

DVB-T MODULATOR WITH IR Return Path



USER GUIDE

TABLE OF CONTENT

1 GENERAL	2
1.1 Description	2
1.2 What's in the Box	2
1.3 Specifications.....	3
2. INSTALLATION	5
2.1 Power Supply	5
2.1.1 Operation via external power supply	5
2.2 Connection	5
2.2.1 Connection diagram examples	5
2.3 Navigation and edition of values.....	6
3 OPERATING INSTRUCTIONS.....	6
3.1 Description of controls and components	6
3.2 Starting	7
3.3 Configuration menu	8
3.4 Menu Tree	9

HOME DIGITAL MODULATOR

1 GENERAL

1.1 Description

The module able to generate a signal in **DVB-T** format (Digital Terrestrial Television) from HDMI input.

It is H264 encoding, DVB-T modulation integrated device to convert HDMI signal to DVB-T RF out. It has equipped with one channel HDMI input, one HDMI out(HDMI pass-through) and one DVB-T RF out.

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

It converts HDMI signal to DVB-T RF out with IR return path to allow channel changing from other rooms. Able to control remote control signals easily from coaxial cable. Long transmission distance and Simple Plug-and-Play installation

1.2 What's in the Box

One DVB-T Modulator with IR return path

One power adaptor

One IR Emitter

One IR Receiving Eye

1.3 Specifications

Source input :	
• Input Channel	1
• Video	HDMI
• Video System	480i/p, 576i/p, 720p, 1080i/p
• Audio system	HDMI

Compression :	
• Video	H.264 Baseline Profile Level4.0
• Video Resolution	1080p 25 / 30 Max
• Video Bit rate	12Mbps MAX
• Audio	MPEG-2 / AAC
• Audio Bit rate	192 Kbit/S
• DVB insertion tables	SDT, NIT
• Editable field	SERVICE NAME , Network Name , Provider Name , TS ID , NETWORK ID , ORIGINAL NET ID , LCN , NIT VERSION , PRIVATE DATA , Country

RF Output	
• Type	1 Multiplex DVBT with a digital TV service
• Frequency	177 – 858 MHz
• MER	30 dB Typically
• Output level	95 dBuV
• RF Level Adj	0 dB ~ -20dB
• Attenuation step	1dB per step

Connections	
• HDMI IN	HDMI IN
• HDMI OUT	HDMI PASS THROUGH
• RF Output (9VDC)	RF outputs (providing accessory power supply 9 volts DC for IR Pass)
• DC Switch	Power supply 9 volts DC for IR Pass
• RF Input	RF Combiner
• USB	Firmware upgrade
• IR Out	IR Emitter output

Modulation	Standard	DVBT (ETSI EN 300 744)
	Constellation	QPSK, 16QAM, 64QAM
	Guard Interval	1/4, 1/8, 1/16, 1/32
	Code Rate	1/2, 2/3, 3/4, 5/6, 7/8
	FFT Carriers Mode	2K, 8K
	Bandwidth	6MHz, 7MHz, 8MHz, 7-8MHz
Power Supply	12V ADAPTOR	
Display	LCD panel @ 2 x 16 characters (on front panel).	
Configuration	6 Local keys on front panel : <ul style="list-style-type: none"> • ENTER Key : Select parameter, or menu • L / R Keys : Move menu, or characters • Up / down : Select value of the figure, or field • MENU keys : Return to start menu 	
Environmental for operating	Temperature range	5°C- 40°C
	Relative Humidity	80% @ 30°C

IR Receiving Eye	
Freq. range	100 -900 MHz
Insertion loss	3.0dB Typical
Return path signal freq	7.0MHz
IR freq.	20~60kHz
Impedance	75 ohm
Power consumption	9mA

*Specifications subject to change without prior notice.

2. INSTALLATION

2.1 Power Supply

To start using it, connect the external power supply to the 230V mains and the 12V to the instrument input.

Once connected to power, the device turns on and it takes about 18 seconds to be operational. Then the message “**Keyboard Locked**” appears on the display.

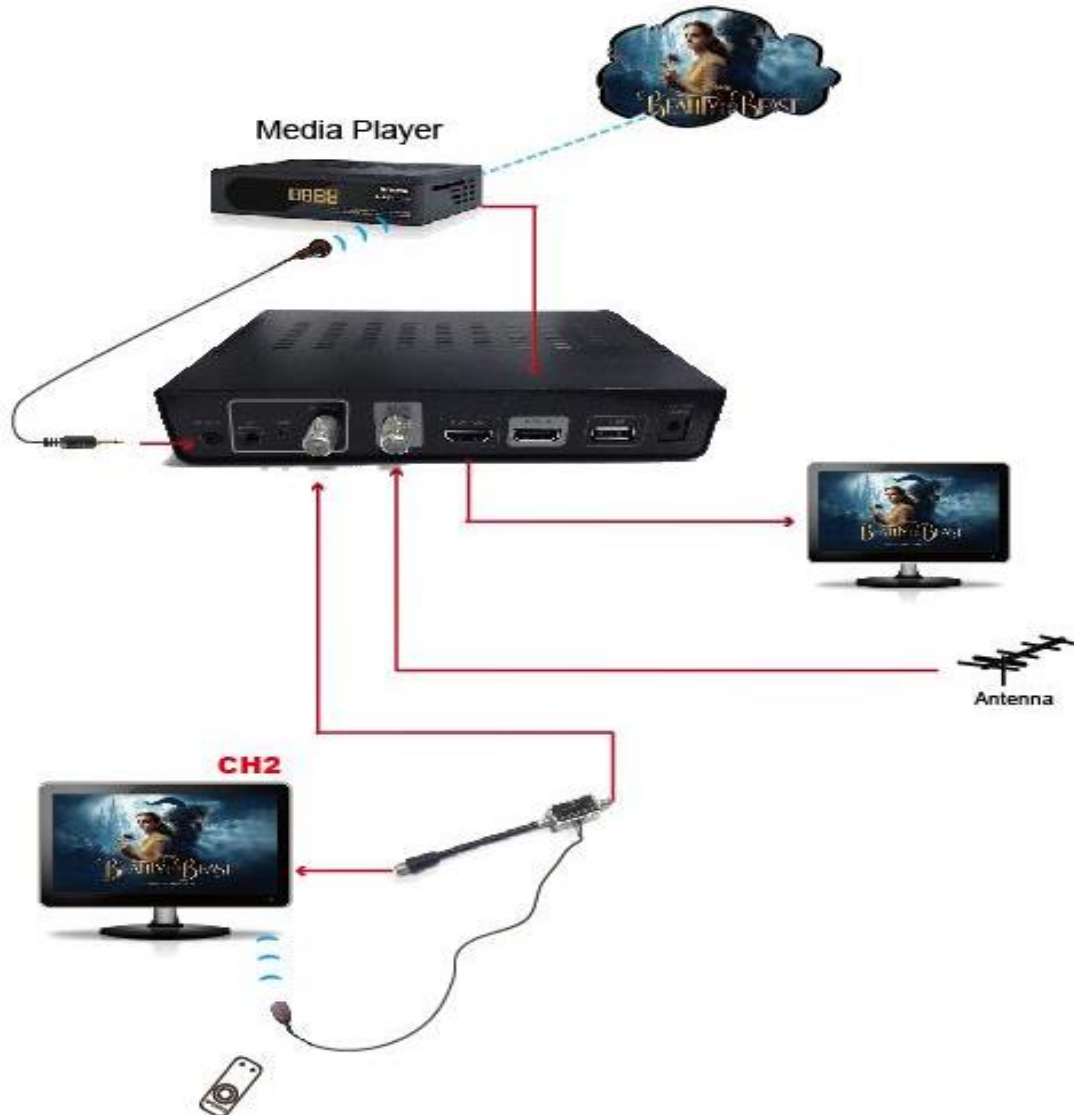
2.1.1 Operation via external power supply

Use only the external power adapter supplied with the instrument.

2.2 Connection

2.2.1 Connection diagram examples

- CONNECTION DIAGRAM FOR ONE MODULE









ATTENTION!

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

2.3 Navigation and edition of values.

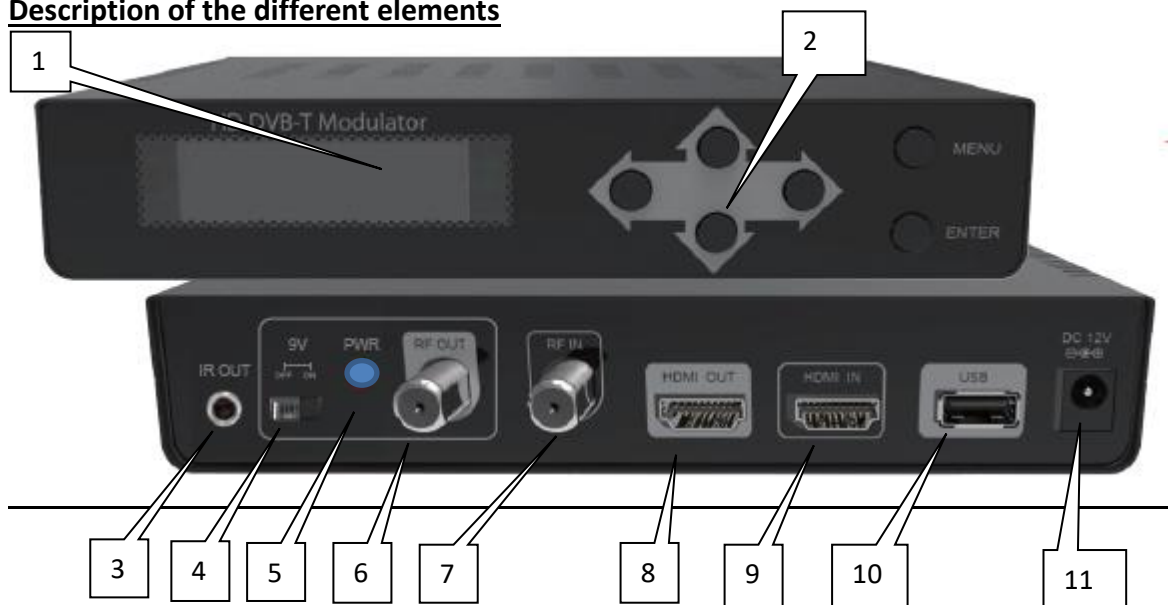
The instrument is configured through its 6 keys and front panel display. In general, it is not necessary to configure the instrument to generate a **DVB-T** signal compatible with any digital terrestrial television receiver.

-  Select parameter / menu.
-   Move Right / Left between menu / characters.
-   Increase / Decrease value of the figure / field.
-  Return to start menu

3 OPERATING INSTRUCTIONS



3.1 Description of controls and components

Description of the different elements



- 1.- Display (LCD).
- 2.- Menu navigation keys.
- 3.- IR Output.
- 4.- 9 VDC Switch
- 5.- LED (9 VDC Indicator)
- 6.- TV COFDM Output (IR Return with 9VDC)
- 7.- RF IN
- 8.- HDMI Out
- 9.- HDMI IN
- 10.- USB: S/W update.
- 11.- Input 12V DC power adapter (included).

3.2 Starting

- 1.- After connecting the power to the instrument, the message **“Initial...” “Please Wait...”** appears for 37 seconds.
- 2.- Then the message **“Keyboard Locked”** appears. To access to the configuration menus the user has to enter a password.
- 3.- Press **ENTER** .
- 4.- The field **“Enter Password”** appears. Enter the access code. (By default: 0000).
- 5.- Press **ENTER** .
- 6.- The field **“Network Setting”** appears, this is the first option on the configuration menu.

3.3 Configuration menu

- 1.- **Frequency:** It sets the frequency value for the output signal. **Important:** Check that the selected frequency is not already being used by a current television distribution channel.
- 2.- **RF Level Adj:** It adjusts the power level of the output signal, in dB units. Its range from 0 to -30 dB.
- 3.- **Bandwidth:** Channel bandwidth. (6, 7, 8, 7 - 8 MHz).
- 4.- **FFT Carriers:** Signal transmission mode. (2K, 8K).
- 5.- **Guard Interval:** Safety signal margin. (1/4, 1/8, 1/16, 1/32).
- 6.- **Constellation:** Constellation type used to transmit signal(QPSK,16QAM, 64QAM).
- 7.- **Code Rate:** Available values are (1/2, 2/3, 3/4, 5/6, 7/8).
- 8.- **Video Output:** Video encode. H.264 of the video output.
- 9.- **Audio Output:** Audio encode. Selection between MPEG-2 and AAC
- 10.- **Video Bitrate:** Select video bit rate(2,4,6,8,10,12 Mbit/S).
- 11.- **Audio Bitrate:** Bitrate to encode the audio. Available values are between 192 kbit/s.
- 12.- **Service Name:** Service name edit.
- 13.- **Provider Name:** Service provider name edit.
- 14.- **Service ID:** Service ID edit.
- 15.- **LCN:** It specifies the index for the service sorting on the digital terrestrial television receiver. Values are between 1 and 999.
- 16.- **Country:** Country selection for LCN sorting.
- 17.- **Original Net ID:** Identifier of the original network. It is the number to identify the network from where the signal comes.
- 18.- **Network ID:** It is the number that identifies the network where the signal is distributed.
- 19.- **Network Name:** Network name edit.
- 20.- **TS ID:** It is the transport stream identifier.
- 21.- **NIT Version:** Network Information Table version. In some countries it should match with other tables version received from the receiver.
- 22.- **IR:** IR Frequency selection.(Mode A: 38KHz, Mode B:56KHz)
- 23.- **Information:** It shows the firmware version installed in the instrument. This option is not editable.
- 24.- **Load Default:** It returns to the default values.
- 25.- **Configuration:** User can backup and restore all configuration setting from the device to a local file.
- 26.- **Change Password:** It allows the user to change to a new password to access the menu.

3.4 Menu Tree

MAIN	NO	Layer 1	Layer 2(Default)	Layer 2
Network Setting	1	Country	Other	AUSTRALIA,CROATIA,CZECH,DENMARK,ESTONIA,FINLAND,FRANCE,IRELAND,ITALY,LATVIA,NETHERLANDS,NEW ZEALAND,NORWAY,POLAND,PORTUGAL,SLOVAK,SWEDEN,UK,Other
	2	Original Net ID	8350	1 ~ 65535
	3	Network ID	13057	1 ~ 65535
	4	Network Name	Private Network	
	5	TS ID	128	1 ~ 65535
	6	NIT Version	28	0 ~ 31
CH&Enc Setting	1	Service Name	CH1	
	2	Provider Name	CH1	
	3	Service ID	1	1~65535
	4	LCN	1	1~1023
	5	Video Output	H.264	
	6	Audio Output	MPEG-2	AAC/MPEG-2
	7	Video Bitrate	12 Mbit	2,4,6,8,10,12 Mbit
	8	Audio Bitrate	192 Kbit	
RF Setting	1	Frequency	CH21 474.00 MHz	CH5 178.75 Mhz~ CH69 858.00 MHz
	2	Constellation	64QAM	QPSK,16QAM,64QAM
	3	Guard Interval	1/4	1/4,1/8,1/16,1/32
	4	Code Rate	2/3	1/2,2/3,3/4,5/6,7/8
	5	FFT Carrier	8K	2K,8K
	6	Bandwidth	8MHz	6,7,8,7-8MHz
	7	RF Level Adj	00dB	00 ~ -30dB
IR	1	IR MODE A	MODE A	MODE A, MODE B
Information	1	FW : 5.2.2.5.4 APP : 1D,B0,0C,02		
Load Default	1	Load Default? Yes No		
Backup Config.	1	USB Connected? Yes No		
Restore Config.	1	USB Connected? Yes No		
Change Password	1	New Password 0000		