

# RFT-806HD

**Digital modulator HDMI → QAM**

## User Manual



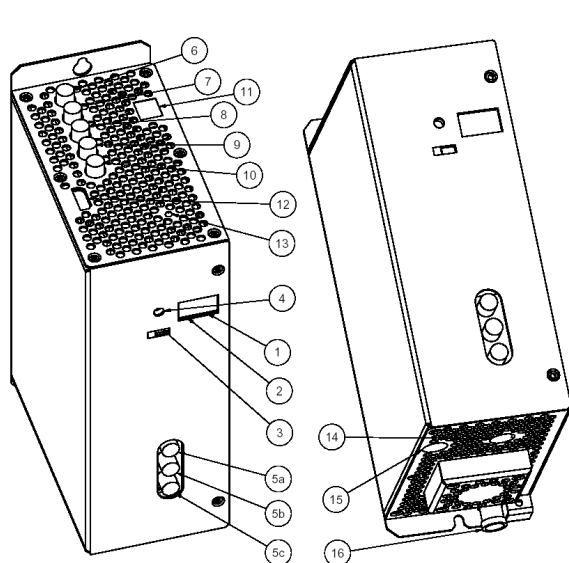
## 1. Purpose of use

RFT-806HD is a Full-HD encoder to modulate high quality audio and video into QAM (DVB-C) multiplex.

**RFT-806HD support up to 1920\*1080p resolution but it is recommendate to use max. 1920\*1080i resolution as most of TV sets does not support 1920\*1080p resolution.**

## 2. Installation

The connections and indications are shown in Fig 1.



1. Cable TV S channel indication led
2. Channel number ( CCIR)
3. Control switch to program a unit in ON position. The swirch must be set to OFF position when programming is ready.
4. IR detector.
5. VIDEO/AUDIO outputs for menu monitoring.
6. Audio IN (right)
7. Audio IN (left)
8. Video IN or YPbPr (Y)
9. YPbPr (Pb)
10. YpbPr (Pr)
11. USB port for SW update.
12. HDMI IN
13. When signal led is orange, the unit is initialized. When signal led is green, outgoing bit stream is ready. Red signal led means overloading.
14. DC IN/OUT
15. DC IN/OUT
16. RF OUT + DC IN in RFT-800 installation

RFT-806HD can be mounted either to RFT-800 system (RFT-800 User Manual) or stand-alone. Do not cover the air passage holes.

HD audio/video signal is connected to HDMI connector (12.).


RF OUT (16) is connected to cable network.

VIDEO/AUDIO connectors are for user interface monitoring.

**NOTE!** If any black horizontal stripes or white pixels exist in picture, the HDMI synchronisation is lost. The power of HDMI source must be switched OFF and ON.

## 3. Programming

The modulator is simple to program with the remote control unit (RCU-800). The main functions of RCU are shown in Fig 2.

- |    |   |             |   |
|----|---|-------------|---|
| 1. |  | <b>MENU</b> | Main OSD menu (exit without saving changes) |
| 2. |   | <b>OK</b>   | Confirm selection                           |
| 3. |   | <b>EXIT</b> | Exit from menu (exit with saving changes)   |
| 4. |   | <b>^^</b>   | Select a letter in service name             |
| 5. |   | <b>vv</b>   | Select a letter in service name             |
| 6. |   | <b>CH ^</b> | Change a letter in service name             |
| 7. |   | <b>CH v</b> | Change a letter in service name             |

**Fig 2.**

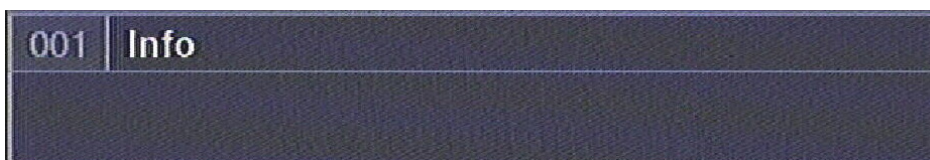
### 3.1 Power-up



At power-up this welcome screen is displayed. Main SW and user interface SW version numbers plus unit serial number are shown.

When the unit is powered the display lights up showing selected output channel. The factory set channel is E21.

The display is switched off after 3 minutes. Two signal led indicate that the unit is powered. The display lights up again by pressing any button of remote controller unit.



The selected program info is displayed and the channel opened.

### 3.2 First time set-up

When using the unit for the first time, you must first connect video output to monitor. After this you can continue set-up using on-screen menus.

To control the unit first slide front panel switch to ON position. When programming is ready, the front panel switch must be slide to OFF position. This will prevent accidental changes to be made while controlling other units.

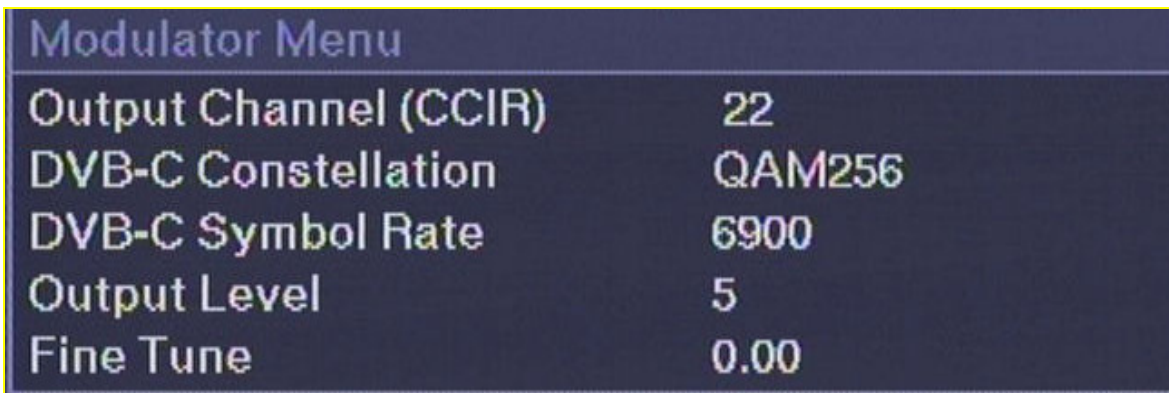
### 3.3 Set-up

To start set-up, press Menu key. Main Menu will be displayed.



Select “Modulator Configuration”.

All selectable options of modulator menu are shown in below figure.



You can select output channel using left and right arrow keys. The channel number will be displayed simultaneously on front panel display. The selectable channels are S02 - S10, 5 - 12, S11 - S41 and 21 – 69 (CCIR).

Select DVB-C Constellation. QAM 32, QAM 64, QAM 128 and QAM 256 are selectable. The most common is QAM 64. If QAM 256 is used, the S/N of network must be very good (60 dB).

Select appropriate DVB-C Symbol Rate (1000 ... 8000). The common symbol rate in most cable networks is 6900. The used symbol rate effects for the bandwidth. 6900 ksymb/s corresponds 8 MHz bandwidth.

To adjust modulator output attenuation use left and right arrow keys. You can fine tune output frequency when using different channel grid than CCIR. Adjustment is done using left and right arrow keys in steps of 1 MHz. Adjustment range is  $\pm 4$  MHz. You can monitor the adjusted frequency in parenthesis on the same line.

Select "Encoder Configuration"

Encoder Configuration	
<b>Input Source</b>	<b>HDMI</b>
<b>System Bitrate</b>	<b>14000</b>
<b>Audio Mode</b>	<b>stereo</b>
<b>Audio Bitrate</b>	<b>192 kbps</b>
<b>Scale to SD</b>	<b>No</b>
<b>Audio Level</b>	

Following options can be selected:

- Input video HDMI (also audio), Composite, YPbPr
- System Bitrate (total max. 30000 kbps)
- Audio mode (mono, stereo)
- Audio bit rate (64 ... 384 kbps)
- Scale to SD (yes, no)
- Audio Level (adjustable only with analogue source, fixed with HDMI)

NOTE! Save with "EXIT" or MENU" .

Select "Service Menu"

Service Menu	
<b>Service Name</b>	<b>TV</b>
<b>PMT PID</b>	<b>41</b>
<b>Video PID</b>	<b>42</b>
<b>Audio PID</b>	<b>43</b>
<b>PCR PID</b>	<b>44</b>
<b>Program Number</b>	<b>1</b>
<b>Logical Channel Number</b>	<b>0</b>
<b>Output Transport Stream Id</b>	<b>1</b>
<b>Output Original Network Id</b>	<b>1</b>
<b>Network Name</b>	<b>RF</b>
<b>Service Provider</b>	<b>RF</b>

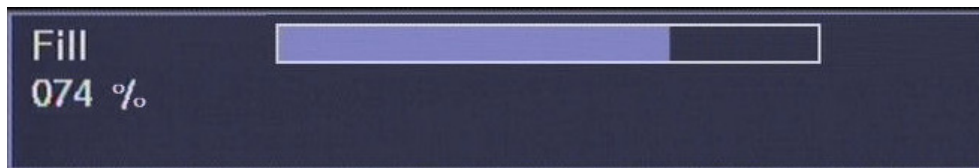
Following options can be selected:

- Service Name (Info is factory default). The name can be changed by selecting firstly a letter with double arrow UP/DOWN and then select a correct letter with single UP/DOWN arrow. Save the name with EXIT push button of RCU.
- PMT PID (default value is 41)
- Video PID (default value is 42)
- Audio PID (default value is 43)
- Program Number (set 1)
- Logical Channel Number (LCN). 0 means no LCN value. LCN setting does not cancel NIT of operator.



- Output Transport ID. Select free value. Do not use two same values in same network.
- Output Original Network ID (used only in big cable operator networks)
- Network name
- Service Provider

NOTE! When programming is ready, check the status of bit rate. “Fill” beam shows how many percentage of the maximum stream is used.



### 3.4 Other functions

In main menu you can select “Set Factory Defaults” .

## 4. Technical specifications

VIDEO ENCODER	MPEG-4 H.264 AVC
Max. bitrate	28 Mbit/s
AUDIO ENCODER	MPEG-2 audio layer ½
	Compliant to ISO/IEC11172-3
Max. bitrate	384 kbps
QAM OUTPUT	
Modulation	QAM 32, 64, 128, 256
Output frequency range	114 MHz - 858 MHz
Symbol rate	1 .. 8 Msymb/s
Output level	85 - 105 dBuV
Data connector	USB
Input connectors	HDMI; max. 1920*1080p resolution, recommendate max. 1080i RCA; YpbPr 720p/720/25/30/50/60Hz and 1080i/50/60Hz (not 1080p)
Output connector	F-male 75 ohm
Power consumption	16VDC/0,8A
Dimensions	W*H*D 72mm*218mm*129mm



This symbol on the product or on its packing means that within the European Union the product must be taken to separate collection at the product-end-of life.

Do not dispose of these products as unsorted municipal waste.

For more information about where you can drop off your waste equipment for recycling, please contact your local city office, your house disposal service or the shop where you purchased the product.