BLANKOM®

Professional Headend Solutions

Device manual

8 pole IP-/ ASI-TV Modulator

IP/ SFP/ ASI (MPEG2) → ATV (8x AM)

A-PALIOS-IPM2
Part N°: 5105.81

...Setting Signals

Contents

1. Safety and operating instructions

When assembling, starting-up and adjusting the devices, it is necessary to consider the system specific references in the instruction manual.

The devices may only be installed and started up by authorized technical personnel.

When assembling the devices into the receiving points, the adherence of the EMC regulations is to be ensured.

The assembly and wiring have to be done without voltage.

With all work the defaults of the DIN EN 50083 have to be considered. It is especially important to follow DIN EN 60728-11[2].

If installed in mounting cabinets a adequate heat circulation must be guaranteed. The mounting in closed cabinets without air sufficient flow is **not allowed**.

The devices come under protection classification I. It is absolutely necessary, therefore, to insert the mains plug into a socket with protective contact.

WEEE-Reg.-Nr. DE 50389067

2. Device variants

A-PALIOS-IPM2	5105.81	IP/ SFP/ ASI (MPEG2) → ATV (8x AM)

3. General

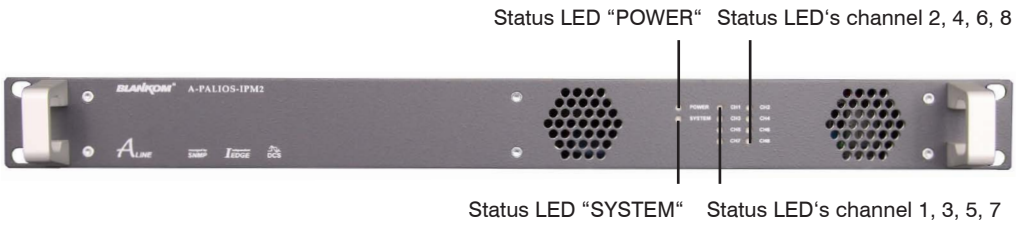
The 8 pole IP-/ ASI-TV Modulator A-PALIOS-IPM2 is a device of the head end system A-LINE, which is conceived as a complete system for big and middle sized networks.
The A-PALIOS-IPM2 selects 8 programs from up to 8 adjacent IP transport streams or from an ASI transport stream and converts these into analoge TV signals to transmit it in cable networks. In this case, a maximum of 8 analog television channels are generated from the available MPEG2 transport streams.

4. Functional description

The device receives a data stream via Gigabit Ethernet and can receive 8 transport streams from the included IP encapsulated transport streams. The 8 transport streams are further processed in 8 MPEG2 decoders. The analogue TV modulation and the freely adjustable up-conversion in the cable network range (45 ... 862 MHz) is carried out by a high-performance FPGA.
The eightfold modulator is adjacent channel compatible. A highly-clocked digital to analogue converter (DAC) is responsible for the spectrally pure output of the cable signal. After amplification and sum level adjustment, the cable signal is coupled through a directional coupler to the output jacks.

5. Explanation of the operating elements

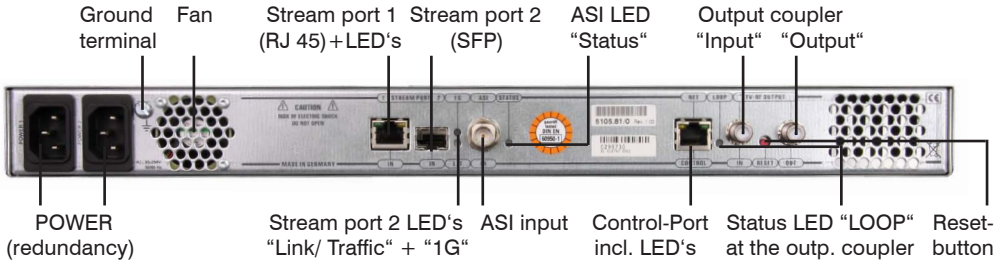
5.1 Front view



5.2 Meaning of the status LED‘s

Designation	Colour	Status	Meaning of display
POWER	green	permanently on	device is on
	amber	permanently on	device is in standby
		off	device is off, operating voltage is not applied
SYSTEM	green	permanently on	device is ready for work
		flashing	software update is running
	amber	permanently on	temperature is high, fan is already activated
		flashing	temperature is critical, the device will no longer work or is forced to shut down
		off	device is not ready for work
CH 1 ... CH 8	green	permanently on	channel operates without error
	amber	permanently on	error warnings, depending on signal: - input and/ or output without sync - input sync, but in bad quality (eg. mosaic effect in the TV picture)
		flashing	hardware is faulty
		off	channel is off

5.3 Rear view



5.4 Meaning of the LED‘s on rear

5.4.1 LED’s at the 10/ 100/ 1000 Mbit stream port 1

Designation, colour	Status	Meaning of display
GbE connect LED, green	permanently on	only illuminated when the connection is a GbE connection (does not light up at a 10/ 100 Mbit connection)
	off	no GbE connection
Connect/ data LED yellow	permanently on	cable connection is established
	flashing	data is received
	off	no cable connection

5.4.2 LED’s at the 10/ 100/ 1000 Mbit stream port 2

Designation	Colour	Status	Meaning of display
1G	green	permanently on	only illuminated when the cable connection is a GbE connection (does not light up at a 10/ 100 Mbit connection)
		off	no GbE connection
LINK/ TRAFFIC	amber	permanently on	cable connection is established
		flashing	data is received
		off	no cable connection or option is not enabled

5 4.3 Status LED at the ASI socket

Designation	Colour	Status	Meaning of display
STATUS	green	permanently on	ASI transport stream is present
		flashing	no ASI transport stream
		off	option is not enabled

5.4.4 Status LED at the output coupler

Designation	Colour	Status	Meaning of display
LOOP	green	permanently on	loop active, i.e. nominal level range 62 ... 82 dBμV
		off	no loop, i.e. nominal level range 76 ... 94 dBμV

5.4.5 LED‘s at the 10/ 100 Mbit control port

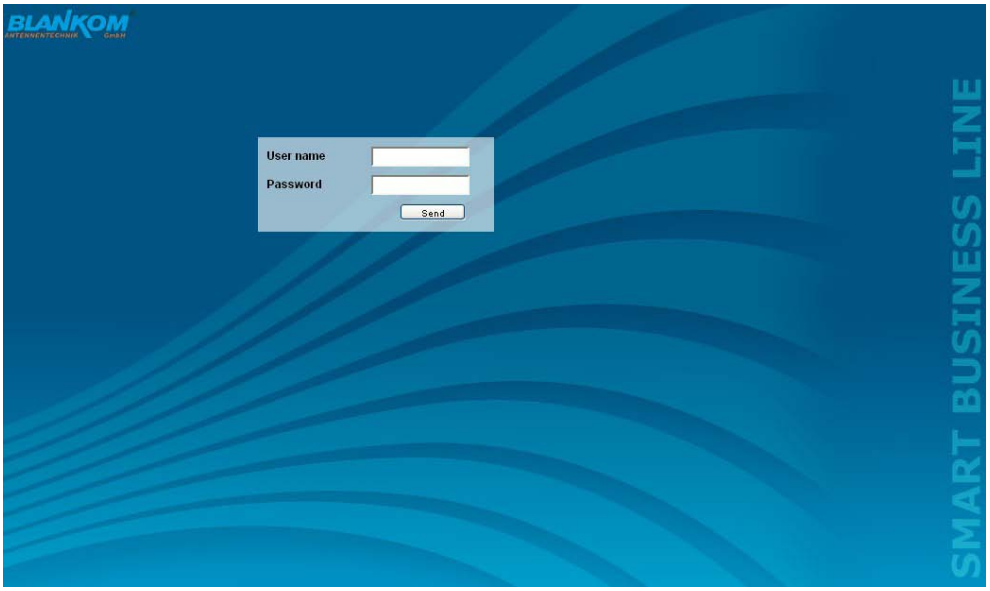
Designation, colour	Status	Meaning of display
Connect LED, yellow	permanently on	network cable is connected
	off	no cable connection
Data LED, green	flashing	data is exchanged
	off	no data exchange

6. Adjusting by web server

6.1 Network connection to the computer

System requirements:
- PC/ laptop with 10/ 100 Mbit Ethernet interface
- Internet browser (e.g. Windows Internet Explorer), which accept JAVA script.

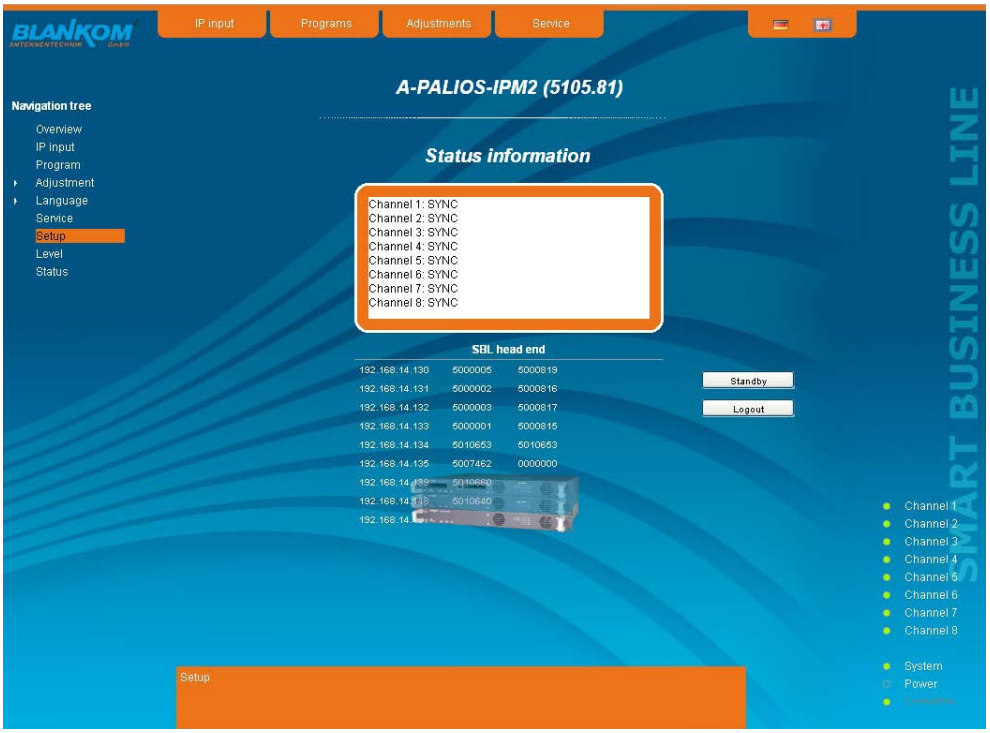
Setup the connection:
The A-PALIOS-IPM2 has to be connected to PC network using an Ethernet cable. The IP address of the device is 192.168.1.100 on delivery. If several devices should be controlled or adjusted via an Ethernet switch, each device must first be configured **individually** to its provided IP address within the network. To do so the address of the network port on the PC (temporary) must be adapted to the IP address of the device (subnet mask: 255.255.255.0, IP address: 192.168.1.XXX, where XXX is not the same as the corresponding value of the device IP address).
After the network configuration of the device(s) the IP address of the control PC is converted to the provided IP address and the devices can be accessed through the browser with their new IP addresses. The user must authenticate himself with his credentials (user name and password), if the password and user testing were activated on the setup page (see chapter 6.2.6):



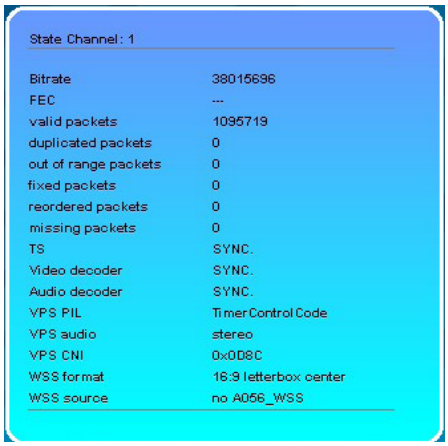
After successful registration or successful connection establishment without password (default setting) the start page of the device is the menu “Overview“ (see chapter 6.2.1).

6.2 Setting of individual parameters

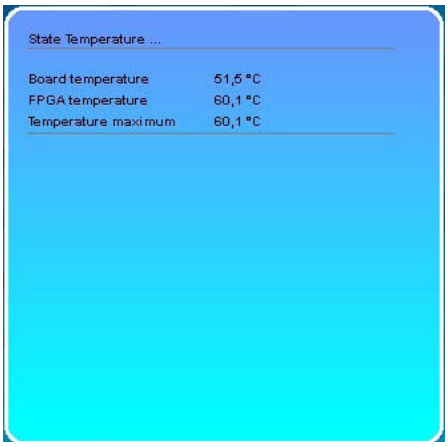
Using the web site, you can set certain parameters of the device or perform configurations on the device or the user interface. The various setting menus can be selected in the navigation tree on the left side. The setting is supported by an online help. Hovering the parameters by the mouse in the lower part of the site an orange colored text box appears with explanations for each parameter. By setting in the “Setup“ menu (see chapter 6.2.6) may be selected so that the help appears in the status bar of your browser. If appropriate setting changes in the browser options are necessary.



In addition, in the lower part of the navigation tree status information for the device is displayed. By changing the “Setup“ menu, the status information can also be moved to the right (see also chapter 6.2.6). All 8 channels are listed individually. A green LED symbol before the “channel ...“ means that both input and output are synchronized and that the channel operates without error. An orange colored symbol indicates that an error has occurred in that channel. An overview of the status of various parameters of the channel is obtained by clicking the corresponding channel. In the GUI a status overview appears.



A transparent LED symbol means that the channel is not configured yet, or the RF output is turned off. Status information about the system is mirrored in the same way. In this case too an orange colored LED symbol displays an error state during which a green LED symbol displays error-free working condition. The detailed status information is available by clicking the name field.



The last displayed point indicates the connection status between the network interface and the device. Green means, that the connection is established. A transparent LED light indicates that there is no connection or the connection is failed.
Settings with the selection box or input fields are taken over by pressing the “send“ button and stored permanently, and the A-PALIOS-IPM2 is set on these values after a restart too. Settings with the check box are usually performed immediately but not stored in memory, so they would be lost on a possible restart of the device. To save these settings the “send“ button must be pressed.
In all menus, the language selection is possible between German and English top right.

6.2.1 Menu ”Overview”

This page provides a status overview of the 8 channels. If a channel is working without errors, “SYNC“ is displayed. If errors occur you will see an “Error“ display. If the RF power is switched off the display “Off“ appears behind the respective channel.
In addition, below the status window the head end display is visible. There all A-LINE-SBL and SBL devices are listed, which are in

the same network and which have been associated with the head end in the “Setup“ menu (see 6.2.6). This is significant because functions over all devices such as the NIT processing between A-QAMOS/ A-QAMOS-4CI/ A-QAMOS-IP and QAMOS/ QAMOS-4CI/ QAMOS-IP devices can be extended to all components of the head end. The individual components of a head end are listed with their IP address, which is also provided with a link to this address, so you can switch easily to the next device. If no head end was configured, a “Search“ button appears, which forwards to the “Setup“ menu and scans the network for other A-LINE-SBL and SBL devices. Then all available devices are listed and can be selected and added to the head end.
By clicking the “Logout“ button the user logs out of the device and the login window appears. By pressing the “Standby“ button the device is switched to standby, which is indicated by an amber POWER LED on the device. The “Standby“ button will be replaced by a “ON“ button, and by pressing this the device will be switched back on.

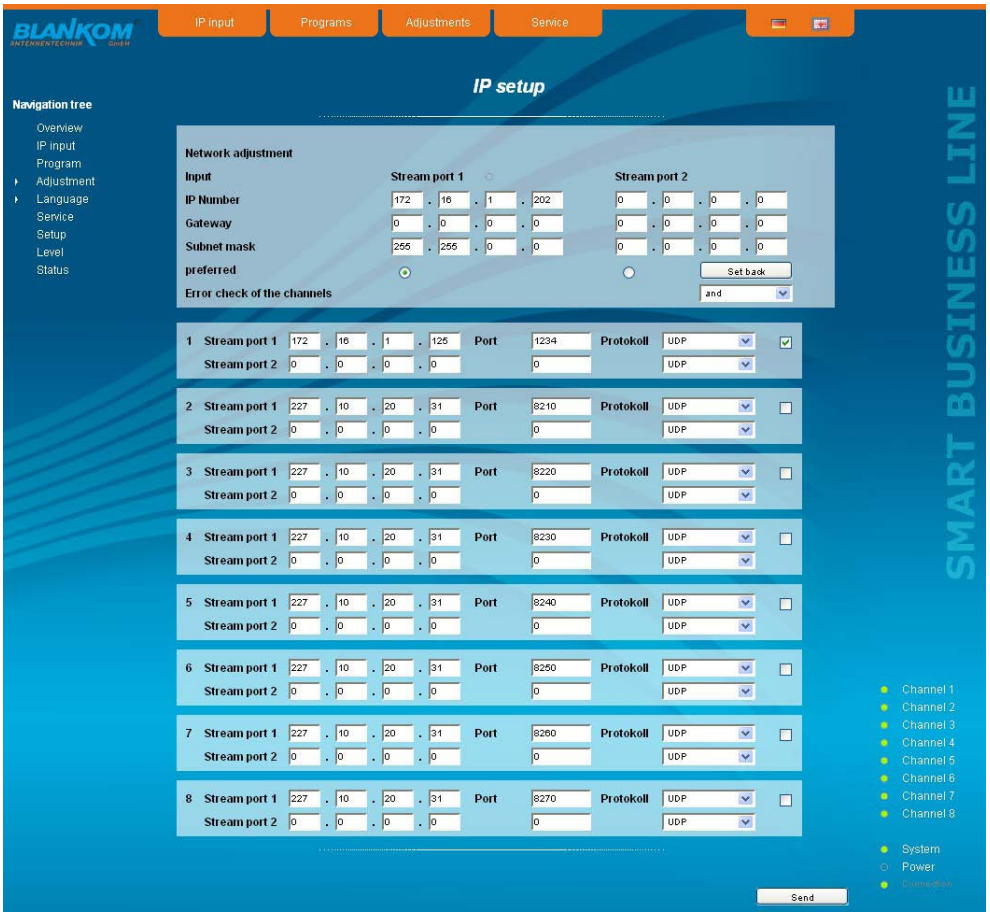
6.2.2 Menu “IP Input”

This menu contains the network configuration for the streaming port and for the 8 IP transport streams from which then the 8 desired programs for transmitting can be selected.

On top the configuration options for the two stream ports are displayed. It should be noted that the stream port 2 is available only after enabling the associate software option (see section 6.2.6). The IP address, subnet mask and gateway can be configured for each port. The next step is to configure the setup parameters of the 8 IP input transport streams (IP input channels). Again, IP address, port and transport protocol (UDP or RTP) have to be entered for each IP channel. Everything is confirmed by pressing the “send“ button.
If not all 8 ports are used, the unused ports can be disabled by entering the IP address 0.0.0.0.
Identical settings within these 8 IP channels are not permitted and are automatically marked red.

6.2.2.1 SFP option

The SFP option allows the connection of different modules for the IP input. Depending on the SFP module thus various management and media types can be connected to the A-PALIOS-IPM2. The IP input can be expanded to another IP data source. The SFP module figures as the stream port 2, so that either “Stream port 1“ or “Stream port 2“ can be used as an IP input.
Simultaneously there is the ability to define one of the two IP inputs as the preferred source and the respective other IP input as redundancy source. When an IP data source fails, then switches to the other data source. For this purpose, individual rules can be defined for when and how to switch. Inclusion in the monitoring is configured on a per-channel basis. This is a global option, deciding when to switch: either when an input channel is down or all monitored channels have failed.
Switching back to the preferred IP input is not automatic, but can only be done manually via the user interface.
Please note that actual monitoring on a particular channel starts for real one if actually receives data.



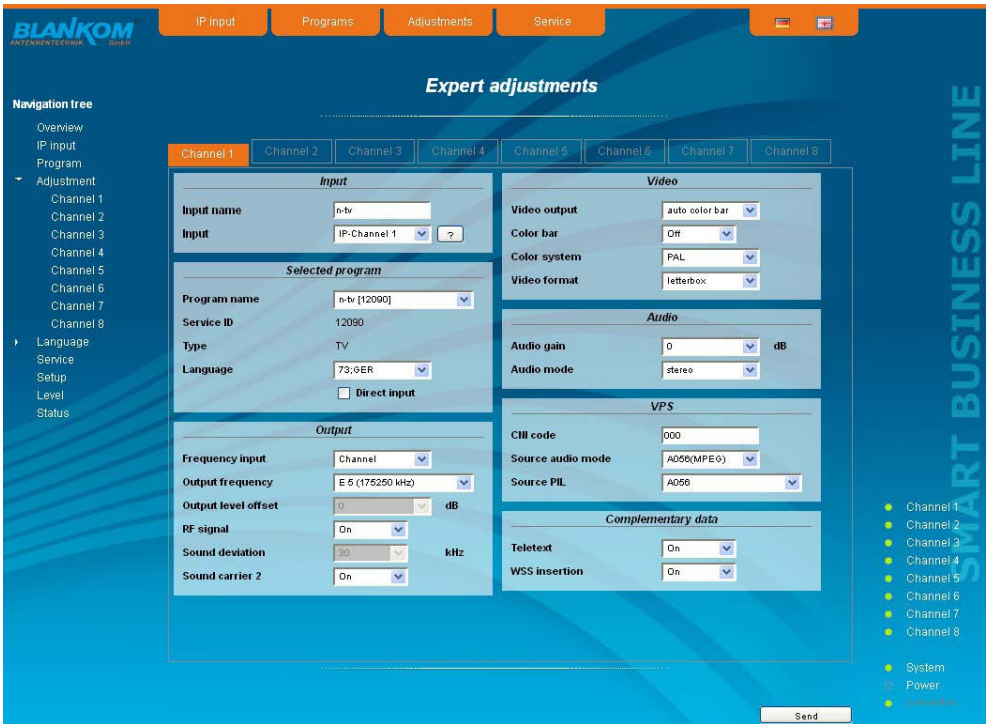
The form of the network settings also includes means for selecting the preferred IP input. The selection is made by pressing the appropriate option button. “Error check of the channels“ as described above configures the device for switchover if only one of the monitored channels fails (“or“) or only when all monitored channels have failed (“and“) .
At the right of the configuration of each of the 8 IP input transport streams, there is a check box. By marking this box, the respective transport stream is included in the monitoring.

6.2.3 Menu ”Transponders”

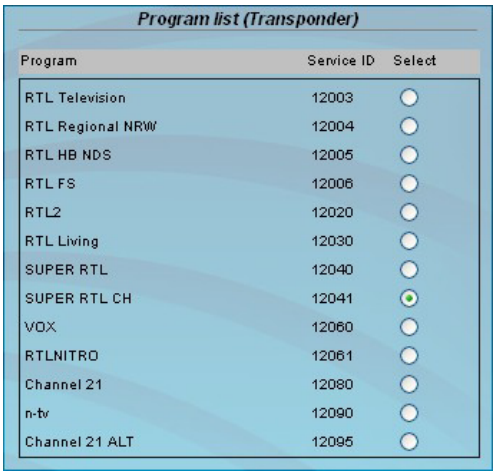
In this menu the program selection is done for all output channels. After call up of the menu at first the actual channel allocation of the A-PALIOS-IPM2 device is listed. The following settings respective changes per channel are possible: in the column “IP“ there can be selected the transponder, which contains the program to be transferred. In the next column the requested program can be selected. In the next both columns there can be selected the language respective the language of the subtitles, if there are more than one of them. In the column “Output frequency“ there is to be selected the output channel of the program. On double assignments within these 8 channels is called attention to this automatically. With the checkbox “RF“ the RF output of the channel is set to “on“ or “off“. Clicking on the “Send“ button, the settings are taken and stored.

6.2.4 Menu ”Adjustment”

In this menu, the settings of the device are made. Each channel can be adjusted individually according to individual requirements. The channel may be selected by clicking either left in the navigation tree or by clicking one of the tabs above the set-up tables.

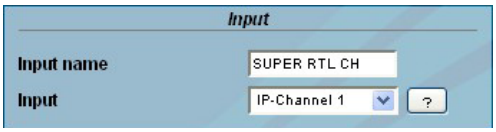


The following parameters are adjustable:



Program list (Transponder)

If “Program selection with select box“ in chapter “GUI settings“ is deactivated (see also chapter 6.2.6), the form at the left appears for program selection. All programs of the selected transponder are listed with name and service ID. The selection of the program is done by marking of the respective select box. The program name and the other parameters of the program are adopted automatically. In this case the program name in the menu “Selected program“, variant 1 is not selectable.

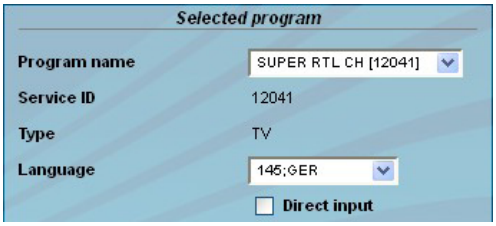


Input input parameters of the channel

Input name e.g. name of the program, editable

Input sel.: IP input channels 1 ... 8, ASI TS

By pressing the “?“ button, the channel list is updated.



Selected program variant 1: program selection menu

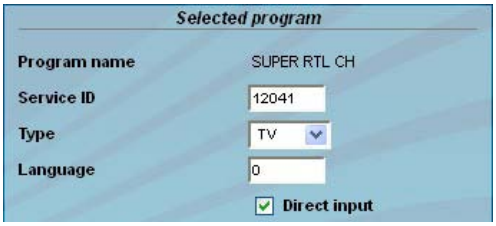
Program name selection of the program from the program list of the transponder of the selected IP TS

Service ID displays the service ID of the selected program

Type displays the type of the program

Language selection of the available language

Direct input selection: selection menu, direct input (see below)



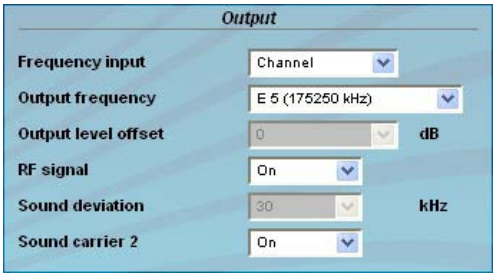
Selected program variant 2: direct input

Program name displays the name of the program, which was selected in the input menu

Service ID input of the service ID of the requested program, adjustment range: 0...65535

Type selection of the program type: TV, Radio

Language input of the language n°, adj. range: 0..255



Output output parameters of the channel

Frequency input selection: channel, frequency *

Output frequency selection from channel table/ input in kHz *

Output level offset display of the level offset **

RF signal selection: On, Off

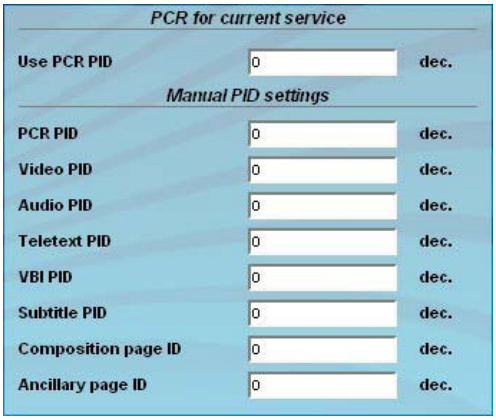
Sound deviation selection: 30, 50 kHz ***

Sound carrier 2 selection: On, Off

* If at the frequency input “channel“ is selected, the output frequency can be chosen in the pre-selected channel spacing (see chapter 6.2.6). If, however, “frequency“ is selected, then the output frequency is selectable in kHz steps.

** Adjustment of the offset of each channel to the basic level, see chapter 6.2.6

***Only selectable, if sound carrier 2 is set to “Off“. If sound carrier 2 is set to “On“, the sound deviation is permanently 30 kHz



PCR for current service*

Use PCR PID adjustment range: 0..8190

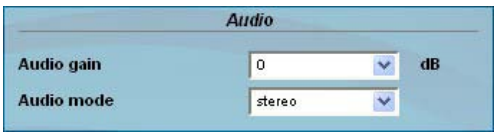
Manual PID settings*

PCR PID adjustment range: 0..8190
Video PID adjustment range: 0..8190
Audio PID adjustment range: 0..8190
Teletext PID adjustment range: 0..8190
VBI PID adjustment range: 0..8190
Subtitle PID adjustment range: 0..8190
Composition page ID adjustment range: 0...65535
Ancillary page ID adjustment range: 0...65535

* The menu of the manual PID setting only appears, if the respective box is clicked on in the "Setup" menu, chapter "GUI settings" (see also chapter 6.2.6).
The functionality is currently not supported.

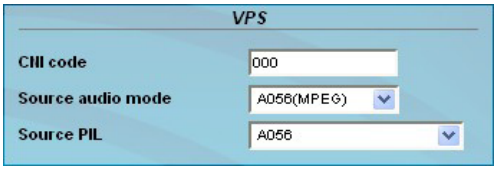
Video setting of the video parameters

Video output selection: On, auto Off, auto colour palette bar
Color bar selection: On, Off
Color system selection: PAL, SECAM, NTSC
Video format selection: letterbox, center cut, 1:1, pillarbox, 4:3 vertical cut, 20:9 letterbox



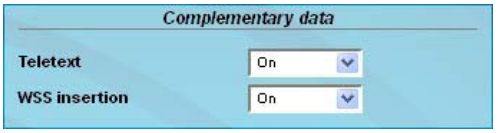
Audio setting of the audio parameters

Audio gain adjustment range: +6...-20 dB
Audio mode selection 1: mono L, mono R, dual, dual invers, stereo, auto **
selection 2: mono L, mono R, mono L+R, auto ***
** if sound carrier 2 is set to "On"
*** if sound carrier 2 is set to "Off"



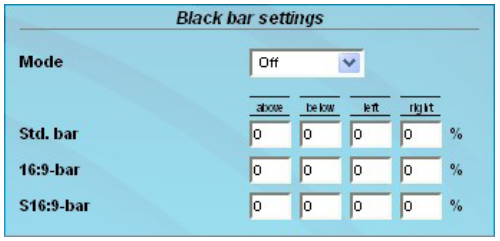
VPS setting of the VPS parameters

CNI code adjustment range: 0x000…0xFFF (hexadec.)
Source audio mode selection: MPEG, A056(MPEG)
Source PIL selection: A056(PDC), A056, PDC, TimerControlCode



Complementary data

Teletext selection: On, Off
WSS insertion selection: On, Off

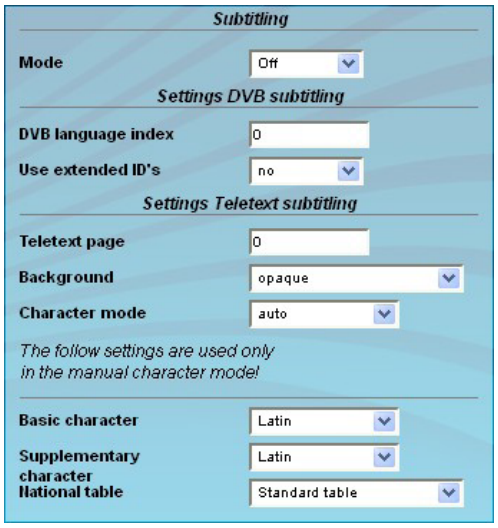


Black bar settings *

Mode selection: On, Off

The width of the bar can be selected in % related to standard 4:3 format. Different values for 16:9- and special 16:9 format can be adjusted.
Note:
In certain settings it can occur in picture distortion. The adjustment values (in %) in these cases are slightly to change up or down until there are no disturbances occur more.

* only available, if "Black bar" option is enabled (see chapter 6.2.6)



Subtitling**** adjustment of the parameters

Mode selection: Off, Teletext, DVB

Settings DVB subtitling

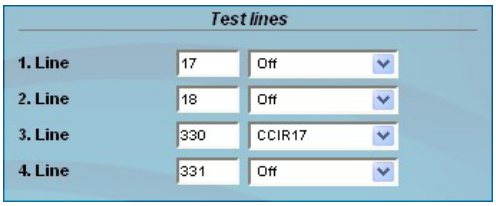
DVB language index adjustment range: 0...255
Use extended ID's selection: yes, no

Settings teletext subtitling

Teletext page adjustment range: 0..65535
Background selection: opaque, semi-transparent, transparent, black transparent
Character mode selection: auto, manual

The following settings are only used in the manual character mode:
Basic character selection: Latin,Cyrillic-1,Cyrillic-2, Cyrillic-3, Arabic, Greek, Hebrew
Supplementary character selection: Latin, Cyrillic, Arabic, Greek, Hebrew
National table selection: standard table, alternative table, no country code, English, German, Swedish, Italian, French, Spanish, Czech, Rumanian, Polish, Estonian, Latvian, Serbian, Turkish, Danish

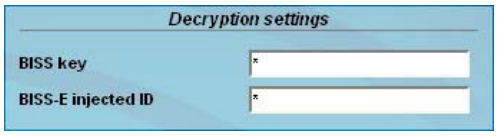
**** only available, if "Subtitling" option is enabled (see chapter 6.2.6)



Test lines**

The A-PALIOS-IPM2 offers the opportunity to output test signals on up to 4 image lines from the following selection: Off, CCIR 17, CCIR 18, CCIR 330, CCIR 331, Sin(x)/ x, Ramp. As a default, the image lines 17, 18, 330 and 331 are selected. The image lines selection is editable, i.e. the test lines can be output on each image line in the range 1..625.

** only available, if "Test line" option is enabled (see chapter 6.2.6)



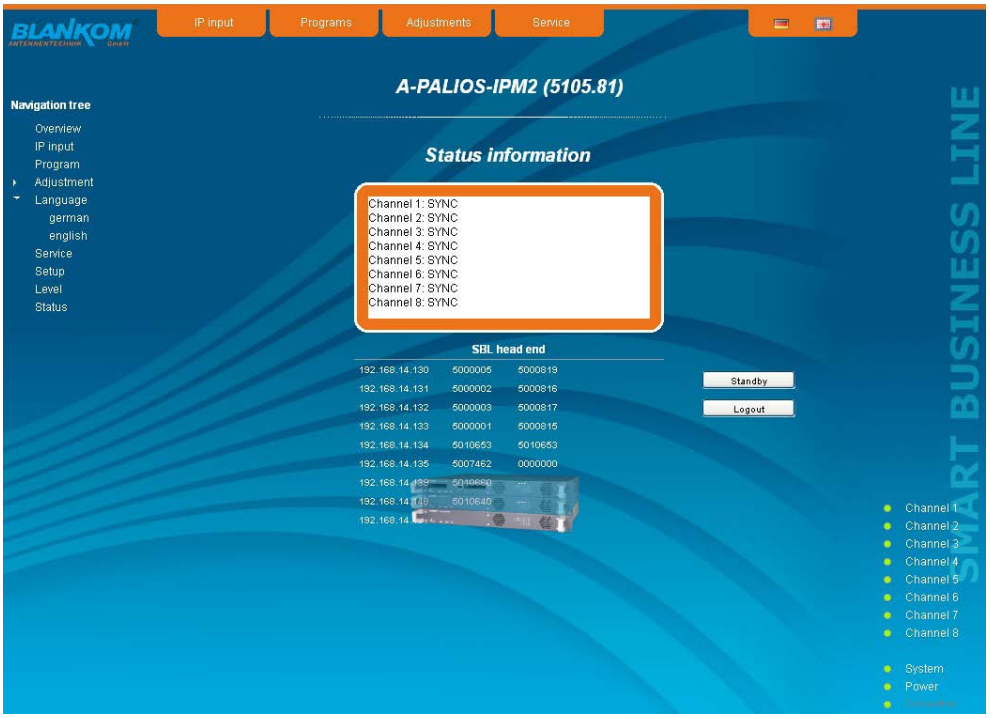
Decryption settings***

BISS key input of the 12-digit code in BISS mode 1 or of the 16-digit code in BISS mode E
BISS-E injected ID input of the 14-digit code in BISS mode E, no input in BISS mode 1

*** only available, if "BISS" option is enabled (see chapter 6.2.6)

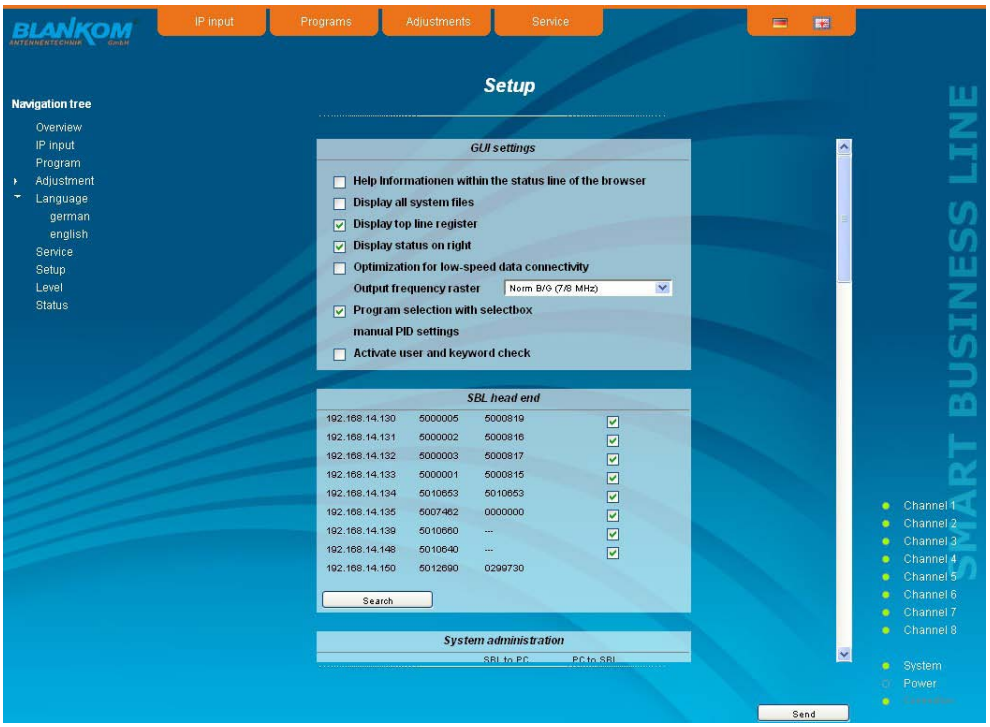
6.2.5 Menu ”Language”

In this menu, the selection of the user interface language is executed. You can choose between German and English. The transition can be made either to the left in the navigation tree in the subtree of the point “language“ or top right via the language selection box.

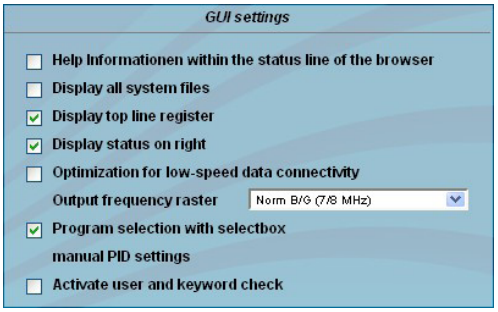


6.2.6 Menu ”Setup”

In this menu, various administrative and system settings are made.



Specifically, the following can be configured:



GUI settings

Help information within the status line of the browser
By default, the online help is displayed in an orange text box at the bottom of the page. If you click this option, the help texts are displayed in the status bar of your browser. Depending on your browser sometimes such use has to be allowed in the browser settings.

Display all system files
The default is, that the system files can be subjected to upload or download as a package under “Backup“ in the submenu “System administration“. If you click on this box, the system files are listed individually and can be individually subjected to an up- or download.

Display top line register
By default, the registers are shown in the upper part of the user interface, to move more quickly to the most frequently used menus. By removing the box marking the registers are hidden.

Display status on right
By clicking on the box, the status of the channels or the system is shifted to the right of the user interface.

Optimization for low-speed data connectivity
By clicking the box the data volume of the browser pages is greatly reduced. So it is possible to adjust the device, if there is only a low-speed connectivity (GSM). The available reduction is achieved by reducing image size.

Output frequency raster
It is possible to choose between the standard B/G raster (7 or 8 MHz) and the D/K rasters. In case of D/K1 the sound carriers are at 6,5/ 6,25 MHz, D/K2 at 6,5/ 5,74 MHz and D/K3 at 6,5/ 6,74 MHz. Simultaneously in accordance with the selection, the group delay filter is set for standard B/G or D/K.

Program selection with select box
If the box is deactivated, the program selection is done with the program list in the adjustment menu. Otherwise the program selection is done in the field “Selected program“ (see chapter 6.2.4).

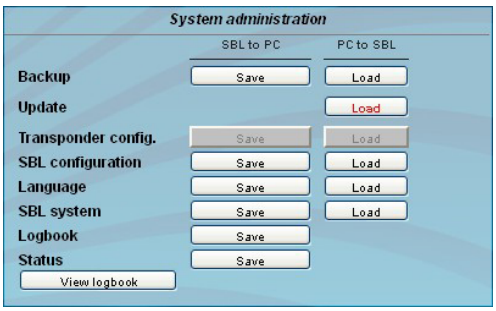
manual PID settings*
By clicking the box the respective input box of each channel appears additionally in the menu “Adjustment“ (see also chapter 6.2.4). Default the input box is deactivated.

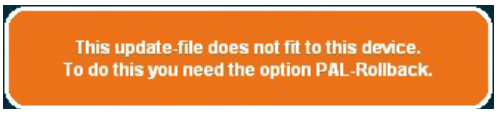
Activate user and keyword check
This selection is only available if you are logged in as administrator. If the box is disabled, the log-in is skipped after each GUI reboot. Otherwise, user login and password are required (see chapter 6.1).

* **Functionality is currently not supported**

SBL head end

All A-LINE-SBL and SBL devices, which are located in the same network, are listed. By pressing the “Search“ button the list is updated. All marked devices belong to the head end and are displayed on the “Overview“ page.





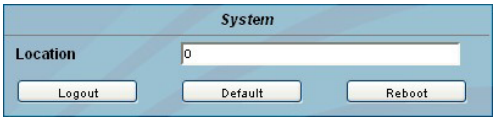
System administration

The default is displaying of the shortened list of files (top).

Backup
Here the system files can be loaded or saved as a package (except Logbook and Status). Thus, it is possible, for example in a simple way to copy the system files from a A-PALIOS-IPM2 device to another. If under “GUI setup“ “Display all system files“ is selected, the system files can also be loaded or saved separately (see figure below).

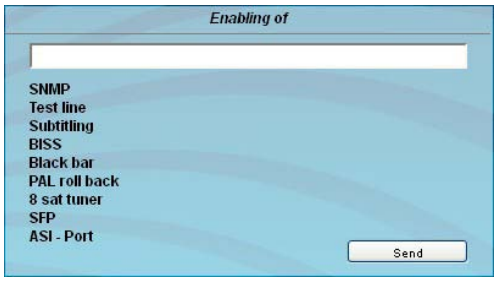
Update
By clicking the “Load“ button, the internal software components can always be brought up to date.
If the “PAL-Rollback“ option is enabled, it is possible to convert the A-PALIOS-IPM2 device into a A-QAMOS-IP device via software update. This can be chosen: a A-QAMOS-IP release instead of a A-PALIOS-IPM2 release starts the update reversed when needed as well. After clicking the “Load“ button instead of the current A-PALIOS-IPM2 releases the current A-QAMOS-IP release is to select and then perform the update process.
If the option is not enabled, after selecting the A-QAMOS-IP releases appears opposite error message, so that accidental conversion is not possible.

Pressing the button “View logbook“ leads to an overview, in which all the processes have been documented since the start of the GUI. Each operation is listed by date, time and description. If operations have been executed, the logged on user, who initiated the action, is saved too. By pressing of the “Erase“ button all entries are deleted, when you are logged in as administrator.



System

Location	In this field a name for the A-PALIOS-IPM2 is be made to identify the device easily. This name appears on the top right of the web site under the language selection box and is provided via SNMP with the question of the field: Iso(1)org(3). dod(6).internet(1).mgmt(2).mib.2(1).system(1). sysLocation(6).
Logout	restart the user interface
Default	delete the settings and reset to default values (including IP address), available only if you have logged in as administrator
Reboot	restart of the A-PALIOS-IPM2 device

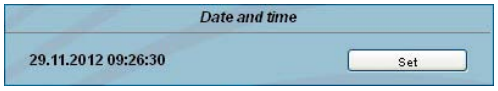


Enabling of

In this field, possible software options for the A-PALIOS-IPM2 can be enabled. The registration code must be entered in the input field and by pressing the "Send" button the option will be activated. Activated options are displayed in black, inactive are grayed out.

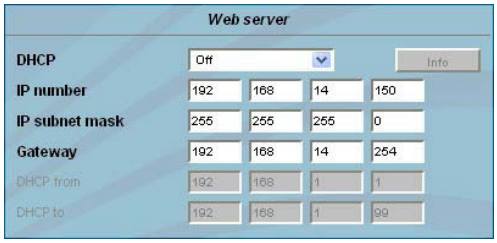
note

To convert an A-PALIOS-IPM2 into an A-QAMOS-IP, the option "PAL roll back" must be active to perform the update process (see "System administration → update").



Date and time

Clicking on the "Set" button, the date and time will be set to that of the PC.

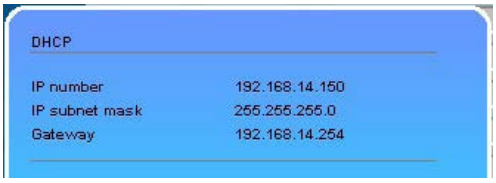


Web server

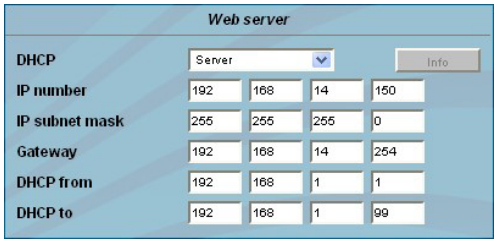
This setting appears only when you are logged in as administrator, and thus you have the authority to make administrative changes.
The A-PALIOS-IPM2 supports the DHCP functionality. DHCP-Client is factory default. Note, that after each factory reset the A-PALIOS-IPM2 is set "DHCP-Client".

If the **DHCP functionality** is set to **"Off"**, in the appropriate fields the IP number, subnet mask and gateway can be manually entered and then the settings of the A-PALIOS-IPM2 device are adapted to the network.

If the device is set as **"DHCP-Client"**, it automatically obtains an IP address from the DHCP server on the network. The manual network settings are grayed out and are therefore disabled.



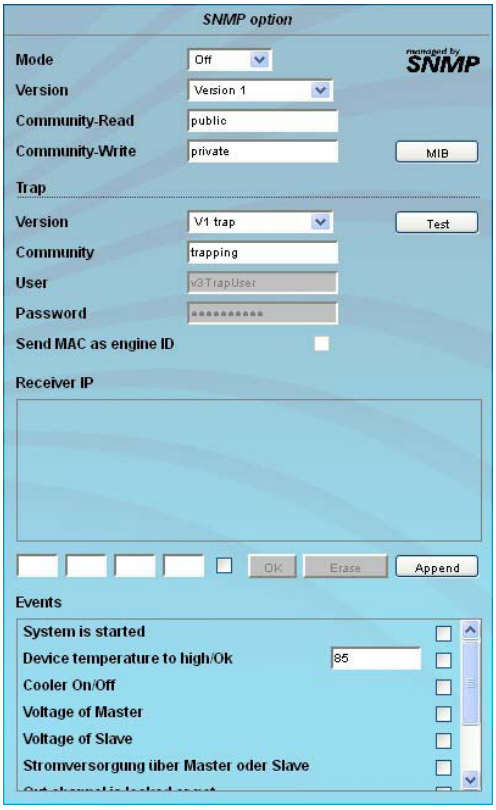
By pressing the "Info" button the automatically assigned network configuration of the device is displayed.



Please note if the device is set as **"DHCP-Server"**, that the IP address 192.168.1.100 should not be set. If you select this address, you will get an error message. In addition to the IP settings you can configure the DHCP range from which the IP addresses of the connected clients are assigned. The address range must match the address range according to IP address and subnet mask of the server and should not be too small. The default is the area 192.168.1.1 to 192.168.1.99. Additonally with the DHCP server will also set up a local DNS (Domain Name Server). To use it in full extent a connected PC/ laptop must be configured as a DHCP client. Please note, that the client unit not only get its IP address from the DHCP server, but also its DNS server.

If the device is configured as a DHCP server or client and the client has received an IP address successfully, so the device can be accessed via a web browser using its name. This name is composed of the prefix "sbl" and the device number that is printed on the back of the device and on the packaging. For example, the device with the number 0123456 can be called under "sbl0123456". Should there be problems with it among the local network conditions, the domain can be added. In the case that the above device is configured as a server, the call using the domain is then "sbl0123456.sbl". If another DHCP server is used, ask your administrator for the domain name.

An example of the simplification of the configuration or operation of the head end via DHCP, is, that an A-LINE-SBL device is as a server, the remaining devices and the connected PC/ laptop are configured as a client. By calling the browser "dhcp.sbl" the GUI of the server device is loaded. If not already done so, now the head end can be read. So all connected components are found and listed. The head end can now be stored in the "Setup" menu under the item "System administration". The head end overview can be changed quickly to the user interface of any other device by selecting the respective devices links.



SNMP option

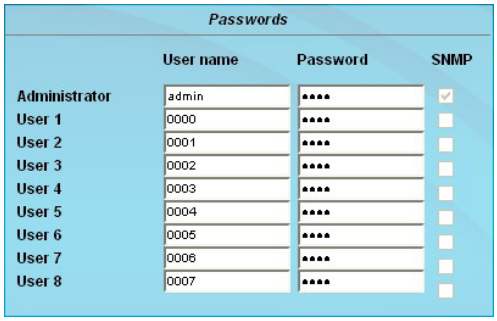
In the first section, the SNMP functionality, including the sending of traps is enabled or disabled with the “Mode“ selection field. With the selector “Version“ you can select the SNMP version (version 1, 2 or 3). In the two boxes below it, the communities for versions 1 and 2 are given separately for reading and writing via SNMP. With version 3, these two fields are disabled because all registered users of the device (see menu “Passwords“) have the automatic read access to SNMP. The write access can be enabled or disabled for each user by clicking the SNMP check box in the “Passwords“ menu.
By clicking the “MIB“ button the MIB of the device is generated and offered for download.

In the second section the trap settings are done. First, the trap version is selected:
V1 trap - normal traps according SNMPv1 with specified community
V2 trap - normal traps according SNMPv2 with specified community
V2 inform - sends information traps according SNMPv2 and waits for an acknowledgment
V3 trap - normal traps according SNMPv3
V3 inform - sends information traps according SNMPv3 and waits for an acknowledgment

The community can be configured for traps of SNMP versions v1 and v2. User/ password and the using of the network MAC address as the engine ID can be configured for traps of SNMP version v3. These settings must correspond with the configuration of the trap receiver, so traps are successfully transferred. For this purpose a test trap can be sent by clicking the button “Test“ to test the transmission of traps. If a test trap triggered, all pre-preserved traps are discarded.

There up to 256 IP addresses to receive the traps can be created or enabled. These are listed under “Receiver IP“. Below, the events can be configured, whether and partly with what thresholds they should trigger traps. There are three ways to configure a trap:
- without parameters, e.g. fan on/ off
- with a freely selectable parameter for a medium priority
- with a selectable parameter from a list for a medium priority

References and notes:
All users using SNMPv3 must use passwords with at least 8 characters. For SNMPv3 the SBL supports only the authentication password, not the privacy password. The A-LINE-SBL only supports the MD5 algorithm for authentication password in SNMPv3. Information traps are specific traps that are possible up to SNMPv2. If there is no acknowledgment of the receiver, the transmitter attempts to transmit it later, until the confirmation is received.
An A-LINE-SBL device holds up to 256 information traps that could not be sent successfully. If there are more unconfirmed traps, the older traps are discarded and noted in the logbook as having failed. A successful sent trap is also registered as such in the logbook. In case of power failure or reboot of the device the non-confirmed traps are lost.
Details may be found in the help text for each event. The critical priorities are each covered with fixed values that can not be changed.
If the web site of A-PALIOS-IPM2 is open, no changes are possible via SNMP.



Passwords

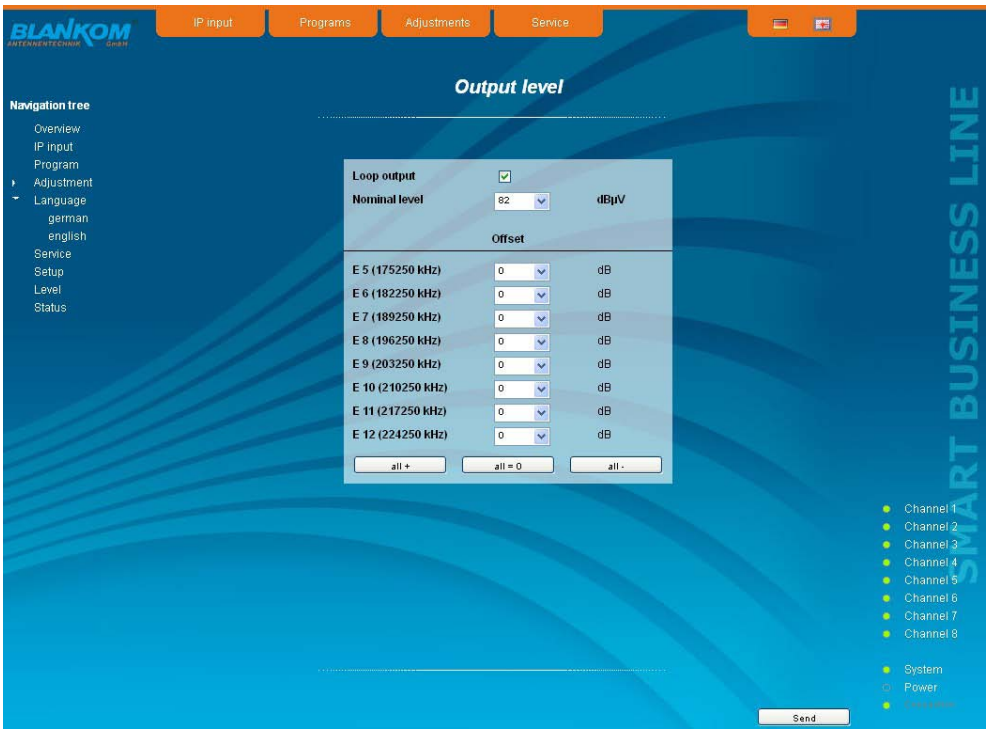
Again, this setting appears only when you are logged in as administrator, having the authority to make administrative changes. In addition the box “User and keyword check“ in the submenu “GUI settings“ has to be clicked. The user ID and password for the administrator can be set in the first line. The fixing of up to 8 user identification and passwords is possible. The limitations of user rights exist only in the fact that they are not authorized to change web server settings, user rights and password changes and default settings.
The default **password** for the **admin** is: 1111
and for the **user**s: 0000
To the right of each user appears an SNMP check box. By clicking the box, the writing rights for individual users can be awarded for the SNMP version 3 (see also section “SNMP option“).

6.2.7 Menu "Service"

In this menu you will find all information about the service for the A-PALIOS-IPM2 device in particular the BLANKOM service hotline and the service email address. In addition, the implemented operating instructions may be downloaded or viewed as PDF. If there is an Internet connection the BLANKOM homepage can be started, offering the latest software release or descriptions. Finally, the currently installed software release is displayed.

6.2.8 Menu "Level"

With the top box, the loop through output (loop) is enabled or disabled. If enabled, the underlying selection of the nominal level for all 8 channels may be set in the range from 62 ... 82 dBµV. If the loop is disabled, the output level of the 8 channels may be set in the range of 76 ... 94 dBµV. Below each channel can be set individually with an offset of +3 ... -6 dB in 0.5 dB steps. The three lower buttons are used to simplify the offset level setting if you want to perform same adjusting for all 8 channels. With the left button the offset for all 8 channels is increased by 0.5 dB, decreased with the right button by 0.5 dB. The offset is set for all 8 channels to 0 dB with the middle button.



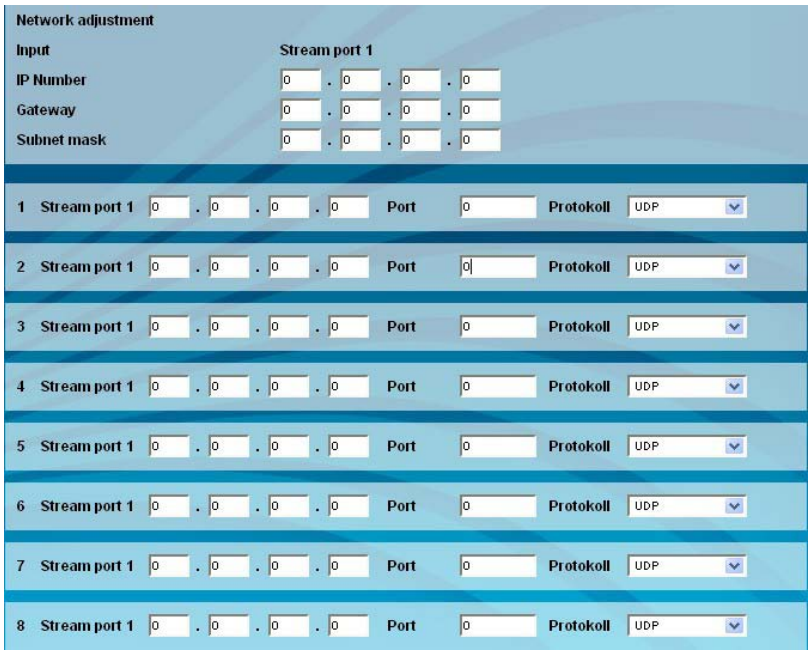
6.2.9 Menu ”Status”

It presents an overview of the status of the various components per channel, it is updated every 5 seconds. It lists only the current values, the naming of the parameter appears in the help box in the lower part of the user interface or in the status bar of the browser (as adopted configuration), if you hover the mouse cursor above the parameter. The listing is in 3 groups: input, modulators and system. With the selection box at the top right you determine whether you have an overall view or only one of the 3 groups is listed.

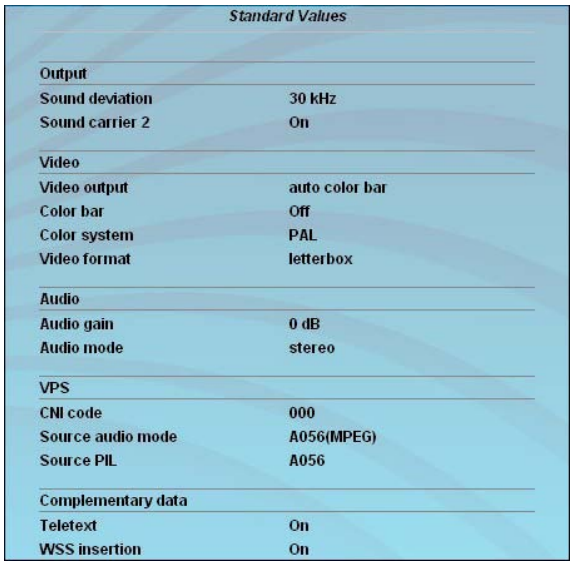
7. Factory settings

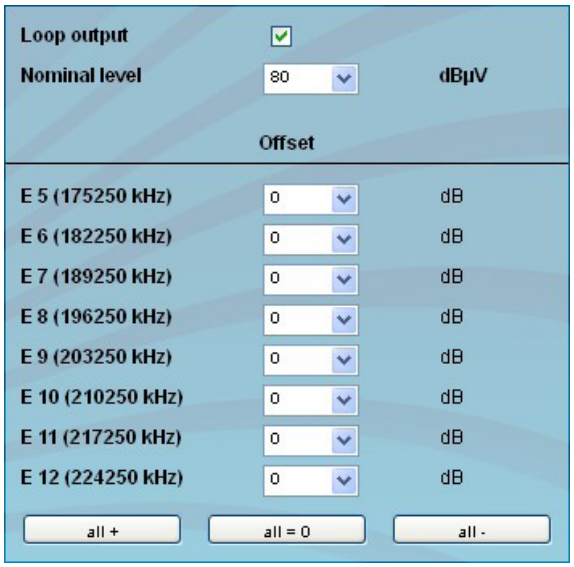
A short pressing of the reset button on the rear of the device causes a reboot, i.e. the device restarts and all stored values are adjusted. If the device is to be reset to factory settings, the reset button must be pressed so long to keep up until the “POWER“ and “SYSTEM“ LED will illuminate green permanently. This process takes about 15 seconds. In this case the device is set to the following:

Input parameters

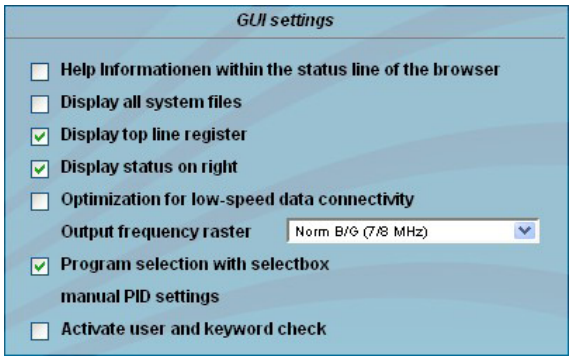


Output parameters



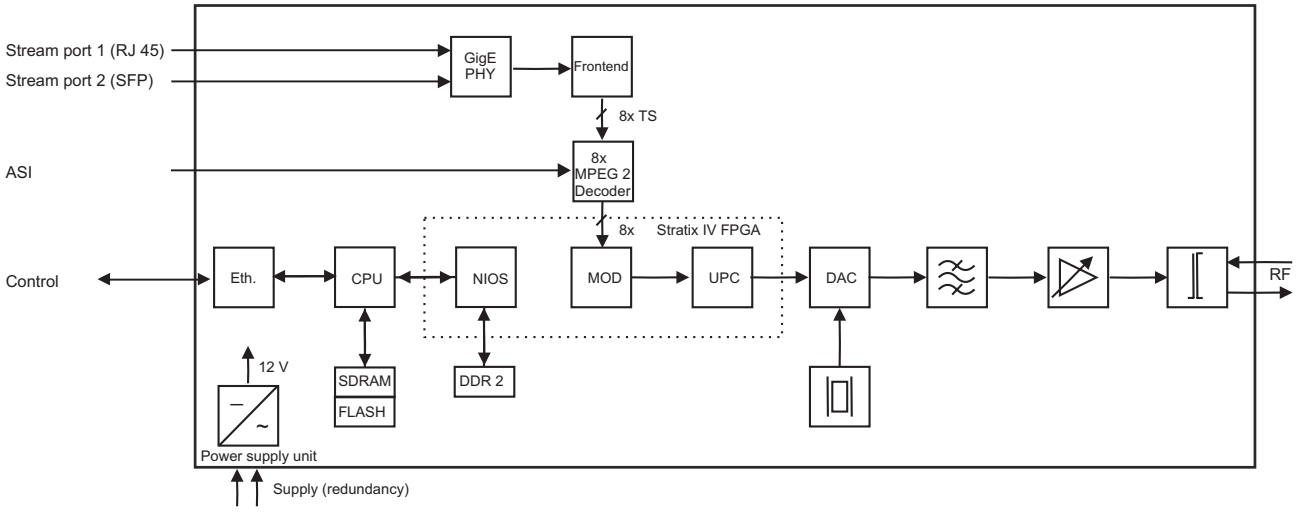


Setup settings

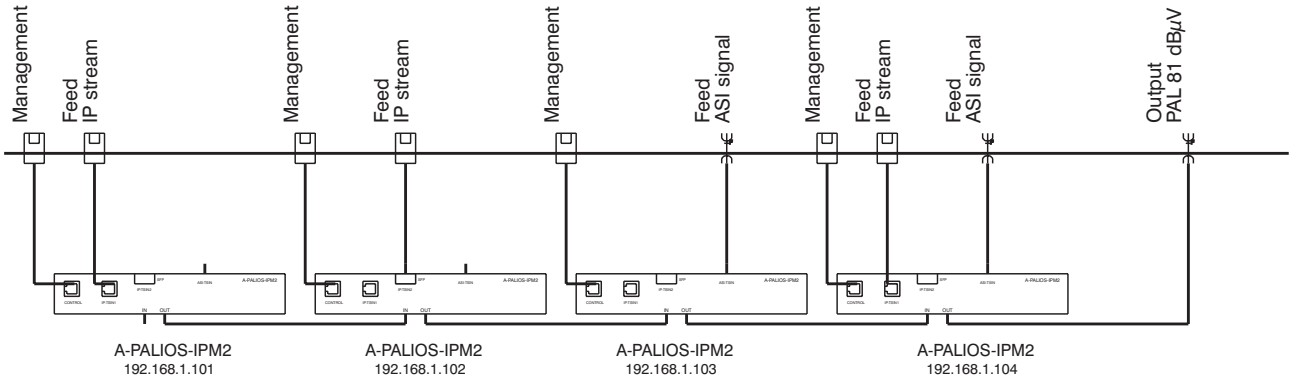


Network settings

8. Block diagram



9. Application example



10. Technical data

IP input (stream port)		
Network connection (LAN/ WAN)		Ethernet,10/ 100/ 1000 Base-T
Connector		1x RJ 45, 1x SFP
Protocols		ARP, IGMPv3, UDP, RTP
ASI input		
Level range		200 … 880 mV_{pp}
Data rate		270 Mbps
Connector		BNC socket
Impedance		75 Ω
ASI polarity		regular/ inverted
ASI signal processing		
Data rate		0.625…75 Mbps
ASI transfer format		continuous, burst
TS transfer format		188, 204 Byte
Signal processing		EN 50083-9 [1]
MPEG decoder		
Video		MPEG-2 MP@ML
Audio		Audio description, MPEG-1 Layer 1&2
TV output		
TV standard		B/G, D/K
Sound type		double carrier FM
Sound carrier frequencies		
	B/G	5.5/ 5.742 MHz
	D/K1	6.5/ 6.25 MHz
	D/K2	6.5/ 5.742 MHz
	D/K3	6.5/ 6.742 MHz
		(each above picture carrier)
Sound mode		mono/ stereo/ dual/ auto (VPS controlled)
Audio deviation 1 mono carrier		30/ 50 kHz
Audio deviation 2 mono carrier		30 kHz
Audio deviation dual sound		30 kHz
Output frequency range		45 ... 862 MHz
Tuning step		125 kHz
Max. output level		85 dBµV (per channel)

Total level settings	
without loop	76 ... 94 dBµV (1 dB steps)
with loop	62 ... 82 dBµV (1 dB steps)
Individual level settings (offset)	+3 ... -6 dB (0.5 dB steps)
Channel allocation	adjacent channel ability
Connector	F socket
Impedance	75 Ω
Return loss	≥ 18 dB 45 MHz - 1.5 dB/ octave
Signal quality	
C/N in channel (BW = 4,8 MHz)	≥ 65 dB
S/N ratio parallel sound (unweighted/ weighted)	≥ 65/ 60 dB
Spurious 45...862 MHz	≥ 60 dB
Max. frequency stability	30 kHz
Output level stability	± 0.5 dB
Operating parameters	
Operating voltage	2x 90 ... 240 V~ 50/ 60 Hz including redundancy function
Power consumption	36 W
Environmental conditions	
Temperature range	-10 ... +55 °C
Temperature range for data keeping	5 ... 45 °C
Relative humidity	≤ 80 % (non condensing)
Method of mounting	horizontal
Location of mounting	splash-proof and drip-proof
Miscellaneous	
Dimensions (l x w x h)	448 x 44 x 350 mm
Weight	5.500 g
Delivery content	2x power cord 1x RJ45 connection cable 1x terminating resistor 1x mounting kit

11. Glossary

AM	**A**mplitude **m**odulation
ARP	**A**ddress **R**esolution **P**rotocol
ASI	**A**synchronous **S**erial **I**nterface
ATV	**A**nalogue **Tele**v**i**sion
BISS	**B**asic **I**nteroperable **S**crambling **S**ystem
BISS-E	**B**asic **I**nteroperable **S**crambling **S**ystem with **E**ncrypted keys
CNI	**C**ountry and **N**etwork **I**dentification
DVB	**D**igital **V**ideo **B**roadcasting (-C Cable, -S Satellite, -S2 Satellite 2, -T Terrestrial)
FPGA	**F**ield **P**rogrammable **G**ate **A**rray
GbE	**G**iga**b**it-**E**thernet
GUI	**G**raphical **U**ser **I**nterface (grafische Benutzeroberfläche)
HD(TV)	**H**igh **D**efinition (**Tele**v**i**sion)
HTTP	**H**ypertext **T**ransfer **P**rotocol
ID	**Id**entifier
IF	**I**ntermediate **F**requency
IGMP	**I**nternet **G**roup **M**anagement **P**rotocol
IIC	**I**nter-**I**ntegrated **C**ircuit (geräteinterner Datenbus)
IP	**I**nternet **P**rotocol
LED	**L**ight **E**mitting **D**iode
LNB	**L**ow **N**oise **B**lock
MAC	**M**edia **A**ccess **C**ontrol
MPEG	**M**oving **P**icture **E**xperts **G**roup
Nios	product name for a processor

NIT	**N**etwork **I**nformation **T**able
PCR	**P**rogram **C**lock **R**eference
PID	**P**rogram **Id**entifier
RF	**R**adio **F**requency
SFP	**S**mall **F**orm-factor **P**luggable
SNMP	**S**ingle **N**etwork **M**anagement **P**rotocol
TS	**T**ransport **S**tream
VBI	**V**ertical **B**lanking **I**nformation
VPS	**V**ideo **P**rogramming **S**ystem
WSS	**W**ide **S**creen **S**ignalling

12. Bibliography

[1] EN 50083-9: Cabled distribution systems for television, sound and interactive multimedia signals, part 9: Interfaces for CATV/SMATV head ends and similar professional equipment for DVB/MPEG-2 transport streams

[2] EN 60728-11: Cable networks for television signals, sound signals and interactive services Part 11: Safety (IEC 60728-11:2005); German version EN 60728-11:2005

[3] EN 50083-2 : Cabled distribution systems for television and sound signals. Electromagnetic compatibility for equipment; EN 50083-2:2001

[4] RFC 1157 Request for Comments (RFC): RFC Database URL: Http://www.rfc-editor.org/rfc.html

13. Notes on the device software

Device Software of the A-PALIOS-IPM2
Copyright (C) BLANKOM Antennentechnik GmbH Bad Blankenburg

This device software based on top of Linux 2.6 is free software: you can redistribute it and/ or modify it under the terms of the GNU General Public License as published by the Free Software Foundation, either version 2 of the License, or (at your option) any later version.

You should have received a copy of the GNU General Public License along with Foobar. If not, see <http://www.gnu.org/licenses/>.

The source code is available upon request.
Please address requests to:

BLANKOM Antennentechnik GmbH
Hermann-Petersilge-Straße 1

07422 Bad Blankenburg
Germany

14. Document history

Version	Date	Modification	Author
1.00	14.11.2012	basic version	Häußer

Options available upon request. Subjects to changes due to technical progress.

CE Declaration of Conformity

The Manufacturer

BLANKOM Antennentechnik GmbH · Hermann-Petersilge-Str. 1 · 07422 Bad Blankenburg · Germany

herewith declares the conformity of the product

Product name:	IP-/ ASI-TV Transmodulator
Type:	A-PALIOS-IPM2
Product number:	5105.81

according to the following regulations

EN 50083-2 [3]
EN 60728-11 [2] (as far as relevant)

and additional device-specific regulations, enclosed above, which this product is subjected to.

Date: 14.11.2012

Signature:

Dr. Piero Kirchner
(Managing Director)