TMX160HD
HD encoder - DVB-T/C out

1 - Safety considerations

1.1 CONNECTING TO THE MAINS SUPPLY
This product has to be connected to the mains 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 mains supply,can cause shortcircuits 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 CLEANING
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.

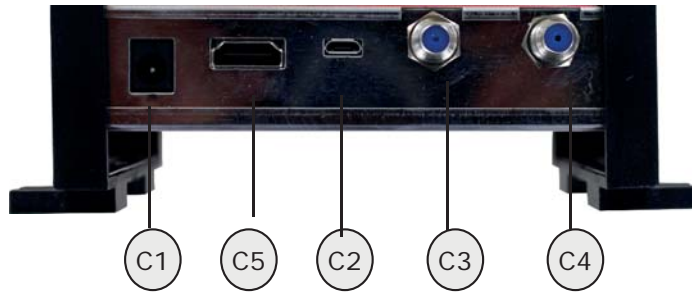## 1.7 INSTALLATION OF THE MODULE
The module must be installed in a place well protected from direct sunlight. All measures have to be taken to avoid installation in humid or sunny place.Do not install near heating elements or other devices producing heat. Assure yourself that the module is placed at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

2 - Technical specifications

Video input	Input	HDMI
	Resolution modes	480p -576p -720p - 1080i - 1080P
	Compression	H.264 – bitrate 5-15 Mb/s
Audio input	Input	HDMI
	Sample Rate	HDMI (32kHz / 44.1 kHz / 48 kHz)
	Compression	AAC-LC / MPEG1-L2– bitrate 128-384 Kb/s
DVB Processing	Table insertion	PAT, PMT, SDT, NIT
	Configuration	Channel/network name, SID, LCN, TSID, ONID, NID, versions, audio, video PIDs…
DVB-T output	Output frequency / level	170-230 MHz + 470-862 MHz / > 82 dBµV
	Constellation - FEC	QPSK/16QAM/64QAM - 1/2, 2/3, 3/4, 5/6, 7/8
	Guard interval	1/4, 1/8, 1/16, 1/32
	Mode - MER	2K/8K - 34 dB
DVB-C output	Output frequency/level	47-862 MHz / > 82 dBµV
	Constellation - MER	QAM16,32,64,128,256 / MER > 40 dB
	Symbol rate	up to 7000 kB/s
Power + consumption	DC 2.1 mm connector	+5V - 10 Watts
Dimensions + weight	LxWxH	150x130x35mm - 0.45 kg
EAN code	TMX160HD	5420037691616

3 - Description of the different elements

C1   Power supply input (5V/2A)
C2   USB input (for programming the TMX160HD by PC)
C3   RF input
C4   RF output
C5   HDMI input

A1   Alphanumeric display
T1   **SELECT** button
T2   ▲   (UP) button
T3   ▼   (DOWN) button

4 - Installation and quick menu

4.1 - Installation

Connect the audio and video source using a HDMI cable. Connect the RF input cable (if present) and the RF output cable. If the RF input is not used, please connect a 75 ohm terminating resistor to it. Once the modulator installed and the cables connected, please proceed connecting the power supply to the modulator.

4.2 - Powering up and quick menu

Plug in the connector of the power supply. The display will show a red dot in the left uppercorner. Once the modulator has booted correctly the display will show : 5ᴸ

With the buttons UP and DOWN, you can toggle between 5ᴸ (standard DVBT or DVBC) ᴄʰ (channel) ,ᴿᴸ (attenuation) and ᴵᵈ (program id) .

Once selected the right option, press and hold the select button.
In standard mode the display will show the actually selected DVB standard (t or c). With the select button pressed used up down keys to change the standard.
In channel mode, the display will show you the actual output channel. For instance 2ᴵ
With the select button pressed use the up and down buttons to change the output channel.

In attenuation mode, with the select button pressed, the display will show the actual level of attenuation at the the output for instance ⬚⬚ . Keep the select button pressed and use the up or down buttons to change this value (00 - 15).
In the last mode the program ID can be changed.
The selected values are automatically saved in the memory of the TMX160HD.

Once these settings made, the display on the TMX160HD will return to its standby state. The display shows one or two dots. One dot to indicate that power is applied to the unit. The second dot to the right indicating that a HDMI source is connected to the u⬚⬚

4.3 - Return to factory settings.

To return to factory settings, power down the modulator. Now, with the UP button pressed, put the

power again to the modulator. Keep the UP button pressed ands wait until the mesage ⬚⬚ appears on the display. The modulator has returned to its factory settings.
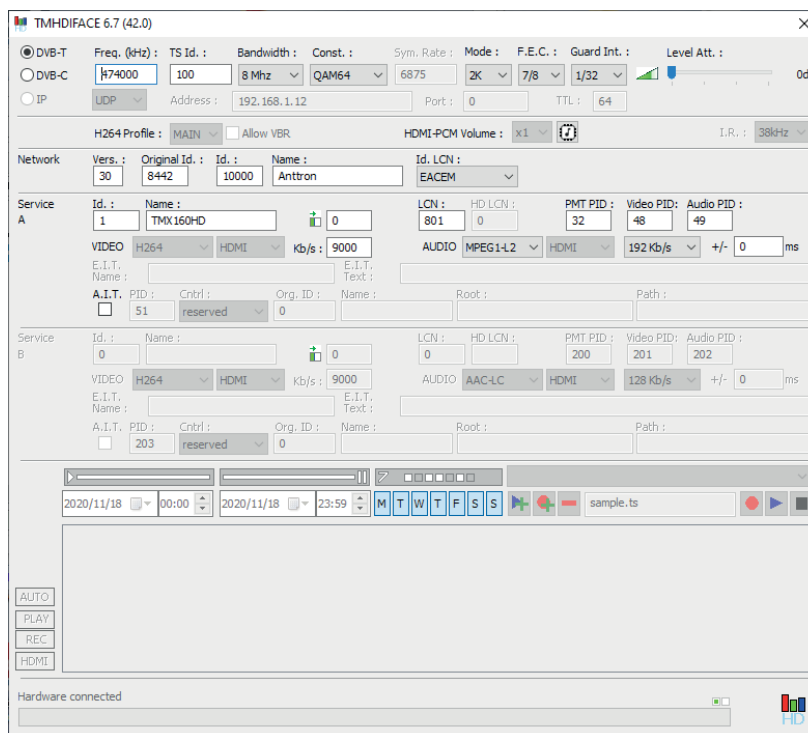
5 - Advanced settings using a PC

More, advanced settings of the TMX160HD can be changed using a PC.

First, please install the software **TMHDIFace** on your PC. You can download this software from our internet site **anttron.com**
After installation of this software, connect the TMX160HD using a USB cable (not included) to your personal computer. Then launch the program **TMHDIface.**

On the display of the TMX160HD the message ⬚⬚ appears, indicating that the programming is now performed through your PC. The following window appears on your screen.

Now, further parameters can be edited in the TMX160HD.