Clear View

HD4660

DVB-T HD MODULATOR

User Manual

CLEAR VIEW

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DIGITAL MODULATOR

1. GENERAL

1.1 Description

The HD4660 module able to generate a signal in DVB-T format (Digital Terrestrial Television) from HDMI and YPbPr (RCA) and CVBS(RCA) input.

HD4660 is MPEG-4 and MPEG-2 encoding, DVB-T modulation integrated device to convert HDMI and YPbPr (RCA) and CVBS(RCA) signal to DVB-T RF out.

The HD4660 module adjusts the compression rate to the available bandwidth, using the modulation DVB-T parameters.

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1.2 Specifications

INPUT	
Video Input	HDMI:1080P 25/30, 1080i 50/60 Max, YPbPr(1080i,720P, 576i/P,480i/P), CVBS: NTSC, PAL
Video Input Level	1.0 V p-p (CVBS)
Video Mode	PAL / NTSC (CVBS)
Audio Input	Stereo (L/R)
Audio Input Level	3 V p-p (L/R)
Input Connectors	Video (RCA) / Audio (RCA) / HDMI
OUT PUT	
Frequency Range	177 -858 MHz
Output Level	100 dBuV
Channel Bandwidth	6,7,8 ,7-8 MHz
RF Level Adjustment	0~-36 dB typ.
Attenuation step	2dB per step
MER	30 dB typically /
MODULATION	
Video Resolution	1080P25, 1080P30,1080i,576i,480i
Video Compression	HD: H.264 AVC / HP@L4.0, SD: MPEG-2/ MP@ML
Audio Compression	MPEG2, AAC
Video Bit Rate	6 Mbit/S Max
Audio Bit Rate	384Kbits
Editable Field	Service Name, TS ID, Network ID, Original NET ID, LCN, Network Name
Carrier (OFDM Mode)	2K/8K
Guard Intervals	1/4, 1/8, 1/16, 1/32
Code Rate (FEC)	1/2,2/3,3/4, 5/6, 7/8
Constellations	64 QAM /16 QAM / QPSK
MANAGEMENT / CONTROL	
Front panel LCD control	6 Local keys on front panel
Web Management	RJ-45 Ethernet port
GENERAL	
Power Supply	AC 100~240V 50/60Hz
Consumption	25 W
Languages	English
Dimensions	19" x 12.5" x 1.75"
Weight	2.8Kg

*Specifications subject to change without prior notice.

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2. INSTALLATION

2.1 What's in the Box

One HD4660 Encoder / Modulator
One power cable

2.2 Connection

The HD4660 unit comes standard with HDMI, Component, and Composite video inputs. Component Connection: Connect the Y (Green), Pb (Blue), and Pr (Red) video source cable to the unit's Component input ports. If using a Composite Video source, use a 75Ω coaxial cable with RCA connectors to connect the video source to the unit's CVBS port.

Use RCA cables to connect the audio source to the red / white AUDIO L and AUDIO R INPUT jacks.

Use a quality 75Ω coaxial cable with "F" connectors from the unit's RF OUT jack to the distribution system or directly to a television.

Connect the power cord to an appropriately rated AC power outlet.

Once connected to power, the device turns on and it takes about 20 seconds to be operational. Then the message "Initial Please wait" appears on the display. After 60 seconds the message "Status (Enter) & IP Address 192.*.*.*" on the display.

```
S t a t u s   ( E n t e r )
    1 9 2 . 1 6 8 . 1 . 1 3 8
```
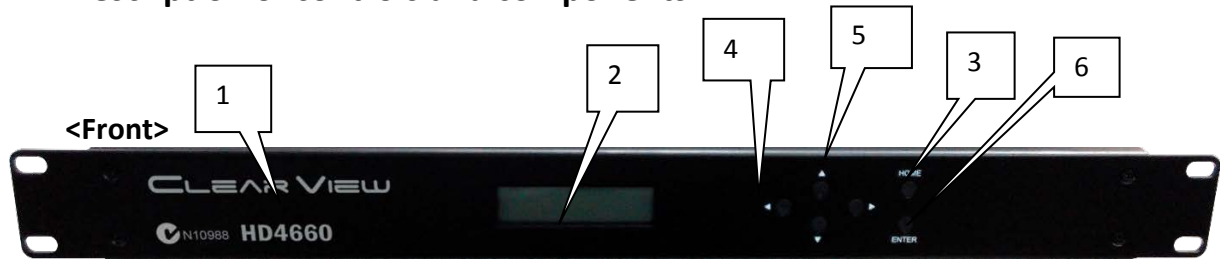
2.2.1 DEVICE Programming and Setup

Connect an Ethernet cable directly (no Cross Over cable required) to the Ethernet Port on the rear panel of the encoder and then connect the Ethernet cable to an Ethernet switch or connect an Ethernet Cable to your PC.

3 OPERATING INSTRUCTIONS

3.1 Description of controls and components

<Front>

<Rear>

1	HD4660	Model name
2	LCD Display	Configuration and system status
3	Key PAD / Home	Return to start menu.
4	Key PAD / Left & Right	Move Right / Left between menu / characters.
5	Key PAD / Upper & Down	Increase / Decrease value of the figure / field.
6	Key PAD / Enter	Select parameter / menu.
7	Audio/Video Input * 4	HDMI/ Component YPrPb(RCA) / Composite CVBS(RCA)
8	RF output	"F"-Female 75Ω, +45dBmV Typical
9	Ethernet Port	RJ-45,GbE / IE9, Chrome
10	AC input	AC 100~240V / 50~60Hz

ATTENTION!
FOR THIS CONFIGURATION YOU SHOULD USE OUTPUT FREQUENCIES DIFFERENT FROM THE ONES THAT YOUR TV IS CURRENTLY USING

3.2 Starting
3.2.1 Beginning Setup
DEVICE Programming and Setup
1. Apply power.
2. Connect Audio / Video source

Connecting to the GUI Interface:
1. Connect an Ethernet cable directly to the Ethernet port on the rear panel of the encoder and then connect the Ethernet cable to an Ethernet switch /router or connect an Ethernet Cable to your PC.
2. Using a Windows-based PC Select Windows Icon
3. Check IP address from front panel display.

```
I n i t i a l . . .          S t a t u s   ( E n t e r )
P l e a e s   w a i t . . .        1 9 2 . 1 6 8 . 1 . 1 3 8
```
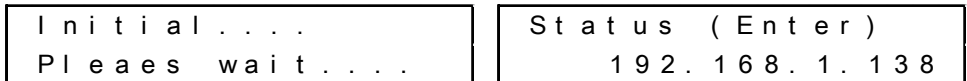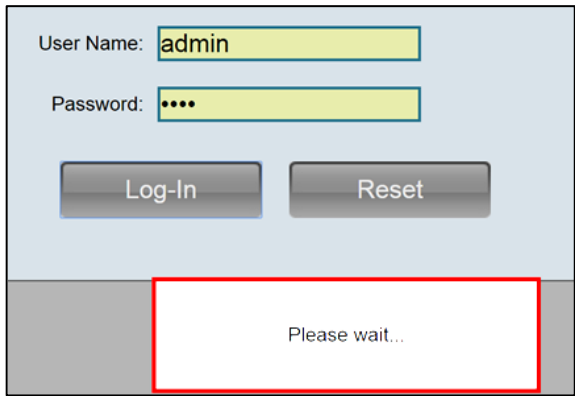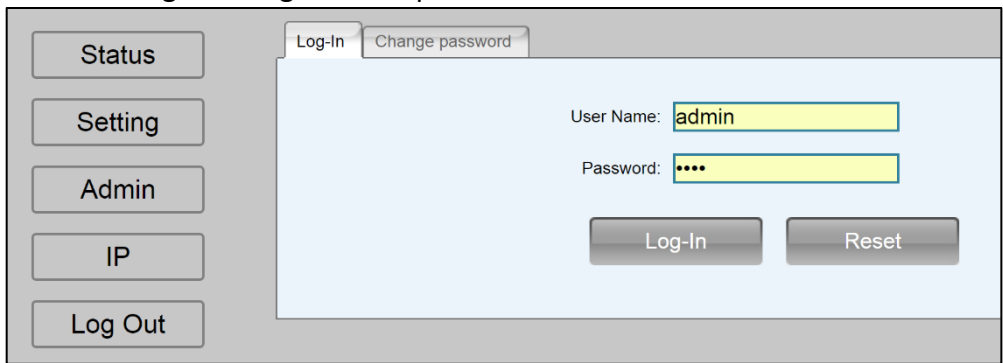
4. Key in the IP address in web browser.

3.2.2 Step 1: Login
Login Password:
Default User Name: admin
Default Password: 0000
Encoder Programming and Setup via GUI Interface:

3.2.3 Step 2: Right Click and Select "Status"

Overview Page of Encoder of RF.

Network Status					
Country	Rack Position	Original Net ID	Network ID	Network Name	TS ID
AUSTRALIA	OFF	8234	12801	Private Network	128

Channel & Encode Status									
No.	Name	Service ID	LCN	ON/OFF	Video Output	Audio Output	Video Input	Input Video Type	Status
CH 1	TV1	1	101	ON	MPEG-2	MPEG-2	CVBS	PAL 576i	🟢
CH 2	TV2	2	102	ON	MPEG-2	MPEG-2	CVBS	PAL 576i	🟢
CH 3	TV3	3	103	ON	MPEG-2	MPEG-2	CVBS	PAL 576i	🟢
CH 4	TV4	4	104	ON	MPEG-2	MPEG-2	CVBS	PAL 576i	🟢

No.	PMT	Video PID	Audio PID
CH 1	37	32	33
CH 2	53	48	49
CH 3	69	64	65
CH 4	85	80	81

RF Status								
Frequency	Constellation	Guard Interval	Code Rate	FFT Carrier	Bandwidth	Encode Rate(Kbps)	RF Power	RF ON/OFF
CH29 536.5 MHz	64QAM	1/32	7/8	8K	7 MHz	27686	46 dBmV	ON

3.2.4 Step 3: Setting Tab

Use the Setting Setup Page to set the Network setting , and channel & encode setting, and RF setting.

Please check the resolution of the source side, and then check the item of input video type at Channel & Encode Setting page to make sure both of them have same setting value.

3.2.5 Step 4: Local Save

Perform apply once all parameters are set.

Changes made to an individual setup tab may require the installer to perform a apply to the device if you are only making changes to one parameter of the encoder.

3.2.6 Step 5: IP Configuration Tab
Use the IP Setup Tab to configure the device's IP address, Mask, Gateway,

3.2.7 Step 6: Save IP Configuration
Perform apply once all parameters are set.

IP Setting

Connection Mode	IP Address	Mask	Gateway
Static ▾	192.168.1.138	255.255.255.0	192.168.1.1

Apply   Reset

3.2.8 Step 7: Administration
Selecting "Reboot" will automatically reset all saved settings back to factory default settings. All saved settings will be lost.

Use the Admin Setup Tab to set the device's reboot, configuration, software update, password change,

Status
Setting
Admin
IP
Log Out

Reboot | Configuration | Software Update | Password Change

Click the "Reboot" button to reboot the unit, it will take about 70 seconds to complete.

Reboot

ADMINISTRATION PAGE FUNCTIONS	ACTIONS
Reboot	Reboot device. All unsaved settings will be lost.
Configuration	User can upload the file with pre-saved configuration settings to device.
Software update	Upload a saved firmware file
Password Change	Create and save new password for GUI

To upload a configuration file- simply click **"Choose File"** then locate the file you want to upload. Click "**Upload**" to install the configuration files. This function is helpful to the installer when installing a large number of encoders in a single system.

4 MENU TREE

4.1 Menu Tree of Front panel

MAIN		Layer 1	Layer 2(Default)	
Edit Menu	1	Status (Enter)	Status (Enter)	Edit (Enter)
Network Edit	1	Country	Australia	
	2	Rack Position	OFF	
	3	ONID	8234	
	4	NIT ID	12801	
	5	NIT Name	Private Network	
	6	TS ID	128	
CH & Enc Edit	1	CH1 Name	TV1	
	2	CH1 Service ID	1	
	3	CH1 LCN	101	
	4	CH1 ON/OFF	ON	ON, OFF
	5	CH1 Video Output	MPEG-2	MPEG-2, H.264
	6	CH1 Audio output	MPEG-2	MPEG-2, AAC
	7	CH1 Input Video	CVBS	HDMI, YPbPr , CVBS
	8	CH1 Input Video	PAL 576i	
	9	CH1 Status	Running	
	10	CH1 PMT	37	
	11	CH1 Video PID	32	
	12	CH1 Audio PID	33	
RF Edit	1	Frequency	CH29 536.5MHz	177~858 MHz
	2	Constellation	64QAM	64/16/QPSK
	3	Guard Interval	1/32	1/32,1/16,1/8,1/4
	4	Code Rate	7/8	7/8,5/6,3/4,2/3,1/2
	5	FET Carrier	8K	8K/2K
	6	Bandwidth	7 MHz	6/7/8/7-8M
	7	Encode Rate(Kbps)	27686	
	8	RF Power	46 dBmV	10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46
	9	RF ON/OFF	ON	ON,OFF
IP Edit	1	Connection Mode	Static	DHCP, Static
	2	IP Address	192.168.1.138	
	3	Mask	255.255.255.0	
	4	Gateway	192.168.1.1	
Load Default	1	YES / NO		
Change Password	1	New Password	0000	
	2	Apply Password	Yes No	

4.2 Menu Tree of Web UI

MAIN		Layer 1	Layer 2(Default)	Layer 2
Netwotk Setting (Status)	1	Country	Australia	Australia,Croatia,Czech,Denmark,Estonia, Finland,France,Ireland, Italy, Latvia, Netherlands, New Zealand, Norway,Poland, Portugal, Slovak, Sweden, UK, Other
		Rack Position	OFF	
	2	Original Net ID	8324	
	3	Network ID	12801	
	4	Network Name	Private Network	
	5	TS ID	128	
	6	Apply / Reset / Load Default		
CH & Enc setting (Status)	1	CH1 Name	TV1	
	2	CH1 Service ID	1	
	3	CH1 LCN	101	1~1023
	4	CH1 ON/OFF	ON	ON, OFF
	5	CH1 Video Output	MPEG-2	MPEG-2, H.264
	6	CH1 Audio output	MPEG-2	MPEG-2, AAC
	7	CH1 Input Video	CVBS	HDMI, YPbPr , CVBS
	8	CH1 Input Video	PAL 576i	CVBS: NTSC 480i, PAL 576i YPbPr: NTSC1080i, PAL 1080i, NTSC 720P, PAL 720P, NTSC 480P, PAL 576P, NTSC 480i, PAL 576i HDMI: 1080P 25/30, 1080i 50/60, 720P 50/60, 576 50/60, 480 50/60
	(9)	CH1 Status	Running	
	10	CH1 PMT	37	
	11	CH1 Video PID	32	
	12	CH1 Audio PID	33	
	13	Apply / Reset / Load Default		
RF Setting (Status)	1	Frequency	CH29 536.5MHz	177~858 MHz
	2	Constellation	64QAM	64QAM,16QAM,QPSK
	3	Guard Interval	1/32	1/32,1/16,1/8,1/4
	4	Code Rate	7/8	7/8,5/6,3/4,2/3,1/2
	5	FET Carrier	8K	8K, 2K
	6	Bandwidth	7 MHz	6,7,8,7-8M
	7	Encode Rate(Kbps)	27686	
	8	RF Power	46 dBmV	10,12,14,16,18,20,22,24,26,28, 30,32,34,36,38,40,42,44,46
	9	RF ON/OFF	ON	ON,OFF
	10	Apply / Reset / Load Default		
Admin	1	Reboot		Please wait
	2	Configuration		Backup, Upload
	3	Software Update	Choose filr/No file chosen	Upload
	4	Firmware	Firmware : (1)B.06 (2)B.06 (3)B.06 (4)B.06, APP : D1.02, Serial Number : 2016060601	
	5	Change password	User name/ Password/ New Password/ Confirm Password	Change , Reset
IP setting	1	Connection Mode	Static	DHCP, Static
	2	IP Address	192.168.1.138	
	3	Mask	255.255.255.0	
	4	Gateway	192.168.1.1	
	5	Apply / Reset	192.168.1.1	
Log Out	1	Log-Out	User Name / Password	Log-In, Reset

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5 MODULATOR CONFIGURATION VIA FRONT PANEL LCD

5.1 Once connected to power, the device turns on and it takes about 20 seconds to be operational. Then the message "Initial Please wait" appears on the display. After 60 seconds the message "Status (Enter) & IP Address 192.*.*.*" on the display.

Screen Views(5.1)

| S t a t u s   (E n t e r) |
| 1 9 2 . 1 6 8 . 1 . 1 3 8 |

Screen Views(5.2)

| E d i t   (E n t e r) |
| 1 9 2 . 1 6 8 . 1 . 1 3 8 |

5.2 Access the Edit Menu first enter the password by pressing the left & right key button.

5.3 Press the Enter button firstly, and then press right button to enter the password 0000.

5.4 Press Enter button again after display show Network Edit .

5.5 Use the Right/Left buttons to display Network Edit, CH&Enc Edit, RF Edit, Load Default, Chang Password Mode selection.

5.6 Network Edit Menu : Use the Right/Left buttons to display Country, Original Net ID, Network ID, Network Name, TS ID mode selection.

Screen Views(5.3 & 5.4)

| E n t e r   P a s s w o r d |
| 0 0 0 0 |

Screen Views(5.6)

| N e t w o r k   E d i t |
| |

5.7 CH&Enc Edit Menu: Use the Right/Left buttons to display Name, Service ID, LCN, on/off, Video output, Audio output, Video Input, Input Video, Status , PMT, Video PID, Audio PID mode function.

5.8 RF Edit Menu: Use the Right/Left buttons to display Frequency, Constellation, Guard Interval, Code Rate, FET Carrier, Bandwidth, RF Power, RF ON/OFF mode selection.

Screen Views(5.7)

| C H & E n c   E d i t |
| |

Screen Views(5.8)

| R F   E d i t |
| |

5.9 Reset the Encoder/Modulator to back the factory default via pressing the Enter button to access the Load Default page. Then, using the right/left button select YES to reset all programmed settings back to the factory default setting.

Screen Views(5.9)

| L o a d   D e f a u l t |
| |

Screen Views(5.10)

| C h a n g e   P a s s w o r d |
| |

5.10 Change Password Menu: Use the Right/Left buttons & Up/Down to select new password.

5.11 Follow the blow steps to change frequency.

Step	Instructions

Step 1: How to access the Edit Menu.	1. After power on, The Main menu page are shown on the display.
	`S t a t u s   ( E n t e r )`
	`        1 9 2 . 1 6 8 . 1 . 1 3 8`
	2. To access the Edit Menu first, Please press the any key button.
	`E d i t       ( E n t e r )`
	`        1 9 2 . 1 6 8 . 1 . 1 3 8`

Step 2:
Enter the password
Default Password: 0000
	1. Use the Enter button to enter the password, Password is 0000. Press right button for each number to enter the password.
	`E n t e r   P a s s w o r d`
	`0`

Step 3 :
Change RF Frequency
	1. RF Edit Menu : Use the Right/Left buttons to selection RF Edit mode.
	`R F   E d i t`
	
	2. Press the Enter button to access the Frequency mode to view the current value.
	`F r e q u e n c y`
	`    C H 2 9   5 3 6 . 5   M H z`
	3. Press the Enter button again to get in edit mode.
	`F r e q u e n c y`
	`C H 2 9   5 3 6 . 5   M H z`
	4. Use the Up/Down button to change the channel.
	`F r e q u e n c y`
	`C H 3 0   5 4 3 . 5   M H z`

Step 4:
Save the parameter
	1. Use the Home button to save the changed channel value.
	2. Press the Home button again and then select "Yes" item for confirming the Apply Setting.
	`R F   E d i t  ✲`
	
	`A p p l y   S e t t i n g ?`
	`Y e s   N o`
	3. Use the Enter button to store the Frequency edit.
	`P r o c e s s i n g`
	`w a i t   a   m o m e n t . . .`
	`R F   E d i t`