UMH160UIG

UHD Receiver Decoder

User Guide



Revision History

Date	Version	Description	Author
25/7/2022	1.0	First Draft	
8/12/2022	1.1	Add Management IP address settings and Cardless CAS feature	

This guide contains some symbols to call your attention.

A DANGER	The DANGER symbol calls your attention to a situation that, if ignored, may cause physical harm to the user.
	The CAUTION symbol calls your attention to a situation that, if ignored, may cause damage to Our product.
NOTE	The NOTE symbol calls your attention to important information.
TIP	The TIP symbol calls your attention to additional information that, if followed, can make procedures more efficient.
Red Arrow	The Red Arrow symbols point to import details mention the context above or below an image.
• Blue Arrow	The Blue Arrow symbol indicates the motion path of an item in an operation step.
Thick Arrow	The thick Arrow symbol calls your attention to a series of operation steps mentioned in the context.

This guide also contains the following text conventions.

Bold ItalicThe bold Italic text indicates a button to click, an item in the drop-down menu to
select, or a certain item in the UI.

Safety Instructions

- Read these instructions
- Keep these instructions
- Follow all instructions
- Heed all warnings
- Do not use this unit near water.
- Only use a dry cloth to clean chassis
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions
- This unit is grounded through the power cord grounding conductor. To avoid electrocution, do not remove the power cord before the outlet is switched off or unplugged. If the plug does not fit into your outlet, consult an electrician for replacement of the outlet.
- Route power cords and other cables so that they are not likely to be damaged.
- Only use attachments/accessories specified by the manufacturer.
- Do not wear hand jewelry or watch when troubleshooting high current circuits.
- Do not work on the system during periods of lightning.
- Refer all servicing to qualified service personnel. Servicing is required when this unit has been damaged in any way.
- **Damage Requiring Service**: Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - O When the power-supply cord or plug is damaged.
 - O If liquid has been spilled, or objects have fallen into the product.
 - O If the product has been exposed to rain or water.
 - O If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of the controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
 - O If the product has been damaged in any way.
 - O The product exhibits a distinct change in performance.
- **Replacement Parts**: When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer. Unauthorized part substitutions made may result in fire, electric shock or other hazards.

SAFETY PRECAUTIONS

There is always a danger present when using electronic equipment.

Unexpected high voltages can be present at unusual locations in defective equipment and signal distribution systems. Become familiar with the equipment that you are working with and observe the following safety precautions.

- Every precaution has been taken in the design of your UMH160UIG to ensure that it is as safe as possible. However, safe operation depends on you the operator.
- Always be sure your equipment is in good working order. Ensure that all points of connection are secure to the chassis and that protective covers are in place and secured with fasteners.
- Never work alone when working in hazardous conditions. Always have another person close by in case of an accident.
- Always refer to the manual for safe operation. If you have a question about the application or operation call Wellav for assistance.
- WARNING To reduce the risk of fire or electrical shock never allow your equipment to be exposed to water, rain or high moisture environments. If exposed to a liquid, remove power safely (at the breaker) and send your equipment to be serviced by a qualified technician.
- To reduce the risk of shock the UMH160UIG must be connected to a mains socket outlet with a protective earthing connection.
- For the UMH160UIG the mains plug is the main disconnect and should remain readily accessible and operable at all times.
 The UMH160UIG is equipped with an internal system battery. The UMH160UIG must be sent to Wellav service for replacement of this battery.
- When installing the UMH160UIG utilizing the DC power supply, the power supply MUST be used in conjunction with an over-current protective device rated at 50V, 5A, type: Slow-blo, as part of battery-supply circuit.
- To reduce the risk of shock and damage to equipment, it is recommended that the chassis grounding screw located on the rear of the UMH160UIG– be connected to the installation's rack, the vehicle's chassis, the battery's negative terminal, and/or earth ground.

CAUTION – Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type.

FCC Class A Information

The UMH160UIG has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his or her own expense.

Shielded cables must be used with this unit to ensure compliance with the Class A FCC limits.

M Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Dolby Digital Information

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Preface

About This Manual

This manual provides introduction to users about how to operate the device correctly. The content includes introduction to product installation, product characteristics and product settings, etc. It is highly suggested that users should read this document before actually operating the device.

Intended Readers

This manual is suggested to be studied by the following readers:

- Technical Service Engineer
- Maintenance Engineer
- Test Engineer
- Sales Engineer

Symbol	Meaning
	There is highly potential danger. If it cannot be avoided, it will lead to the deaths or
DANGEROUS	serious injury.
	There is medium or low potential danger. If it cannot be avoided, it will lead to medium
WARNING	or slight injury.
	There are potential risks. If ignore these texts, it may cause damage to the device,
ATTENTION	data loss, equipment performance reduce or unpredictable results.
TIPS	Tips that help you to solve problems or save your time.
REMARKS	Remarks. Additional information to the text, in order to emphasize something.

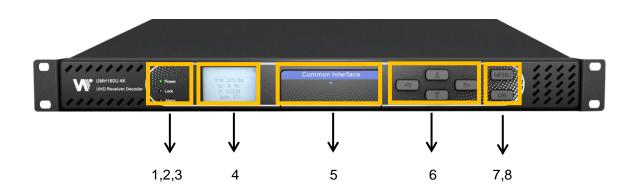
Symbols Definition

For the symbols that might appear in this document, the meanings they represent are as the following:

1. Overview

1. 1. Product Introduction

UMH160UIG is a powerful and cost-effective 4K receiver/decoder that supports MPEG-2/H.264/H.265/AVS+/AVS2 UHD/HD/SD 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.



1.2. Front Panel Overview

1. Power status indicator: This LED light is turned on when the IRD is power on.

2. Lock status indicator: This LED light is turned on when a channel is locked.

3. Alarm status indicator: This LED flickers when there is something abnormal.

4. LCD screen: This LCD screen can show the program and configuration information.

5. CI slots: There are two CI slots for various CAS CAM (PCMCIA) modules.

6. Up/Down/Left/Right buttons: To change channels, to adjust volumes and configure the IRD.

7. Menu button: To enter the menu and the quit function of the sub menus.

8. OK button: To confirm the operation in the setup.

1. 3. Rear Panel Overview



1	RELAY	2	AUDIO OUT
3	HDMI	4	AES/EBU
5	CVBS OUT	6	R-AUDIO1
7	R-AUDIO2	8	ASI OUT1
9	ASI OUT2	10	SDI OUT1
11	SDI OUT2	12	L-AUDIO1
13	L-AUDIO2	14	ASI IN1
15	ASI IN2	16	USB
17	MGMT	18	TS/IP 1
19	TS/IP 2	20	RF IN2
21	RF IN1	22	POWER SUPPLY

1.4. Cooling

The UMH160UIG is cooled via forced induction through the front of the unit and exhausted through the vents in the rear of the chassis. The UMH160UIG is equipped with a temperature controlled status indicator. If the temperature inside the unit exceeds 60°C the red "Error" text will illuminate on the front panel and a description of the error will appear in the "Error List.

1.5. Rack Information

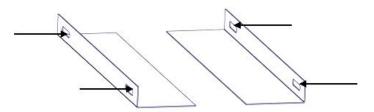
The UMH160UIG is intended to be mounted in a standard 19" rack. It occupies 1RU of rack space and the connections are all on the rear of the unit.

2. Installation

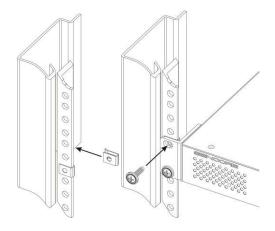
2.1. Installation Procedure

The UMH160UIG is designed to be mounted in a standard 19" rack. It takes 1RU of rack space. To install it into a rack, please use the following steps:

- 1. Determine the desired position in the rack for the UMH160UIG. Make sure that the air intake on the top of the unit and the exhausts on the back of the unit will not be blocked.
- 2. Install the brackets at desired position if there's no supporting plate in the rack.



- 3. Insert the rack mount clips into place over the mounting holes in the rack.
- 4. Slide the UMH160UIG into the position in the rack.
- 5. Secure the chassis to the rack by installing the four supplied screws through the front mounting holes and tightening.



2. 2. Preparation before Installation

Before installation, the installation personnel should read through and confirm the

followings:

• Go through this user manual.

- Has the knowledge of digital television system.
- Has defined the sources, racks allocation, and set-up plan system wiring.
- Knows how to operate this unit and parameters configuration.
- Go through related engineering design documents about the system.

2. 3. AC Power Connection

Please only use the supplied 3-prong power connector or one with equal specifications. NEVER tamper with or remove the grounding pin. This could cause damage to UMH160UIG, personnel, or property. Make sure the power outlet is switched off before plug or unplug the power cable from the panel of UMH160UIG.

2.4. DC Power Connection

The UMH160UIG with the DC chassis option is intended for use on 48V DC systems. A power cable is not included for this option. In order to apply power to the unit in this configuration, simply connect the screw terminals on rear of the unit to the rack's DC power rails.

Be sure that the power source and cable is used in conjunction with an over-current protective device rated at 50V, 5A, type: Slow-blo fuse as part of battery-supply circuit. Also, to reduce the risk of shock and damage to equipment, it is recommended that the chassis grounding screw (1.3) located on the rear of the UMH160UIG – be connected to the installation's rack, battery negative terminal, and/or earth ground.

2.5. Checking Package and Accessories

- Base Unit x1
- Power cord x1
- Earth cord x1
- BNC cord x1
- BNC-RCA cord x2

2.6. Maintenance

The UMH160UIG is virtually a maintenance-free piece of equipment. There are no user serviceable parts on the inside of the unit.

3. Operating the front panel

3. 1. UMH160UIG Front Panel Overview



The UMH160UIG front panel allows the user to configure all settings that are present in the web interface using the buttons located on the front of the unit. The screen below is the idle screen of the UMH160UIG. This idle screen allows the user to view the incoming bitrate of the active input, which input is set to active, the management IP address of the unit and the service currently set to decode.

3. 2. UMH160UIG Network Setup via Front Panel



- 1. Bitrate of incoming stream displayed in Mbps.
- 2. Current active input.
- 3. IP address of management port.
- 4. Current decoded service.

The following figure shows a typical screen on the front panel. Several important features have been circled and noted below. These features are common to all screens and assist

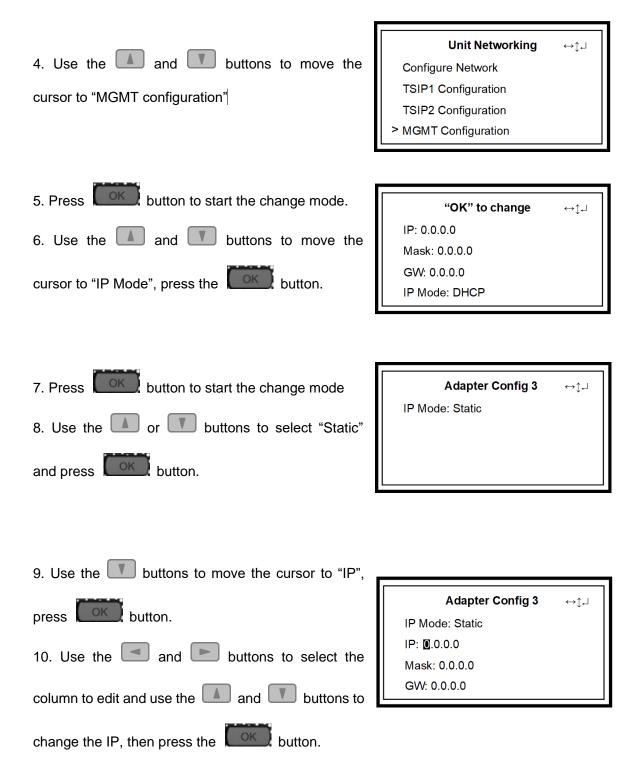
when navigating, viewing and editing unit information. The MeNU button allows the user to return to the home screen, cancel settings and go back a menu. In order to edit a selected parameter the MeNU button must be pressed. Once a parameter has been changed the MeNU button must be pressed again before the change takes effect on the unit.

Adapter Config 3 + >IP Mode: Static IP: 192.168.1.100 Mask: 255.255.255.0 GW: 0.0.0.0

3. 3. UMH160UIG Management IP address via Front Panel

To setup the UMH160UIG with a Static IP address, use the following steps:

 Press the button to "Main Manu". Use the and buttons to move the cursor to "System" 	Main Menu ↔ Inputs Decoding Outputs >	
3. Use the A and V buttons to move the cursor to "Unit Networking".	System Menu ↔↓↓ > Unit Networking Reboot About Unit Reset All Settings	



11. The cursor will now be on "Mask".	
	Adapter Config 3 ↔ț₊J
12. Use the 🖪 and 🕨 buttons to select the	IP Mode: Static
	IP: 0.0.0.0
column to edit and use the 🚺 and 🚺 buttons to	Mask: 0.0.0.0
	GW: 0.0.0.0
change the Subnet Mask, then press the	
button.	
13. The cursor will now be on "GW" which is gateway.	
	Adapter Config 3 ↔‡₊J
14. Use the 💶 and 🖿 buttons to select the	IP Mode: Static
	IP: 0.0.0.0
	IF. 0.0.0.0
column to edit and use the 🚺 and 🛄 buttons to	Mask: 0.0.0.0
column to edit and use the 🚺 and 🚺 buttons to change the Gateway, then press the 🗰 button.	

DHCP

The UMH160UIG can be configured to use DHCP to obtain an IP address/Subnet

Mask/Gateway.

1. Use the 🚺 and 🚺 buttons to move the cursor	
to "IP Mode", press the to the button.	Adapter Config 3 ↔ୁ.J IP Mode: DHCP
2. Use the I or I buttons to select "DHCP"	
and press CON button to save the selection.	

4. Operating the Web Interface

4.1. UMH160UIG Web Interface Overview

4.1.1. Logging into the UMH160UIG Web Interface

The user will need to login to the web interface. Press the login button in order to login to the web interface.

Default Credentials

IP address:10.0.0.74

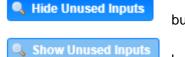
Username: admin

Password: mpeg101

& Login	
User: admin Password:	
🤌 Login	

4.1.2. Hiding Unused Inputs

The UMH160UIG web interface allows the user to hide inactive inputs using the



button or show all available inputs by click the

button. Only the inputs configured as the Primary Input and

Backup Input will be displayed when unused inputs are hidden.

4.1.3. Buttons and Status Indicators

When the 🥒 button is shown user configuration is available. Clicking this button will open

menus where settings can be changed by the user.

Inputs				
S Hide Unused Inputs	3	Configure ASI Port 1		
🖉 Input 1	Active: None	Receive:	Disabled	•
🖉 Input 2	Active: None	TS Standard:	DVB	-
A SI Port 1	Receive: Disabled			
A SI Port 2	Receive: Disabled		Apply	Cancel

When the icon is shown additional status information can be viewed. Click this button will expand the menu to display the additional status information.

Green LED	Status is good. No errors are present and function is operating normally.
Red LED	Status indicates function is affected by active error. To view the errors navigate to Alarms panel to view Active Errors
Gray LED	Status is inactive. Function is currently disabled or unavailable

Status in the UMH160UIG web interface is shown with LED status indicators:

4.2. Main panel

The Main panel of the UMH160UIG web interface is used to configure the unit to decode, de-encapsulate and demodulate. When configuring the UMH160UIG the user begins at the top of the menu and works down. The inputs are configured, then descrambling (if present), then service or PIDs are selected for decode, then outputs are configured. Pictured below is a fully populated unit with all options licensed.

		Main Logs System
Main Control Panel		
Inputs		
Show Unused Inputs		
Input 1	Active: TS/IP Port 1 Stream 1 Primary: TS/IP Port 1 Stream 1 Backup: ASI Port 1	35 Switch to Backup Inpu
Input 2	Active: None Primary: None Backup: None	😒 Switch to Backup Inpu
🖉 A SI Port 1	Receive: Disabled	Stream Rate(Mbps): 0.00 / 0.00 Unlocked
🗄 🥒 TS/IP Port 1 Stream 1	Receive: Enabled 239.192.0.206:10000	Stream Rate(Mbps): 8.23 / 8.45 Locked
Conditional Access		
🗉 🥒 DVB-CI	Top Slot: Disabled Source: None Bottom Slot: Disabled Source: None	
Decoding		
Service	Source: Input 1 Service: 1 (Program-1)	Mode: Service Lock
• Video	PID: 1000 (MPEG-2 MP@ML 4:2:0 8 Bit) Native Format: 720x576i 4x3 25fps	
o Audio 1	PID: 1001 (MPEG-1) Format: 128 kbps 48.0 kHz 2/0	
Baseband Processing		
😠 🖉 Video	Format Mode: Auto Output Format: 720x576i 16x9 25.00fps	
🗄 🥒 Audio	Audio State: Enabled Audio Volume: 100%	
Data Outputs		
Program Multiplex		
A SI Port 1	Transmit: Disabled Source: Input 1	Stream Rate(Mbps): 0.00 / 0.00
ASI Port 2	Transmit: Disabled Source: Input 1	Stream Rate(Mbps): 0.00 / 0.00
/ TS/IP Port 1 & 2	Operation Mode: Output All PIDs	
	m1 Transmit: Disabled Source: Input 1 239.100.1.100:10000 Backup:	Disabled Stream Rate(Mbps): 0.00 / 0.00

4.2.1. Configuring Active Inputs

This menu allows the user to configure a primary and backup input. In case there is an input failover the UMH160UIG is capable of detecting the failed state and switching to a secondary backup input in order to provide a continuous output. Which input is primary and backup, how the inputs switchover and restore and switchover timing is all user configurable. The user can force the UMH160UIG to switch between the Primary and Backup Inputs by clicking the switch to button. To change the active input and failover settings click the button next to Input Selection:

Inputs					
Show Unused Inputs					
🥒 Input 1	Active: TS/IP Port 1 Stream 1	Primary: TS/IP Port 1 Stream 1 Backup: ASI Port 1		Switch to Ba	ckup Input
/ Input 2	Active: None	Primary: None Backup: None		Switch to Ba	ckup Input
ASI Port 1	Receive: Disabled		Stream Rate(Mbps):	0.00 / 0.00	Unlocked
I S/IP Port 1 Stream 1	Receive: Enabled 239.192.0.206:	10000	Stream Rate(Mbps):	8.24 / 8.45	Locked

Active Input Indicator

Configure Input 1		
Primary Input:	TS/IP Port 1 Stream 1	-
Backup Input:	ASI Port 1	-
Switch On:	Sync Loss	Ŧ
Restore On:	Backup Input Sync Loss	Ŧ
Switchover (secs.):	5	+
	Apply Canc	el

General options for Input 1 configuration

Setting	Range	Description
Primary Input	DVB-S2X Port1	Used for both normal operation and
	DVB-S2X Port2	input failover settings. During normal
	ASI Port1	operation this input will be the active
	ASI Port2	input.
	TS/IP Stream 1	Note: Depending on the tuner module
	TS/IP Stream 2	that is installed, the menu will change
	TS/IP Stream 3	to reflect the applicable input type.
	TS/IP Stream 4	
	Network protocol	
Backup Input	DVB-S2X Port1	During failover operation this input will
	DVB-S2X Port2	become the active input. The catalyst
	ASI Port1	for what causes the unit to switch to
	ASI Port2	this input is configured in the following
	TS/IP Stream 1	setting.
	TS/IP Stream 2	
	TS/IP Stream 3	Note: Depending on the tuner module
	TS/IP Stream 4	that is installed, the menu will change
	Network protocol	to reflect the applicable input type.

Switch On	Manual Only	Manual Only: the unit will not switch
	TS Sync Loss	inputs automatically. The user must
		manually switch inputs.
		TS Sync Loss: the UMH160UIG will
		switch from the primary to the backup
		input if the primary stream loses
		synchronization for the duration of the
		Switchover Interval.
Restore On	Manual Only	Manual Only: the unit will not restore to
	Primary Input Restored	the primary input automatically. The
	Backup Input Sync Loss	user must manually switch inputs.
		Primary Input Restored: the
		UMH160UIG restores to primary when
		the Primary input regains transport
		stream synchronization.
		Backup Input Sync Loss: the unit will
		switch from back to primary when the
		backup stream loses synchronization
		for the duration of the Switchover
		interval.
Switchover(se	1-20 seconds	The time in seconds which Switch On
cs)		or Restore On value must remain in the
		configured state before the
		UMH160UIG switches between the
		Primary Input and Backup Input or vice
		versa.

4.2.2. Configuring ASI Input

This menu allows the user to either Enable or Disable the ASI Input on the UMH160UIG. After ASI is enabled, the user need to select the corresponding TS standard, DVB or ATSC.

Configure ASI Port 1			
Receive:	Enabled	-	
TS Standard:	DVB	Ŧ	
	Apply	Cancel	

General options for ASI input

Setting	Range	Description
Receive	Enabled	This setting allows the user to enable or disable
	Disabled	these input stream settings.
TS	DVB	This setting allows the user to select the TS
Standard	ATSC	standard for input stream.

4.2.3. Configuring TS/IP Input

This menu allows the user to configure the TS/IP inputs. There are two ports that can be set to receive and/or transmit. This menu is for setting up the reception of TS/IP unicast or multicast transport streams. The menu for Stream 1 and 2 have the same settings. IGMPv2 is used to join/leave multicast streams by default if no IGMP Filter addresses are entered. If IGMP Filter Mode addresses are specified then IGMPv3 is used.

Configure TS/IP Port 1 Stream 1				
Receive:	Enabled	Ŧ		
Mode:	Multicast	~		
Destination IP:	239.192.0.206			
Destination Port:	10000	\$		
TS Standard:	DVB	Ŧ		
IGMP Filter Mode:	Exclude	Ŧ		
Add IGMP Address	🖨 Rer	nove All		
IGMP Address		Remove		
	Apply	Cancel		

General options for TS/IP Input

Setting	Range	Description
Receive	Enabled	This setting allows the user to enable or disable
	Disabled	these input stream settings.
Mode	Multicast Unicast	Multicast setting allows the unit to receive multicast streams. Multicast streams originate from the IP range 224.0.0.0 – 239.255.255.255. Unicast allows the unit to receive unicast streams. Unicast streams originate directly from a source device.
Destination IP	224.0.0.0 239.255.2 55.255	This setting is only available when receiving a multicast stream. This address is the IP address the source device is sending to.
Destination Port	0-65535	This is the UDP port the source device is sending to. This is the only setting required to receive a unicast stream.
TS Standard	DVB ATSC	This setting allows the user to select the TS standard for input stream.
IGMP filter	Exclude	Used on networks supporting IGMPv3. If this
Mode	Include	setting is set to Exclude any streams originating
		from the user defined IP addresses will be rejected. If this setting is set to Include any streams
		originating from the user defined IP addresses will
		be received.

4. 2. 4. Configuring DVB-S/S2/S2X Input

If the DVB-S/S2/S2X tuner was selected as a factory installed option, the following menus and options will be available for configuration. This menu allows the user to configure the DVB-S/S2/S2X inputs. The tuner will automatically detect modulation and

symbol rate during signal acquisition. LNB Power configuration for this input card is configured in the DVB-S/S2/S2X menu.

Configure DVB-S2X Port 1			
Receive:	Disabled	-	
TS Standard:	DVB	Ŧ	
Frequency(MHz):	3840	\$	
Symbol Rate(KBaud):	27500	÷	
LNB Frequency(MHz):	5150	÷	
LNB Voltage:	Off	Ŧ	
LNB 22k:	Enabled	Ŧ	
	Apply	Cancel	

Configuration of DVB-S2X

Setting	Range	Description
Receive	Disabled	This setting allows the user to enable or disable
	Enabled	this input stream.
TS Standard	DVB	This setting allows the user to select the TS
	ATSC	standard for input stream.
Frequency(MHZ)	0-14500	This setting allows the user to enter the satellite
		frequency.
Symbol	1000-45000	This setting allows the user to enter the symbol
Rate(KBaud)		rate.
LNB	0-13550	The offset in MHz that the local oscillator is
Frequency(MHZ)		operating. Set to the LNB frequency when you
		want to enter the satellite frequency in Frequency
		field.

LNB Voltage	OFF	The UMH160UIG has the ability to provide the
	13V	necessary voltage to power an LNB. Select the
	18V	correct voltage to supply to the LNB.
LNB 22k	Enable	Enabling or disabling the 22khz tone allows the
	Disable	UMH160UIG to trigger the LNB to switch polarities.

4.2.5. Configuring DVB-C Input

If the DVB-C tuner was selected as a factory installed option, the following menus and options will be available for configuration. This menu allows the user to configure the DVB-C inputs. This menu is for setting up the reception of DVB-C cable signal or DTMB signal.

Configure DVB-C Port 1		
Modulation Type:	DVB-C	~
Receive:	Enabled	*
TS Standard:	DVB	Ψ.
Frequency(KHz):	59000	* *
	Apply	Cancel

Setting	Range	Description
Modulation Type	DVB-C	This setting allows the user to choose between
	DTMB	DTMB or DVB-C modulation schemes.
Receive	Disabled	This setting allows the user to enable or disable this
	Enabled	input stream.
TS Standard	DVB	Defines the standard for the modulation input
	ATSC	selected.
Frequency (KHz)	47000-	This setting allows the user to enter the frequency of
	862000	the input signal.

4.2.6. Configuring Network Protocol Input

This section describes how to configure Network Protocol input. Currently the

UMH160UIG supports HLS input and SRT input.

Configuring HLS Input

This menu configures the HLS input for reception of HTTP/HTTPS streams. The HLS input may be configured to receive through a local or network location through the HLS mode setting.

Configure Network Protocol	
Input type:	HLS
Receive:	Enabled
Interface:	TS/IP 1
HLS Mode:	Pull
HLS Network Location:	http://qthttp.apple.com.edg
	Apply and Refresh
Profile Name	Bandwidth
Profile Name Decryption Mode:	
	Bandwidth

General options for HLS input

Setting	Range	Description
Receive	Disabled Enabled	This setting allows the user to enable or disable this input stream.
Interface	TS/IP 1 TS/IP 2	The physical connector on which to receive the HLS traffic.
HLS	Pull	Determines if the HLS receivers through a local or network location.

HLS Network Location	224.0.0.0-	Defines address of the HLS stream to
	239.255.255.255	be received.
Decryption Mode	Disabled	Defines if a decryption of the received
	AES128	signal is needed, AES 128 standard.
Decryption Key	User Entry	Provides the key to allow signal
		processing if decryption is to be done.
Discovery Timeout	0(infinite)	Defines the length of time to wait for
	1-100(seconds)	the stream to be discovered.

Configuring SRT Input

This menu configures the reception of a SRT input. The SRT input can be configured to specify a caller, listener or rendezvous within the Call Mode selection drop down.

Receive: nterface: Call Mode:	Enabled TS/IP 1	Ŧ
	TS/IP 1	
Call Mode:		*
	Caller	Ŧ
Remote IP:	1.0.0.1	
Remote Port:	10000	÷
.ocal Port Mode:	Auto	Ŧ
local Port:	10000	-
Discovery Timeout(s):	3	-
latency (ms):	20	-
Passphrase:	•••••	

General options for SRT input

Setting	Range I	Description
Receive	Disabled Enabled	This setting allows the user to enable or disable this input stream.
Interface	TS/IP 1 TS/IP 2	The physical connector on which to receive the HLS traffic.
Call Mode	Caller Listener Rendezvous	Defines the 'handshake' mechanism to be used when establishing connection.
Remote IP	224.0.0.0- 239.255.255.25 5	Defines the IP address of the stream on the remote device.
Remote Port	0-65535	Defines the port of the stream on the remote device.
Local Port Mode	Auto Manual	In Auto Mode the local port number will be assigned. In Manual Mode the local port number will be defined by the user.
Local Port	1-65535	Defines local port number.
Discovery Timeout	0(infinite) 1-100(seconds)	Defines the length of time to wait for the stream to be discovered.
Latency	1-8000(ms)	Defines buffer size in milliseconds.
Passphrase	10- 79(characters)	Defines encryption passphrase.

Click the 🗉 icon by the Network Protocol input to view information about the incoming IP

stream. Clicking the icon will hide the IP statistics.

	_					
B Network	Protocol	Receive:	Enabled	Input type: H	HLS	
Status			Configur	ration		
Encryption State:		Disabled	Interface: Profile: State: HLS Mode:		TS/IP 1 Invalid Pull 12	
			HLS	Input		
Network Protocol	Receive: E	nabled Input type: S	SRT		Stream Rate(Mbps): 0.00 / 0.00	Unlock
Status Connection State: Up Time: Local Port: Encryption Mode: Decryption State: Round Trip Time (ms): Buffer Size (ms): Latency (ms): Link Bandwidth: TS Packets Per SRT Packet:	Invalid 00:00:00 0 Disabled Unsecured 0 0 0 0 0.000 Mbps 1431262047	Statistics Reconnections: Received Packets: Received Packets: Lost Packets: Uncorrected Packets: SKT NAKS: Last Reset: & Reset:	0 0 Bytes 0 0 0 0 0 1970-01-01 00:00:00	Configuration Interface: State: Call Mode: Discovery Timeout(s	;):	UNKNOWN Invalid Caller 3



4.2.7. Configuring DVB-CI Descrambling

This section describes how to configure DVB-CI descrambling in the UMH160UIG. First, the user will need to configure the CAM slots and descrambling mode. Once this is completed the user can configure which services or PIDs to descramble.

Configuring DVB-CI Slots

This menu allows the user to configure the DVB-CI slots in the UMH160UIG. The UMH160UIG has two DVB-CI slots, divided into top one and bottom one, where CAM Modules can be inserted. Both slots are individually configurable using the Bottom Slot and Top Slot tabs. CAM Modules can be reset manually using the Reset button. The button opens the MMI (Man Machine Interface) for the CAM in the respective slot. MMI support is dependent on what is supported by the CAM.

Configuring Service Descrambling

This menu allows the user to select the service the UMH160UIG will descramble using the

CAM modules and Smart Cards inserted into the DVB-CI slots. The drag and drop method can be used to drag services from the right column to the left column, The drop down menu next to each selected service allows the user to choose either the bottom or top slot to descramble the service. If in Descramble Selected Services mode, Services to descramble can be added manually by dragging the selected services from the right column to the left column. Clicking the **Selectes** button forces the UMH160UIG to rescan the transport stream for changes.

Select Slot	Top Slot Configura	ation			
Top Slot	Descramble:	Disabled	~	📧 MMI 📑 Reset	
Bottom Slot	CAM Max Bitrate:	72 Mbps	Ŧ		
	Source:	Input 1	v		
	Operation Mode:	Descramble Selected S	rvices 👻		
	Selected Services/	PIDs		Available Services	
	Selection 🕇	Source	Remove	nefresh	
	Service 100	Input 1	0	Service/PID	Bitrate (Mbps)
				▶ 👰 Service 100	7.449

General options for DVB-CI descrambling

4.2.8. Configuring Cardless CAS Descrambling

This menu allows user to configure the Cardless CAS in the UMH160UIG. To use this feature, customer need to operate a complete CAS system. The Device ID at Cardless CAS is going to be the user device ID at the SMS system.

🗉 🥒 Cardless CAS	Operation Mod	Operation Mode: Descramble Selected Services Source: Input 1			
Service	PID	Source	Descramble Status	Licensed Status	

Configuring Service Descrambling

This menu allows the user to select the service the UMH160UIG will descramble using the CAS system. The drag and drop method can be used to drag services from the right column to the left column, The drop down menu next to each selected service allows the user to choose either the bottom or top slot to descramble the service. If in Descramble Selected Services mode, Services to descramble can be added manually by dragging the selected services from the right column to the left column. Clicking the Selected Services to descramble the service added manually by dragging the selected services from the right column to the left column. Clicking the Selected Services to descramble the services to descramble the service to descramble the service to descramble the selected services from the right column to the left column. Clicking the Selected Services the UMH160UIG to rescan the transport stream for changes.

Device ID: 0000a06986062e03

Configure Cardless CAS							
Multi-Service Options							
Operation Mode: Source:	Descramble Se Input 1	elected Services 👻					
Selected Services	s/PIDs				Available Services		
Selection 🕇		Source	R	emove	🔧 Refresh		
Service 1		Input 1		0	Service/PID	Bi	trate (Mbps)
					▶ 👰 Service 1 - service		4.510
						Apply	Cancel

General options for Cardless CAS descrambling

4.2.9. Configuring T2MI Decapsulation

This menu allows the user to configure the T2MI Decapsulation for input stream. The T2MI 1 option corresponds to Input 1, while the T2MI 2 option corresponds to Input 2.

T2MI		
😠 🖉 T2MI 1	Source: Input 1	T2MI 1 Enable: Disabled T2MI 1 PID : 600
🖽 🥒 T2MI 2	Source: Input 2	T2MI 2 Enable: Disabled T2MI 2 PID: 0

onfigure T2MI					Configure T2MI	-			
Source:	Input 1	~			Source:	Input 2	~		
T2MI 1 Enable:	Enabled	~			T2MI 2 Enable:	Enabled	~		
PLP 1 Enable:	Disabled 👻	PLP 1 ID:	0	-	PLP 1 Enable:	Disabled 👻	PLP 1 ID:	0	
PLP 2 Enable:	Disabled 👻	PLP 2 ID:	0	-	PLP 2 Enable:	Disabled 👻	PLP 2 ID:	0	
PLP 3 Enable:	Disabled 💌	PLP 3 ID:	0	-	PLP 3 Enable:	Disabled 👻	PLP 3 ID:	0	
PI P 4 Enable [.]	Disabled 👻	PLP 4 ID:	0	*	PLP 4 Enable:	Disabled 👻	PLP 4 ID:	0	

General options for T2MI decapsulation

Setting	Range	Description
T2MI 1/2 Enable	Disabled	This setting allows the user to enable or disable
	Enabled	the T2MI decapsulation.
PLP 1 Enable	Disabled	This setting allows the user to enable or disable
	Enabled	the Physical layer pipes 1.
PLP 1 ID	0-255	Defines the PLP 1 ID.
PLP 2 Enable	Disabled	This setting allows the user to enable or disable
	Enabled	the Physical layer pipes 2.
PLP 2 ID	0-255	Defines the PLP 2 ID.
PLP 3 Enable	Disabled	This setting allows the user to enable or disable
	Enabled	the Physical layer pipes 3.
PLP 3 ID	0-255	Defines the PLP 3 ID.

PLP 4 Enable	Disabled	This setting allows the user to enable or disable
	Enabled	the Physical layer pipes 4.
PLP 4 ID	0-255	Defines the PLP 4 ID.

4. 2. 10. Configuring Service Selection

This menu allows the user to configure the PIDs or Service the UMH160UIG will decode. Depending on the Selection Mode that is set, the menu will change to reflect the applicable settings.

Service Lock

In Service Lock mode the UMH160UIG is set to decode a specified service number or service name. If the PIDs within the service change at any time, the UMH160UIG will continue to decode the service. The drag and drop method can be used to populate the Service Name or Service Number dialog boxes.

onfigure Service			
Settings		Available Services	
Source:	Input 1 -	🔁 Refresh	
Selection Mode:	Service Lock -	Service/PID	Bitrate (Mbps)
	Control Look		4.03
Primary	Service Name	▶ 👰 Service 2 - Program-2	4.03
Service Name:	Program-1		

Service Lock Selection Menu

Setting	Range	Description
Source	Input1	Determines which input source to be decoded
	Input2	
Selection Mode	Service Lock	Setting to Service Lock sets the unit to decode
	PID Lock	any PIDs associated with a service number or
	Auto Seek	service name. Setting to PID Lock sets the unit
		to decode only the PIDs specified in the PID
		Lock Configuration matrix. Auto Seek mode will
		tune the unit to the first service listed in the PAT
		if a transport stream is present.
Lock Mode	Service Name	If set to Service Name the UMH160UIG will
	Service Number	decode only services matching the name
		specified (SDT in DVB or TVCT in ATSC tables
		must be present in this mode). If set to Service
		Number, the UMH160UIG will decode only
		services matching the number specified.

PID Lock Mode

In PID Lock mode the UMH160UIG will only decode the PIDs specified by the user in the PID Lock Configuration matrix. The drag and drop method can be used to auto-populate the cells in the matrix.

ettings			Available Services	
Source:	Input 1 👻		▼ Refresh	
Selection Mode:	PID Lock		▼	Bitrate (Mbps)
Component	Primary	Primary Type	Service 1 - Program-1	4.03 4.03
PCR	1002	· · · · · · · · · · · · · · · · · · ·	▶ 🙊 Service 2 - Program-2	4.03
Video	1000	Auto		
Audio 1	1001	Auto		

PID Lock Selection Menu

Auto Seek Mode

In Auto Seek mode the UMH160UIG will decode first service listed in the PAT. All PIDs will automatically be assigned and decoded. No other configurations are available in this mode. This mode should only be used to verify the UMH160UIG is receiving a valid signal and it able to decode. This mode is not recommended for a professional environment.

Configure Service				
Settings			Available Services	
Source:	Input 1	•	S Refresh	
Selection Mode:	Auto Seek	-	Service/PID	Bitrate (Mbps)
Selection mode.	Auto Seek		🔻 🙊 Service 1 - Program-1	4.037
			🔯 1002 PCR	0.041
			1000 MPEG-2	3.807
			40 1001 MPEG-1	0.190
			🔻 🙊 Service 2 - Program-2	4.047
			🔯 2002 PCR	0.039
			🞽 2000 MPEG-2	3.822
			40 2001 MPEG-1	0.186
				Apply Cancel

Auto seek selection menu

4. 2. 11. Configuring Video Services

This menu allows the user to configure the HDMI/SDI and Composite output formats of

the UMH160UIG. Overlay function is configured in this menu as well.

Configure Video			Configure Video		
General Over	lay		General Overlay		
Video Output:	HDMI/SDI	v	Captions/Subtitle	es	
Format			Overlay Type:	DVB Subtitles	~
Format Mode:	Auto	v	DVB Subtitles:		~
Manual Format:	720x480i 16x9 30.00fps	~			
Manual Format:	720x480i 16x9 30.00fps	~			
	Apply	Cancel		Apply	Cancel

General and Overlay Options

Setting	Range	Description
Video Output	HDMI/SDI	Defines the video output interface.
	CVBS	
Format Mode	Auto	Setting to Auto the UMH160UIG will output video to
	Manual	match the incoming native video format.
		Setting to Manual the user can define the video
		format the UMH160UIG will output.
Manual Format		This setting is the video format the UMH160UIG will
		output.
Overlay Type	None	Defines the Overlay Type. DVB Subtitles burns
	DVB-Subtitles	subtitles in video output.

4. 2. 12. Configuring Audio

This menu allows the user to configure the audio setting.

	Audio State:	Enabled	~
	Audio Volume(%):	100	*
Select Audio	Audio 1 Configuration	on	
Audio 1	Audio Format Mode:	Professional	Ŧ
	Bit Depth:	20-bit	Ŧ

General options for Audio output

Setting	Range	Description
Audio State	Enabled	This setting allows the user to enable or disable
	Disabled	audio output.

Audio Volume	0-100(%)	Defines the Volume of audio output
Audio Format Mode	Professional Consumer	This option selects the Dolby Digital format mode.
Bit Depth	20-bit 24-bit	This setting allows the AES bit-depth to be 20-bit or 24-bit

4. 2. 13. Configuring Program Multiplex

This menu allows the user to multiplex and output multiple programs they want. The user can create a new output TS by selecting and dragging one or more services from Input 1 and Input 2. The user can also configure a TS bitrate and stream information for each MUX stream. The menu for both MUX1 and MUX2 contain the same settings.

Configure Mux	Selection							
Select Mux	Mux 1 Configuration					Available Services		
Mux 1	TS Bitrate (Mbps):	12	* *			🥩 Refresh		
Mux 2	TS Standard:	DVB	*			Service/PID	В	itrate (Mbps)
	Transport Stream ID:	0				👰 Input 1		
	Original Network ID:	0	*			🙊 Input 2		
	Selected Services/Pl	Ds						
			Estimated Bitrate	e: 0.00	00 Mpbs			
	Selection		Source		Remove			
							Apply	Cancel

General options for program multiplex

Setting	Range	Description
Select MUX	Mux 1	Select which Mux to configure
	Mux 2	

TS Bitrate (Mbps)	0.25-	Defines the TS Bitrate for the transport stream
	160	selected.
TS Standard	DVB	Defines the standard for the transport stream
	ATSC	selected.
Transport Stream ID	0-	Defines the Transport Stream ID for the transport
Transport Stream ID	0- 65535	Defines the Transport Stream ID for the transport stream selected.
Transport Stream ID Original Network ID		

Click the $\stackrel{\textcircled{\tiny \ensuremath{\blacksquare}}}{=}$ icon by the Mux 1/2 to view information about the multiplexing services information. Click the $\stackrel{\textcircled{\tiny \ensuremath{\blacksquare}}}{=}$ button to edit the PSI table for the selected service. Clicking the $\stackrel{\textcircled{\tiny \ensuremath{\blacksquare}}}{=}$ icon will hide the information.

o Mux 1							
Service Name	Source	Provider Name	Service ID	PMT PID	PCR PID	Service Type	
TEST1	Input 1	PROVIDER1	100	480	4097	0	
TEST2	Input 2	PROVIDER2	1	51	52	0	
o Mux 2							
o Mux 2 Service Name	Source	Provider Name	Service ID	PMT PID	PCR PID	Service Type]
	Source Input 1	Provider Name LINK	Service ID 8988	PMT PID 1132	PCR PID 1133	Service Type	
Service Name							

Configure TEST1		
Service Name:	TEST1	
Provider Name:	PROVIDER1	
Service ID:	100	÷
PMT PID:	480	*
PCR PID:	4097	*
Service Type:	1	*
	Apply	Cancel

Configuring service information

Setting	Range	Description
Service Name	User Entry	Defines the Service Name for the service selected.
Provider Name	User Entry	Defines the Provider Name for the service selected.
Service ID	0-65535	Defines the Service ID for the service selected.
PMT PID	0-65535	Defines the PMT PID for the service selected.
PCR PID	0-65535	Defines the PCR PID for the service selected.
Service Type	0-255	Defines the service type for the service selected.

4. 2. 14. Configuring ASI Output

This menu allows the user to configure the ASI output of the UMH160UIG.

Configure ASI Port 1		
Transmit:	Disabled	Ŧ
TS Packet Length(Bytes):	188	Ŧ
Stream Mode:	Spread	*
Source:	Input 1	Ŧ
	Apply	Cancel

Configuring ASI Output

Setting	Range	Description
Transmit	Disabled	Enable or disable the ASI output port.
	Enabled	
TS Packet Length(Bytes)	188	Defines the packet length of the output stream
	204	to be 188 or 204
Stream Mode	Spread	Defines the stream mode to be Spread or Burst
	Burst	
Source	Input 1	Input 1/2 will pass the incoming TS to the output
	Input 2	without applying any BISS or DVB-CI
	Mux 1	decryption.
	Mux 2	Mux 1/2 will output the TS from program
		multiplex

4. 2. 15. Configuring TS/IP Output

This menu allows the user to configure the TS/IP outputs. Users can select all the programs they want to export or individual programs. The menu for Channel 1 through 8 will contain the same options.

Configure TS/IP P	ort 1 & 2		
Select Channel	Channel 1 Configuration		
Channel 1	Transmit:	Enabled	-
Channel 2	Source:	Input 2	~
Channel 3	Selected Service	All PID	~
Channel 4	Estimated Bitrate:	0.000 Mbps	
Channel 5		0.000 Mbps	
Channel 6	TS Bitrate (Mbps):	12	\$
Channel 7	Destination IP:	227.10.20.80	
Channel 8	Destination Port:	1234	-
	TS packets per IP packet:	7	-
	Protocol:	UDP	-
	Backup Tramsit:	Enabled	~
	-		*
	Destination IP:	227.10.20.80	
	Destination Port:	1234	-
		Apply	Cancel

Configuring TS/IP Output

	Ø	T S/IP Port 1 & 2	Operation Mode: Output All PIDs						
۲	•	TS/IP Port 1 & 2 Stream 1	Transmit: Enabled	Source: Input 1	239.100.1.100:10000	Backup: Disabled	Stream Rate(Mbps): 8.23 / 8.45		
H	0	TS/IP Port 1 & 2 Stream 2	Transmit: Enabled	Source: Mux 1	239.100.2.100:10000	Backup: Disabled	Stream Rate(Mbps): 8.14 / 12.00		

The output state of the two channels

Setting	Range	Description
Select Channel	Channel 1 to	Defines the IP output channel
	8	
Transmit	Enabled	Enable or disable the IP output channel.
	Disabled	
Source	Input 1	Input 1/2 will pass the incoming TS to the
	Input 2	output without applying any BISS or DVB-
	Mux 1	CI decryption.
	Mux 2	Mux 1/2 will output the TS from program
		multiplex
Select Service	All PID	Setting to All PID the UMH160UIG will
	Services X	output all the services in the selected
		source. Or the user can select a single
		service in the source to output.
Estimated Bitrate		The estimated bitrate of the selected
		service.
TS Bitrate	25 to 160	Defines the TS Bitrate for the transport
		stream selected.
Destination IP	0.0.0.0-	When sending to a unicast address the
	255.255.255	destination IP address must match the
	.255	receiving device's IP address. When
		sending a multicast to the address must
		be sent within the multicast IP range.
Destination Port	1025-65535	When sending to a unicast address, the
		destination port must match the receiving
		device's port. When sending a multicast,
		any port within the accepted range can be
		used.

TS Packets Per IP Packet	1-7	The number of TS packets that are contained with a single IP packet. Default is 7. Lowering this value below default increases network overhead.
Protocol	UDP RTP	Sets the Encapsulation to UDP or RTP.
Backup Transmit	Enabled Disabled	Enable or disable the backup IP output. Setting to Enabled, the transport stream will output via TS/IP port 2.
Destination IP	0.0.0.0- 255.255.255 .255	When sending to a unicast address the destination IP address must match the receiving device's IP address. When sending a multicast to the address must be sent within the multicast IP range.
Destination Port	1025-65535	When sending to a unicast address, the destination port must match the receiving device's port. When sending a multicast, any port within the accepted range can be used.

4. 3. System Panel

To access the System Panel, click on the System tab. This menu allows the user to

control many aspects of the UMH160UIG.

Change Pas	ntrol Panel	_	_									-	_			
			gnostics										Update Unit	Reboot Re	set to Defa	
🔢 System	n Information															9
Software Vers Jnit Serial Nu		1.0.RC6 23144050029														
🧾 Genera	l Settings															4
Configure G	eneral Setting	s														
Jnit Alias:	(No Alia	as)														
JVB-S2	2X Preset															0
Save Setting	g to Preset	Configure P	reset													
Config I	Name	Port		Servio	e Name		Service N	lumber	Decoder I	nput Sou	rce Frequency(M	IHz) Symb	ol Rate(KBaud	i) LNB Frequ	ency(MHz	z)
Preset1		DVB-S2X	Port 1				1		Input 1		3840	27500		5150		
Preset2	2	DVB-S2X	Port 1				1		Input 1		3840	27500		5150		
Preset3	8	DVB-S2X	Port 1				1		Input 1		3840	27500		5150		
Preset4		DVB-S2X					1		Input 1		3840	27500		5150		
Preset5	•	DVB-S2X	Port 1				1		Innut 1		3840	27500		5150		Þ
Networ	k															(
Configure N	letworks	Hostname:	(none)	Default G	ateway:	MGMT	Primary Na	ameserver:	0.0.0.0		Secondary Namese	ver: 0.0.0.0				
Name		N	lode	IP Addres	s	Subnet	Mask	Gateway	/	MAC						
MGMT (e	eth2)	:	Static	192.168.1	.100	255.255	.255.0	192.168.	.1.1	A0:69:	36:06:2E:05					
	IP Network															0
Name		/lode II	Address		Subnet M	ask	Gateway		MAC		Link Status	Tx R	ate (Mbps)	Rx Rate (Mbps	IGMP	
TS/IP1(10.0.0.71		255.255.2		0.0.0.0		A0:69:86:	6-2E-03	N/A (Down)	0.00		0.000	V3	
) TS/IP 2 (10.0.0.72		255.255.2		0.0.0.0		A0:69:86:		N/A (Down)	0.00		0.000	V3	
Liconse	e Informatior															4
Apply Licen		•														4
ption													Supported	State	Insta	ince
AC-3 Decodin	ng License												Yes	Licensed	1	
AC Decodin													Yes	Licensed	1	
IEVC HD/SD) License												Yes	Licensed	1	
K/HDR Deco	oding License												Yes	Licensed	1	
Aultiplexing L	icense												Yes	Licensed	1	
1 2	B Decryption Lic	ense											Yes	Licensed	1	
													Yes	Licensed	1	
S-level BISS	•												Yes	Licensed	1	
S-level BISS 2MI License													Yes	Licensed	1	
S-level BISS 2MI License 2ID Auto-upd	late License												Yes	Licensed	1	
S-level BISS 2MI License PID Auto-upd nput redunda Aultistream L	late License ant License .icense												163		1	
TS-level BISS T2MI License PID Auto-upd: nput redunda Multistream L SRT Input Lic	late License ant License License cense												Yes	Licensed	1	
rS-level BISS f2MI License PID Auto-upd nput redunda Multistream L SRT Input Lic RTMP Input L	late License ant License License cense License													Licensed	1	
rS-level BISS f2MI License PID Auto-upd nput redunda Multistream L SRT Input Lic RTMP Input L	late License ant License License cense License												Yes			
23 S-level BISS 2011 License 21D Auto-upd nput redunda Autistream L 38T Input Lic 8TMP Input Lic 21XI Input Lic 21XI Input Lic 22 Date / T	late License ant License License License License License												Yes Yes	Licensed	1	0
23 S-level BISS 2011 License 21D Auto-upd nput redunda Autistream L 38T Input Lic 8TMP Input Lic 21XI Input Lic 21XI Input Lic 22 Date / T	late License ant License License License License License												Yes Yes	Licensed	1	(
IS-level BISS (2011 License 2010 Auto-upd Input redunda Autistream L SRT Input Lic RTMP Input Lic RTMP Input Lic (2011 Input Lic) (2010 Date / T Configure D	late License ant License License License Hine Time Nate / Time												Yes Yes	Licensed	1	0
rS-level BISS r2MI License PID Auto-updi nput redunda Autitistream L SRT Input Lic RTMP Input Lic ZIXI Input Lic Date / T Configure D Jpdate Mode: Current Date:	late License ant License eense License Einense Time eate / Time e Manual ; 2000-01-17												Yes Yes	Licensed	1	0
rS-level BISS r2MI License PID Auto-updi nput redunda Wultistream L SRT Input Lic RTMP Input L ZIXI Input Lic Date / T Configure D Jpdate Mode: Current Date: Current Time:	late License ant License License License Ense Ente / Time Ente / Time												Yes Yes	Licensed	1	0
rS-level BISS r2MI License PID Auto-upd nput redunda Autistream L SRT Input Lic RTMP Input Lic Configure D Jpdate Mode: Current Date: Current Time: Current Time: Current Time:	late License ant License eense License Einense Time eate / Time e Manual ; 2000-01-17												Yes Yes	Licensed	1	0
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rS-level BISS r2MI License PID Auto-upd. nput redunda Wultistream L SRT Input Lic RTMP Input L ZIXI Input Lic Date / T Date / T Date / T Date / T DJpdate Mode: Current Time: NTP Server: Time Zone: Syslog Configure S State:	ate License ant License Licens												Yes Yes	Licensed	1	
	ate License ant License Licens												Yes Yes	Licensed	1	

4.3.1. Changing Unit Password

The UMH160UIG can be assigned an access password and the current access

password can be changed. In order to make changes to passwords, click the

Change Password button. A window will appear to enter the current password and new

password.

Change Password	d	
New Password:		
Confirm Password:		
	Apply	Cancel

4.3.2. **Profiles**

The UMH160UIG has the ability to save all configured settings to multiple profiles. Profiles can be saved locally, renamed and saved to external storage to be used on other UMH160UIGs. Profiles can be used to quickly and easily change the configuration of an UMH160UIG to suit different inputs and decoding requirements.

🚯 Add Upload	La	st Profile A	pplied:
Profile Name 🕇	Download	Rename	Delete
1	Ļ	P	×
2	1	Ø	×
2	1	P	3

Add	🔂 Add	Adds a new profile from current settings. User must			
		name profile before creation is complete.			
Upload	1 Upload	Allows the user to browse to external storage or			
		workstation to upload profile to UMH160UIG			
Download	Ļ	Select a profile from the drop down menu and click			
		this button. The user will be prompted to select a			
		directory to download the profile.			
Rename		Select a profile from the drop down menu and click			
		this button. The user will be prompted for a new			
		name for the profile.			
Delete	×	Select a profile from the drop down menu and click			
		this button. The user will be prompted to confirm			
		deletion of the profile.			
Apply Profile	Apply	Select a profile from the drop down menu and click			
		this button. The UMH160UIG will apply all settings			
		contained in the profile selected.			

4.3.3. Diagnostics

Admin Control Par	nel		
Change Password	Profiles	Diagnostics	

The UHM160UIG provides the user the ability to take a snapshot of all current unit settings, reported values, active alarms, and the alarm and log file history. This snapshot will be downloaded as a .TXT format file that can be sent to Wellav for analysis. Click the 'Diagnostics' button and a window will open showing the diagnostic file creation progress. This window is replaced with a download file window when file creation is complete. The user will be asked to 'Open' or 'Save' the file.

И ИМН16	DU	
Logged in as admin		Temperature 47.5 C (117.5 F) Time: 17:52:48 System Status 💽 Logour
		Main Logs System
	Admin Control Panel	
	Change Password Profiles Diagnostics	Update Unit Reboot Reset to Defaults
	# System Information	0
	Software Version: 1.0.0 Unit Serial Number: DD2/4142370063 Success	0
	gil General Settings The diagnostics file was created	d. 💿
	Configure General Settings OK	
	Unit Alias: (No Alias)	
	Metwork	0
	Configure Networks Hostname: (none) Default Gateway: MGMT Primary Nameserver: 0.0.0.0	Secondary Nameserver: 0.0.0.0
	Name Mode IP Address Subnet Mask Gateway	MAC
	MGMT (eth2) 781ic 10.0.0.63 255.255.255.0 0.0.0.0	A0.69.66.05.FB.B3
	J MPEG/IP Network	0
	Name IP Address Subnet Mask Gateway MAC	Link Status Tx Rate (Mbps) Rx Rate (Mbps) IGMP
diagnostics.txt		全部显示

4.3.4. System Information

The user is able to check the software versions currently installed and the serial number of the unit.

4.3.5. General Settings

The UMH160UIG can be assigned an alias which is displayed in the upper right-hand corner of the web interface. The alias can help define which UMH160UIG the operator is currently logged into.

	DU			, Wellav TEST
Logged in as admin		Temperatur	e 48.7 C (119.7 F) Ime: 13:40:25	System Status Logout
			Main Logs System	
	Admin Control Panel			
	Change Password Profiles Diagnostics	Opdate (Jnit Reboot Reset to Defaults	
	System Information		0	
	Software Version: 1.0.0 Unit Serial Number: DD24142370063	Configure General Settings		
	💼 General Settings	Alias: Wellav TEST	0	
	Configure General Settings	Apply Cancel		
	Unit Alias: Wellav TEST			

4. 3. 6. **DVB-S2X Preset**

If the DVB-S2X tuner module was installed, the following menus and options will be available for configuration. This menu allows the user to configure the preset parameters for DVB-S2X signal. Click Save Setting to Preset button to save your current setting to the preset selected. Click Configure Preset to configure the Preset switching conditions.

1	DVB-S2X Preset									0
Sa	ve Setting to Preset	Cont	figure Preset							
	Config Name	Po	ort	Service Name	Service Number	Decoder Input Source	Frequency(MHz)	Symbol Rate(KBaud)	LNB Frequency(MHz) LM
-(j)+	Preset1	D	VB-S2X Port 1		1	Input 1	3840	27500	5150	
-(j)+	Preset2	D	VB-S2X Port 1		1	Input 1	3840	27500	5150	
-(j)+	Preset3	D	VB-S2X Port 1		1	Input 1	3840	27500	5150	
÷\$	Preset4	D	VB-S2X Port 1		1	Input 1	3840	27500	5150	
385	Preset5	ית 	VR-S2X Port 1		1	Input 1	3840	27500	5150	•
4	P								,	
				Save Setting to	Preset					
				Selected Port:		DVB-S2X Port 1	Ŧ			
				Selected Preset		Preset1	Ŧ			
						Apply	Cancel	Ī		

Setting	Range	Description
Select Port	DVB-S2X	Defines which port's configuration will be saved to
	Port1	the Preset.
	DVB-S2X	
	Port2	
Select Preset	Preset 1 to 20	Defines the Preset name the configuration will be
		saved to.

Configure Preset			
Defined Preset:	Preset1 -		
Service Switch:	Enabled 👻		
Clock Source:	System Clock 🔹		
Next Preset:	Preset2 ·		
Start Time:	00:00:00		
End Time:	02:00:00		
Frequency:	Once 👻		
	Apply Cancel		

Setting	Range	Description
Defined Preset	Preset 1 to 20	Defines the current Preset name
Service Switch	Enabled	This setting allows the user to enable or disable
	Disabled	the Service Switch.
Clock Source	System Clock	Setting to System Clock the UMH160UIG will
	Input 1	refer to its system time configured at Date/Time
	Input 2	section.
		Setting to Input 1/2 the UMH160UIG will refer to
		the TOT/TDT table in the transport stream of
		Input 1/2.
Next Preset	Preset 1 to 20	Defines the next preset selected.
Start Time	00:00:00 to	Defines the start time of switching from the
	23:59:59	current preset to the next preset.
End Time	00:00:00 to	Defines the end time of switching from the
	23:59:59	current preset to the next preset.
Frequency	Once	Setting to Once the UMH160UIG will only
	Every Day	perform the service switch once.
		Setting to Every Day the UMH160UIG will
		perform the service switch every day.

Click the button to edit the configuration of the Preset selected. The menus for Preset 1 through Preset 20 all contain the same settings.

Configure Preset1				
Config Name:	Preset1			
Port:	DVB-S2X Port 1 -			
Service Name:	Encryption			
Service Number:	2 🌲			
Decoder Input Source:	Input 2 👻			
Frequency(MHz):	4230 🌲			
Symbol Rate(KBaud):	27500 🌲			
LNB Frequency(MHz):	5150 🌲			
LNB Voltage:	Off 👻			
PCR PID:	100			
Video PID:	100			
Video Type:	Auto 👻			
Audio 1 PID:	101			
Audio 1 Type:	Auto 👻			
	Apply Cancel			

Setting	Range	Description
Config Name	User Entry	Set a name for the selected Preset
Port	DVB-S2X Port 1	Defines the DVB-S2X port the
	DVB-S2X Port 2	UMH160UIG will use to receive the
		signal.
Service Name	User Entry	This setting allows the user to enter the
		service name that UMH160UIG will
		decode.
Service Number	User Entry	This setting allows the user to enter the
		service number that UMH160UIG will
		decode. It should match the service
		number of the preset service.

Decoder Input	Input 1	The setting allows the user to select the
Source	Input 2	Decoder Input Source. The source
		should match the DVB-S2X port set in
		'Port'.
Frequency (MHz)	0-14500	This setting allows the user to enter the
		satellite frequency.
Symbol Rate (KBaud)	1000-45000	This setting allows the user to enter the
		symbol rate.
LNB Frequency(MHz)	0-13550	The offset in MHz that the local
		oscillator is operating. Set to the LNB
		frequency when you want to enter the
		satellite frequency in Frequency field.
LNB Voltage	OFF	The UMH160UIG has the ability to
	13V	provide the necessary voltage to power
	18V	an LNB. Select the correct voltage to
		supply to the LNB.
PCR PID	0-8191	This setting allows the user to enter the
		PCR PID.
		It should match the PCR PID of the
		preset service.
Video PID	0-8191	This setting allows the user to enter the
		Video PID. It should match the Video
		PID of the preset service.
Video Type	Auto	The UMH160UIG will automatically
		detect the video type of the preset
		service.

Audio 1 PID	0-8191	This setting allows the user to enter the
		Audio 1 PID. It should match the Audio
		1 PID of the preset service.
Audio Type	Auto	The UMH160UIG will automatically
		detect the audio type of the preset
		service.

4.3.7. Unit Network Configuration

1	Network													0
Co	Configure Networks Hostname: (none) Default Gateway: MGMT Primary Nameserver: 0.0.0.0 Secondary Nameserver: 0.0.0.0													
	Name		Mode	IP Addre	SS	Subnet I	Mask	Gateway		MAC				
Ø	MGMT (eth2)		Static	192.168.	1.100	255.255	255.0	192.168	1.1	A0:69:86:00	6:2E:05			
ø	/ MPEG/IP Network													
	Name	Mode	IP Addres	s	Subnet M	ask	Gateway		MAC		Link Status	Tx Rate (Mbps)	Rx Rate (Mbps)	IGMP
÷\$}	TS/IP 1 (eth0)	Static	10.0.0.71		255.255.2	55.0	0.0.0.0		A0:69:86:	06:2E:03	N/A (Down)	0.000	0.000	V3
÷	TS/IP 2 (eth1)	Static	10.0.0.72		255.255.2	55.0	0.0.0.0		A0:69:86:	06:2E:04	N/A (Down)	0.000	0.000	V3

The management port of the UMH160UIG can be configured on the web interface. To make changes to the management port click, the Configuration section. Domain name servers can be configured on the UMH160UIG clicking the Configure Networks button. IP address and web address entries are accepted as Nameserver addresses.

NOTE: Exercise extreme caution when performing changes to this menu as network communication can be lost with the UMH160UIG.

Configure Networks				
Hostname:	(none)			
Default Gateway:	MGMT -			
Primary Nameserver:	10.0.0.53			
Secondary Nameserver:	10.0.0.64			
	Apply Cancel			

Configure eth2			
Interface Name:	MGMT		
Mode:	Static -		
- Static Settings -			
IP Address:	10.0.0.63		
Subnet Mask:	255.255.255.0		
Gateway:	0.0.0.0		
	Apply Cancel		

Setting	Range	Description
Hostname	User Entry	This setting allows the user to define an
		optional
		unit Hostname.
Mode	Static	Setting to DHCP will allow the network assign
	DHCP	an IP address automatically to the
		UMH160UIG (if supported). Setting to Static
		allows the user to manually define all IP
		settings for the management port.
IP Address	1.0.0.0-126.0.0.0	This option is only available if Static Mode is
	128.0.0.0-	set. This is the IP address assigned to the
	191.255.0.0	management port.
	192.0.1.0-	
	223.255.255.0	
Subnet Mask	255.0.0.0 –	This option is only available if Static Mode is
	255.255.255.254	set. This is the Subnet Mask assigned to the
		management port.

Gateway	1.0.0.0-126.0.0.0	This option is only available if Static Mode is
	128.0.0.0-	set. This is the Gateway address assigned to
	191.255.0.0	the management port.
	192.0.1.0-	
	223.255.255.0	

MPEG/IP Network Configuration

÷

This menu allows the user to configure the network for two data ports. Click the button under the MPEG/IP Network Configuration next to the corresponding port. The settings for both ports are the same.

Configure eth0		
Interface Name:	TS/IP 1	
Mode:	Static 💌	
Static Settings		
IP Address:	10.0.0.71	
Subnet Mask:	255.255.255.0	
Gateway:	0.0.0.0	
	Apply Cancel	

Setting	Range	Description	
Interface Name	User Entry	This setting allows the user to define an interface	
		name for the ethernet port selected.	
Mode	Static	Setting to DHCP will allow the network assign an	
	DHCP	IP address automatically to the UMH160UIG (if	
		supported). Setting to Static allows the user to	
		manually define all IP settings for the	
		management port.	
IP Address	1.0.0.0-	This option is only available if Static Mode is set.	
	126.0.0.0	This is the IP address assigned to the	

	128.0.0.0- 191.255.0.0 192.0.1.0- 223.255.255.	management port.
	0	
Subnet Mask	255.0.0.0 –	This option is only available if Static Mode is set.
	255.255.255	This is the Subnet Mask assigned to the
	.254	management port.
Gateway	1.0.0.0-	This option is only available if Static Mode is set.
	126.0.0.0	This is the Gateway address assigned to the
	128.0.0.0-	management port.
	191.255.0.0	
	192.0.1.0-	
	223.255.255	
	.0	

4.3.8. License Information

Certain features of the UMH160UIG require licenses in order to be functional. The interface displays all licenses available as well as the following status:

- License Locked or Unlocked
- License is Supported or Unsupported by the installed hardware

If licenses need to be applied to the UMH160UIG click Apply License Key button. The menu below will appear where the user can copy and paste the provided license key from Wellav.

_a Enter License Key		
Enter a new license key here		
	Apply Can	cel

4.3.9. Data/Time

The UMH160UIG can be set to synchronize with an NTP server or a manual date and

time can be defined by the user. Click the **Configure Date / Time** button to configure the date and time. These values are used to timestamp entries in the Alarm and Event logs under the Reporting tab.

🕑 Configure Date / Time				
Update Mode:	Manual	~		
NTP Server:	0.0.0.0			
Date:	2022-08-11			
Time:	03:37:51			
Time Zone:	(GMT+08:00:00) Asia/Shanghai	*		
Note: Changing time may prompt you to log-in.				
	Apply	Cancel		

Setting	Range	Description
Update	NTP	Setting to NTP uses the local network's NTP server to
Mode	Manual	synchronize date and time. Manual allows the user to
		define a data and time.
NTP	XXX.XXX.XXX	This is the IP address or Domain Name of the local
Server	.XXX	NTP Server on the network. This setting is only
	Domain Name	available if Update Mode is set to NTP.

Date	MM/DD/YYYY	This setting is the user defined date. A calendar widget can be used to select the date by clicking the button. This setting is only available if Update Mode is set to Manual.			
Subnet	255.0.0.0	55.0.0.0 – This option is only available if Static Mode is set. This			
Subriet	255.0.0.0 -	This option is only available if Static Mode is set. This			
Mask	255.255.255.2	is the Subnet Mask assigned to the management port.			
	54				
Time	00:00:00-	This setting is the user defined time. The time is based			
	23:59:59	on a 24 hour clock. This setting is only available if the			
		Update Mode is set to Manual.			

4.3.10. Syslog

The UMH160UIG can be configured to send error and event logs formatted in the syslog protocol to a remote user specified Syslog server. To configure the Syslog settings click

the **Configure Syslog** button.

Sconfigure Syslog			
State:	Disabled	-	
Network Protocol:	UDP	Ŧ	
IP Address:	10.0.0.1		
Port:	514	-	
	Apply	Cancel	

Action	Range	Description
State	Disabled	Enable or Disable sending messages to
	Enabled	Syslog server.

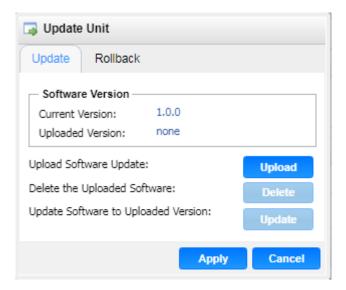
Network	UDP	Select which network protocol used to transmit		
Protocol	ТСР	to the Syslog server.		
IP Address	Four decimal octets:	IP of the Syslog server.		
	XXX.XXX.XXX.XXX	0.0.0.0 and 255.255.255.255 are not		
		permitted.		
Port	0 - 65535	Destination port of the Syslog server.		

4.3.11. Updating the UMH160UIG

1.Applying software updates

Updates to the UMH160UIG are performed through the web interface. A software update file is provided by Wellav and then uploaded to the unit. Once uploaded, the software update is applied to the unit. To upload software updates to the unit, click on the

Update Unit button. The current version and uploaded version are displayed in the Software Versions section. The UMH160UIG will reboot after a software update is complete.

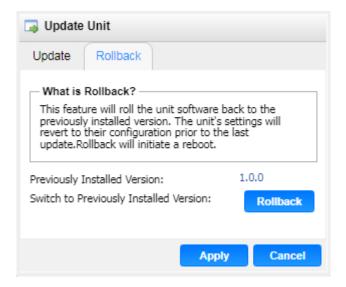


Action	Button	Description
Upload Software Update	Upload	To upload software updates to the UMH160UIG click this button. The user will be
		prompted to navigate to an update file. The file will then upload to the UMH160UIG. When
		complete the UMH160UIG with prompt the
		user to either apply the update or cancel.
Delete the	Delete	Clicking this button prompts the user to
Uploaded Software		confirm the deletion of the software update
		from the UMH160UIG. This will also clear the
		Uploaded Version status of the Software
		Versions section.
Update Software	Update	Clicking the button starts the software update
to Uploaded		process. The UMH160UIG will prompt the
Version		user to confirm the update. Click Yes to
		continue or No to cancel.

2.Rollback Software Updates

The UMH160UIG is capable of reverting back to a previous version of software using the Rollback feature. The UMH160UIG maintains two separate software images; one is the most current version of software with all current settings and the other is the previous version of software with all settings. To perform a rollback, click the Update Unit button and then click the Rollback tab. The UMH160UIG will report after the rollback process.

and then click the Rollback tab. The UMH160UIG will reboot after the rollback process is complete.



4.3.12. Reboot Unit

The UMH160UIG can be rebooted from the web interface. In order to perform a reboot,

click the **Reboot** button. The UMH160UIG will prompt the user to confirm the reboot.

Once the reboot is complete the login screen will appear allowing the web interface to be logged into.

4.3.13. Reset Defaults

The UMH160UIG settings can be reset to factory defaults. All settings will be returned to the factory defaults except the network management ports IP settings. All event logs will be cleared. To reset all settings to default, click the **Reset to Defaults** button. The UMH160UIG will prompt the user to confirm the reset.

4.4. Log Panel

The Logs tab in the UMH160UIG contains logs for active alarms currently affecting the unit and an event log. The active alarms are updated periodically in order to reflect the real-time state of the unit. Once an error is cleared it will be cleared from the active alarms window. The event log can be used to view alarm and event history. Both the active alarm and event logs can be configured to hide or change the behavior of alarms and events.

				Main	Logs	System
Reporti	ng Control Panel					
Alarms	Logs					Configure
State	Name	Location	Last Changed			
0	Input Not Present	Unit	2022-08-10 16:37:55			
0	RF Lock Lost	Input DTMB Port 2	2022-08-10 16:37:55			
Θ	HLS Receive Exceed 20M	Hisinput	2022-08-10 16:37:55			

4.4.1. Active Alarms

Clicking on the button displays the Active Alarms menu. This list displays all of the active alarms currently affecting the unit. There are four columns in the log that display different types of information.

			Main	Logs	System		
Reportir	Reporting Control Panel						
Alarms	Logs				Configure		
State	Name	Location	Last Changed				
•	Input Not Present	Unit	2022-08-10 16:37:55				
0	RF Lock Lost	Input DTMB Port 2	2022-08-10 16:37:55				
Θ	HLS Receive Exceed 20M	Hisinput	2022-08-10 16:37:55				

Title	Description
State	This column displays the nature of the alarm. The 🧕 icon means
	the log entry is informational and is not an error. The ${\scriptstyle{[0]}}$ icon
	means the log entry is an active alarm.
Name	This column displays the description of the error. The function that
	is
	experiencing an error condition is described here.
Location	This column displays the hardware or function that is experiencing
	the active error.
Last Changed	This column displays the date and time the error was raised. This
	date and time correlate with the Date and Time settings configured
	before.

4.4.2. Event Logs

Clicking on the Logs button displays the Event Log menu. This list displays all of the events and alarms that have affected the unit. The UMH160UIG stores up to four days' worth of logs. If the unit is rebooted or powered off and on the event logs are cleared.

The logs can be cleared manually by clicking the Clear button. The logs can be

Download

downloaded as a .tsv file and saved to an external location by clicking the

button. There are five columns in the log that display different types of information.

							Mai	n Logs	System
Reportin	g Control Panel								
Alarms	Logs								Configure
Refresh	Clear Downlos	ad							
Severity	Timestamp	Transition	Location	Message					
0	2022-06-22 16:14:	0	Unit	Exit Input1 Not Present Status					
0	2022-06-22 16:14:	0	Input TS/IP Port 1 Strea	Exit TS/IP Port 1 Stream 1 Ts Sync Lost Status					
0	2022-06-22 16:14:	0	Unit	Input1 Not Present					
0	2022-06-22 16:14:	0	Input TS/IP Port 1 Strea	TS/IP Port 1 Stream 1 Ts Sync Lost					
0	2022-06-22 14:40:	٢	Decoder	Video Decoding					
0	2022-06-22 14:40:	٢	Output Mpegip Channel2	Exit Output MpegIp Channel2 Nic Link Lost Status					
0	2022-06-22 14:40:	0	Output MpegIp Channel1	Exit Output MpegIp Channel1 Nic Link Lost Status					
0	2022-06-22 14:40:	0	Input TS/IP Port 1 Strea	Exit TS/IP Port 1 Stream 1 Input Lost Status					
0	2022-06-22 14:40:	0	Unit	Exit Input1 Not Present Status					
0	2022-06-22 14:40:	0	Input TS/IP Port 1 Strea	Exit TS/IP Port 1 Stream 1 Ts Sync Lost Status					
0	2022-06-22 14:39:	0	Decoder	Video Not Decoding					
0	2022-06-22 14:39:	0	Unit	Input1 Not Present					
0	2022-06-22 14:39:	٢	Input TS/IP Port 1 Strea	TS/IP Port 1 Stream 1 Ts Sync Lost					
0	2022-06-22 14:39:	٢	Output MpegIp Channel2	Output MpegIp Channel2 Nic Link Lost					
0	2022-06-22 14:39:	٢	Output MpegIp Channel1	Output MpegIp Channel1 Nic Link Lost					
0	2022-06-22 14:39	8	Input TS/IP Port 1 Strea	TS/IP Port 1 Stream 1 Input Lost Severity: ① Info ① Error	Transition:	🖐 Event	t 🔘 We	nt Good (Went Bad

Title	Description
Severity	This column displays the nature of the alarm. The $\begin{array}{c} \end{array}$ icon means the log
	entry is informational and is not an error. The ${}^{igodoldsymbol{0}}$ icon means the log entry is
	an active alarm.
Timestamp	This column displays the date and time the error was raised or cleared. This
	date and time correlate with the Date and Time settings configured before.
Transition This column displays when an alarm transition from a bad to good	
	state. When an error is raised the \bigcirc icon is displayed. When an error is
	cleared the 🥯 icon is displayed. When an event takes place the $ ot=$ icon
	is displayed.
Location	This column displays the hardware or function that experienced the alarm or
	event.
Message	This column displays the description of the error or event. The function or
	hardware that experienced the event or error is described here.

4.4.3. Configuring the Logs

The UMH160UIG allows the user to configure alarms and events. In order to configure

these options, click the **Configure** button. The **Conditions** tab allows the user to configure the alarms reported by the UMH160UIG. The **Events** tab allows the user to configure the events reported by the UMH160UIG. Each column and its function are described below. A user configured time offset can also be applied to allow viewing the logs in a local time zone.

Configure Conditions and E	vents				
Set Viewer Time Offset: ±00:00	‡ HR				
Conditions Events					
Name 🕇	Location 1	Log 🗹	Severity	Alarm	SNMP Trap
ASI Input Lock Loss Error	Input ASI Port 1		Error	\checkmark	
ASI Input Lock Loss Error	Input ASI Port 2	\checkmark	Error	\checkmark	
Ac3 Audio Unsupported	Decoder	\checkmark	Error	\checkmark	
Audio Not Decoding	Decoder	\checkmark	Error	\checkmark	
Backup Input Active	Unit	\checkmark	Error		
Backup Input Active	Unit	\checkmark	Error		
Fan Speed Below Lower Limit	Unit	\checkmark	Error	\checkmark	
HEVC Video Unsupported	Decoder	\checkmark	Error	\checkmark	
IP Loss Error	Input TS/IP Port 1 Stream 1	\checkmark	Error	\checkmark	
IP Loss Error	Input TS/IP Port 1 Stream 2	\checkmark	Error	\checkmark	
IP Loss Error	Input TS/IP Port 2 Stream 1	\checkmark	Error	\checkmark	
IP Loss Error	Input TS/IP Port 2 Stream 2	\checkmark	Error	\checkmark	
Input Not Present	Unit		Error	\checkmark	
land Mat Decent	i i una	-1	F		
				Appl	y Cancel

Title	Description
Name	This column displays the name of the error or condition. This is informational
	data: no options can be set here.
Location	This column displays the hardware or function that the alarm or event applies
	to. This is informational data; no options can be set here.
Log	Checking the box in this column creates an entry in the event log in the case
	this error or event is raised. If this box is unchecked this error or event will be
	hidden and not logged if raised.
Severity	This column is only available in the Conditions tab This option allows the
	user to set the severity of the error to Info or Error. If Info is selected in the
	drop down box the ${}^{\textcircled{0}}$ icon will displayed in the event log. If Error is selected
	the $artheta$ icon will be displayed in the event log.
Alarm	This column is only available in the Conditions tab This option allows the
	user to enable or disable this alarm in the Active Alarms log. If checked
	the alarm will be displayed in the Active Alarms log if raised. If this box
	is unchecked this error will be hidden.

SNMP Trap	This column allows the user to send an SNMP Trap if this alarm is raised. If
	this box is checked an SNMP Trap is sent when this alarm is raised. If this box
	is unchecked an SNMP is not sent.

5. Appendices

5.1. Acronyms and Glossary

8VSB: Vestigial sideband modulation with 8 discrete amplitude levels.

16VSB: Vestigial sideband modulation with 16 discrete amplitude levels.

AAC: Advanced Audio Coding

AC-3: Also known as Dolby Digital

AES: Audio Engineering Society

AFD: Active Format Descriptor

ASI: Asynchronous Serial Interface

ATSC: Advanced Television Systems Committee

AV: Audio Video

Bit Rate: The rate at which the compressed bit stream is delivered from the channel to

the input of a decoder.

BNC: British Naval Connector

BPS: Bits per second.

CAM: Conditional Access Module

CAT: Conditional Access Table

CAT6: Category 6 – Cable standard for gigabit Ethernet

CC: Closed Caption

CI: Common Interface

CoP: Code of Practice

CRC: Cyclic Redundancy Check

CVCT: Cable Virtual Channel Table

dB: Decibel

DDPlus: Dolby Digital Plus

DHCP: Dynamic Host Configuration Protocol

DPI: Digital Program Insertion

DTVCC: Digital Television Closed Captioning

DVB: Digital Video Broadcasting

EBU: European Broadcasting Union

EIA: Electronic Industries Alliance

EIT: Event Information Table

EPG: Electronic Program Guide

ETM: Extended Text Message

ETT: Extended Text Table

Event: An event is defined as a collection of elementary streams with a common time base, an associated start time, and an associated end time.

FCC: Federal Communications Commission

FEC: Forward Error Correction

Field: For an interlaced video signal, a "field" is the assembly of alternate lines of a frame. Therefore, an interlaced frame is composed of two fields, a top field and a bottom field.

Frame: A frame contains lines of spatial information of a video signal. For progressive video, these lines contain samples starting from one time instant and continuing through successive lines to the bottom of the frame. For interlaced video a frame consists of two fields, a top field and a bottom field. One of these fields will commence one field later than the other.

HANC: Horizontal Ancillary

HD: High Definition

High level: A range of allowed picture parameters defined by the MPEG-2 video coding specification which corresponds to high definition television.

I/O: Input/Output

IP: Internet Protocol

Kbps: 1000 bit per second

LED: Light Emitting Diode

LNB: Low-Noise Block

MAC: Medium Access Control

Main level: A range of allowed picture parameters defined by the MPEG-2 video coding specification with maximum resolution equivalent to ITU-R Recommendation 601.

Main profile: A subset of the syntax of the MPEG-2 video coding specification that is

expected to be supported over a large range of applications.

Mbps: 1,000,000 bits per second.

MER: Modulation Error Ratio

MGT: Master Guide Table

MIB: Management Information Base

MP@HL: Main profile at high level.

MP@ML: Main profile at main level.

MPEG: Refers to standards developed by the ISO/IEC JTC1/SC29 WG11, Moving

Picture Experts Group. MPEG may also refer to the Group.

MPEG-2: Refers to ISO/IEC standards 13818-1 (Systems), 13818-2 (Video), 13818-3

(Audio), 13818-4

MPTS: Multiprogram Transport Stream

NTP: Networking Time Protocol

NTSC: National Television System Committee

OSD: On Screen Display

PAL: Phase-Alternating Line

PAT: Program Association Table

PCM: Pulse-Code Modulation

PCR: Program Clock Reference

PCM: Pulse-code Modulation

PID: Packet Identifier. A unique integer value used to associate elementary streams of a

program in a single or multi-program transport stream.

PMT: Program Map Table

Profile: A defined subset of the syntax specified in the MPEG-2 video coding

specification

Program specific information (PSI): PSI consists of normative data which is

necessary for the demultiplexing of transport streams and the successful

regeneration of programs.

Program: A program is a collection of program elements. Program elements may be

elementary streams. Program elements need not have any defined time base; those that do have a common time base and are intended for synchronized presentation.

- PTS: Presentation Time Stamp
- **QAM**: Quadrature Amplitude Modulation
- **QPSK**: Quadrature Phase-Shift Keying
- RDS: Receiver Decoder System
- RF: Radio Frequency
- RGBHV: Red, Green, Blue, Horizontal, Vertical
- RO: Read Only
- RPM: Revolutions Per Minute
- RRT: Rating Region Table
- RS-232: Recommended Standard. A standard for serial binary data interconnection.
- RU: Rack Unit
- RW: Read/Write
- SD: Standard Definition
- SDI: Serial Digital Interface
- SFP: Small Form-Factor Pluggable
- SI: System Information
- SMPTE: Society of Motion Pictures and Television Engineers
- **SNMP**: Simple Network Management Protocol
- SPTS: Single Program Transport Stream
- SSRC: Synchronization Source

STD input buffer: A first-in, first-out buffer at the input of a system target decoder for storage of compressed data from elementary streams before decoding.

STD: System Target Decoder. A hypothetical reference model of a decoding process

used to describe the semantics of the Digital Television Standard multiplexed bit stream.

stream.

STT: System Time Table

- **TS**: Transport Stream
- TVCT: Terrestrial Virtual Channel Table

UTC: Coordinated Universal Time

VANC: Vertical Ancillary

VBI: Video Blanking Interval

VCT: Virtual Channel Table. Used in reference to either TVCT or CVCT.

XLR: Cannon "X" series connector, with a Latch, and Rubber around the contacts.

YPbPr: Component Red, Green, Blue

5.2. Specifications

RF	
DVB-S/S2/S2X Input	
Input	RF (F-type), 75Ω
DVB-S/S2/S2X Input	QPSK, 8PSK, 16APSK, 32APSK, 64APSK
Symbol Rate	1~45 MSps (QPSK, 8PSK, 16APSK, 32APSK), 1-34MSps
	(64APSK)
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
Advanced Feature	16/32/64APSK
	CCM/VCM demodulation supported
	Multi-stream supported (single ISI)
	Roll-off factors:0.15, 0.10, 0.05
DVB-C Input	
Input	RF (F-type), 75Ω
Symbol Rate	1~6.952 MBauds
QAM Туре	J.83 A/B/C
Input Frequency	48-862 MHz

Range	
Max Bit-rate	55Mbps
Signal Level	40~80 dBuV (64QAM)
	44-100 dBuV (256QAM)
DVB-T Input	
Input	RF (F-type), 75Ω
Constellation	QPSK/16/64QAM
Bandwidth	6/7/8M
Input Frequency	48~862 MHz
Range	
Max Bitrate	31.67Mbps
Signal Level	-65~-25 dBm
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-T2 Input	
Input	RF (F-type), 75Ω
Constellation	QPSK/16/64/128/256QAM
Bandwidth	6/7/8M
Input Frequency	48~862 MHz
Range	
Max Bitrate	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/16/64QAM
Bandwidth	6MHz

Input Frequency	48~862 MHz
Range	
Max Bitrate	23.42Mbps
Signal Level	-65~-10 dBm
Carriers Mode	2/4/8K
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	57~803 MHz (fixed frequency)
Range	
Sensitivity	-83~-8 dBm
Channel Plans	Broadcast
Max Bit-rate	19.39Mbps

TS/IP	TS/IP				
GbE IP					
Interface	2*GbE level RJ45 port				
Speed	Up to 1000Mbps				
Package Format	UDP/RTP/HLS/RTMP/SRT/ZIXI/RIST				
Traffic Type	Unicast: (ARP)				
	Multicast: V2, V3 (optional)				
Number of Channels	2 x input & 2 x output				
FEC	ProMPEG CoP3v2(1 x input & 1 x output)(Future)				
TCP/IP Protocol	IPv4				
IGMP	Version1, 2 & 3				

DVB-ASI

Interface	4 BNC, 75Ω (2xASI input, 2xASI output)				
Max Bitrate	150Mbps				
Packet Type	188/204 bytes				
Input Mode	Spread and burst				
Output Mode	Spread				
Supports MPEG-2/H	H.264/H.265/AVS+/AVS2 SD/HD/UHD stream bypass				
transmission					
Supports AC-3/E-AC-3 audio bypass transmission					

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

Decoder	
Interface	
Composite Video	1xBNC, 75Ω PAL/NTSC
Output	
SD/HD-SDI Output	2xBNC, 75Ω
Digital Output	1xHDMI 2.0 connector
Analog Audio Outputs	4xBNC,75Ω unbalanced
	2 pairs of analogue balanced audio output via 1x15 Pin

	D-sub (4xXLR Breakout Cable) (1 by default, 2 is a future
	option)
AES/EBU	2 pairs of digital unbalanced AES/EUB output via 1x15
	Pin D-sub (2xBNC, Breakout Cable) (1 by default, 2 is a
	future option)

Video Decoding	
Video Profile/Levels	MPEG-2 SD 4:2:0 MP@ML
	MPEG-2 HD 4:2:0 MP@ML
	MPEG-4 AVC/H.264 SD MP@L3
	MPEG-4 AVC/H.264 HD MP@L4.1/HP@4.1
	AVS-P16/AVS+
	AVS2 P2 10 bit Profile @Level 8.2.60
	H.265/HEVC Main/Main10 profile@Level5.1 High-tier
Output Format	720x576i@25
	720x480i@29.97,30
	720x480p@50,59.94,60
	1280x720p@50,59.94,60
	1920x1080i@25,29.97,30
	1920x1080p@25,30,50,59.94,60
	3840x2160@25,30,50,60
Aspect Ratio	4:3 letterbox, 4:3 pan and scan,
Conversion	16:9 letterbox, 16:9 pan and scan

Audio Decoding	
Number of Audio Services	1 by default, 2 is a future option
Audio Codecs Supported	MPEG1 Layer II
	Dolby Digital AC-3 (Optional)
	Dolby Digital Plus (E-AC3, optional)

	AAC-LC, HE-AAC, HE-AACv2(Optional)
SDI Embedded Audio	1 audio pair by default
Output	
Adjustable Volume Level	-63~0 dB

Transcoding (future)	
TS Transcoding	
Processing Channels	1 UHD programs
Input	
Video	H.264 (MPEG-4 part 10) or MPEG-2 or AVS+ or AVS2
	or HEVC/H.265
Video Format	Up to 2160p60
Aspect Ratio	4:3, 16:9, auto
Audio	MPEG-1 Layer I/II
	Dolby Digital (AC-3)/Dolby Digital Plus(E-AC3)
	(optional)
	AAC (optional)
Audio Mode	Stereo, dual mono, single mono
Output	
Video	H.265/HEVC Main/Main10 profile@Level5.1 High-tier
Resolution	576i, 480i (BT.656)
	1080i50, 1080i60, 1080i59.94
	720P50, 720P60, 720P59.94
	1080p25, 1080p30, 1080p5994, 1080p60
	2160p25, 2160p30, 2160p50, 2160p60
Audio	MPEG-1 Layer I/II

	Dolby Digital AC-3 (optional)
	AAC (optional)
Subtitle and Audio	Pass-through
Bit-rate	MPEG-2 video: 2.0~15 Mbps (CBR & VBR)
	AVS+ video: 1.0~15 Mbps (CBR & VBR)
	H.264 Video: 1.0~20 Mbps (CBR & VBR)
	AVS2 Video: 2.0~40Mbps (CBR & VBR)
	H.265/HEVC Video: 2.0~40Mbps (CBR & VBR)
	Audio: 64~384 Kbps
Adjustable Volume	-63~0 dBm

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

Physical & Environment	
Power Supply	100~240 VAC 50/60Hz
	Dual AC (via a hardware upgrade, optional)
	Dual 36~72V DC (via a hardware upgrade, optional)
Size	1RU rack mount chassis
Dimension	483mm x 312mm x 44mm
Operating Temperature	0℃~50℃
Storage Temperature	-40°C~70°C
Relative Operating	< 95% (non-condensing)

Humidity	
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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	HEVC HD/SD Decoding License
16004	4K/HDR Decoding License
16005	Multiplexing License
16006(Future)	TS-level BISS Decryption License
16007	T2MI License
16008(Future)	PID Auto-update License
16009	Input redundant License
16010(Future)	Multi-stream License
16011	SRT Input License
16012(Future)	RTMP Input License
16013(Future)	ZIXI Input License