

BLANKOM[®]

an IRENIS brand *...Setting Signals*

HDC 5004 / 5008

IP to 8 QAM or DVB-T Modulator EDGE-QAM/COFDM User Manual

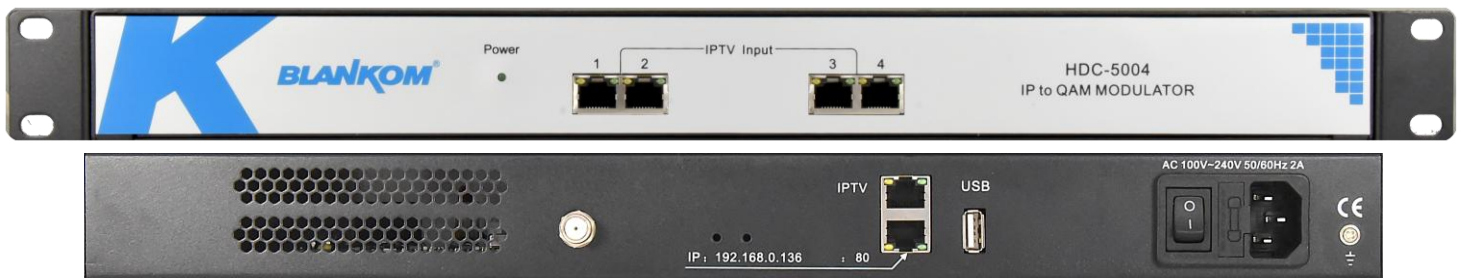


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Chapter 1 Product Overview

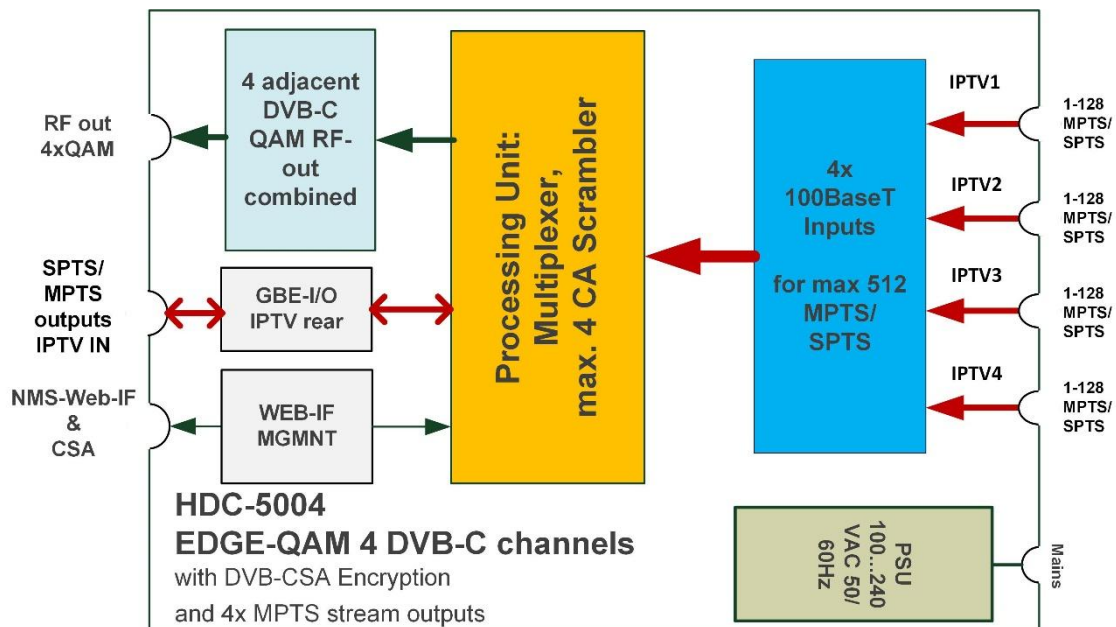
1.1 Outline

This HDM-5004 IP to QAM modulator is an all-in-one device integrated with multiplexing, scrambling and modulation in 1RU. It has 512 IP (SPTS/MPTS) input over UDP/RTP with 4 (5) Ethernet ports. After multiplexing, scrambling and modulating process, it gives 4 DVB-C adjacent carriers (30MHz...1000MHz) output through the RF output. To meet various requirements, this device is also equipped with 1 Data-Out port for 4x IP (SPTS/MPTS) output over UDP protocol. With the features of low cost and high performance, HDM-5004 is very adaptable to IPTV systems.

1.2 Key Features

- 4 Ethernet IP input ports (IPTV 1,2,3,4) 1 IP 4x MPTS outputs (DATA=REAR panel)
- 512 IP (SPTS/MPTS) input over UDP/RTP protocol
- Support up to 748 PID's remapping per channel
- PCR adjusting/PSI/SI editing and inserting /PID Remapping/PID pass
- Excellent RF output performance index, MER \geq 40db
- 4 multiplexed or scrambled TS over UDP output
- 4 adjacent QAM carriers' output, compliant to DVB-C (EN 300 429) and ITU-T J.83 A/B/C
- USB for upgrading CPU/FPGA
- IPTV Synchronization & NTP -> TDT
- Web-based Network management

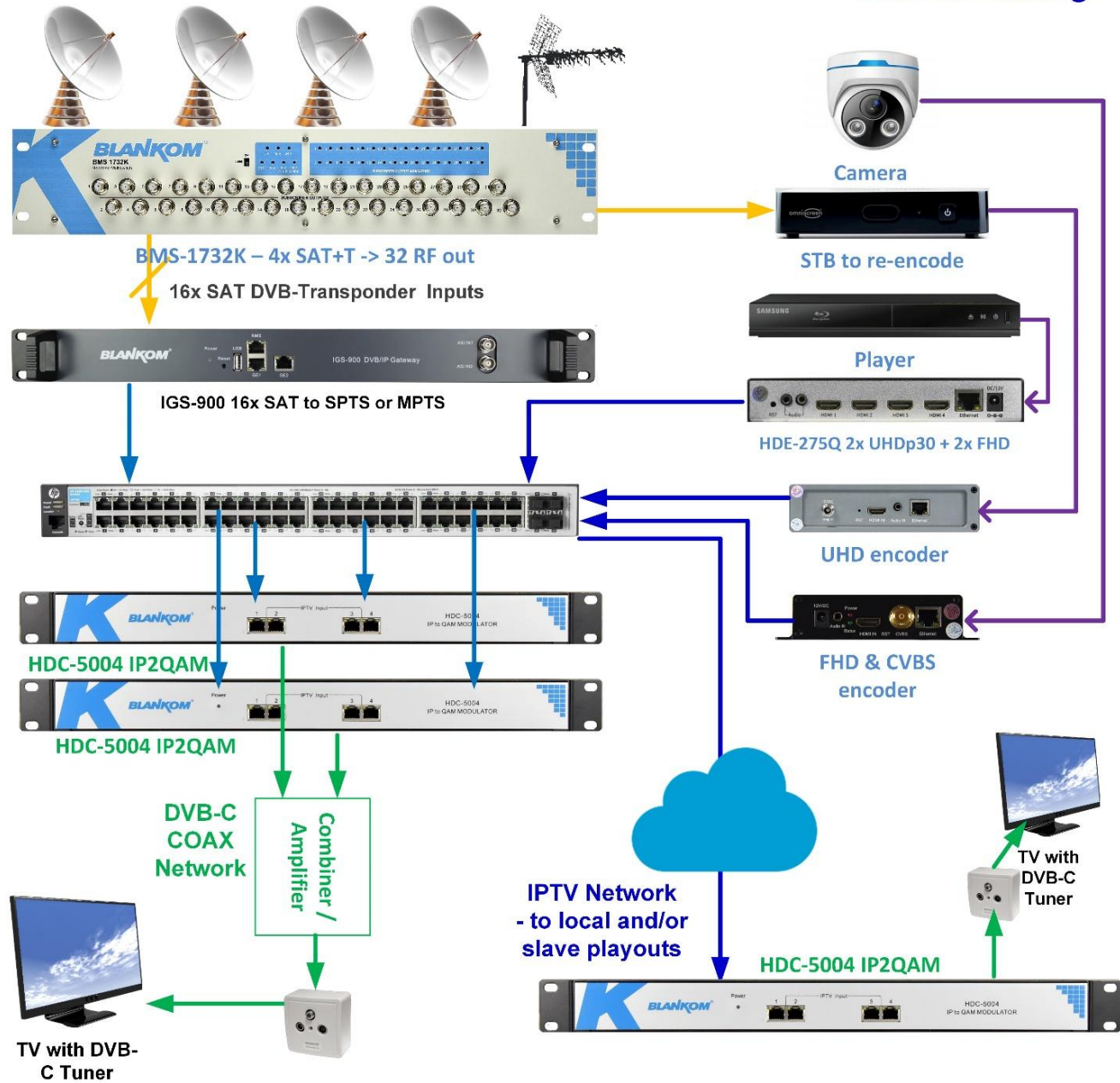
1.3 Block Diagram



1.3.1 Application Example



**Application example
IPTV and local
content to DVB-C
Channel-Adding**



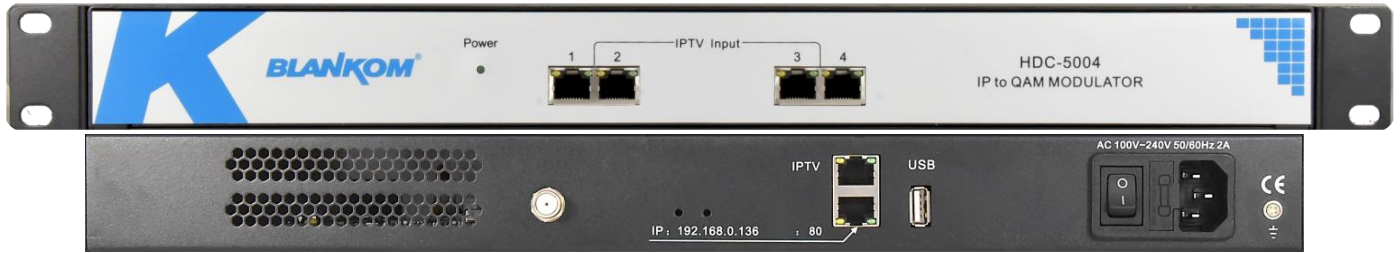
We assume, that the user is familiar with all abbreviations mentioned in this manual which is written for skilled RF technicians and DVB-specialists.

1.5 Specifications

| | | |
|---|---|---|
| Input | Input | 512 from 4x IP inputs by 100Mb/s Ethernet Ports |
| | Transport Protocol | TS over UDP/RTP, unicast and multicast, IGMP V2/V3 |
| | Transmission Rate | max 84Mbps for each IPTV-1...4 input |
| Mux | Remapping | Max. 780 PIDs per Channel |
| | Output Channel | 4 adjacent -> 4x IP out as MPTS (from 4 MUX) |
| | Functions | PID remapping (auto / manually) |
| | | PCR restamping |
| PSI/SI table automatically generating NIT, LCN generation and inserting, auto or manual | | |
| Encryption Parameters | Max simulcrypt CA | 4 |
| | CA Standard | ETR289, ETSI 101 197, ETSI 103 197 |
| | Connection | Local/remote connection to CAS |
| Modulation Parameters | QAM Channel | 4 adjacent carrier |
| | Modulation Standard | DVB-C Annex A/C and B <i>EN300 429/ITU-T J.83A/B</i> |
| | Symbol Rate | 5.0...9.0 Msps, 1 kSps steps, FEC |
| | Constellation | 16, 32, 64, 128, 256QAM <i>dep. On A/C or B</i> |
| | FEC | RS (204, 188) inner/outer configurable |
| RF Output | Interface | 1 F-type output port for 4 QAM channel, 75Ω impedance |
| | RF Range | 30...1000 MHz, 1kHz steps |
| | Output Level | -10 dBm...+0 dBm (87...107 dBμV), 0.1dB steps |
| | MER | ≥ 40dB |
| | ACLR | -60 dBc |
| TS output | 4 MPTS IP output over UDP/RTP multicast by 1x100/1000M Gbit-Ethernet Port (@ Rear – IPTV –port) | |
| System | Network management software (NMS) support (Rear: 100BaseT) and USB port upgrade support | |
| General | Dimensions | 19" 1U: 430mm×180mm×44mm (WxLxH) |
| | Weight | 3kg |
| | Temperature | 0...45°C (operation), -20...80°C (storage) |
| | Power Supply | AC 100V±10%, 50/60Hz or AC 220V±10%, 50/60Hz |
| | Consumption | 15.4W |

Chapter 2: Connection Description

2.1 Front & Rear panel



| | |
|------------|--|
| Front: | Power LED, 4x IPTV 1...4 Input stream RJ45 ports |
| Rear left | RF output F-female 75 Ohm |
| ... | IPTV GbE Input/Output (Output of the 4x MPTS from the QAM Muxes) |
| ... | NMS/CAS: Network management port and CAS data port |
| | USB-Port for Firmware upgrade or TS-Player for INFO-Channels |
| ... | Power switch, Fuse |
| ... | AC IEC Power Socket |
| Rear right | Grounding |

Chapter 3 Installation Guide

3.1 Acquisition Check

When you opens the package of the device, it is necessary to check items according to packing list. Normally it should include the following items:

- HDC-5004 IP QAM Modulator
- User's Manual (online download from www.blankom.de)
- Power Cord and grounding wire (depending on country)

3.2 Installation Preparation

When you install the device, please follow the steps below. The details of installation will be described after this chapter. Users can also refer to the rear panel chart during the installation.

The main steps of the installation include:

- Checking the possible device missing or damage during the transportation
- Preparing relevant environment for installation
- Installing the IP Mux-Scrambling QAM Modulator
- Connecting signal cables
- Connecting communication port for WEB-IF

3.2.1 Environmental Conditions

| Item | Requirement |
|-------------------------|--|
| Machine Hall Floor | Electric Isolation, Dust Free Volume resistivity of ground anti-static material: $1 \times 10^7 \dots 1 \times 10^{10} \Omega$, Grounding current limiting resistance: 1m (Floor bearing should be greater than 450kg/m^2) |
| Environment Temperature | 5...40°C(sustainable), 0...45°C(short time) installing air-conditioning is recommended |
| Relative Humidity | 20%...80% sustainable 10%...90% short time |
| Pressure | 86...105kpa |
| Door & Window | Installing rubber strip for sealing door-gaps and dual level glasses for window |
| Wall | It can be covered with wallpaper, or brightness less paint. |
| Fire Protection | Fire alarm system and extinguisher |
| Power | Requiring device power, air-conditioning power and lighting power are independent to each other. Device power requires AC power 220V $\pm 10\%$ 50/60Hz or 110V $\pm 10\%$ 50/60Hz. Please carefully check before running. |

3.2.2 Grounding Requirement

- All function modules' good grounding is the basis of reliability and stability of devices. Also, they are the most important guarantee of lightning arresting and interference rejection. Therefore, the system must follow this rule.
- Coaxial cables' outer conductor and isolation layer should keep proper electric conducting with the metal housing of device.
- Grounding conductor must adopt copper conductor in order to reduce high frequency impedance, and the grounding wire must be as thick and short as possible.
- Users should make sure the 2 ends of grounding wire well electric conducted and be antirust.
- It is prohibited to use any other device as part of grounding electric circuit
- The area of the conduction between grounding wire and device's frame should be no less than 25mm^2 .

3.2.3 Frame Grounding

All the machine frames should be connected with protective copper strip. The grounding wire should be as short as possible and avoid circling. The area of the conduction between grounding wire and grounding strip should be no less than 25mm^2 .

3.2.4 Device Grounding

Connecting the device's grounding rod to frame's grounding pole with copper wire.

3.3 Wire Connections

3.3.1 Power cord connection

The power socket is located on the right of rear panel, and the power switch is on the left of front panel. User can plug one end of the power cord to the socket and insert the other end to AC power. When the device solely connects to protective ground, it should adopt independent way, say, share the same ground with other devices. When the device adopts united way, the grounding resistance should be smaller than 1Ω.

⚠ Caution: Before connecting power cord to the IP QAM Modulator, user should set the power switch to "OFF".

3.3.2 Signal and Network Management (NMS) Cable Connection

The signal connections include the connection of input signal cable and the connection of output signal cable. Please use at least CAT 5 STP RJ45 LAN Cable for the management port and CAT 6 DSTP for the streaming data ports to avoid electromagnetic influences. For RF cable we recommend double shielded Coax.

Chapter 4: Web NMS Management

This device does not support an LCD operation, and the modification can only be operated with Web NMS by using a standard web-browser. We recommend to use Firefox – latest version.

4.1 Login

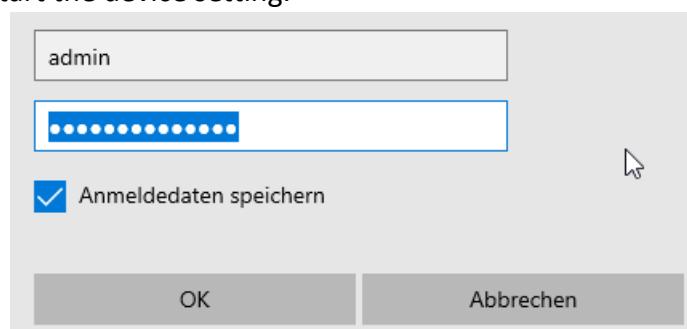
The factory default IP address is **192.168.0.136** and users can connect the device and web NMS through this IP address. (No https)

Connect the PC (Personal Computer) and the device with a network cable, and use ping command to confirm they are on the same network segment. For instance, the PC IP address is 192.168.99.252, we then change the device IP to 192.168.0.xxx (xxx can be 0 to 254 except 136 to avoid IP conflict).

Launch the web browser and input the device IP address in the browser's address bar and press Enter. **We recommend to use the latest Mozilla Firefox browser.**

It will display the Login interface as Figure-1. Input the Username and Password (Both the default **Username and Password are "admin"**).

And then click "Login" to start the device setting.



The screenshot shows a web-based login form. At the top, there is a text input field containing the text 'admin'. Below it is a password input field where the characters are masked with blue dots. Underneath the password field is a checkbox that is checked, with the label 'Anmeldedaten speichern'. At the bottom of the form, there are two buttons: 'OK' on the left and 'Abbrechen' on the right. A mouse cursor is visible over the right side of the form.

Figure-1

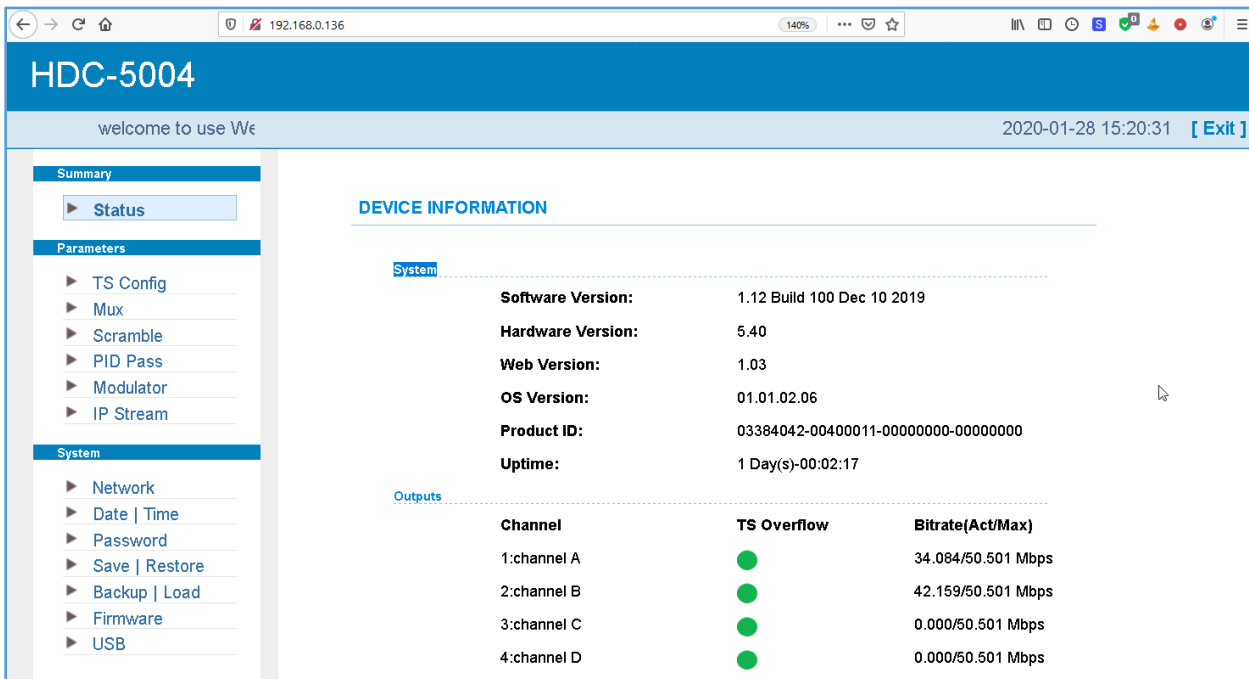
4.2 Operation

Remark: The user should be familiar with DVB-MPEG and PSI/SI information and its PID and Table construction and norms. Many tables are cross referencing to other tables (example: EIT and SDT, PMT, ...).

Information can be grabbed from: <https://www.dvb.org/standards>

4.2.1 Summary

When the login has been confirmed, it displays the summary status as in Figure-2:



The screenshot shows the web interface for the HDC-5004 device. The browser address bar shows the IP address 192.168.0.136. The page title is "HDC-5004" and the subtitle is "welcome to use Web Management". The date and time are 2020-01-28 15:20:31. The interface is divided into a left sidebar and a main content area.

Left Sidebar:

- Summary
 - Status
- Parameters
 - TS Config
 - Mux
 - Scramble
 - PID Pass
 - Modulator
 - IP Stream
- System
 - Network
 - Date | Time
 - Password
 - Save | Restore
 - Backup | Load
 - Firmware
 - USB

Main Content Area:

DEVICE INFORMATION

System

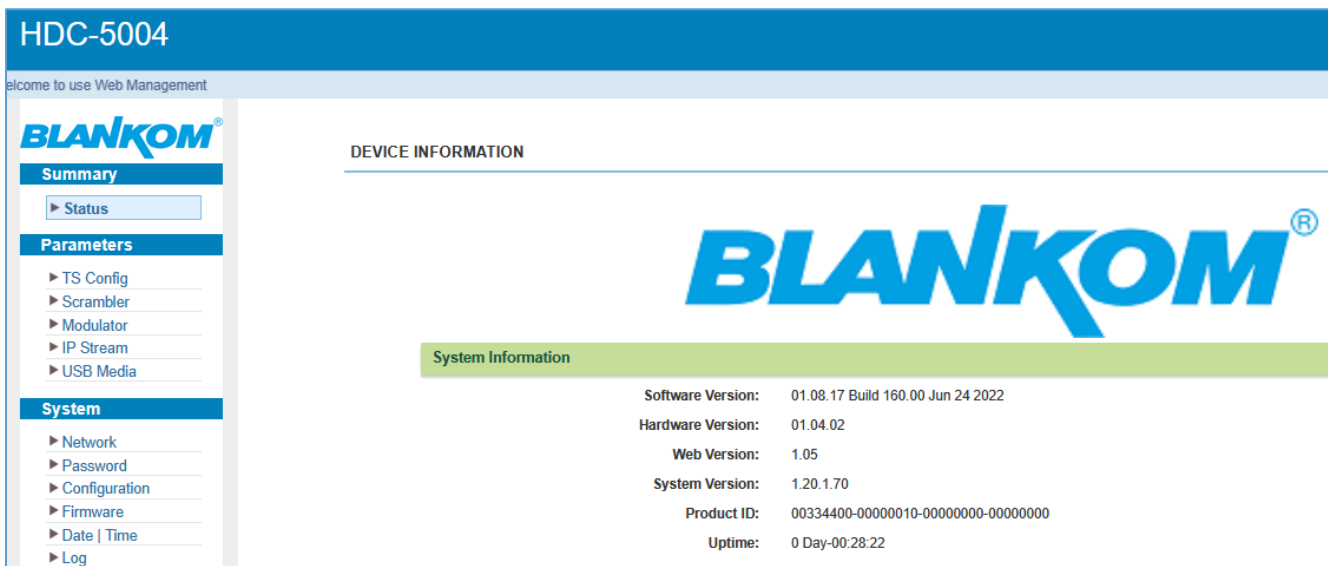
- Software Version: 1.12 Build 100 Dec 10 2019
- Hardware Version: 5.40
- Web Version: 1.03
- OS Version: 01.01.02.06
- Product ID: 03384042-00400011-00000000-00000000
- Uptime: 1 Day(s)-00:02:17

Outputs

| Channel | TS Overflow | Bitrate(Act/Max) |
|-------------|-------------|--------------------|
| 1:channel A | ● | 34.084/50.501 Mbps |
| 2:channel B | ● | 42.159/50.501 Mbps |
| 3:channel C | ● | 0.000/50.501 Mbps |
| 4:channel D | ● | 0.000/50.501 Mbps |

Figure-2

Or to show the latest Version:



The screenshot shows the web interface for the HDC-5004 device, displaying the latest version. The browser address bar shows the IP address 192.168.0.136. The page title is "HDC-5004" and the subtitle is "welcome to use Web Management". The date and time are 2022-01-28 15:20:31. The interface is divided into a left sidebar and a main content area.

Left Sidebar:

- Summary
 - Status
- Parameters
 - TS Config
 - Scrambler
 - Modulator
 - IP Stream
 - USB Media
- System
 - Network
 - Password
 - Configuration
 - Firmware
 - Date | Time
 - Log

Main Content Area:

DEVICE INFORMATION

System Information

- Software Version: 01.08.17 Build 160.00 Jun 24 2022
- Hardware Version: 01.04.02
- Web Version: 1.05
- System Version: 1.20.1.70
- Product ID: 00334400-00000010-00000000-00000000
- Uptime: 0 Day-00:28:22

4.2.1.1 Setting Date and Time

The device supports setting of Date and Time by a) browser you are using to the web-IF – so your computer. But for the correct Time and Date it is almost better to configure time zone + NTP servers:

HDC-5004

welcome to use Web M 2020-01-28 15:

Summary

- ▶ Status

Parameters

- ▶ TS Config
- ▶ Mux
- ▶ Scramble
- ▶ PID Pass
- ▶ Modulator
- ▶ IP Stream

System

- ▶ Network
- ▶ **Date | Time**
- ▶ Password
- ▶ Save | Restore
- ▶ Backup | Load
- ▶ Firmware
- ▶ USB

Date | Time

System Time:

Timezone:

NTP Server 1:

NTP Server 2:

NTP Server 3:

NTP Server 4:

NTP Server 5:

Example for European NTP-Server addresses... But first set the time zone please:

System Time:

Timezone:

NTP Server 1:

NTP Server 2:

NTP Server 3:

NTP Server 4:

NTP Server 5:

first set

time zone than config NTP-Server!

System Time:

Timezone:

NTP Server 1:

NTP Server 2:

NTP Server 3:

NTP Server 4:

NTP Server 5:

And you are done – but your Device need a connection to these NTP addresses. -> Local Gateway settings should fit as well to assure the connection to external NTP servers via Internet. The NTP or the correct time is needed for the

TDT Injection to the output multiplexes. TOT offset table can be injected from an IP stream by PID forwarding if necessary.

4.2.2 Parameters “TS Config” - Menu

- The TS Config Menu sets the basics for your 4 QAM channels

From the menu on up side of the webpage, clicking “Stream Select”, it displays the interface where users can choose the programs to Mux out.

Summary

- ▶ Status

Parameters

- ▶ **TS Config**
- ▶ Mux
- ▶ Scramble
- ▶ PID Pass
- ▶ Modulator
- ▶ IP Stream

System

- ▶ Network
- ▶ Date | Time
- ▶ Password
- ▶ Save | Restore
- ▶ Backup | Load
- ▶ Firmware
- ▶ USB

TS CONFIGURATION

| | channel A | channel B | channel C | channel D |
|----------------------------|---|-----------|-----------|-----------|
| Output IP Scramble: | Off <input type="button" value="v"/> | | | |
| Stream | | | | |
| TS ID: | 1 <input type="text"/> | | | |
| ON ID: | 1 <input type="text"/> | | | |
| Character Encoding: | NORMAL <input type="button" value="v"/> | | | |
| PCR Correct: | <input checked="" type="checkbox"/> | | | |
| PCR Speed BW: | 1 <input type="button" value="v"/> | | | |
| PCR State BW: | 1 <input type="button" value="v"/> | | | |
| NIT | | | | |
| Network ID: | 1 <input type="text"/> | | | |
| Network Name: | BLANKOM1 <input type="text"/> | | | |
| Version Mode: | Automatic <input type="button" value="v"/> | | | |
| Version Number: | 2 <input type="text"/> (0-31) | | | |
| LCN Mode: | European <input type="button" value="v"/> | | | |
| Country Code: | 0 <input type="text"/> | | | |
| Channel List ID: | 0 <input type="text"/> | | | |
| Channel List Name: | <input type="text"/> | | | |
| Private Data: | 0x00000000 <input type="text"/> | | | |
| NIT Insert: | Data From PSI Tool <input type="button" value="v"/> | | | |

Corresponding with:

Summary

- ▶ Status

Parameters

- ▶ TS Config
- ▶ Mux
- ▶ Scramble
- ▶ PID Pass
- ▶ **Modulator**
- ▶ IP Stream

System

- ▶ Network
- ▶ Date | Time
- ▶ Password
- ▶ Save | Restore

MODULATOR

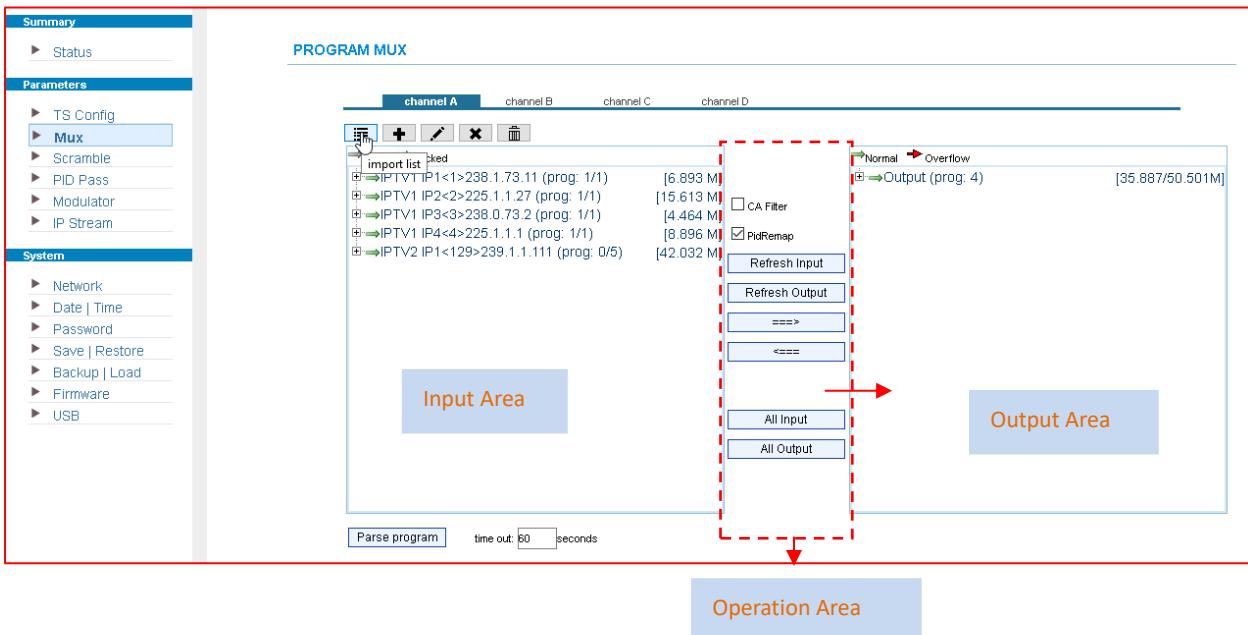
| | channel A | channel B | channel C | channel D |
|--------------------------|--|-----------|-----------|-----------|
| Standard: | J.83A(DVBC) <input type="button" value="v"/> | | | |
| Constellation: | 256 QAM <input type="button" value="v"/> | | | |
| Symbol Rate: | 6.850 <input type="text"/> (5.0 - 9.0 Msps) | | | |
| RF Frequency: | 122.000 <input type="text"/> (30.0 - 1000.0 MHz) | | | |
| RF Level: | -10.0 <input type="text"/> (-10.0 - 0.0 dBm) | | | |
| RF On: | <input checked="" type="checkbox"/> | | | |
| Bitrate(Val/Max): | 35.726 Mbps/50.501 Mbps | | | |

Please do not use ITU –DVB for Europe, because that’s related to US and Korea... EU= J83A

Date 29. April 2026

BLANKOM-HDC-5008_IP2QAM-modulator.docx

The MUX Menu:



Configure 'Input Area' and 'Output Area' with buttons in 'Operation Area'. Instructions are as below:

CA Filter : Enable/disable the CA Filter function. Clicking this box, you can filter out the input CA-PIDs to avoid disturbing with the device scrambling function.

PID Remap: To enable/disable the PID remapping (disabled recommended for pass through and also PID forwarding). If similar PIDs are in the Input streams, please remap them avoiding conflicts

Refresh Input To refresh the input program information

Refresh Output To refresh the output program information

===> Select one input program first and click this button to transfer the selected program to the right box to be processed to the output.

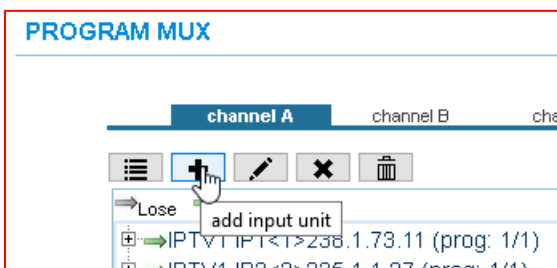
<=== Similarly, you can remove TV Services from the multiplex in the right box.

All Input To select all the input programs

All Output To select all the output programs

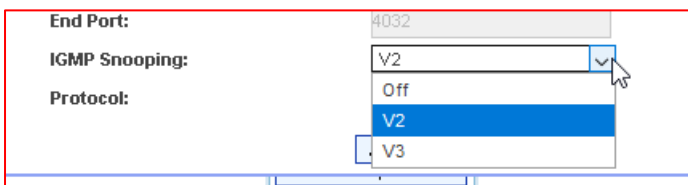
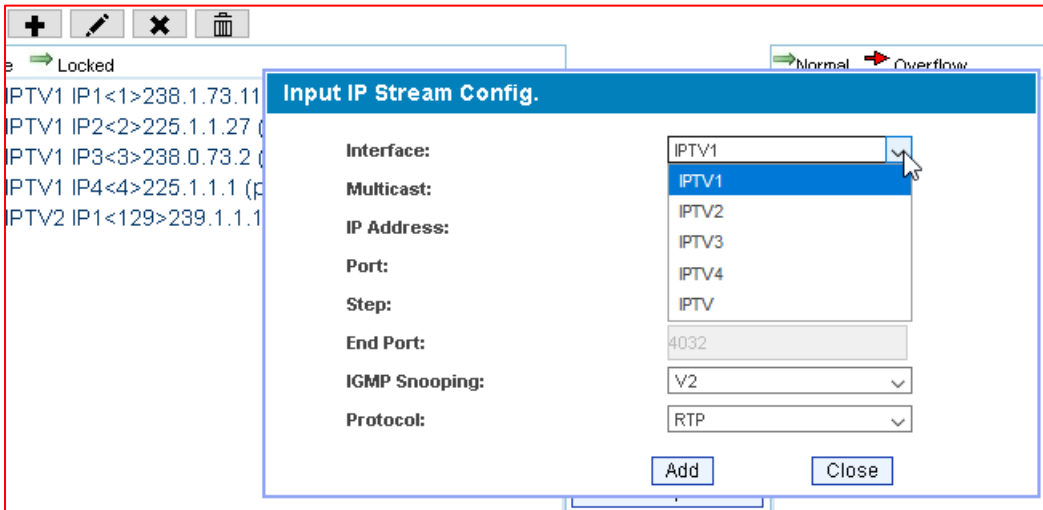
Parse program To parse programs seconds time limitation of parsing input programs from TS

This must be used for every Input stream to read its content after setting up the IP addresses:

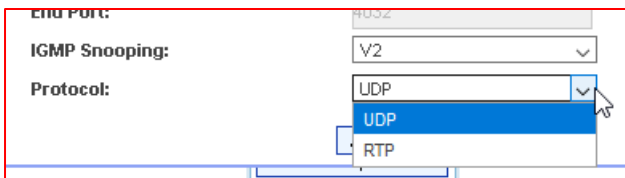


Window opens....

Select the input RJ45 port: 'IPTV 1...4' or Rear-Side 'IPTV'

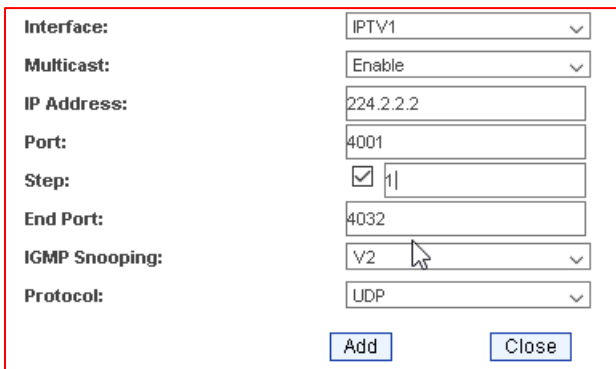


Select IGMP Version or OFF (not useful)



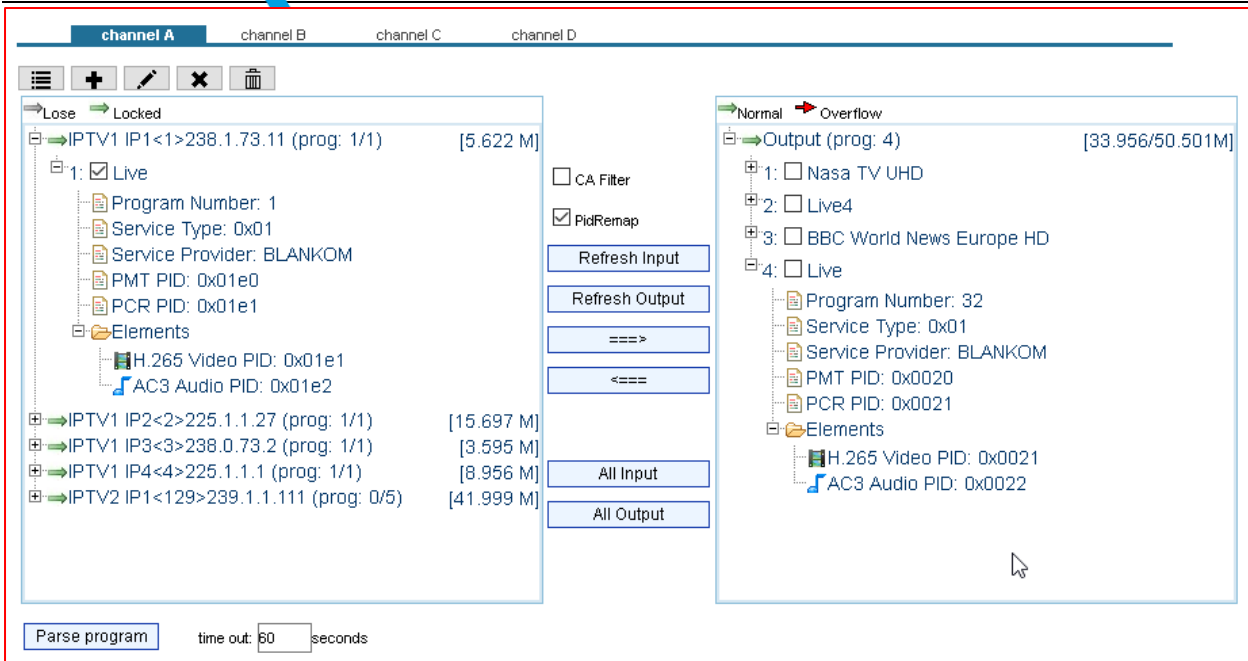
Select Input protocol of the stream UDP/RTP

You can address 1 or many IPTV streams:

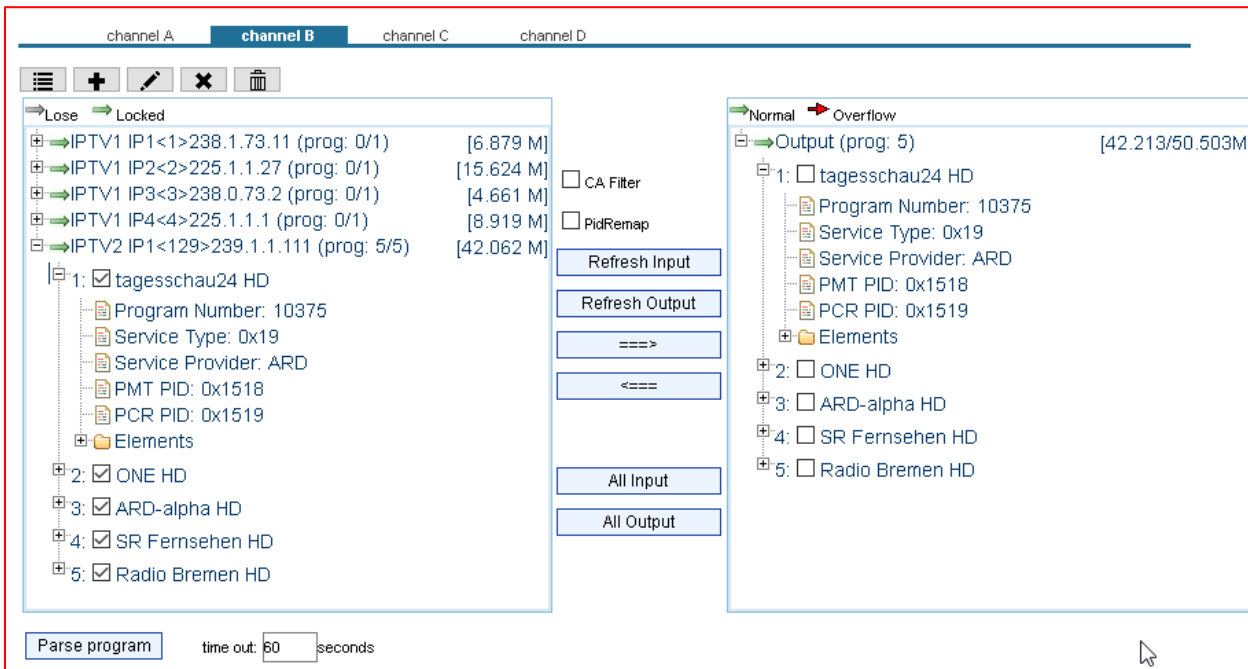


Finally Add and Close this window.

Your streams shown in the left window will cover all of them. Do not forget to PARSE them to get the content.



Example with PID-remapping.



And w/o -> MPTS Input to DVB-C Channel 2 output

Program Modification:

The multiplexed program information can be modified by selecting the program in the 'output' area. For example, when clicking on a service, it opens a popup as dialog box (Figure 6) where you can change or insert new data or even rename the service.

Press:

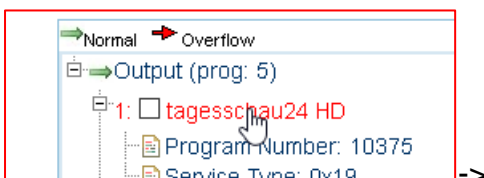


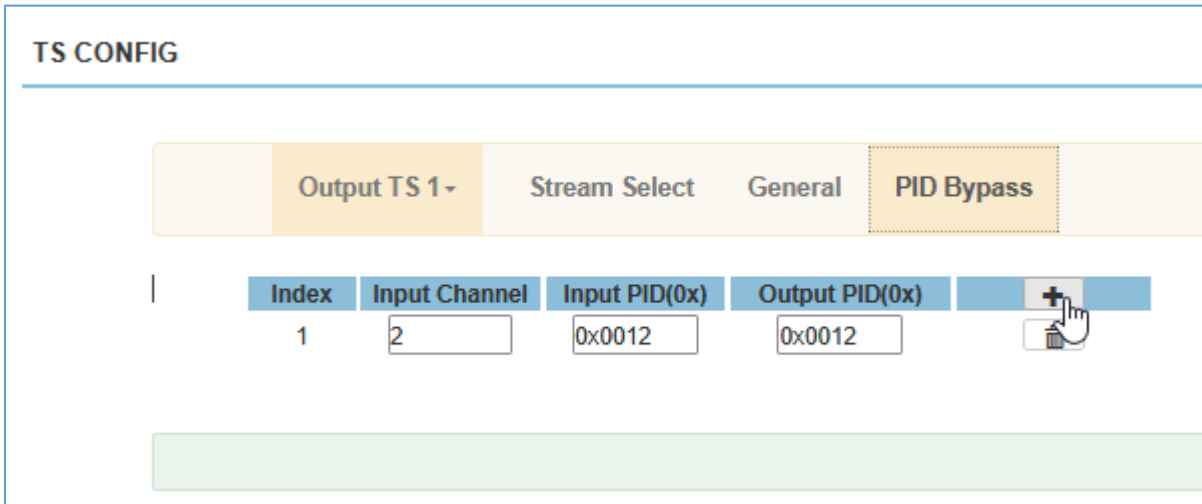
Figure 6

Passing EPG:

If 1 or more inputs are carrying the EIT table and you want to pass it to the Modulator output, you should consider:

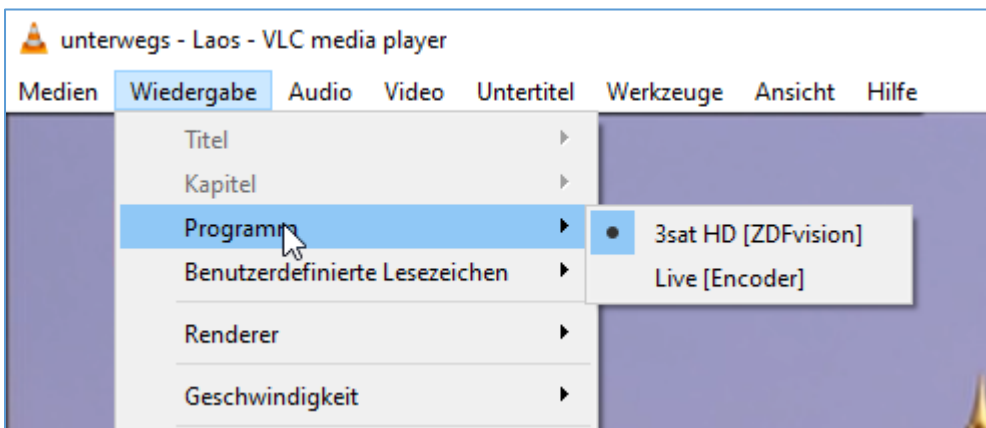
1st: Do not use the PID-remapping:

Then enter into

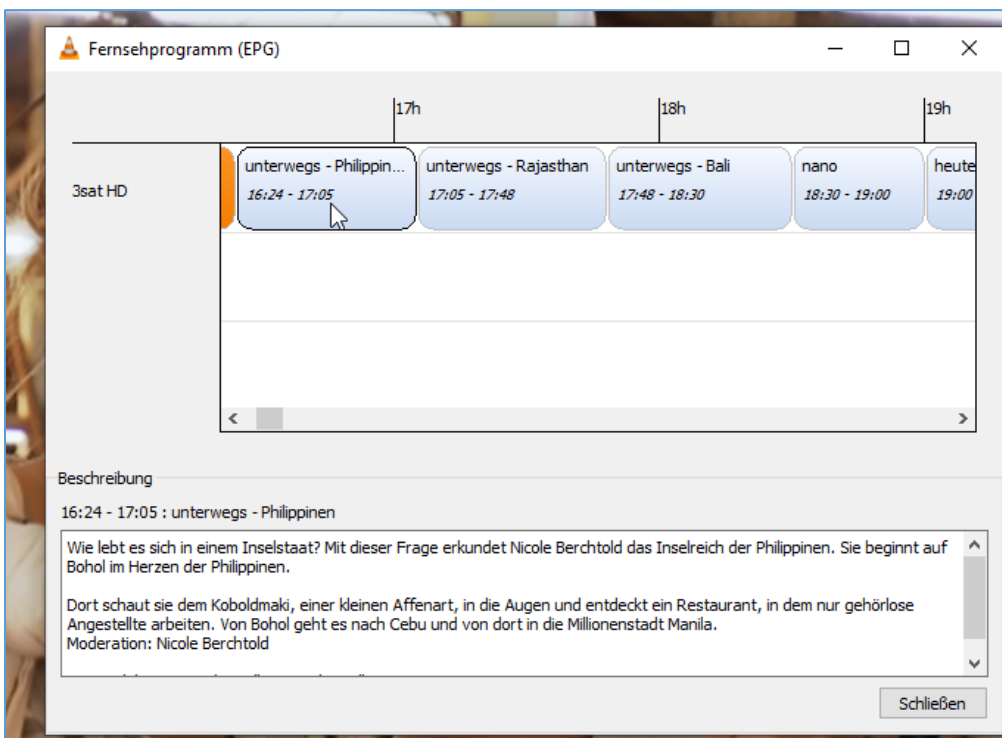


Select the right Channel input you have an SPTS (or MPTS) with EIT on PID12hex, add 12 pass to 12 out and you are good:

Check with VLC: (MPTS output on DATA-port at the rear-panel):



-> Werkzeuge -> EPG:



Attention: The Unit does NOT remultiplex the EIT-PID Database from different sources!!!

RF-Output settings:

4 adjacent channels- first channel sets up the start frequency (middle), all need same QAM mode 16...256 and symbol rates, independent output level attenuation...:

MODULATOR

| | channel A | channel B | channel C | channel D |
|--------------------------|--|-----------|-----------|-----------|
| Standard: | J.83A(DVBC) v | | | |
| Constellation: | 256 QAM v | | | |
| Symbol Rate: | 6.850 (5.0 - 9.0 Msp/s) | | | |
| RF Frequency: | 122.000 (30.0 - 1000.0 MHz) | | | |
| RF Level: | -10.0 (-10.0 - 0.0 dBm) | | | |
| RF On: | <input checked="" type="checkbox"/> | | | |
| Bitrate(Val/Max): | 33.981 Mbps/50.503 Mbps | | | |

For the output level, see Annex – conversion table dBm -> dBμV.

Set QAM Mode (Annex A/C = Normal DVB, Annex B = US Norm), mode 16...256 QAM and other values. This setup configures adjacent channel from a start frequency.

To individually configure the 4 channels set them accordingly in every single config mode.

DVB-tables:

TS CONFIG

| Output TS 1~ | Stream Select | General | PID Bypass |
|---|---|----------------------|--|
| Stream | | | |
| Output Mode: | Mux out v | PAT Insert: | <input checked="" type="checkbox"/> |
| SDT Insert: | <input checked="" type="checkbox"/> | BAT Insert: | <input checked="" type="checkbox"/> |
| Share BAT: | <input type="checkbox"/> | CAT Insert: | <input checked="" type="checkbox"/> |
| PMT Insert: | <input checked="" type="checkbox"/> | TDT Insert: | <input checked="" type="checkbox"/> |
| TOT Insert: | <input checked="" type="checkbox"/> | Fixed Table Version: | <input type="checkbox"/> |
| TS ID: | 1 v | ON ID: | 1 v |
| PCR Correct: | <input type="checkbox"/> | PCR Speed BW: | 1 v |
| PCR State BW: | 1 v | PCR Compensate: | 0 v |
| Character Encoding: | NORMAL v | IGMP Interval: | 5 (5s~120s) |
| NIT | | | |
| NIT Insert: | Not insert v | Share NIT: | <input type="checkbox"/> |
| VCT | | | |
| VCT Insert: | <input type="checkbox"/> | Modulation Mode: | 4 v |
| IPTV Sync(SPTS) | | | |
| IPTV Sync: | <input checked="" type="checkbox"/> | Sync Period: | 300 Sec |
| IPTV Anti-shake(SPTS) | | | |
| IPTV Anti-shake: | <input checked="" type="checkbox"/> | | |
| Apply | | | |

You can add the NIT by adding manually all frequencies (and also from the rest of the cable-network):

PCR State BW: 1 | PCR Compensate: 0
 Character Encoding: NORMAL | IGMP Interval: 5 (5s~120s)

NIT

NIT Insert: Web insert | Share NIT:
 Private Data: 0x00000000 | Network ID: 1
 Network Name: network-1 | Version Mode: Automatic
 Version Number: 1 (0-31) | LCN Mode: European

| Index | TS ID | ON ID | Frequency | Constellation | Symbol Rate | |
|-------|-------|-------|-----------|---------------|-------------|---------------------|
| | | | | | | + - add description |

VCT

Remark: BAT is almost not necessary, TDT/TOT might work if you set the internal clock date correctly by using an NTP server address.

The NIT should contain its own values:

MODULATOR

Center Frequency: 662.000 MHz | Standard: J.83A(DVB-C)
 Level(All Carriers): 5.0 dBm | Channel Info.(Alarm/Active/Total): 0/4/4

| # | Frequency | Constellation | Symbol Rate | Channel Level | Status | Bit(Act/Max) | |
|---|-------------|---------------|-------------|---------------|--------|--------------|-----------------|
| 1 | 650.000 MHz | 256 QAM | 6875 Ksps | -1.0 dB | ● | 19.2/50.7 M | channel config. |
| 2 | 658.000 MHz | 256 QAM | 6875 Ksps | -1.0 dB | ● | 0.0/50.7 M | |
| 3 | 666.000 MHz | 256 QAM | 6875 Ksps | -1.0 dB | ● | 0.0/50.7 M | |
| 4 | 674.000 MHz | 256 QAM | 6875 Ksps | -1.0 dB | ● | 0.0/50.7 M | |

Output TS 1- | Stream Select | General | PID Bypass

NIT Descriptor [close]

TS ID: 1
 ON ID: 1
 Frequency: 650.000 MHz
 Constellation: 256 QAM
 Symbol Rate: 6875 Ksps
 FEC Inner: 1/2 conv.
 FEC Outer: not outer FEC

Add Close

Stream

Output Mod: | SDT Insert: | Share BAT: | PMT Insert: | TOT Insert: | TS ID: | PCR Correct: | PCR State B: | Character E: | (5s~120s)

NIT

NIT Insert: Web insert | Share NIT:
 Private Data: 0x00000000 | Network ID: 1
 Network Name: network-1 | Version Mode: Automatic
 Version Number: 1 (0-31) | LCN Mode: European

| Index | TS ID | ON ID | Frequency | Constellation | Symbol Rate | |
|-------|-------|-------|-----------|---------------|-------------|-----|
| | | | | | | + - |

See:

NIT

NIT Insert: Share NIT:

Private Data: Network ID:

Network Name: Version Mode:

Version Number: (0-31) LCN Mode:

| Index | TS ID | ON ID | Frequency | Constellation | Symbol Rate | |
|-------|-------|-------|-------------|---------------|-------------|--------------|
| 1 | 1 | 1 | 650.000 MHz | 256 QAM | 6875 Ksps | + - ✎ ✖ |

Enter the next....

In the single stream menu by double-click:

Program Information [close]

Program From Input: CH2_IPTV1_225.2.2.1:12341 [11150]

Service Name:

Major Channel Number:

Minor Channel Number:

Source Id:

Short Name:

Program Number:

Logic Channel Number:

Service Type:

Service Provider:

PMT Descriptor Tag:

PMT Descriptor Data: (Hex)

PMT PID:

PCR PID:

MPEG-4 Video PID:

MPEG-1 Audio PID:

Private PES PID:

MPEG-1 Audio PID:

Private PES PID:

You can assign the LCN to the service.

Please do not give double values to the different services: always different ones please.

For DVB-C except in USA and Korea, you can ignore these settings because they are belonging to ATSC/ITU-J83 Annex B = US norm with 6 MHz:

Program Information [clo]

Program From Input: CH2_IPTV1_225.2.2.1:12341 [11150]

Service Name:

Major Channel Number:

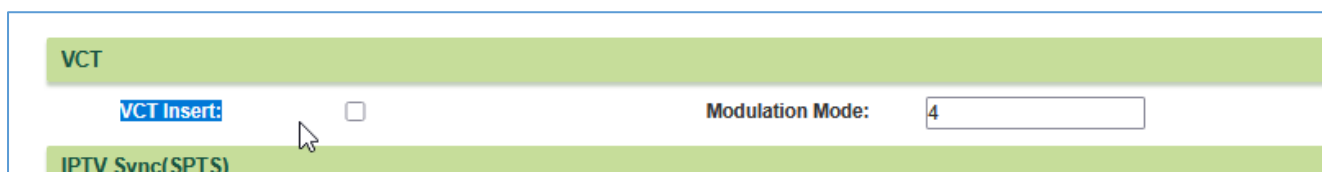
Minor Channel Number:

Source Id:

Short Name:

Program Number:

and



The CENELEC Channel-Plan would be very helpful.

See following hints.

Consider the center/middle frequencies for setup the QAM channels please.

| Bereich Bands | Kanal Channel | Kanal... frequenzen Channel frequency (MHz) | Mitten... frequenz Middle frequency (MHz) | Bild... träger Picture carrier (MHz) | Ton... träger Sound carrier (MHz) | Bereich Bands | Kanal Channel | Kanal... frequenzen Channel frequency (MHz) | Mitten... frequenz Middle frequency (MHz) | Bild... träger Picture carrier (MHz) | Ton... träger Sound carrier (MHz) | |
|--|---------------|---|---|--|---|---------------|---------------|---|---|--|---|--------|
| B I | 2 | 47 ... 54 | 50,50 | 48,25 | 53,75 | B IV | 21 | 470 ... 478 | 474,00 | 471,25 | 476,75 | |
| | 3 | 54 ... 61 | 57,50 | 55,25 | 60,75 | | 22 | 478 ... 486 | 482,00 | 479,25 | 484,75 | |
| | 4 | 61 ... 68 | 64,50 | 62,25 | 67,75 | | 23 | 486 ... 494 | 490,00 | 487,25 | 492,75 | |
| USB Unterer Sonder- kanal- bereich Midband channels | S 02 | 111 ... 118 | 114,50 | 112,25 | 117,75 | | 24 | 494 ... 502 | 498,00 | 495,25 | 500,75 | |
| | S 03 | 118 ... 125 | 121,50 | 119,25 | 124,75 | | 25 | 502 ... 510 | 506,00 | 503,25 | 508,75 | |
| | S 04 | 125 ... 132 | 128,50 | 126,25 | 131,75 | | 26 | 510 ... 518 | 514,00 | 511,25 | 516,75 | |
| | S 05 | 132 ... 139 | 135,50 | 133,25 | 138,75 | | 27 | 518 ... 526 | 522,00 | 519,25 | 524,75 | |
| | S 06 | 139 ... 146 | 142,50 | 140,25 | 145,75 | | 28 | 526 ... 534 | 530,00 | 527,25 | 532,75 | |
| | S 07 | 146 ... 153 | 149,50 | 147,25 | 152,75 | | 29 | 534 ... 542 | 538,00 | 535,25 | 540,75 | |
| | S 08 | 153 ... 160 | 156,50 | 154,25 | 159,75 | | 30 | 542 ... 550 | 546,00 | 543,25 | 548,75 | |
| B III | S 09 | 160 ... 167 | 163,50 | 161,25 | 166,75 | | 31 | 550 ... 558 | 558,00 | 551,25 | 556,75 | |
| | S 10 | 167 ... 174 | 170,50 | 168,25 | 173,75 | | 32 | 558 ... 566 | 562,00 | 559,25 | 564,75 | |
| | 5 | 174 ... 181 | 177,50 | 175,25 | 180,75 | | 33 | 566 ... 574 | 570,00 | 567,25 | 572,75 | |
| | 6 | 181 ... 188 | 184,50 | 182,25 | 187,75 | | 34 | 574 ... 582 | 578,00 | 575,25 | 580,75 | |
| | 7 | 188 ... 195 | 191,50 | 189,25 | 194,75 | | 35 | 582 ... 590 | 586,00 | 583,25 | 588,75 | |
| | 8 | 195 ... 202 | 198,50 | 196,25 | 201,75 | | 36 | 590 ... 598 | 594,00 | 591,25 | 596,75 | |
| | 9 | 202 ... 209 | 205,50 | 203,25 | 208,75 | | 37 | 598 ... 606 | 602,00 | 599,25 | 604,75 | |
| OSB Oberer Sonder- kanal- bereich Superband channels | S 11 | 230 ... 237 | 233,50 | 231,25 | 236,75 | | B V | 38 | 606 ... 614 | 610,00 | 607,25 | 612,75 |
| | S 12 | 237 ... 244 | 240,50 | 238,25 | 243,75 | | | 39 | 614 ... 622 | 618,00 | 615,25 | 620,75 |
| | S 13 | 244 ... 251 | 247,50 | 245,25 | 250,75 | | | 40 | 622 ... 630 | 626,00 | 623,25 | 628,75 |
| | S 14 | 251 ... 258 | 254,50 | 252,25 | 257,75 | | | 41 | 630 ... 638 | 634,00 | 631,25 | 636,75 |
| | S 15 | 258 ... 265 | 261,50 | 259,25 | 264,75 | | | 42 | 638 ... 646 | 642,00 | 639,25 | 644,75 |
| | S 16 | 265 ... 272 | 268,50 | 266,25 | 271,75 | | | 43 | 646 ... 654 | 650,00 | 647,25 | 652,75 |
| | S 17 | 272 ... 279 | 275,50 | 273,25 | 278,75 | | | 44 | 654 ... 662 | 658,00 | 655,25 | 660,75 |
| ESB Erweiterter Sonder- kanal- bereich Specialband channels | S 18 | 279 ... 286 | 282,50 | 280,25 | 285,75 | | | 45 | 662 ... 670 | 666,00 | 663,25 | 668,75 |
| | S 19 | 286 ... 293 | 289,50 | 287,25 | 292,75 | | | 46 | 670 ... 678 | 674,00 | 671,25 | 676,75 |
| | S 20 | 293 ... 300 | 296,50 | 294,25 | 299,75 | | | 47 | 678 ... 686 | 682,00 | 679,25 | 684,75 |
| | S 21 | 302 ... 310 | 306,00 | 303,25 | 308,75 | | | 48 | 686 ... 694 | 690,00 | 687,25 | 692,75 |
| | S 22 | 310 ... 318 | 314,00 | 311,25 | 316,75 | | | 49 | 694 ... 702 | 698,00 | 695,25 | 700,75 |
| | S 23 | 318 ... 326 | 322,00 | 319,25 | 324,75 | | | 50 | 702 ... 710 | 706,00 | 703,25 | 708,75 |
| | S 24 | 326 ... 334 | 330,00 | 327,25 | 332,75 | | | 51 | 710 ... 718 | 714,00 | 711,25 | 716,75 |
| S 25 | 334 ... 342 | 338,00 | 335,25 | 340,75 | 52 | | | 718 ... 726 | 722,00 | 719,25 | 724,75 | |
| S 26 | 342 ... 350 | 346,00 | 343,25 | 348,75 | 53 | | | 726 ... 734 | 730,00 | 727,25 | 732,75 | |
| S 27 | 350 ... 358 | 354,00 | 351,25 | 356,75 | 54 | | | 734 ... 742 | 738,00 | 735,25 | 740,75 | |
| S 28 | 358 ... 366 | 362,00 | 359,25 | 364,75 | 55 | | | 742 ... 750 | 746,00 | 743,25 | 748,75 | |
| S 29 | 366 ... 374 | 370,00 | 367,25 | 372,75 | 56 | | | 750 ... 758 | 754,00 | 751,25 | 756,75 | |
| S 30 | 374 ... 382 | 378,00 | 375,25 | 380,75 | 57 | | | 758 ... 766 | 762,00 | 759,25 | 764,75 | |
| S 31 | 382 ... 390 | 386,00 | 383,25 | 388,75 | 58 | 766 ... 774 | | 770,00 | 767,25 | 772,75 | | |
| S 32 | 390 ... 398 | 394,00 | 391,25 | 396,75 | 59 | 774 ... 782 | | 778,00 | 775,25 | 780,75 | | |
| S 33 | 398 ... 406 | 402,00 | 399,25 | 404,75 | 60 | 782 ... 790 | | 786,00 | 783,25 | 788,75 | | |
| S 34 | 406 ... 414 | 410,00 | 407,25 | 412,75 | 61 | 790 ... 798 | | 794,00 | 791,25 | 796,75 | | |
| S 35 | 414 ... 422 | 418,00 | 415,25 | 420,75 | 62 | 798 ... 806 | | 802,00 | 799,25 | 804,75 | | |
| S 36 | 422 ... 430 | 426,00 | 423,25 | 428,75 | 63 | 806 ... 814 | | 810,00 | 807,25 | 812,75 | | |
| S 37 | 430 ... 438 | 434,00 | 431,25 | 436,75 | 64 | 814 ... 822 | | 818,00 | 815,25 | 820,75 | | |
| S 38 | 438 ... 446 | 442,00 | 439,25 | 444,75 | 65 | 822 ... 830 | | 826,00 | 823,25 | 828,75 | | |
| S 39 | 446 ... 454 | 450,00 | 447,25 | 452,75 | 66 | 830 ... 838 | | 834,00 | 831,25 | 836,75 | | |
| S 40 | 454 ... 462 | 458,00 | 455,25 | 460,75 | 67 | 838 ... 846 | | 842,00 | 839,25 | 844,75 | | |
| S 41 | 462 ... 470 | 466,00 | 463,25 | 468,75 | 68 | 846 ... 854 | | 850,00 | 847,25 | 852,75 | | |
| | | | | | 69 | 854 ... 862 | | 858,00 | 855,25 | 860,75 | | |

DVB-T2 channels OTA would might interfere or we can integrate them into our network. So we should exactly skip these in our DVB-C channels – check local T2 frequencies please.

Chapter 5 Troubleshooting

Our ISO9001 quality assurance system has been approved by CQC organization. We guarantee the products' quality, reliability and stability. All of our products have been passed the testing and inspection before shipping out from factory. The testing and inspection scheme already covers all the Optical, Electronic and Mechanical criteria which have been published by us. To prevent potential hazard, please strictly follow the operational conditions.

Installation pre-conditions

- Installing the device at the place in which environment temperature between 0 to 45 °C
- Making sure good ventilation for the heat-sink on the rear panel and other heat-sink bores if necessary
- Checking the input AC voltage within the power supply working range and the connection is correct before switching on device
- Checking the RF output level varies within tolerant range if it is necessary
- Checking all signal cables have been properly connected
- Frequently switching on/off device is prohibited; the interval between every switching on/off must greater than 10 seconds.

Conditions need to unplug power cord

- Power cord or socket damaged.
- Any liquid flowed into device.
- Any stuff causes circuit short
- Device in damp environment
- Device was suffered from physical damage
- Long-time idle.
- After switching on and restoring to factory setting, device still cannot work properly.
- Maintenance needed

Chapter 6 Packing list

- | | |
|---|------|
| • HDC-5004 IP QAM Modulator | 1 pc |
| • User's Manual (check www.blankom.de -> Downloads) | 1 pc |
| • Power Cord, dep. on country | 1 pc |

Important Notes!

This manual is for use by qualified personnel only. Handling this device or system requires special electronic technical knowledge. To reduce the risk of electrical shock or damage to the equipment, do not perform any servicing other than the installation and operating instructions contained in this manual unless you are qualified to do so. This device operates in the given voltage and frequency range without requiring manual adjustment.

Do not open the top case w/o unplugged power source because serious injury or death may be the result! Inside are components under risk from electrostatic discharge. To avoid equipment damages do not touch these components or, observe the respective handling rules!

For continued protection against fire, the fuses may only be replaced by identical fuses with the same electrical specifications which are designed for the corresponding fuse positions.

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IRENIS GmbH provides this manual without warranty of any kind, neither implied nor expressed, this includes also any warranties regarding the merchantability and fitness for a particular purpose. IRENIS GmbH may improve this manual or make changes in the products described herein at any point of time.

Installation Notes

All types of the IRENIS-BLANKOM family are 19" devices with 1 RU height designed for installation in 19" racks. In addition to the front panel screws an internal module support is required at the rack.

Depending on the Frontend used and the operating adjustments, the SAT-RF-input ports carrying DC Voltage (13V /18V, max. 400 mA).

By connecting a mains cable, the device can become functional without any auxiliary appliances. The power supply units are designed for the wide range of 100-230V AC; a manual adjustment of the voltage is not necessary.

For some models the second power connector is feeding another independent power supply for internal redundancy. For a maximum of redundancy both power supplies should use different circuits.

All the outputs are decoupled from one another. Thus, the circuit does not have any effect on the functioning of the device. Connections that are not required need not to be terminated.

Suggestion: CAT 6E Ethernet cable for GbEthernet, DSTP (double shielded twisted pair) for the streaming ports

Note:

IPv4 global scope sessions use multicast addresses in the range 224.2.128.0 - 224.2.255.255 with SAP Announcements being sent to 224.2.127.254 Port 9875 (note that 224.2.127.255 is used by the obsolete SAPv0 and MUST NOT be used).

IPv4 administrative scope sessions using administratively scoped IP multicast. The multicast address to be used for announcements is the highest multicast address in the relevant administrative scope zone.

For example, if the scope range is 239.16.32.0 - 239.16.33.255, then 239.16.33.255 is used for SAP Announcements.

Sources:

http://www.etsi.org/deliver/etsi_en/300400_300499/300468/01.15.01_60/en_300468v011501p.pdf

<https://www.dvb.org/standards>

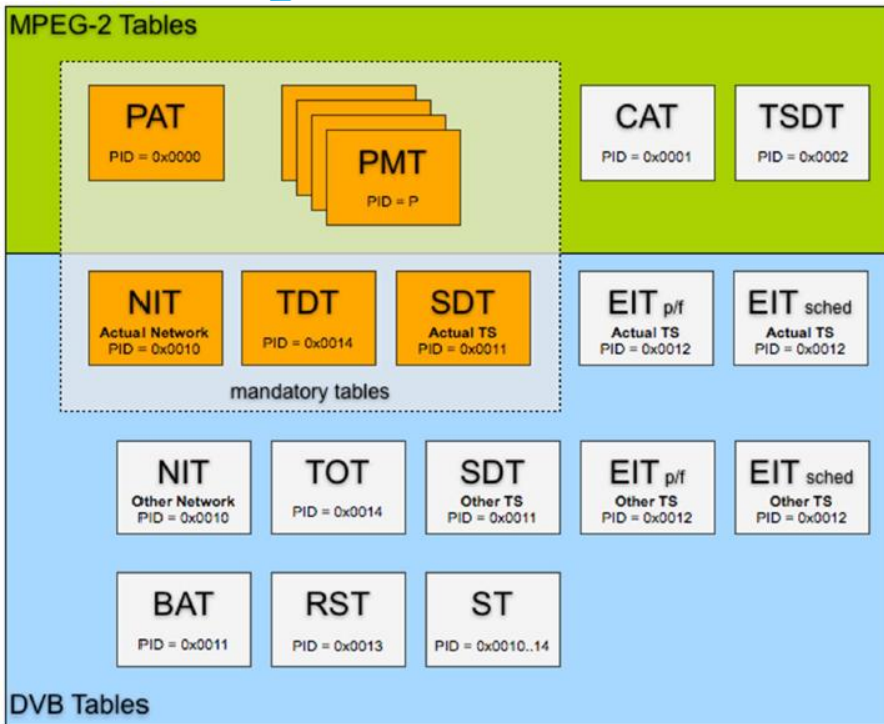


Table 1: PID allocation for SI

| Table | PID value |
|--|------------------|
| PAT | 0x0000 |
| CAT | 0x0001 |
| TSDT | 0x0002 |
| reserved | 0x0003 to 0x000F |
| NIT, ST | 0x0010 |
| SDT, BAT, ST | 0x0011 |
| EIT, ST, CIT (ETSI TS 102 323 [13]) | 0x0012 |
| RST, ST | 0x0013 |
| TDT, TOT, ST | 0x0014 |
| network synchronization | 0x0015 |
| RNT (ETSI TS 102 323 [13]) | 0x0016 |
| reserved for future use | 0x0017 to 0x001B |
| link-local inband signalling | 0x001C |
| measurement | 0x001D |
| DIT | 0x001E |
| SIT | 0x001F |

Appendix DB**Conversions of Power @ 75Ω / Umrechnungstabelle dBμV <-> dBm**

| dBmV | dBμV | dBm 75Ω | mV _{RMS} | mW 75Ω |
|------|------|---------|-------------------|---------|
| 8 | 68 | -40.75 | 2.51 | 8.4E-05 |
| 9 | 69 | -39.75 | 2.82 | 1.1E-04 |
| 10 | 70 | -38.75 | 3.16 | 1.3E-04 |
| 11 | 71 | -37.75 | 3.55 | 1.7E-04 |
| 12 | 72 | -36.75 | 3.98 | 2.1E-04 |
| 13 | 73 | -35.75 | 4.47 | 2.7E-04 |
| 14 | 74 | -34.75 | 5.01 | 3.3E-04 |
| 15 | 75 | -33.75 | 5.62 | 4.2E-04 |
| 16 | 76 | -32.75 | 6.31 | 5.3E-04 |
| 17 | 77 | -31.75 | 7.08 | 6.7E-04 |
| 18 | 78 | -30.75 | 7.94 | 8.4E-04 |
| 19 | 79 | -29.75 | 8.91 | 1.1E-03 |
| 20 | 80 | -28.75 | 10.00 | 1.3E-03 |
| 21 | 81 | -27.75 | 11.22 | 1.7E-03 |
| 22 | 82 | -26.75 | 12.59 | 2.1E-03 |
| 23 | 83 | -25.75 | 14.13 | 2.7E-03 |
| 24 | 84 | -24.75 | 15.85 | 3.3E-03 |
| 25 | 85 | -23.75 | 17.78 | 4.2E-03 |
| 26 | 86 | -22.75 | 19.95 | 5.3E-03 |
| 27 | 87 | -21.75 | 22.39 | 6.7E-03 |
| 28 | 88 | -20.75 | 25.12 | 8.4E-03 |
| 29 | 89 | -19.75 | 28.18 | 0.011 |
| 30 | 90 | -18.75 | 31.62 | 0.013 |
| 31 | 91 | -17.75 | 35.48 | 0.017 |
| 32 | 92 | -16.75 | 39.81 | 0.021 |
| 33 | 93 | -15.75 | 44.67 | 0.027 |
| 34 | 94 | -14.75 | 50.12 | 0.033 |
| 35 | 95 | -13.75 | 56.23 | 0.042 |
| 36 | 96 | -12.75 | 63.10 | 0.053 |

| dBmV | dB μ V | dBm 75 Ω | mV _{RMS} | mW 75 Ω |
|------|------------|-----------------|-------------------|----------------|
| 37 | 97 | -11.75 | 70.79 | 0.067 |
| 38 | 98 | -10.75 | 79.43 | 0.084 |
| 39 | 99 | -9.75 | 89.13 | 0.106 |
| 40 | 100 | -8.75 | 100.00 | 0.133 |
| 41 | 101 | -7.75 | 112.20 | 0.168 |
| 42 | 102 | -6.75 | 125.89 | 0.211 |
| 43 | 103 | -5.75 | 141.25 | 0.266 |
| 44 | 104 | -4.75 | 158.49 | 0.335 |
| 45 | 105 | -3.75 | 177.83 | 0.422 |
| 46 | 106 | -2.75 | 199.53 | 0.531 |
| 47 | 107 | -1.75 | 223.87 | 0.668 |
| 48 | 108 | -0.75 | 251.19 | 0.841 |
| 49 | 109 | 0.25 | 281.84 | 1.059 |
| 50 | 110 | 1.25 | 316.23 | 1.333 |
| 51 | 111 | 2.25 | 354.81 | 1.679 |
| 52 | 112 | 3.25 | 398.11 | 2.113 |
| 53 | 113 | 4.25 | 446.68 | 2.660 |
| 54 | 114 | 5.25 | 501.19 | 3.349 |
| 55 | 115 | 6.25 | 562.34 | 4.216 |
| 56 | 116 | 7.25 | 630.96 | 5.308 |
| 57 | 117 | 8.25 | 707.95 | 6.683 |
| 58 | 118 | 9.25 | 794.33 | 8.413 |
| 59 | 119 | 10.25 | 891.25 | 10.591 |
| 60 | 120 | 11.25 | 1000.00 | 13.333 |
| 61 | 121 | 12.25 | 1122.02 | 16.786 |
| 62 | 122 | 13.25 | 1258.93 | 21.132 |
| 63 | 123 | 14.25 | 1412.54 | 26.604 |
| 64 | 124 | 15.25 | 1584.89 | 33.492 |
| 65 | 125 | 16.25 | 1778.28 | 42.164 |
| 66 | 126 | 17.25 | 1995.26 | 53.081 |
| 67 | 127 | 18.25 | 2238.72 | 66.825 |
| 68 | 128 | 19.25 | 2511.89 | 84.128 |

Appendix A



Product Disposal

Warning! Ultimate disposal of this product should be handled according to all national laws and regulations.

製品の廃棄

この製品を廃棄処分する場合、国の関係する全ての法律・条例に従い処理する必要があります。

警告

本产品的废弃处理应根据所有国家的法律和规章进行。

警告

本產品的廢棄處理應根據所有國家的法律和規章進行。

Warnung

Die Entsorgung dieses Produkts sollte gemäß allen Bestimmungen und Gesetzen des Landes erfolgen.

¡Advertencia!

Al deshacerse por completo de este producto debe seguir todas las leyes y reglamentos nacionales.

Attention

La mise au rebut ou le recyclage de ce produit sont généralement soumis à des lois et/ou directives de respect de

סביבתנו

! אזהרה

סילוק מוצרי של חברתנו על ידי לקוחותינו ללא תשלום עלול לגרום נזק לסביבתנו.

l'environnement. Renseignez-vous auprès de l'organisme compétent.

عند التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقاً لجميع القوانين واللوائح الوطنية

경고!

이 제품은 해당 국가의 관련 법규 및 규정에 따라 폐기되어야 합니다.



Waarschuwing

De uiteindelijke verwijdering van dit product dient te geschieden in overeenstemming met alle nationale wetten en reglementen.


Safety instructions

Read the safety instructions carefully before assembling or commissioning the device and ensure that you comply with them


1. Installation


- **Danger:** The device may **only** be installed and started up by competent people (see EN 60065). 
- **Danger:** The device and the peripheral distribution devices must be earthed properly (potential equalization) in accordance with EN 60728-11 **before Commissioning** and remain earthed even when the device is dismantled.
- **Danger:** The device may not be installed on a flammable base (**risk of fire**).
- **Danger:** Only connect the device to a socket that is installed correctly and connected to devices that has an earth conductor (Depending on Model and Usage).
- **Danger:** Plan the assembly or installation location to ensure that children cannot play with the device and its connections. There is a risk of electric shock (**Danger of death**).
- **Danger:** Select an assembly or installation location in which fluids or objects cannot get into the device under any circumstances (e.g. condensation, water for watering plants, etc.).
- **Danger:** Ventilation slots and refrigeration units are important function elements on the devices. If devices have refrigeration units or ventilation slots, you must ensure that they are never covered or built over. Also ensure that there is sufficient air circulation around the device. This prevents possible damage to the device and the **risk of fire due** to overheating. Ensure a minimum of **clearance of 20cm** between the device and other objects.
- **Danger:** The assembly or installation location must allow all connected cables to be laid safely. Cables and power supply cables must not be damaged or crushed by any objects. Furthermore, ensure that cables are not laid in the immediate vicinity of sources of heat (e.g. radiators, other electrical devices, fireplaces, etc.) (**Risk of fire**), (**risk of electric shock danger of death**)
- **Danger:** In order to prevent damage to the device, as well as possible subsequent damage (**risk of fire**), devices intended for installation on the wall are only permitted to be installed on a level surface and not **above head height**.
- **Warning:** (Only for optical transmitters and their peripheral distribution devices) Never look directly or indirectly into the laser beam. Only connect the device to the power supply once all optical lines are connected securely. 
- **Warning:** The safety regulations in the relevant current standards EN 60728-11 and EN 60065 must be complied with.
- **Warning:** Comply with all applicable national safety regulations and standards.
- **Warning:** The device's mains plug must be easily accessible at all times.
- **Warning:** Follow all instructions in the device-specific operating manual

2. Operation


- **Danger:** The device is only permitted to be operated in dry rooms in a non-tropical climate. In damp rooms or outdoors, there is the risk of short circuits (**risk of fire**) or electric shock (**danger of death**).
- **Danger:** Do not insert any objects through the ventilation slot. Risk of electric shock (**danger of death**). 
- **Danger:** Do not put any containers filled with liquid (e.g. vases) on the device. There is a risk of electric shock (**danger of death**) or (**risk of fire**).
- **Danger:** No open sources of fire such as burning candles are permitted to be placed on the device (**risk of fire**).
- **Danger:** Ensure that there is a clearance of at least **20cm** around the device. The device ventilation is not permitted to be impaired by covering the
 - Ventilation openings with objects such as newspapers, tablecloths, curtains, etc. (**risk of fire**).
- **Warning:** Follow all instructions in the device-specific operating manual.

3. Maintenance

- **Danger:** Maintenance tasks must always be carried out by competent people (see EN 60065). 
- **Danger:** Do not carry out servicing work during thunderstorms. There is a risk of electric shock (**danger of death**).


- **Warning:** (Only for devices with batteries): **Risk of explosion if** the battery is replaced improperly. Only replace with the same type!
- **Warning:** Batteries must not be subjected to excessive heat such as sunlight, fire or similar (**risk of explosion**).
- **Warning:** Only use the manufacturer's accessories or accessories with identical technical properties.
- **Warning:** (For optical transmitters and their peripheral distribution devices) unplug the mains plug before dismantling the device. 

4. Repairs



- **Danger:** The device may only be opened by competent people (see EN 60065). Before opening the device, unplug the mains plug or disconnect the power supply; otherwise there is a danger of death! The device is only permitted to be connected to the power and operated when the mains adaptor cover is installed. 
This also applies when you clean the device or work on the connections.
- **Danger:** Repairs on the device may only be carried out by a specialist (**see EN 60065**) observing **the applicable VDE (German Association for Electrical, Electronic & Information Technologies) guidelines**.
- **Danger:** Only use components of the same type and with identical technical properties for the repair. Otherwise, there is a risk of electric shock (**danger of death**) and **risk of fire**.
- **Warning:** (For optical transmitters and their peripheral distribution devices) unplug the mains plug before dismantling the device.

If you have any queries regarding repairs, please contact our company service: E-mail: info@blankom.de, contact: www.blankom.de

5. Sale

- **Caution:** If the device is sold, these safety instructions and the operating manual for the relevant device must be handed over to the purchaser. 

6. Disposal

- **Caution:** Dispose of the device in accordance with the applicable environmental regulations. 
- **Caution:** Dispose of batteries (if present) in accordance with the applicable environmental regulations.
- Cartons and all pcs. of the packaging can be sent back to us for recycling for sustainable environment protection. 

Sicherheitshinweise



Sicherheitshinweise bitte vor Montage bzw. Inbetriebnahme des Gerätes sorgfältig lesen und befolgen.

Installation

Gefahr: Das Gerät darf ausschließlich von sachverständigen Personen (siehe EN 60065), installiert und in Betrieb genommen werden.

Gefahr: Das Gerät und/oder die Verteilperipherie muß vor Inbetriebnahme gemäß EN 60728-11 vorschriftsmäßig geerdet sein (Potentialausgleich) und bleiben, auch wenn das Gerät ausgebaut wird.

Gefahr: Das Gerät darf nicht auf brennbarem Untergrund montiert werden (Brandgefahr).

Gefahr: Schließen Sie das Gerät nur an eine vorschriftsmäßig installierte Steckdose mit Schutzleiter an.

Gefahr: Planen Sie den Montage - bzw. Aufstellungsort so, daß Kinder nicht am Gerät und dessen Anschlüssen spielen können.

Es droht Gefahr durch elektrischen Schlag (Lebensgefahr).

Gefahr: Wählen Sie einen Montage - bzw. Aufstellungsort, an dem unter keinen Umständen Flüssigkeiten oder Gegenstände in das Gerät gelangen können (z.B.

Kondenswasser, Gießwasser etc.).

Gefahr: Lüftungsschlitze und Kühlkörper sind wichtige Funktionselemente an den Geräten. Bei Geräten, die Kühlkörper oder Lüftungsschlitze haben, muß daher unbedingt darauf geachtet werden, daß diese keinesfalls abgedeckt oder zugebaut werden. Sorgen Sie außerdem für eine großzügig bemessene Luftzirkulation um das Gerät. Damit verhindern Sie mögliche Schäden am Gerät sowie Brandgefahr durch Überhitzung. Gewährleisten Sie einen Mindestabstand von 20cm um das Gerät zu anderen Gegenständen.

Gefahr: Der Montage- bzw. Aufstellort muß eine sichere Verlegung aller angeschlossenen Kabel zulassen. Stromversorgungskabel sowie Zuführungskabel dürfen nicht durch irgendwelche Gegenstände beschädigt oder gequetscht werden. Es ist darüber hinaus unbedingt darauf zu achten, daß Kabel nicht in die direkte Nähe von Wärmequellen verlegt werden (z.B. Heizkörper, andere Elektrogeräte, Kamin etc.) (Brandgefahr), (Gefahr durch elektrischen Schlag).

Gefahr: Um sowohl Beschädigungen am Gerät als auch mögliche Folgeschäden (Brandgefahr) zu vermeiden, dürfen für Wandmontage vorgesehene Geräte nur auf einer ebenen Grundfläche montiert werden und nicht über Kopf.

Warnung: (Nur für optische Sender sowie deren Verteilperipherie) Blicken Sie auf keinen Fall direkt oder indirekt in den Laserstrahl. Schließen Sie das Gerät erst an die

Stromversorgung an, wenn alle elektrischen und optischen Leitungen sicher verbunden sind.

Warnung: Die Sicherheitsbestimmungen der jeweils aktuellen Normen EN 60728-11 und EN 60065 sind zwingend einzuhalten.

Warnung: Befolgen Sie auch alle anwendbaren nationalen Sicherheitsvorschriften und Normen.

Warnung: Der Netzstecker des Gerätes muß jederzeit leicht erreichbar sein.

Warnung: Befolgen Sie alle Instruktionen in den gerätespezifischen Bedienungsanleitungen

Betrieb

Gefahr: Das Gerät darf nur in trockenen Räumen bei nicht tropischem Klima betrieben werden. In feuchten Räumen oder im Freien besteht die Gefahr von

Kurzschluß (Brandgefahr) oder elektrischen Schlag (Lebensgefahr).

Gefahr: Stecken Sie keine Gegenstände durch die Lüftungsschlitze. Gefahr durch elektrischen Schlag (Lebensgefahr).

Gefahr: Stellen Sie keine mit Flüssigkeit gefüllten Gefäße (wie z. B. Vasen) auf das Gerät. Es droht Gefahr durch elektrischen Schlag (Lebensgefahr) oder (Brandgefahr).

Gefahr: Es dürfen keine offenen Brandquellen, wie z. B. brennende Kerzen, auf das Gerät gestellt werden (Brandgefahr).

Gefahr: Sorgen Sie für einen Freiraum von mindestens 20cm um das Gerät. Die Belüftung des Gerätes darf nicht durch Abdecken der Belüftungsöffnungen mit

Gegenständen wie z. B. Zeitungen, Tischdecken, Gardinen usw. behindert werden (Brandgefahr).

Warnung: Befolgen Sie alle Instruktionen in der gerätespezifischen Bedienungsanleitung.

Wartung

Gefahr: Wartungsarbeiten sind stets von sachverständigen Personen (siehe EN 60065) vorzunehmen.

Gefahr: Keine Servicearbeiten bei Gewitter. Es droht Gefahr eines elektrischen Schlags (Lebensgefahr).

Warnung: (nur für Geräte mit Batterie): Explosionsgefahr bei unsachgemäßem Auswechseln der Batterie. Ersatz nur durch den gleichen Typ!

Warnung: Batterien dürfen nicht übermäßiger Wärme wie Sonnenschein, Feuer oder dergleichen ausgesetzt werden (Explosionsgefahr).

Warnung: Verwenden Sie nur das Zubehör des Herstellers oder Zubehör mit identischen technischen Eigenschaften.

Warnung: (Bei optischen Sendern sowie deren Verteilperipherie) ziehen Sie den Netzstecker bevor das Gerät ausgebaut wird.

Reparatur

Gefahr: Das Gerät darf nur durch sachverständige Personen (siehe EN 60065) geöffnet werden. Vor Öffnen des Gerätes Netzstecker ziehen

bzw. Stromzuführung entfernen, andernfalls besteht Lebensgefahr! Das Gerät darf nur mit montierter Netzteilabdeckung an Spannung angeschlossen und betrieben werden. Dies gilt auch, wenn Sie das Gerät reinigen oder an den Anschlüssen arbeiten.

Gefahr: Reparaturen am Gerät sind ausschließlich vom Fachmann (siehe EN 60065) unter Beachtung der geltenden VDE-Richtlinien durchzuführen.

Gefahr: Verwenden Sie nur Bauteile des gleichen Typs und mit identischen technischen Eigenschaften für die Reparatur, andernfalls droht Gefahr eines elektrischen Schlags (Lebensgefahr) und Brandgefahr.

Warnung: (Bei optischen Sendern sowie deren Verteilperipherie) ziehen Sie den Netzstecker bevor das Gerät ausgebaut wird.

Bei Fragen zur Reparatur wenden Sie sich an den IRENIS-Service:

E-Mail: info@blankom.de, Kontakt: www.blankom.de

Verkauf

Vorsicht: Im Falle eines Verkaufs müssen diese Sicherheitshinweise und die Bedienungsanleitung des entsprechenden Gerätes dem Käufer ausgehändigt werden.

Entsorgung

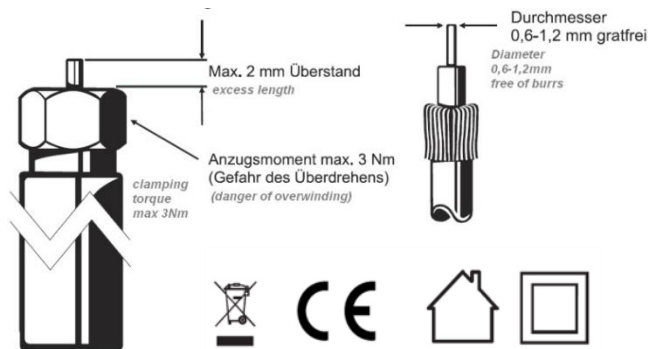
Vorsicht: Entsorgen Sie das Gerät entsprechend den geltenden umweltrechtlichen Bestimmungen. Elektrische und elektronische Geräte dürfen nicht in den Hausmüll!

Vorsicht: Entsorgen Sie Batterien (falls vorhanden), entsprechend den geltenden umweltrechtlichen Bestimmungen.

Verpackungen können an uns zurückgeschickt werden. Wir kümmern uns um Recycling und/oder fachgerechte Entsorgung.

Installation guide for F-connectors:

/ Installationshinweis für den F-Anschluß:



SAT: Die LNB-Anschlüsse sind meist entsprechend gekennzeichnet

The LNC –connectors at Multiswitches are almost marked as:

HH= Horizontal High-Band

HL = Horizontal Low-Band = LH

VL = Vertical Low-Band = LV

VH= Vertical High-Band = HV

Elektronische Geräte gehören nicht in den Hausmüll, sondern müssen - gemäß Richtlinie 2002/96/EG DES EUROPÄISCHEN PARLAMENTS UND DES RATES vom 27. Januar 2003 über Elektro- und Elektronik-Altgeräte fachgerecht entsorgt werden.

Bitte geben Sie dieses Gerät am Ende seiner Verwendung zur Entsorgung an den dafür vorgesehenen öffentlichen Sammelstellen ab.

Electronic equipment is not household waste - in accordance with directive 2002/96/EC OF THE EUROPEAN PARLIAMENT AND THE COUNCIL dated 27th January 2003 on used electrical and electronic equipment, it must be disposed of properly.

At the end of its service life, take this unit for disposal to an appropriate official collection point

Zur Beachtung / Important notes:

- Auf das Netzgerät dürfen keine mit Flüssigkeit gefüllten Gegenstände gestellt werden.
- *No liquid-filled items may be placed on top of the power supply unit.*
- Das Netzgerät darf nicht Tropf- oder Spritzwasser ausgesetzt sein.
- *The power supply unit must not be exposed to dripping or splashing water.*
- Der Netzstecker muss ohne Schwierigkeiten zugänglich und benutzbar sein.
- *The mains plug must be easily accessible and operable.*
- Das Gerät kann nur durch Ziehen des Netzsteckers vom Netz getrennt werden.
- *The only reliable method of disconnecting the unit from the mains is to unplug it.*
- Bei größerem Durchmesser des Kabel- Innenleiters als 1,2 mm bzw. Grat können die Gerätebuchsen zerstört werden.
- *If the inner cable conductor diameter is greater than 1.2 mm or in case of burr, the device sockets may be destroyed.*

Bitte installieren Sie die Anschlüsse gemäß dem Aufdruck

Please install according to the sticker on the Multiswitch

Hinweis: Elektrische Installationen sollten nur durch geschultes Fachpersonal vorgenommen werden!

Note: Electrical installations should only be done by well-educated and skilled technicians!

Contact:

IRENIS GmbH

Hauptstr. 29

31171 Nordstemmen- Germany

Phone: +49 5069 4809781

Managing Director: Dipl.Ing. Murad ÖnoI

Commercial Register: HRB 206370 / District Court Hildesheim



Web: www.blankom.de E-Mail: contact@blankom.de

...Setting Signals

Addon-manual for the new HDC-5008:

with DVB-T Modulator (basically all is the same except the output modulator settings are different.



| System Information | |
|---------------------|-------------------------------------|
| Software Version: | 17.01.22 Build 272.00 Jan 20 2026 |
| Hardware Version: | 01.01.12 Build Oct 26 2023 |
| MCU Version: | 0.14 |
| Web Version: | 1.56 |
| System Version: | 1.20.2.51 |
| Product ID: | 00330800-00000010-00000000-00000000 |
| Serial Number: | |
| Manufacturing Date: | |
| Temperature: | 49.59 Degree Celsius |
| VccInt: | 1029.05 mV |
| VccAux: | 1785.64 mV |
| VccBRam: | 1029.05 mV |
| Uptime: | 0 Day-00:20:49 |

This status picture is needed every time you'll need support from us! And the Firmware versions

screenshot is almost helpful also.

So we first do the network settings:

Please note that the 4 DATA-ports should not be in the same subnet like the NMS management port.

| NETWORK | | | | | |
|--------------------------------------|---|--|--|--|---|
| NMS | | | | | |
| NMS IP Address: | <input type="text" value="192.168.0.136"/> | | | | |
| NMS Subnet Mask: | <input type="text" value="255.255.255.0"/> | | | | |
| Web Manage Port: | <input type="text" value="80"/> | | | | |
| Gateway: | <input type="text" value="192.168.0.1"/> | | | | |
| MAC Address: | <input type="text" value="26:45:32:5a:01:72"/> | | | | |
| <input type="button" value="Apply"/> | | | | | |
| DATA | | | | | |
| Data1: | <input type="text" value="IP Address:192.168.2.136"/> | <input type="text" value="Subnet Mask:255.255.255.0"/> | <input type="text" value="Gateway:192.168.2.1"/> | <input type="text" value="MAC Address:26:55:32:5a:01:73"/> | <input type="checkbox"/> Priority: Electrical <input type="button" value="Apply"/> |
| Data2: | <input type="text" value="IP Address:192.168.2.146"/> | <input type="text" value="Subnet Mask:255.255.255.0"/> | <input type="text" value="Gateway:192.168.2.1"/> | <input type="text" value="MAC Address:26:55:32:5a:01:74"/> | <input type="checkbox"/> Priority: Electrical <input type="button" value="Apply"/> |
| Data3: | <input type="text" value="IP Address:192.168.2.156"/> | <input type="text" value="Subnet Mask:255.255.255.0"/> | <input type="text" value="Gateway:192.168.2.1"/> | <input type="text" value="MAC Address:26:55:32:5a:01:75"/> | <input type="checkbox"/> Priority: Electrical <input type="button" value="Apply"/> |
| Data4: | <input type="text" value="IP Address:192.168.2.166"/> | <input type="text" value="Subnet Mask:255.255.255.0"/> | <input type="text" value="Gateway:192.168.2.1"/> | <input type="text" value="MAC Address:26:55:32:5a:01:76"/> | <input type="checkbox"/> Priority: Electrical <input type="button" value="Apply"/> |

You can select the 4 SFP input (Fibre) or 4 RJ45 GbEthernet or only one of them ;-)

DATE | TIME

1970-01-01 01:28:47

Timezone: (GMT+01:00) Amsterdam, Berlin, Bern, Rome, ...

NTP Server 1:

NTP Server 2:

NTP Server 3:

NTP Server 4:

NTP Server 5:

Date-Time should be used to later on insert the Time and date table into the multiplexes.

CONFIGURATION

When you change settings, you should save the configuration once done. Otherwise, the new configuration will be lost after reboot.

It is always a good idea to

- Write your IP addresses down somewhere or also
- your changed username and password

- and save the settings periodically after you have done some changes

TS CONFIG

Output TS 1 - Stream Select General PID PASSTHRU

- Data 1: 3.0 / 3.0 / 7.4 Mbps
- Data 2: 0.0 / 0.0 / 0.0 Mbps
- Data 3: 0.0 / 0.0 / 0.0 Mbps
- Data 4: 0.0 / 0.0 / 0.0 Mbps

add input channel

| | | |
|------------------------------------|------------|---|
| CH1_ASI 1 (prog: 0) | [0.0/0.0M] | |
| CH2_ASI 2 (prog: 0) | [0.0/0.0M] | |
| CH3_ASI 3 (prog: 0) | [0.0/0.0M] | <input checked="" type="checkbox"/> CA Filter |
| CH4_ASI 4 (prog: 0) | [0.0/0.0M] | <input checked="" type="checkbox"/> PID Remap |
| CH5_ASI 5 (prog: 0) | [0.0/0.0M] | Refresh Input |
| CH6_ASI 6 (prog: 0) | [0.0/0.0M] | Refresh Output |
| CH7_USB (prog: 0) | [0.0/0.0M] | ====> |
| CH8_Data1_238.0.0.1:1234 (prog: 0) | [3.9/3.9M] | <==== |

Normal → Overflow
→ Output TS 1 (prog: 0)

Parse program time out: 60 seconds

Add a stream input (UDP or RTP):

BLANKOM®

Summary

- ▶ Status

Monitor

- ▶ Input Status
- ▶ Output Status

Parameters

- ▶ TS Config
- ▶ Modulator
- ▶ IP/ASI Output
- ▶ USB Media

System

- ▶ Network
- ▶ Password
- ▶ Configuration
- ▶ Firmware
- ▶ Date | Time
- ▶ Log
- ▶ Reboot

TS CONFIG

Output TS 1 - Stream Select General PID PASSTHRU

Input IP Stream Config. [close]

Data Interface: Data1

Unicast:

IP Address: 238.0.0.1

Step IP: 1

IP Address End: 224.2.2.255

Port: 1234

Step: 1

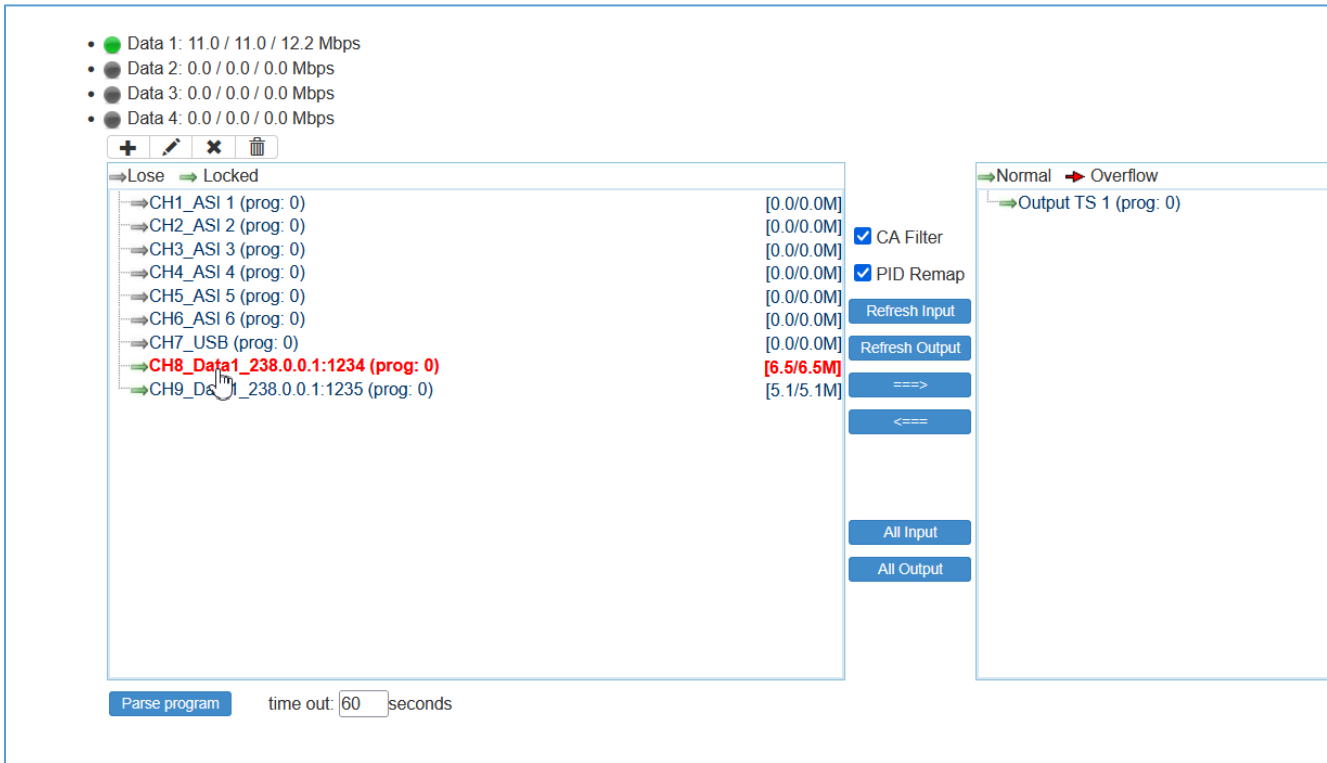
End Port: 1032

IGMP Snooping: V2

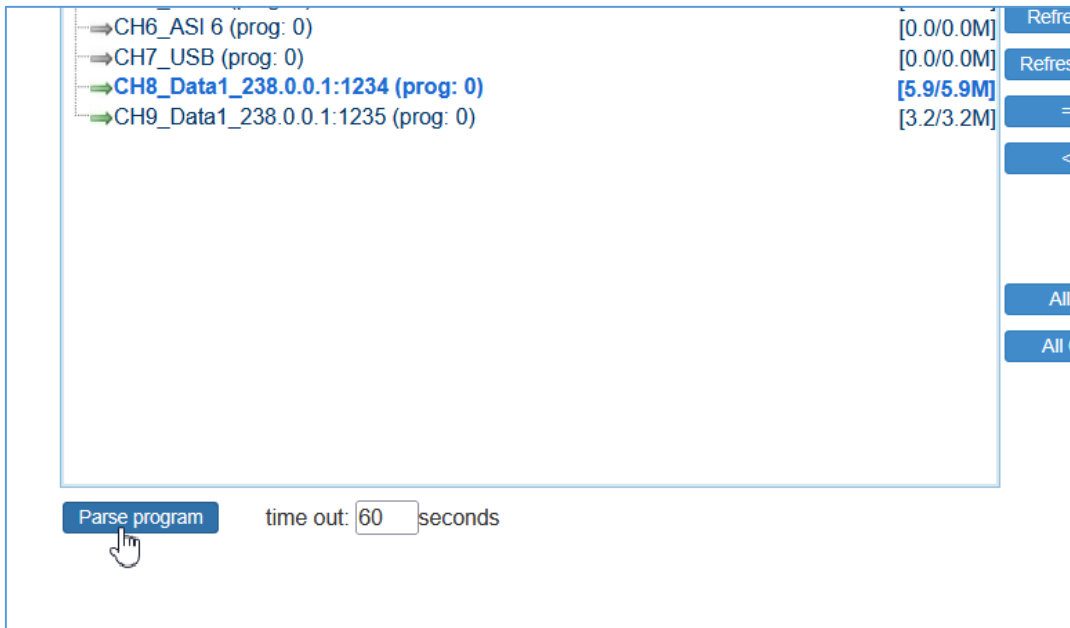
Protocol: UDP

Add Close

You'll get some values if successful:



Guess we did a mistake... (Importing streams from same IP Address but different ports... IGMP will refuse its proper function...)



Nevertheless, every time when you add a new stream or ASI or USB input, you need to PARSE its content

- Data 1: 7.0 / 7.0 / 9.4 Mbps
- Data 2: 0.0 / 0.0 / 0.0 Mbps
- Data 3: 0.0 / 0.0 / 0.0 Mbps
- Data 4: 0.0 / 0.0 / 0.0 Mbps

CA Filter
 PID Remap
 Refresh Input
 Refresh Output
 ==>>
 <<==
 All Input
 All Output

Parse program time out: 60 seconds

You need to check the PID-values because double ones need a PID remapping to avoid multiplexer collisions! See above, we have 2 times the same – so we need to change that.

- Data 1: 7.0 / 7.0 / 9.4 Mbps
- Data 2: 0.0 / 0.0 / 0.0 Mbps
- Data 3: 0.0 / 0.0 / 0.0 Mbps
- Data 4: 0.0 / 0.0 / 0.0 Mbps

CA Filter
 PID Remap
 Refresh Input
 Refresh Output
 ==>>
 <<==
 All Input
 All Output

Parse program time out: 60 seconds

A Problem if both input streams are using the same DVB-Table PID's and values:
 The internal mux cannot separate them, so your source streams must have different names, PIDs and so on:

We are using here 2 Streams from the same SDI-encoder-streamer and modify their values:

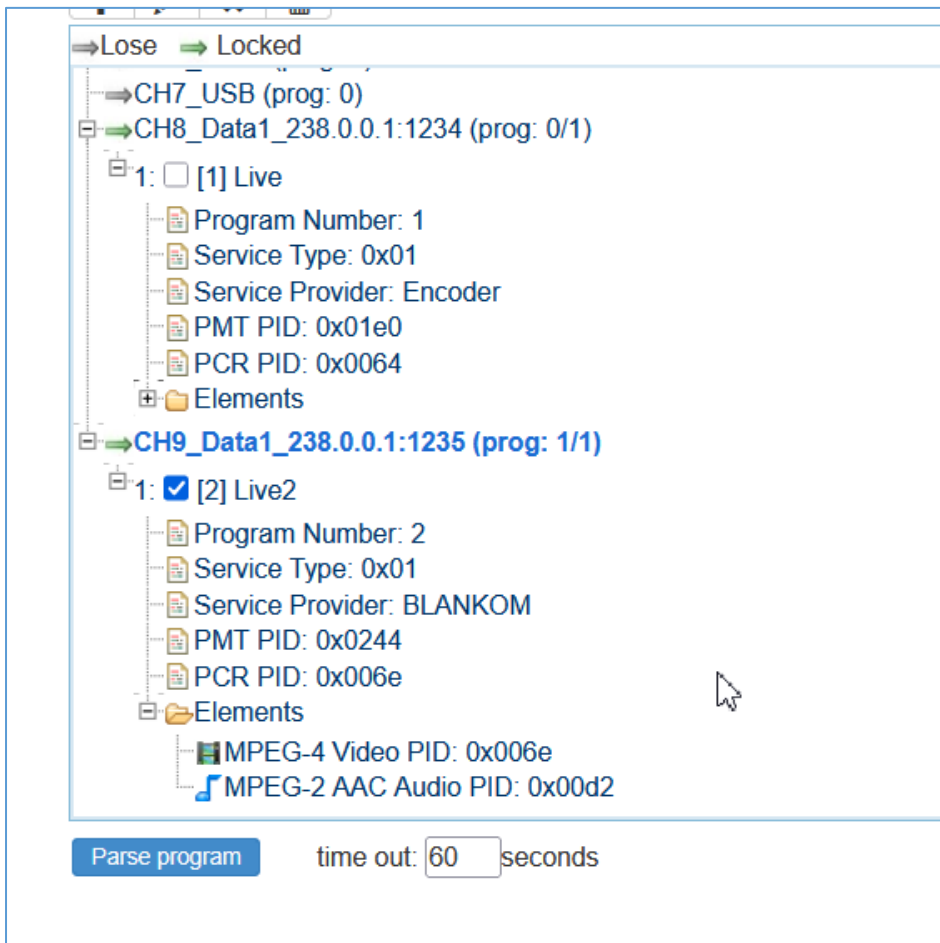
BLANKOM
H.265
HEVC

🏠 Status
Encoder
Main Stream
Sub Stream 1
Sub Stream 2
Sub Stream 3
Video Settings
Audio Settings
OSD
System

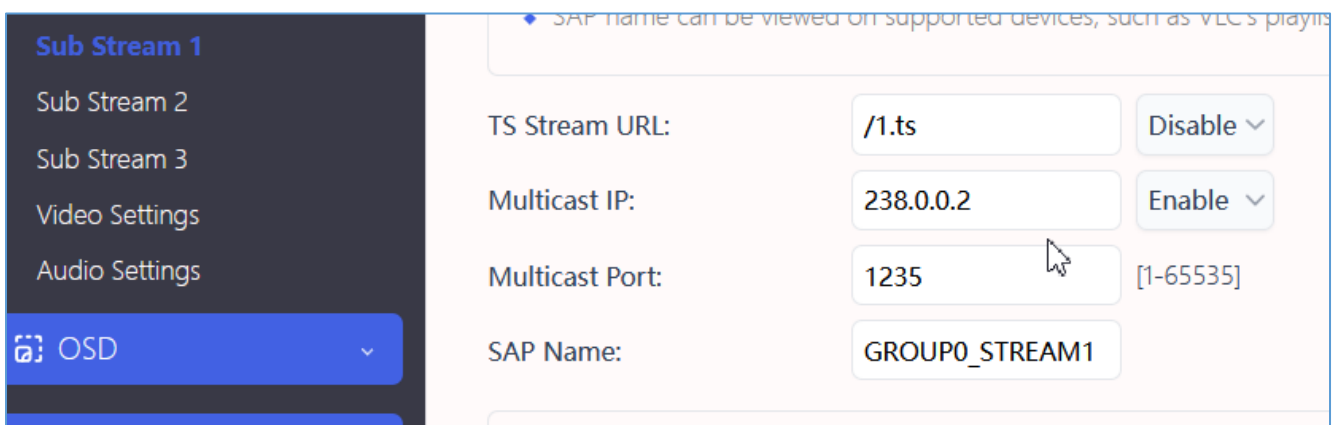
| Encoding | TS/Multicast | RTSP | RTMP |
|---|---|----------------------|------|
| <ul style="list-style-type: none"> ◆ Multicast address can also accept broadcast or unicast addresses, the system will a ◆ If VLC cannot play multicast, check if your computer has multiple network adapters ◆ SAP name can be viewed on supported devices, such as VLC's playlist -> Local Ne | | | |
| TS Stream URL: | <input type="text" value="/1.ts"/> | Disable ▾ | |
| Multicast IP: | <input type="text" value="238.0.0.1"/> | Enable ▾ | |
| Multicast Port: | <input type="text" value="1235"/> | [1-65535] | |
| SAP Name: | <input type="text" value="GROUP0_STREAM1"/> | | |
| <ul style="list-style-type: none"> ◆ TS advanced settings generally don't need adjustment. ◆ When connecting to IPTV systems, TS null packets should be adjusted to 1.3x, the <li style="padding-left: 20px;">This setting only applies to "Strong CBR" mode. | | | |
| TS Video PID: | <input type="text" value="110"/> | [16-8190] | |
| TS Audio PID: | <input type="text" value="210"/> | [16-8190] | |
| TS Transport Stream ID: | <input type="text" value="102"/> | [1-65535] | |
| TS Original Network ID: | <input type="text" value="65281"/> | [1-65535] | |
| TS PMT Start PID: | <input type="text" value="580"/> | [16-7936] | |
| TS Start PID: | <input type="text" value="581"/> | [32-3840] | |
| TS Tables Version: | <input type="text" value="6"/> | [0-31] | |
| TS Service ID: | <input type="text" value="2"/> | [1-65535] | |
| TS Service Name: | <input type="text" value="Live2"/> | | |
| TS Provider Name: | <input type="text" value="BLANKOM"/> | | |
| TS PCR Period (ms): | <input type="text" value="0"/> | [0-100](0=automatic) | |
| Conform to System B (DVB): | Disable ▾ | | |
| TS Null Packets: | No insert ▾ | | |
| TS TDT: | Disable ▾ | | |
| Save | | | |

Of course it needs a new parsing:

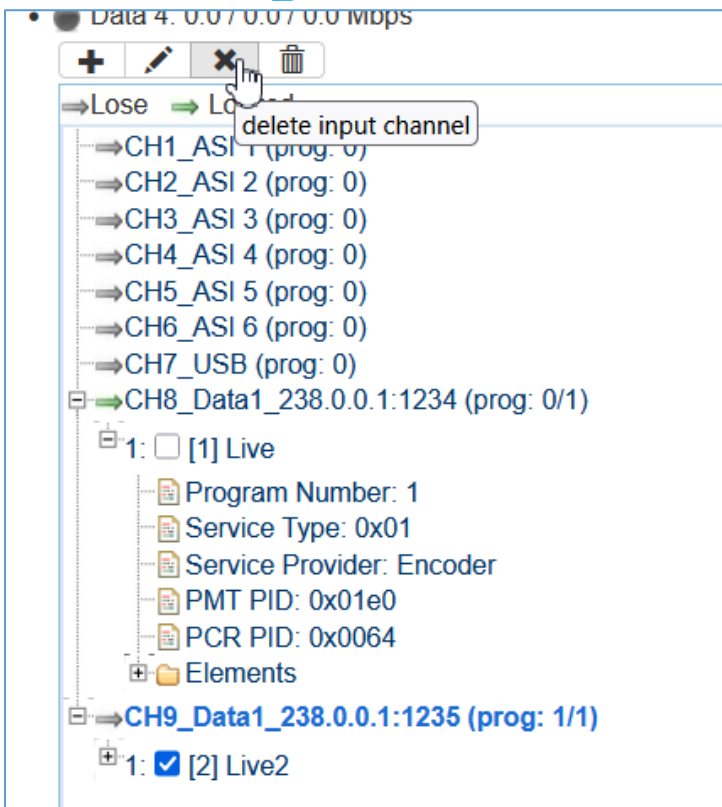
And e' Voila:



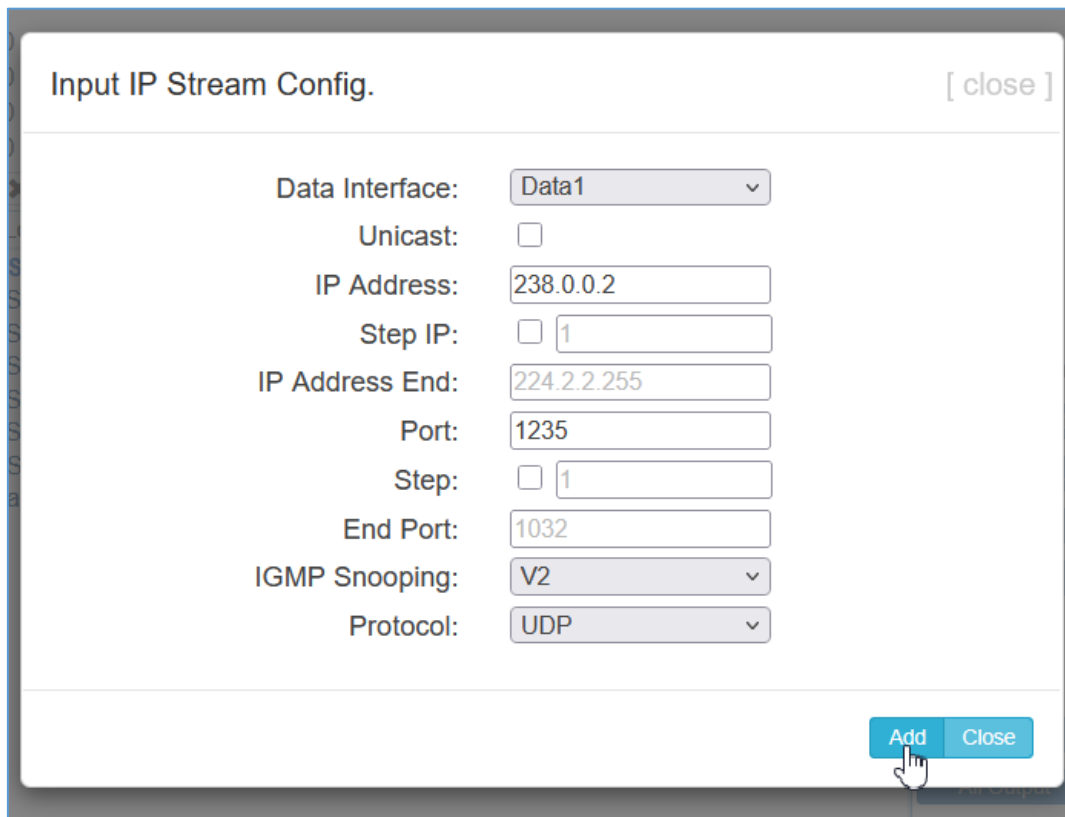
But another issue: The UDP Address is the same and the Port number is different – so IGMP would not work. We need 2 input streams with different Address.



Now we must delete the former stream from the listing:



Create the IP-Input by start again and do **parsing**:



- Data 1: 10.0 / 10.0 / 7.2 Mbps
- Data 2: 0.0 / 0.0 / 0.0 Mbps
- Data 3: 0.0 / 0.0 / 0.0 Mbps
- Data 4: 0.0 / 0.0 / 0.0 Mbps

+ ✎ ✕ 🗑️
 ↳ Lose ↳ Locked

| Channel | Rate | Buttons |
|--------------------------------------|------------|---|
| CH1_ASI 1 (prog: 0) | [0.0/0.0M] | <input type="checkbox"/> CA Filter <input type="checkbox"/> PID Remap Refresh Input Refresh Output ⇌ ⇐ All Input All Output |
| CH2_ASI 2 (prog: 0) | [0.0/0.0M] | |
| CH3_ASI 3 (prog: 0) | [0.0/0.0M] | |
| CH4_ASI 4 (prog: 0) | [0.0/0.0M] | |
| CH5_ASI 5 (prog: 0) | [0.0/0.0M] | |
| CH6_ASI 6 (prog: 0) | [0.0/0.0M] | |
| CH7_USB (prog: 0) | [0.0/0.0M] | |
| CH8_Data1_238.0.0.1:1234 (prog: 0/1) | [5.7/5.7M] | <input checked="" type="checkbox"/> [1] Live <input checked="" type="checkbox"/> [2] Live2 Program Number: 2 Service Type: 0x01 Service Provider: BLANKOM PMT PID: 0x0244 PCR PID: 0x006e Elements MPEG-4 Video PID: 0x006e MPEG-2 AAC Audio PID: 0x00d2 |
| CH9_Data1_238.0.0.2:1235 (prog: 0/1) | [5.6/5.6M] | |

Parse program time out: 60 seconds

So we are ready to push them to the multiplexer output of TS1 of 8.
 Now path this to the mux-site:

+ ✎ ✕ 🗑️
 ↳ Lose ↳ Locked

| Channel | Rate | Buttons |
|--------------------------------------|------------|--|
| CH1_ASI 1 (prog: 0) | [0.0/0.0M] | <input type="checkbox"/> CA Filter <input type="checkbox"/> PID Remap Refresh Input Refresh Output ⇌ ⇐ All Input All Output |
| CH2_ASI 2 (prog: 0) | [0.0/0.0M] | |
| CH3_ASI 3 (prog: 0) | [0.0/0.0M] | |
| CH4_ASI 4 (prog: 0) | [0.0/0.0M] | |
| CH5_ASI 5 (prog: 0) | [0.0/0.0M] | |
| CH6_ASI 6 (prog: 0) | [0.0/0.0M] | |
| CH7_USB (prog: 0) | [0.0/0.0M] | |
| CH8_Data1_238.0.0.1:1234 (prog: 1/1) | [5.8/5.8M] | <input type="checkbox"/> [2] Live2 Program Number: 2 Service Type: 0x01 Service Provider: BLANKOM PMT PID: 0x0244 PCR PID: 0x006e Elements |
| CH9_Data1_238.0.0.2:1235 (prog: 1/1) | [3.3/3.3M] | |

↳ Normal ↳ Overflow
 ↳ Output TS 1 (prog: 2)

- 1: Live2 <= CH9_Data1_238.0.0.2:1235 [2]
 - Program Number: 2
 - Logic Channel Number: 1
 - Service Type: 0x01
 - Service Provider: BLANKOM
 - PMT PID: 0x0244
 - PCR PID: 0x006e
 - Elements
- 2: Live <= CH8_Data1_238.0.0.1:1234 [1]
 - Program Number: 1
 - Logic Channel Number: 2
 - Service Type: 0x01
 - Service Provider: Encoder
 - PMT PID: 0x01e0
 - PCR PID: 0x0064
 - Elements

Parse program time out: 60 seconds

And we have both and did not need to do the PID-remapping because they were already different from the source. **Time to save the config again.**

Output Settings:

MODULATOR

Center Frequency: 678.000 MHz Standard: DVBT
 Level(All Carriers): 0.0 dBm Channel Info.(Alarm/Active/Total): 0/8/8
 Guard Interval: 1/32 Constellation: 64QAM
 BandWidth: 8M FFT Mode: 2K
 Code Rate: 7/8

| # | Frequency | Gain offset | Status | Bit(Act/Max) |
|---|-------------|-------------|--------|--------------|
| 1 | 650.000 MHz | 0.0 dB | ● | 9.5/31.7 M |
| 2 | 658.000 MHz | 0.0 dB | ● | 0.0/31.7 M |
| 3 | 666.000 MHz | 0.0 dB | ● | 0.0/31.7 M |
| 4 | 674.000 MHz | 0.0 dB | ● | 0.0/31.7 M |
| 5 | 682.000 MHz | 0.0 dB | ● | 0.0/31.7 M |
| 6 | 690.000 MHz | 0.0 dB | ● | 0.0/31.7 M |
| 7 | 698.000 MHz | 0.0 dB | ● | 0.0/31.7 M |
| 8 | 706.000 MHz | 0.0 dB | ● | 0.0/31.7 M |

Channel 1 Config. [close]

Level(All Carriers): (-20 ~ +10 dBm)

Channel Enable:

Frequency: (50 ~ 960 MHz)

Gain offset: (-10 ~ 0 dB)

The default settings are showing the max. Data rate of 31.7 Mb/s capacity in one DVB-T channel-Mux.

You can keep those COFDM-Modulator settings (set to maximum), but if you need to go over Air, you should decrease FEC, increase FFT-Mode from 2K carrier to better robust 8K carrier but your total data rate per channel will also decrease.

You can set the common levels for all increase +10dBm or attenuate by -20dBm maximum. The single channels can be adjusted by the GAIN offset value to the common levels.

IP ASI out:

| # | IP Address | Port | Protocol | Pkt Length | Null PKT Filter | Data1 | Status | Bit(Act/Max) | |
|---|------------|------|----------|------------|--------------------------|--------------------------|--------|--------------|--|
| 1 | 224.2.2.2 | 2000 | UDP | 7 | <input type="checkbox"/> | <input type="checkbox"/> | ● | 8.1/31.7 M | |
| 2 | 224.2.2.2 | 2002 | UDP | 7 | <input type="checkbox"/> | <input type="checkbox"/> | ● | 0.0/31.7 M | |
| 3 | 224.2.2.2 | 2004 | UDP | 7 | <input type="checkbox"/> | <input type="checkbox"/> | ● | 0.0/31.7 M | |
| 4 | 224.2.2.2 | 2006 | UDP | 7 | <input type="checkbox"/> | <input type="checkbox"/> | ● | 0.0/31.7 M | |
| 5 | 224.2.2.2 | 2008 | UDP | 7 | <input type="checkbox"/> | <input type="checkbox"/> | ● | 0.0/31.7 M | |
| 6 | 224.2.2.2 | 2010 | UDP | 7 | <input type="checkbox"/> | <input type="checkbox"/> | ● | 0.0/31.7 M | |
| 7 | 224.2.2.2 | 2012 | UDP | 7 | <input type="checkbox"/> | <input type="checkbox"/> | ● | 0.0/31.7 M | |
| 8 | 224.2.2.2 | 2014 | UDP | 7 | <input type="checkbox"/> | <input type="checkbox"/> | ● | 0.0/31.7 M | |

First of all if you want to stream either MPTS or the SPTS streams, you should change the default settings of UDP/RTP Addresses: (RTP ports should be > 5000 and only even numbers- 5004 5006...)

We start here with UDP mode 225.1.1.1:20001 and increase by 1 each:

Set the Null-Pkt-Filter to ON if you do not want to stream the Mux output including them (PID8191dec) filled up to the max. TS datarate and occupies Network bandwidth.

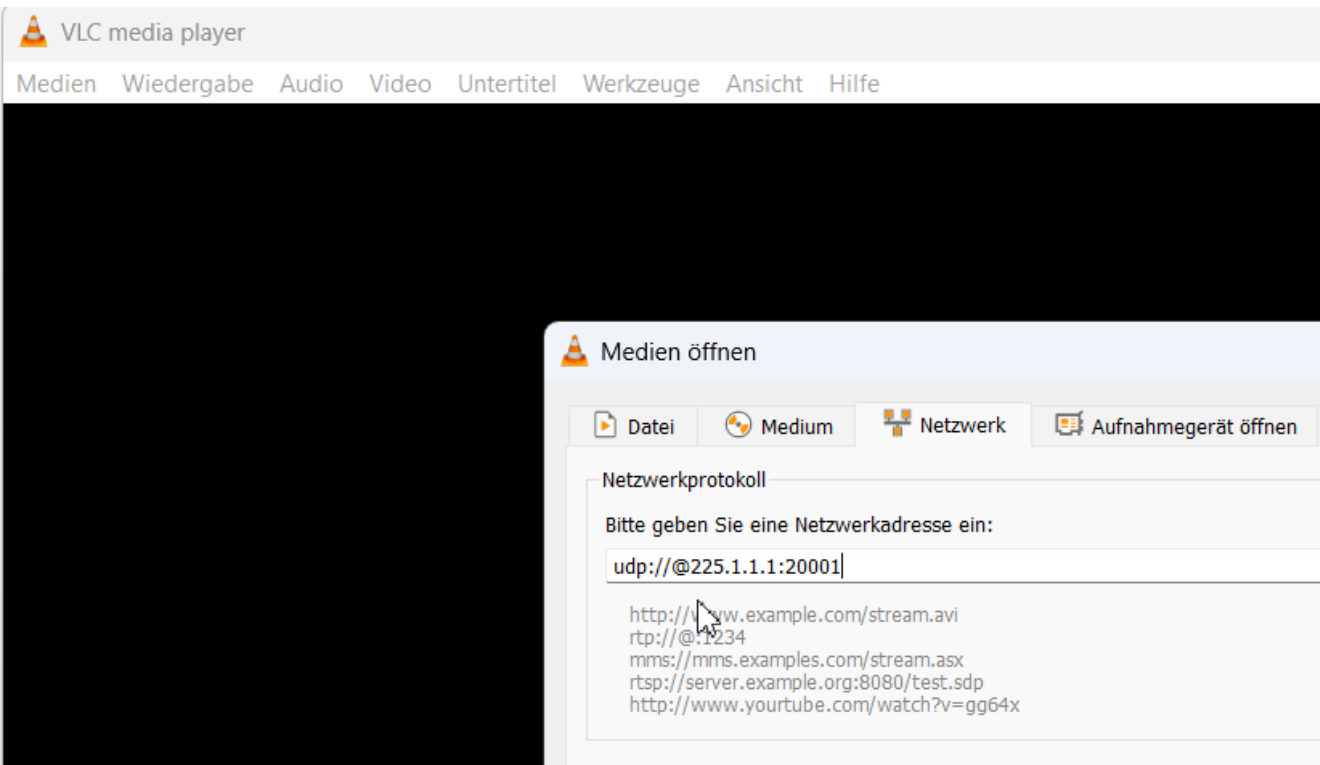
This automatic STEPS works only for the ports, so we need to change the IP output addresses accordingly and manually 8 times:

IP Output

Channel Info.(Alarm/Active/Total): 0/8/8

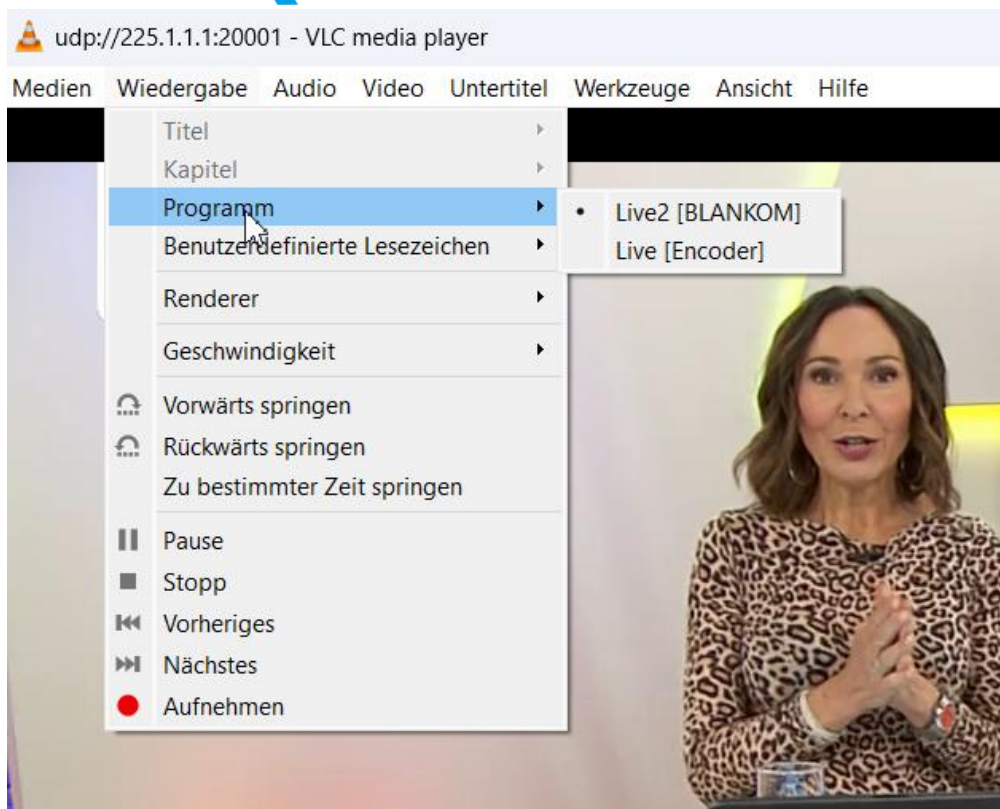
| # | IP Address | Port | Protocol | Pkt Length | Null PKT Filter | Data1 | Status | Bit(Act/Max) | |
|---|------------|-------|----------|------------|-------------------------------------|-------------------------------------|--------|--------------|--|
| 1 | 225.1.1.1 | 20001 | UDP | 7 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | ● | 8.2/31.7 M | |
| 2 | 225.1.1.2 | 20002 | UDP | 7 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | ● | 0.0/31.7 M | |
| 3 | 225.1.1.3 | 20003 | UDP | 7 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | ● | 0.0/31.7 M | |
| 4 | 225.1.1.4 | 20004 | UDP | 7 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | ● | 0.0/31.7 M | |
| 5 | 225.1.1.5 | 20005 | UDP | 7 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | ● | 0.0/31.7 M | |
| 6 | 225.1.1.6 | 20006 | UDP | 7 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | ● | 0.0/31.7 M | |
| 7 | 225.1.1.7 | 20007 | UDP | 7 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | ● | 0.0/31.7 M | |
| 8 | 225.1.1.8 | 20008 | UDP | 7 | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | ● | 0.0/31.7 M | |

So we can check that now:



GOT it:

2 Services in the multiplex:



If you need to check the DVB-Tables and modify them we recommend to use an analyser like Dek



Tec Fantasi.

The DVB-Tables can be modified here:

TS CONFIG

Output TS 1 - Stream Select **General** PID PASSTHRU

Stream

| | | | |
|----------------------|-------------------------------------|----------------------|-------------------------------------|
| Output Mode: | Mux out | PAT Insert: | <input checked="" type="checkbox"/> |
| SDT Insert: | <input checked="" type="checkbox"/> | BAT Insert: | <input checked="" type="checkbox"/> |
| Share BAT: | <input type="checkbox"/> | CAT Insert: | <input checked="" type="checkbox"/> |
| PMT Insert: | <input checked="" type="checkbox"/> | Fixed Table Version: | <input type="checkbox"/> |
| TS ID: | 1 | ON ID: | 1 |
| PCR Correct: | <input checked="" type="checkbox"/> | PCR Mode: | 2 |
| Update Program Type: | Update by index | Character Encoding: | NORMAL |
| IGMP Interval: | 5 s(5-120) | | |

NIT

| | | | |
|---------------|----------|-----------------|-----------|
| NIT Insert: | Disable | Share NIT: | Disable |
| Network Name: | Disable | Version Mode: | Automatic |
| LCN Mode: | From Web | Version Number: | 1 (0-31) |

TDT/TOT

| | | | |
|-----------------|--|------------------------|---------|
| TDT/TOT Insert: | | TOT Descriptor Insert: | disable |
|-----------------|--|------------------------|---------|

IPTV Sync(SPTS)

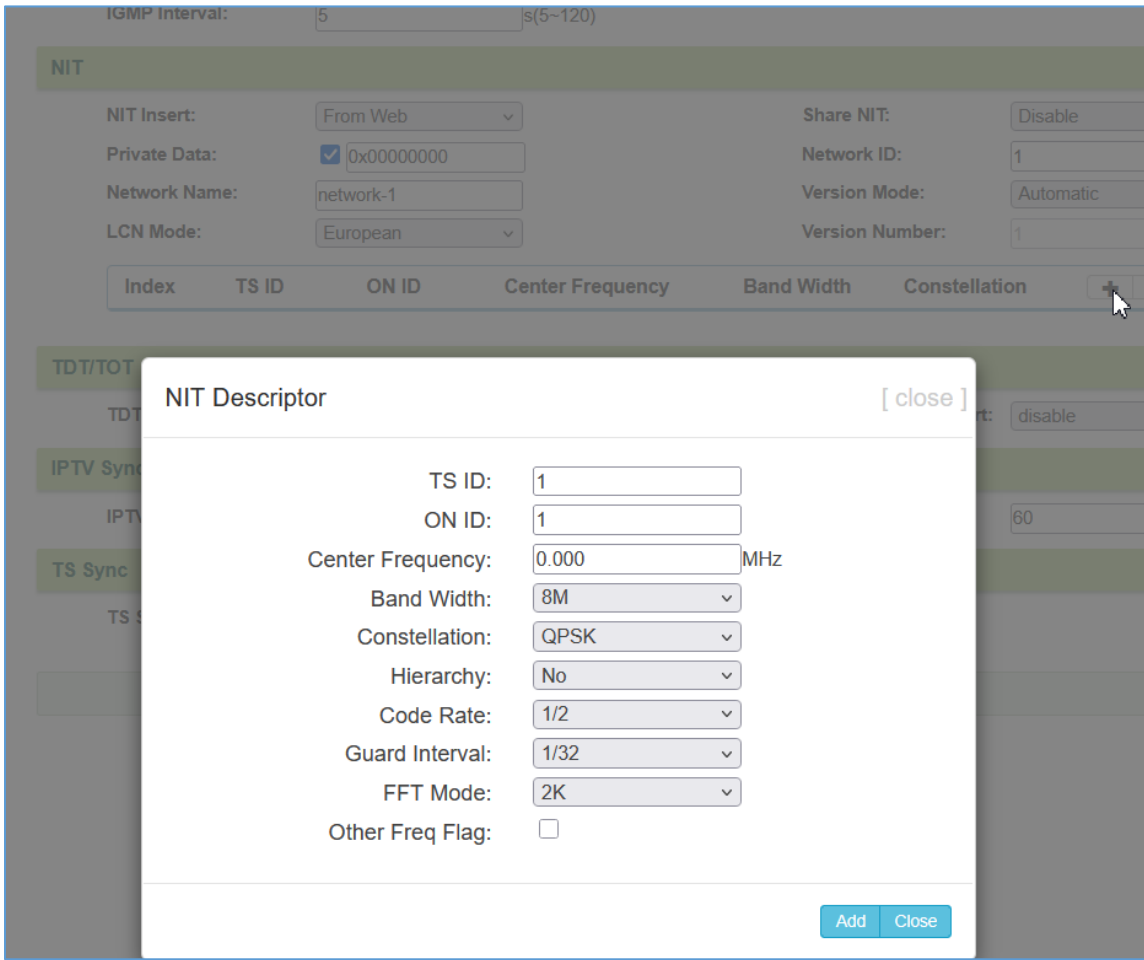
| | | | |
|------------|--|--------------|--------|
| IPTV Sync: | | Sync Period: | 60 Sec |
|------------|--|--------------|--------|

TS Sync

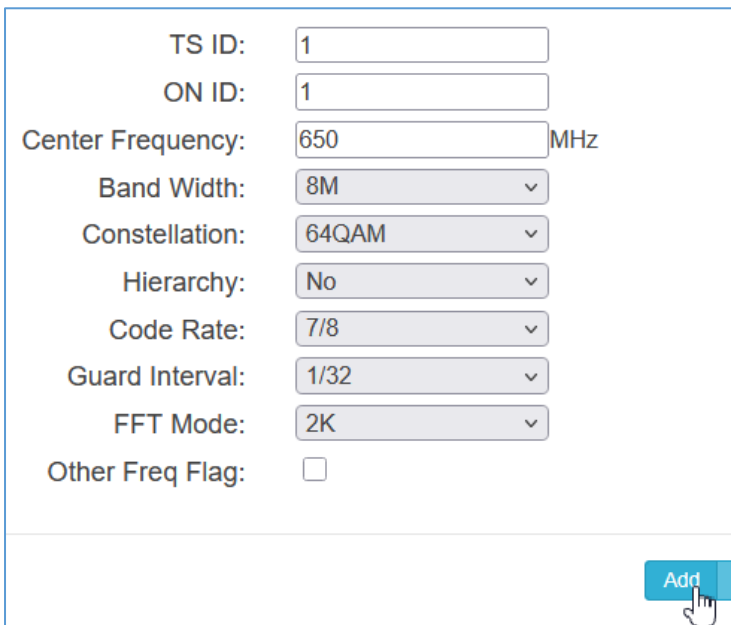
| | | | |
|----------|--|--|--|
| TS Sync: | | | |
|----------|--|--|--|

Apply

To insert a NIT we recommend to configure that by hand:



Off course this must fit to your channel line-up of the modulator values:



Output TS 1 ▾
Stream Select
General
PID PASSTHRU

Stream

Output Mode:

SDT Insert:

Share BAT:

PMT Insert:

TS ID:

PCR Correct:

Update Program Type:

IGMP Interval: s(5~120)

PAT Insert:

BAT Insert:

CAT Insert:

Fixed Table Version:

ON ID:

PCR Mode:

Character Encoding:

NIT

NIT Insert:

Private Data:

Network Name:

LCN Mode:

Share NIT:

Network ID:

Version Mode:

Version Number: (0-31)

| Index | TS ID | ON ID | Center Frequency | Band Width | Constellation | + - |
|-------|-------|-------|------------------|------------|---------------|-----|
| 1 | 1 | 1 | 650.000 MHz | 8M | 64QAM | ✎ ✖ |

TDT/TOT

TDT/TOT Insert: TOT Descriptor Insert:

IPTV Sync(SPTS)

IPTV Sync: Sync Period: Sec

TS Sync

TS Sync:

Above we set the first frequency with a NIT. You can use share NIT if this should be inserted to all multiplexed outputs.

USB-Media:

BLANKOM

Summary

- ▶ Status

Monitor

- ▶ Input Status
- ▶ Output Status

Parameters

- ▶ TS Config
- ▶ Modulator
- ▶ IP/ASI Output
- ▶ USB Media

System

- ▶ Network
- ▶ Password
- ▶ Configuration
- ▶ Firmware
- ▶ Date | Time
- ▶ Log
- ▶ Reboot

USB MEDIA

Record TS

Record Source Select:

File Name:

Null PKT Filter:

Record Status: ●

Record Mode:

File Size: MB

Overflow Status: ●

Play TS

Play Mode:

Auto Play:

File Select:

Play Status: ●

Status

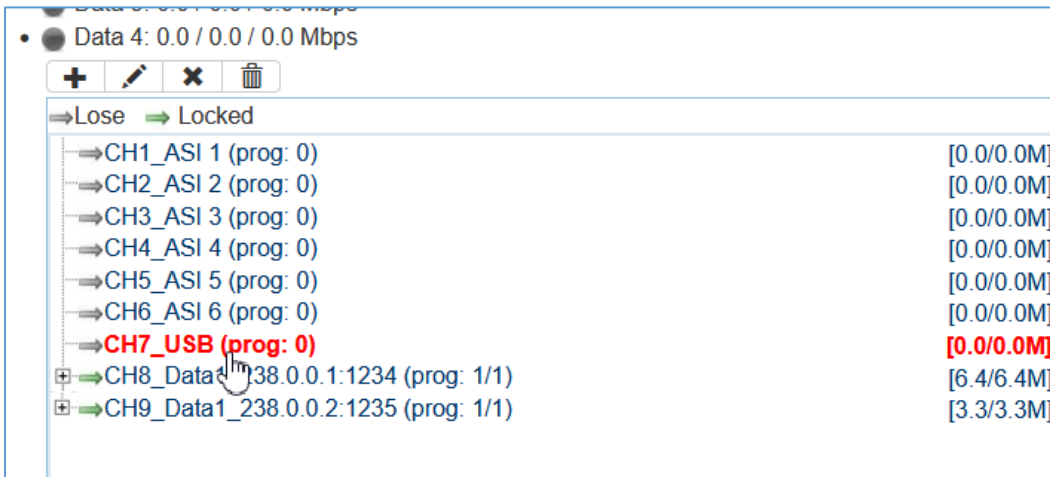
Disk Status: ● Disk Usage: 0.00/0.00 GB

Here you can record TS files to your USB-device (FAT32) and also playback TS files which can be inserted into a selected mux by your choice or to all. The files should be valid files according to MPEG&DVB norm with proper table structures. And according to the codecs your TV sets are

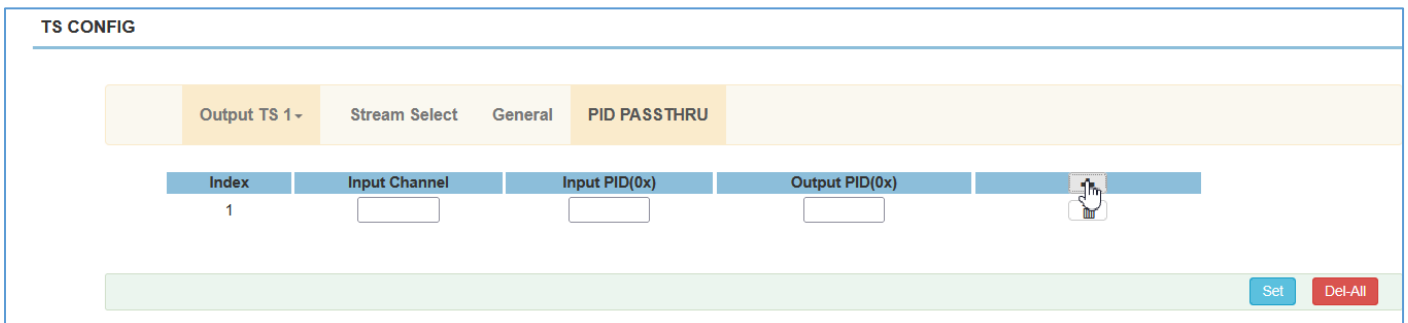
Date 29. April 2026

BLANKOM-HDC-5008_IP2QAM-modulator.docx

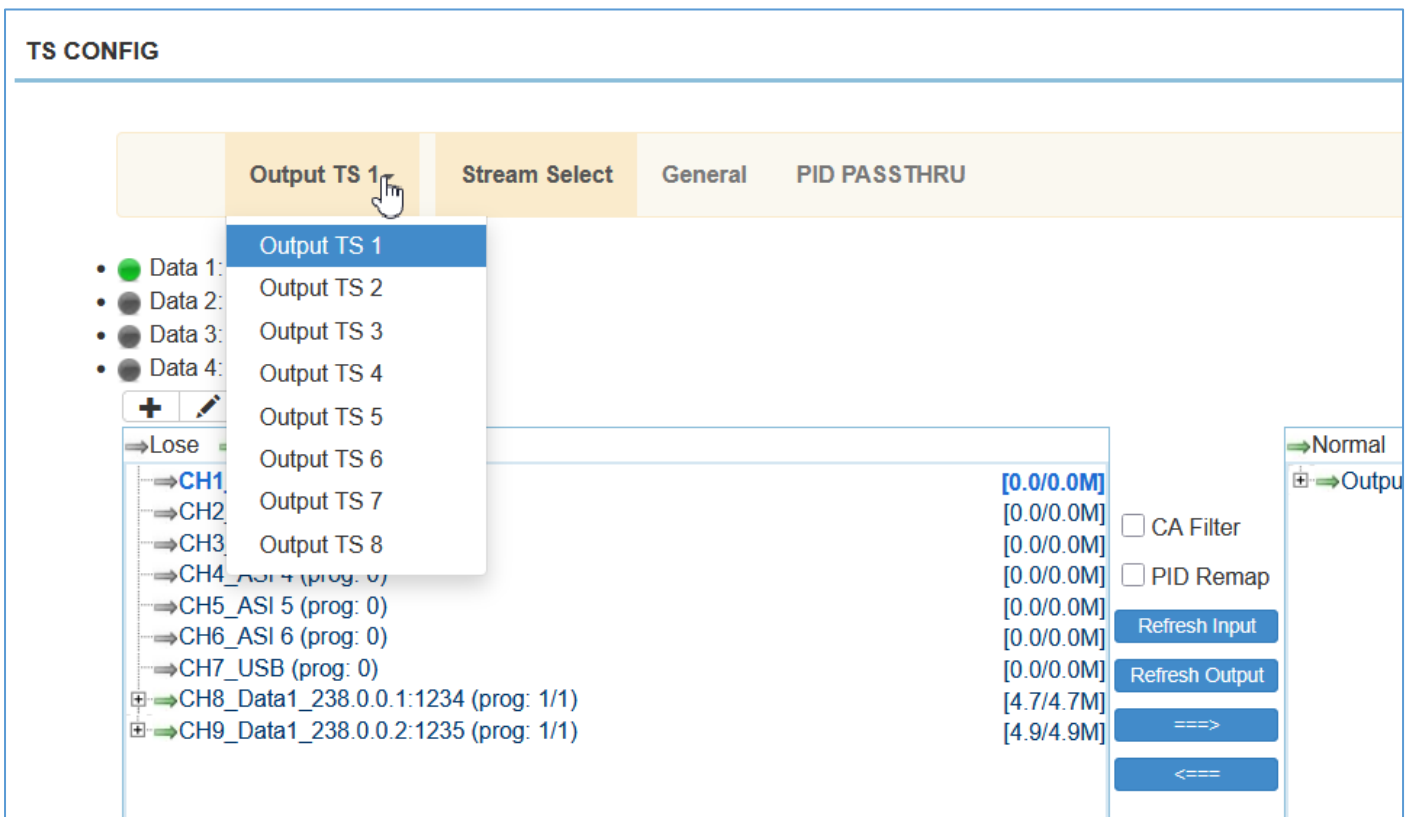
supporting (h.264 AVC is almost common but HEVC might work as well).



You can also pass particular stream components from an input e.g. the EPG-data from an Input like a DVB-SAT Gateway -> streams an MPTS of a Transponder. To keep that in your output, you must add PID12hex by selecting the source and pass it:



Now you can carry on with the next output multiplex:



That's all for a quick-start. Of course DVB is not trivial...