

AD6202HII H.264 Encoder
User Manual

V1.0

CHAPTER 1 EQUIPMENT OVERVIEW

1.1 General introduction

AD6202HII H.264 Encoder is a professional broadcasting equipment can satisfy the MPEG-4 AVC/H.264 standard, with encoding and multiplexing function. The encoder supports 1-4 HDMI input (1-4 SDI/AV inputs optional), it can encode 1-4 channels sources synchronously. Also it has one group of ASI input interface which can multiplex the TS from both encoder and other sources into MPTS, and insert SI information.

The equipment has high quality performance with low cost, can be used widely in various Digital TV broadcasting system and Digital TV Head-end systems which have strict request on bandwidth.

1.2 Features

- Support H.264/AVC High Profile Level 4.0 Encoding, Hi-Tech Video Preconditioning Algorithms;
- Audio Coding adopts MPEG-1 Audio Layer 2;
- 1-4 Channels HDMI inputs (1-4 SDI / AV inputs optional);
- Single ASI input supporting multiplexing;
- HD Resolution of 720P, 1080I, 1080P;
- Support Multi-Programs output by ASI output and IP;
- Compatible with UDP protocol, support both Unicast and Multicast;
- Control LED display and Inspect setting parameters by button Operation;
- Set and Alter parameters via NMS Software.

Application

- Digital Cable TV Head-end;

- Satellite digital television broadcasting
- Digital Terrestrial Television
- Image Control
- Video on Demand (VOD)
- Distance Learning
- Video Conference

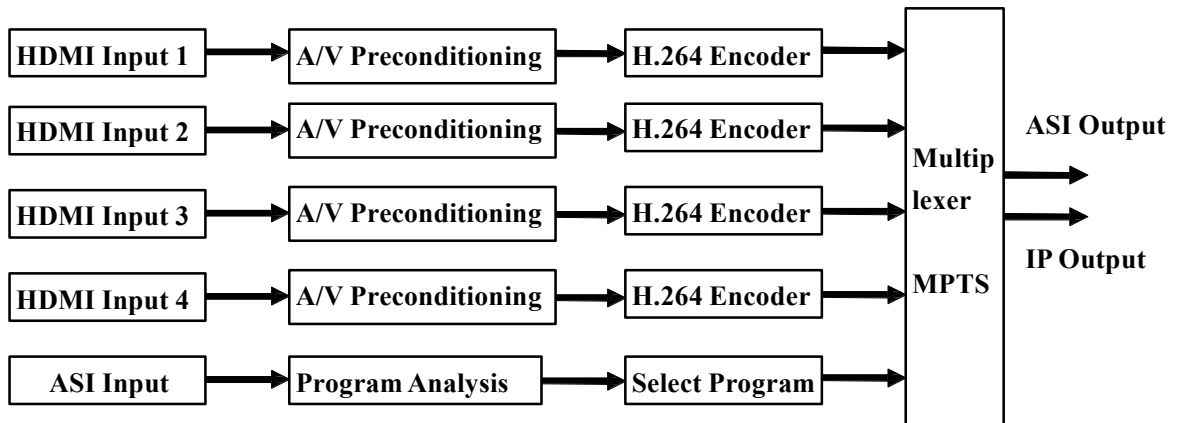
1.3 Performance Index

Input	1-4 Channel HDMI inputs(SDI optional)	
	Single ASI Input, BNC interface	
Video Input	Resolution	1920×1080_60P , 1920×1080_60i
		1920×1080_50p , 1920×1080_50i
		1280×720_60p
		1280×720_50p
	Encoding	H.264/AVC High Profile Level 4.0 (HD)
	Coding Bit Rate	0.8Mbps-20Mbps(8MbpsbyFactoryDefaults,suggestto use no less than 6Mbps if HD)
	Bit Rate Control	CBR/VBR
	GOP Type	IBBP
Video Preconditioning	De-Interlacing, Noise abatement, sharpening	
Audio Input	Encoding	MPEG-1 Layer 2
	Sampling Rate	48KHz
	Bit Depth	24 bit
	Bit Rate	64Kb/s~384Kb/s
Multiplexing		Multiplex 1 ASI input and 4 Channels Local Programs
TS Output		Dual ASI output, BNC interface
		MPTSIPoutput,UDPProtocol, 10/100MEthernet Port, Unicast and Multicast
System		LCD/KEY Operation, NMS, English Operation Interface
		Update software via Web
General	Dimensions	482mmx400mmx44.5mm (L x W x H)
	Weight	3.1kg
	Temperature	0~45□(working), -20~80□(not working)
	Power Supply	AC 110V~220V, 50/60Hz
	Power	≤25W

Caution:

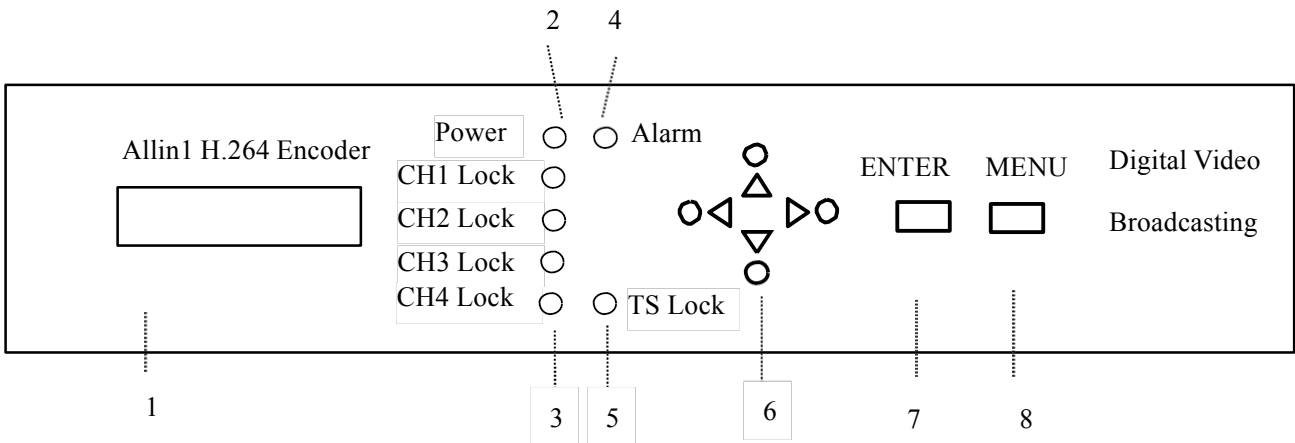
To ensure the stability of the equipment operation, all connection cable on the rear panel interface is strictly prohibited to Hot-swappable. When need to alter any of connection cable, need to be close the power of the source-side device and this device before changes.

1.4 Functional Block Diagram



1.5 Outline and Description

1.5.1 4 channels HD inputs, 1 ASI input Sketch map of front panel:



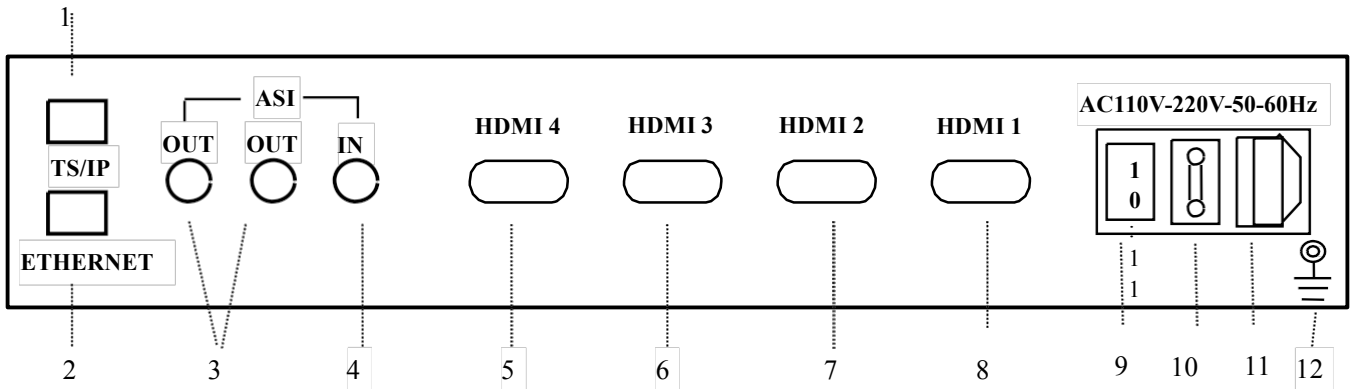
- 1: LCD Interface
- 2: Power Signal Indication
- 3: 1#-4# Encoding Channel Lock Indication
- 4: Stream Overflow Alarm Indication
- 5: ASI Input Lock Indication

6: Up, Down, Left and Right Buttons

7: Confirm Button

8: Menu Button

1.5.2 4 channels HD inputs, 1 ASI input Sketch map of rear panel:



1: IP Stream Output Interface;

2: Webmaster and Ethernet Interface;

3: DVB standard dual ASI output, BNC interface;

4: DVB standard single ASI input, BNC interface;

5: 4th HDMI (High-Definition Multimedia Interface);(SDI/AV optional)

6: 3rd HDMI; (SDI/AV optional)

7: 2nd HDMI;(SDI/AV optional)

8: 1st HDMI; (SDI/AV optional)

9: Power Switch, “1” for power on, “0” for off;

10: Fuse Holder: If power overflows or short circuit occurs, the fuse disconnects.

After trouble clearing, replace the fuse by a new one with same specification.

Way to take off the fuse holder: pull the power plug, infix a straight screwdriver to the notch on the holder to prize up the fuse holder.

In new machine there are two fuse holders while one of them is for spare part.

Custom can replace with the spare holder directly;

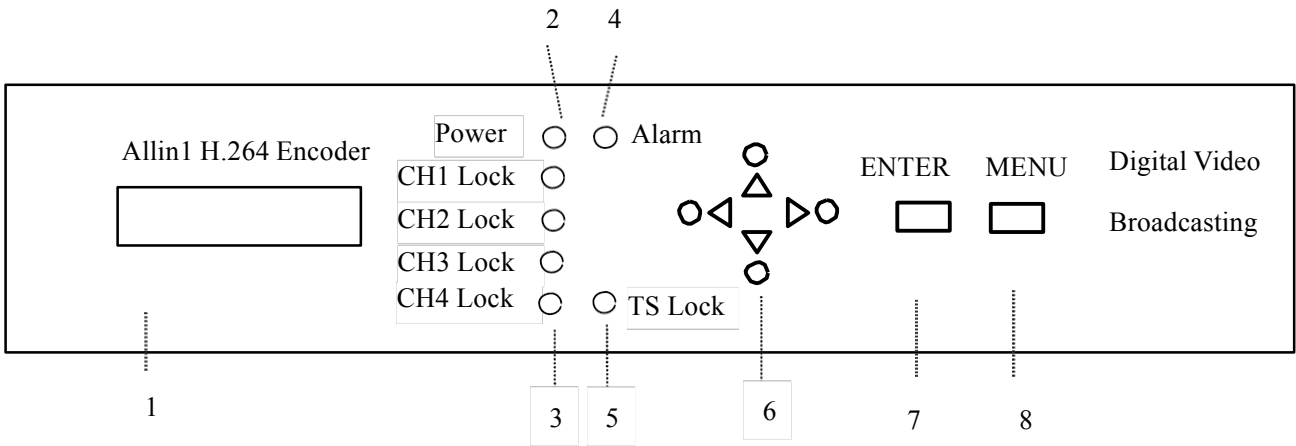
11: Power Jack;

12: Protective grounding column

When install the equipment, please correctly connect the protective grounding

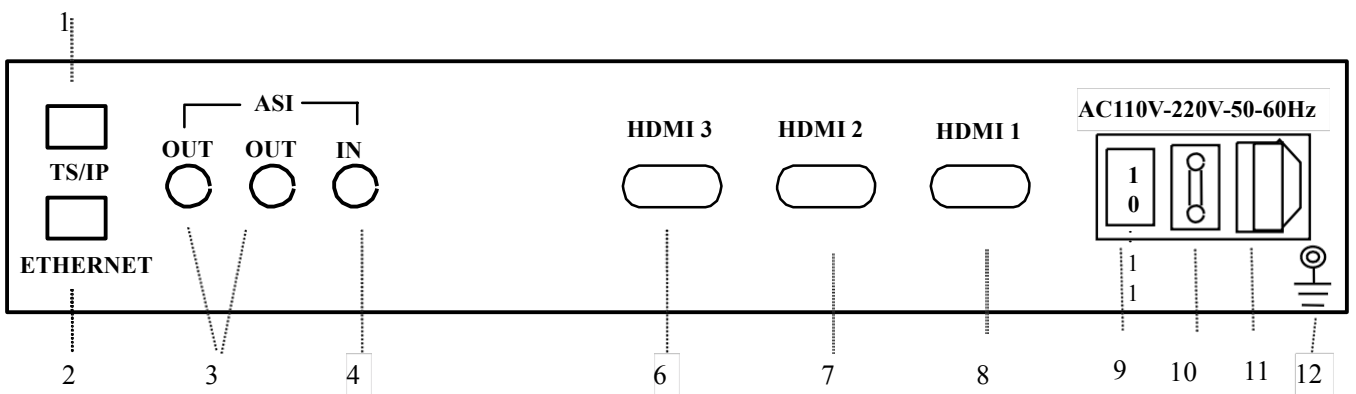
cables first. After connect other signal cables, power off the equipment, then plug the outlet cable.

1.5.3 3 channels HD inputs, 1 ASI input Sketch map of front panel:



- 1: LCD Interface
- 2: Power Signal Indication
- 3: 1#-4# Encoding Channel Lock Indication
- 4: Stream Overflow Alarm Indication
- 5: ASI Input Lock Indication
- 6: Up, Down, Left and Right Buttons
- 7: Confirm Button
- 8: Menu Button

1.5.4 3 channels HD inputs, 1 ASI input Sketch map of rear panel:



- 1: IP Stream Output Interface;

- 2: Webmaster and Ethernet Interface;
- 3: DVB standard dual ASI output, BNC interface;
- 4: DVB standard single ASI input, BNC interface;
- 6: 3rd HDMI;(SDI/AV optional)
- 7: 2nd HDMI;(SDI/AV optional)
- 8: 1st HDMI;(SDI/AV optional)
- 9: Power Switch, “1” for power on, “0” for off;
- 10: Fuse Holder: If power overflows or short circuit occurs, the fuse disconnects. After trouble clearing, replace the fuse by a new one with same specification.

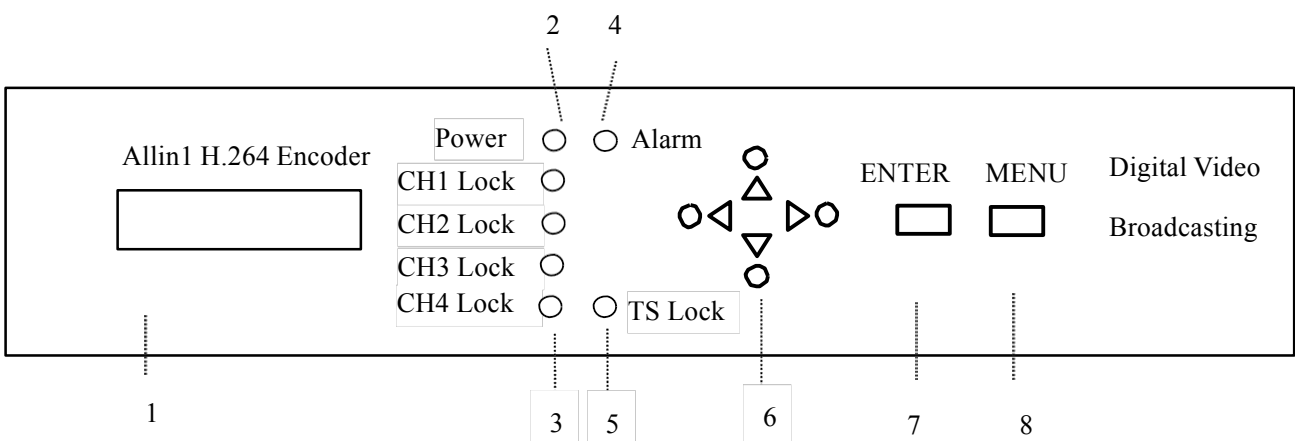
Way to take off the fuse holder: pull the power plug, infix a straight screwdriver to the notch on the holder to prize up the fuse holder.

In new machine there are two fuse holders while one of them is for spare part. Custom can replace with the spare holder directly;

- 11: Power Jack;
- 12: Protective grounding column

When install the equipment, please correctly connect the protective grounding cables first. After connect other signal cables, power off the equipment, then plug the outlet cable.

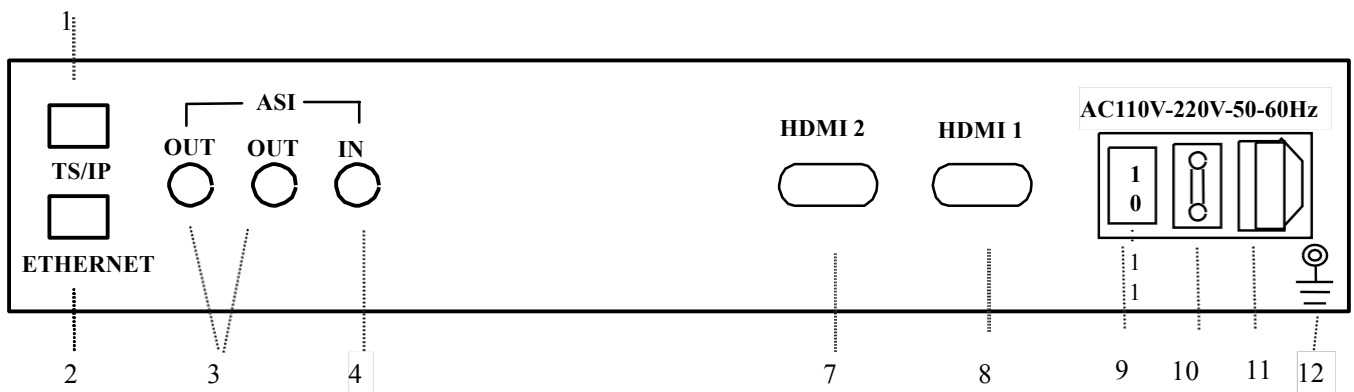
1.5.5 2 channels HD inputs, 1 ASI input Sketch map of front panel:



- 1: LCD Interface
- 2: Power Signal Indication

- 3: 1#-4# Encoding Channel Lock Indication
- 4: Stream Overflow Alarm Indication
- 5: ASI Input Lock Indication
- 6: Up, Down, Left and Right Buttons
- 7: Confirm Button
- 8: Menu Button

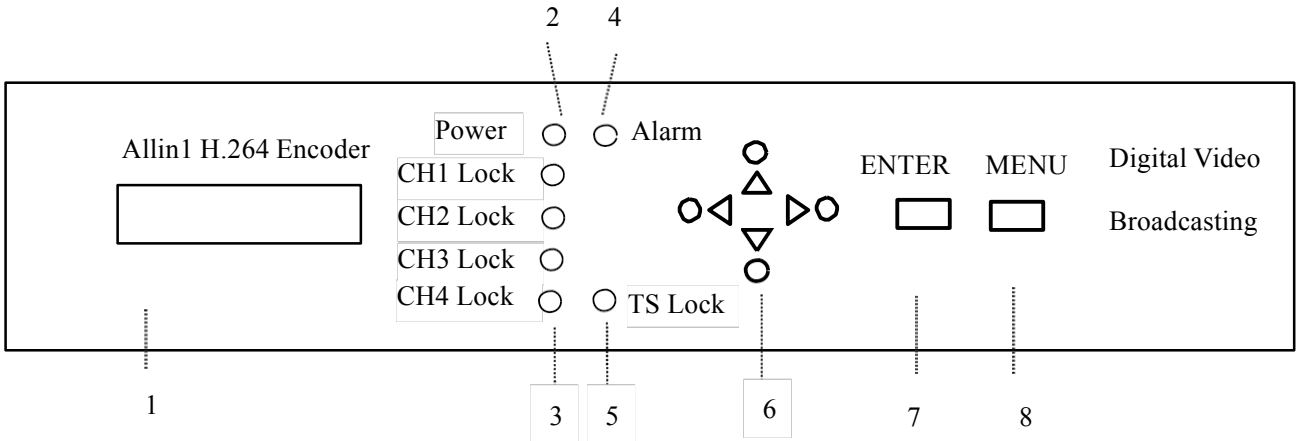
1.5.6 3 channels HD inputs, 1 ASI input Sketch map of rear panel:



- 1: IP Stream Output Interface;
- 2: Webmaster and Ethernet Interface;
- 3: DVB standard dual ASI output, BNC interface;
- 4: DVB standard single ASI input, BNC interface;
- 7: 2nd HDMI;(SDI/AV optional)
- 8: 1st HDMI;(SDI/AV optional)
- 9: Power Switch, “1” for power on, “0” for off;
- 10: Fuse Holder: If power overflows or short circuit occurs, the fuse disconnects. After trouble clearing, replace the fuse by a new one with same specification.
Way to take off the fuse holder: pull the power plug, infix a straight screwdriver to the notch on the holder to prize up the fuse holder.
- In new machine there are two fuse holders while one of them is for spare part. Custom can replace with the spare holder directly;
- 11: Power Jack;
- 12: Protective grounding column

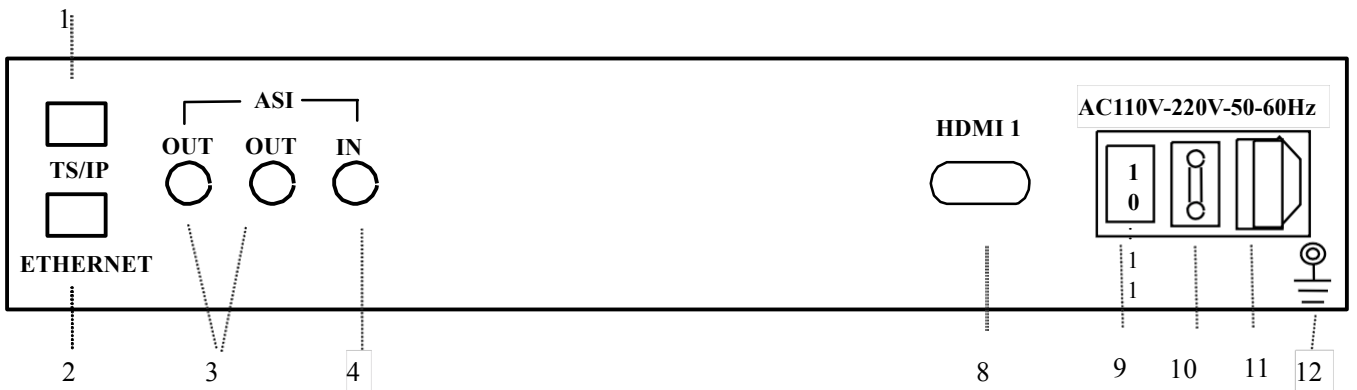
When install the equipment, please correctly connect the protective grounding cables first. After connect other signal cables, power off the equipment, then plug the outlet cable.

1.5.7 Single channel HD inputs, 1 ASI input Sketch map of front panel:



- 1: LCD Interface
- 2: Power Signal Indication
- 3: 1#-4# Encoding Channel Lock Indication
- 4: Stream Overflow Alarm Indication
- 5: ASI Input Lock Indication
- 6: Up, Down, Left and Right Buttons
- 7: Confirm Button
- 8: Menu Button

1.5.8 Single channel HD inputs, 1 ASI input Sketch map of rear panel:



- 1: IP Stream Output Interface;
- 2: Webmaster and Ethernet Interface;
- 3: DVB standard dual ASI output, BNC interface;
- 4: DVB standard single ASI input, BNC interface;
- 8: 1st HDMI;(SDI/AV optional)
- 9: Power Switch, “1” for power on, “0” for off;
- 10: Fuse Holder: If power overflows or short circuit occurs, the fuse disconnects. After trouble clearing, replace the fuse by a new one with same specification.

Way to take off the fuse holder: pull the power plug, infix a straight screwdriver to the notch on the holder to prize up the fuse holder.

In new machine there are two fuse holders while one of them is for spare part. Custom can replace with the spare holder directly;

- 11: Power Jack;
- 12: Protective grounding column

When install the equipment, please correctly connect the protective grounding cables first. After connect other signal cables, power off the equipment, then plug the outlet cable.

Chapter 2 OPERATIONAL USE

General Introduction

The front panel of JXDH-6202HIIXM H.264 encoder is operation interface.

Client can use factory default settings before regular operation, or alter/reset encoding parameters via Webmaster Software.

The equipment has English menu. Specific operation comes as follows:

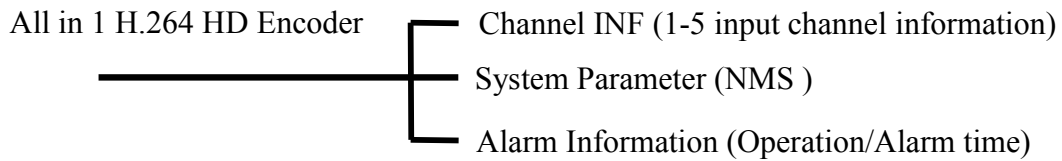
2.1 Keyboard Functions of Front Panel

Enter Key: Activate and confirm parameters that need to be reset

Four Direction Keys: Locate the parameter to-be-reset and scroll screen

MENU key: Return to the previous menu or cancel parameter resetting to exit

2.2 Main menu of H.264 Encoder



2.3 Encoder Submenu

2.3.1 Check Parameter Settings of the Equipment

2.3.1.1 Initialization

Power on the equipment after installation as per the requirement, Power Indication turns green and LCD will display:

All in 1 H.264 HD Encoder
SW 1.0 HW 1.0

The equipment checks parameters automatically. After testing and confirming, system is under Initialize Status. LCD backlight goes out after start-up. Press “MENU”, LCD shows the current output rate as below:

All in 1 H.264 HD Encoder
TS rate: 025789kbps

Red Alarm Indication of front panel is off as normal work status at present.

2.3.1.2 Enter the HD Encoder Parameter Menu

While start-up meanwhile backlight is off, press “Enter” to get in main menu. Locate the sign “◇” in front of the channel circularly from CH1-CH4 to ASI Channel by pressing UP/DOWN button, then press “Enter”.

For example, when “◇” is in front of “Encoder CH1”, press “Enter”, you will find the parameters on LCD.

◇ Encoder CH1	Encoder CH2
Encoder CH3	Encoder CH4

◇ ASI Channel

LCD shows:

Encoder 1 INF	A Rate: 256kbps
1080 50I CBR	V Rate: 008000kbps

To check parameters on other 1-3 channels, just locate the sign “◇” in front of the channel you want, press “Enter”:

Encoder 2 INF	A Rate: 256kbps
1080 50I CBR	V Rate: 008000kbps

LCD display of 1-3 encoding channels is the same only except the channel number in front of INF.

ASI Channel Parameters (up to 100Mbps) will be shown as below:

ASI Channel	INF
TS Locked	Rate: 013564kbps

If Unlock, a sign “UN” will show up after “TS”.

2.3.2 Set/Check System Parameters on Webmaster

After start-up the equipment and the backlight is off, press “Enter” to get in main menu. Press left/right button to locate the sign “◇” in front of “System Parameter”. Press “Enter” to set/check system parameter of webmaster software. LCD shows as below:

◇ Set Local IP	Set Subnet Mask
Set Gateway addr	Load default

Press “Enter” to set/check IP parameters of Equipment, LCD shows:

Set Local IP
Set : 101.101.101.020

Use Up/Down/Left/Right/Enter buttons to alter/set relative IP address, press “Enter” to save setting.

Use Left/Right to locate the sign “◇” in front of “Set Subnet Mask”. Press “Enter” to set/check Subnet Mask parameters. LCD shows as below:

Set Subnet Mask
Set : 255.255.255.000

Use Up/Down/Left/Right/Enter buttons to alter/set relative Subnet Mask parameters, press “Enter” to save setting.

Use Left/Right to locate the sign “◇” in front of “Set Gateway Addr”. Press “Enter” to set/check Gateway Address parameters. LCD shows as below:

Set Gateway addr
Set : 101.101.101.010

Use Up/Down/Left/Right/Enter buttons to alter/set relative Gateway Address parameters, press “Enter” to save setting.

Use Left/Right buttons to locate the sign “◇” in front of “Load Default”. Press “Enter” to load factory default settings. LCD shows as below:

Load	Factory	Setting
	YES	* NO

Use Left/Right buttons to locate sign “*” in front of “YES” or “NO” to load factory defaults or not, press “Enter” to save setting.

2.4 Indicator Light Introduction

POWER

Power indicator light is on while power is working normally.

Alarm

Red alarm lamp lights on when code rate overflow or no video signal input.

CH1 Lock- CH4 Lock

Green light is on while the channel is locked and the encoder work normally.

TS Lock

Green light is on while the ASI input channel is locked and working normally.

2.5 The Musts of Safety

1. Please read this introduction carefully before use the equipment.
2. Make sure the working environment is under temperature 0-45°C and other required conditions. Keep the back panel ventilated. Make sure all the connections are correct of the relative ports.
3. When install the equipment, remember to correctly connect the protective grounding cables first. After connect other signal cables, power off the equipment, then plug the outlet cable.
4. To ensure the equipment running stably, DO cut off the power before any change of cable connection on the ports of back panel.
5. When initial use, make sure the A/V source is connected normally.

6. Do not open the lid to avoid electrical shock or damage of the unit.
7. Do not turn on and off the equipment too often. The time interval between on and off should be at least 20 seconds.
8. If the equipment would not be in use for long, please unplug the power cord. Do not use damaged power in case of fire or electric shock.
9. Do not touch the power line with wet hands. When any liquid flows into the chassis, cut power off IMMEDIATELY.
10. Put the equipment in a horizontal place. Do not stack heavy objects on the equipment to prevent damage.
11. Settle the equipment in ventilated environment and suitable temperature. Keep the equipment away from the fierce light, moisture and severe vibration.
12. If the working environment has sharp temperature difference as previous, please keep the equipment off for one to two hours before power on again.

2.6 Packing

List

1. AD6202HII XM H.264 Encoder	1 Set
2. Introduction	1 Copy
3. AC Power Cable with Plug	1 Cable

2.7 Note:

This user manual also apply to encoder AD6202HII XM.

All in 1 H.264 HD Encoder (with IP output) User Manual

Please connect the network management computer with all in 1 H.264 HD Encoder. Enter into network management interface and set the related IP parameters. The buttons on the device can't be applied to set related IP parameters.

After network management computer connected with all in 1 H.264 HD Encoder and enter into the network management interface successfully, choose "IP setting" option and show as below,

The screenshot displays the configuration interface for the AD Instruments device. It is divided into several sections:

- Parameter:** Contains fields for Destination IP (192.168.1.11), Destination MAC address (F4-6D-04-73-C0-8F), and Destination port (6000). There is also a 'PID' list with values like 029E, 0208, 1FFE, etc., and buttons for 'Add', 'Delete', and 'Clear All'.
- Output:** Shows a list of output destinations labeled IP 1 through IP 6, with a 'Number of Output' set to 6.
- TS output parameters:** A list of selected programs including 'Program No.:301 CCTV-1', 'Program No.:302 CCTV-2', 'Program No.:303 CCTV-7', 'Program No.:304 CCTV-10', 'Program No.:305 CCTV-11', 'Program No.:306 CCTV-12', 'Program No.:307 CCTV-MUSIC', and 'Program No.:65534 Skystream Channel 1'.
- Left Panel:** Contains fields for IP address of the machine (192.168.1.77), Subnet mask (255.255.255.0), Gateway address (192.168.1.1), Source MAC address (06-05-04-03-02-01), Application Protocol (UDP), and Standard (IPTV). A 'Send' button is at the bottom.

This screenshot shows a different configuration view of the AD Instruments interface:

- Parameter:** Destination IP address (192.168.1.11), Destination port (3000), and Destination MAC address (00-1F-D0-D6-02-53).
- Output:** IP address of the machine (192.168.1.77), Subnet mask (255.255.255.0), Gateway address (192.168.1.1), and Source MAC address (06-05-04-03-02-01).
- Application Protocol:** Set to UDP.
- Standard:** Set to DVB.
- A 'Send' button is located at the bottom left.

At first, please choose IP out standard, DVB or IPTV;

If DVB standard, can set an IP address only, all streams after multiplexed will be sent to this destination IP address (See DVB standard user interface.)

If IPTV standard, can set maximum 6 IP address, all streams after multiplexed can be sent to different destination IP address with single program; also can be randomly sent to different destination IP address with single program or multiple programs; (See IPTV standard user interface)

Then, please choose application protocol, UDP or RTP;

Left side of the user interface is for IP parameter settings;

Right side of the user interface is for destination receiving device IP parameter settings;

Middle of the user interface is for stream of 1-6 IP address parameters setting; (when IPTV standard)

When all settings done, click “send” to save parameters settings.

After all settings done, connect relative receiving device with IP output interface.

Sketch Diagram of Devices Connection:

