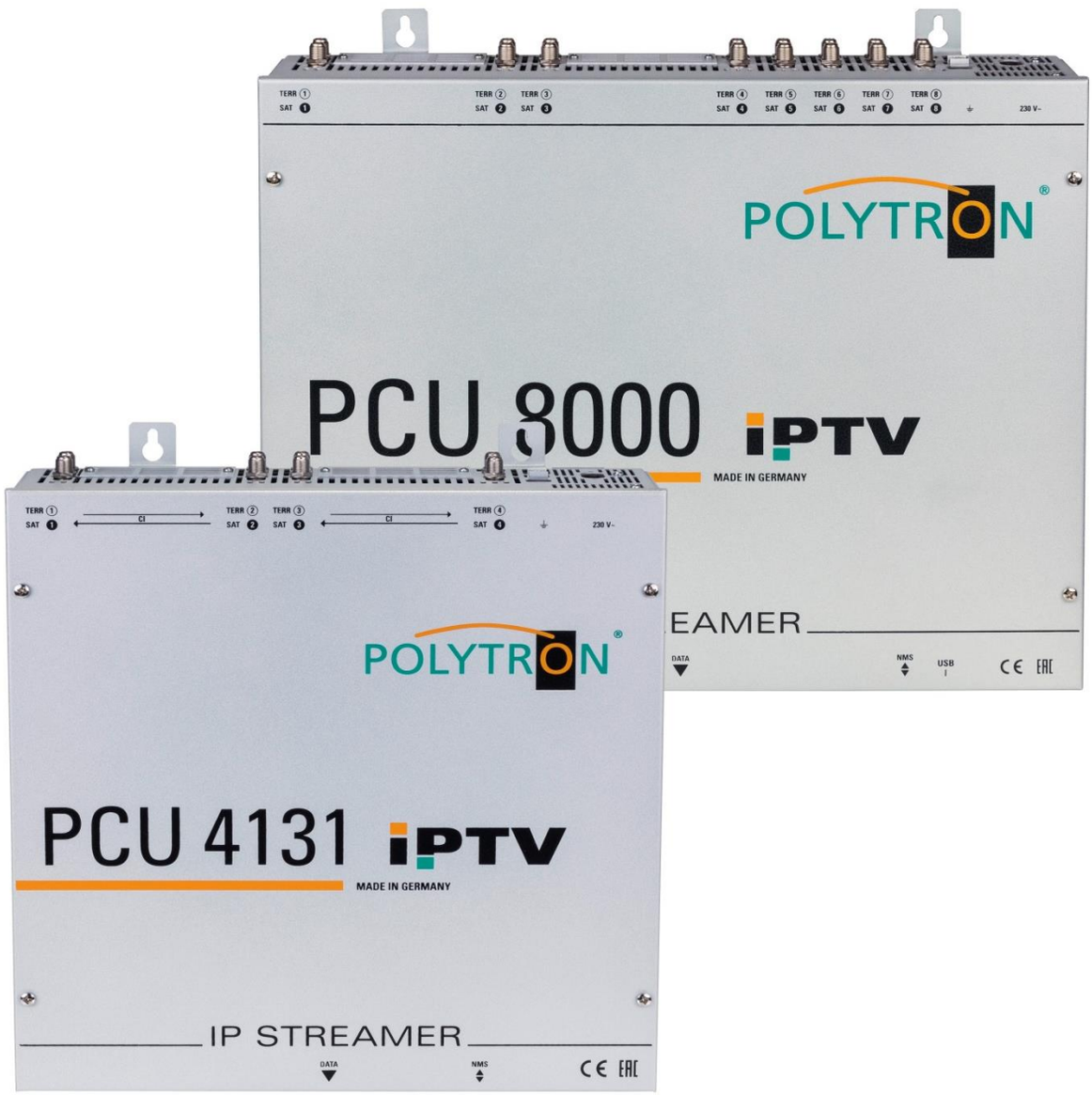
PCU 4131 / PCU 8130

IP Streamer



User manual

MADE IN GERMANY

0902261 V2

Contents

1. Mounting- and safety instructions

Please observe the following safety instructions in order to prevent any risks for persons and/or damage to the device, as well as to contribute to environmental protection.

Important instructions
Please read the operating instructions for the device(s) carefully before putting into operation! The instructions contain important information on installation, environmental conditions, service and maintenance. Save the operating instructions for later use. All operating instructions can be found on our website at: https://polytron.de/index.php/en/services/operating-manuals

Approved use
Use the device only at the permissible operating locations, under the permissible environmental conditions and for the purpose described in the operating instructions. If there is no information about the intended use (e.g. operating location, environmental conditions) or if the operating instructions do not contain any relevant information, you must contact the manufacturer of this device to ensure that the device can be installed. If you do not receive any information from the manufacturer, the device must not be put into operation.

Transport
Please check the packaging and the device for damages in shipment immediately upon receipt. Do not put a damaged device into operation.
Transporting the device by the power cord is not permitted as this can damage the power cord or the strain relief. Insulation that serves to protect against mains voltages can be damaged by excessive loads (e.g. fall, shock, vibration).

Attention
The rated voltage on the device must correspond with the mains voltage to be used. When operating devices with protection class I, connection to power sockets with a protective conductor connection is mandatory. The instructions for operating the device must be observed.

Grounding and potential equalisation
Please establish grounding and perform potential equalisation before initial startup. According to the currently valid version of EN 60728-11, coaxial receiving and distribution systems must meet the safety requirements with regard to earthing, equipotential bonding etc, even if the device is removed. Otherwise, damage to the product, fire, or other dangers can occur. In addition, the earth connection on the device can be used. Other devices within touching distance are to be integrated in the equipotential bonding. Operation without a protective conductor connection, device grounding or equipotential bonding is not permitted. If damaged, the device must be taken out of operation.
The electrical system for powering the device, e.g. house installations must contain protective devices against excessive currents, earth faults and short circuits. Follow all applicable national safety regulations and standards.

Connection cables
Always install the connection cables with a loop so that condensed and/or splashing water cannot run into the device.

Select installations site
Plan the installation location so that children cannot play with the device and its connections. The device should only be installed on a solid, flat and most of all fire-resistant surface. Observe the operation position of the devices specified in the operating instructions. Avoid strong magnetic fields in the surroundings. Too strong a heat effect or accumulation of heat will have an adverse effect on the durability. Don't mount directly over or near heating systems, open fire sources or the like, where the device is exposed to heat radiation or oil vapours. Mount fan-cooled and passively cooled devices so that the air can be sucked in unhindered through the lower ventilation slots and heat can escape through the upper ventilations slots. Ensure free air circulation, ventilation slots must not be covered. Do not place any objects on the devices. Installation in recesses, alcoves etc and covering the installation site, e.g. through curtains is not allowed. To avoid heat build-up, the correct installation position must be observed and all-round, free ventilation must be ensured in accordance with the information in the operating instructions! When installing the cabinet, sufficient air convection must be possible to ensure that the maximum permissible ambient temperature of the device is maintained.

Moisture
The devices have no protection against water and may therefore only be operated and connected in dry rooms. Dripping/splashing water and high humidity damage the device. If there is condensation, wait until the device is completely dry. Select the operating environment according to the specified IP protection class.

Heat
Housing parts near cooling fins and cooling fins themselves can get very hot. Therefore, you should not touch these parts.

Mounting and service work
The device may only be installed and operated by qualified persons (in accordance with EN 62368-1) or by persons who have been instructed by experts in accordance with the rules of technology. Maintenance work may only be carried out by qualified service personnel. Before starting the service work, switch off the operating voltage and secure it against being switched on again. In the event of service or danger, the mains plug serves as a disconnect device from the mains voltage and must therefore be accessible and usable at all times. In order to guarantee interference immunity, all device covers must be screwed tight again after opening.
Fuses are only to be changed by authorised specialists. Only fuses of the same type may be used.

Repairs
Repairs may only be carried out by the manufacturer. Improper repairs can pose significant risks to the user. In the event of malfunctions, the device must be disconnected from the mains and authorised specialist personnel must be consulted. If necessary, the device must be sent to the manufacturer.

Thunderstorm
According to EN 60728 part 1 safety requirements, due to increased risk of lightning, maintenance and / or installation work should not be carried out during thunderstorms on the device or the system.
High overvoltages (lightning strikes, overvoltages in the power grid) can damage insulation that serves to protect against mains voltage.

Ambient temperature
The permissible ambient temperatures specified in the technical data must be observed for operation and storage, even if the climatic conditions change due to external influences (solar radiation etc.). Overheating the device can damage the insulation that serves to isolate the mains voltage.

Termination
Unused coaxial connections should be terminated with 75 Ohm terminating resistors. For DC-supplied connections, DC voltage decoupling must be used or use 75 Ohm terminating resistors with integrated DC decoupling.

Attention
This module contains ESD components! (ESD = Electrostatic Sensitive Device).
An electrostatic discharge is an electrical current pulse, which can flow through an electrically insulated material, when triggered by a large voltage difference. To ensure the reliability of ESD components, it is necessary to consider their most important handling rules:
» Pay attention permanently to potential equalisation (equipotential bonding)!
» Use wrist straps and approved footwear for personnel grounding!
» Avoid electrostatically chargeable materials such as normal PE, PVC, polystyrene!
» Avoid electrostatic fields >100 V/cm!
» Use only labeled and defined packing and transportation materials!
Damage caused by faulty connections and/or improper handling are excluded from any liability.

Recycling
All of our packaging materials (packaging, identification sheets, plastic foil and bags) are fully recyclable. The devices are to be disposed of properly according to the current disposal regulations of your district/country/state as electronic scrap.

WEEE-Reg.-Nr. DE 51035844

Guarantee conditions
The general terms and conditions of Polytron-Vertrieb GmbH apply. The general terms and conditions can be found on our website at: https://polytron.de/index.php/en/company/general-terms-and-conditions

GENERAL INFORMATION ON THE OPERATING INSTRUCTIONS

- All parameter data are examples only.
- User adjustable parameters are freely selectable.
- Menu views can vary slightly depending on the software version; the operability does not change as a result.
- The images in this manual are for illustrative purposes only.

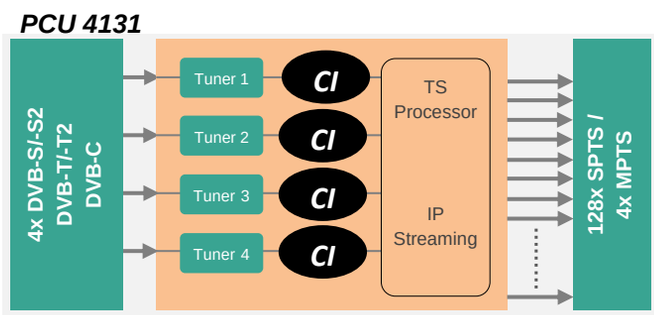
1. General information

The transmission of television programs via digital data networks (IPTV) is becoming increasingly important. Through the use of the so-called Internet protocol, it is also possible to transmit DVB signals via a network infrastructure.
In order to be able to use IP networks as transmission paths for television programs, the DVB signals received in the PCU 4131 or PCU 8130 are converted into IP streams and thus made available throughout the network. Particularly in office buildings and hospitals, the supply of terminal equipment via IP networks, some of which already exist, represents an elegant solution for the transmission of television programs. For new buildings and special applications, such as cruise ships, the advantage is that only an IP network has to be set up and additional coaxial cabling is not required.

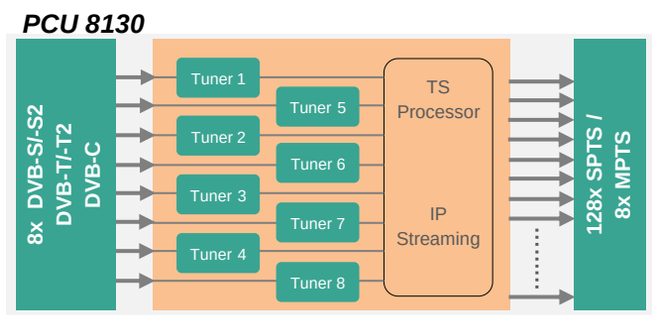
2. Description

The IP Streamer PCU 4131 and PCU 8130 convert DVB-S/S2, DVB-T/T2 and DVB-C signals into IP streams. The PCU 4131 has 4 input tuners and the integrated CI interfaces enable the central decoding of transmitter content. The PCU 8130 provides 8 input tuners and is capable of receiving and streaming free-to-air channels and passing encrypted content for de-encyption by the end user. The input signal is made available throughout the IP network and can be directly received by PCs / notebooks with appropriate software, IP-compatible TV sets or set-top boxes (STBs) that support the "DVB-IPTV" standard. The IP Streamer can be programmed quickly and easily via the web browser user interface. The selected settings can be printed out, saved and transferred to other devices, e.g. via USB stick. The integrated LAN connection allows remote control of all parameters.

PCU 4131



PCU 8130



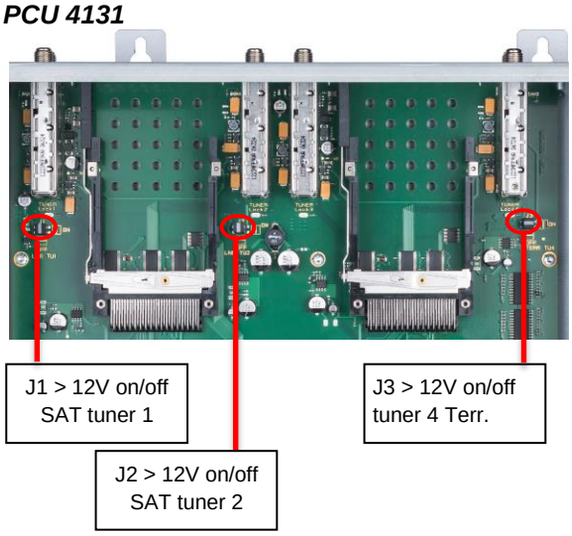
3. Scope of delivery

1 x PCU 4131 / PCU 8130
1 x Power cable
1 x LAN patch cable
1 x Operating instructions
1 x Installation accessories

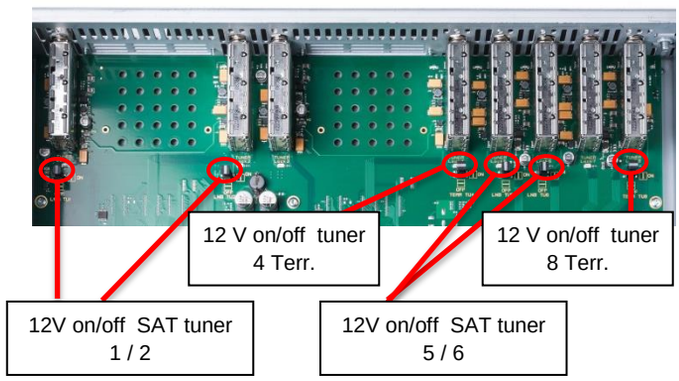
4. Input circuit

With the PCU 4131 and the PCU 8130, the signals are fed directly to the input tuners. Due to the triple standard tuners, there are 4 or 8 inputs for SAT signals and 4 or 8 inputs for terrestrial signals (DVB-T/T2 or DVB-C). The SAT inputs Tuner 1 and Tuner 2 are equipped with an additional 12 V DC voltage for LNB supply. The units are supplied with this activated. The supply can be activated/deactivated by jumpers J1 and J2 respectively. A 12 V supply voltage for the terrestrial range can be applied to Tuner 4 by plugging in Jumper J3. The operating states are indicated by LEDs.
Likewise, the SAT input tuners 1, 2, 5 and 6 of PCU 8130 are equipped with a 12 V DC voltage for LNB supply. The units are supplied with this activated. The supply can be activated/deactivated by the corresponding jumpers. On tuners 4 and 8, a 12 V supply voltage for the terrestrial inputs can be delivered by plugging in the corresponding jumpers. The operating states are indicated by LEDs.

PCU 4131



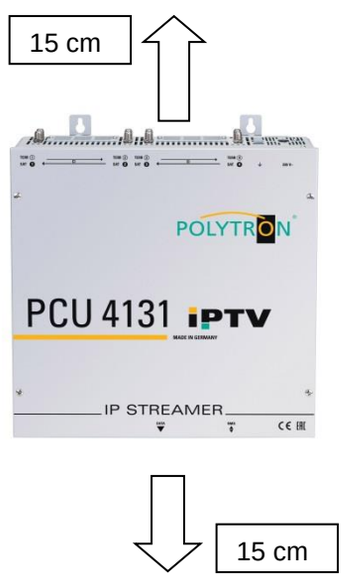
PCU 8130



5. Mounting

The IP Streamer must be installed in a well-ventilated room. The ambient temperature must not exceed 45 °C. It must be ensured that air can circulate freely through the ventilation holes, this applies especially with horizontal 19" mounting. In order that the air can circulate freely, a minimum distance of at least 15 cm from the ventilation holes must be maintained. The mains plug must be pulled out for installation or when working on the wiring.

= Heat accumulation!!!



6.1. Grounding

The device must be grounded in accordance with EN 60728-11.

- Strip the cable insulation of the grounding cable (4 mm^2) by approx. 15 mm.
- Push the stripped end under the grounding screw and tighten the screw firmly.

6. Installation

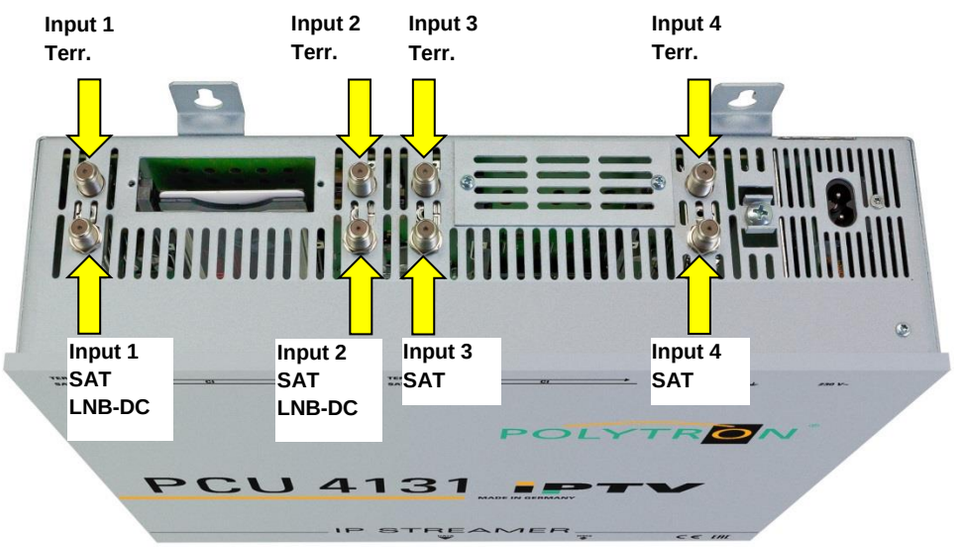
Connecting the input signals

Connect SAT signals directly or via distribution networks to the corresponding tuner inputs.

PCU 4131

The SAT inputs Tuner 1 and Tuner 2 have a 12 V DC voltage for LNB supply.

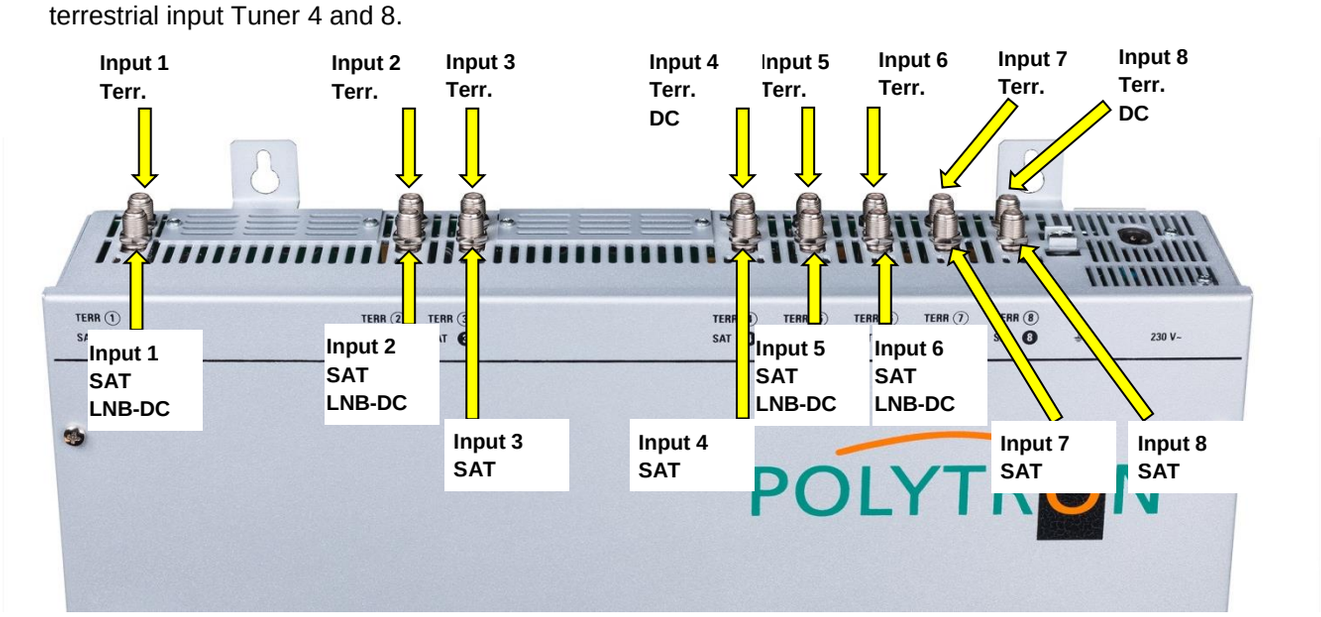
DVB-T and DVB-C are connected via the terrestrial inputs. An optional 12 V supply is available at the terrestrial input Tuner 4.



PCU 8130

The SAT inputs Tuner 1, 2, 5 and 6 have a 12 V DC voltage for LNB supply.

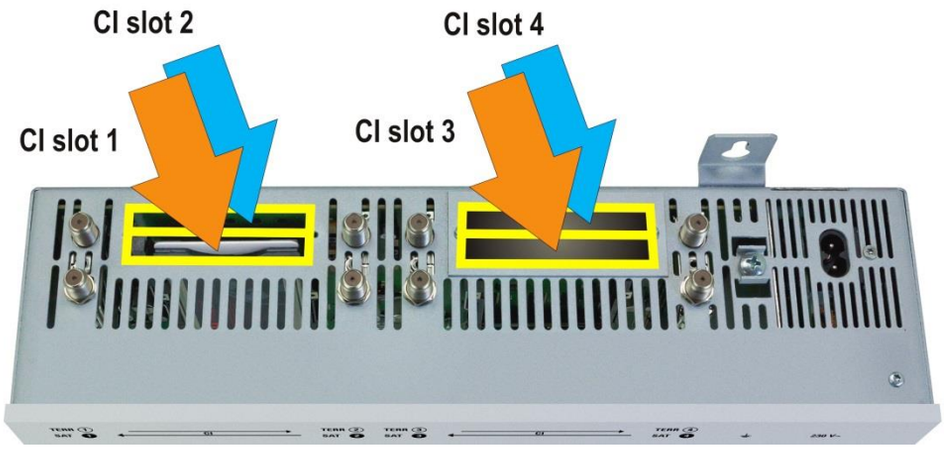
DVB-T and DVB-C are connected via the terrestrial inputs. An optional 12 V supply is available at the terrestrial input Tuner 4 and 8.



Please make sure that the current consumption of 250 mA per input is not exceeded. Total consumption must not exceed 500 mA

Plugging in the CI modules PCU 4131

To insert the CI modules into the PCU 4131, the covers must be removed. The picture shows the assignment of the CI slots to the inputs. For wall mounting as shown below, the double ridge guide of the CAMs must always be on the left hand side (according to the picture). On the right hand side, the CAM has only a single ridge guide.



7.1. Pre-programming

The inputs and outputs of the device are pre-programmed at the factory with a standard frequency assignment. To receive the pre-programmed ASTRA transponders, the SAT inputs must be connected to the "Horizontal High" level.

Slot 1-4 for PCU 4131 and PCU 8130:

SAT Input	1	2	3	4
Transponder	**71**	**77**	**107**	**89**
	ARD Digital	**ZDF Vision**	**SAT.1/Pro Sieben**	**RTL World**
Frequency	HH 11836	HH 11954	HH 12545	HH 12188
Symbol rate	27500 kSym	27500 kSym	22000 kSym	27500 kSym
ASTRA	Das Erste	ZDF	SAT.1	RTL Television
	BR FS Süd	3sat	ProSieben	RTL2
	hr-fernsehen	KiKA	kabel eins	VOX
IP Output MPTS	deactivated			
IP address	239.1.1.1	239.1.1.2	239.1.1.3	239.1.1.4
Port	10001	10002	10003	10004
Protocol	RTP	RTP	RTP	RTP

Slot 5-8 for PCU 8130:

SAT Input	5	6	7	8
Transponder	**85**	**91**	**103**	**93**
	ARD Digital Dritte	**Diverse**	**Diverse**	**ARD digital Radio**
Frequency	HH 12110	HH 12226	HH 12460	HH 12266
Symbol rate	27500 kSym	27500 kSym	27500 kSym	27500 kSym
ASTRA	RBB Berlin	Eurosport	Disney Channel	SR Fernsehen
	NDR NDS	HSE 24	N24 Doku	ARD Alpha
	MDR TH	EuroNews D	Sixx	N-Joy
IP Output MPTS	deactivated			
IP address	239.1.1.5	239.1.1.6	239.1.1.7	239.1.1.8
Port	10005	10006	10007	10008
Protocol	RTP	RTP	RTP	RTP

IP parameters of the factory pre-programmed TV channels:

Service Name	SID	IP-Address	Port	CH No	Protocol	IP-Out	IN
Das Erste	28106	239.1.1.100	10001		RTP	☑	1
BR Fernsehen Süd	28107	239.1.1.101	10001		RTP	☑	1
hr-fernsehen	28108	239.1.1.102	10001		RTP	☑	1
ZDF	28006	239.1.1.103	10001		RTP	☑	2
3sat	28007	239.1.1.104	10001		RTP	☑	2
KiKa	28008	239.1.1.105	10001		RTP	☑	2
SAT.1	17500	239.1.1.106	10001		RTP	☑	3
ProSieben	17501	239.1.1.107	10001		RTP	☑	3
kabel eins	17502	239.1.1.108	10001		RTP	☑	3
RTL Television	12003	239.1.1.109	10001		RTP	☑	4
RTL2	12020	239.1.1.110	10001		RTP	☑	4
VOX	12060	239.1.1.111	10001		RTP	☑	4
RBB Berlin	28205	239.1.1.112	10001		RTP	☑	5
NDR Niedersachsen	28226	239.1.1.113	10001		RTP	☑	5
MDR Thüringen	28230	239.1.1.114	10001		RTP	☑	5
Eurosport	31200	239.1.1.115	10001		RTP	☑	6
HSE 24	31210	239.1.1.116	10001		RTP	☑	6
EuroNews D	31230	239.1.1.117	10001		RTP	☑	6
Disney Channel D	1793	239.1.1.118	10001		RTP	☑	7
N24 Doku	48	239.1.1.119	10001		RTP	☑	7
Sixx D	776	239.1.1.120	10001		RTP	☑	7
SR Fernsehen	28486	239.1.1.121	10001		RTP	☑	8
ARD Alpha	28487	239.1.1.122	10001		RTP	☑	8
N-Joy	28440	239.1.1.123	10001		RTP	☑	8

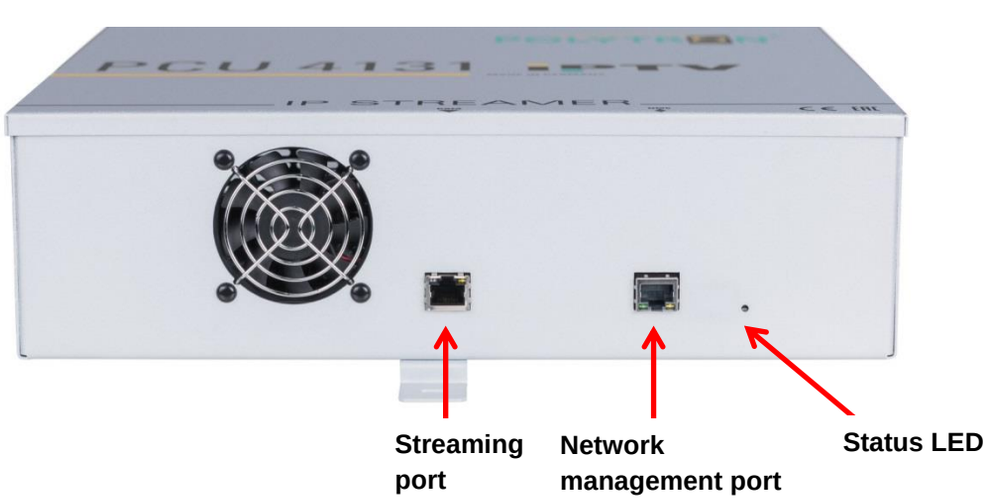
7.2. Input level

To ensure flawless reception, make sure that the level at the inputs is between **50** and **80 dBµV**.

When receiving digital signals it is advantageous to have a lower input level instead of an excessively high one.

If the input level is too high, an attenuator should be used.

7.3. LAN connectors and Status LED



8. General programming

Upon powering up, the device runs through an internal routine and all channels (4 for PCU 4131 and 8 for PCU 8130) are set to the current stored data. During this time, the **Status LED** flashes green.

A connection between the PCU 4131 / PCU 8130 and the PC / notebook can only be established after the Status LED lights up permanently green or orange.

8.1. Initial setup

The PCU 4131 / PCU 8130 are configured via the Network Management System (NMS).

8.1.1. Establishing a connection via the browser

Connect the PC or notebook directly to the network management port using a suitable CATx LAN cable. The input window appearance depends on the selected browser (Chrome, Firefox, Internet Explorer, etc.).

Notes:

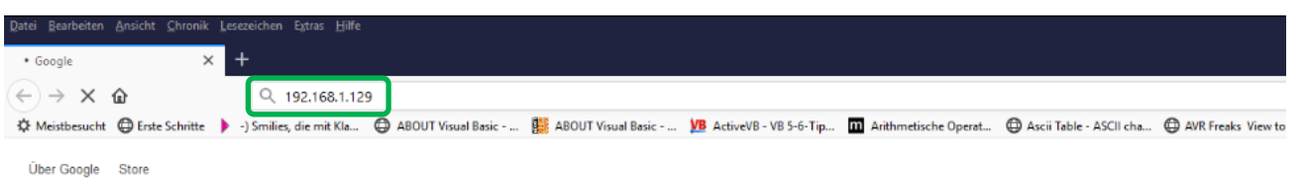
- PC / notebook and the IP streamer must be in the same network / IP address range.
- Cookies must be accepted and JavaScript must be enabled.
- Use current browser versions.

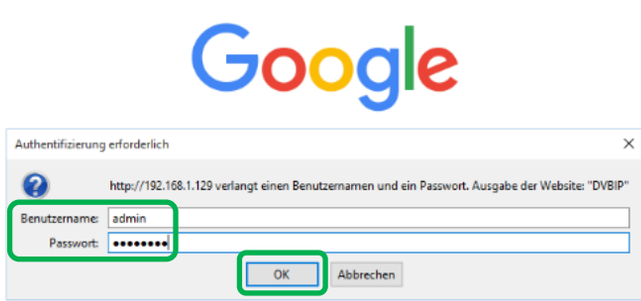
Enter the following IP address in the search bar of the web browser: **192.168.1.129**

Username: **admin**

Password: **password**

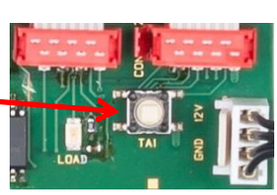
Then click **OK** to establish the connection.





If the factory IP address of the IP streamer is lost or forgotten, it can be reset to the factory setting (**192.168.1.129**) as follows:

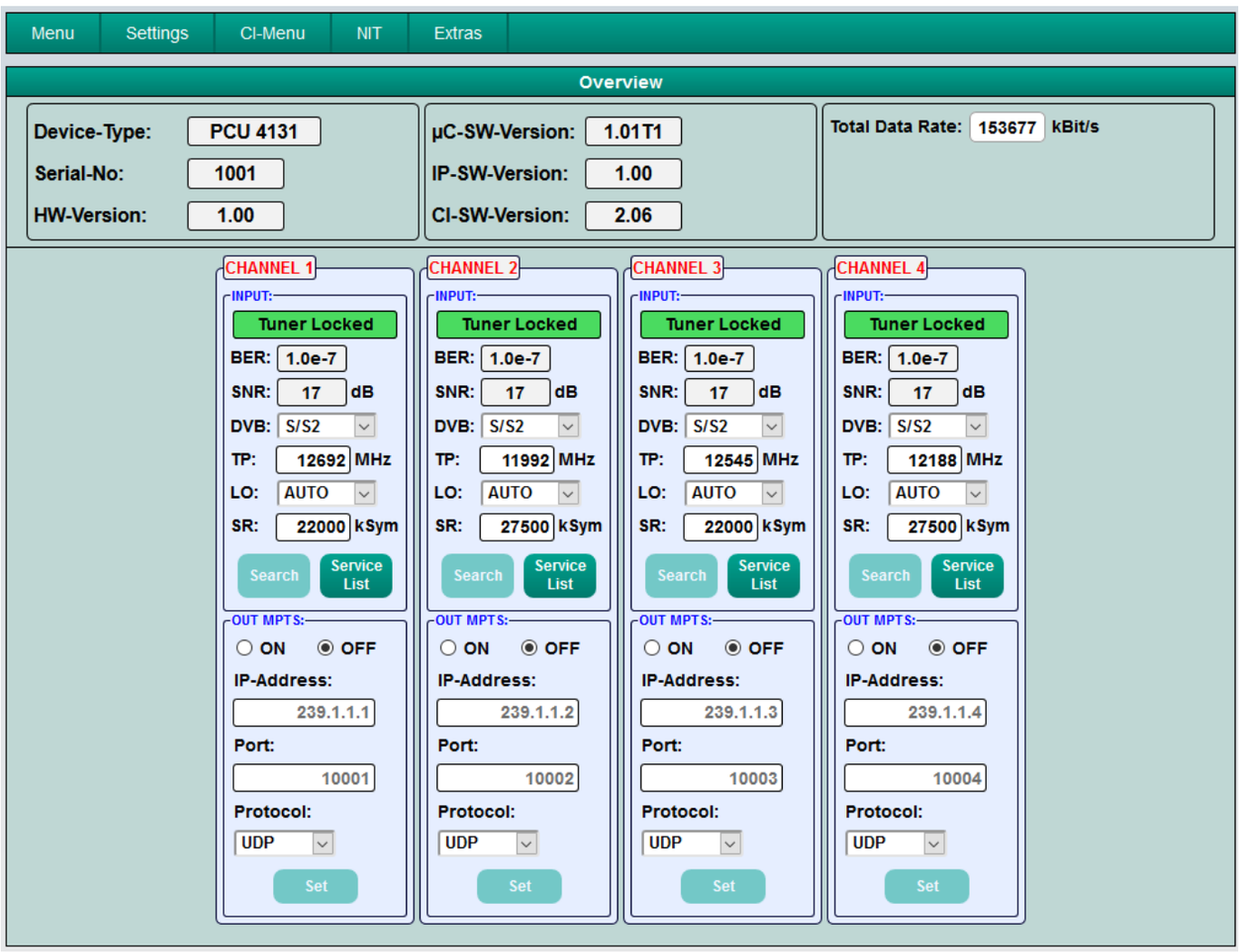
- Pull the mains plug out.
- Press and hold button TA1 on the IP board.
- Reconnect the mains plug.
- Wait until the Status LED flashes red / green alternately.
- Now the IP address is reset and the button can be released.



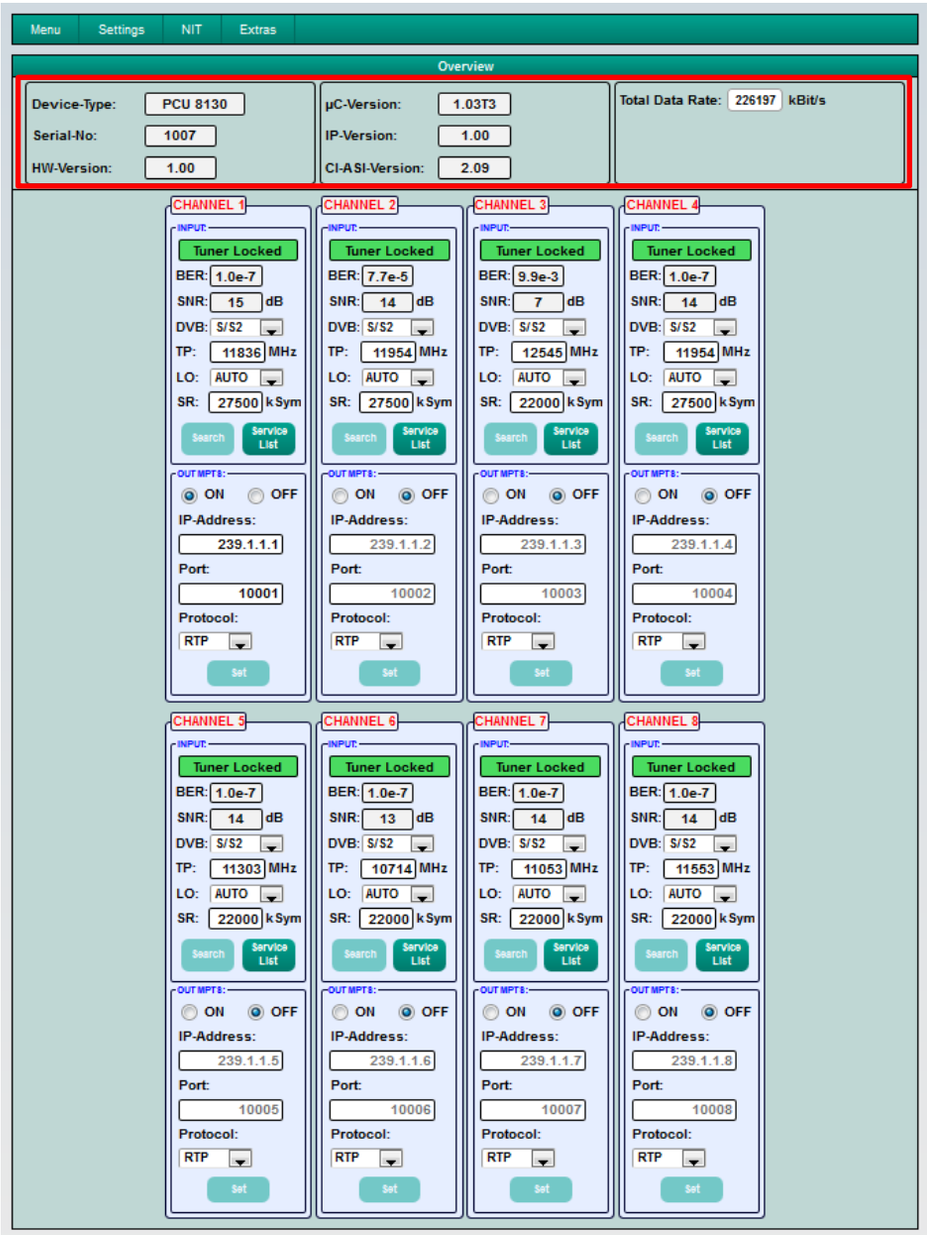
8.2. Programming of the device parameters

After successful network access, the following overview window is displayed:

Overview PCU 4131



Overview PCU 8130



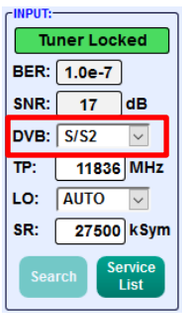
All input and output parameters can be set via this input window. The status display is automatically updated every 3 seconds.

In the upper part of the menu, the device data such as type, serial number, hardware version and the software versions for CPU, IP and CI controller (PCU 4131 only) or ASI controller (PCU 8130 only) are displayed. The information about the total data rate is also displayed here.

The channel related setting and selection options for MPTS, IP address, port and protocol are displayed in the lower part of the menu.

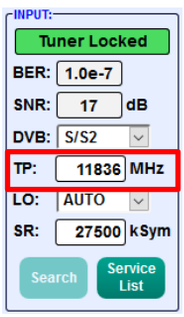
8.2.1. Input parameters for SAT reception

DVB > Input signal



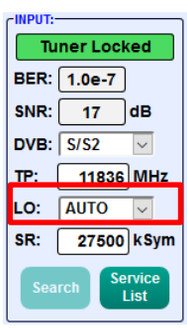
Select type of input signal
-> If DVB-T/T2 or DVB-C is selected, please skip to section 8.2.2 Input parameters for the terrestrial range

TP > Transponder frequency



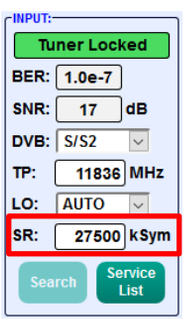
Enter transponder frequency

Auto > LO frequency



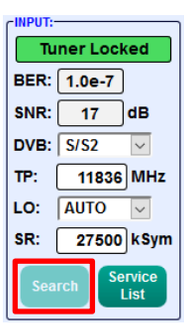
The required frequency is set automatically, but can be set to **09750**, **10600** or another **OTHER** frequency.

SR > Symbol rate



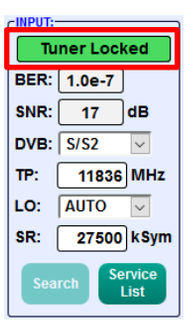
Enter symbol rate

Search > Scan



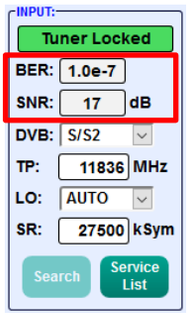
After pressing the **Search** button, the desired channel is found.

Tuner Locked



If the tuner identifies the transponder, **Tuner Locked** is displayed in the upper field.

Reception conditions (DVB-S/S2)



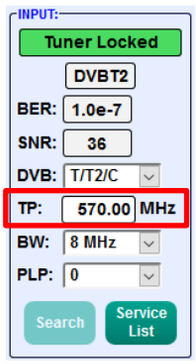
The quality of the input signal can be evaluated via the bit error rate **BER** and the signal-to-noise ratio **SNR**.
These depend on the quality of the reception conditions and the SAT signals.
Recommendation: Bit error rate **BER** should be ≤ 1e-6.

For the SNR signal-to-noise ratio **SNR**, the following guidelines apply. The corresponding values of the FEC (forward error correction) can be taken from the tables of the satellite operators. If, for example, the transponder has an FEC of 5/6, at least 9 dB must be displayed in the **SNR** field to ensure "good" reception.

FEC	gut	sehr gut
1/2	5-7dB	8-11dB
2/3	7-9dB	10-13dB
3/4	8-10dB	11-14dB
5/6	9-11dB	12-15dB
7/8	10-12dB	13-16dB

8.2.2. Input parameters for the terrestrial range

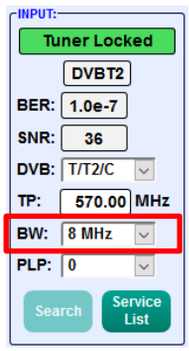
TP > Frequency



The type of input signal is automatically displayed.

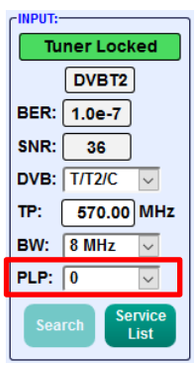
Enter input frequency

BW > Channel bandwidth



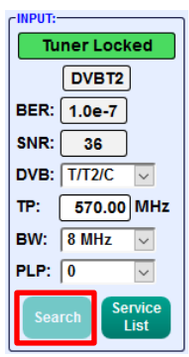
Selection 7 or 8 MHz

PLP > Service selection (DVB-T2)



Select PLP value

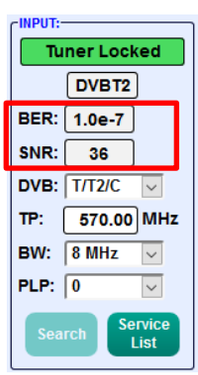
Search > Scan



After pressing the **Search** button, the desired channel is found.

If the tuner identifies the transponder, **Tuner Locked** is displayed in the upper field.

Reception conditions (DVB-T/T2/C)



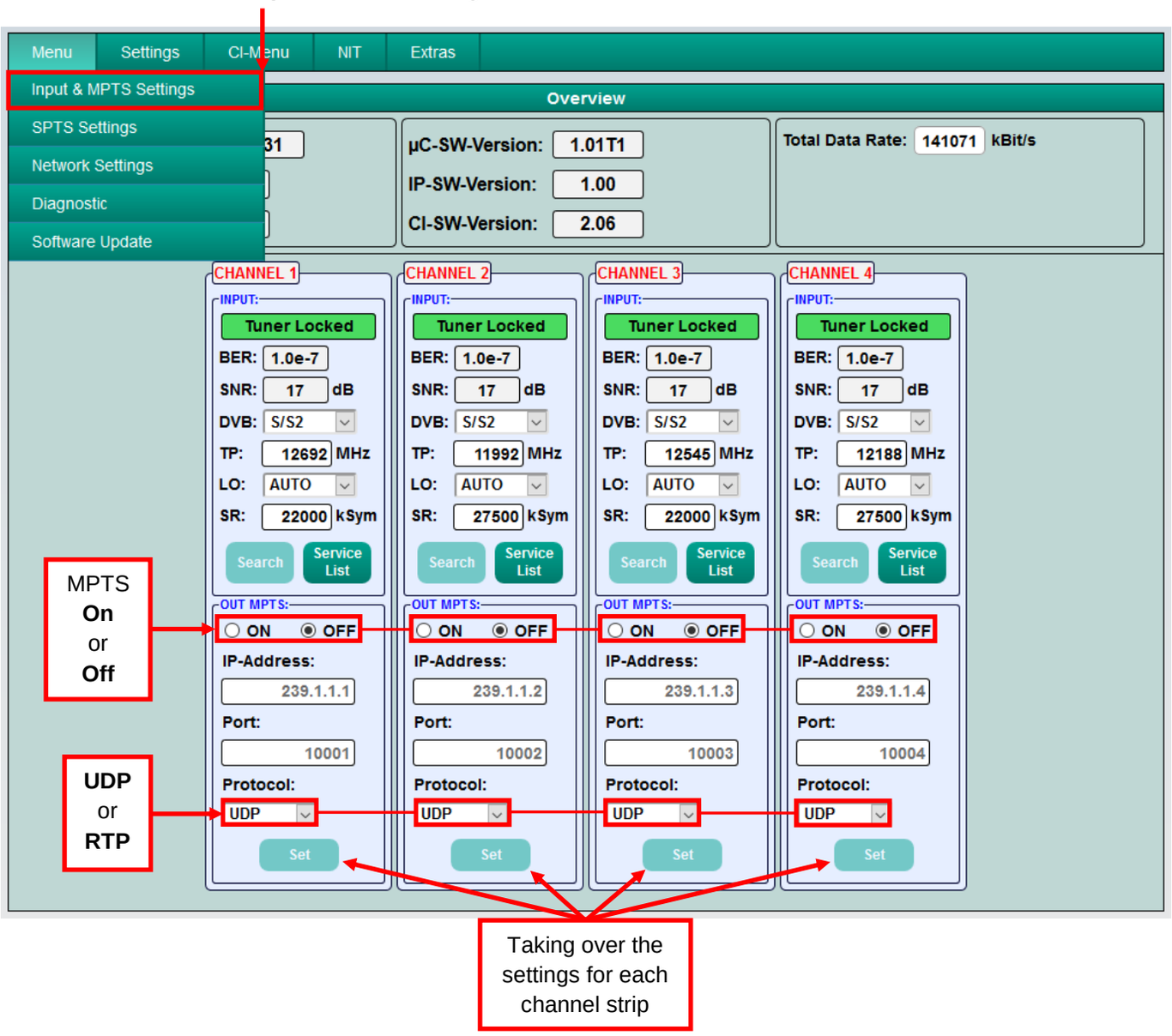
The quality of the input signal can be evaluated via the bit error rate **BER** and the signal-to-noise ratio **SNR**.

These depend on the quality of the reception conditions and the signals.

Recommendation: Bit error rate **BER** should be ≤ 1e-6.
The lower limits for the signal-to-noise ratio SNR are 26 dB for DVB-T and 32 dB for DVB-T2.

8.2.3. Output parameters MPTS (Multiple Program Transport Streams)

➔ Click on **Menu * Input & MPTS Settings**



MPTS can be switched on or off separately for each channel strip -> Factory setting: Off
When MPTS is switched off, the factory default SPTS streams are active (see section 8.2.4.).

The network protocol can also be selected separately for each channel strip -> Factory setting: RTP

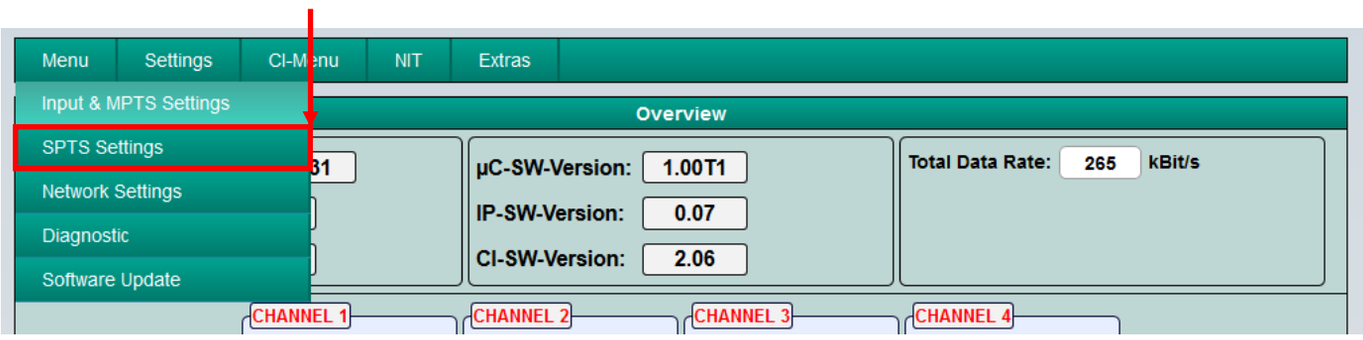
For further information on IP address and port, see section 7.1. (Input presetting).

Clicking on **Set** confirms the settings for each channel strip.

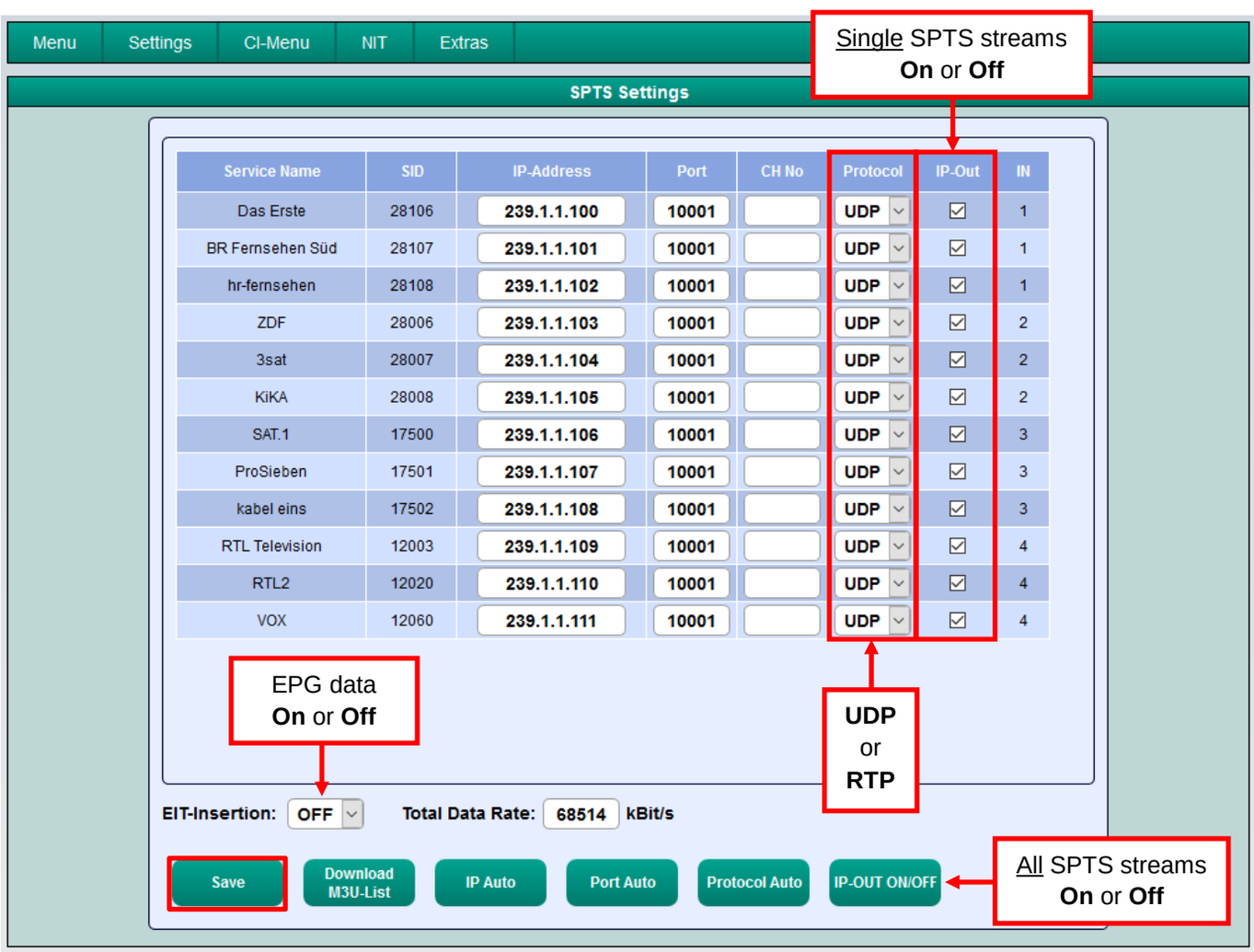
Note: In MPTS mode, the EPG function (EIT insertion) is permanently switched on by default and can't be deactivated. It must be ensured that sufficient bandwidth is available in the IP network to accommodate this.

8.2.4. Output parameters SPTS (Single Program Transport Stream)

➔ Click on **Menu * SPTS Settings**



Now the following dialogue window (here with factory settings) is displayed:

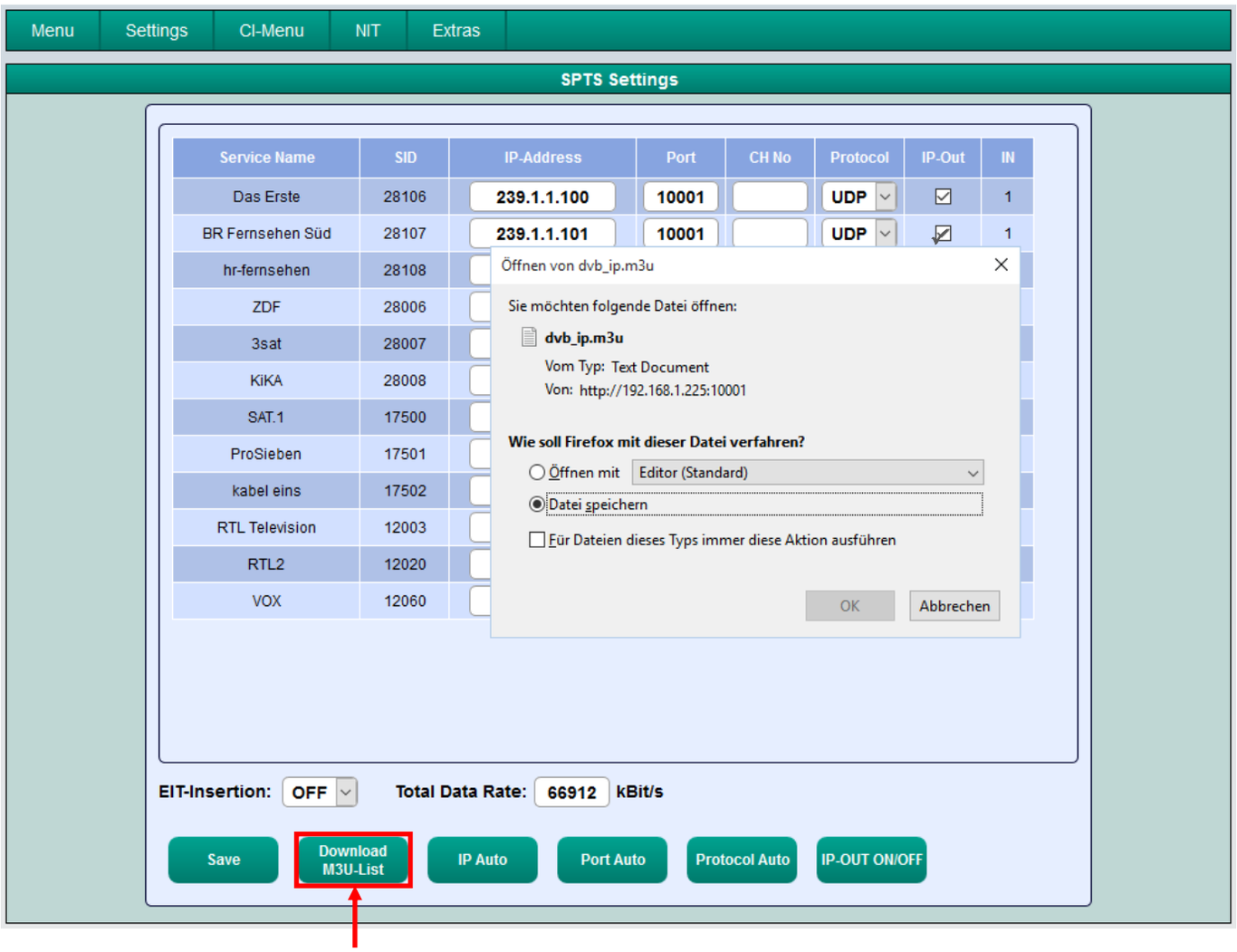


The IP addresses, ports and network protocols can be set separately for each service (program) either manually or automatically via the control panels below. The network protocol can be selected separately for each service (program) -> Factory setting: RTP. The SPTS stream can be switched on or off separately for each service (program) by placing a tick in the relevant box.

Note: In SPTS mode, the EPG function (EIT insertion) is switched off by default and can be activated as shown above. When it is activated, it must be ensured that sufficient bandwidth is available in the IP network to accommodate it.

➢ Create an M3U list

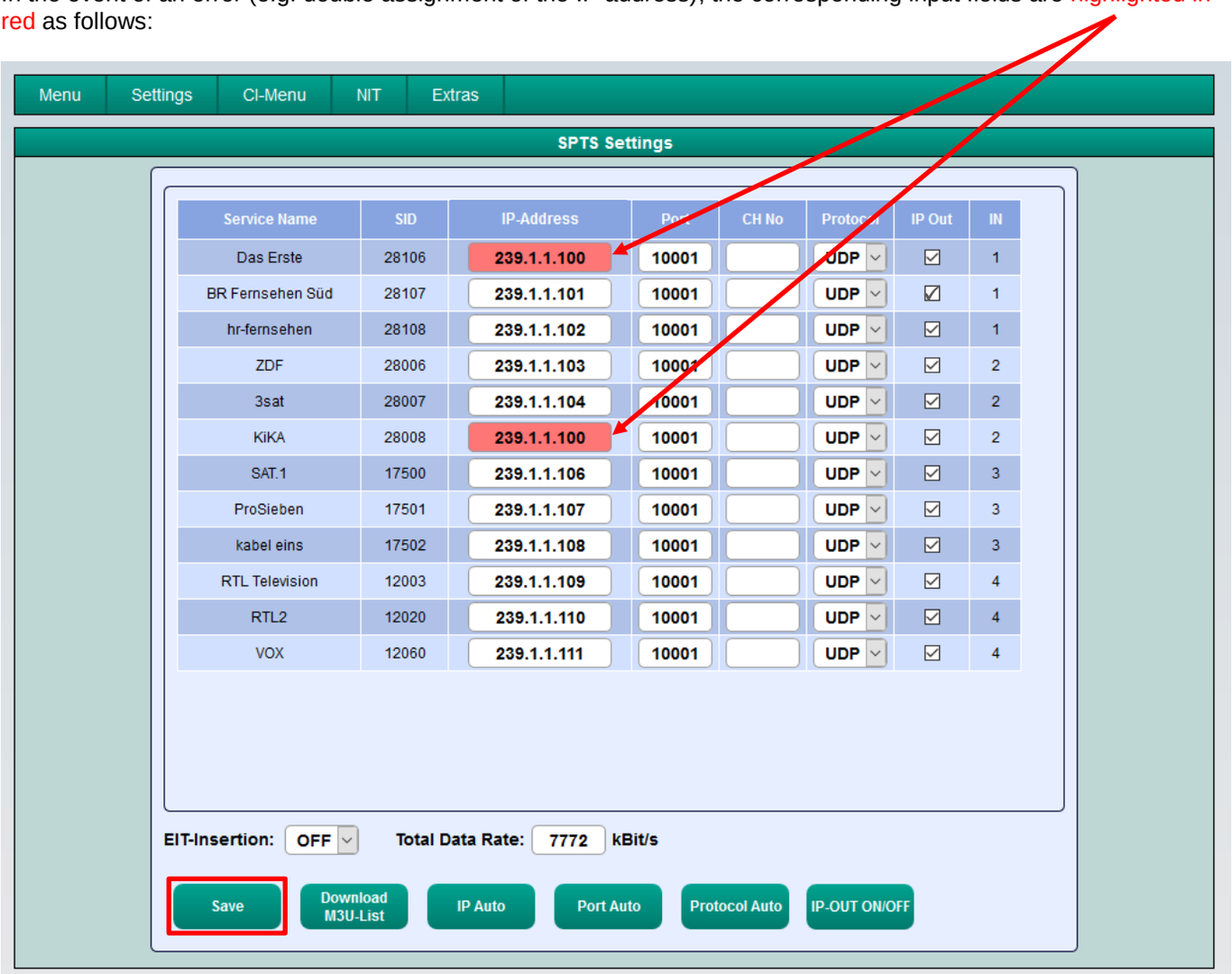
In SPTS mode, it is possible to create an M3U list as follows:



- By clicking on **Download M3U-List**, an M3U list (file name: dvb_ip.m3u) of the currently active SPTS streams is created and can be saved on the PC / notebook (download directory).
- This file can then be used to transfer the program list e.g. to PCs / notebooks with corresponding software, IP-compatible TV sets or set-top boxes (STBs) that support the "DVB-IPTV" standard. The prerequisite is that these devices support the import of M3U lists.

➢ Identification of incorrect data entries

In the event of an error (e.g. double assignment of the IP address), the corresponding input fields are highlighted in red as follows:

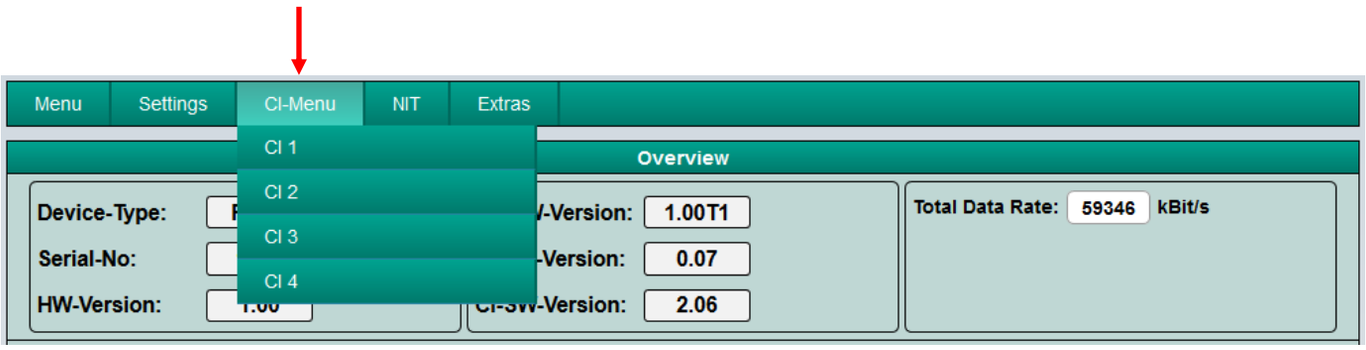


After correcting and re-entering all data, they must be saved again by clicking on **Save**.

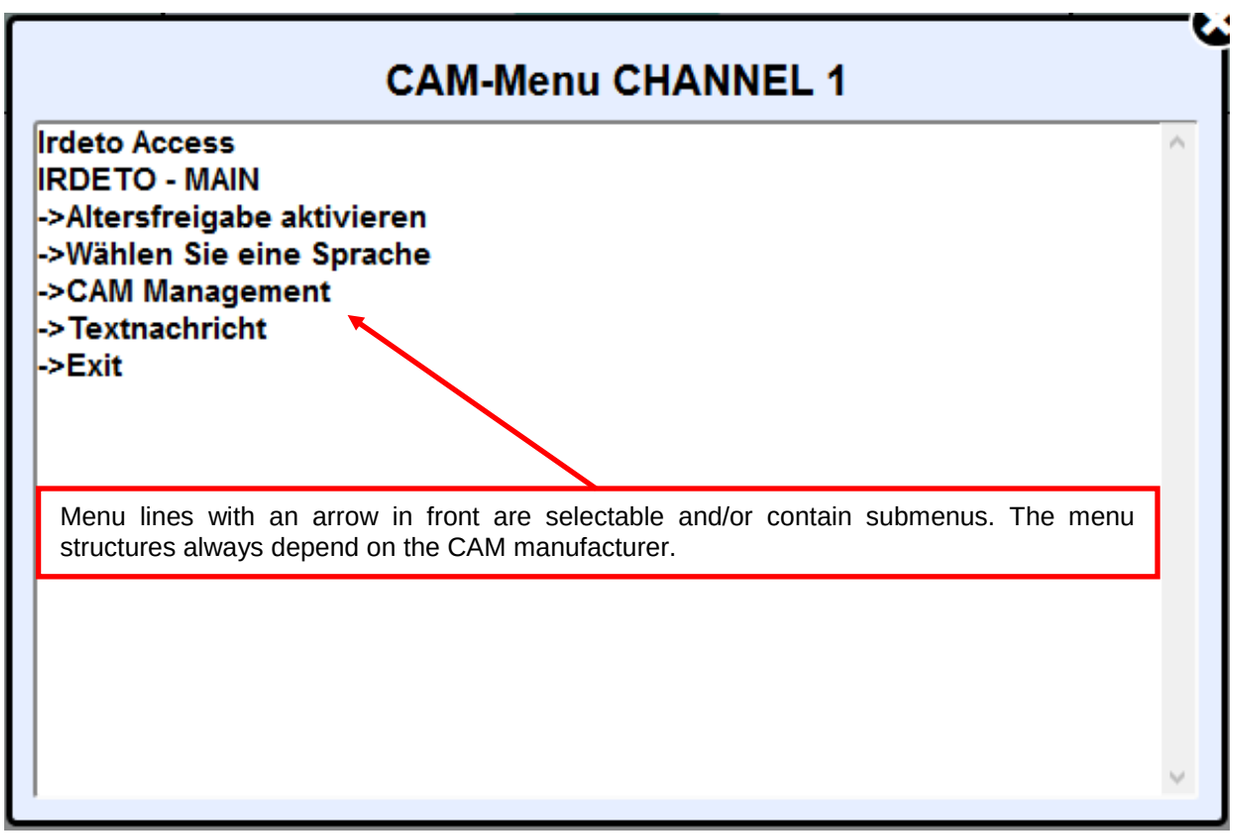
8.2.5. CI menu PCU 4131

This menu is only available for **PCU 4131**.

➔ Click on **CI-Menu * CI 1, CI 2, CI 3** or **CI 4**



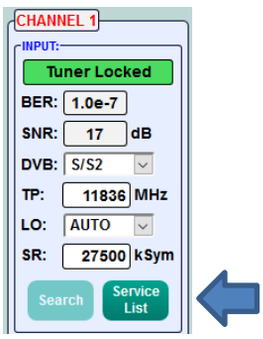
➔ Example display after clicking on **CI 1**



8.3. “Service list“ (program list)

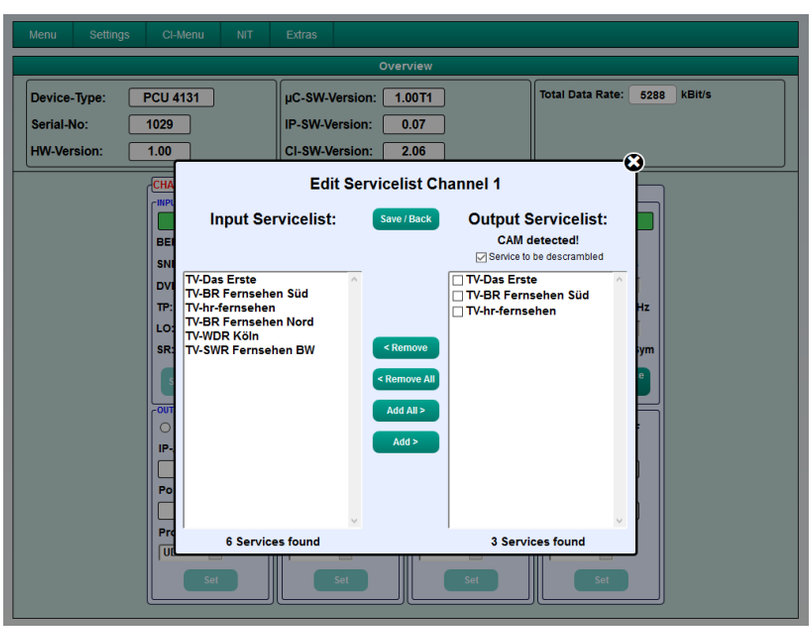
If certain services within a transponder are not desired at the output, they can be removed. You can also use this function for PCU 4131 to select encrypted services for decryption.

8.3.1. Delete and add “Services” (programs)



An additional **Service List** button is displayed next to the **Search** button. This is only active if the tuner is locked.

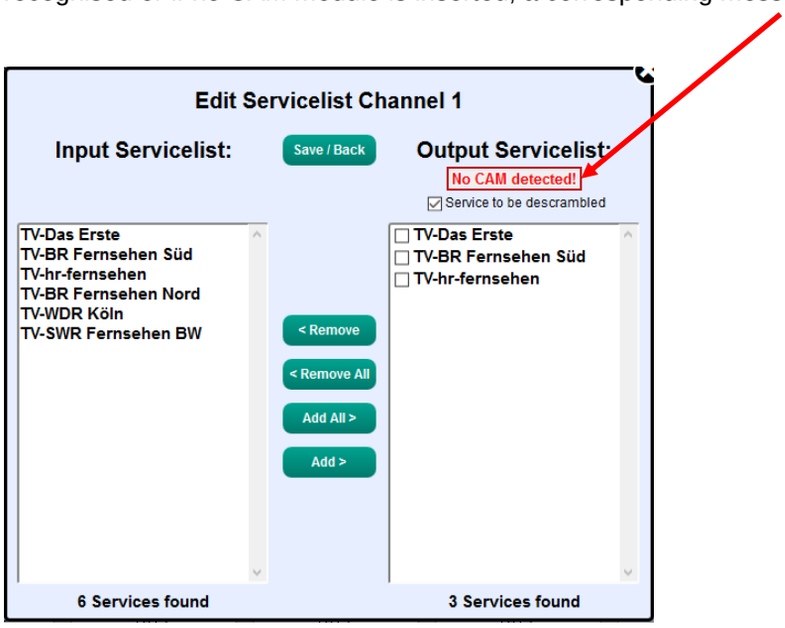
A click on the **Service List** button opens the following window. The list of services available at the input is displayed on the left. On the right side the services contained in the output signal are listed.



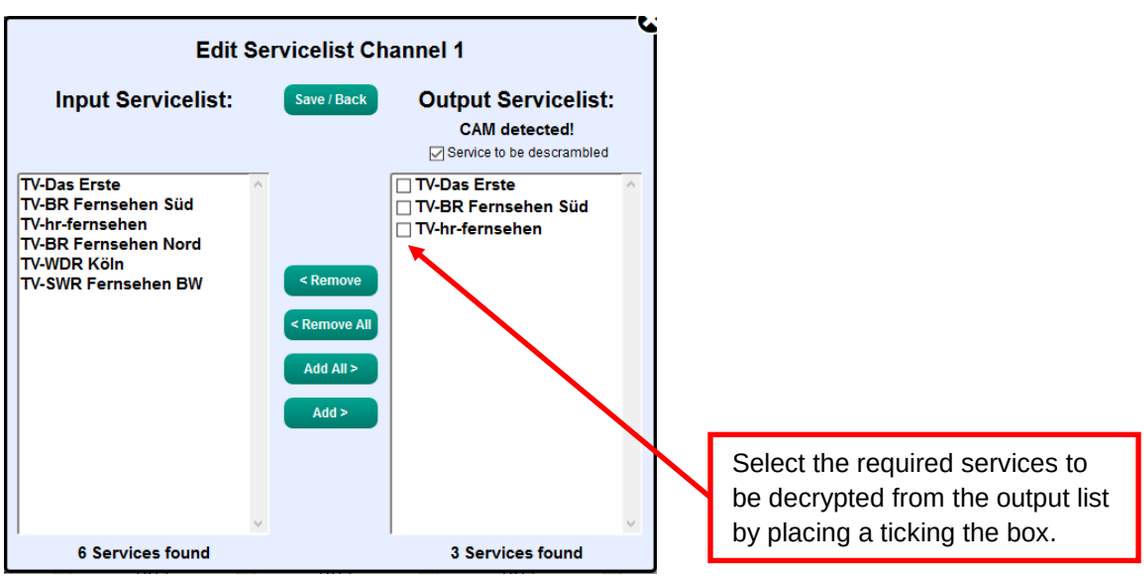
Clicking a service in the Input Servicelist and clicking **Add** adds that service to the Output Servicelist (double clicking a service in the Input Servicelist automatically adds it to the Output Servicelist).
Clicking a service in the Output Servicelistand clicking the **Remove** button removes this service from the Output Servicelist (double clicking a service in the Output Servicelist automatically removes it).
With a click on the **Save / Back** button the Output Servicelist is saved and the window is closed automatically.
If you want to use only a few services from a transponder with many services, you can first click **Remove All** and then select the required services.

8.3.2. Selection of the channels to be encoded PCU 4131

With PCU 4131 switched off, insert the CAM module with the corresponding smartcard. If it is not recognised or if no CAM module is inserted, a corresponding message will be displayed:



If the CAM module with the corresponding smart card is not detected, no services can be decrypted! However, encrypted and unencrypted services can still be distributed together.



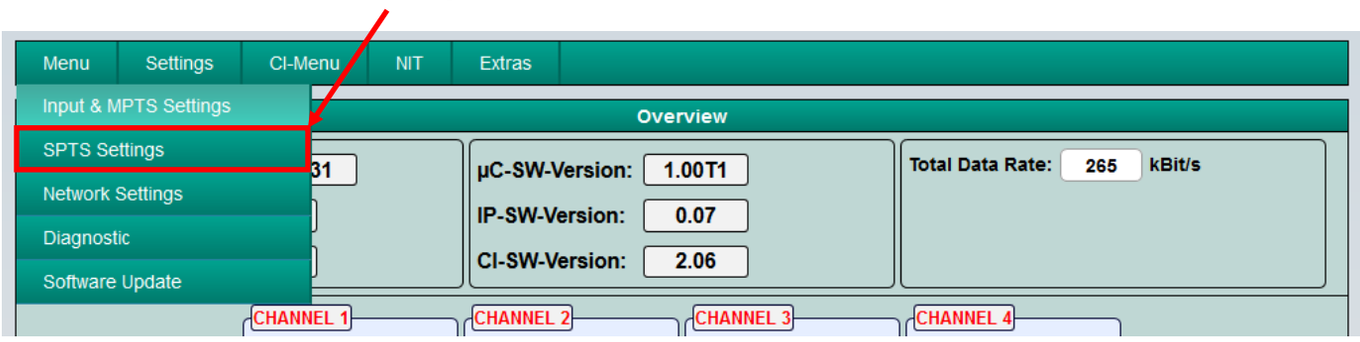
With a click on the **Save / Back** button, the output list is saved and the window is automatically closed.

☞ **The CAM modules should only be plugged in when the device is switched off.**

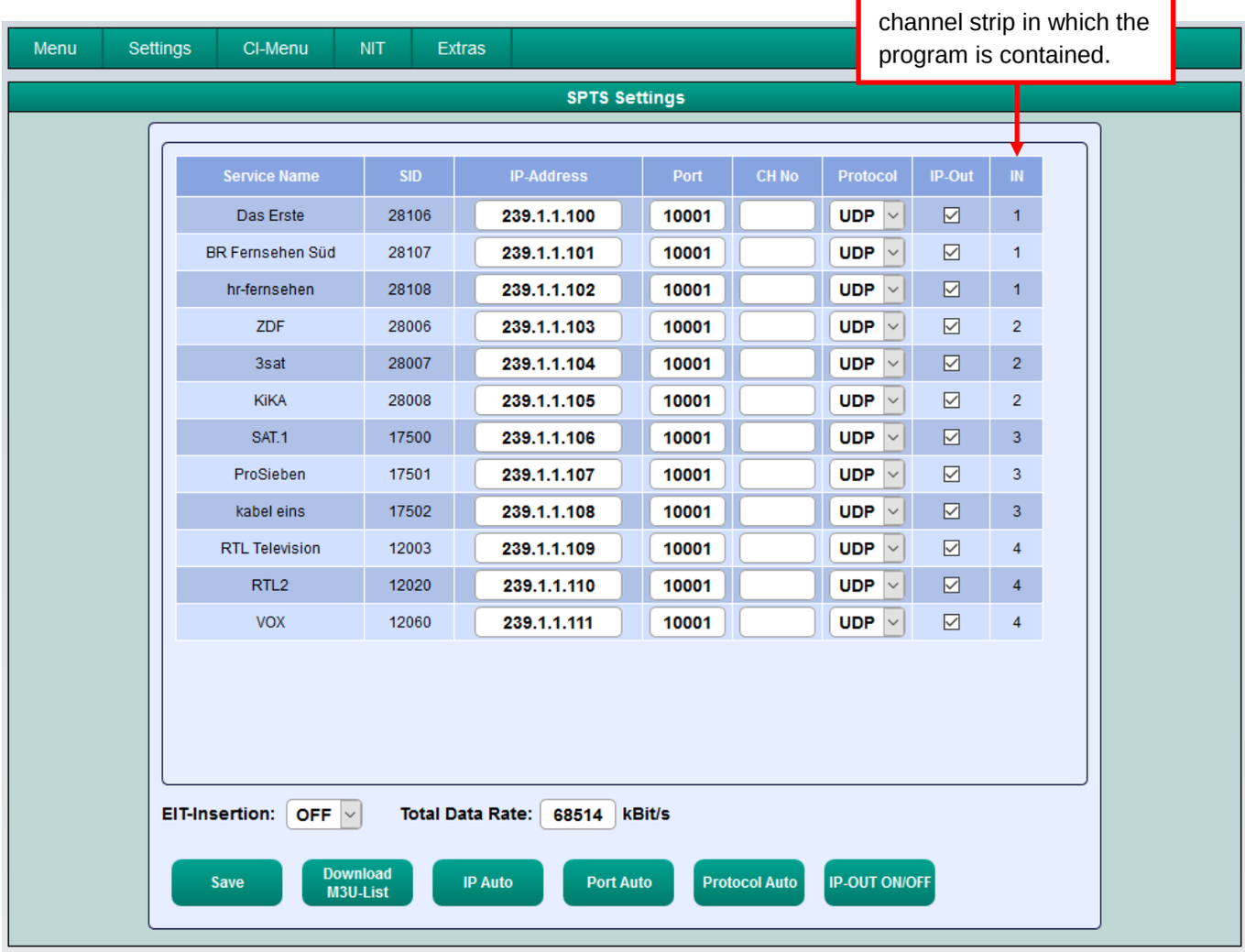
8.3.3. Assigning program positions via the M3U list

The prerequisite is that the IP reception devices support the reading and evaluation of M3U lists.

➔ Click on **Menu * SPTS Settings**

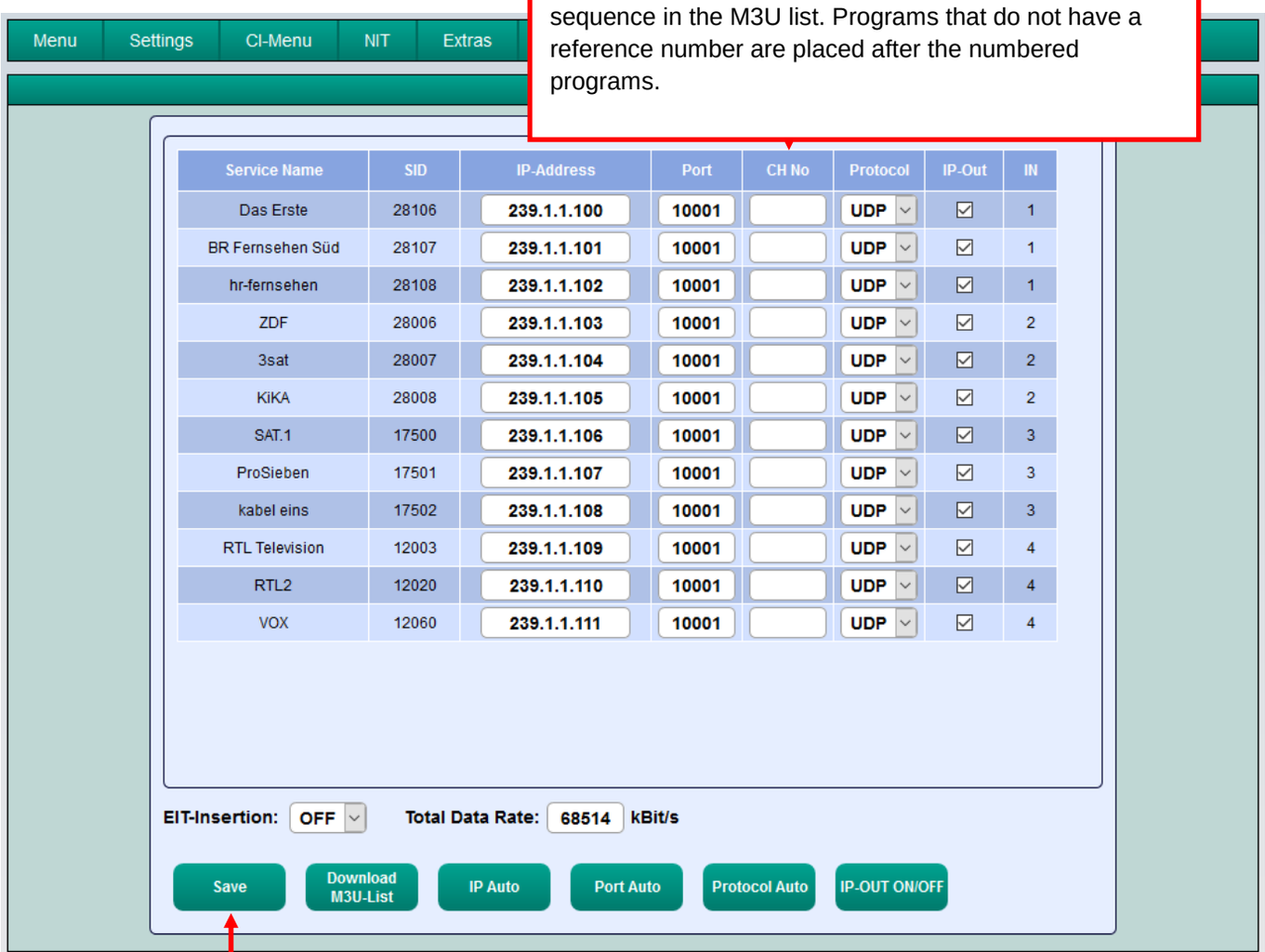


The IN field refers to the channel strip in which the program is contained.



Service Name	SID	IP-Address	Port	CH No	Protocol	IP-Out	IN
Das Erste	28106	239.1.1.100	10001		UDP	☑	1
BR Fernsehen Süd	28107	239.1.1.101	10001		UDP	☑	1
hr-fernsehen	28108	239.1.1.102	10001		UDP	☑	1
ZDF	28006	239.1.1.103	10001		UDP	☑	2
3sat	28007	239.1.1.104	10001		UDP	☑	2
KiKA	28008	239.1.1.105	10001		UDP	☑	2
SAT.1	17500	239.1.1.106	10001		UDP	☑	3
ProSieben	17501	239.1.1.107	10001		UDP	☑	3
kabel eins	17502	239.1.1.108	10001		UDP	☑	3
RTL Television	12003	239.1.1.109	10001		UDP	☑	4
RTL2	12020	239.1.1.110	10001		UDP	☑	4
VOX	12060	239.1.1.111	10001		UDP	☑	4

The required program position can be entered in the CH No column. These programs are then sorted into sequence in the M3U list. Programs that do not have a reference number are placed after the numbered programs.

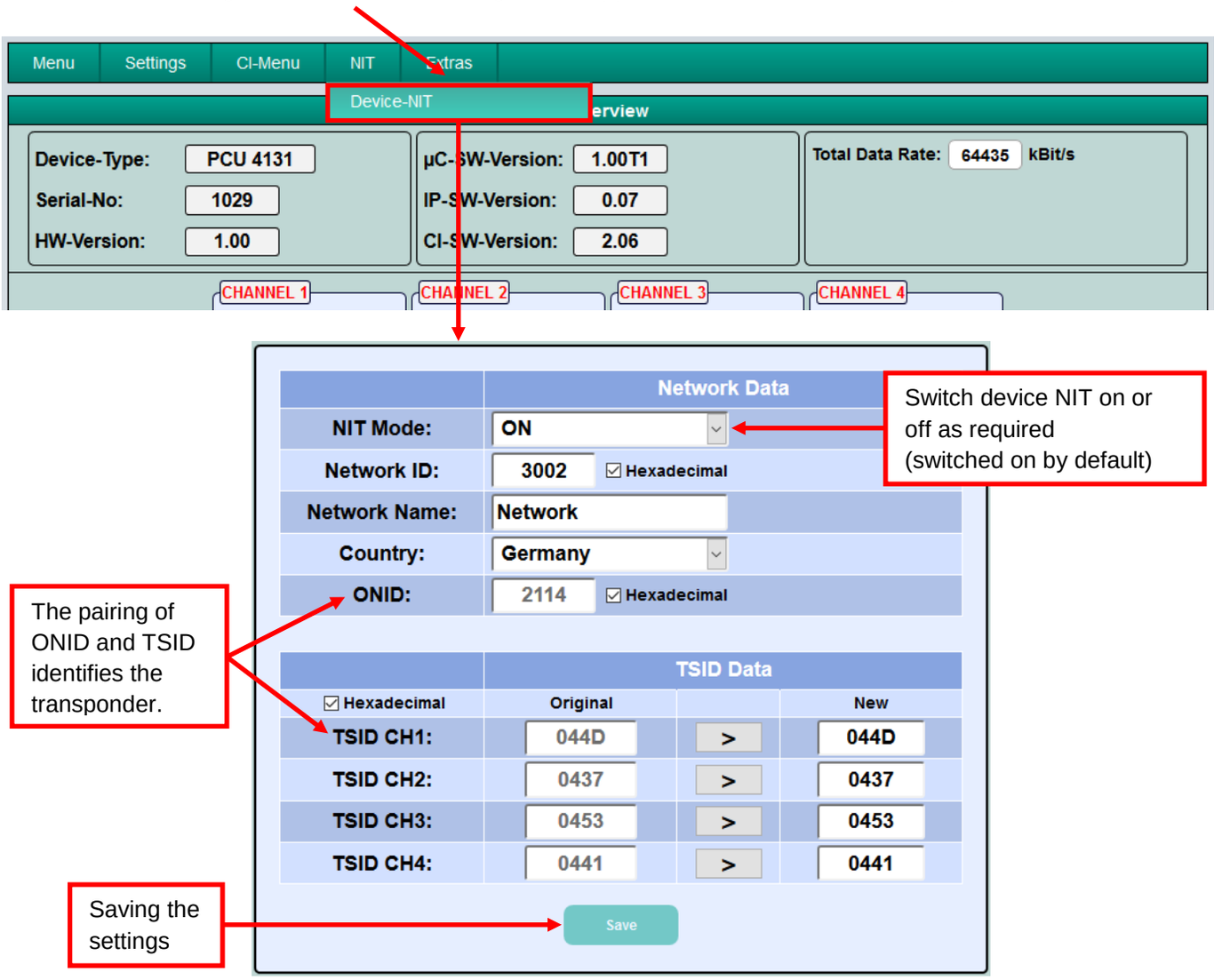


Service Name	SID	IP-Address	Port	CH No	Protocol	IP-Out	IN
Das Erste	28106	239.1.1.100	10001		UDP	☑	1
BR Fernsehen Süd	28107	239.1.1.101	10001		UDP	☑	1
hr-fernsehen	28108	239.1.1.102	10001		UDP	☑	1
ZDF	28006	239.1.1.103	10001		UDP	☑	2
3sat	28007	239.1.1.104	10001		UDP	☑	2
KiKA	28008	239.1.1.105	10001		UDP	☑	2
SAT.1	17500	239.1.1.106	10001		UDP	☑	3
ProSieben	17501	239.1.1.107	10001		UDP	☑	3
kabel eins	17502	239.1.1.108	10001		UDP	☑	3
RTL Television	12003	239.1.1.109	10001		UDP	☑	4
RTL2	12020	239.1.1.110	10001		UDP	☑	4
VOX	12060	239.1.1.111	10001		UDP	☑	4

Saving the settings

8.3.4. Device NIT

➔ After selecting **Device NIT**, the following screen appears, where further entries are possible:



Note: Please pay attention to plausibility and/or overlaps during data entry!

Network ID: Factory setting **3002** (modification possible)

Network Name: Can be freely assigned by the user.

Country: Factory setting **Germany** (modification possible)
The country setting should match the receiver setting.

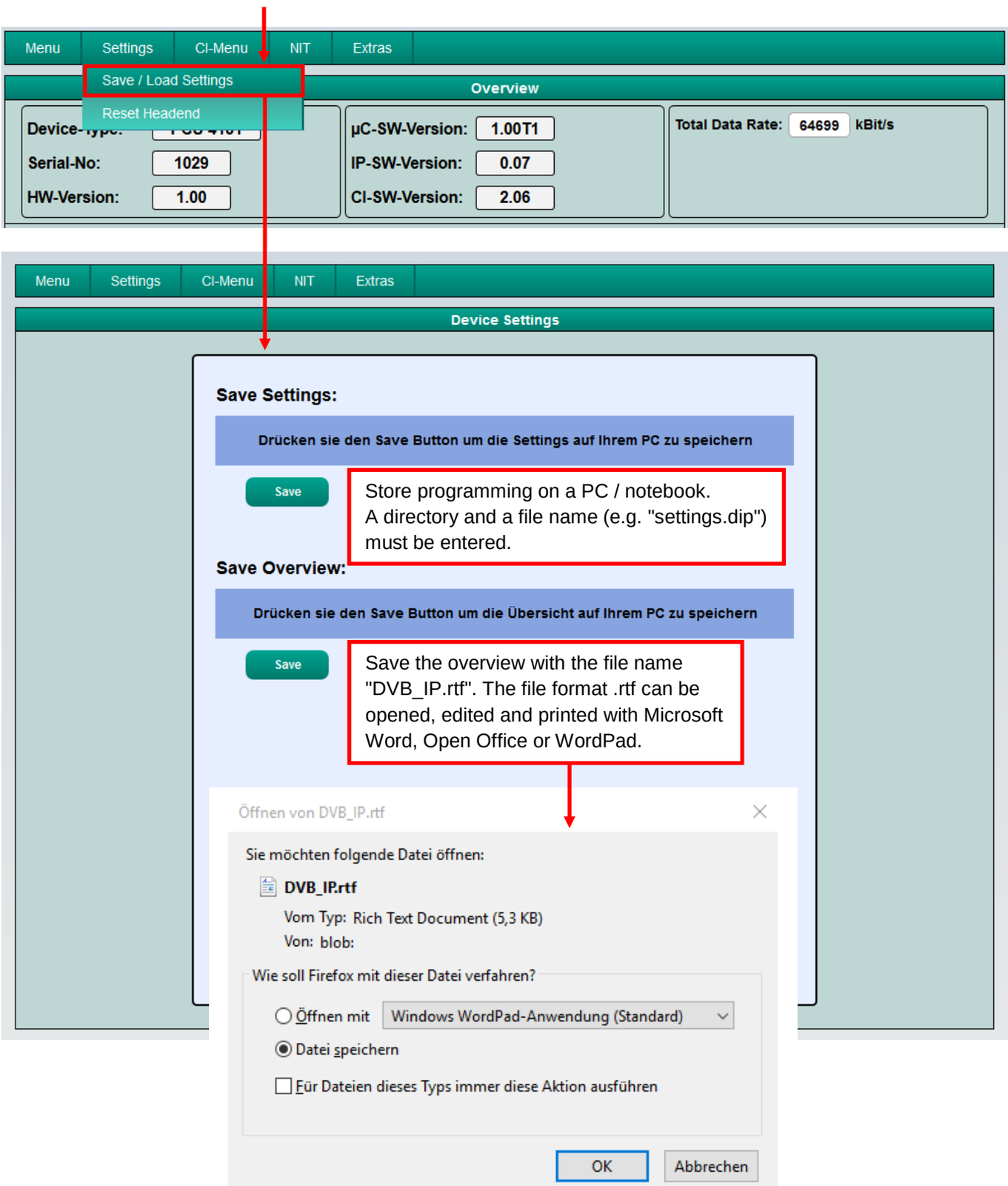
TSID New: If required, a new TSID can be assigned. We recommend to use hexadecimal values within the range of F001 and FFFE.

8.4. Storage of programming / Reset IP Streamer

It is possible to save an existing programming dataset on a PC / notebook or to load it from the same device. In this way it is possible to archive device constellations.
If required, the IP Streamer can be reset to the factory settings.

8.4.1. Storage of settings or overviews

➔ Click on **Settings * Save / Load Settings**



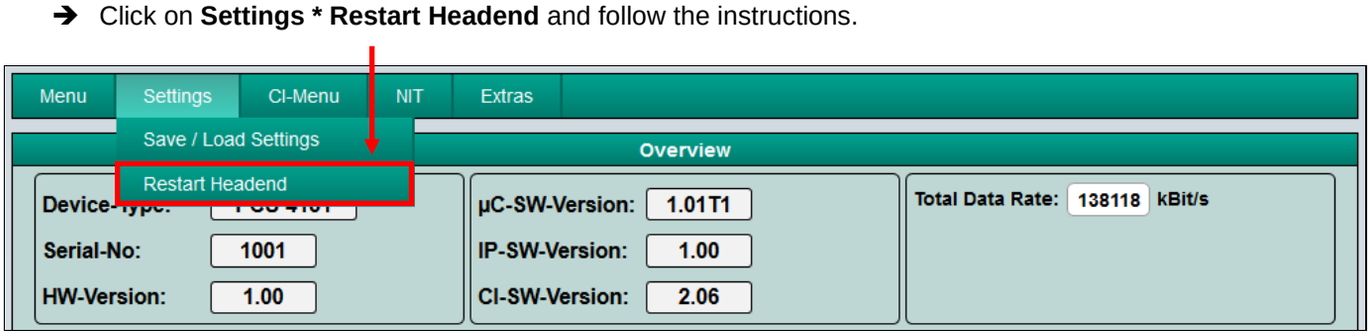
8.4.2. Upload of settings

Via the menu item **Load Settings,** the upload of an existing programming dataset from the PC / Notebook to the IP-Streamer PCU 4131 / PCU 8130 is possible.

To do this, select the corresponding .dip file (e.g. "settings.dip") in the directory and open it.
The data will then be loaded automatically within about 45 - 60 seconds.

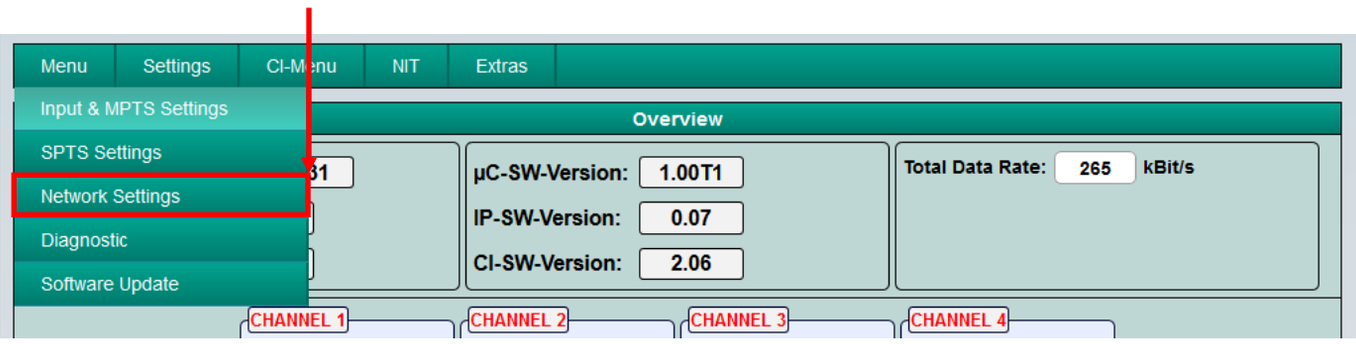
8.4.3. Restart the device

➔ Click on **Settings * Restart Headend** and follow the instructions.

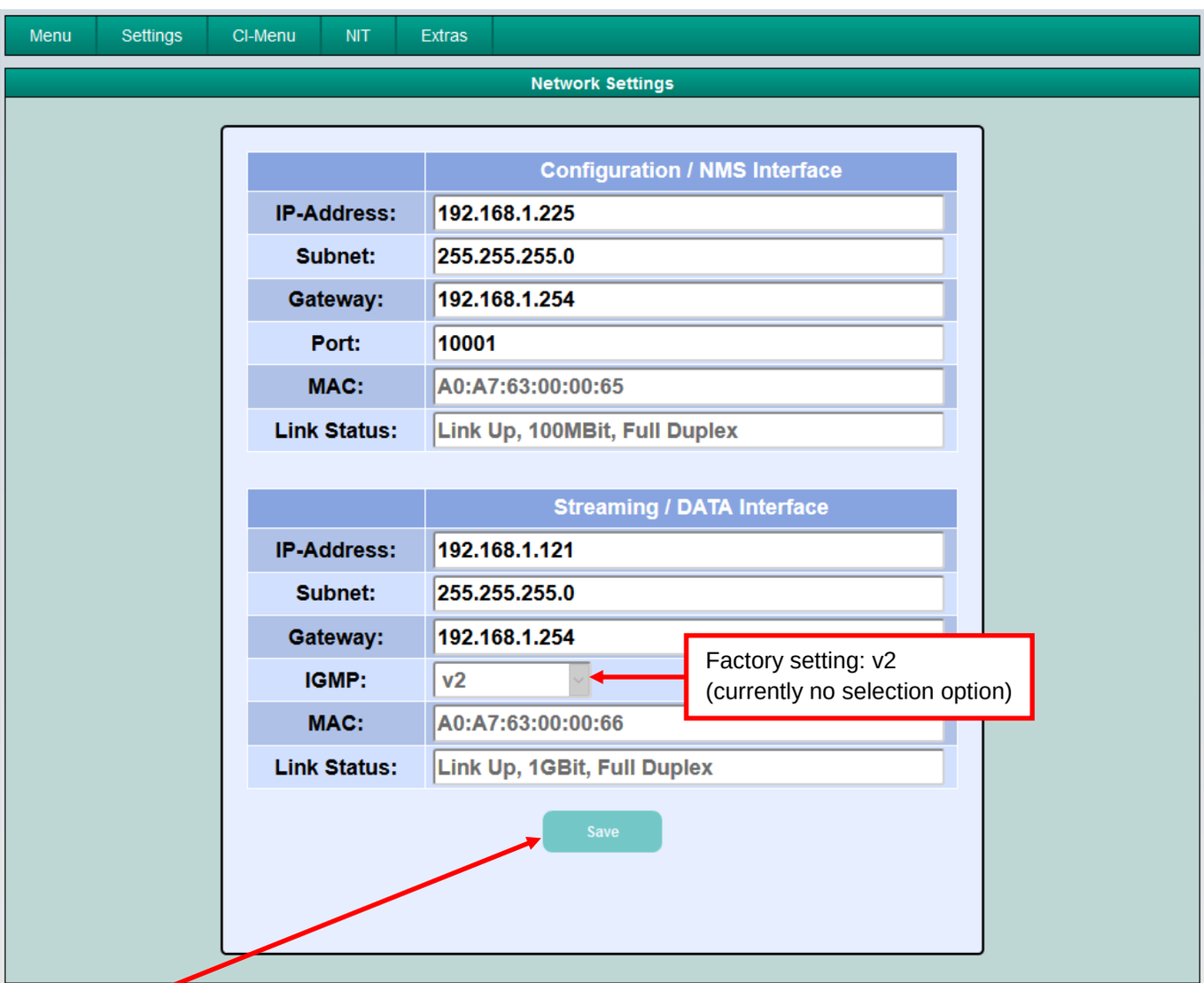


8.5. Network settings

➔ Click on **Menu * Network Settings**



Now the following dialogue window is displayed:



With **Save,** all changes are stored. A restart occurs which can take up to one minute.

Note: The IP addresses listed are only examples. All addresses must be adapted to the local network.
If this information isn't known, the responsible IT specialist should be contacted.

By default, the IP Streamers PCU 4131 / PCU 8130 have the following IP address: 192.168.1.129
If the system is used in a network with a different network address, the IP address must be adapted accordingly.

Example:
The PC operated in the network has the following settings:

IP address: 192.168.1.068

network share host share

The IP address of the streamer may only differ from the connected PC / notebook in the last block (host share). Not allowed are the digits 0, 255 and all those already in use.
Example IP address of the streamer in this application: 192.168.1.100 or factory IP address.

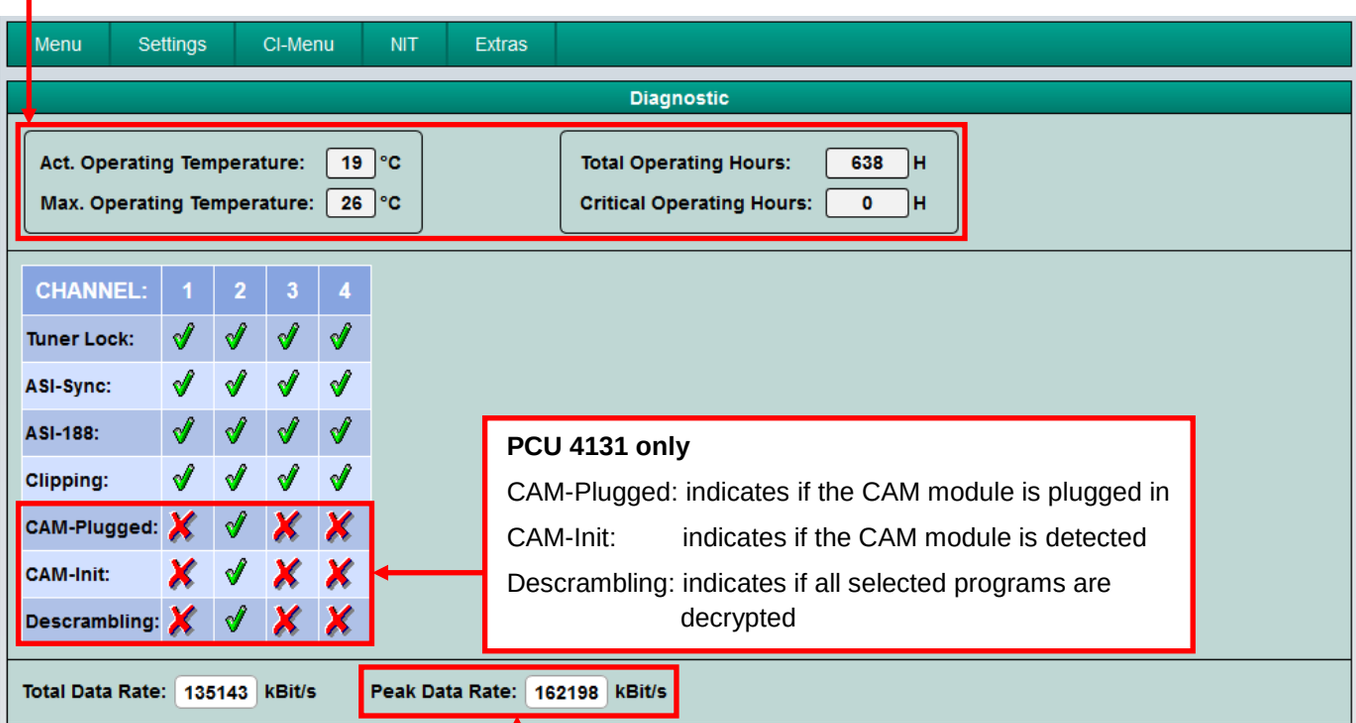
8.6. Diagnostic

The "Diagnostic" menu is used for service purposes and can be helpful for telephone error analysis via the **Hotline +49 (0) 7081 / 1702-0**.
The status display is automatically updated every 3 seconds.

Menu header display:

Cur. Operating Temperature:	approximate current ambient temperature
Max. Operating Temperature:	maximum measured ambient temperature
Total Operating Hours:	number of hours in operation
Critical Operating Hours:	operating hours above 45 °C ambient temperature

The indicated temperatures only correspond to the actual value in the case of professional, vertical installation and closed housing cover.



PCU 4131 only

CAM-Plugged: indicates if the CAM module is plugged in

CAM-Init: indicates if the CAM module is detected

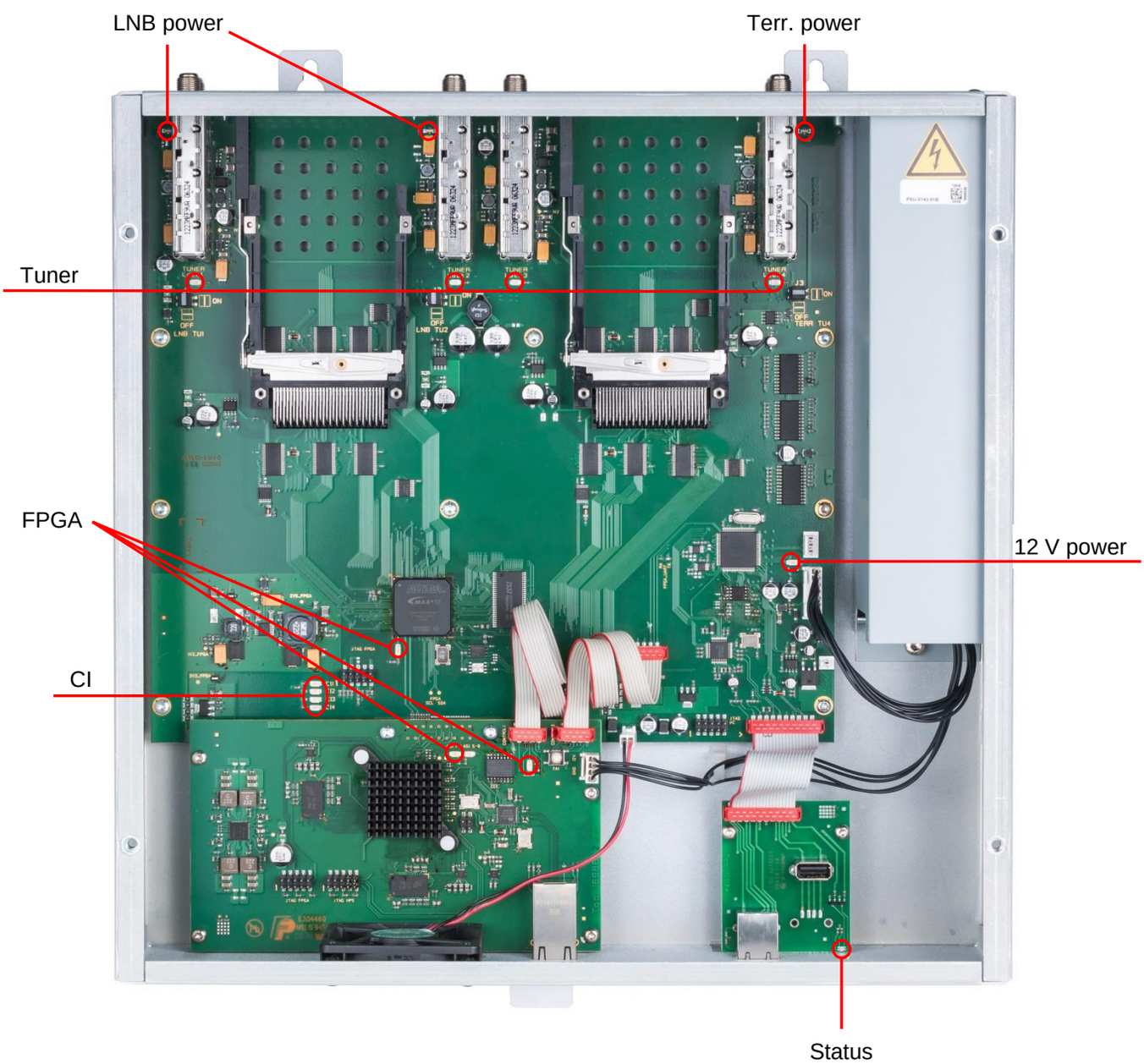
Descrambling: indicates if all selected programs are decrypted

Indication of the **Peak Data Rate** during operation
-> The displayed value (Total Data Rate) is automatically updated every 3 seconds.
-> The current peak value is stored hourly.
-> After mains disconnection restart, or relevant data-related parameters are changed, the values are reset.

8.7. LED key

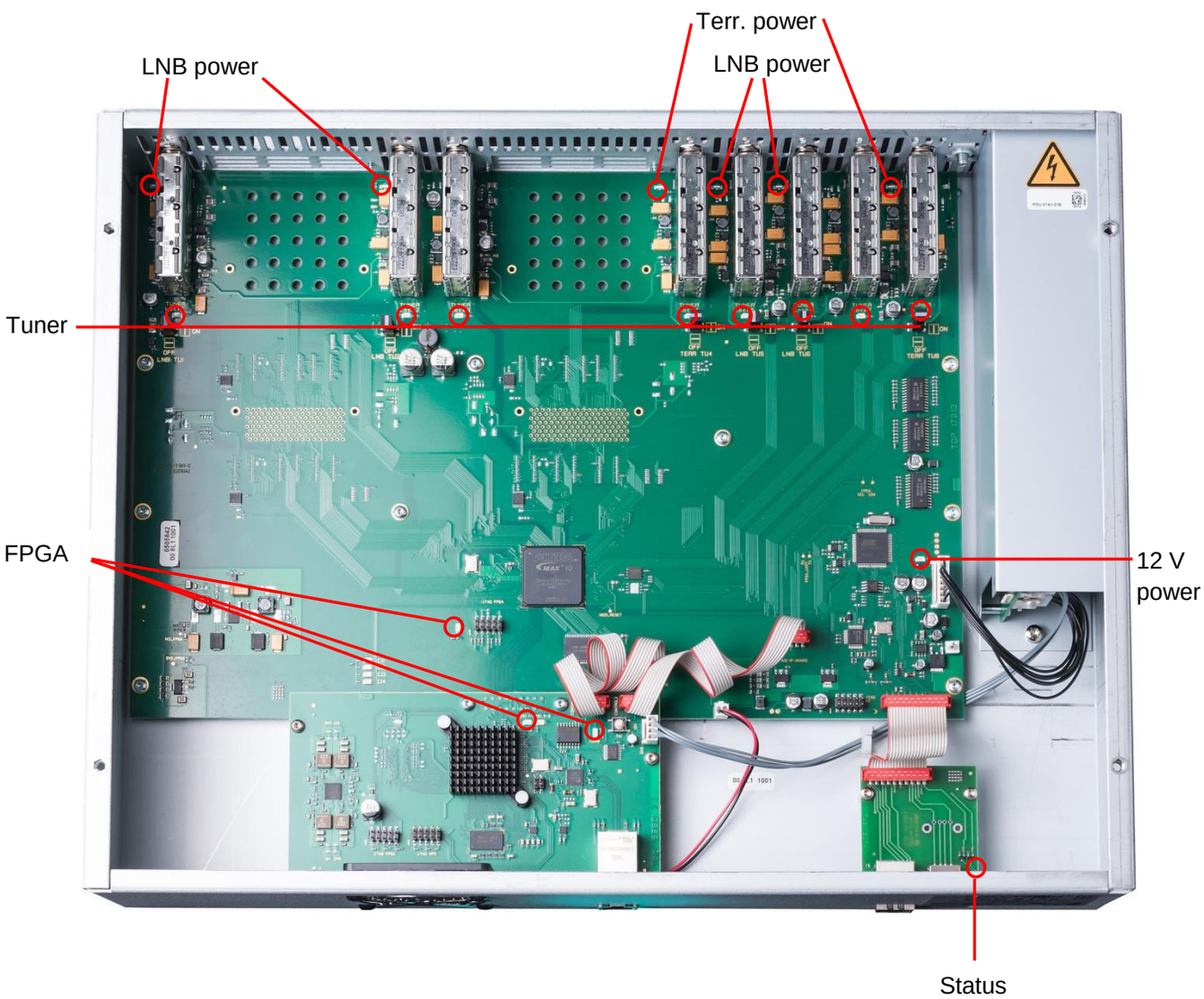
PCU 4131

LNB	green:	12 V power supply
	off:	no voltage supply
Tuner	green continuous:	tuner logged
	green flashing:	tuner not logged
FPGA	green:	configured, ready to operate
	off:	failure
12 V	green:	12 V from power supply provided
	off:	power supply error
CI	green:	CAM 1-4 detected
	off:	no CAM detected
Status	green:	all tuners logged, ready for operation
	orange:	various functions during programming



PCU 8130

LNB	green:	12 V power supply
	off:	no voltage supply
Tuner	green continuous:	tuner logged
	green flashing:	tuner not logged
FPGA	green:	configured, ready to operate
	off:	failure
12 V	green:	12 V from power supply provided
	off:	power supply error
Status	green:	all tuners logged, ready for operation
	orange:	various functions during programming



8.8. Software update

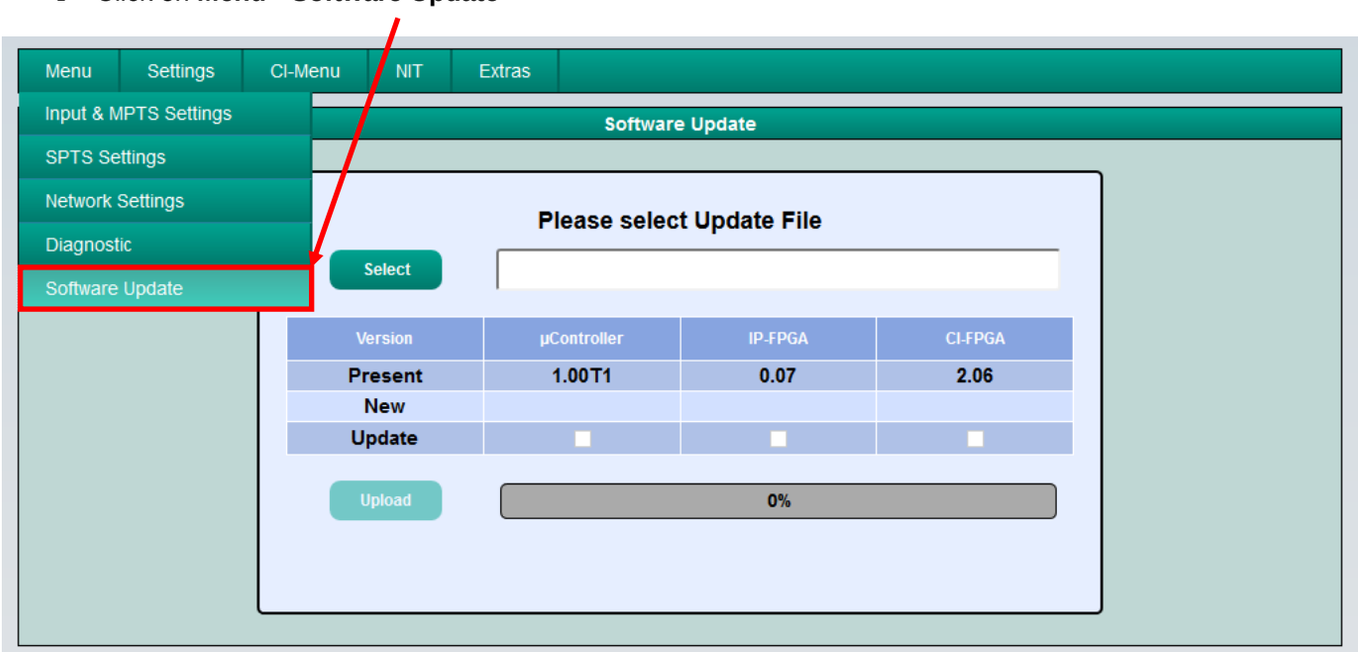
The **Software Update** menu is used to update the controller software of the device.

The prerequisite is that the latest software is installed on the PC / notebook.
The latest software can be found on www.polytron.de in the Service / Software Download area.

The programming of the input and output parameters carried out in section 8.2. is not affected by this.

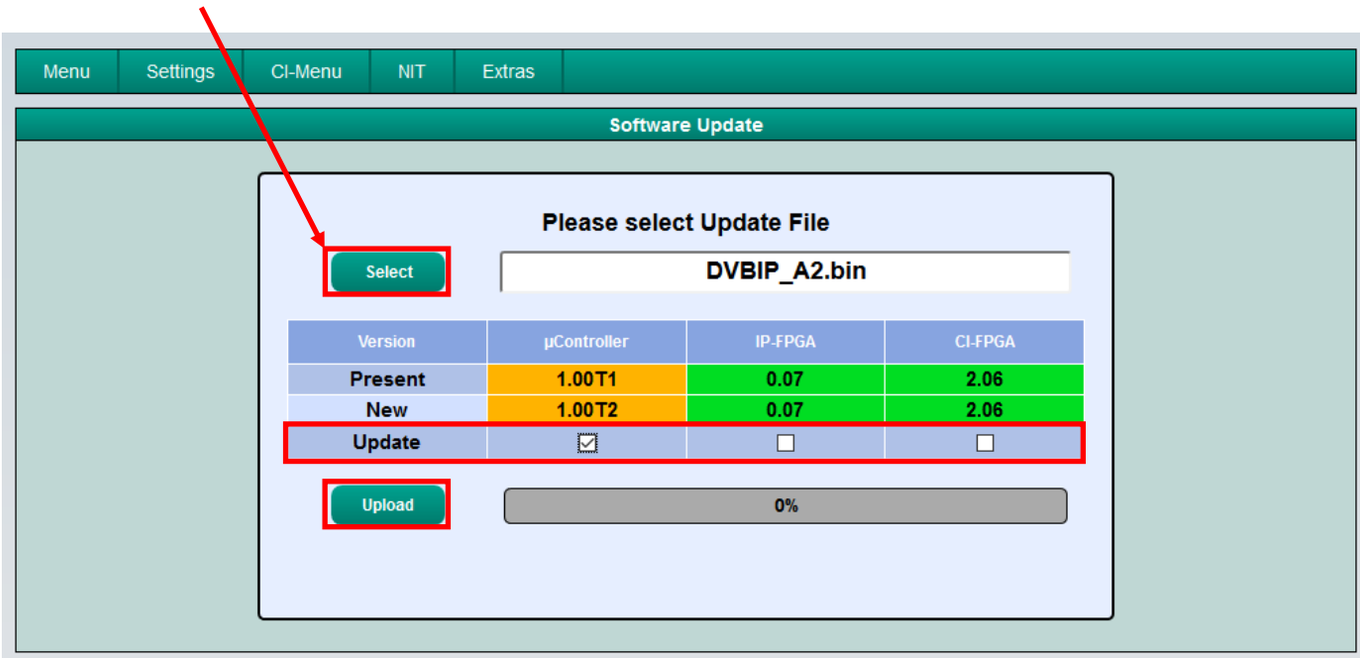
Important: Please follow the update instructions carefully. Do not turn off the unit or unplug the power cord from the wall outlet. Failure to follow the instructions or interrupt the power supply while installing the new controller software may interrupt the update process and cause the unit to stop responding or require repair.

➔ Click on **Menu * Software Update**



The software selection „CI-FPGA“ will only be displayed for **PCU 4131**.

Use **Select** to find the appropriate folder with the update file, select the .bin file and open it.



Now, the fields with the software versions are marked in colour:

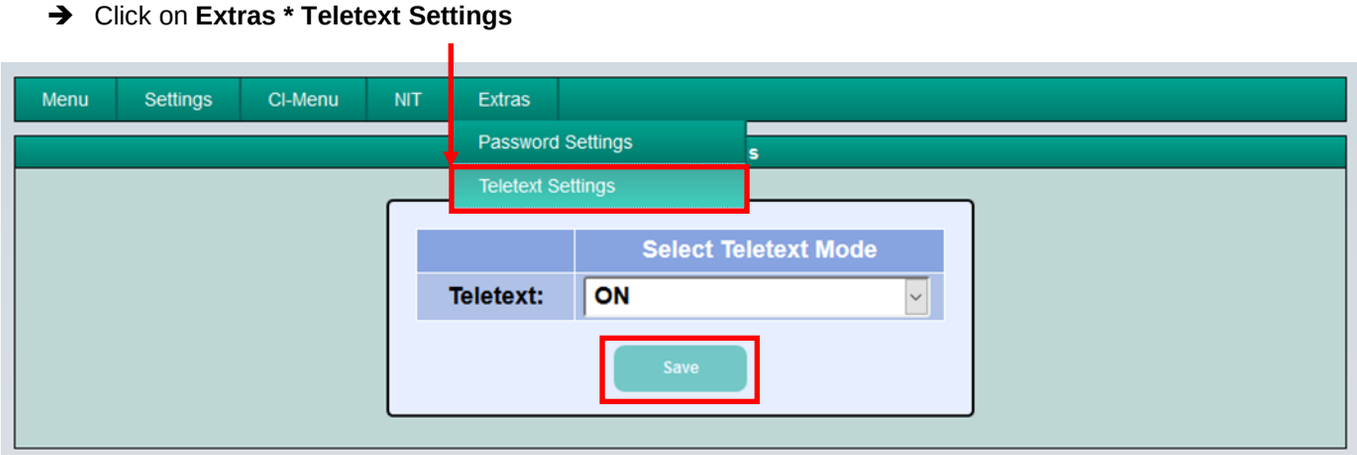
- Green means: Software is up to date.
- Orange means: More recent software exists, an update is possible.

The individual software files can be updated selectively.
To do this, select the desired update(s) in the **Update** line by ticking and then click on **Upload**.

The software files are now uploaded one after the other. The IP streamer is then rebooted and the new software will be installed.

8.8.1. Teletext ON / OFF

➔ Click on **Extras * Teletext Settings**



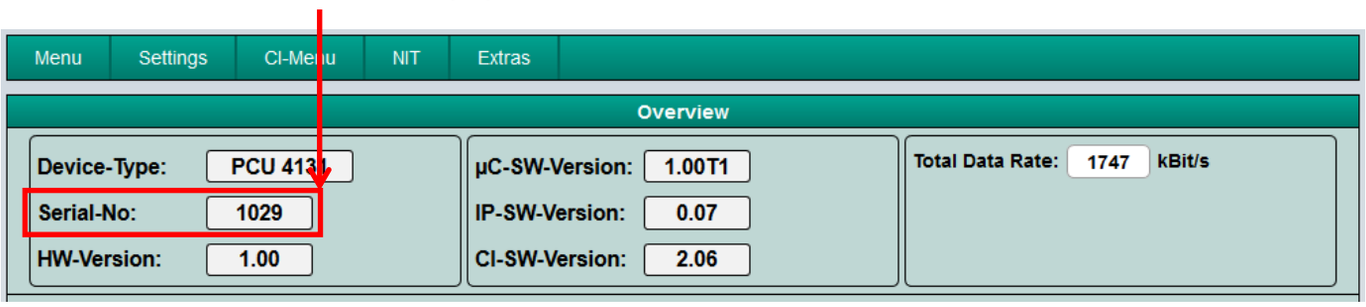
Switch teletext on or off as required. Then store by clicking **Save**.

Note: Factory setting -> Teletext is switched on

8.8.2. Change factory logon data (user and password)

Function to protect against unauthorised access to the menu structure and device data.

Note: Please make sure to note the serial number, as this is required to reset the password if necessary. The serial number is displayed on the Overview window:

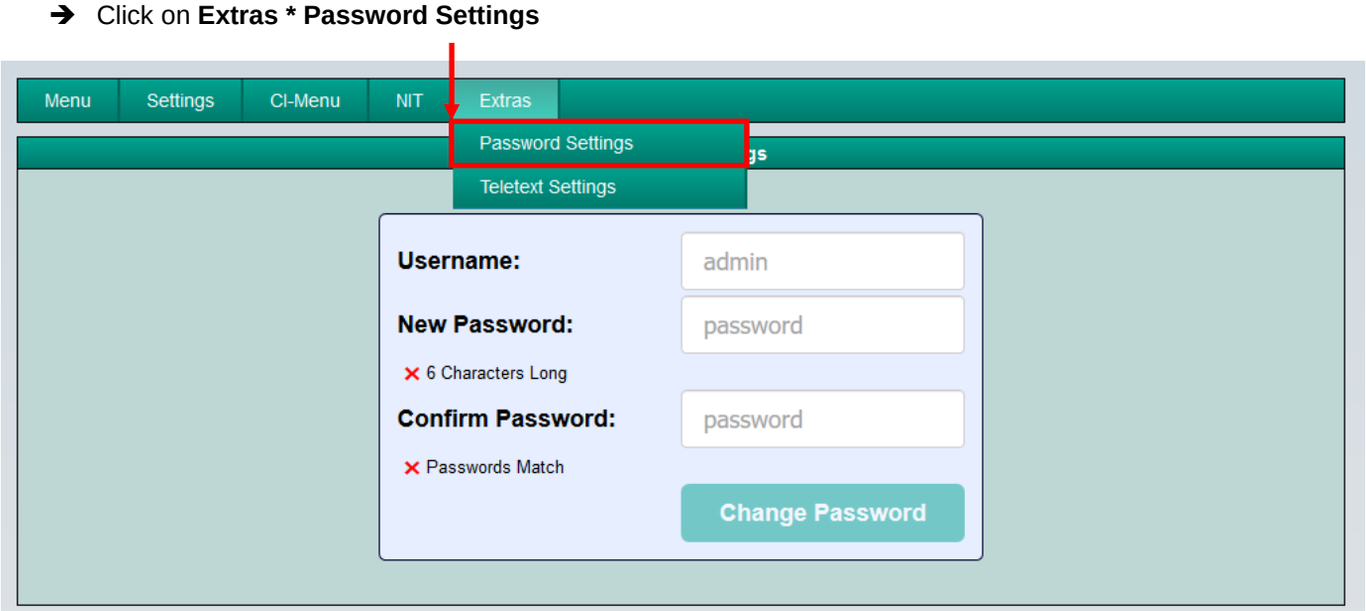


Should the password be lost or forgotten, we are happy to help with the general password reset. For this we need the serial number of the device. The serial number can also be found on the label on the outside of the device housing.

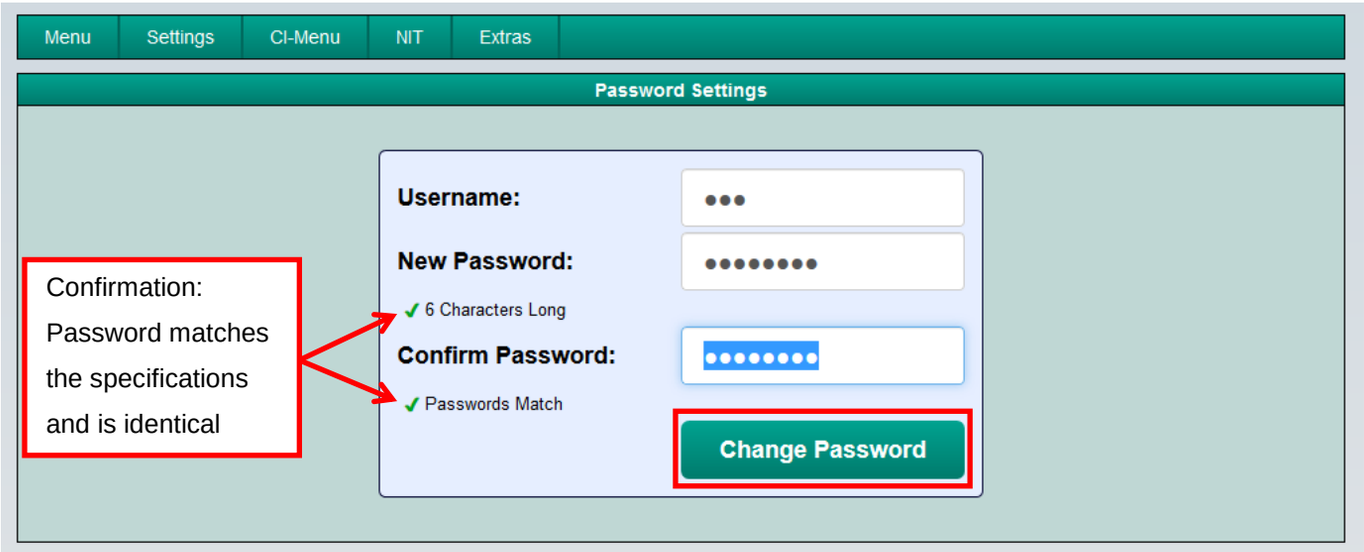
The general password reset can only be done by POLYTRON. For this process, we generate a new password with which the device can be unlocked again.

Password protection is activated by default and can be configured as follows:

➔ Click on **Extras * Password Settings**



➔ Change Username and Password as follows



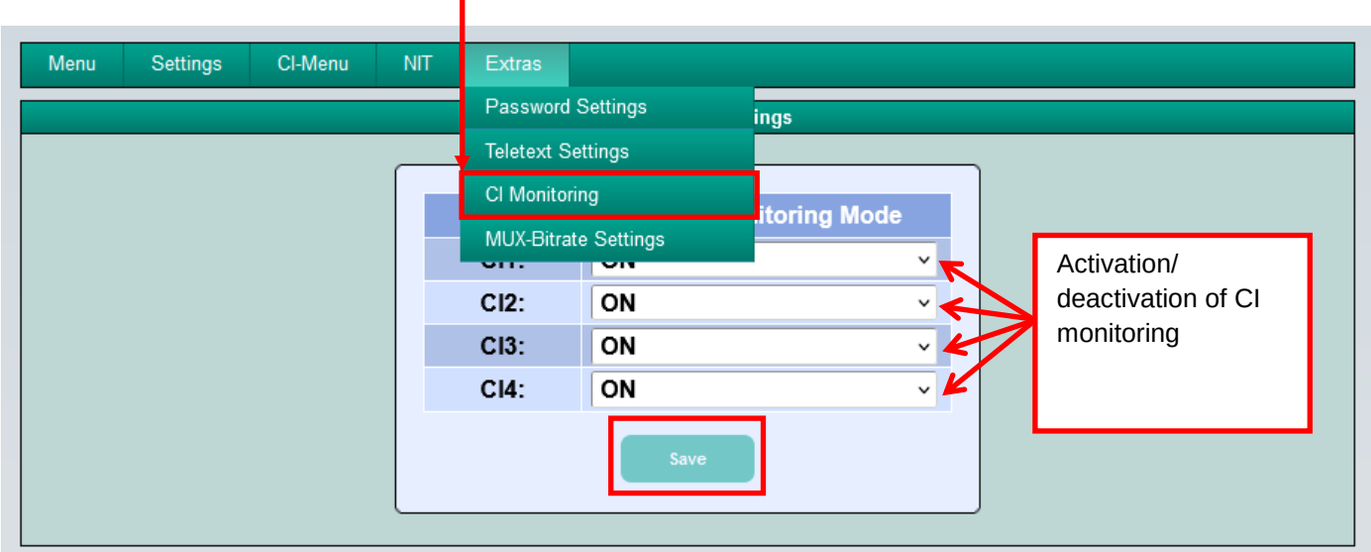
- If required, assign a new user name (consisting of letters, numbers or special characters in any order and length) in the **Username** field.
- In the **New Password** field, enter the new password with at least 6 digits (consisting of letters, numbers or special characters in any order).
- Then enter the new password again in the **Confirm Password** field.
- Click **Change Password** to save the new password.

Note: After changing / saving the new login data, the login data is queried again when the next operation is attempted.

8.8.3. CI Monitoring PCU 4131

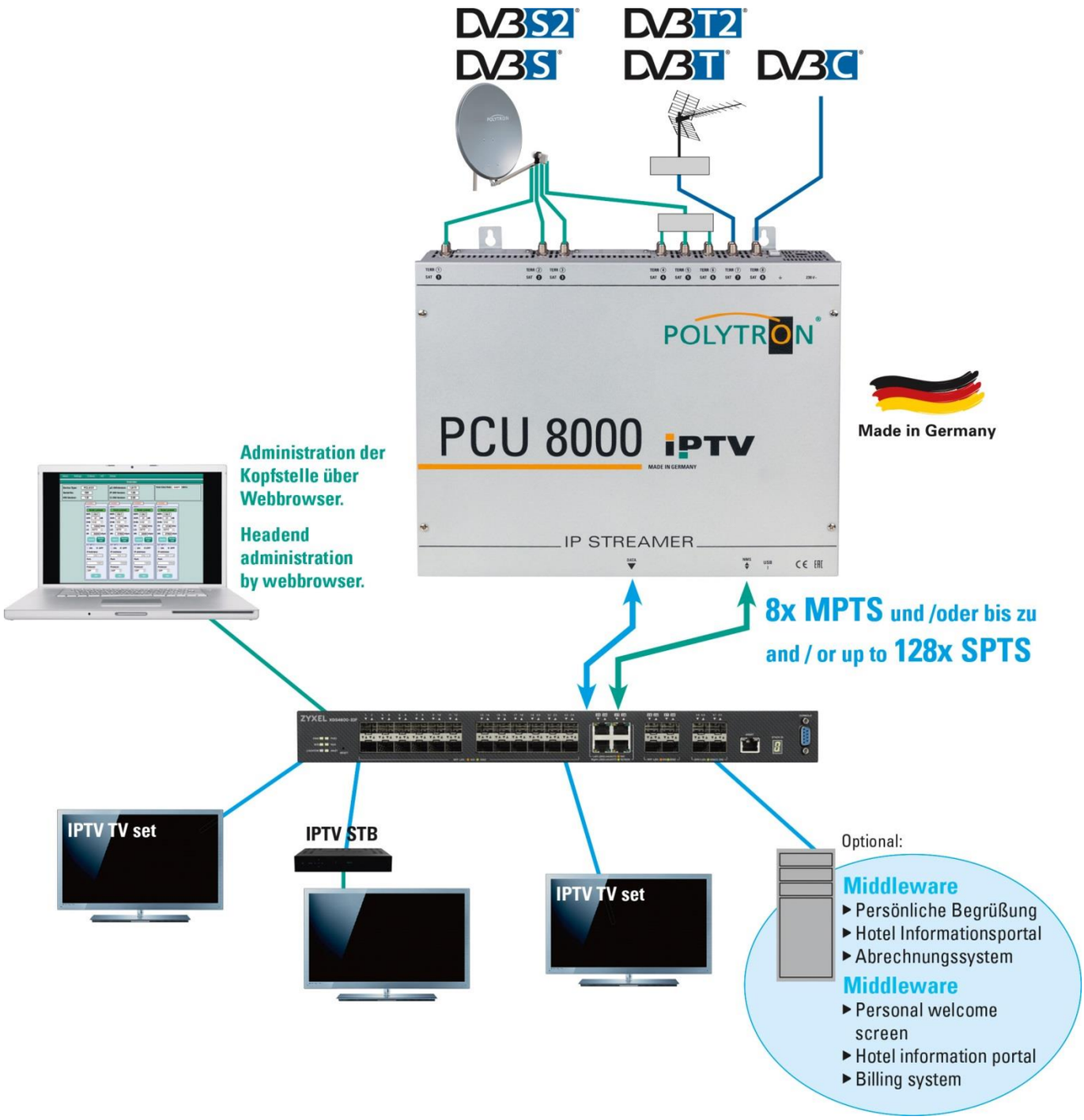
Function to activate CI monitoring

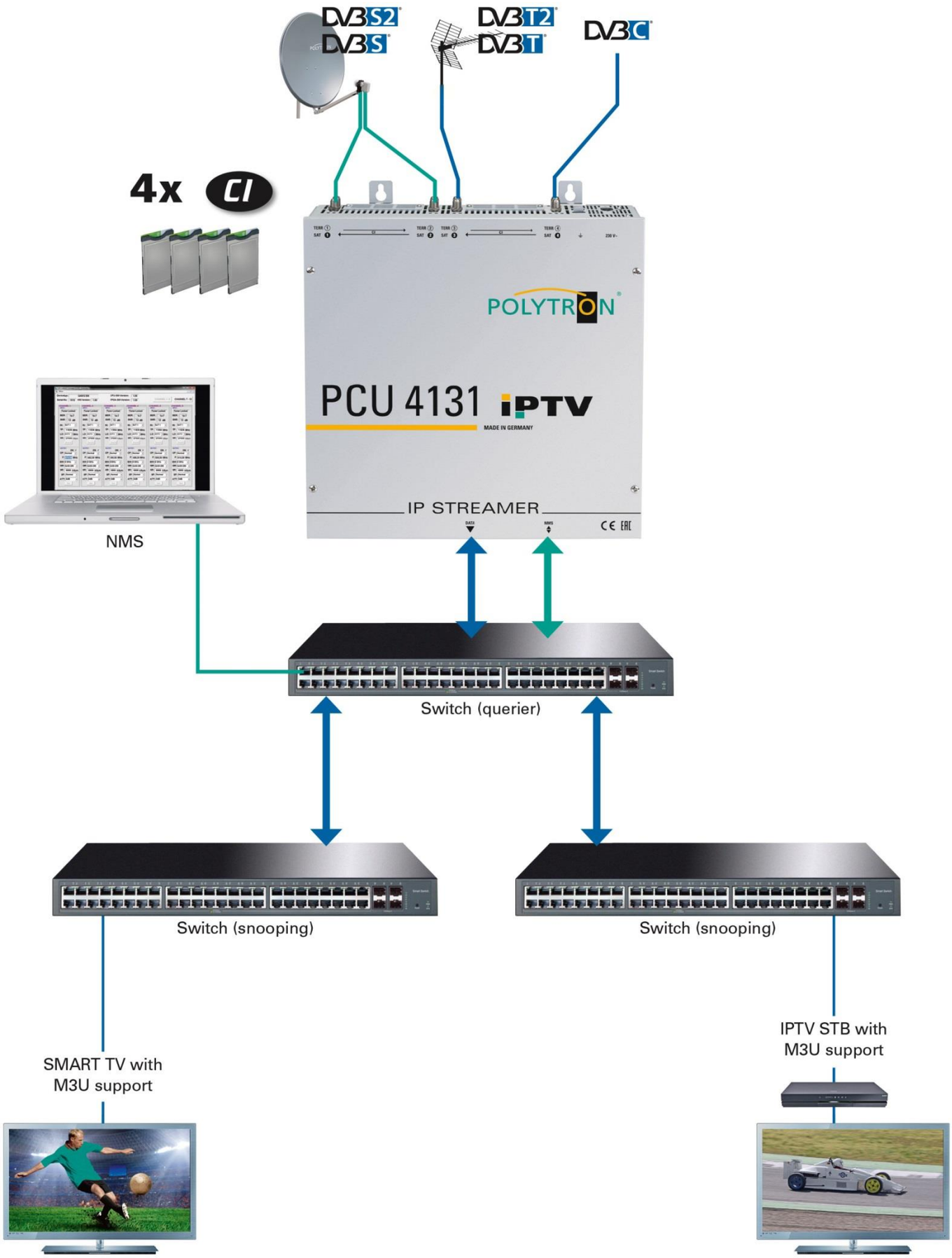
➔ Click on **Extras * CI Monitoring**



Click **Save** to save the settings.

9. Application examples




DVB S2
DVB S
DVB T2
DVB T
DVB C
4x CI
POLYTRON
PCU 4131 iPTV
MADE IN GERMANY
IP STREAMER
NMS
Switch (querier)
Switch (snooping)
Switch (snooping)
SMART TV with
M3U support
IPTV STB with
M3U support

10. Technical data

Type	**PCU 4131**	**PCU 8130**
Article no.	5552140	5552340
Inputs	4	8
CI slots	4	/
Input connector A		
Connector	F female	
Input frequency	950 … 2150 MHz (1 MHz steps)	
Input level	50 … 80 dBµV	
Input Connector B		
Connector	F female	
Input frequency	110 … 862 MHz (250 kHz steps)	
Input level	50 … 80 dBµV	
Demodulator		
DVB-S/S2		
SR DVB-S / QPSK	1 … 45 MS/s	
SR DVB-S2 / QPSK	1 … 45 MS/s	
SR DVB-S2 / 8PSK	1 … 45 MS/s	
Modulation	8PSK / QPSK	
CR DVB-S / QPSK	1/4, 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10	
CR DVB-S2 / 8PSK	3/5, 2/3, 3/4, 5/6, 8/9, 9/10	
Roll off	0.35, 0.25, 0.20	
DVB-T		
Modulation	QPSK, 16QAM, 64QAM	
FFT	2K, 8K	
Bandwidth	7, 8 MHz	
Code rate	1/2, 2/3, 3/4, 5/6, 7/8	
Guard interval	1/4, 1/8, 1/16, 1/32	
DVB-T2		
Modulation	QPSK, 16QAM, 64QAM, 256QAM	
FFT	1K, 2K, 4K, 8K, 16K, 32K	
Bandwidth	7, 8 MHz	
Code rate	1/2, 3/5, 2/3, 3/4, 4/5, 5/6	
Guard interval	1/4, 5/32, 1/8, 5/64, 1/16, 1/32, 1/64, 1/128	
DVB-C		
Modulation	16QAM, 32QAM, 64QAM, 128QAM, 256QAM	
Symbol rate	0.2 … 7.2 MS/s	
Bandwidth	6, 7, 8 MHz	
IP-Output		
Interface	RJ45	
Standard	1000-Base-T	
Data rate	max. 800 Mbit/s	
Protocol	MPEG over UDP/RTP (Unicast / Multicast)	
Format	4x MPTS / max. 128 SPTS	8x MPTS / max. 128 SPTS
Operation parameters		
Operation temperature	0 … 50 °C	
Supply voltage	180-265 V~, 50/60 Hz	
Dimensions (W x H x D)	331 x 328 x 103 mm	

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Technische Änderungen vorbehalten
Subject to change without prior notice