



## **VMOD-2HDMI**

**HD Encoder**

**DVB-T out modulator**

**Record and play TS files**

**REF. 0914843R13**

## **User Manual**

**CAHORS**

CS 60022 - 46003 Cahors cedex 9 - France  
Tél. +33 (0)5 65 35 82 20 Fax + 33 (0)5 65 35 82 52  
[www.groupe-cahors.com](http://www.groupe-cahors.com)



Congratulations on your purchase of the VMOD-2HDMI

This 'state of the art' product, is a **dual HD encoder**. Two HDMI sources (A and B) can be encoded and modulated simultaneously into **one DVBT channel**. Furthermore, an USB port is available which allows you to play a .ts file instead of using input A. The .ts file and input B are then available on the same DVBT channel.

**Sequential files** (eg. file001, file002, file003 etc.) make it possible to play several files after each other in a loop.

The record function allows you to record your source connected to input A in a .ts file on a USB stick or drive.

Using VMOD600 software to operate the VMOD-2HDMI a wide scala of **digital signage functions** becomes available. Using a battery powered time and date function, different files can be played according to a schedul you can define by hour, day and week etc.

At the same time, different recordings can be programmed using VMOD600 software.

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# **1 Safety instructions**

## **1.1 CONNECTING TO MAIN SUPPLY**

This product should be plugged in main supply. If there is the slightest doubt concerning the type of connection available on the installation, please contact your supplier of electricity. Before carrying out maintenance operation or modification of the installation, the modulator has to be disconnected.

Remark: only use the supplied power adaptor

## **1.2 OVERVOLTAGE**

An overvoltage on the main supply can cause short-circuits or fire. Never overload the power lines.

## **1.3 LIQUIDS**

This module should be protected from splashes. Please assure yourself that no containers containing liquids are placed on this module. Also be aware of other persons splashing liquids on the module.

## **1.4 CLINING**

Disconnect the module before cleaning. Use only a humid cloth without solvent.

## **1.5 VENTILATION**

In order to assure an adequate air circulation and to prevent overheating, the ventilation holes should not be obstructed. The module may not be installed in a hermetically sealed environment. Other electronic products or heat producing items may not be placed upon or near the module.

## **1.6 ACCESSORIES**

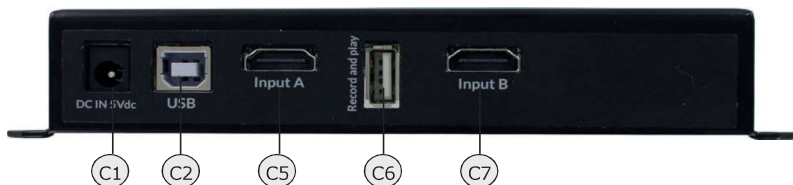
The use of accessories not manufactured by the manufacturer can cause damage to the module.

## **1.7 INSTALLATION OF THE MODULE**

The module must be installed in a place well protected from direct sunlight. All measures have to be taken to avoid installation in humid or sunny place. Do not install near heating elements or other devices producing heat. Assure yourself that the module is placed at least 10 cm from other equipment which is susceptible to electromagnetic radiation. Do not install the module on unstable items. A fall can cause physical or material damage.

## 2 Description of the different elements

- |           |                             |           |                             |
|-----------|-----------------------------|-----------|-----------------------------|
| <b>C1</b> | Power supply input (5V/2A)  | <b>C5</b> | HDMI A input                |
| <b>C2</b> | USB (for programming by PC) | <b>C6</b> | USB input (read and record) |
| <b>C3</b> | RF input                    | <b>C7</b> | HDMI B input                |
| <b>C4</b> | RF output                   |           |                             |



**ENTER** button



**LEFT** button



**RIGHT** button



### 3 Informations on LCD screen

In normal operation the LCD screen of the VMOD-2HDMI shows some information on the status of the modulator. The status of input A and input B is alternated with the actual date and time set in the modulator. Possible informations can be:

VMOD 2HDMI 2.2 A: --- B: ---	Nothing connected to input A and input B	VMOD 2HDMI 2.2 A: PLAY B: 1080P	Input A playing .ts file Input B encoding, resolution 1080P
VMOD 2HDMI 2.2 A: 720P B: 1080P	Input A encoding, resolution 720P Input B encoding, resolution 1080P	VMOD 2HDMI 2.2 A: REC B: 1080P	Input A recording Input B encoding, resolution 1080P

### 4 Settings:

VMOD-2HDMI has a quick menu to allow for quick basic settings. For advanced settings an advanced menu is available.

#### 4.1 Quick menu:

To enter the quick menu please push following sequence of buttons

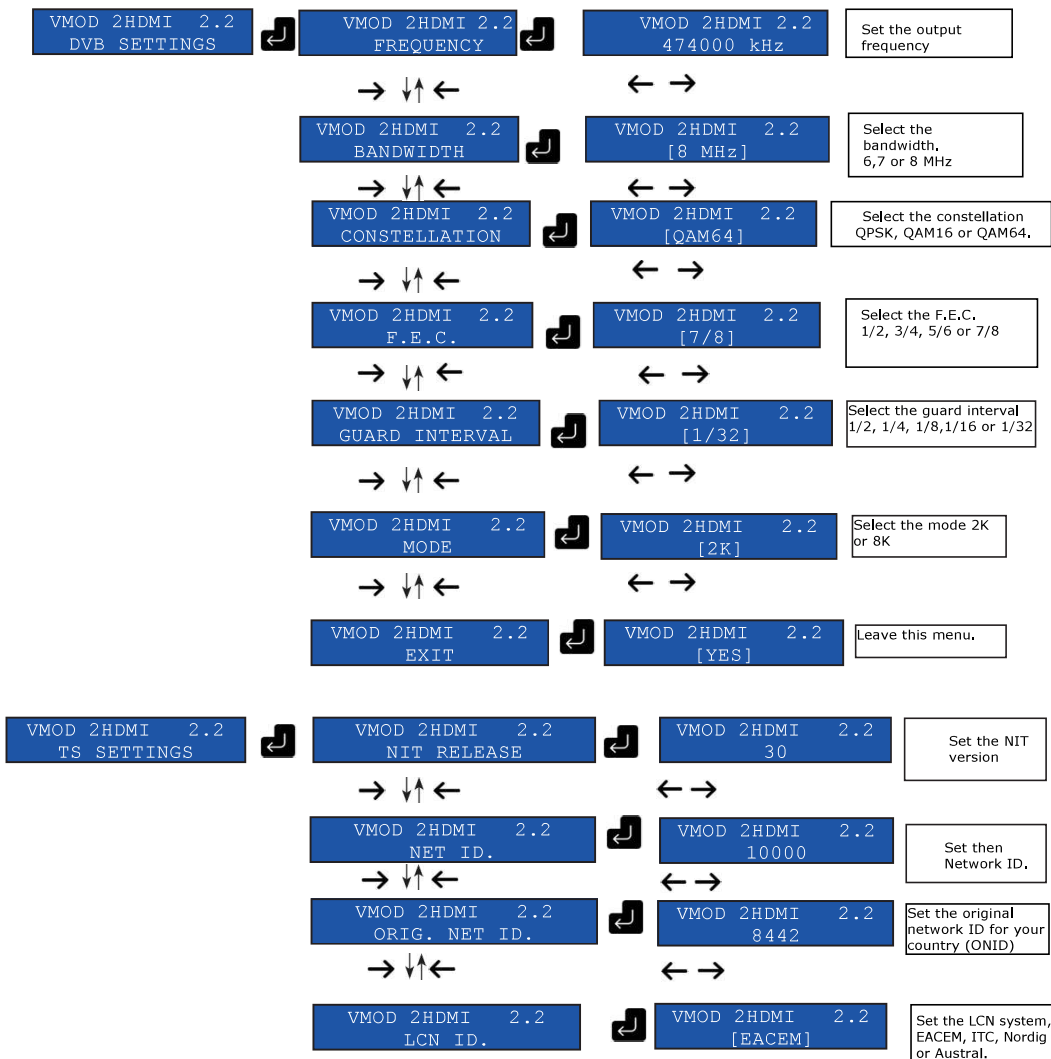


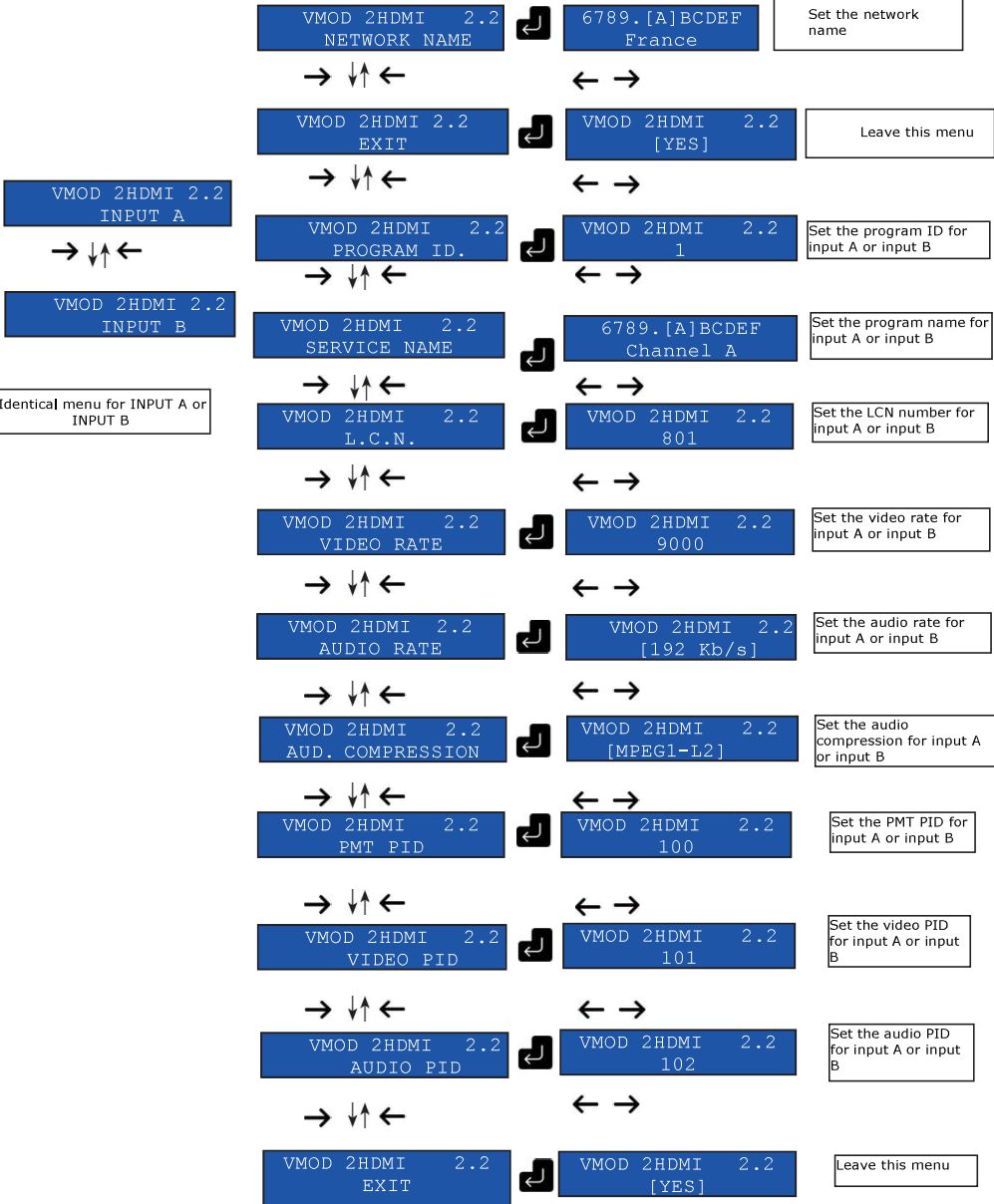
When entered successfully, the quick menu comes accessible, use the → ← buttons to move between the different menu options, PRESS AND HOLD ↵ to select that option and → ← use to change the value for that option. Changes are automatically saved.

VMOD 2HDMI 2.2 CHANNEL → ↑ ↓ ←	↵	VMOD 2HDMI 2.2 21 (474 MHz) ← →	Change the output channel.
VMOD 2HDMI 2.2 ATTENUATION → ↑ ↓ ←	↵	VMOD 2HDMI 2.2 5 dB ← →	Change the output level.
VMOD 2HDMI 2.2 COUNTRY → ↑ ↓ ←	↵	VMOD 2HDMI 2.2 [FRANCE] ← →	Change the country
VMOD 2HDMI 2.2 TS ID. → ↑ ↓ ←	↵	VMOD 2HDMI 2.2 100 ← →	Change the TS ID.
VMOD 2HDMI 2.2 LANGUAGE → ↑ ↓ ←	↵	VMOD 2HDMI 2.2 [ENGLISH] ← →	Change the language.
VMOD 2HDMI 2.2 DEFAULT CONFIG → ↑ ↓ ←	↵	VMOD 2HDMI 2.2 [YES] ← →	Go back to factory settings
VMOD 2HDMI 2.2 EXIT → ↑ ↓ ←	↵	VMOD 2HDMI 2.2 [YES] ← →	Leave this menu.

## 4.2 Advanced menu

To enter the advanced menu please push following sequence of buttons

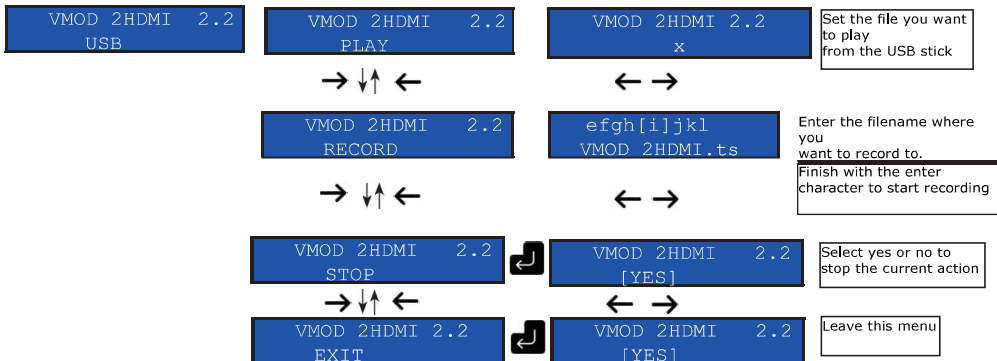






In order to operate the USB menu, please connect at first an **USB Stick 3.0** and then power up the VMOD-2HDMI.

With the USB stick connected you can play files. Please note that only files with the extension **.ts** can be played through this device. If you play a file, the source connected to input A will be interrupted and in the output you will find your **.ts** file.



As mentioned in the introduction, if you select a file this will be played continuously. At the end of the file, the VMOD-2HDMI will play again the same file.

If you want to **play a selection of files**, then name your files sequentially. For instance, file001, file002, file 003. (all with **.ts** extension). Then, if you select a file from this list, the file will start to play. At the end the VMOD-2HDMI will look for the same file name with a higher number (for instance if you start with file002, it will look at the end of this file for file003 etc. and play the following file). When no higher number is found it will start again with file001.

To easily create your **.ts** files please see section 6.5 in this manual. Indeed, on the CAHORS website you can find some easy to use software to produce appropriate **.ts** files for your VMOD-2HDMI

## 5 Programming using a PC

The settings of the VMOD-2HDMI can also be changed using a PC.

First, please install the software **VMOD600** on your PC. You can download this software from our internet site <http://www.groupe-cahors.com>

After installation of this software, connect the VMOD-2HDMI using a USB cable (not included) to your computer. Then launch the program **VMOD600**.

On the display of the VMOD600 the message <USB> appears, indicating that the programming is now performed through your PC. The following window appears on your screen.

VMOD600 5.1 - CAHORS(c) (3.2)

DVB-T Fréq. (KHz): 474000 TS Id.: 100 L. Bande: 8 Mhz Const.: QAM64 Débit Sym.: 0 Mode: 2K F.E.C.: 7/8 Int. Garde: 1/32 Niveau Att.: 0dB

DVB-C

IP UDP Adresse: 192.168.1.12 Port: 0 TTL: 64

H264 Profile: MAIN  Autor. VBR Volume HDMI-PCM: x1 I.R.: 38kHz

Réseau Vers.: 30 Original Id.: 8442 Id.: 10000 Nom: F LCN Id.: EACEM

Programme A Id.: 1 Nom: Chan A LCN: 801 HD LCN: 0 PMT PID: 100 Vidéo PID: 101 Audio PID: 102

720P50 PCM VIDEO H264 HDMI 9000 Kb/s AUDIO MPEG1-L2 HDMI 128 Kb/s

E.I.T. Nom: E.I.T. Texte:

Programme B Id.: 2 Nom: Chan B LCN: 802 HD LCN: PMT PID: 200 Vidéo PID: 201 Audio PID: 202

720P50 PCM VIDEO H264 HDMI 9000 Kb/s AUDIO MPEG1-L2 HDMI 128 Kb/s

E.I.T. Nom: E.I.T. Texte:

2019/07/09 00:00 2019/07/09 23:59 L M M J V S D Autoplay.ts

14:15

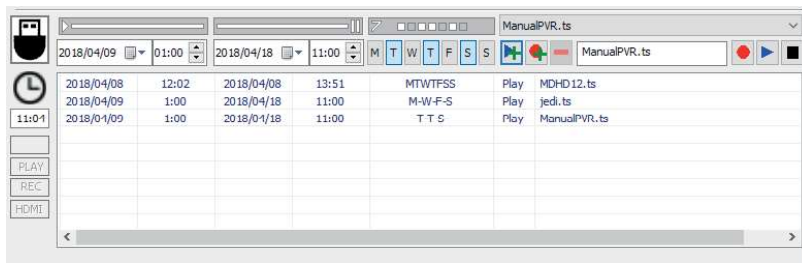
PLAY REC HDMI

Matériel connecté




Now, all parameters discussed in Chapter 4 of this user manual can be modified by VMOD 600 interface

## 6 Making play and recording lists using VMOD600 interface

Due to the ability of recording and playing using a USB 3.0 key, together with the presence of a clock, the VMOD-2HDMI is an ideal product to use in DIGITAL SIGNAGE APPLICATIONS. Indeed different .ts files present on the USB key can be played over your DVB-T network according to a predefined time table, specifying over a given period the start time and end time and also the days of the week. VMOD600 interface allows easy setup of these timetables.



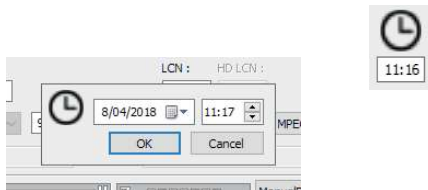
### 6.1 Direct play and record

Select a file in the dropdown list of files available on the USB key and press .  
Create a "file.ts" in VMOD600 interface and press  to record the HDMI source.  
Press  to end playing or recording.


### 6.2 Adjusting time and date

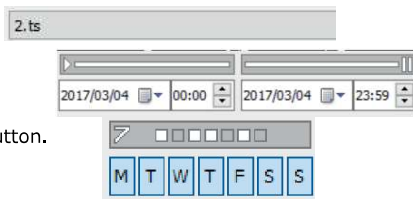
Before starting to use play and record list, please check that the time and date in the VMOD-2HDMI is set appropriate. In order to adjust time and date, please click on the time in VMOD600 interface.

A new window will popup where you can adjust the date and time in the modulator.




### 6.3 Making a playlist.


- Select a .ts file from the files present on the USB key:
- Select the start date/time and the end date/time:
- Select the days of the week Press the add to playlist button.
- Press the add to playlist button 

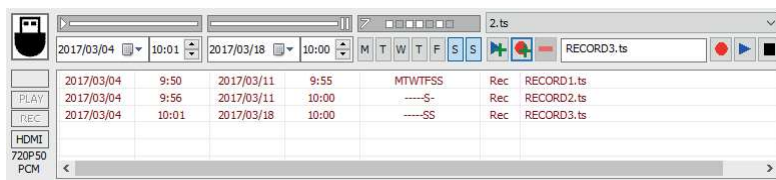


2017/03/04	9:35	2017/03/04	9:40	MTWTFSS	Play	BMWXM4M4.ts
2017/03/04	9:40	2017/03/04	9:42	MTWTFSS	Play	test170226.ts
2017/03/04	9:43	2017/03/04	9:45	MTWTFSS	Play	2.ts

e/ For removing an item from the playlist, select that line and press the  button

## 6.4 Making a recordlist.

Similarly, a recordlist can be created as described above. Instead, you have to first name the .ts file and then press the add to recordlist button 



## 6.5 Creating your .ts files

In order for you to create your .ts files, a **.ts convertor is available on the CAHORS website**. This one allows you to easily convert your files from .avi or .mp4 into .ts

## Z Technical specifications

<b>Video inputs (x2)</b>	<b>Input</b>	HDMI
	<b>Resolution modes</b>	480p -576p -720p - 1080i - 1080P
	<b>Compression</b>	H.264 – bitrate 5-15 Mb/s
<b>Audio input</b>	<b>Input</b>	HDMI
	<b>Sample Rate</b>	HDMI (32kHz / 44.1 kHz / 48 kHz)
	<b>Compression</b>	AAC-LC / MPEG1-L2– bitrate 128-320 Kb/s
<b>DVB Processing</b>	<b>Table insertion</b>	PAT, PMT, SDT, NIT
	<b>Configuration</b>	Channel/network name, SID, LCN, TSID, ONID, NID, versions, audio, video PIDs...
<b>DVB-T output</b>	<b>Output frequency / level</b>	170-230 MHz + 470-862 MHz / > 85 dBµV
	<b>Constellation - FEC</b>	QPSK/16QAM/64QAM - 1/2, 2/3, 3/4, 5/6, 7/8
	<b>Guard interval</b>	1/4, 1/8, 1/16, 1/32
	<b>Mode - MER</b>	2K/8K - 33 dB
<b>Power</b>	<b>DC 2.1 mm connector</b>	+5V
	<b>Consumption</b>	10 Watts
<b>Dimensions</b>	<b>LxWxH</b>	150x130x35mm
	<b>Weight</b>	0.9 kg