

User Manual





H-HDMI-RF-Petit-IR

A Note from Thor Broadcast about this Manual

Intended Audience

This user manual has been written to help people who have to use, integrate and to install the product. Some chapters require some prerequisite knowledge in electronics and especially in broadcast technologies and standards.

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Chapter 1 - Introduction

<u>1.1 Product Overview</u>

The **H-HDMI-RF-Petit-IR** modulator has an HDMI input with local loop through, and a COFDM output which is combined with the RF input. The HDMI input content can be supplied by a number of sources, Blu-rayplayer, Satellite Set top box, CCTV etc. The input signal is modulated as a COFDM output and can be distributed to a number of TV's over an existing private coaxial network.

It has an HDMI loop through, to connect to the local TV, and can also combine existing RF with the modulated output channel on RF Out 1 and RF Out 2. The modulator has adjustable level control to balance the COFDM channel with the incoming RF channels

The source Set top box can be controlled from another TV location, via the IR remote control over the coaxial cable, using an IR transmitter and a digital link. The coaxial network must be connected to the RF Out, with the 9vdc able to pass through the network, to remotely power the digital link.

1.2 Key features

- ◆ Support IR control return pass
- ♦ Supports HD MPEG2 Encoder
- Supports output resolutions up to 1080 30p
- Control via NMS or Key, and easy updates via web
- Selectable Audio format AAC/Mpeg1 L2, AC3
- ♦ Install multiple units onto TV system

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1.3 Specifications

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)
Output
Max.1080@30p
4 1 2/1 4 2 4)
/lode3(I=1,2,4)
QAM J.83B
64QAM,256QAM

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1.4 Appearance and Description



1. LCD Screen9. RF Output (IR return w/ 9 V DC)2. ESC(Cancel/Return)10. RF Output3. Enter key10. RF Output4. Power & Status LED12. HDMI Out5. Directional keys(up, down, left, right)13. HDMI IN6. IR Output for IR emitter14. NMS Control(LAN PORT)7. 9V dc Switch15. Power input8. LED (9V dc indicator)

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1.5 Application Drawing



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Chapter 2 - Operation

Keyboard Function Description:

ENTER: Activate the parameters which need modifications, or confirm the change after modification. ESC: Cancel current entered value, resume previous setting; Return to previous menu. LEFT/RIGHT: Choose and set the parameters. UP/DOWN: Modify activated parameter or paging up/down when parameter is inactivated.

2.1 LCD Menu Structure

1. DVB-T Menu Settings

TS Config

TS ID	1
ON ID	1
Program Number	1
Program Provider	TF HD1
Program Name	TF HD1
LCN	1
Network ID	1

Encode Input sou Bit Rate

Input source	HDMI
Bit Rate	19.000Mbps
Latency	500/ 800/ 1000
Audio Format	AAC/ Mpeg1 layer2/ AC3
PMT PID	32
Video PID	48
Audio PID	49
PCR PID	50

Modulate

Standard
RF Frequency
Bandwidth
Constellation
FT
Guard Interval
Code Rate

DVB-T/ DVB-C(J.83A)/ ATSC/ DVB-C(J.83B)/ ISDB-T 474.000MHz 6M/ 7M/ 8M QPSK/ QAM16/ QAM256 2K/4K/8K 1/4 1/8 1/16 1/32 1/2 2/3 3/4 5/6 7/8

2. DVB-C(J.83A) Menu Settings

TS Config

TS ID	1
ON ID	1

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Program Number	1
Program Provider	TF HD1
Program Name	TF HD1
LCN	1
Network ID	1

Encode Ŀ

Input source	HDMI
Bit Rate	19.000Mbps
Latency	500/ 800/ 1000
Audio Format	AAC/ Mpeg1 layer2/ AC3
PMT PID	32
Video PID	48
Audio PID	49
PCR PID	50

Modulate

Standard	DVB-T/ DVB-C(J.83A)/ ATSC/ DVB-C(J.83B)/ ISDB-T
RF Frequency	474.000MHz
Symbol Rate	5-8M
Constellation	QAM16/ QAM32/ QAM64/ QAM128/ QAM256

3. ATSC Menu Settings

TS Config

Major Config	1
Minor Config	1
TS ID	1
Program Number	1
Program Name	TF HD1

Encode

Input source	HDMI
Bit Rate	19.000Mbps
Latency	500/800/1000
Audio Format	AC3/ AAC/ Mpeg1 layer2
PMT PID	32
Video PID	48
Audio PID	49
PCR PID	50

Modulate

Standard RF Frequency DVB-T/ DVB-C(J.83A)/ ATSC/ DVB-C(J.83B)/ ISDB-T 491.000MHz

4. DVB-C(J.83B) Menu Settings

TS Config

Major Config 1 Minor Config 1 TS ID 1 Program Number 1 TF HD1 Program Name

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Encode Inp

Input source	HDMI
Bit Rate	19.000Mb
Latency	500/800/1
Audio Format	AC3/AA0
PMT PID	32
Video PID	48
Audio PID	49
PCR PID	50

ops 000 C/Mpeg1 layer2

Modulate Standard

RF Frequency Constellation

DVB-T/ DVB-C(J.83A)/ ATSC/ DVB-C(J.83B)/ ISDB-T 471.000MHz QAM64QAM64/QAM256

5. ISDB-T Menu Settings

TS Config

-	
TS ID	1
ON ID	1
Program Number	1
Program Provider	TF HD1
Program Name	TF Hd1
Key ID	14
Network ID	1

Encode

FFT

Input source HDMI Bit Rate 19.000Mbps Latency 500/ 800/ 1000 Audio Format AAC/ Mpeg1 layer2/ PMT PID 32 Video PID 48 Audio PID 49 PCR PID 50

Modulate Standard

DVB-T/ DVB-C(J.83A)/ ATSC/ DVB-C(J.83B)/ ISDB-T RF Frequency 474.143MHz QPSK/ QAM64/ QAM256 Constellation 2K/4K/8K Guard Interval 1/4 1/8 1/16 1/32 Code Rate 1/2 2/3 3/4 5/6 7/8

6. Network, System settings, Version Settings

Network		System settings	Version	
IP Address	192.168.0.188	Save & Reboot	NMS	1.04
Subnet Mask	255.255.255.0	Restore	Board ID	00000203
Gateway	192.168.0.1	Factory Set	Modulator	02050107

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Note 9 Vdc power may not be required if the RF output is connected to a distribution amplifier with IR pass capability

2.3 Connect more modulators

HD TV

Room TV



Two, or more modulators can be combined together and the signal can then be distributed over the TV distribution network.

There are a few parameters that have to be changed on the modulators to enable the TV's to see all the channels.

Each modulator must have a different output channel/frequency, Local Channel Number (LCN), Service ID Number.

Note: if IR control is required, use RF2 out

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Chapter 3 - WEB NMS Operation

For setting configurations you can use the front panel; also you are able to control and set the configurations on any computer by connecting the device to the web NMS Port. You should ensure that the computer's IP address is different from the Modulator IP address; otherwise, it would cause an IP conflict.

<u>3. 1 Login</u>

The default IP of this device is 192.168.0.188. We can modify the IP through the front panel. Connect the PC and the device with net cable, and use ping command to confirm they are on the same network segment.

E.G. the PC IP address is 192.168.0.190, we then change the device IP to 192.168.0.xxx (xxx can be 1 to 254 except 190 to avoid IP conflict).

Use any web browser to connect the device with the PC by inputting the Encoder & Modulator's IP address in the browser's address bar and press Enter.

It will display the Login interface as Figure-1. Input the Username and Password (Both the default Username and Password are "admin".) and then click "LOGIN" to start the device setting. Both fields of Username and Password are case sensitive.





3.2 Operation

Summary

When we confirm the login, it displays the Summary interface as shown in Figure-2.

Web Management		Log ovt
BROADCAST	Status	
Summary	Version Information	
1000	Version [1/1/ly	
Status	Board ID ((A)(D))	
Parameters	Modulator Status	
Encode	Standard AfACs	
Modulate	Frequency Introduce	
System	Video Info. (Accession)	
Network	Statur .	
- Password	Get	
	Second Se	

Parameters → **Encode:**

Click [Encode], it displays the information of the program from the HDMI encoded channels, users select different modulating





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Web Management				Log out
THORR &	Encode			
Summary	Input Source	10HK	-	
- And a state of the	Bit Rate	79	(5-25)MBbps	
 Status 	Latency	1970		
Parameters.	Audio format	APROX Lawrence		
* Encode	TS 1D	t		DVB-C(J.83A)
+ Modulate	ON ID	(t		Modulation
The second s	Program Number	8		
System	Program Provider	1F #403		
+ Network	Program Name	17 NB3		
- Password	Private Data Spec ID	ENCED	A- 0420	
+ Firmware	PMT PID	12		
+ Configuration	Video FID	N		
	Audio PID	40		
	PCR PID	(m)		
	Status	•		
	Video Resolution	millow idention		
	Core Version	minoral		

Web Management				Log mit
THERE	Encode			
	Input Source	19960	-	
Summary	Bit Rate	14	(5-25)MBbps	
- Status	Latency	540		
Parameters:	Audio format	A/29	0	
* Encode	TS ID	1		
- Modulate	Program Number	1	3	
Conceptor in	Program Name	17.000		
System	PMT PSD	74		
+ Network	Video PID	4]	
Paseword	Audio PID	10		
- Firmware	PCR PID	90	3	
 Configuration 	Status	• 1	-	
	Video Resolution	HODE TUDORIT		
	Core Version	(D0%0607		
	Cite Arres		25	
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Web Management				Log aut
BROADCAST	Encode			
Cuminstant	Input Source	/1005		
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Status	Latency	200	140	
Parameters	Audio format	Aci		
Encode	15 LD			1920 Modulation
Modulate	Program Number	1		J.65B WIOUUIALION
and the second se	Program Name	TE HETH		
System	PINT PID	19		
Network	Video PID	44.7		
Password	Audio PID	414		
Firmware	PCR PID	4412		
Configuration	Status	•		
	Video Resolution	180/24 #08/29/8		
	Core Version	Second Comparison		
	Cirl Accor			

BROADCAST 7					
Summary	Input Source	HERN		in the second se	
	Bit Rate	10		(5-25)MBbox	
- Status	Latency	-100			
Parameters	Austio format.	ALC.			
+ Encode	ts ID	0		18	ISDB-T Modulation
- Modulate	ON ID	1			
System	Service ID	1			
	Program Provider	14.003			
 Network. 	Program Name	37 +10 1			
 Password 	DIG TMG	8			
 Firmware. 	Video PID	. UL .		1	
Configuration	Audio PID	400		I	
	PCR PID	96 s		1	
	Status	•	_		
	Video Resolution	HISDARCHIN	_		
	Core Version	This weith			

System → Modulate:

Click [Modulate], it displays the interface where users can configure the modulating parameters.

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Web Management				Log out
	Modulate			
	Standard	1599 1	 La Carto	
Summary	RF Frequency	664	(\$0.0-9\$0.0)MHz	
- Status	RF Attenuator	4	(0-30)dB	
Parameters	Bandwidth	3		
Encode	Cohatellation	-hvialda		
- Modulate	FFT	(4)	1.	
- Production	Guard Interval	Section.		
System /	Code Rate	244		
 Network 	Network ID	1		
- Password	LON			
-	1 and a start of the	14.4		

Web Management				Log nu
BROADCAST	Modulate			
Participation in the second	Standard	050.00000	-	
Summary	RE Frequency	978	(50.0-950.0)MHz	
- Status	RF Attenuator	10	(0-20)dB	
Parameters	Symbol Rate	0075		
- Endeda	Constellation	NOMA	-	
- Diciple	Network ID	3		
e Piodulare	LCN			
System	Dates			

Web Management				Log put
BROADCAST	Modulate			
Summersey	Standard	AURC	-	
sector many	RF Prequency	4	(50.0-950.0)MHz	
Status	RF Attenuator		(0-30)dB	
arameters	Constaliation	149301	~	
Eccode	Major Channel	1	1	
Modulate	Minor Channel			
- Contract	Status	•		
ystem				
Network	Cites Cites			
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Veb Management				Ling out
HORA	Modulate			
BRUNDERST	Standard	2.090	-	
ummary	RF Frequency	(AT)	(50.0-950.0)MHz	
Status	RF Attenuator	17	(0-30)dB	
arameters	Constellation	WHICH AND		
Encode	Najor Channel	(i		L83B Modulation
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Presented boder & Modulato web Management Introdecesser Status Introdecesser	Modulate Standard IF Preservy IF Athenator Controllation IFT Gaard Inferval Code Rate	2006 870-165 6 6 6 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7	- (50.0-950.0)MHz (0-30)dB	Logist
Presented	Modulate Standard IF Frequency RF Atlemator Constabilitien FFT Gaund Differend Code Rate Network ID	2000 (73.43) (7.44)	(50.0-950.0)MHz (0-30)dB	Log soft
Presented Defer: & Modulator Neb Management Record Records rameters Encode seton Setons verter Network	Modulate Standard IF Progenory IS Attenuator Condicition IFT Caurol Informal Code Rate Network Network	2010 473 143 6 6 6 6 6 7 1 1 1 1 1 1 1	(50.0-430.0)444 (0-20)68	Log inf

System → Network:

Click [Network], it displays the where to set network parameters.





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System→Password:

Click [Password], it displays the screen where to set login password for the web NMS

BUNDADEAST Password	_
Summary New Demana Ottom	
TOWN DATE OF	
Status Contirm password	
Parameters Ann	
< Encode	
Modulate	
System	
+ Network	

System→Firmware:

Click [Firmware], it displays the screen where to update the firmware on this modulator.

Encoder & Modulato	r	
Web Management		Log out
THORR	Firmware	
Summary	Lipciste Modulator Firmware	
+ Status	The second second	
Parameters	Minana Hinu	
+ Encode	Progress	
- Modulate		
System		
- Network		
- Password		
+ Timmare		
- Configuration		

[Remark]

Read this carefully before starting the update operation

- [1] Make sure the network connection is solid and stable before operation.
- [2] Do not open same web page in different tab.
- [3] Ensure network is connected and power is up during whole update process.
- [4] Do not turn off power while system is restarting after update.

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Click [Update Modulator Firmware] to put file up then auto start update. Progress shown below.

	Web Management					Log on
Starmary Status	THORRE	Firmwa	70			
Status Constant Process Constant Con	Summary		Lighting Mocculary Formager			
Exaction Organization • Encode Implementation • Modular Implementation • System Implementation • Printick Implementation	= Status		Distance Sales			
Crock Propersy Unim Constant Const Constant Constant Constant Constant	Parameters		Wallan Mc			-
Module Opport Opport Notified Notified Opport Not	- Encode	Progress	C lipm	Formation Protocology		
System Verlack Verlack Solutions Solutio	- Modulate		Comment Inscholar			
Network N	System			Z. Hann	.Door recently a	her.
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+ Firmware + F	+ Rassword		1 Di Du H			
	+ Firmeant		1.00.0019		1	

Click [Update NMS] to put file up then auto start update.

Progress shown below.

Web Update				-
Select a web application (3	an) he then click opdate botton			de
Choose ?	C Cym		×	
Update	6- 2 - 1 - 1 - 2017C - 100	maxilies.(D) + update -	6 Contigene	
	Degener + New Yorks		H • 13 0	
	- Costbird - Farcanil	5	Discretibus. New	
	a an tea tri	[] H22H3MMC3pheshe	ingenter for the	
) Statute			
	File Austral		- 86/14r	

[Remark]

If the web application does not open, do the following:

Please turn off the power first, press the OK button until the power is turned on for three seconds, and then release it; the system will forcefully enter the bootloader burning interface, and select the file to be burned again. During the programming process, the external LED will display blue from left to right, then green from right to left.



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System → Configuration:

Click [Factory Set], it displays the screen Click OK to Factory default Setting.

Click [Load Configuration], it will jump a windows to upload the file that saved settings before.

Click [Save Configuration], it saves parameter settings as a file to convenient uploading.

Web Management		Log bu
BROADCAST	Configuration	
Summary	Fectury Set	
> Status	Loud Englishmetric	
Parameters		
+ Encode	Save Configuration	
- Modulate		
System		
 Network 		
- Password		
 Firmware 		

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Chapter 4 - Packing List

BROADCAST H-HDMI-RF-Petit-IR	1PC
User's Manual	1PC
HDMI Cable	1PC
Power adaptor	1PC
IR emitter	1PC
IR receiving eye	1PC

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