ASI Input / Output  | <ul style="list-style-type: none"> <li>①2 ASI Input independently</li> <li>②2 ASI Output independently</li> <li>③Max Bit-Rate: 100Mbps, Max transmission distance: 50M</li> </ul>  |
| TSIP Input / Output | <ul style="list-style-type: none"> <li>①1 IP Input/Output: 2 In 2 Out, Input Max Bit-Rate : 65Mbps/socket, Output Max Bit-Rate: 72Mbps / socket</li> <li>②1 IP Output for backup</li> <li>③Support Unicast(ARP) , Multicast(IGMP V2/V3) , IP V4</li> </ul>   |
| Video Output        | CVBS , HDMI , SDI  |
| Audio Output        | <ul style="list-style-type: none"> <li>①BNC: 4 unbalance analog audios</li> <li>②DB-15: 4 Balance analog audios, 1 AES/EBU digital audio</li> <li>③HDMI, SDI with 2 embedded audios</li> </ul>   |
| CI Descrambling     | <ul style="list-style-type: none"> <li>①2 independent CI Slots</li> <li>②Multicrypt / Simulcrypt</li> <li>③CAM Brand : SMIT, ASTON, NEOTION</li> <li>④CAS Manufacturer : Conax, Irdeto, Novel-SuperTV, CTI, Nagra</li> <li>⑤Max Bit-Rate: 100Mbps</li> </ul> |
| Re-multiplexing     | <b>Supported</b>   |
| BISS Descrambling   | <b>Support TS level BISS-1 and BISS-E</b>  |

# UMH160R-QAM

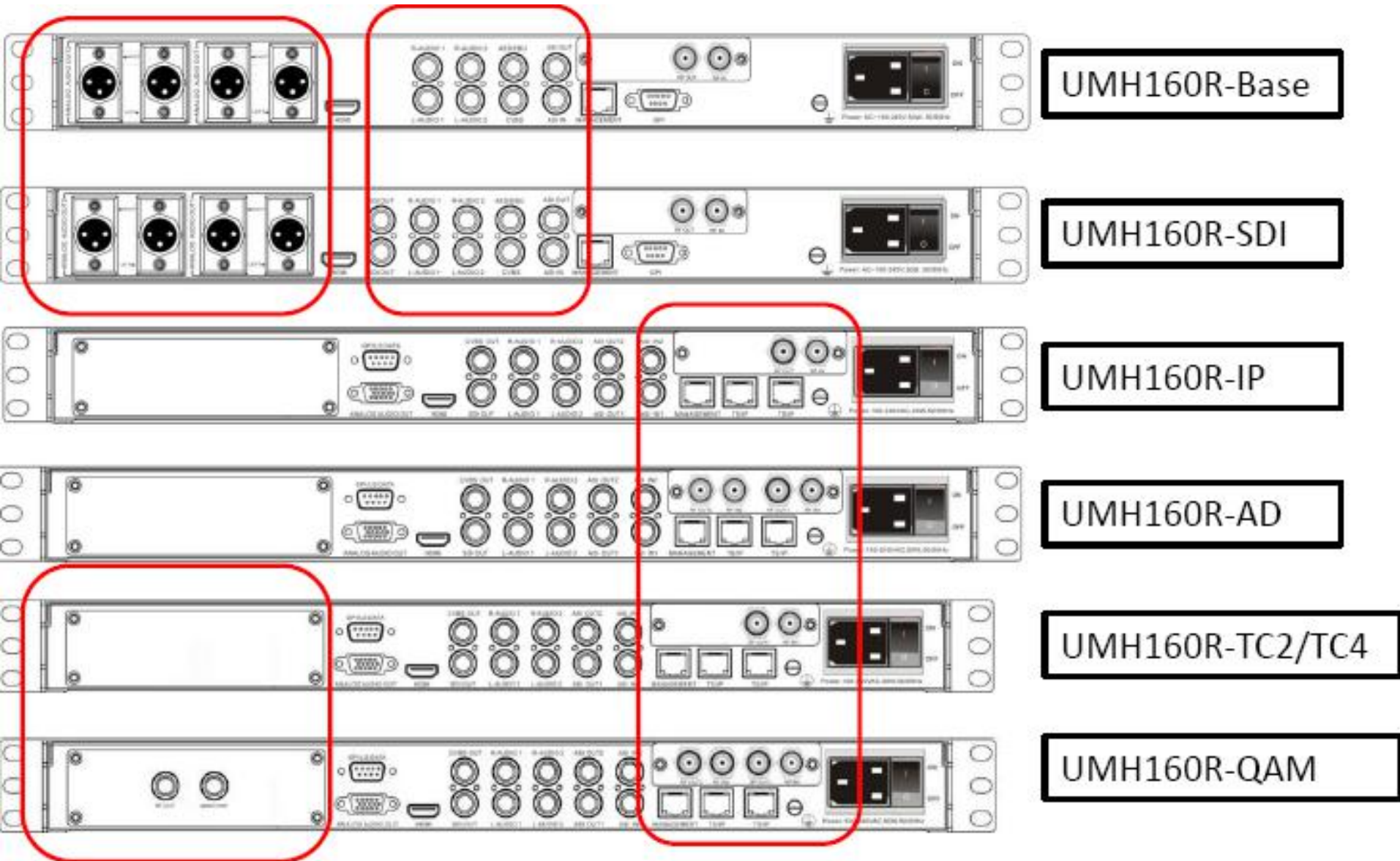
| Interface | Description  |
|-----------|--|
| TUNER     | <b>Dual</b> Tuner(RF In/RF Out) , -S2/S,-T2/T,-C,ISDB-T,8VSB Supported                                 |
| RJ45 x 3  | 1 Management, 2 TSIP   |
| BNC x 10  | ASI In x 2 + ASI Out x 2; 4 unbalance audios ( L-Audio x 2+ R-Audio x 2); CVBS x 1(video); SDI Out x 1 |
| HDMI      | 1 digital video/audio, HDMI1.3a supported  |
| DB-9      | Male, GPI Alarm  |
| DB-15     | Female, 4 balance audios, 1 AES/EBU Digital audio  |



# UMH160R-QAM

| Function            | Description  |
|---------------------|--|
| Tuner Input         | <b>Dual</b> Tuner , -S2/S,-T2/T,-C,ISDB-T,8VSB Supported   |
| ASI Input / Output  | ①2 ASI Input simultaneously (1 for Backup)<br>②2 ASI Output independently<br>③Max Bit-Rate: 100Mbps, Max transmission distance: 50M  |
| TSIP Input / Output | 1 IP Input : 2 In ,Input Max Bit-Rate : 72Mbps/socket<br>IP Output unsupported   |
| Video Output        | CVBS , HDMI , SDI  |
| Audio Output        | ①BNC: 4 unbalance analog audios<br>②DB-15: 4 Balance analog audios, 1 AES/EBU digital audio<br>③HDMI, SDI with 2 embedded audios   |
| CI Descrambling     | ①2 independent CI Slots<br>②Multicrypt / Simulcrypt<br>③CAM Brand : SMIT, ASTON, NEOTION<br>④CAS Manufacturer : Conax, Irdeto, Novel-SuperTV, CTI, Nagra<br>⑤Max Bit-Rate: 100Mbps |
| Re-multiplexing     | Supported  |
| Modulating          | <b>Up to 4QAM or 2 OFDM</b>  |

# Comparison



# UMH160R-BASE Series

|     | UMH160R-BASE   | UMH160R-RL | UMH160R-SDI |
|-----|--|------------|-------------|
| ASI | ①UMH160R-BASE<br>②UMH160R-SDI                                |            |             |
| SDI | ①Only for UMH160R-SDI<br>②2 Output SDI HD, embedded 2 audios |            |             |

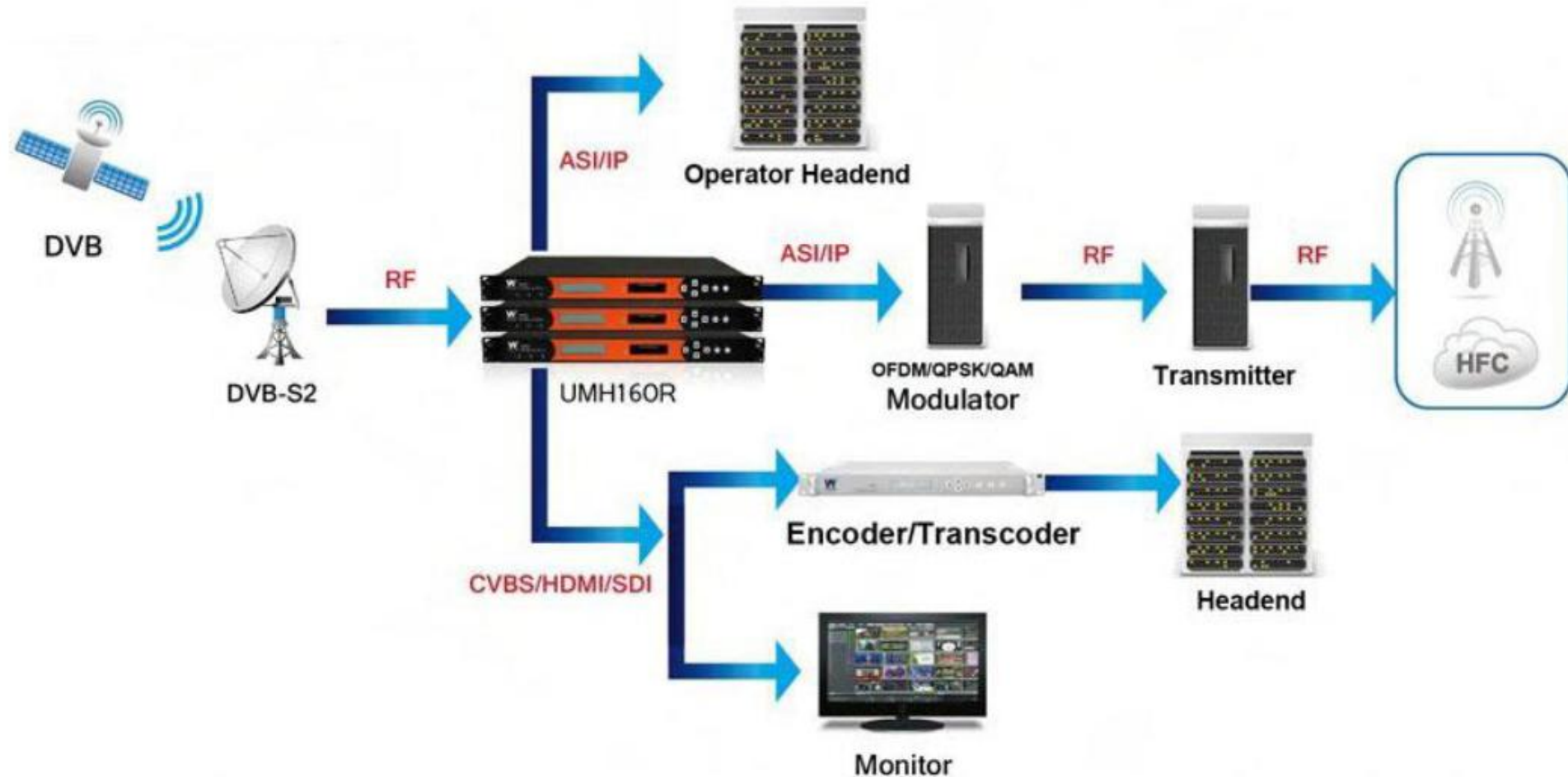


# UMH160R-IP vs UMH160R-AD

|           | UMH160R-IP   | UMH160R-IP-G  | UMH160R-TC  | UMH160R-AD  | UMH160R-QAM                               |
|-----------|--|---|---|---|---|
| Tuner     | Single Tuner   |   | Single Tuner  | Dual Tuner  | Dual Tuner                                |
| TSIP      | 1 IP input/Output:<br>1 In 8 Out ;<br>1 IP Output for Backup | 1 IP input/Output:<br>1 In 4 Out ;<br>1 IP Output for Backup              | 1 IP input/Output: 1 In 4 Out ;<br>1 IP Output for Backup | 1 IP input/Output: 2 In 2 Out ;<br>1 IP Output for Backup | 1 IP input: 2 In;<br>No IP Output         |
| ASI In    | 2 ASI Input simultaneously (1 for Backup)                    | 2 ASI Input simultaneously (1 for Backup)                                 | 2 ASI Input simultaneously (1 for Backup)                 | 2 ASI Input independently                                 | 2 ASI Input simultaneously (1 for Backup) |
| ASI Out   | 2 ASI Output simultaneously (1 for Backup)                   | 2 ASI Output simultaneously (1 for Backup)                                | 2 ASI Output simultaneously (1 for Backup)                | 2 ASI Output independently                                | 2 ASI Output independently                |
| Sub-board | No   | Genlock&CC:<br>1xGenlock IN<br>1 x CVBS out with CC<br>2x SDI out with CC | Transcoder: Up to 4 SD MPEG-2/MPEG-4, 2 HD MPEG-4         | No  | Modulator, Up to 4 QAM or 2 OFDM          |
| Re-Mux    | No   | No  | No  | Yes   | Yes                                       |

# Typical Application-1

## Program distribution



# Typical Application-2

## Point to point video transmission via IP



## Hotel/MDU application



## Receive and transcode H.264 signals to support legacy network



*Thanks !*

