



BLANKOM IRD-6300 HD IRD



Here with 2 Tuner 2 Audio out

User Manual

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Product Outline

Outline

This BLANKOM IRD-6300 HD IRD receives Transponder RF-signals from the installed tuner (DVB-S/S2/S2X, DVB-C, DVB-T/T2, ISDB-T, ATSC-T optional), ASI and IP-Input sources. After demodulating, de-scrambling, re-multiplexing and decoding, it gives content out through various video/audio interfaces (HDMI, CVBS, 3G-SDI) or ASI or IP.

The BLANKOM IRD-6300 HD IRD is featured with two CAM/CI slots and BISS which supports to descramble encrypted Tuner, ASI or IP signals.

Statement:

Text and pictures herein are subject to changes w/o notifications.

The user manual will be updated in real time without special notice.

This user manual is provided only as a reference guide for technicians as examples.

Default Values

*The factory default administrator account: **admin***

*The factory-default user password: **admin***

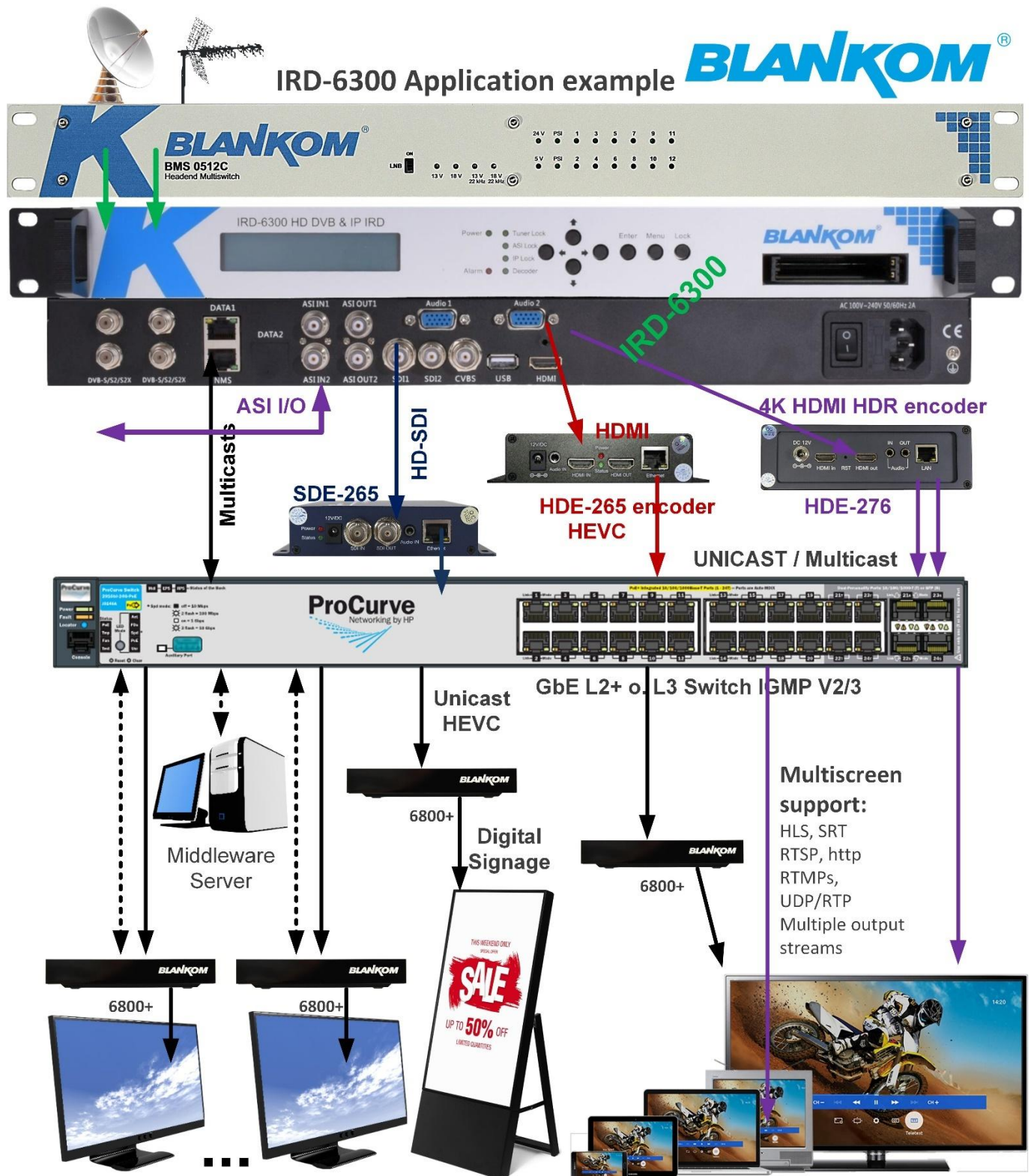
*The factory default IP address: **192.168.0.136 NM 255.255.255 GW 192.168.0.1***

Set the administrator's computer IP as: 192.168.0.* to avoid IP conflicting with the units own IP address 192.168.0.136.
192.168.0.*: use an IP setting "*" in the number range 2-254 and except the units default IP.

Remark: .0 is often the network router, .1 often the Gateway of the used router, .255 might be a network broadcasting address.

Please change these account settings according to your local policy and network. -> Do not forget to save and backup the configuration by Web-Interface and its related system-sub-menu.

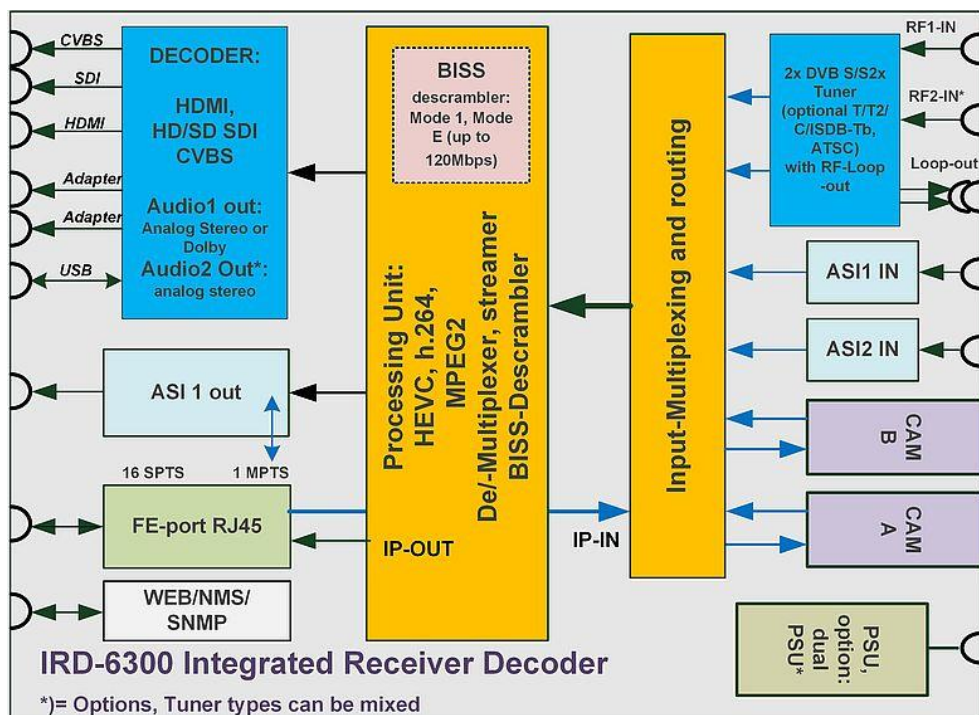
Application Example



Features

- Demodulator + descrambler +re-mux+ decoder in one box
- 1 or 2 Tuner inputs (DVB-C/T/T2/S/S2/S2X/ATSC-T/ISDB-T optional) for option
- 2 ASI & 16 IP UDP/RTP input for re-mux
- Support 1ch HDMI/CVBS/3G-SDI video out (SDI1 and SDI2 mirrored out)
- Support 1ch or 2ch Audios out for option
- Support HD/SD MPEG2, MPEG4 AVC/H.264, HEVC/H.265 and
- AVS/AVS+ decoding
- Support MPEG 1 Layer II, LC-AAC, HE-AAC, HE-AAC V2, Dolby Digital/Dolby Digital Plus decoding and AC3 pass-through
- IP (1 *MPTS & 16* SPTS) output over UDP and RTP/RTSP; 2 ASI mirrored out as a copy of the IP MPTS
- Each CAM can decrypt multiple programs from Tuner/ASI/IP
- BISS descrambling (Up to 120Mbps)
- Support CC (EIA608, EIA708) & Teletext (Applicable for SDI port)
- Support maximum 128 PID mapping per input
- LCD/Keyboard and web-based NMS management
- Updates via web

Block diagram



Specifications*:

Input		1 or 2 *Tuner for option, F type, (DVB-C/T/T2/S/S2/S2X/ATSC-T/ISDB-T optional as per order) 2*ASI input for re-mux, BNC interface 16*IP input for re-mux (UDP/RTP), RJ45			
Tuner Section	Multi-mode tuners switchable	Cable	Input Frequency	60~890 MHz	
			Standard	DVB-C/J.83A, J.83C	J.83B
			Constellation	16/32/64/128/256 QAM	64/256 QAM
			Symbol rate	1.0~7.0Msps	
		DVB-T	Input Frequency	60~890 MHz	
			Constellation	QPSK, 16QAM, 64QAM	
			Bandwidth	6/7/8 M	
		DVB-T2	Input Frequency	60~890 MHz	
			Constellation	QPSK, 16QAM, 64QAM, 256QAM	
			Bandwidth	5/ 6/7/8 M	
		ISDB-T	Input Frequency	60~890 MHz	
			Constellation	DQPSK, QPSK, 16QAM, 64QAM	
	Satellite	DVB-S	Input Frequency	950~2150MHz	
			Symbol rate	0.5~45Msps	
			Signal Strength	- 65- -25dBm	
			FEC	1/2, 2/3, 3/4, 5/6, 7/8	
			Constellation	QPSK	
		DVB-S2	Input Frequency	950~2150MHz	
			Symbol rate	QPSK/8PSK/16APSK: 0.5~45Msps 32APSK: 0.5~40Msps;	
			FEC	QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 32APSK: 3/4, 4/5, 5/6, 8/9, 9/10	

			Constellation	QPSK, 8PSK, 16APSK, 32APSK
		DVB-S2X	Input Frequency	950~2150MHz
			Symbol rate	QPSK/8PSK/16APSK: 0.5~45Mpsps 8APSK/32APSK: 0.5~40Mpsps
			FEC	QPSK: 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 13/45, 9/20, 11/20 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10 8APSK: 5/9-L, 26/45-L 16APSK: 2/3, 3/4, 4/5, 5/6, 8/9, 9/10, 1/2-L, 8/15-L, 5/9-L, 26/45, 3/5, 3/5-L, 28/45, 23/36, 2/3-L, 25/36, 13/18, 7/9, 77/90 32APSK: 3/4, 4/5, 5/6, 8/9, 2/3-L, 32/45, 11/15, 7/9
		Constellation	QPSK, 8PSK, 8APSK, 16APSK, 32APSK	
	ATSC	Input Frequency	54~858MHz	
		Bandwidth	6M	
Constellation		8VSB		
Descrambling	CAM/CI Quantity	2		
	BISS Mode	Mode 1, Mode E (up to 120Mbps)		
Output	IP (1*MPTS & 16*SPTS) out over UDP, RTP/RTSP.			
	1000Base-T Ethernet interface (unicast / multicast)			
	2×ASI mirrored out, BNC interface			
	Decode Output	Video	Interface: 1* CVBS/HDMI/3G-SDI (SDI1 and SDI2 mirrored out)	
			Decode: MPEG-2, MPEG4 AVC/H.264, HEVC/H.265 and AVS/AVS+	
			Resolution:1920×1080_60p, 1920×1080_60i, 1920×1080_50p; 1920×1080_50i; 1280×720_60P, 1280×720_50P; 480i, 576i	
			Chroma: 4:2:0	
		Audio	Interface: HDMI, SDI, DB15 to (XRL, RCA, AES, S/PDIF)	
			Number of channels: 1 or 2 for option (as per order)	
			Decode: MPEG 1 Layer II, LC-AAC, HE-AAC, HE-AAC V2, Dolby Digital/ Dolby Digital Plus	
Audio Output Mode: Left, Right, Stereo audio				
System	Local interface	LCD + control buttons		
	Remote management	Web-server Management		
	Language	English		
	Upgrade	USB, web management		
Miscellaneous	Dimension	482*300*44.5mm (W×L×H)		
	Approx weight	3.5kg		

	Environment	0~45℃(work); -20~80℃ (Storage)
	Power requirements	100~240VAC, 50/60Hz
	Power consumption	20W

***) : technical specifications are subject to change w/o notifications**

Order Guide

Please specify both **Tuner Input** and **Audio out channel** options when you place order:

Tuner Input	Option 1	1*DVB-S/S2/S2X tuner
	Option 2	1*DVB-C/T/T2/ISDB-T tuner
	Option 3	1*ATSC-T tuner
	Option 4	2*DVB-S/S2/S2X tuner
	Option 5	2*DVB-C/T/T2/ISDB-T tuner
	Option 6	2*ATSC-T tuner
	Option 7	1*DVB-S/S2/S2X tuner + 1*DVB-C/T/T2/ISDB-T tuner
	Option 8	1*DVB-S/S2/S2X tuner + 1* ATSC-T tuner
	Option 9	1*DVB-C/T/T2/ISDB-T tuner + 1*ATSC-T tuner

Audio Out Channel	Option 1	1*Audio out
	Option 2	2*Audio out

Appearance and description

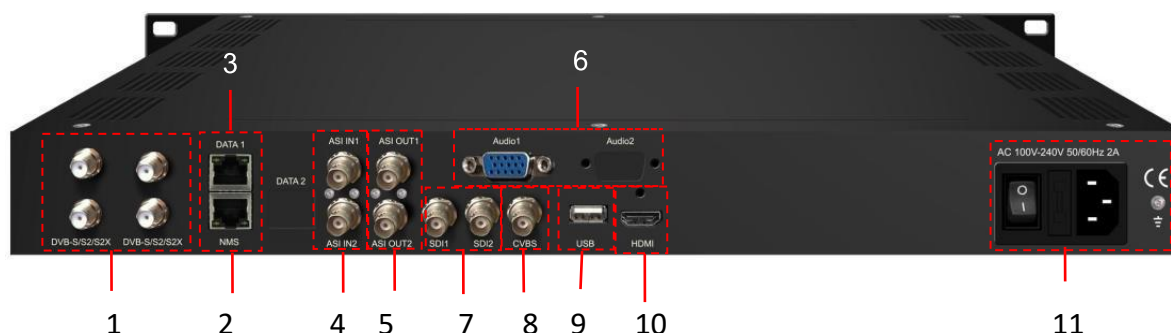
Front Panel Illustration:



1	2	3	4
---	---	---	---

1	monitor LCD display for device control and configuration
2	Indicators Area (to indicate locking status of tuner, ASI and IP input; Decoder: to indicate the decoding status)
3	Up/Down/Left/Right Buttons Enter Key Menu Key Lock Key
4	CAMs /Smart card slots A & B

Rear Panel Illustration



1	2 RF signal inputs and loop-through 1 & 2
2	NMS port for management
3	Data port for IP in and out
4	ASI input Port for re-mux
5	ASI mirrored output ports
6	Analog audio output interface
7	SDI video/audio output interfaces, SDI2 out as mirror of SDI1
8	Composite video output interface (CVBS)
9	USB upgrade port
10	HDMI video/audio output interface
11	Power switch/Fuse/Socket/ Grounding Wire

Installation Guide

Accessories

When you open the package of the device, it is recommended to check delivered items according to the packing list. Normally it should include the following items*:

- BLANKOM IRD-6300 HD IRD
- User's Manual (*optional as download PDF*)
- HDMI Cable
- CVBS Cable
- SDI Cable
- Audio Adapter Cable
- Power Cord depending *on country*
- Ground lead

If any item is missing or mismatching with the list above, please contact our sales rep.

Installation Preparation

When users install device, please follow the below steps. The details of installation will be described at the rest part of this chapter. Users can also refer rear panel chart during the installation.

The main content of this chapter including:

- Checking the possible device missing or damage during the transportation
- Preparing relevant environment for installation
- Installing modulator
- Connecting signal cables
- Connecting communication port (if it is necessary)

Environment Requirement

Item	Requirement
Machine Hall Space	When user installs machine frame array in one machine hall, the distance between 2 rows of machine frames should be 1.2...1.5m and the distance against wall should be no less than 0.8m.
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: $1 M\Omega$ (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 100-240V 50-60Hz. Please carefully check before running.

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, this 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 .

Frame / Rack 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 .

Device Grounding

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

Wire Connection

The grounding wire conductive screw is located at the right end of rear panel, and the power switch, fuse, power supply socket is just besides, whose order goes like this, power switch is on the left, power supply socket is on the right and the fuse is just between them.

- Connecting Power Cord

The user can insert one end into the power supply socket, while insert the other end to AC power.

- Connecting Grounding Wire

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 less than 1Ω.

⚠ Caution:

Before connecting the power cord to the BLANKOM IRD-6300 HD IRD, the user should set the power switch to “OFF”.

Signal Cable Connection

We assume, that the installation will be done by an experienced technician and all to be installed connection cables are used according to their specifications.

IRD-6300 HD IRD Satellite Receiver Signal Cable Connections:

RF IN and LOOP OUT Connection:

The User can find the RF IN and LOOP OUT interface on the device according to the connectors marked and described on the rear panel illustration, and connect the right cables. One end is connected to the RF IN interface of satellite receiver (or DVB T/T2/C/...) while the other end is connected to the satellite signal source equipment or LOOP OUT interface of the previous satellite receiver when several satellite receivers are in serial connection (See remark below).



We recommend to avoid using the loop RF-output in particular for the SAT Input

- **ASI IN and ASI OUT Connection:**

Users can find the ASI IN and ASI OUT interface on the device according to the connectors marked and described on the rear panel illustration. One end is connected to ASI IN interface of the BLANKOM IRD-6300 HD IRD, the other end is connected to any device that has ASI output. If connecting the ASI OUT interface, the other end of the connection is mostly used for encoders and multiplexers:



- **Component Output, CVBS and Audio Output Connection:**

The User can connect the YPbPr, CVBS and Left/Right sound channel interfaces on the device according to the connectors described on the rear panel illustration. The other end of the wire is connected to encoders or other equipment.



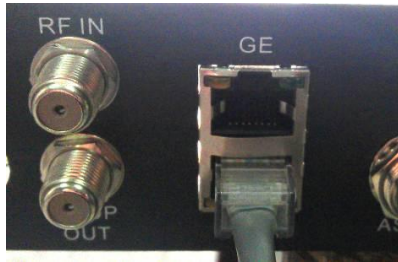
- **HDMI Output Connection:**

The User can find the HDMI interface on the device according to the connector described on the rear panel illustration, and then connect the wire. One end of the wire should be connected to the HDMI output interface of the BLANKOM IRD-6300 HD IRD, while the other end can be connected to an encoder or other equipment like a TV set:



- **IP Input and Output Connection:**

The user can find the IP IN/OUTPUT interface on rear of the device according to the connector described on the rear panel illustration. One end of the wire is connected to the RJ45 Ethernet IP output interface of the BLANKOM IRD-6300 HD IRD, the other end should go to a streaming switch:



Operation

The front panel of the BLANKOM IRD-6300 HD IRD is one of the user-operating interfaces and the equipment can be conveniently operated and used by the user according to the procedures displayed on the LCD; the simple using method for the machine is as follows:

Keypad Function Description:

MENU: Cancel current entered value, resume previous setting; Return to previous menu.

ENTER: Activate the parameters which need modifications, or confirm the change after modification.

LEFT/RIGHT: Choose and set the parameters.

UP/DOWN: Modify activated parameter or paging up/down when parameter is inactivated.

LOCK: Lock the screen/cancel the lock state. After pressing the lock key, the LCD will display the current configuring state.

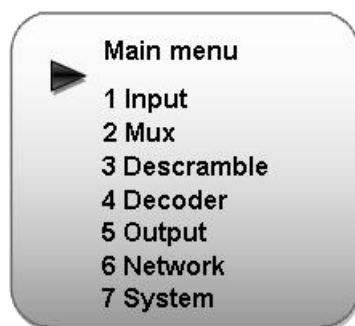
General Setting

Switch on the device and after a few seconds' initialization, it presents start-up pictures as below:



- HD IRD: Device's name
- 192.168.0.136 indicates the current NMS IP address.

Press LOCK key on the front panel to enter the main menu. The LCD will display the following pages where user can configure the parameters for the device:



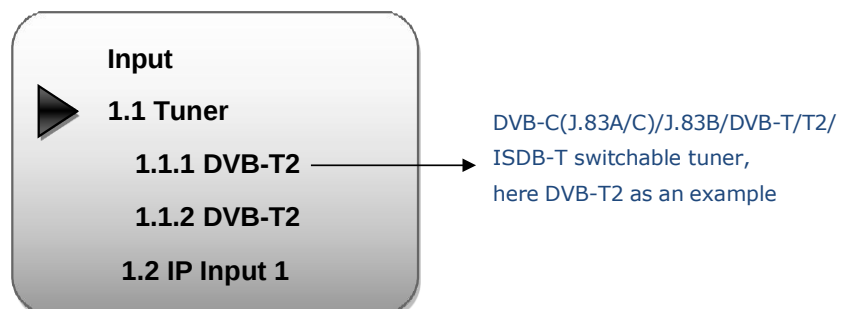
User could do all the settings according to the 7 directions displayed on the LCD. User can press UP/DOWN buttons to specify menu item, and then press ENTER to enter the submenus as below:

The LCD-Menus might be from the old IRD version and must not match the new ones.

Input Setting

IRD-6300 supports 1/2 tuner inputs, 2 ASI inputs and 16 IP stream inputs. Users can enter 'Input Sets' to configure the tuner/IP parameters to receive the transport streams and select programs to mux out.

It displays as below:



Tuner In (taking DVB-S2 HD IRD module as an example)

The menu from 1.1 to 1.3 represents the tuner, ASI and IP input ports of the IRD. User can multiplex the input programs from any port to output any program or all the programs at the same time. By pressing the “Enter” key, the device will take a while to analyze the input TS or signal and then display the program list at the submenu, say, 1.1.1-1.1.6

1.1.1 Prog Parse
1.1.2 Sat freq Set
1.1.3 LNB freq Set
1.1.4 Symbol rate
1.1.5 LNB Voltage
1.1.6 22KHZ Switch

By pressing the “Enter” key to enter the submenu of 1.1.1

1.1.1 Prog Parse
Prog:00 Mux:00

At the submenu 1.1.1, it displays the quantity of total parsed programs and multiplexed programs.

User also could check and set the Satellite frequency, LNB frequency, Symbol rate and LNB voltage in its corresponding submenu “1.1.2”, “1.1.3”, “1.1.4”, “1.1.5”.

1.1.2 Sat freq Set
11567MHZ

1.1.3 LNB freq Set
5150MHZ

1.1.4 Symbol rate
17500KHZ

1.1.5 LNB Voltage
Horizonta(18V)

At the submenu 1.1.6, user can decide whether to turn on/off the 22 KHZ Switch.

1.1.6 22KHZ Switch
 OFF ON

ASI IN

By pressing the “Enter” key to enter into the submenu of 1.2.1

1.2.1 Prog Parse
Prog:00 Mux:00

IP IN

By pressing the “Enter” key, it displays below page:

1.3.1 Prog Parse
1.3.2 Input Ip Addr
1.3.3 Input Port

By pressing the “Enter” key to enter the submenu of 1.3.1, 1.3.2 and 1.3.3 respectively, it will display below pages:

1.3.1 Prog Parse
Prog:00 Mux:00

1.3.2 Input Ip Addr
224.002.002.002

1.3.3 Input Port
1234

Output Setting

User can press “Enter” key to enter into below menu of the output setting.

2.1 Multiplex Set
2.2 Output Bitrate
2.3 Transtream ID
2.4 Original NetID
2.5 IP Output

Multiplex Setting

User can enter to the menu 2.1 and select the modes of outputting. By pressing UP/DOWN key after pressing Enter key, user can see the four modes of outputting the Signals in turn: ASI, IP, Tuner passthrough and Mux.

2.1 Multiplex Set
Tuner Passthrough



2.1 Multiplex Set
ASI

2.1 Multiplex Set
IP

2.1 Multiplex Set
Mux

Output Bit rate

By pressing the “Enter” key to enter into the menu of 2.2

2.2 Output Bitrate
060Mbps

Transportstream ID

By pressing the “Enter” key to enter into the menu of 2.3

2.3 Transtream ID
00000

Original Network ID

By pressing the “Enter” key to enter into the menu of 2.4

2.4 Original NetID
00000

IP Output

By pressing the “Enter” key to enter into the submenu of 2.5, it will display below pages. User can set the output IP address, output port and decide whether to output the signals from IP port.

2.5.1 IP Out Enable
2.5.2 Out IP Addr
2.5.3 Out Port

2.5.1 IP Out Enable
 ON OFF

2.5.2 Out IP Addr
224.002.002.002

2.5.2 Out Port
1001

Decoder Setting

User can press “Enter” key to enter into below menu of the decoder setting and execute video setting, audio setting, program selecting, searching and decoder selecting.

3.1 Video Setting
3.2 Audio Setting
3.3 Program Select
3.4 Search
3.5 Decoder Select

Video Setting

After pressing enter key, user can enter into the submenus: 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5, 3.1.6.

3.1.1 Resolution
Auto

By pressing UP/DOWN after entering into above menu, user can see all the options of the resolution: 1080I@50, 1080I@60, 720P, 576P, 576I, 480I, 480P, 1080I@59.94, 720P@59.94.

3.1.2 Standard
PALBDGHI

By pressing UP/DOWN after entering into above menu, user can see all the options of standard.

3.1.3 Subtitle
▶ OFF ON

3.1.4 CC Switch
OFF
ELA608
ELC608

3.1.5 Finger Switch
OFF

3.1.6 Aspect Ratio

Audio Setting

User can enter into below submenu by pressing the “Enter” key. Then select the audio, choose the ES mode (consists of stereo, left channel, right channel), adjust the volume, select modes of Audio SPDIF and Audio channel.

3.2.1 Audio Select
3.2.2 ES Mode
3.2.3 Volume

3.2.1 Audio Select

3.2.2 ES Mode

3.2.3 Volume

3.2.4 Audio SPDIF

3.2.4 Audio Channel

Program Selecting

Before entering into below menu to select the programs, user should enter the menu 3.5 and 3.4 in turn to find the programs.

3.3 Program Select

1 Das Erste HD



By pressing UP/DOWN after entering into above menu, all the searched programs will be displayed individually as below:

3.3 Program Select

2 ZDF HD



Searching

The device will start searching the programs automatically after user select the mode of decoding in the menu 3.5.

3.4 Search
Start Searching

Decoder Selecting

There are three ways of decoding: Tuner, ASI and IP. User can press UP/DOWN to see the way individually after entering below menu.

3.5 Decoder Select

1 Tuner



Descramble Setting

User can press “Enter” key to enter into below menu of the descramble setting. The detailed operations about the descramble functions will be explained in the NMS operation part.

4.1 Card Setting
4.2 Biss

Two functions of descrambling,
each option works alone.

Card Setting

After enter into the submenu of 4.1, it will display the following page:

4.1.1 Input
Select
4.1.2 A Card Info
4.1.3 B Card Info
4.1.4 Pro Select
4.1.5 CI Bitrate

User can set the input signals here.

If users don't insert any card, after entering into the menu of 4.1.2 and 4.1.3, it will show “Empty” to indicate there is no card information.

BISS

BISS is one of the descrambling functions which support two modes: mode 1 and mode E. And the application needs to be matched with BISS scrambler. User can select the mode based on the kind of BISS scrambler.

4.2.1 Select
Mode
4.2.2 Mode 1
4.2.3 Mode E

Network Setting

User can press “Enter” key to enter into below menu of the network setting.

5.1 IP Address
5.2 Subnet Mask
5.3 Gateway
5.4 MAC Address
5.5 Service IP
5.6 SPTS Net
Config

IP Address

After entering into the menu 5.1, it will display the following page:

5.1 IP Address
192.168.000.136

Subnet Mask

After entering into the menu 5.2, it will display the following page:

5.2 Subnet Mask
255.255.255.000

Gateway

After entering 5.3, it will display the following page:

5.3 Gateway
192.168.002.001

MAC Address

After entering into the menu 5.4, it will display the following page:

5.4 MAC
Address

Service IP

After entering into the menu 5.5, it will display the following page:

5.5 Service
IP

SPTS Net Configuration

After entering into the menu 5.6, it will display the following page:

5.6.1 SPTS Config
5.6.2 SPTS IP Addr
5.6.3 SPTS Gateway
5.6.4 SPTS Enable
5.6.5 SPTS Para Prog

SPTS Config

After entering into the menu of 5.6.1, it will display the following page:

5.6 Output Disable
Digital 1

By pressing UP/DOWN button after entering this interface, user can see 10 programs in turn.

Enable Select
ON OFF

By selecting ON/OFF to output the program through GE port.

5.6.1 IP Addr Set
224.002.002.002

Device supports multicast under this IP
Address and unicast under the IP Address
192.168.xxx.xxx

5.6.2 IP Port Set
1001

SPTS IP Address

After entering into the menu of 5.6.2, it will display the following page:

5.6.2 SPTS IP
Addr
192.168.012

SPTS Gateway

After entering into the menu of 5.6.3, it will display the following page:

5.6.3 SPTS
Gateway

SPTS Enable

After entering 5.6.4, it will display the following page:

5.6.4 SPTS Enable
ON OFF

By turning ON/OFF button to enable or
disable the SPTS output function.

SPTS Parse Program

After entering into the menu of 5.6.5, it will display the following page:

5.6.5 SPTS Para Prg
Analysis Finish ##

By pressing "Enter" key to parse the
programs to be outputted through GE port.

Saving Configuration

User can choose "Yes" or "No" to save the current configuration parameters in this menu.

6 Saving Config ?
Yes No

Loading Configuration

User can restore the device into the last saved configuration by choosing the menu 7.1 "Saved Config", and also user can restore the device into factory default configuration by choosing the menu 7.2 "Default Config".

7.1 Saved Config
7.2 Default Config

7.1 Saved Config ?
Yes No

7.2 Default Config ?

Yes

No

Version

User can check the device's hardware version and software version in this menu.

XXX Electronic

SW 2.10

HW 1.06

All described issues and topics are subject to technical changes w/o any notification

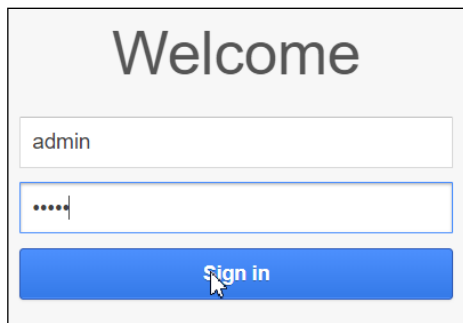
Web Browser configuration

We recommend to use the latest Firefox browser on your PC/Laptop for this operation.

Login Interface

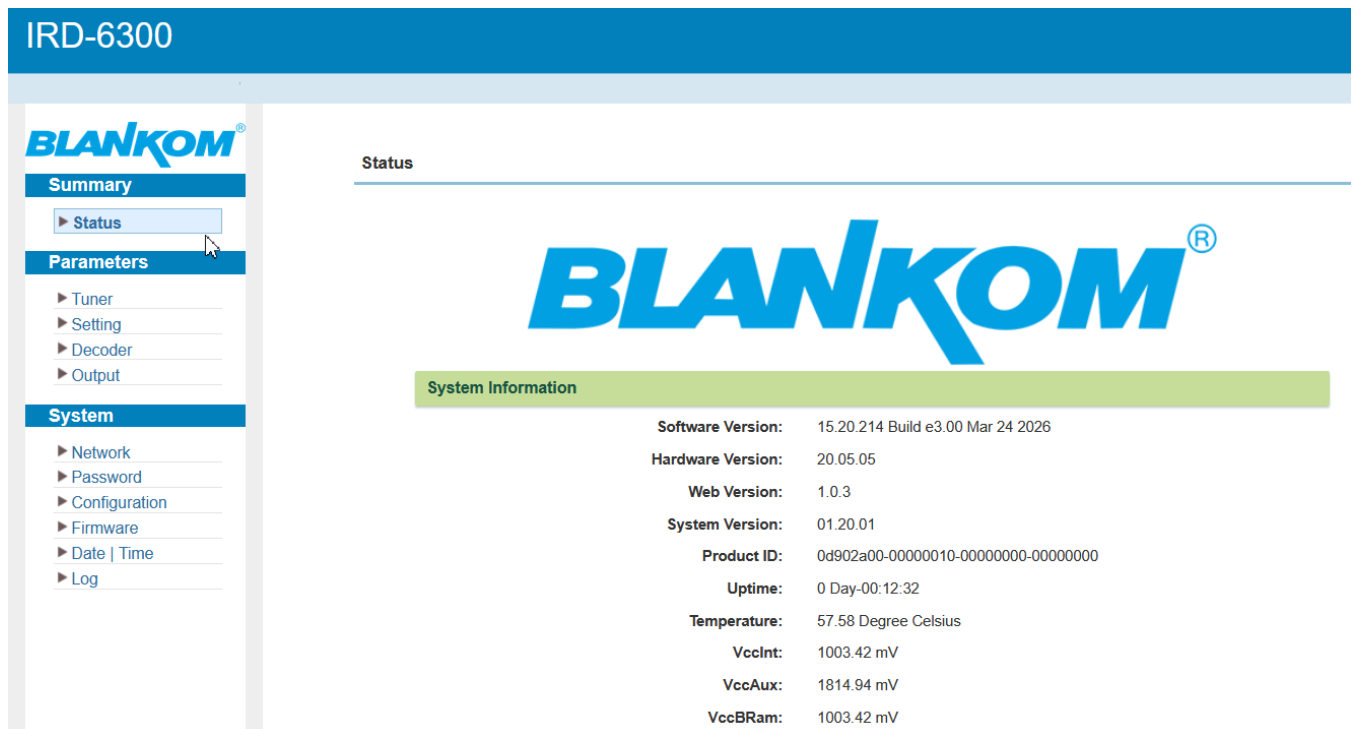
A login interface will pop up firstly when the software is running and give a user prompt to input user name and password (The default user name is admin and password is admin). User can add users and passwords as needed. Details, please refer to below ... other Settings).

Default: <http://192.168.0.136> NMS-Web.IF address in http only – please. The menu shows up as login-screen similar to this:



The login interface shows a 'Welcome' header. Below it, there are two input fields: the first contains 'admin' and the second contains '....'. A blue 'Sign in' button is positioned below the password field.

depending on
browser used

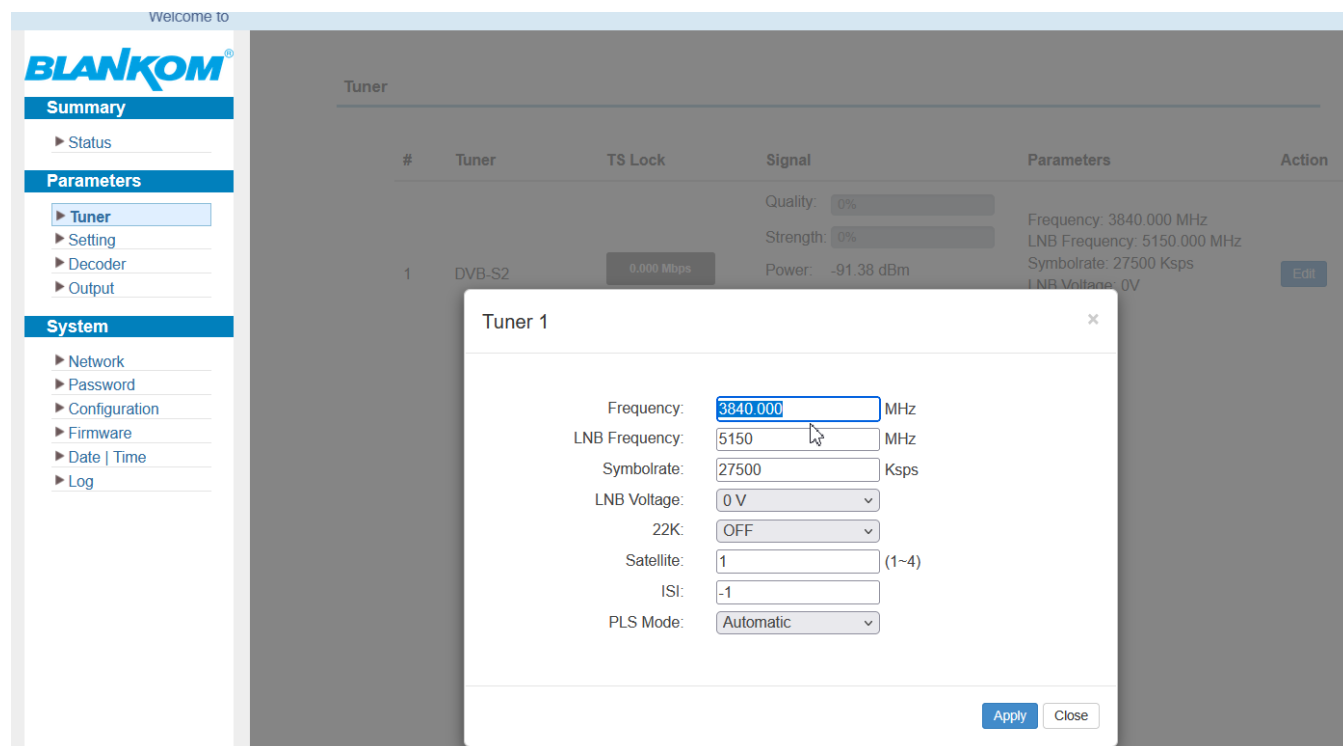


The main dashboard features a blue header with 'IRD-6300'. On the left is a sidebar with the BLANKOM logo and a menu including Summary, Parameters, and System. The main area has a 'Status' tab selected, displaying the BLANKOM logo and a 'System Information' section with the following data:

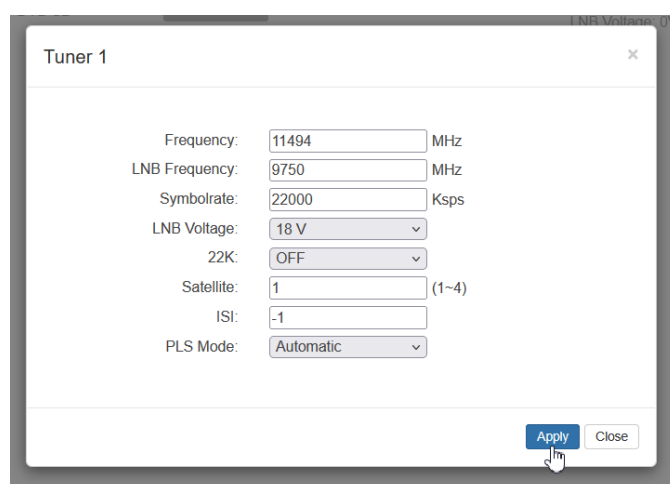
Software Version:	15.20.214 Build e3.00 Mar 24 2026
Hardware Version:	20.05.05
Web Version:	1.0.3
System Version:	01.20.01
Product ID:	0d902a00-00000010-00000000-00000000
Uptime:	0 Day-00:12:32
Temperature:	57.58 Degree Celsius
VccInt:	1003.42 mV
VccAux:	1814.94 mV
VccBRam:	1003.42 mV

The user can login to the WEB-IF-NMS by **Sign In** after the input of the login and come to the STATUS screen

Set the inputs:



Change to your needs:



IRD-6300

BLANKOM®

Summary

Status

Parameters

Tuner

Setting

Decoder

Output

System

Network

Password

Configuration

Firmware

Date | Time

Log

Tuner

#	Tuner	TS Lock	Signal	Parameters	Action
1	DVB-S2	41.452 Mbps	Quality: 62% Strength: 72% Power: -27.90 dBm C/N: 15.50 dB BER: 0.00e+00	Frequency: 11494.000 MHz LNB Frequency: 9750.000 MHz Symbolrate: 22000 Ksps LNB Voltage: 18V 22K: OFF Satellite: 1	Edit

Parse the content of the transponder:

BLANKOM®

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Setting

Mux CI Card CAM Menu BISS PID Bypass PCR Adjust

Output Mode: MUX CI Card: None

1: Tuner 1 [41.5/42.6M]

2: ASI 1 [0.0/0.0M]

3: ASI 2 [0.0/0.0M]

CA Filter

PID Remap

Refresh Input

Refresh Output

CAM-A

CAM-B

BISS

Other

All Input

All Output

Normal

Overflow

MPTS Output(Mux) [0.0/80.0M]

CAM-A (prog: 0) [0.0M]

CAM-B (prog: 0) [0.0M]

BISS (prog: 0) [0.0M]

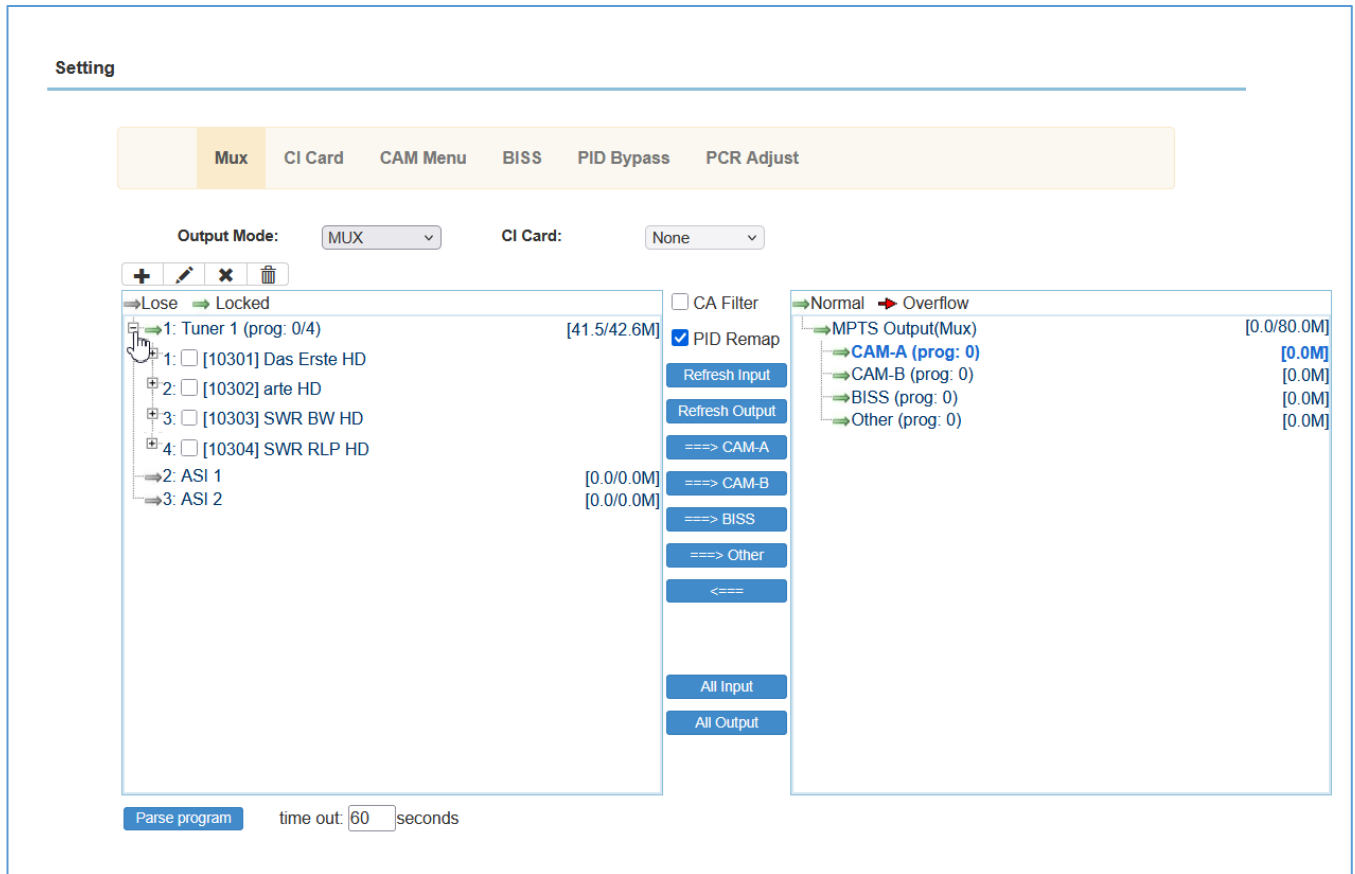
Other (prog: 0) [0.0M]

Parse program

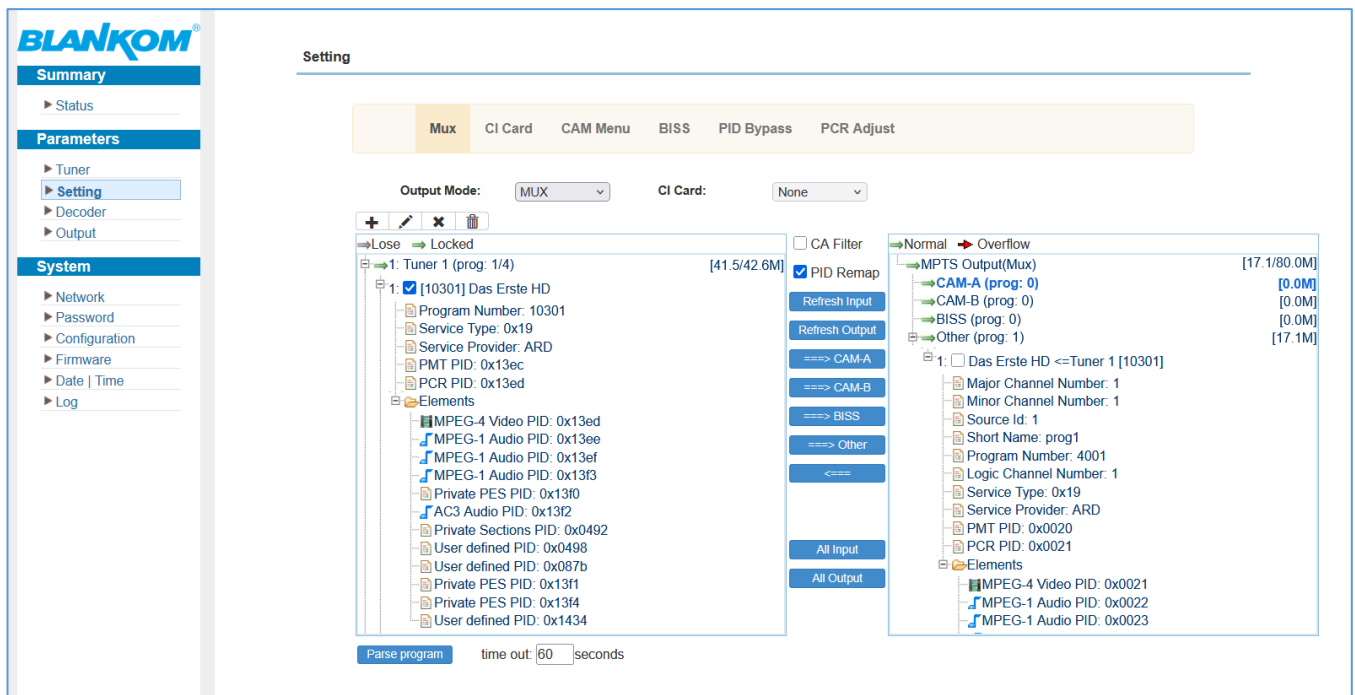
time out: 60 seconds

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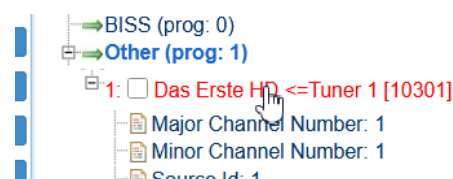


Now you can select and pass services to BISS or CAM A or CAM B or others (Streaming):



Please ignore Mayor/Minor channel number – these are for ATSC / ITU-Annex B – so US related Tables.

You can change the values by click:



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Passing to CI-Module:

Setting

Mux
CI Card
CAM Menu
BISS
PID Bypass
PCR Adjust

CI Card A:

CI Max Bitrate: 54 Mbps User Defined: ☐
CI Clock Mode: Mode 1
CI Card Error Check: ☒
CI Card Status: ●
Descramble Status: ●
Program Counts: 0
TS Status: 0.000 Mbps 0.000 Mbps
TS Overflow: ●

CI Card B:

CI Max Bitrate: 54 Mbps User Defined: ☐
CI Clock Mode: Mode 1
CI Card Error Check: ☒
CI Card Status: ●
Descramble Status: ●
Program Counts: 0
TS Status: 0.000 Mbps 0.000 Mbps
TS Overflow: ●

Default
Apply

You need to know your values of the max datarates of it and so on...

The CAM's can be used independently but only for the selected TS Input and descramble settings formerly chosen in the Menu.

Please note: You cannot assign any CAM to decrypt something before you haven't configured the Input. The CAM needs a working Transport stream (TS) from any of the Inputs (Tuner, ASI or MPTS by IP) before it can operate.

You can also can enter into the internal CAM-Menu:

Setting

Mux
CI Card
CAM Menu
BISS
PID Bypass
PCR Adjust

CAM Menu

ModuleA

Open Menu
Refresh Menu
OK
EXIT

Or add a BISS-Key:

Mux	CI Card	CAM Menu	BISS	PID Bypass	PCR Adjust

Index	Alias	BISS Mode	Descrambler Key(0x)	SK(0x)	Burned Key	
						+

Set
Del-All

Index	Alias	BISS Mode	Descrambler Key(0x)	SK(0x)	Burned Key	
1		mode 1 v mode 1 mode E			☐	+

Set
Del-All

And perform a PID passing by selecting the source (input channel)

Mux	CI Card	CAM Menu	BISS	PID Bypass	PCR Adjust

Index	Input Channel	Input PID(0x)	Output PID(0x)	
1				+

Set
Del-All

And adjust the PCR values... if necessary.



Summary

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Decoder

Video Format:

1080P@50

Program Select:

NULL

Cutoff Output Mode:

Last Frame

Brightness:

50

(1-100)

Saturation:

50

(1-100)

Contrast:

50

(1-100)

Audio1 Mode:

Stereo

Audio1 Select:

Audio1 Volume:

100

(0-200)

Audio2 Mode:

Stereo

Audio2 Select:

NULL

Audio2 Volume:

100

(0-200)

CC 608:

Disable

CC 708:

Disable

AFD:

Disable

TeletextLine:

Disable

AC3 Pass:

Disable

Rom Version:

00.02.02.18

Decoder Version:

08.67-08.35

Decoder Status:

Video Format:

1080P@50

Program Select:

Das Erste HD

Cutoff Output Mode:

Last Frame

Brightness:

50

(1-100)

Saturation:

50

(1-100)

Contrast:

50

(1-100)

Audio1 Mode:

Stereo

Audio1 Select:

Track 1 - deu

Audio1 Volume:

100

(0-200)

Audio2 Mode:

Stereo

Audio2 Select:

Track 2 - mis

Audio2 Volume:

(0-200)

CC 608:

CC 708:

AFD:

TeletextLine:

Disable

AC3 Pass:

Enable

Rom Version:

00.02.02.18

Decoder Version:

08.67-08.35

Decoder Status:

Update Decoder from USB

Default

Apply

BLANKOM®

Summary

► Status

Parameters

► Tuner

► Setting

► Decoder

► Output

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► Configuration

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► Date | Time

► Log

Configuration

SaveRestoreFactory SetBackupLoad

When you change the parameter,you should save configuration ,otherwise the new configuration will lost after reboot.

Save config

Network:



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► Status

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► Setting

► Decoder

► Output

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► Network

► Password

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► Firmware

► Date | Time

► Log

Network

NMS

IP Address:

192.168.0.136

Subnet Mask:

255.255.255.0

Gateway:

192.168.0.1

Web Manage Port:

80

MAC Address:

26:74:62:5a:08:70

Apply

DATA1

IP Address:

192.168.26.111

Subnet Mask:

255.255.255.0

Gateway:

192.168.26.1

MAC Address:

26:84:62:5a:08:70

☐

Apply

Please do not set both IP addresses of NMS and DATA in the same subnet and separate them (100Mb/s Fastethernet = NMS, GbE = DATA port) to not flood your NMS port with too much streams and make Web-IF not reachable because it's overloaded.

Some **time server** can be used:



Summary

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► Tuner

► Setting

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► Output

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► Network

► Password

► Configuration

► Firmware

► Date | Time

► Log

Date | Time

2026-08-04 14:14:18

Timezone:

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

NTP Server 1:

NTP Server 2:

NTP Server 3:

NTP Server 4:

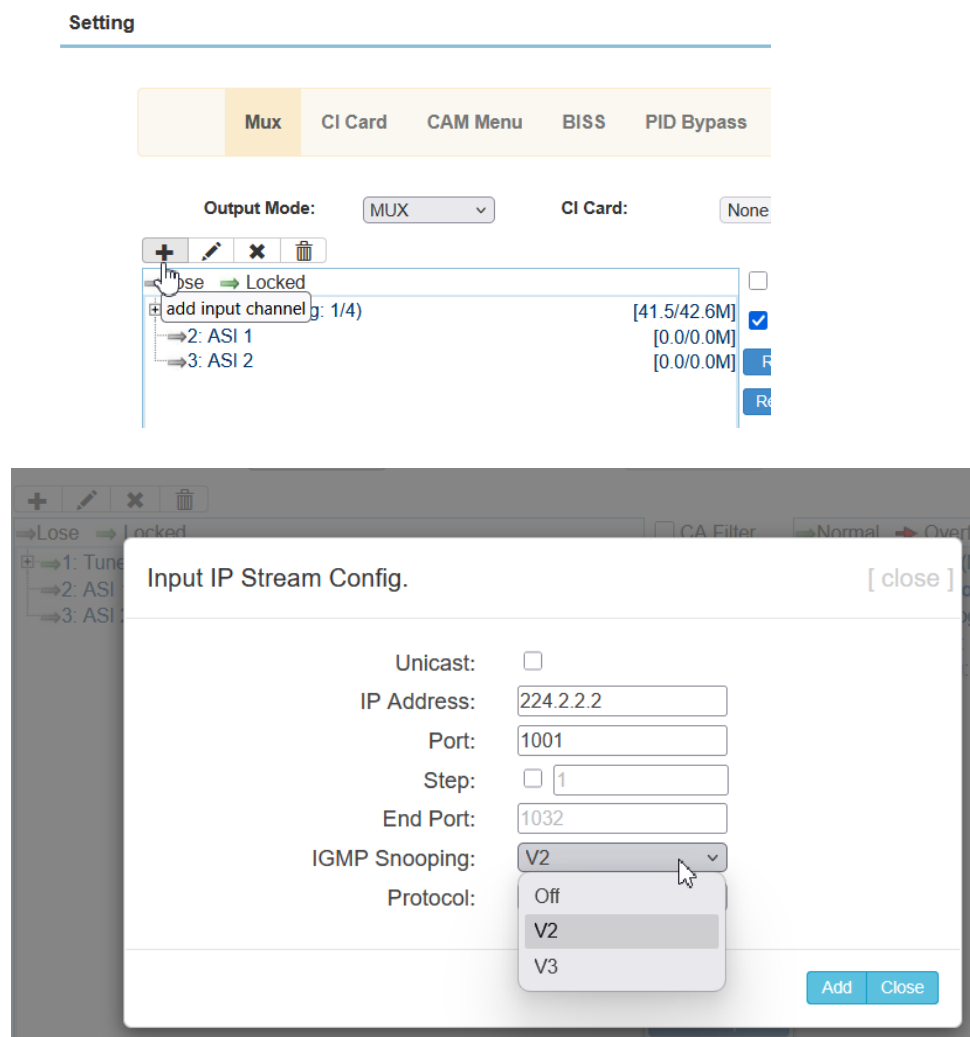
NTP Server 5:

Set Timezone

Set NTP

Update from browser

Input a stream:



IGMP-Version can be chosen for IP-Inputs to assure that only the required IP-Input address will be opened from the connected switch, so make sure, the port will not be flooded- by the many streams you have eventually got in total > 100Mb/s. So, for the stream-IN we recommend an IGMP V2/3 switch like the HP-Procurve (ARUVA) 2530 24G or 48G or successor.

If you Import an external MPTS you can pass it to CAM/BISS or whatever you need and decode ...

Streaming OUT Multicasts:

IRD-6300

e to use Web Management
2026-08-04 13:50:

BLANKOM®

Summary

▶ Status

Parameters

▶ Tuner
▶ Setting
▶ Decoder
▶ Output

System

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

Output

General

Character Encoding:
NORMAL
MPTS Output Bitrate:
80
Mbps
ASI Output Mode:
Packet Mode

VCT

VCT Insert:
☐

IP Output

#	Output Enable	IP Address	Port	Protocol	Null_PKT Filter	Program	Output Bitrate	Status	Bit(Act/Max)
MPTS	☒	224.2.2.2	12010	UDP	☐			●	0.0/80.0 M
SPTS-1	☐	224.2.2.2	3002	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-2	☐	224.2.2.2	3004	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-3	☐	224.2.2.2	3006	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-4	☐	224.2.2.2	3008	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-5	☐	224.2.2.2	3010	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-6	☐	224.2.2.2	3012	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-7	☐	224.2.2.2	3014	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-8	☐	224.2.2.2	3016	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-9	☐	224.2.2.2	3018	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-10	☐	224.2.2.2	3020	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-11	☐	224.2.2.2	3022	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-12	☐	224.2.2.2	3024	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-13	☐	224.2.2.2	3026	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-14	☐	224.2.2.2	3028	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-15	☐	224.2.2.2	3030	UDP	☐	NULL	20	●	0.0/20.0 M
SPTS-16	☐	224.2.2.2	3032	UDP	☐	NULL	20	●	0.0/20.0 M

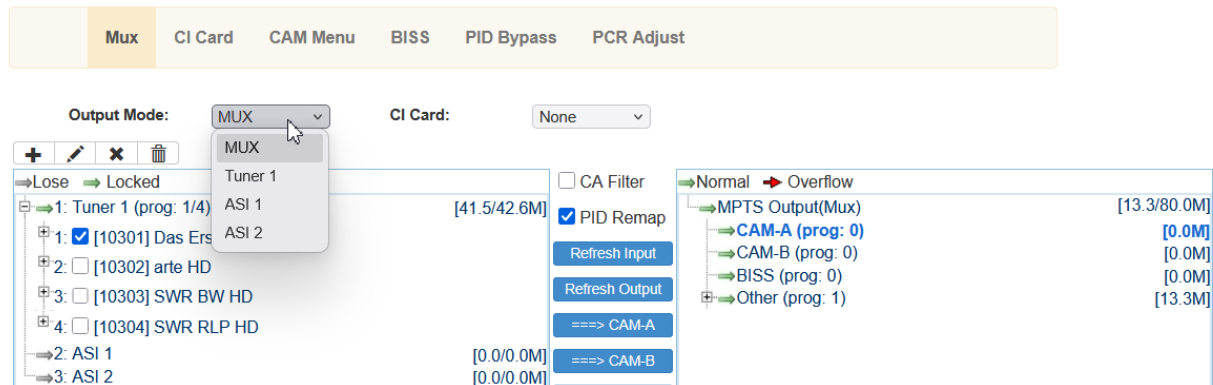
You should change all IP addresses for streaming to avoid IGMP collisions.

BLANKOM_IRD-6300_User_Manual-2.0.docx

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MPTS-Output:

Setting



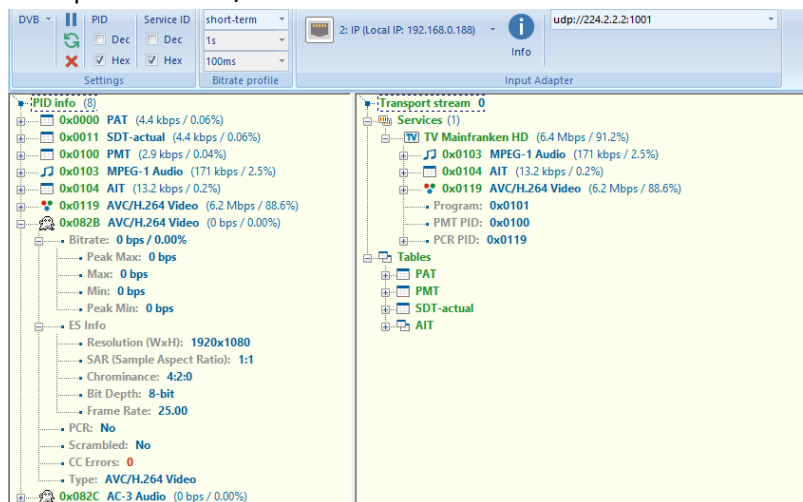
Self explaining? If Mux mode is on, it collects all input streams assigned to the MPTS (which can be passed to ASI 1/2 out as a copy). Or select Tuner 1 (2) ASI IN 1or2and pass it directly to MPTS (and /or ASI out 1 or 2). The MPTS-Output will work in parallel on ASI out: Pass mode from Input: ASI 2+4, Muxed-Mode: ASI 1+2 OUT. The source IP values are necessary for Unicast streaming, where the receiver needs to setup the source address where it comes from. The multicast are the destinations where this unit streams out.

The Source IP ist the Network interface IP Address of the DATA-Ethernet RJ45 output port. Sometimes if you change the IP addresses of your ports, the unit needs a reboot.

you can change the settings of each stream:

default is VBR-Streaming (so variable bit rate) in oposite to CBR Constant Bit Rate which inserts null-packets on PID8191dec upon to the adjusted bitrate. Do not forget to set a valid bitrate (and not less than the content of the VBR peaks already have) if you want to insert the Zero-packets into the Streams:

Examples: VBR w/o Null-Packets



Configure a Datarate above (and with some percentage overhead security) the content:

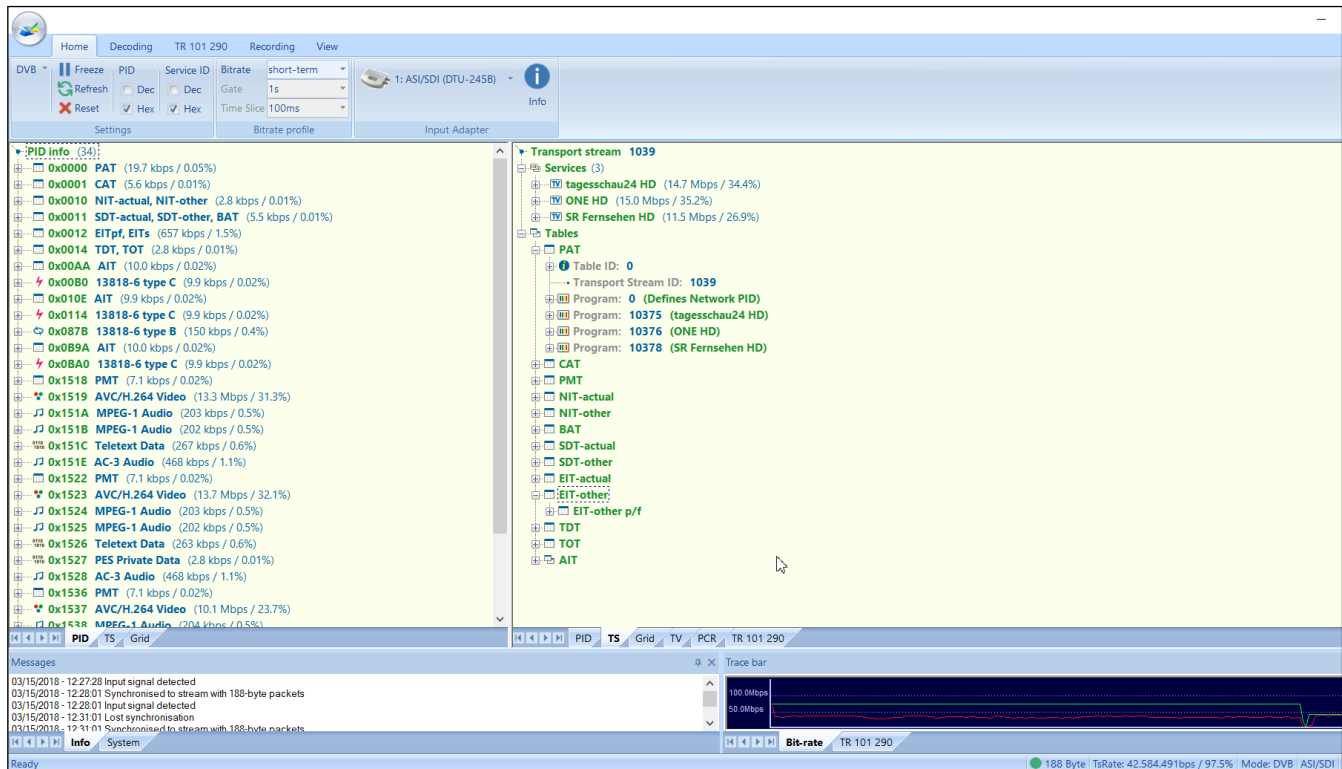
Results in:

If setting up same multicast address and RTP please assure that RTP needs a port number usually above 5004 and **it must be an even number** as well as the next odd port shouldn't be in use in any case. So its better to assure that (here picture from old FW):

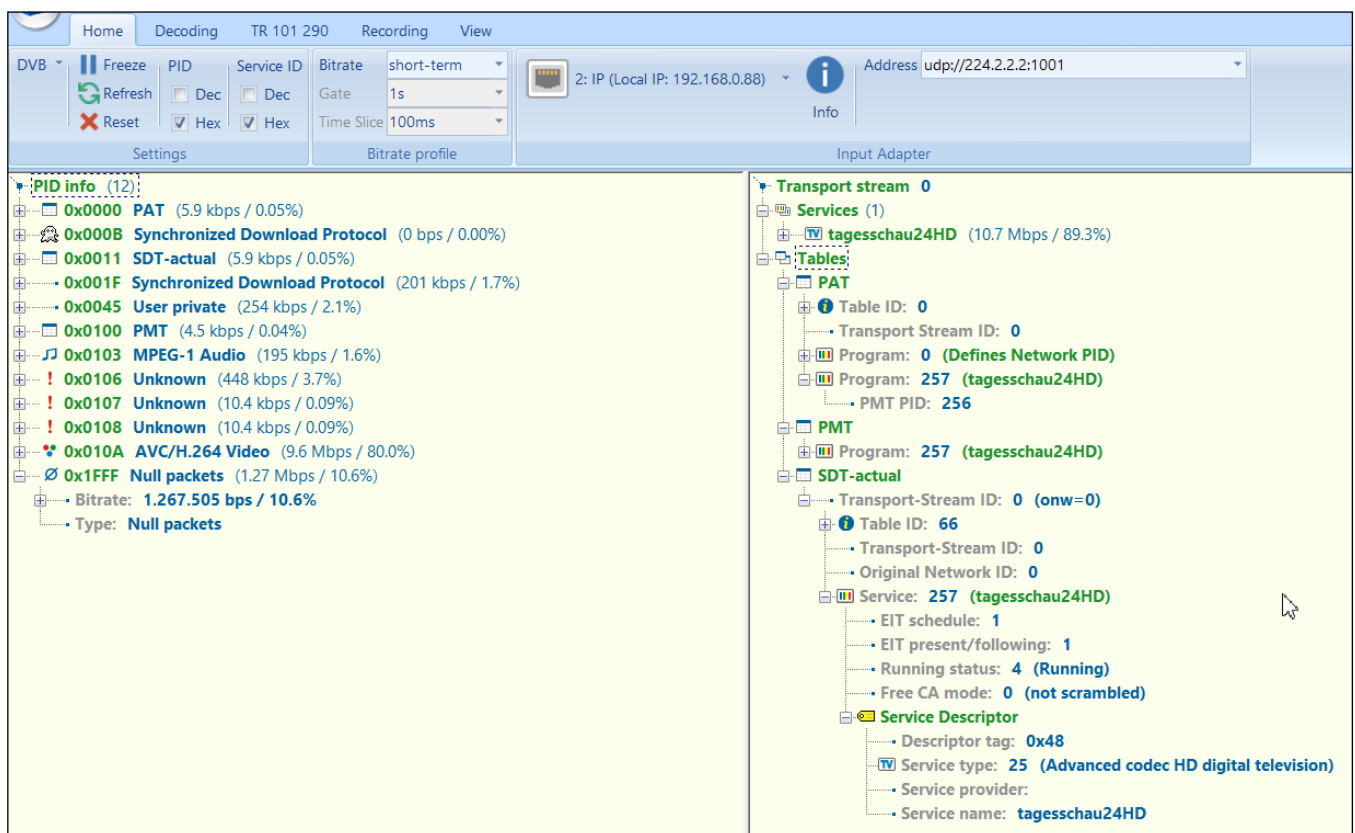
Index	Program No	Program Name	Enable	Output IP	Port	Bitrate(Mbps)	Source Mask	Destination Mac	Modify
1	101	tagesschau24HDD	UDP	224.2.2.2	1001	12	255.255.255.0	01005e020202	Set
2	202	3sat	RTP	224.2.2.2	10020	15	255.255.255.0	01005e020202	Set
3	303	ZDFinfo HD	UDP	224.2.2.2	10031	16	255.255.255.0	01005e020202	Set

Example ASI 1+2 MUXED output:

ASI 3+4: PASSTHROUGH



Example IP Stream: SPTS:



Visually checked the HDMI-Out with a TV Set: tagesschau24HD comes out.

Explanations regarding BISS scrambling/de-scrambling:

BISS modes: BISS Mode 0: unscrambled (clear), BISS Mode 1: Scrambled with a **session word** (SW), BISS Mode E: scrambled with encrypted session word (ESW). The session word is the key that is used in the receiver (IRD) to descramble the transmitted data. Remark that BISS-E uses the same scrambling algorithm as BISS Mode 1 but that there is an additional encryption on the session word.

BISS Mode 1 uses a 12-digit hexadecimal key as session word. The session word has to be announced to all parties that are allowed to descramble the received data. Example: 123456ABCDEF. The session word can easily be compromised, there is no protection when communicating it to the receive site(s).

BISS Mode E: Scrambled with encrypted session word (ESW). This mode uses the ID (identifier) of the receiver(s) and a session word to calculate an encrypted session word (16 digits hex). There are two possible IDs - **Buried ID** - **Injected ID**. By encrypting the session word there is an additional protection on the session word. The ESW can be communicated using a non-secure channel since in order to descramble the received signal both the ID and the ESW need to be known.

Buried ID: Each receiver (IRD) holds a unique ID (i.e., the embedded serial number) that can be used to identify that specific receiver: This is called the buried ID. If you want to do a transmission that is to be received by only one specific receiver, use the buried ID to calculate the encrypted session word (SW).

Injected ID: An identifier can be entered (injected) in a receiver (IRD), this injected ID can be entered in a single or a group of IRDs. This allows a **BISS-E** protected transmission to a group of IRDs.

Operation BISS Mode 1: Connect the scrambler between the encoder and modulator. Select the output interface rate (must be equal or higher than output interface rate of the encoder). Select BISS Mode 1. In case of BISS Mode 1 with clear session word, enter the 12-digit session word **SW**. Communicate the session word to the receive site(s).

Operation BISS Mode E with Buried ID: Connect the scrambler between the encoder and modulator. Select output interface rate (must be equal or higher than output interface rate of the encoder)- Select BISS mode. In case of BISS Mode E with Buried ID, get the Buried ID of the IRD and use this together with a session word to get calculated the **Encrypted Session Word** (using the DES3 algorithm). Communicate the ESW to the receiving site.

Operation BISS mode E with injected ID: Connect the scrambler between the encoder and modulator. Select output interface rate (must be equal or higher than output interface rate of the encoder). Select BISS mode. In case of BISS mode E with injected ID, get the injected ID of the IRD(s) and use this together with a session word to get calculated the encrypted session word (using the DES3 algorithm). Communicate the ESW to the receive site(s).

More details here: <https://tech.ebu.ch/docs/tech/tech3292.pdf>

Mode 1

Under Mode 1, the BISS scrambler applies scrambling by a fixed Control Word (CW), derived from a clear SW (Session Word). In Mode 1, a fixed 12-character SW is inserted into the scrambler. The 64-bit CW is derived from the SW according to DVB-CSA specifications. The User can select Mode 1 in the drop-down menu, and then input the descrambler key. The descrambler key consists of 12 characters based on the Hexadecimal system from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, and F. The IRD-6100 descrambler key is equal the SW Data on the BISS scrambler side.

After inserting the descrambler key, the user should press "Set" to start descrambling. A few seconds later, the programs will be descrambled.

SW (12 digits hex)	FFFFFFFFFFFF	↺↻
Injected ID (14 digits hex)	FFFFFFFFFFFF	↺↻
Mode	Mode 1	▼
☒ Buried ID		

Mode E

Using Mode E, the BISS scrambler completes scrambling through the **ESW** value and **ID Select**. The ESW value is equal to the Descrambler key on the IRD side, while the ID Select equals the Burned Key on IRD side. The BISS scrambler ID Select has two options: Device and Input. If Users choose Device, the Burned Key needs to be selected when descrambling, while if users choose Input and set Input data, on IRD side, users do not need to select Burned Key and input the Input data as SK.

Under Mode E, users can select Burned Key option or not. Under Mode E, the device will calculate a new date which works as descrambling key. The new data is created by Descrambling Key (refers **ESW** on scrambler side) and Burned Key (Input or **Device** mode on the scrambler side). If user is selecting Burned Key, it corresponds to the **Device** mode selected on scrambler side; while if Burned Key is unselected, it corresponds to **Input** mode on scrambler side. The **Input** data is SK on the IRD. User can input the SK in the column as showed:

ESW (16 digits hex)	FFFFFFFFFFFF0B20	↺↻
Injected ID (14 digits hex)	FFFFFFFFFFFF	↺↻
Mode	Mode E	▼
☐ Buried ID		

Mode E (Buried Key option unselected)

After selecting Mode E and Burned Key unselected, users should input the 16 figures Descrambler Key and 14 characters SK (the SK data refers to the **Input Data** on scrambler side). Users should choose the characters from 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, and F. Lastly users press “Set” to initial descrambling. A few seconds later, the programs will be descrambled.

Note: Under this mode, after inputting the Descrambler Key and SK, it will work out a new data, which can be

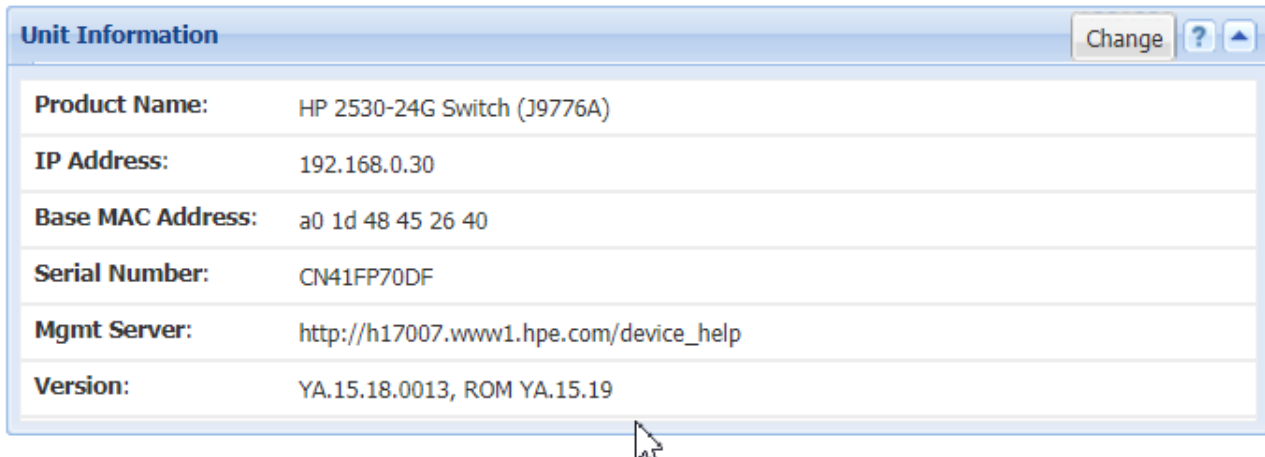
Mode E (Buried Key option selected)

After selecting Mode E and Burned Key, users should input the 16 figures Descrambler Key (named ESW on scrambler side). The user should choose the characters from 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9, A, B, C, D, E, and F. Under this mode, SK cannot be input in the column, as the data which works with ESW has been embedded inside the device after users select Burned Key (which refers that user choose **Device** mode on the scrambler side). Lastly users press “Set” to initial descrambling. A few seconds later, the programs will be descrambled.

Note: The Buried Key is embedded in the device and it is solely controlled by the device supplier.

As a **Multicast capable Switch**, we recommend is the HP (ARUVA) 2530 24G or 48G.

(For Floor switches we have an own branded one and support IGMP as well) IGMP should be set to ON in the port configs. The latest HP Firmware might not be the best choice. Better to test IGMP functions before installation into a HOT running System and eventually do a downgrade of the Firmware. This one work:



Unit Information	
Product Name:	HP 2530-24G Switch (J9776A)
IP Address:	192.168.0.30
Base MAC Address:	a0 1d 48 45 26 40
Serial Number:	CN41FP70DF
Mgmt Server:	http://h17007.www1.hpe.com/device_help
Version:	YA.15.18.0013, ROM YA.15.19

General notes about Streams:

Multicast streams:

Multicast Address Ranges:

We recommend, that the addressing of your Multicast streams should be in conjunction with this listings to avoid conflicts with other network equipment or protocols.

<https://www.iana.org/assignments/multicast-addresses/multicast-addresses.xhtml>

One small part from this:

IPv4 Multicast Address Space Registry

Last Updated

2018-01-05

Expert(s)

Stig Venaas

Note

Host Extensions for IP Multicasting [[RFC1112](#)] specifies the extensions required of a host implementation of the Internet Protocol (IP) to support multicasting. The multicast addresses are in the range 224.0.0.0 through 239.255.255.255. Address assignments are listed below.

The range of addresses between 224.0.0.0 and 224.0.0.255, inclusive, is reserved for the use of routing protocols and other low-level topology discovery or maintenance protocols, such as gateway discovery and group membership reporting. Multicast routers should not forward any multicast datagram with destination addresses in this range, regardless of its TTL.

Available Formats  [XML](#)  [HTML](#)  [Plain text](#)

Registries included below

- [Local Network Control Block \(224.0.0.0 - 224.0.0.255 \(224.0.0/24\)\)](#)
- [Internetwork Control Block \(224.0.1.0 - 224.0.1.255 \(224.0.1/24\)\)](#)
- [AD-HOC Block I \(224.0.2.0 - 224.0.255.255\)](#)
- [RESERVED \(224.1.0.0-224.1.255.255 \(224.1/16\)\)](#)
- [SDP/SAP Block \(224.2.0.0-224.2.255.255 \(224.2/16\)\)](#)
- [AD-HOC Block II \(224.3.0.0-224.4.255.255 \(224.3/16, 224.4/16\)\)](#)
- [RESERVED \(224.5.0.0-224.251.255.255 \(251 /16s\)\)](#)
- [DIS Transient Groups 224.252.0.0-224.255.255.255 \(224.252/14\)\)](#)
- [RESERVED \(225.0.0.0-231.255.255.255 \(7 /8s\)\)](#)
- [Source-Specific Multicast Block \(232.0.0.0-232.255.255.255 \(232/8\)\)](#)
- [GLOP Block](#)
- [AD-HOC Block III \(233.252.0.0-233.255.255.255 \(233.252/14\)\)](#)
- [Unicast-Prefix-based IPv4 Multicast Addresses](#)
- [Scoped Multicast Ranges](#)
- [Relative Addresses used with Scoped Multicast Addresses](#)

Multicast (as opposed to unicast) is used to send UDP packets from 1 source to multiple destination servers. This is useful for example for streaming from a satellite/DVB-T receiver to multiple receiving PCs for playback. Multicast can also be used on the output of an encoder to feed multiple streaming servers. Multicast only works with UDP and is not possible with TCP due to the 2 way nature of TCP, most commonly multicast is used with RTP and MPEG2-TS.

A multicast IP address must be chosen according to IANA information, we recommend using an address in the range **239.0.0.0 to 239.255.255.255** as this is reserved for private use. Using multicast addresses in the 224.0.0.0 range may clash with existing services and cause your stream to fail. For more details see <http://www.iana.org/assignments/multicast-addresses/multicast-addresses.xml>

Choosing a UDP port number for multicast streams is also important. Even if you use a different multicast IP for each of your streams, we strongly recommend using different UDP port numbers as well. This is because a server and all software running on the server receives ALL multicast traffic on an open port and extra processing is required to filter out the required traffic. If the each stream arrives on a different port, the server can safely ignore any traffic on ports that are not open. Port numbers MUST be chosen so that don't clash with any existing services or ephemeral ranges. The ephemeral range for Windows Vista, 7, 2008 is 49152 to 65535, for older Windows it is 1025 to 5000 and for Linux it is 32768 to 61000. For more information on Windows see <http://support.microsoft.com/kb/929851> Care should also be taken to avoid system ports 0 to

1024. See <http://www.iana.org/assignments/service-names-port-numbers/service-names-port-numbers.xml> Generally one of the unassigned User Ports (**1024-49151**) should be used, you can run the **netstat -abn** (as admin under windows) command to see which ports are currently in use.

Registered port

A **registered port** is a [network port](#) (a sub-address defined within the [Internet Protocol](#), in the range 1024–49151) assigned by the [Internet Assigned Numbers Authority](#) (IANA) (or by [Internet Corporation for Assigned Names and Numbers](#) (ICANN) before March 21, 2001,^[1] or by USC/ISI before 1998) for use with a certain protocol or application.

Ports with numbers 0–1023 are called *system or well-known ports*; ports with numbers 1024-49151 are called *user or registered ports*, and ports with numbers 49152-65535 are called *dynamic and/or private ports*.^[2] Both system and user ports are used by transport protocols (TCP, UDP, DCCP, SCTP) to indicate an application or service.

- **Ports 0–1023** – system or [well-known ports](#)
- **Ports 1024–49151** – user or registered ports
- **Ports >49151** – dynamic / private ports

https://en.wikipedia.org/wiki/List_of_TCP_and_UDP_port_numbers

Range for Ephemeral port

The [Internet Assigned Numbers Authority](#) (IANA) suggests the range 49152 to 65535 ($2^{15}+2^{14}$ to $2^{16}-1$) for dynamic or private ports.^[1]

Many [Linux kernels](#) use the port range 32768 to 61000.^[note 2] [FreeBSD](#) has used the IANA port range since release 4.6. Previous versions, including the [Berkeley Software Distribution](#) (BSD), use ports 1024 to 5000 as ephemeral ports.^{[2][3]}

[Microsoft Windows](#) operating systems through XP use the range 1025–5000 as ephemeral ports by default.^[4] [Windows Vista](#), [Windows 7](#), and [Server 2008](#) use the IANA range by default.^[5] [Windows Server 2003](#) uses the range 1025–5000 by default, until Microsoft security update MS08-037 from 2008 is installed, after which it uses the IANA range by default.^[6] Windows Server 2008 with Exchange Server 2007 installed has a default port range of 1025–60000.^[7] In addition to the default range, all versions of Windows since Windows 2000 have the option of specifying a custom range anywhere within 1025–65535.^{[8][9]}

Packet structure

UDP Header				
Offsets Octet	0	1	2	3

Octet	Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0	0	Source port																Destination port															
4	32	Length																Checksum															

The UDP header consists of 4 fields, each of which is 2 bytes (16 bits).^[1] The use of the fields "Checksum" and "Source port" is optional in IPv4 (pink background in table). In IPv6 only the source port is optional (see below).

Source port number

This field identifies the sender's port when meaningful and should be assumed to be the port to reply to if needed. If not used, then it should be zero. If the source host is the client, the port number is likely to be an ephemeral port number. If the source host is the server, the port number is likely to be a well-known port number.^[4]

Destination port number

This field identifies the receiver's port and is required. Similar to source port number, if the client is the destination host then the port number will likely be an ephemeral port number and if the destination host is the server then the port number will likely be a well-known port number.^[4]

Length

A field that specifies the length in bytes of the UDP header and UDP data. The minimum length is 8 bytes because that is the length of the header. The field size sets a theoretical limit of 65,535 bytes (8 byte header + 65,527 bytes of data) for a UDP datagram. However the actual limit for the data length, which is imposed by the underlying IPv4 protocol, is 65,507 bytes (65,535 – 8 byte UDP header – 20 byte IP header).^[4]

In IPv6 jumbograms it is possible to have UDP packets of size greater than 65,535 bytes.^[5] RFC 2675 specifies that the length field is set to zero if the length of the UDP header plus UDP data is greater than 65,535.

Checksum

The checksum field may be used for error-checking of the header and data. This field is optional in IPv4, and mandatory in IPv6.^[6] The field carries all-zeros if unused.^[7]

RTP:

a part from: <https://tools.ietf.org/html/rfc3550>

Chapter 11:

RTP relies on the underlying protocol(s) to provide demultiplexing of RTP data and RTCP control streams. For UDP and similar protocols, RTP SHOULD use an even destination port number and the corresponding RTCP stream SHOULD use the next higher (odd) destination port number. For applications that take a single port number as a parameter and derive the RTP and RTCP port pair from that number, if an odd number is supplied then the application SHOULD replace that number with the next lower (even) number to use as the base of the port pair. For applications in which the RTP and RTCP destination port numbers are

specified via explicit, separate parameters (using a signaling protocol or other means), the application MAY disregard the restrictions that the port numbers be even/odd and consecutive although the use of an even/odd port pair is still encouraged. The RTP and RTCP port numbers MUST NOT be the same since RTP relies on the port numbers to demultiplex the RTP data and RTCP control streams.

In a unicast session, both participants need to identify a port pair for receiving RTP and RTCP packets. Both participants MAY use the same port pair. A participant MUST NOT assume that the source port of the incoming RTP or RTCP packet can be used as the destination port for outgoing RTP or RTCP packets. When RTP data packets are being sent in both directions, each participant's RTCP SR packets MUST be sent to the port that the other participant has specified for reception of RTCP. The RTCP SR packets combine sender information for the outgoing data plus reception report information for the incoming data. If a side is not actively sending data (see [Section 6.4](#)), an RTCP RR packet is sent instead.

RTP (Real-Time Transport Protocol)	
Familie:	Netzwerkprotokoll
Einsatzgebiet:	Transport von Medien-Streams
Port:	beliebiger freier, gerader Port größer 1024
RTP im TCP/IP-Protokollstapel:	
Anwendung	RTP
Transport	UDP
Internet	IP (IPv4, IPv6)
Netzzugang	Ethernet Token Bus Token Ring FDDI ...
Standard:	RFC 3550 (RTP: A Transport Protocol for Real-Time Applications, 2003)

any port (even, not odd > 1024)

Note: Regarding SAP (Session Announcement Protocol)

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 SAP 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.

ANNEX MPEG

MPEG PSI/SI Information's:

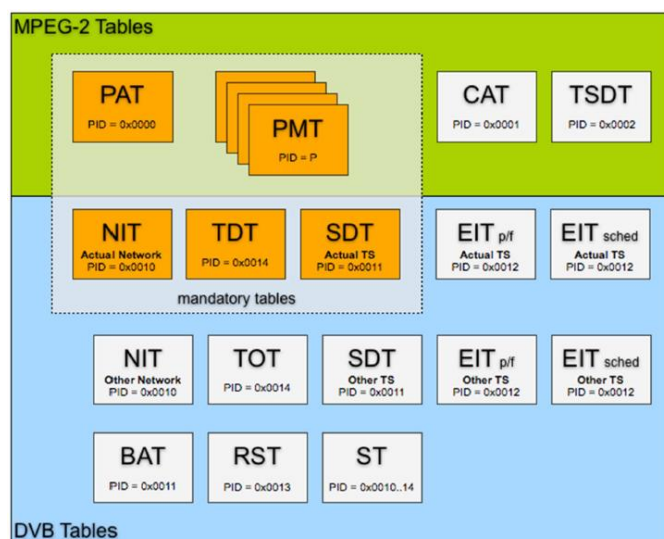


Table 1: PID allocation for SI

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

We assume, that the user is familiar with all abbreviations mentioned in this manual.

This user manual has been written to help people who have to use, to integrate and to install the product. Some chapters require some prerequisite knowledge in Network and streaming technology and protocols and might have knowledge about Microsoft Windows OS and components, electronics and especially in Satellite DVB-reception and broadcast/broadband CATV as well as IPTV Streaming technologies and standards.

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

dBmV	dBμV	dBm 75Ω	mV _{RMS}	mW 75Ω
36	96	-12.75	63.10	0.053
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

dBmV	dBμV	dBm 75Ω	mV _{RMS}	mW 75Ω
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

תאריך תפוגה

חשוב!

הוצאת המוצר מהשימוש חייבת להיעשות בהתאם לכל החוקים והנהלים הנהוגים

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

عند التخلص النهائي من هذا المنتج ينبغي التعامل معه وفقاً لجميع القوانين والقرارات 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 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.

1. 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

2. 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.

4. 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.

5. 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

6. Verkauf

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

7. Entsorgung

Vorsicht: Entsorgen Sie das Gerät entsprechend den geltenden umweltrechtlichen Bestimmungen.

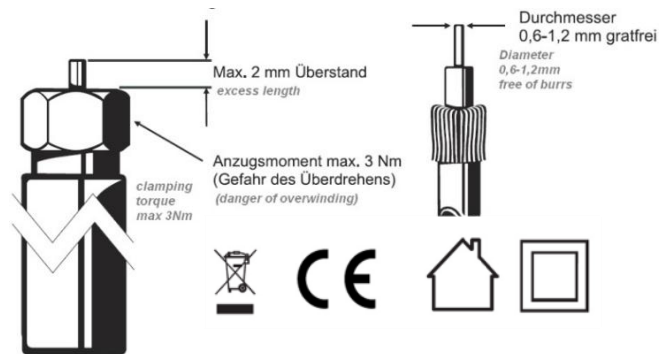
Elektrische und elektronische Geräte dürfen nicht in den Hausmüll!

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:



Die LNB-Anschlüsse sind meist entsprechend gekennzeichnet

The LNC –connectors are almost marked as:

HH= Horizontal High-Band

HL = Horizontal Low-Band = LH

VL = Vertical Low-Band = LV

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

Installation and safety instructions / Montage und Sicherheitshinweise

- Die beschriebenen Geräte dienen ausschließlich der Installation von Satelliten-Empfangsanlagen.
- *The equipment described is designed solely for the installation of satellite receiver systems.*
- Jegliche anderweitige Nutzung oder die Nichtbeachtung dieses Anwendungshinweises hat den Verlust der Gewährleistung bzw. Garantie zur Folge.
- *Any other use, or failure to comply with these instructions, will result in voiding of warranty cover.*
- Die Geräte dürfen nur in trockenen Innenräumen montiert werden. Nicht auf oder an leicht entzündlichen Materialien montieren.
- *The equipment may only be installed in dry indoor areas. Do not mount on or against highly combustible materials.*
- Die Geräte sind mit einer Potenzial-Ausgleichsleitung (Cu, mindestens 4 mm²) zu versehen.
- *The equipment must be provided with an earthing wire (Cu, at least 4 mm²).*
- Die Sicherheitsbestimmungen der jeweils aktuellen Normen EN 60728-11 und EN 60065 sind zu beachten.
- *The safety regulations set out in the current EN 60728-11 and EN 60065 standards must be complied with*
- Verbindungsstecker: HF-Stecker 75 Ohm (Serie F) nach EN 61169-24
- *Connector: HF plug 75 Ohm (series F) to EN 61169-24.*
- **Nicht benutzte Teilnehmergehäuse** sollten mit 75-Ohm Widerständen (z. B. EMK 03) abgeschlossen werden. (Verringerung der terrestrischen Signalwelligkeit)
- **Unused subscriber ports** should be closed off by 75 Ohm resistors (e.g. EMK 03).
- **Nicht benutzte Kaskadenausgänge** sind mit 75 Ohm Widerständen inkl. DC-Blocker abzuschließen. 75 Ohm Widerstände ohne Gleichspannungssperren können das Gerät beschädigen!
- **Unused trunk outputs** must be terminated with 75 Ohm resistors including DC Blocker. Otherwise the device may be inoperable or damaged.
- Bitte überprüfen Sie die Anlage vor Inbetriebnahme auf evtl. Kurzschlüsse der Koaxial-Kabel. Es ist darauf zu achten, dass die Eingangspegel der SAT-Ebenen möglichst gleich hoch sind. Power-LEDs zeigen den Betrieb an. Falls die nicht leuchten, bitte die Stromzufuhr kontrollieren.
- *Please check the installation against shortage in coax cables and connectors before switching on. The input levels should be adjusted accordingly. Power-LED's showing operational mode. If this is not illuminated, please check the power source.*
- **Stromführendes Gerät**
- **Current-carrying unit**
- Nicht öffnen oder am Gerät manipulieren!
- *Do not open or tamper with the unit!*
- Bei Arbeiten an der Anlage immer die Netzstecker aus der Steckdose ziehen!
- *When working on the system always unplug the mains plug from the wall socket!*
- Auf ausreichenden Abstand achten! Nach allen Seiten mind. 5 cm!
- *Ensure adequate clearance! Min. 5 cm to all sides!*

- Nicht über Kopf montieren.
- *Do not install overhead.*
- Für die Geräteentwärmung muss freie Luftzirkulation möglich sein. Überhitzungsgefahr!
- *Free circulation of air must be possible to discharge the heat emitted by the unit. Risk of overheating!*
- Zulässige Umgebungstemperatur -20 bis +50°C
- *Permissible ambient temperature -20 to +50°C*

Important notes: / Zur Beachtung

- 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 auf den Geräten – falls vorhanden

Please install according to the sticker on the devices if shown.

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

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

Document History:

Initial: 2023	First release	MO
12-23	improvements	RR
04-2026	New GUIs implemented	RR

Contact:

First Aid, Ralf Riedel: ralf.riedel@blankom.de

Ralf RIEDEL

Director Technical Sales & Engineering

IRENIS GmbH

Hauptstr. 29

31171 Nordstemmen- Germany

Phone: +49 5069 4809781

Commercial Register: HRB 206370 / District Court Hildesheim



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

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