

# Device manual

## SAT-TV Demodulator

DVB-S/-S2 → CI → ASI-TS & A/V



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## SDB 907

## Part N°: 9722.01

## 1. Safety and operating instructions



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



The modules may only be installed and started up by authorized technical personnel!



When assembling the modules into the receiving points, the adherence of the EMC regulations is to be secured!



The assembly and wiring have to be done without voltage!



All active modules may only be operated with the Headend Controller HCB x00 or Bus Extender BEB x00!



The main voltage and the operating voltage of the modules working by DC have to be in compliance to the operating parameters described in the technical data.



With all work the defaults of the DIN EN 50083 have to be considered! Especially the safetyrelevant execution of the DIN EN 60728-11 [6] is necessary!

## 2. Device variants

SDB 907    9722.01    DVB-S/-S2 → CI → ASI-TS & A/V

### Minimum software requirements for HCB x00:

9650.03:    version 2.34\*

9650.04/.05: version 3.18\*

9652.01:    version 3.18\*

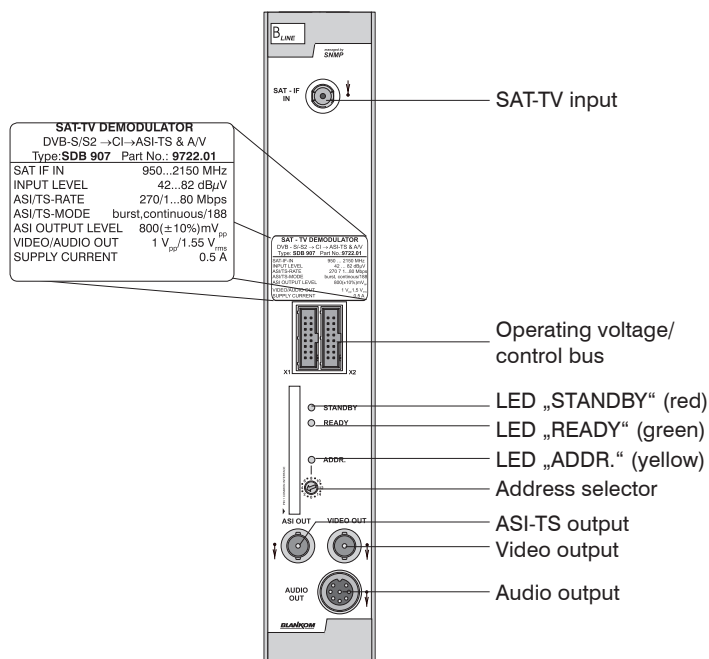
\*) Updates: [www.blankom.de](http://www.blankom.de)

## 3. Preface

The SAT-TV - Demodulator SDB 907 is a module of the head end system B-LINE, which is conceived as a complete system for middle sized networks. The SDB 907 demodulates DVB-S/ -S2 signals (8PSK, QPSK) into analogue audio/ video signals. A Common Interface - slot enables the use of CA-Modules for the reception of scrambled SAT-signals/programmes. Additionally the processed transport stream with the descrambled services is available on the ASI output.

All the components are programmed via a central control unit and will function independently thereafter. The status of the modules are displayed via LED's (see chapter 7 „Front panel LED`s“).

## 4. Front view



managed by  
**SNMP**

## 5. Functional description

The SAT-IF input signal is fed to the DVB-S/ -S2 front end, where the selection of a transponder and its QPSK or 8PSK demodulation are done. The data stream is routed by a switching matrix either to the Common Interface or directly to the DVB module consisting of a demultiplexer and a MPEG decoder. An analogue video- and an associated stereo - audio signal are generated within the DVB module. The video signal is filtered and the audio signal is processed by a DA-converter afterwards. The SDB 907 supports the output of additional services like Teletext, WSS, VPS and optional test lines and the display of subtitle. The analogue signal outputs were fed by buffer amplifiers (for the pin assignment of the audio socket see chapter 8). The audio outputs are balanced to ground. A respective CA module with smart card, which is supported by the device, has to be used for descrambling.\* Multi service decryption is possible if there are not any restrictions by the CAM itself or by the service provider. The decryption of MPEG-4 services is supported. With this module its possible to choose elementary streams of a service for decryption. So the ressources of the respective CAM/ smart card combination can be used optimally. BISS decryption can be performed by activating the software option CKB 104. Supported are the BISS mode 1 and the BISS mode E with entering the necessary Injected ID, but not the BISS mode E with the optional Buried ID. The activation of the software option CKB 105 allows the output of the processed data stream on the ASI-TS connector. The multi service decryption is enabled thereby.

\* The design of the Common interface of this module is done according to DVB standards. Because of the dependencies in interaction of the DVB signals, CA modules and smart cards we can not assure a general functional capability for all application possibilities. Please contact our service department for further assistance!

## 6. Adjustments

### 6.1 Adjustment with the Headend Controller

- Adjustment of the addresses at the Bus Extender BEB x00 and at the modules
- Activation of the programming mode on each module by selecting the line (BEB x00) and the module position (01... 15) at the Headend Controller(HCB x00)
  - yellow LED illuminates until the beginning of the parameter adjustment
- Adjustment of the SDB 907 parameters (see chapter 10) → green LED is switched on
- After the programming the SDB 907 will be automatically switched into the operating mode
  - yellow LED flashes shortly / green LED is switched on

### 6.2 Adjustment with the PC / laptop

- Prerequisite for the remote programming is an “online - connection” according the IP - standard and an ethernet connection at the PC / laptop
- Adjustment of the line / position addresses at the Bus Extender BEB x00 as well as at the modules
- At the Headend Controller HCB x00 input IP-address (e.g. 192.168.001.001)
- For “direct connection” between a PC and HCB x00 use crossover cable (RJ 45)
- For connection over a HUB use a normal straight through patch cable
- Start-up HTML - browser and put in IP - address as target address
- If connected correctly the web interface will be opened on the pc and a blue LED (LINK) at the HCB x00 will be lit up.
- All adjustments of the modules are specified on the web interface.

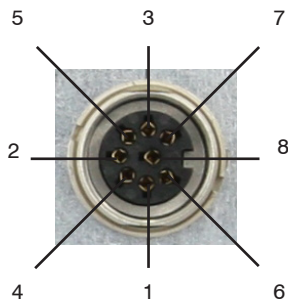
**The manual instructions of the Headend Controller HCB x00 and the Bus Extender BEB x00 have to be considered!**

## 7. Front panel LED`s

Designation (Colour)	Status	Meaning of display
STANDBY (red)	permanently on	Component is in standby
	flashing	Component faulty (hardware error)
READY (green)	permanently on	Component working properly
	flashing	error warnings, depending on signal: - tuner not synchronized (e.g. there is no input signal) - service settings are not valid
ADDR. (yellow)	illuminated/ flashing	remote control connection / data being exchanged

## 8. Audio socket

### Pin assignment



- 1 stereo left+ / dual A+ / mono+
- 2 screening / earth
- 3 stereo right+ / dual B+
- 4 stereo left- / dual A- / mono-
- 5 stereo right- / dual B-
- 6 control line contact 1
- 7 control line contact 2
- 8 control line return path (earth)

### Audio mode

- Mono**            Pins 6/ 8: Connection open  
                      Pins 7/ 8: Connection closed
- Stereo**           Pins 6/ 8: Connection closed  
                      Pins 7/ 8: Connection open
- Dual**             Pins 6/ 8: Connection closed  
                      Pins 7/ 8: Connection closed  
                      or  
                      Pins 6/ 8: Connection open  
                      Pins 7/ 8: Connection open

## 9. Programming by Web server\*

### 9.1 Main menu

SAT-TV DEMODULATOR, SDB 907 (9722.01 / 00), Address 00 / 00	
Description	Discovery Channel
<b>Input</b>	
SAT-IF	1704 MHz
Symbol rate	27500 kSps
Standard	DVB-S
FEC (DVB-S Standard)	auto
Roll-Off (DVB-S2 Standard)	35 %
Status	<b>SYNC</b>
<b>BISS-Settings</b>	
BISS-Key	
BISS-E injected ID	
<b>ASI-Output</b>	
Polarity	normal
TS-Source	auto
<b>A/V-Program settings</b>	
Program listing	Load
Service-ID	20303 dez
Audio language	2
Language code	eng
Service type	TV
<b>Audio settings</b>	
Audio gain	0 dB
<b>Common Interface</b>	
Status	AlphaCrypt
CA-Menu	Load
<b>Multidecryption</b>	
Menu	Load
Operating status	On [ On ]
SNMP-Trap message	On
SYNC-Control	normally
Factory settings	Load
<input type="button" value="Software options"/> <input type="button" value="Extended settings"/> <input type="button" value="Status"/>	
<input type="button" value="Software overview"/>	
<input type="button" value="Update"/> <input type="button" value="Transmit"/>	
<input type="button" value="&lt;&lt;&lt;"/> <input type="button" value="Back"/> <input type="button" value="&gt;&gt;&gt;"/>	

Name of device, item number, address in head end

Description Name of programme (max. 30 characters)

#### Input

SAT-IF adjustment range: 950 ... 2150 MHz  
 Symbol rate adjustment range: 1000 ... 45000 kSps  
 Standard selection: DVB-S, DVB-S2  
 FEC (DVB-S Stand.) selection: 1/2, 2/3, 3/4, 5/6, 7/8, auto  
 Roll-Off (DVB-S2 St.) selection: 20, 25, 35 %  
 Status display whether **SYNC**hronization or **noSYNC**hronization with Input

#### BISS-Settings

(will only be available if "BISS decryption" option is on)  
 BISS-Key input of the 12-digit code in BISS mode 1 or 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!

#### ASI-Output

Polarity selection: normal, inverse  
 TS-Source selection: auto, original

#### A/V-Program settings

Program listing see menu 2  
 Service ID adjustment range: 0...65535  
 Audio language adjustment range: 0...47  
 Language code displays the code of the selected language  
 Service type displays the type of selected service (TV, Radio)

#### Audio settings

Audio gain adjustment range: +6...-20 dB

#### Common Interface

Status status message of the CA module  
 CA-Menu see menu 3

#### Multidecryption

Menu see menu 4

Operating status selection: On, Off, Reset  
 SNMP-Trap mess. On/Off, if SNMP option in HCB x00 is enabled, otherwise "locked" is displayed

SYNC-Control synchronization test at input. selection: fast, normally, slowly

Factory settings see menu 10

Routing to the appropriate adjustment menu:

Software option see menu 1  
 Extended settings see menu 8  
 Status see menu 11  
 Software overview see menu 12

\* For further details see the HCB manual

### 9.2 Software options (menu 1)

**SAT-TV DEMODULATOR, SDB 907**  
(9722.01 / 00), Address 00 / 00

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**Available software options**

Option	Status
Test line	activate
Subtitling	activate
BISS-Decrambler	activate
ASI-Output	activate

Enter license key:

License index:0  
Device number:0000000

Name of device, item number, address in head end

Dialogue for entering a code to activate the "test line" (CKB 101), "subtitling" (CKB 102), "BISS decryption" (CKB 104) and "ASI output" (CKB 105) software options . When the page is called, the current state of activation will be displayed.

### 9.3 Loading the programme list (menu 2)

**SAT-TV DEMODULATOR, SDB 907**  
(9722.01 / 00), Address 00 / 00

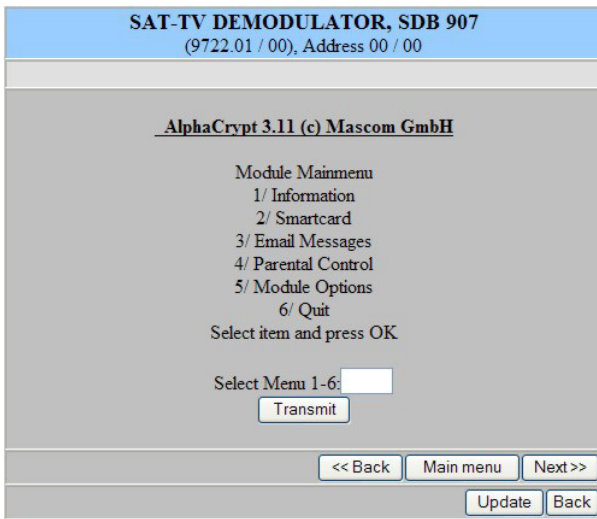
---

**Program listing**

Program name	Status	Service type	Service-ID	Audio language	Subtitle language	Selection
NOVA SPORT	coded	TV	20301	hun ▼	missing	<input type="button" value="Set"/>
Animal Planet	coded	TV	20302	hun ▼	missing	<input type="button" value="Set"/>
Discovery Channel	coded	TV	20303	hun ▼	missing	<input type="button" value="Set"/>
JimJam	coded	TV	20304	hun ▼	missing	<input type="button" value="Set"/>
Jetix/Jetix Max	coded	TV	20305	hun ▼	missing	<input type="button" value="Set"/>
National Geographic	coded	TV	20306	hun ▼	cze	<input type="button" value="Set"/>
HBO Comedy	coded	TV	20307	hun ▼	hun ▼	<input type="button" value="Set"/>
Hallmark	coded	TV	20308	hun ▼	missing	<input type="button" value="Set"/>
Hustler TV	coded	TV	20309	eng	missing	<input type="button" value="Set"/>
Zone Reality	coded	TV	20310	hun ▼	missing	<input type="button" value="Set"/>
Extreme Sports	coded	TV	20311	hun ▼	cze	<input type="button" value="Set"/>
UPC_EPG	free	TV	20499	---	missing	<input type="button" value="Set"/>
Guide	free	TV	20500	---	missing	<input type="button" value="Set"/>
Games Portal	coded	TV	20498	---	missing	<input type="button" value="Set"/>
Game 1	coded	TV	20497	---	missing	<input type="button" value="Set"/>
Game 2	coded	TV	20496	---	missing	<input type="button" value="Set"/>
Game 3	coded	TV	20495	---	missing	<input type="button" value="Set"/>
UPC Direct Radio	coded	TV	20494	---	missing	<input type="button" value="Set"/>

This menu contains a list of all MPEG-2 services available in the data stream. Audio- and DVB subtitle language selection can take place here if there are any available. A service is adopted or changed by clicking the relevant "Set" button.

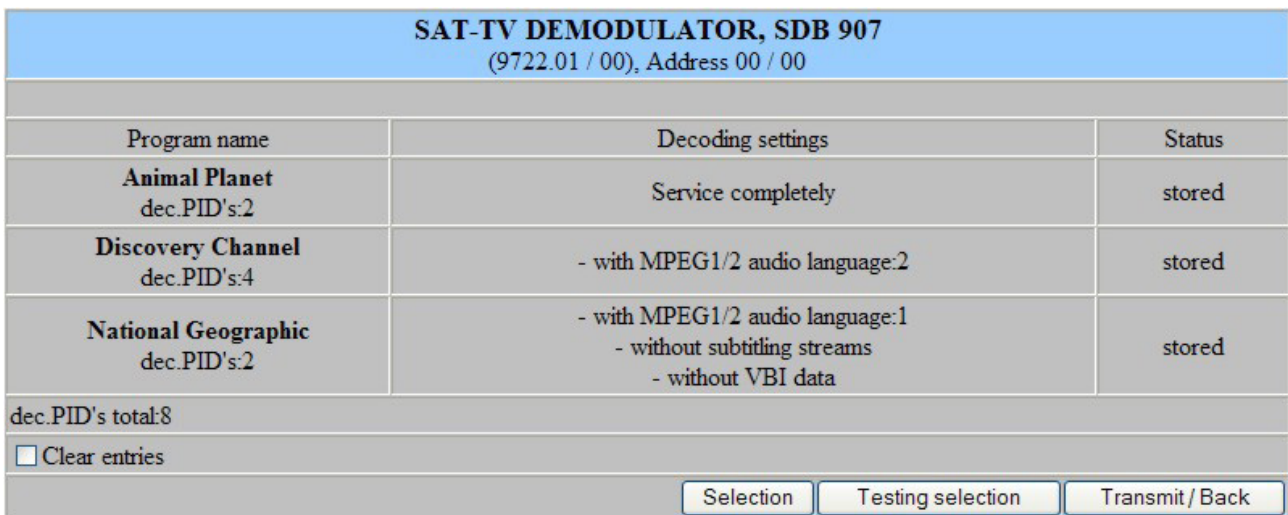
### 9.4 CA menu (menu 3)



Name of device, item number, address in head end

On these pages all menus implemented in the CA module are offered. The available menus are selected individually or are invoked one-by-one to do necessary settings or to get all informations about the CA module.

### 9.5 Multi-decryption menu (menu 4)



Program name	Decoding settings	Status
<b>Animal Planet</b> dec.PID's:2	Service completely	stored
<b>Discovery Channel</b> dec.PID's:4	- with MPEG1/2 audio language:2	stored
<b>National Geographic</b> dec.PID's:2	- with MPEG1/2 audio language:1 - without subtitling streams - without VBI data	stored

dec.PID's total:8

Clear entries

Selection    Testing selection    Transmit / Back

When calling this menu the selection of the services of the adjusted transponder, which were selected for decryption and whose decryption was successfully, appears. Indicated are the programme name with the number of the decoded PID's, the decryption settings and the status of the programme. "Stored" means, that the service was successfully decrypted and saved in the CA-service-list. Using the check box "Clear entries" and the "Transmit / Back" button the entire selection will be deleted and no services are decrypted afterwards. By using the "Selection" button and the appropriate selection of the services in the multi-decryption selection menu (menu 5) the list of the services to decrypt can be changed. Using the "Testing selection" button calls the test menu (menu 6), in which the decryption state of all programmes in the CA-service-list will be tested again and possible occurring errors will be listed.

**9.6 Multi-decryption selection (menu 5)**

SAT-TV DEMODULATOR, SDB 907 (9722.01 / 00), Address 00 / 00								
Program selection			Decoding settings					
Selection	Program name	Status	private Streams	other Audio Streams	MPEG1/2 Audio Streams	Subtitling Streams	VBI Data Streams	PID-Drop list
<input type="checkbox"/>	PHILIPS DOWNLOAD 1.1	free	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	PHILIPS DOWNLOAD 1.2	free	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	NAGRA DOWNLOAD	free	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	HUMAX DOWNLOAD	free	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	NOVA SPORT	coded	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	Animal Planet	coded	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	all	all	<input checked="" type="checkbox"/>	
<input checked="" type="checkbox"/>	Discovery Channel	coded	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	eng	all	<input checked="" type="checkbox"/>	
<input type="checkbox"/>	JimJam	coded	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	Jetix/Jetix Max	coded	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	National Geographic	coded	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	eng	no	<input type="checkbox"/>	
<input type="checkbox"/>	HBO Comedy	coded	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	Hallmark	coded	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	Hustler TV	coded	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	Zone Reality	coded	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	Extreme Sports	coded	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	UPC_EPG	free	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	Guide	free	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	Games Portal	coded	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	Game 1	coded	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	Game 2	coded	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	Game 3	coded	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	
<input type="checkbox"/>	UPC Direct Radio	coded	<input type="checkbox"/>	<input type="checkbox"/>	no	no	<input type="checkbox"/>	

Reset CA-Modul

Simultaneous decoding of several programs depends on CA-Module and Smartcard!

In this menu all services of the adjusted transponder and their CA status are listed. The services are selectable for decryption. For each of this selected services one can determine, what streams or PID's are to be decrypted. That's important because the maximum number of the decryptable PID's is limited and this limit has a different size per CA module.

In the selection boxes "MPEG 1/ 2 Audio Streams" respective "Subtitling Streams" all, no or individual streams are selectable. If one wants to select more than one stream, but not all, the selection field "all" in the box is to be selected and in the column "PID-Drop list" all PID's have to be entered, that shall not be decrypted."

In the column "PID-Drop list" all PID's are listed, that shall not be decrypted. The PID's can be given in decimal or hexadecimal format and have to be separated by a semicolon. The maximum number of PID's is 10."

Individual CA modules have to be initialized once again before the CA services will be sent to the module. To do so the option "Reset CA-Modul" can be activated.

\* "Other Audio Streams" includes all AC3-, DTS- and AAC-Streams. „Private Streams" selects all streams which are not captured by the other selection fields.

\*\* Particularly Pid's can be given here, which are active only at times and no authorisation for decryption is available for them.

### 9.7 Multi-decryption test (menu 6)

Check program: Animal Planet

First all services, which are saved in the CA-service-list, will be tested for the current decryption status.

SAT-TV DEMODULATOR, SDB 907 (9722.01 / 00), Address 00 / 00		
Program name	Decoding settings	Status
<b>Animal Planet</b> dec.PID's:2	Service completely	OK Info
<b>Discovery Channel</b> dec.PID's:4	- with MPEG1/2 audio language:2	OK Info
<b>National Geographic</b> dec.PID's:2	- with MPEG1/2 audio language:1 - without subtitling streams - without VBI data	OK Info
dec.PID's total:8		
<input type="checkbox"/> Clear entries		
<input type="button" value="Selection"/> <input type="button" value="Testing selection"/> <input type="button" value="Transmit / Back"/>		

After the end of the test the multi-decryption menu (menu 4) appears, where in the "Status"-column the test result of the respective service is stated by using the "Info" button, the relevant information page of the test (menu 7) is displayed. By clicking of the "Transmit / Back" button all settings are transmitted. The "Selection" button routes back to menu 5 to correct input values, e.g. too much PID's were selected.

### 9.8 Multi-decryption test information (menu 7)

SAT-TV DEMODULATOR, SDB 907 (9722.01 / 00), Address 00 / 00		
Service Information:		
Service ID	CA Information	Test result
20302	coded with CAM support	Test OK
Information about elementary streams:		
PID / Typ	CA Information	Test result
151 / Video	coded with CAM support	Test OK
160 / Audio	coded with CAM support	Test OK
161 / Audio	coded with CAM support	Test OK
162 / Audio	coded with CAM support	Test OK
<input type="button" value="Back"/>		

Name of device, item number, address in head end

On this page informations about the test result of the selected service are displayed. First the final result of the test with service ID and CA information is listed, than for each requested PID the type, the CA information and the test result.

**9.9 Extended settings (menu 8)**

SAT-TV DEMODULATOR, SDB 907 (9722.01 / 00), Address 00 / 00	
<b>Video</b>	
Video output	auto Color bar ▾
Color bar	Off ▾
Color system	PAL ▾
Video format	letterbox ▾
<b>VPS-Settings</b>	
CNI-Code	0x000
Source audiomode	MPEG ▾
Source PIL	A056 (PDC) ▾
<b>Complementary data</b>	
Teletext	On ▾
WSS-Insertion	On ▾
SDT/PMT-Processing	On ▾
Mode CA-PMT-Update	CA-PMT-Entry ▾
<b>Subtitling</b>	
Mode	DVB ▾
<b>Settings DVB-Subtitling</b>	
DVB-Language index	0
DVB-Language code	---
Use extended ID's	yes ▾
Composition Page ID	0 dez
Ancillary Page ID	0 dez
<b>Settings Teletext-Subtitling</b>	
Teletext page	0
Background	opaque ▾
Character mode	auto ▾
The following settings are only used in manual character mode.	
Basic character	Latin ▾
Supplementary character	Latin ▾
National table	standard table ▾
<b>Test line</b>	
Line 17	Off ▾
Line 18	Off ▾
Line 330	Off ▾
Line 331	Off ▾
<input type="button" value="Manual settings"/>	
<input type="button" value="Update"/> <input type="button" value="Transmit"/>	
<input type="button" value="Back"/>	

Name of device, item number, address in head end

**Video**  
 Video output settings of the video parameters  
 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

**VPS-Settings**  
 CNI-Code adjustment range: 0x000...0xFFFF hex.  
 Source audiomode selection: MPEG, A056(MPEG)  
 Source PIL selection: A056(PDC), A056, PDC, TimerControlCode

**Complementary data**  
 Teletext selection: On, Off  
 WSS-Insertion selection: On, Off  
 SDT/ PMT-Processing selection: On, Off  
 Mode CA-PMT-Update selection: CA-PMT-List, CA-PMT-Entry (isn't supported by all CAM's)

**Subtitling**  
 (will only be available if "Subtitling" option is on)  
 Mode selection: Off, Teletext, DVB

**Settings DVB-Subtitling**  
 (will only be available if "Subtitling" option is on)  
 DVB-Languages index adjustment range: 0...7  
 DVB-Language code displays the code of the language selected  
 Use extended ID's selection: yes, no  
 Composition Page ID displays the ID (decimal number)  
 Ancillary Page ID displays the ID (decimal number)

**Settings Teletext-Subtitling**  
 (will only be available if "Subtitling" option is on)  
 Teletext page adjustment range: 0...999  
 Background selection: not transparent, semi-transparent, transparent, black transparent  
 Character mode selection: auto, manual

The following settings are only used in 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

**Test line**  
 (will only be available if "Test lines" option is on)  
 Line 17 a test signal can be sent on all four of these lines, the signal selection is:  
 Line 18 off, CCIR17, CCIR 18, CCIR 330m,  
 Line 330 off, CCIR17, CCIR 18, CCIR 330m,  
 Line 331 CCIR331, Sinus (x)/x, Ramp

Routing to the appropriate adjustment menu:  
 Manual settings see menu 9

### 9.10 Manual settings (menu 9)

SAT-TV DEMODULATOR, SDB 907 (9722.01 / 00), Address 00 / 00		
<b>PCR for current service</b>		
Use PCR-PID	<input type="text" value="0"/>	dez
<b>Manual PID-Settings</b>		
PCR-PID	<input type="text" value="0"/>	dez
Video-PID	<input type="text" value="0"/>	dez
Audio-PID	<input type="text" value="0"/>	dez
Teletext-PID	<input type="text" value="0"/>	dez
VBI-PID	<input type="text" value="0"/>	dez
Subtitle-PID	<input type="text" value="0"/>	dez
Composition Page-ID	<input type="text" value="0"/>	dez
Ancillary Page-ID	<input type="text" value="0"/>	dez
		<input type="button" value="Update"/> <input type="button" value="Transmit"/>
		<input type="button" value="Back"/>

Name of device, item number, address in head end

**PCR for current service**

Use PCR PID                      adjustment range: 0..8190

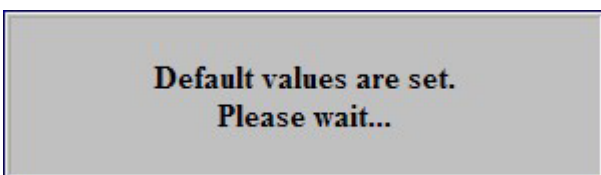
**Manual PID-Settings**

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

### 9.11 Factory settings (menu 10)



When this menu item is requested, at first a security query whether it really set all parameters to the factory default settings pops up.



Affirming the query, all settings stored in the EEPROM will be deleted and replaced by the default settings. The module will go back to these default values. Once the setting process is over, there will be an automatic return to the main menu.

### 9.12 Status of the device (menu 11)

SAT-TV DEMODULATOR, SDB 907 (9722.01 / 00), Address 00 / 00	
<b>Tuner</b>	
Status	<b>SYNC</b>
Input frequency offset	1.213 MHz
Input power	67 dBuV
Noise margin	8.9 dB
BER/PER	< 1 E-6
DVB-S2-Parameter	---
<b>MPEG-Decoder</b>	
Status	TS: SYNC Audio Decoder: SYNC Video Decoder: SYNC
<b>Complementary data</b>	
Current VPS-Data	PIL= TimerControlCode Audio= mono CNI= 0x0000
Current WSS-Data	4:3 full no A056_WSS
Test line insertion	Line 17: Off Line 18: Off Line 330: Off Line 331: Off
<b>Information</b>	
Temperature	33 °C
Device number	0000000
Device index	00
<input type="button" value="Update"/> <input type="button" value="Back"/>	

Name of device, item number, address in head end

**Tuner**

Status displays whether **SYNC**hronization or **noSYNC**hronization  
 Input frequency offset displays the frequency deviation from requested input frequency  
 Input power in dBμV  
 Noise margin in dB  
 BER/ PER bit error rate (DVB-S)/ packet error rate (DVB-S2)  
 DVB-S2-Parameter according to the signalling DVB-S2 information

**MPEG-Decoder**

Status Synchronization status for the TS audio and video decoder

**Complementary data**

Current VPS-Data displays detailed information about current VPS data  
 Current WSS-Data displays detailed information about current WSS data  
 The following will only be displayed if the "test lines" option is switched on:  
 Test line insertion displays which test signal is set for the 4 lines

**Informationen**

Temperature temperature of terminals board  
 Device number display of the device number  
 Device index display of the device index (hardware)

### 9.13 Software overview (menu 12)

SAT-TV DEMODULATOR, SDB 907 (9722.01 / 00), Address 00 / 00	
<b>Version</b>	
AP-Controller	9722.01-81.01 Steuercontroller Anschluß-LP V1.00 16.04.2009 JR
MPEG-Decoder	9611.01-86.01 (Dual) MPEG_CI V1.20 11.05.09 SS
FPGA-ASI-Encoder	9862.04-87.02 FPGA ASI-Encoder V0.04 07.05.2009 WE
<input type="button" value="Back"/>	

Name of device, item number, address in head end

**Software versions**

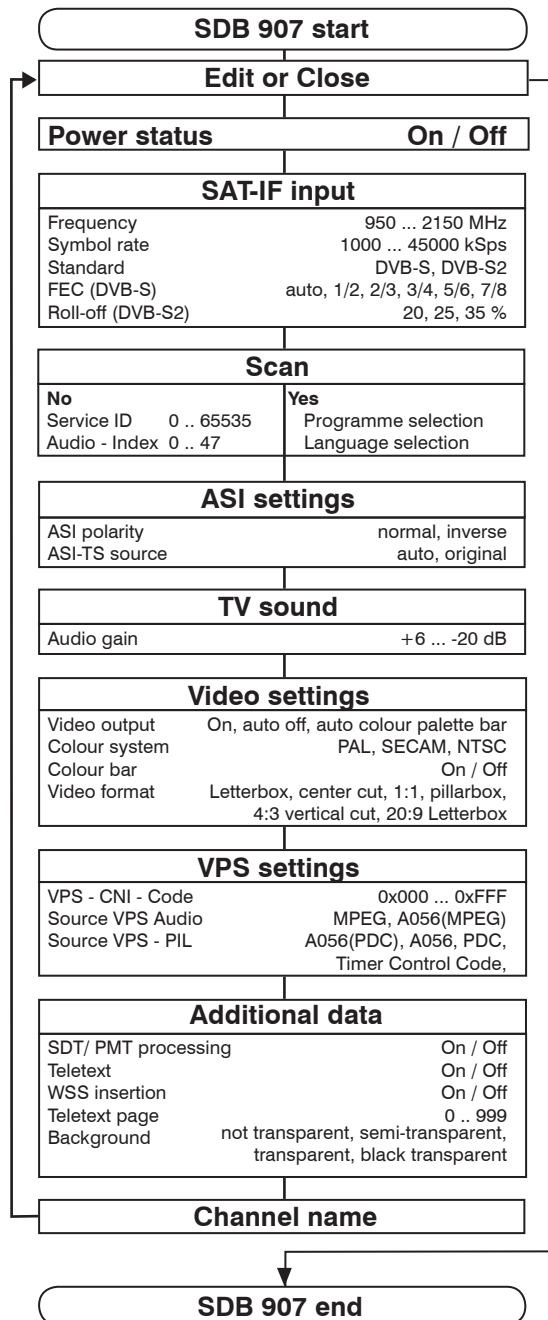
Displays the software versions for the controllers as follows:

- Controller of terminals board

- MPEG-Decoder

- FPGA-ASI-Encoder

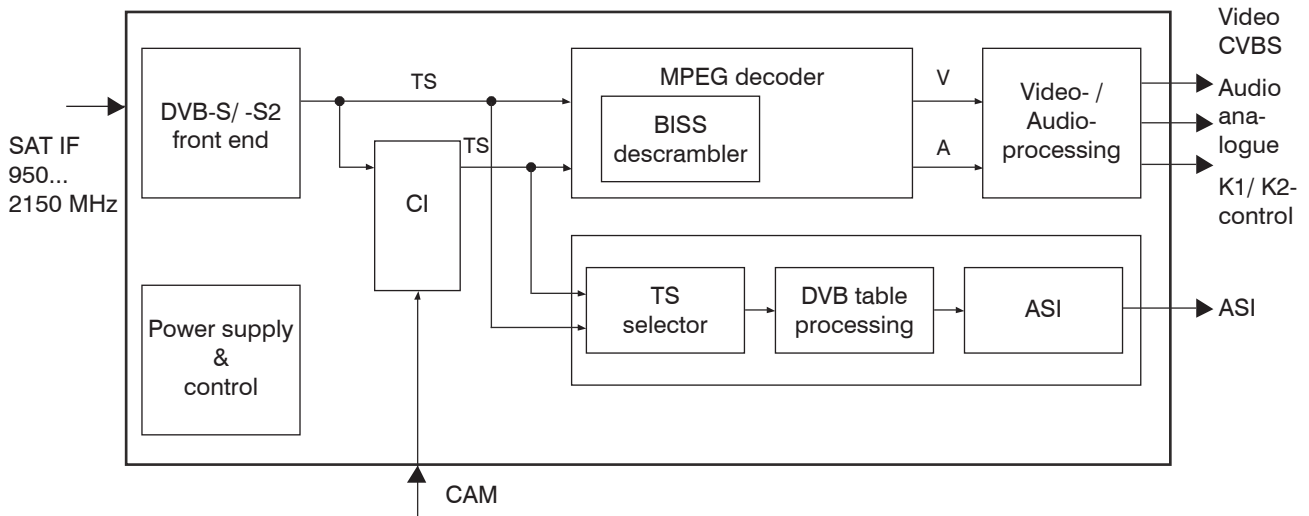
## 10. Manual menu control at the Headend Controller (HCB x00)



## 11. Trap messages

Lfd.Nr.	Meldung	Typ	Bemerkung
01	Signal OK	INFORMATION	Component working, everything ok
02	Input not sync	WARNING	Input not synchronized
03	MPEG Error	CRITICAL	MPEG error
04	System reset	WARNING	System has been reset after internal error
05	MPEG-Decoder not sync	WARNING	MPEG decoder not synchronised
06	Power fail	CRITICAL	Power supply error
07	Decoding of service ... fail	WARNING	Error on descrambling of service...
08	Decoding of service ... ok	INFORMATION	Descrambling of service ... ok

## 12. Block diagram

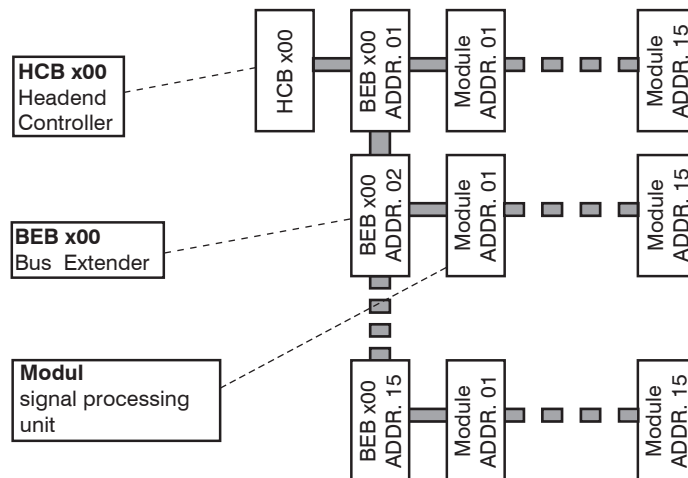


## 13. Operation modes

Operation mode	BISS	CAM	ASI - Out		A/V - Out (MPEG 2)	Remark
			FE-TS	CAM-TS*		
MPEG 2 DVB-Services	x		x		x	Service - ID set manual PID's = 0
		x	x		x	
		x		x	x	
MPEG 4 - Services		x	x			Service - ID = 0 manual PID's = 0
		x		x		
manual PID selection	x		x		x	manual PID's set

\* CAM-TS: automatic changeover between FE- und CAM-TS

## 14. Head end bus structure

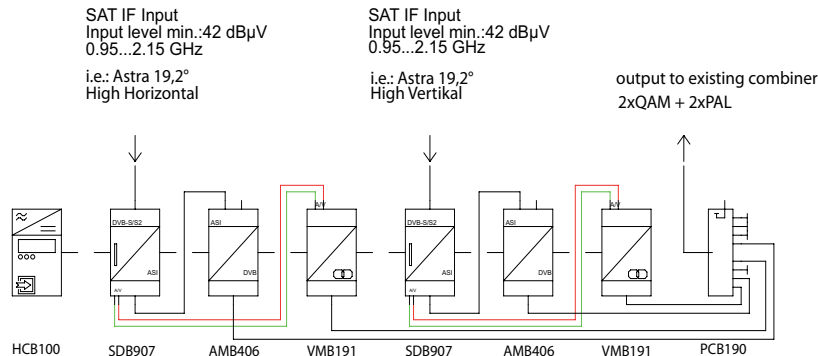


The number of the possible module connections (00 ... 15) to a BEB x00 depends on the total power consumption of this line!

## 15. Application example

### Integration in existing B-LINE structure

Conversion of 2 SAT transponders into 2x QAM  
+ 2 services of the same transponder into PAL  
included the multidecryption option



## 16. Technical data

<b>SAT - IF input</b>		Impedance	75 Ω
Frequency range	950 ... 2150 MHz	<b>Audio output</b>	
Frequency step	1 MHz	Rated level (at digital -6 dBFS)	6 dBu
AFC range	± 3 MHz (SR < 10 MSps) ± 5 MHz (SR ≥ 10 MSps)	Output	symmetrical, free-of-ground
AGC level range	42 ... 82 dBμV	Connector	socket according DIN 45326[5] IEC 130-9-20
Connector	F socket	<b>Operating parameters</b>	
Impedance	75 Ω	Voltage/Current (w/o CAM)	12 V (± 0.2 V)/ 500 mA
<b>DVB-S demodulator (QPSK)</b>		Residual ripple of supply voltage	≤ 10 mV <sub>pp</sub>
Symbol rate	1 ... 45 MSps	<b>Environmental conditions</b>	
Code rate	1/2, 2/3, 3/4, 5/6, 7/8	Temperature range	-10 ... +55 °C
Roll-off	35 %	Temperature range for data keeping	5 ... 45 °C
Signal processing	EN 300 421 (DVB - S) [1]	Relative humidity	≤ 80 % (non condensing)
<b>DVB-S2 demodulator (QPSK, 8PSK)</b>		Method of mounting	vertical
Symbol rate	QPSK 5 ... 36 MSps 8PSK 5 ... 30 MSps	Location of mounting	splash-proof and drip-proof
Code rate	QPSK 1/4, 1/3, 2/5, 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	<b>Miscellaneous</b>	
Roll-off	20, 25, 35 %	Dimensions (l x w x h)	
Signal processing	EN 302 307 (DVB - S2) [2]	without 19" - adapter	50 x 276 x 148 mm
<b>ASI output</b>		with 19" - adapter	50 x 301 x 148 mm
Data rate	270 Mbps	Weight	1,300 g
Polarity	normal/ inverted	<b>Delivery content</b>	
Mode	burst, continuous	1 x BUS connector	
TS data rate	according symbol rate and coding	1 x Audio connecting cable ASK 525	
TS mode	188 Bytes	1 x Video connecting cable VVK 526	
Output voltage	800 mV <sub>pp</sub> ± 10 %	<b>Software options</b>	
Connector	BNC socket	Test line	CKB 101 (9650.51)
Impedance	75 Ω	Subtitling	CKB 102 (9650.52)
Signal processing	EN 50083-9 [3]	BISS decryption	CKB 104 (9650.54)
<b>Decryption interface</b>		Activation of ASI output	CKB 105 (9650.55)
Common Interface	PCMCIA-Slot according EN 50221 [4]		
Operating voltage	5 V		
Multi-Service Decryption	21 services max.		
<b>Video output</b>			
Output voltage	1 V <sub>pp</sub>		
Connector	BNC socket		

## 17. Glossary

AP	Anschlussplatte (Terminals board)
ASI	Asynchronous Serial Interface
AV	Audio/Video
BISS	Basic Interoperable Scrambling System
CA	Conditional Access
CAM	Conditional Access Module
CI	Common Interface
CCIR	Comité Consultatif International des Radiocommunications
DVB	Digital Video Broadcasting (-C Cable, -S Satellite, -S2 Satellite 2, -T Terrestrial)
FPGA	Field Programmable Gate Array
HTML	Hypertext Markup Language
HTTP	Hypertext Transfer Protocol
ID	Identifier
IIC	Inter-Integrated Circuit (I <sup>2</sup> C-Bus, data bus within device)
IP	Internet Protocol
LED	Light Emitting Diode
MC	Microcontroller
MIB	Management Information Base
MPEG	Moving Picture Experts Group
NTSC	National Television Systems Committee*
PAL	Phase Alternating Line*
PCR	Programme Clock Reference
PDC	Programme Delivery Control, synonym of VPS
PID	Packet Identifier
PMT	Programme Map Table
PLL	Phase-locked loop,
SECAM	Séquentiel couleur à mémoire*
SNMP	Simple Network Management Protocol
SPI	Serial Peripheral Interface
SPTS	Single Programme Transport Stream
TS	Transport Stream
TV	Television
VPS	Video Programming System
WSS	Wide Screen Signalling

\* colour-encoding systems of analogue television

## 18. Bibliography

- [1] EN 300 421: Digital Video Broadcasting (DVB): Framing structure, channel coding and modulation for 11/12 GHz satellite services
- [2] EN 302 307: Digital Video Broadcasting (DVB): Second generation framing structure, channel coding and modulation systems for Broadcasting, Interactive Services, News Gathering and other broadband satellite applications
- [3] 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
- [4] EN 50221: Common interface specification for conditional access and other digital video broadcasting decoder applications; German version EN 50221:1997 + Corrigendum:2000
- [5] DIN 45326 / EN 60130-9: Connectors for frequencies below 3 MHz - Part 9: Circular connectors for radio and associated sound equipment, 2000-05
- [6] 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
- [7] RFC 1157 Request for Comments (RFC): RFC Database URL: <http://www.rfc-editor.org/rfc.html>

## 19. Document history

Version	Date	Modification	Author
1.00	05.06.2009	basic document	Häußer

Options and other TV standards available upon request! Subjects to changes due to technical progress.

# 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:** SAT-TV Demodulator

**Type:** SDB 907

**Product number:** 9722.01

according to the following regulations

EN 50083-2

EN 60728-11 (soweit zutreffend)

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

**Date:** 04.06.2009

**Signature:**



(Managing Director)