# Televes 563852 IP Modulator Encoder Installation Guide



**563852 IP Modulator Encoder**
**Installation Guide**

**Ref. 563852**

# TWIN HDMI/YPbPr/IP MPEG2/4 ENCODER/MODULATOR – QAM/COFDM/IP QUICK INSTALLATION GUIDE

Contents



## Important safety instructions

### Caution Statements

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Only use attachments/accessories specified by the manufacturer.
10. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
11. Refer all servicing to qualified service personnel.

Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

### Warning

- Reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
- Apparatus shall not be exposed to dripping or splashing and no objects filled with liquids, such as vases, shall be placed on the apparatus.

### Safe operation

- Should any liquid or object fall into the equipment, please refer to qualified personnel for service.

**Safe installation**

- Ambient temperature should not be higher than 45°C.
- Do not place the equipment near heat sources or in a highly humid environment.
- Do not place the equipment in a place where it can suffer vibrations or shocks.
- Please allow air circulation around the equipment.
- Do not place naked flames, such as lighted candles on or near the product.

**Simbology**

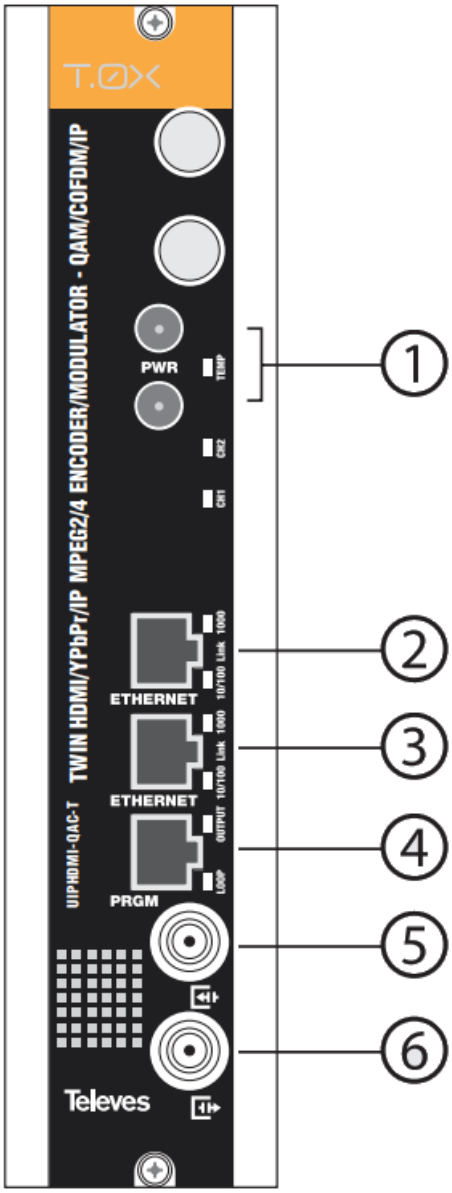
 Equipment designed for indoor use.

 The equipment complies with the CE mark requirements.

 This symbol indicate the maximum and minimum temperature limits at which the equipment shall be used.

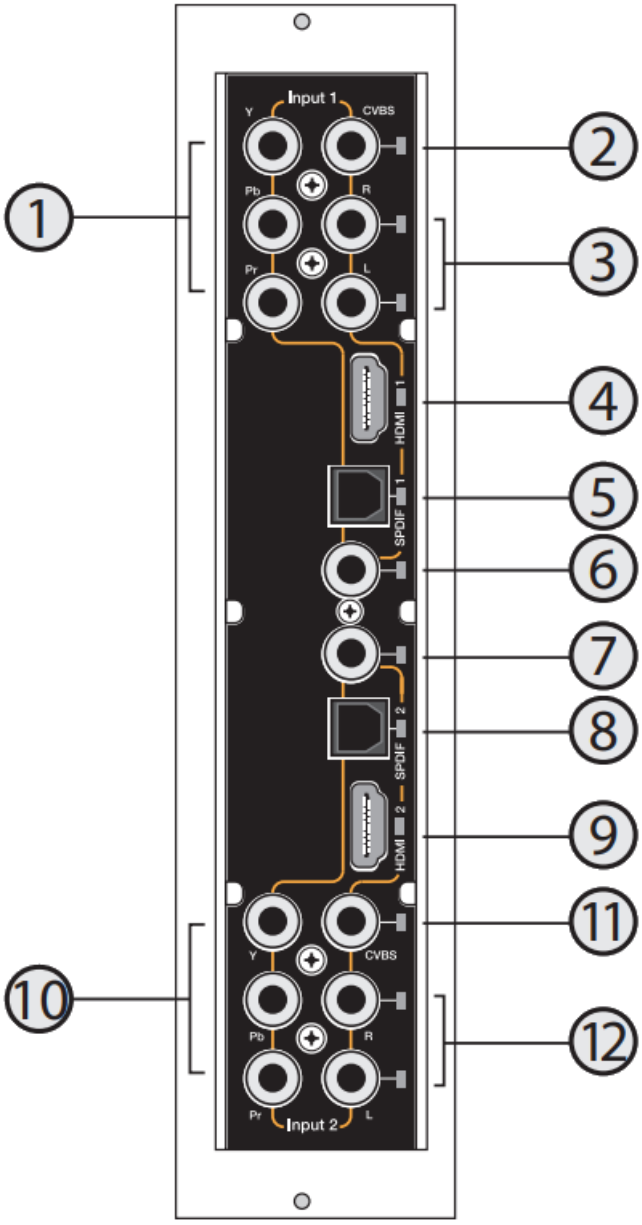
## Description of connectors

**Front view**




1. Power connectors
2. Ethernet connector
3. Ethernet connector
4. Programmer connector
5. RF loop through input
6. RF output

**Rear view**




1. YPbPr component input. Channel 1
2. CVBS input. Channel 1
3. Analog (L/R) audio input. Channel 1
4. HDMI input. Channel 1
5. SPDIF digital optical audio input. Channel 1
6. SPDIF digital coaxial audio input. Channel 1
7. SPDIF digital coaxial audio input. Channel 2
8. SPDIF digital optical audio input. Channel 2
9. HDMI input. Channel 2
10. YPbPr component input. Channel 2
11. CVBS input. Channel 2
12. Analog (L/R) audio input. Channel 2

**LED indicators**

| | | | | |
|---|---|---|---|---|
| **Front LED alarms** ***Alarmas (LEDs) panel frontal*** )LED( | TEMP | Color | temp Internal | Comment |
| | | Solid green | Normal | Safe |
| | | Slow blink or ange | High | Warning * |
| | | Fast blink red | Very High | Danger |
| | CH1 – CH2 | Color | Channel status | Comment |
| | | Off | Disabled | Channel disabled. |
| | | Solid green | Lock | Input locked and unit encoding audio/video |
| | | Solid red | Unlock | Input unlocked and unit not encoding audio/video. |
| | | Blinking red | Boot | Unit starting up. |
| | OUTPUT | Color | mode Output | Comment |
| | | Solid green | Normal | Output RF channel is ON, broadcasting audio/video ( normal mode). |
| | | Slow blinking green | Carrier wave, null, or muted | mode. signal alternate an in or OFF is channel RF Output |
| | | orange/red Solid | Normal | Config bitrate doesn´t fit in output |

| | | | | |
|---|---|---|---|---|
| | LOOP | Color | Output loop status | Comment |
| | | Solid green | ON | Output loop-through enabled. Units may be daisy-chained using the internal combiner. |
| | | Off | OFF | Output loop-through disabled. Units must be combined using an external combiner. |
| **Back LEDindicators** | A/V inputs | Indicate the currently selected audio and video inputs and where the input signals should be connected. | | |

## Installation

1. Install all units in the rack and connect them as shown in Fig. 1.
2. The audio and video input signals connect to the back of the modules (Fig. 2).
3. If a network is available that provides IP addresses through DHCP, connect the encoders to the network as shown in Fig. 3. If such a network is not available, then a computer will need to be connected as shown in Fig. 4.
4. Power on the units.
5. Connect the programmer to each unit and set a unique number in the “# ID” field according to the order of installation of the units in the rack (Fig. 5).
6. Connect the programmer to a unit, usually the first one, and read the IP address (Fig. 6). Each unit can work as a master controller for the other units. All units can be configured by connecting to only one.
7. If a network was connected in Step 3 then proceed to step 8. If not, set the address of you computer as follows:
   IP value = 172.20.0.2
   netmask = 255.0.0.0
   gateway = 172.20.0.3
   **NOTE:** The default factory configuration of the units has an IP address in this range (it should be different for each unit). If a unit was ever provided an address before, manually or through DHCP, this unique address may no longer exist. Resetting to IP factory defaults, will return the original unique private address though.
8. In your web browser, enter the IP address from Step 6 as the URL.

A login prompt will appear. By default the parameters are:
Login: encoder
Password: encoder

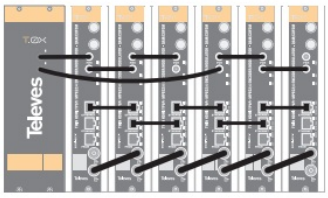



Fig. 1

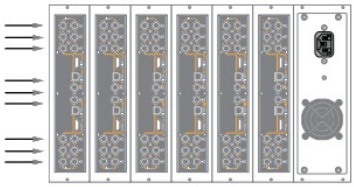


Fig. 2

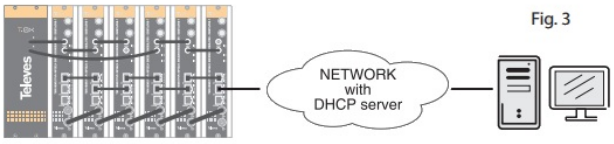



Fig. 3

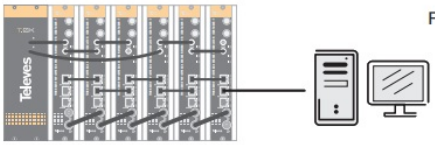



Fig. 4

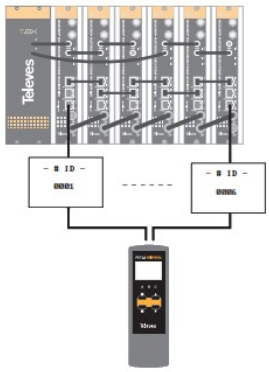



Fig. 5

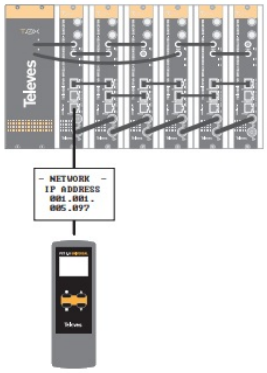



Fig. 6

The Status > Summary page (Fig. 7) should appear as the first page.
This provides a summary of all the units installed in the network and the units will be sorted by the number entered in Step 5.
Fig. 8 shows an example of a detailed “status” page.

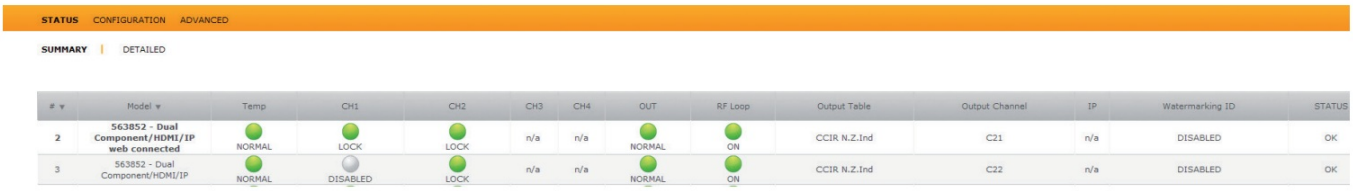



Fig. 7 - Status > Summary


Fig. 8 - Status > Detailed

## Configure all units:

Select “CONFIGURATION”. This page has 5 tabs:
INPUT, TRANSPORT, OUTPUT, IP and NETWORK shown in Fig. 9 to 14.
The last column of each configuration page is “Select”. Any changes made will be saved only in the units with the “Select” option checked when you click “Apply Selected”. This applies to the five tabs that exist under the “Configuration” menu. Some items have a choice of automatic configuration. For example, the Network Configuration page allows you to change the number assigned in step 5 of the installation process.
The “Auto” option will request confirmation to have changed the parameters of all units set in step 5 and order probably will not correspond with the position of the units in the rack.

### 9.1 INPUT

Configuration of the physical inputs audio and video. It will be necessary to select the encoding H.264 if the

resolution is 1080p.

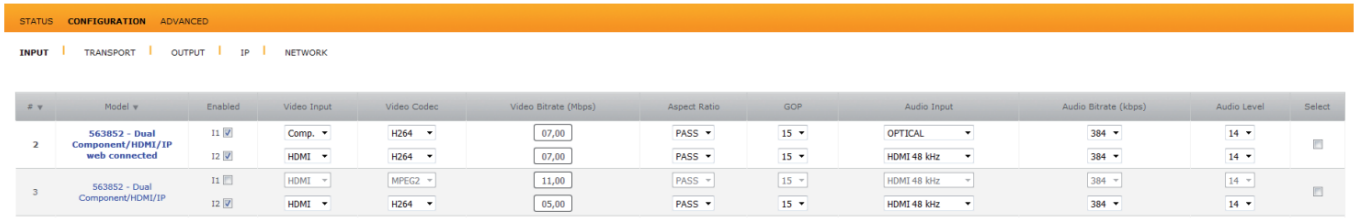



Fig. 9 - Input

## 9.2 TRANSPORT

Changing the parameters of the output Transport Stream. The TS ID, SID and LCN of each service shall not overlap with those of another service the same unit.

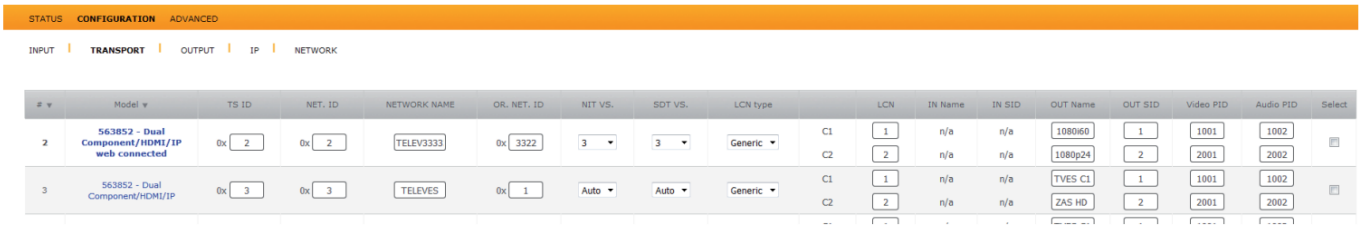



Fig. 10 - Transport

## 9.3 OUTPUT

Setting the RF output channel. The unit will restart, if you switch between QAM and COFDM mode.

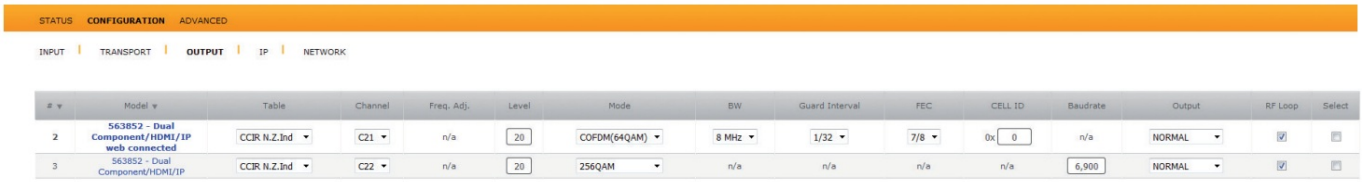



Fig. 11 - Output

## 9.4 IP

The unit can work in 3 different modes IP, Input, Output and Disabled.

Input: To receive IP services, It's necessary that the unit is in Input mode and you set the IP addresses and ports. Allowed IP addresses between 224.0.0.0 y 239.255.255.255.

If not, make changes on the IP tab (Fig. 12) and click " Apply Selected".

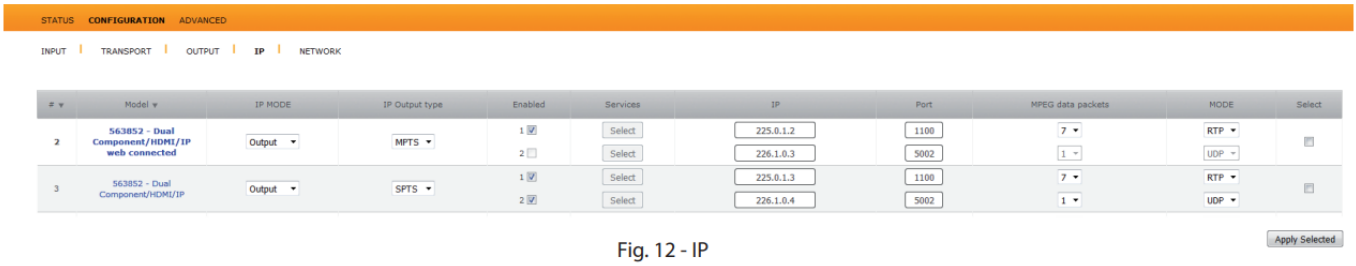



Fig. 12 - IP

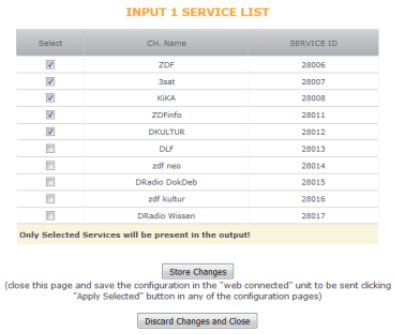



Fig. 13 - IP (2)

If you try to configure two IP addresses and ports equal the Web will warn you that is not a valid configuration and will not let you apply settings.

Once everything is set up, press the "Select" button associated with each IP address and a window appears like Fig. 13. If no appear any service, wait until the end of the scan.

Here you can see the services available to the corresponding IP. Select the services you want to display and click on "Store Changes".

Finally, to apply the configuration, click "Apply Selected". The selected services will appear in the "Transport" tab

next to the services of the physical inputs.
Output: For services transmissions of physical inputs via IP, the unit must be in “Output” mode; if you want, you can choose between MPTS or SPTS output types and
configure IP addresses and ports. In SPTS mode, the physical input 1 will exit through the IP 1 and physical input 2 by the IP 2.
In MPTS mode, the two physical inputs will exit by a single IP.
If any of the physical inputs is disabled, its corresponding IP service will not have transport.

**9.5 NETWORK**

Configuring network options. Both the IP address and the network mask may only be changed if DHCP mode is disabled (Fig. 14).


Fig. 14 - Network

**10 Complete configuration window:**

To change any encoder value from a single window, select “CONFIGURATION”. Click on the name of the unit and the page Fig. 15, is displayed. From this page, you can modify any parameter settings for the selected unit.

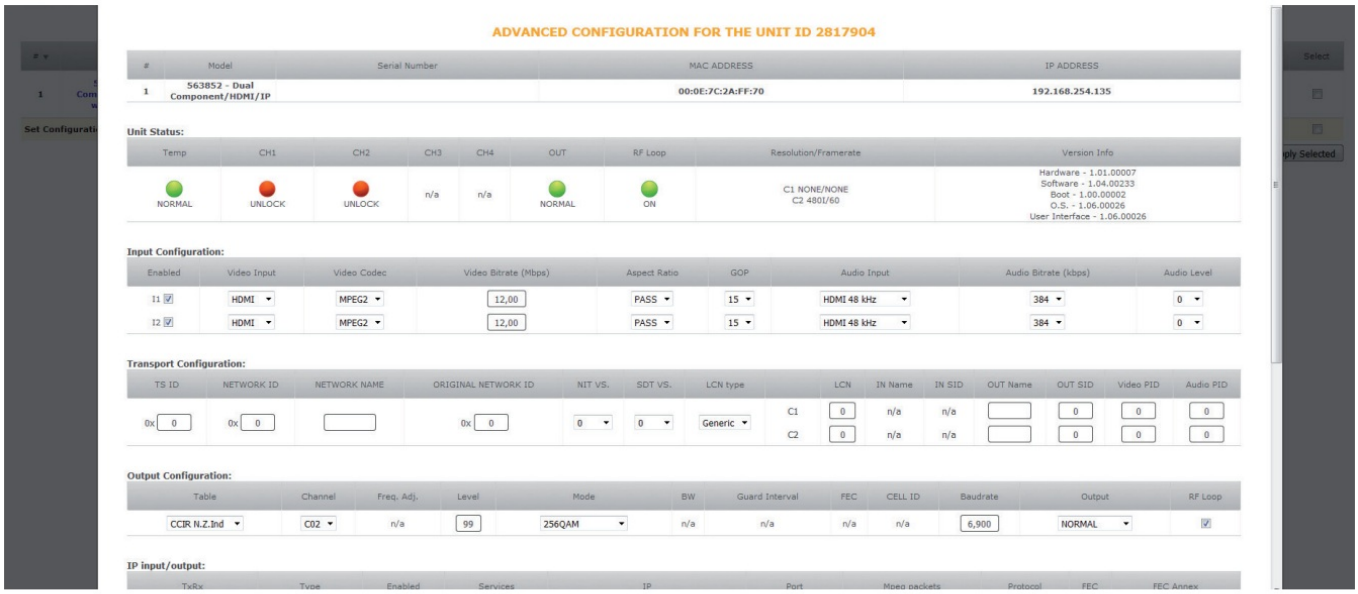
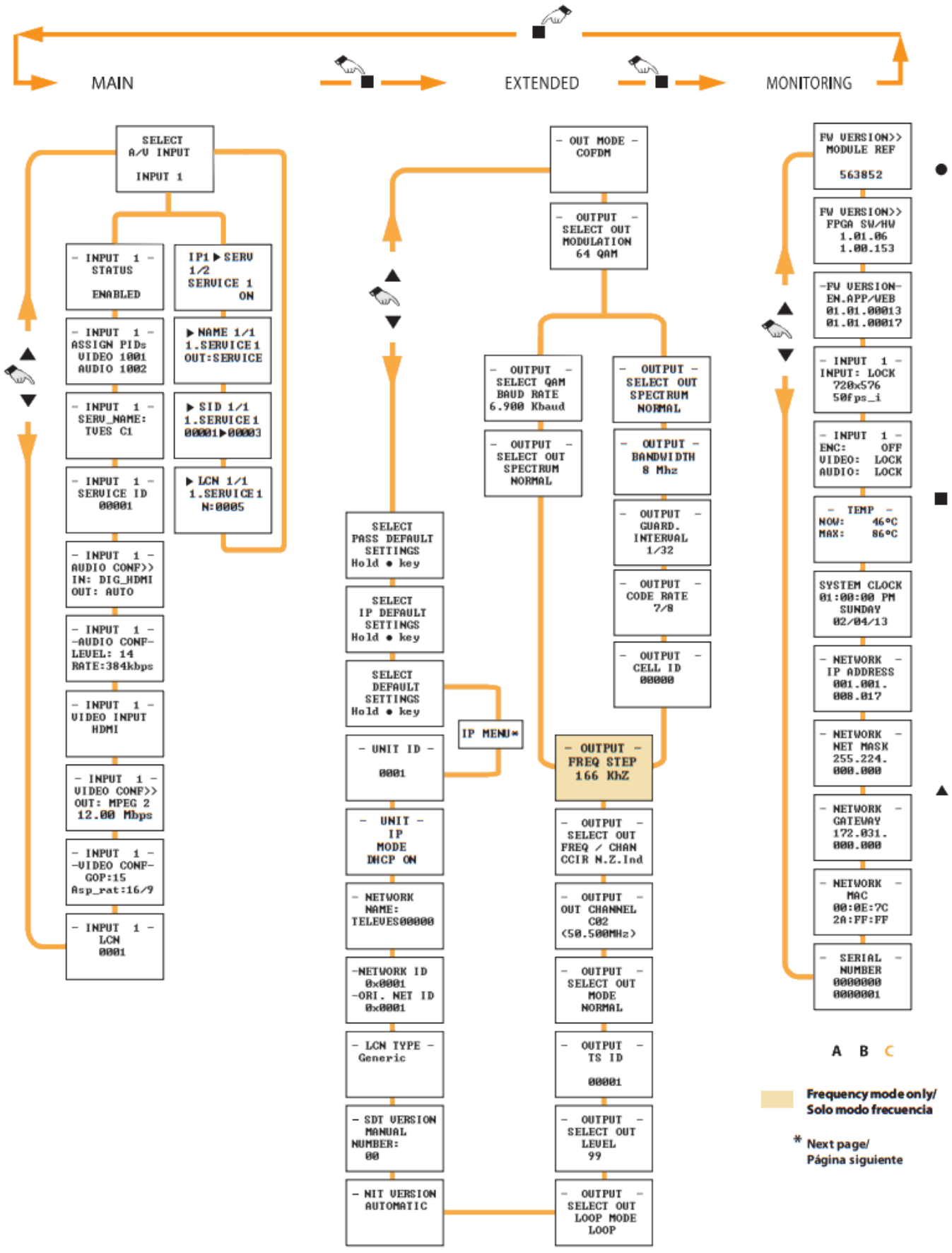



Fig. 15 - Advanced Configuration

## Menu flow chart

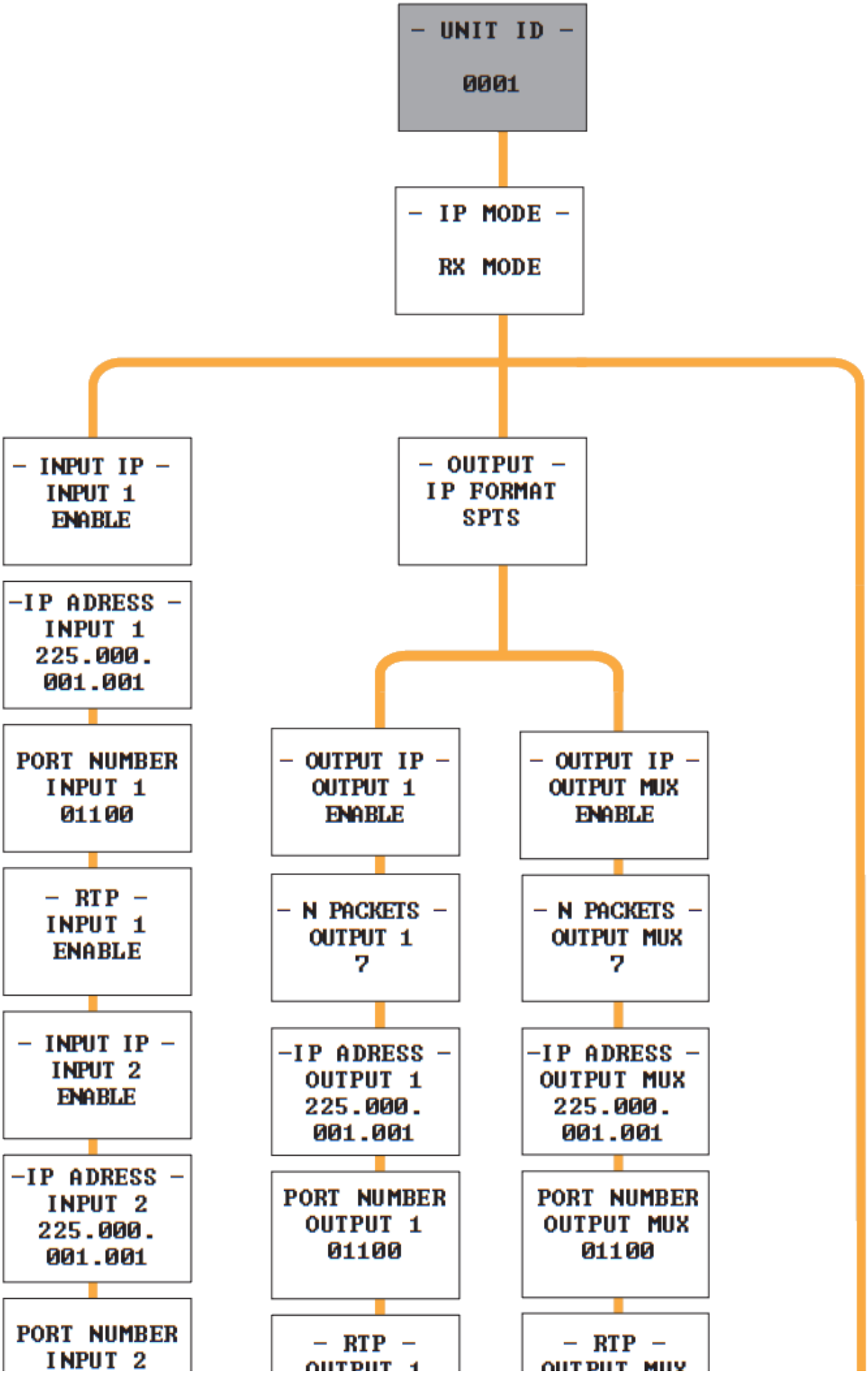
### For programming Unit operation

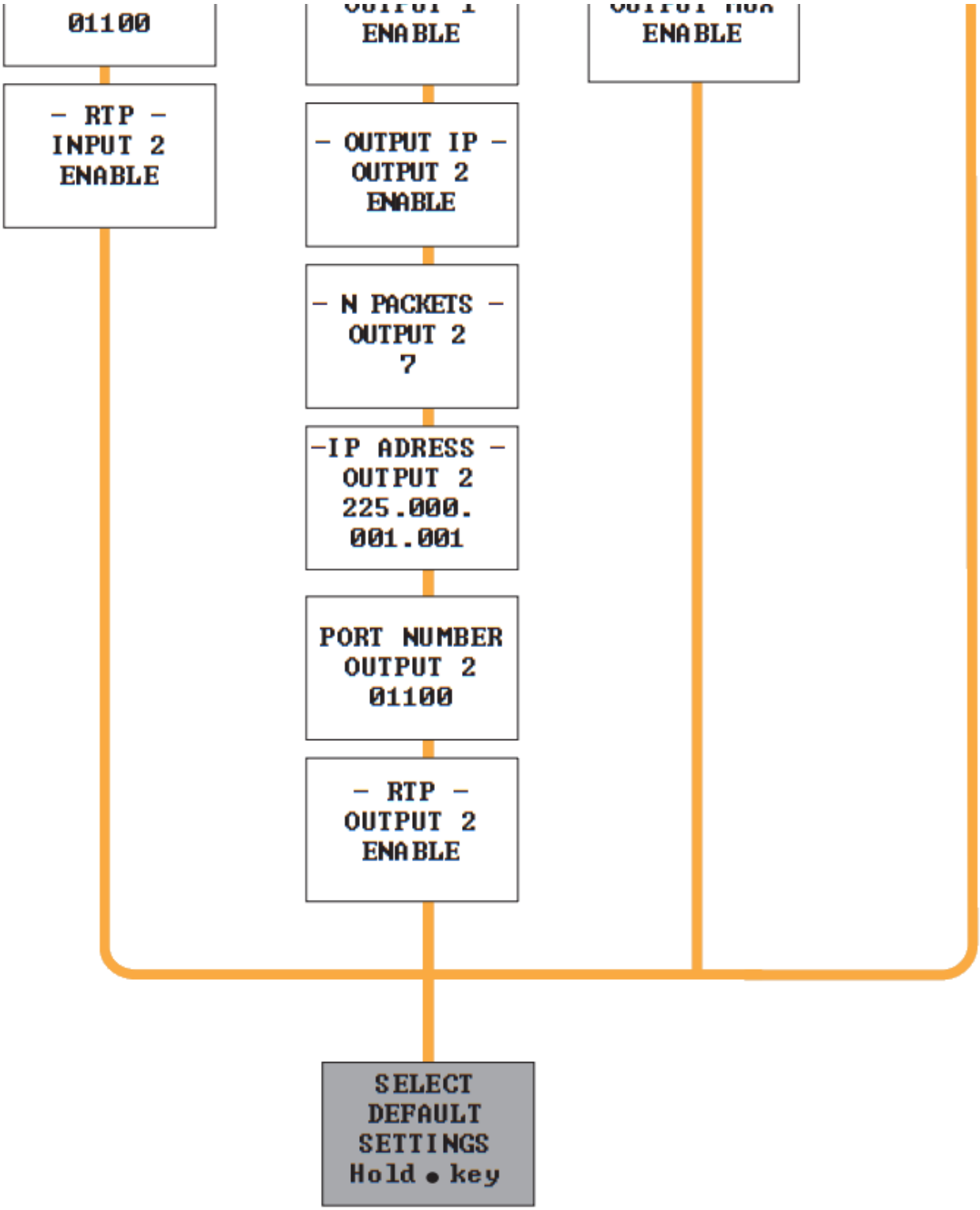



- Enable edit mode / Position cursor (in edit mode) /Disable edit mode.
- Change section /Save parameters (press and hold for 3 sec.)
- Change menu /Modify value (in edit mode)

**IP menu**

For programming Unit operation






**Technical specifications**

| Reference | | | 563852 |
|---|---|---|---|
| INPUTS | VIDEO | Connectors | 2 sets – 3x RCA for Video (Y, Pb, Pr) |
| | | | 2 sets – 1x RCA for CVBS Video |
| | AUDIO | Connectors | 2 sets – 2x RCA for Analog Audio (L, R) |
| | | | 2 sets – 1x RCA for Digital Audio |
| | | | 2 sets – 1x Toslink for Digital Audio (Optical) |
| | VIDEO + AUDIO | Connectors | 2 sets – 1x HDMI |
| | IP MULTICAST | Connectors | 2x RJ45 (Switch Gigabit) |
| | | Formats | SPTS or MPTS (UDP/RTP) |

| | | | | |
|---|---|---|---|---|
| ENCODING PROFILE | VIDEO | Output Format | | MPEG-2 / H.264 (1) |
| | | Resolution | | 480i, 480p, 576i, 576p, 720p, 1080i & 1080p (2)<br>Supports auto-scan for input resolution |
| | | Aspect Ratio | | 4:3, 16:9, and pass through |
| | | GOP | | 10, 12, 15, 16, 18, 20, 24 or 30 |
| | | Transport rate | | Variable |
| | | Video bit rate | | Variable |
| | AUDIO | Output format | | Dolby Digital AC-3 (only digital passthrough) or MPEG1 Layer2 (analog input or HDMI uncompressed PCM audio) |
| | | Sampling rate | kHz | 48 or 44.1 |
| | | Output bitrate | | Variable |
| | | | | |

| | | | | |
|---|---|---|---|---|
| | | Connectors | | |
| | | Frequency Range | MHz | |
| | | Max output level | dBµV | |
| | | | | |

| | | | | |
|---|---|---|---|---|
| OUTPUT | RF | MER | dB | 1x “F” Female<br>46 … 862<br>+110 (+100 with loop-through)<br>>40 (typ)<br>-60<br>75<br><1<br><1<br>16, 32, 64, 128, 256 |
| | | Spurious | dBc | |
| | | Impedance | Ω | |
| | | I/Q Phase Error | º | |
| | | I/Q Amplitude Im balance | % | |
| | QAM | Modulation format | | |
| | | BaudRate | Mbaud | 6,9 |
| | | Roll-off | % | 15 |
| | | Code | | Reed Solomon |
| | | Spectrum Mode | | Normal / Inverted |
| | | Frequency Step | KHz | 250 |
| | | Modulation format | | QPSK, 16QAM, 64QAM |
| | | Guard Interval | | 1/4, 1/8, 1/16, 1/32 |
| | | FEC | | 1/2, 2/3, 3/4, 5/6, 7/8 |

| | | | | |
|---|---|---|---|---|
| | COFDM | Bandwidth | MHz | 6, 7, 8 |
| | | Cell_id | | Editable |
| | | Frequency Step | KHz | 125 / 166 |
| | IP MULTICAST | Connectors | | 2x RJ45 (Switch Gigabit) |
| | | Formats | | SPTS or MPTS (UDP/RTP) |
| | | | | |
| PSI PARAMETERS | | Transport Stream ID | | Editable |
| | | Original Network ID | | Editable |
| | | Network ID | | Editable |
| | | Logical Channel Number | | Editable |
| | | NIT Version | | Manual / Automatic |
| | | SDT Version | | Manual / Automatic |
| | | Type LCN | | Generic / UK / NorDig V1 / NorDig V2 |
| | | Network Name | | Editable |
| | | Service PID | | Editable |

| | | |
|---|---|---|
| | Service Name | Editable |
| | Service ID | Editable |

| | | |
|---|---|---|
| MONITORING / CONTROL | Local control | Full configuration with LCD handheld programmer |
| | Local monitoring | LOOP status LED |
| | | OUTPUT status LED |
| | | TEMP status LED |
| | | CH1/CH2 status LEDs |
| | | Ethernet status LEDs |
| | Remote monitoring | Centralized web based remote control, management, alarms, and software upgrades |
| | Control | Daisy-chain integrated ethernet switch |

| | | | |
|---|---|---|---|
| GENERAL | Power supply | Vdc | 24 |
| | Power disipation | W | <20.4 |
| | Operating Temperature | ºF / ºC | 32 to 95 / 0 to 35 |

The technical specifications are defined for an ambient temperature of 35 ºC (95 ºF). It shall always be installed with forced ventilation.

1. The reference 563852 is intended to be used to feed several receivers utilizing only an HDMI source. The output quality of the image cannot be considered analogous as that of the original HDMI source.
2. 1080p resolution is only supported with MPEG-4 video codec.

**ENCODER DISCLAIMER**

1. TELEVÉS states that the following references:
563803, 563805, 56380501, 56380502, 56380503, 56380504, 56380505, 56380506, 56380507, 56380508, 56380509, 56380510, 563831, 563832, 563833, 563852, 566001, 585301, 585401, hereinafter referred as “Encoder Equipment” or products. have as sole purpose to provide a technical solution to the need to transfer audiovisual content, originally generated in a device provided with an HDMI interface, to one or more receivers located at distances greater than 100 linear meters within a room or building. According to the currently available technology, it is not possible to conduct the HDMI signal at that distance or greater to a multiplicity of receivers, except through a complex and commercially non-viable network deployment, which in no case could ensure the protection of the original audio visual content.
2. TELEVÉS, as the holder of an HDCP license, is not entitled to include in a product such as the aforementioned Encoder Equipment any interface, switch, plug, conductor, button, push-button or other equivalent software solution that allows the output of said content device HDCP decrypted in any analogous form.
3. In order, a) to comply with the license, and b) at the same time provide the purchaser of the product with a technical, legal and feasible solution for the transfer to a multiplicity of receivers at distances greater than 100 linear meters from the audiovisual signal transmitted with HDMI interface and HDCP encryption, the Encoder Equipments do not allow the output of decrypted audiovisual content in a representation analogous to the HDMI format, but instead compresses the content of the audiovisual signal, converting it into MPEG format. This compressed format allows the transfer of the signal through the use of coaxial cables and its reception through the use of DVB-T / DVB-C / ISDB-T or similar analog tuning interfaces.
4. The user of the products may use the compressed audiovisual format, not analogous to the original HDMI content, in which any of the references cited as Encoders emits its output signal, solely and exclusively for the purpose and conditions defined as follows:
1st) In order to transfer the signal to content displays (monitors, televisions, projectors) located more than 100 linear meters from the one receiving the HDMI signal with the HDCP encrypted content.
2º) Provided that the devices that allow the user to view content to which the signal is directed within the premises or building (monitors, televisions, projectors) allow normal viewing of HDMI content while keeping HDCP encryption.
5. Any other use other than that defined in the previous paragraph is expressly prohibited. In particular, the user may not:
a) Reproduce the signal on content viewers not authorized to reproduce HDMI content while maintaining HDCP encryption; nor,
b) Carry out conducts or operations aimed at copying, manipulating or transforming, in whole or in part, the audiovisual signal emitted by the products listed in section 1.
6. The user will be solely responsible in the event of improper use of any of the Encoder Equipments or of the audiovisual signal emitted by them. The user will indemnify and hold TELEVÉS harmless, to the maximum extent permitted by applicable law, against any claim, action or claim, judicial or extrajudicial, from third parties, holders of intellectual or industrial property rights, derived from prohibited actions of in accordance with the previous provisions.

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**Documents / Resources**

| | |
|---|---|
|  | Televes 563852 IP Modulator Encoder [pdf] Installation Guide<br>563852, IP Modulator Encoder, Modulator Encoder, IP Encoder, Encoder |

## References

- Home | Televés