

BLANKOM®

B-IRD *Falcon*
DIGITAL

DRD 700 Quad Multistream Processor

Instruction Manual



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DVB
Digital Video
Broadcasting

Important Notes!

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

Special symbols that might appear on the equipment:

	This symbol indicates that there are dangerous live parts within the equipment, which are not insulated. Do not touch these live parts, because serious injury or death may be the result!
---	--

	This symbol indicates that there are components under risk from electrostatic discharge. To avoid equipment damages do not touch these components or, observe the respective handling rules!
---	--

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

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Installation Notes

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

Depending on the Frontend used and the operating adjustments, the input port carries DC voltage (13V / 18V, max. 400 mA).

By connecting a mains cable, the device can become functional without any auxiliary appliances. The power supply units are designed for the wide range of 100-240V AC; a manual adjustment of the voltage is not necessary.

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

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

Suggestion: CAT 6E Ethernet cable for GbEthernet

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General description

DRD 700 is an DVB-Quad receiver. He can be user defined equipped with 2 Twin DVB frontend boards (DVB-S/S2, DVB-T/C or DVB-T/T2). The four independent MPEG-2/MPEG-4 SD/HD input signals are demodulated, descrambled and are available as 4x2 ASI interfaces.

For the descrambling, DRD 700 has four DVB-CI slots, which enables appropriate CAM modules to decode the complete transport stream. Multidecryption is available by default.

The DVB-S/S2 twin frontends allows the receiving and demultiplexing of transport streams regarding EN 302307 Annex H.2. By using two twin frontends four transport streams can be provided at the ASI interfaces. In total there exist 4 x 2 ASI output interfaces, two interfaces provide the same signal.

Max. four transport streams as 4 x MPTS can be provided by the IP-GbE-SFP interface. In addition the DRD700 is able to provide 60 x SPTS data streams, in total 64 transport stream channels are available via IP interface.

Optionally the IP-GbE-SFP interface can be used as IP input. For redundancy applications the second IP-GbE-SFP interface is available. For both options a license key is necessary.

An additional option is Processing, inclusive Service- and PIF filtering as well as multiplexing of max. four new transport streams from the input signals with table generation.

The device is operated locally, either via a LCD display and an additional wheel or with the implemented web server via a web browser. A SNMP agent with the corresponding MIB is built in for the integration in a network management system. The device is controlled via a separate LAN connection, which has a separate IP address; thus, the device can also be accessed from a distance.

The basic version of the DRD 700 comprises:

- 2 internal slots for Twin-DVB-x frontend boards
- 2 x ASI input
- 4 x 2 x ASI output
- 4 DVB common interface for the CAM modules
- 2 x IP-GbE SFP interface for IP input or IP streaming
 - Dual configured for signal redundancy
 - SFP-interfaces to 100/1000BaseT Half-/Full duplex manuell configurable
- 10/100 Mbit LAN interface for web browser and SNMP
- Isolated / potential-free switching contacts
- LCD display with wheel and status LEDs
- 2 Wide-range power supply units (Redundancy)

The basic device can be extended with additional hardware / software options:

- DVB-S/DVB-S2 Frontends (with LNB supply and 22kHz switch signal) design, SCPC filter
- DVB-S/DVB-S2 Twin-16APSK-/32APSK-Frontends, SCPC filter
- DVB-T/C Frontend
- DVB-T/T2 Frontend
- ISDB-T Frontend
- IP Frontend (Gigabit-Ethernet) with electric / optical SFP module
- Service filter, PID filter
- NDS CA Decryption
- IP Pro-MPEG FEC

Input

Different DVB Input Frontends can be implemented.

ASI interface

There are 4 x 2 equivalent ASI outputs on the back side of the device. If a fault occurs, the ASI operating outputs can be switched off. Depending upon the (software) configuration and option, the originally received TS or the TS with one or more descrambled services can be maintained on the ASI outputs.

As a standard, two ASI inputs are provided on the back side of the device. If an additional frontend is implemented, it is possible to switch between the ASI and frontend input.

Wide-range power supply unit:

DRD 700 has two wide-range power supply units for redundancy purposes. A failure of a power supply will be indicated. The input voltage range is 100V AC – 240V AC. In the event of an operational disturbance or a fault in the mains supply the configuration is stored in a non-volatile memory. Upon restart the operation automatically continues with the last setting.

Test Equipment

Devices delivered for demonstration and test purposes might have a limited duration of functionality. After exceeding the test period the main functions are shut off.

Software Options

Description	Type
IP-Input Streaming (SFP module required) Reception of MPEG2 transport stream encapsulated in UDP over IP interface	APA135-51
IP-GbE-Redundance (additional SFP module required) Redundancy for GbE-SFP Interface (swichting criteria link-loss, sync-loss)	Bundle with SFP-Modul: OPD135-60
Processing Service- and PID-Filtering and multiplexing of max. 4 new transport streams according DVB	APA135-59
NDS CA Decryption Due to the NDS Certification procedure NDS decryption is an option	APA135-56
IP Pro-MPEG FEC	APA135-61

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Ordering Codes

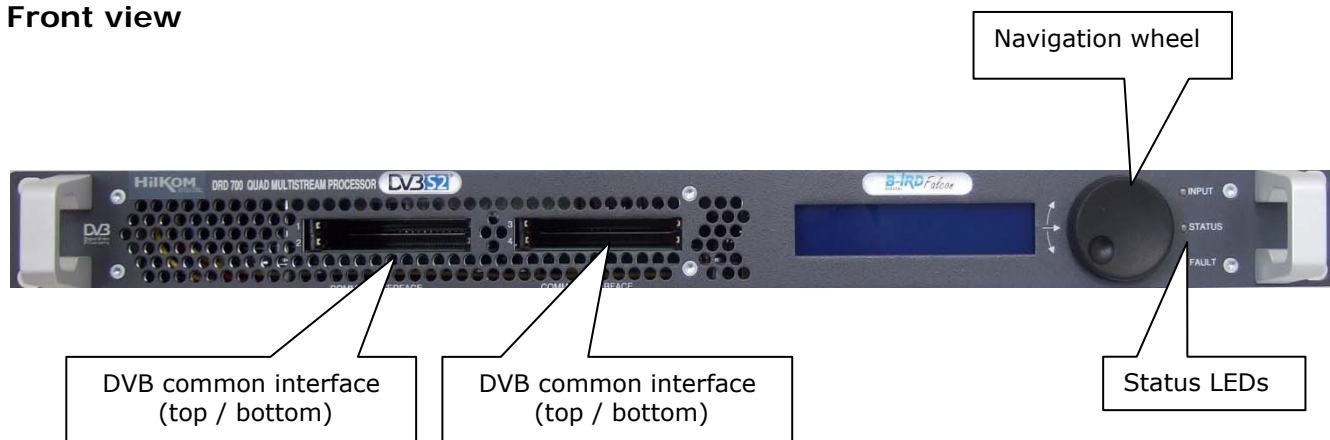
Name	Type	Ordering code	Remarks
DVB Quad Multistream Processor Basic-version	DRD 700	D135.01	

DVB-T/C	75 Ohm F	OPD135-03	OPD13501 0300	
DVB-T/T2	75 Ohm F	OPD135-04	OPD13501 0400	
DVB-S/S2 APSK	75 Ohm F	OPD135-09	OPD13501 0900	
ISDB-T	75 Ohm F	OPD135-17	LPD10301 1700	

SW-Optionen	Name	Type	Ordering code	Remarks
	IP-Input Streaming Interface	APA135-51	OPD13501 5100	<i>SFP Modul necessary!</i>
	Processing	APA135-59	OPD13501 5900	
	NDS Decryption	APA135-56	OPD13501 5600	<i>Customer related NDS certification.</i>
	BISS Decryption	DCA 315	F038.01	<i>BISS by CAM</i>
	IP-GbE-Redundancy	APA135-60	OPD13501 6000	
	IP Pro-MPEG FEC	APA135-61	OPD13501 6100	

Activation of software options is described under [Download](#).

Front view



LED Marking	Colour	Function
INPUT	Green Red Orange	Input signal available Input signal missing Invalid input signal
STATUS	Green Red Orange	Green flashing during SW update/download Other state indications depending from frontend
FAULT	Red	Internal hardware fault

Control with display and navigation wheel

The display is showing the most important status information and the navigation wheel allows the configuration of the LAN connection. All configurations are made by turning and pressing the navigation wheel located at the front of the device at the right side. By turning the wheel, the user can navigate through the entire menu. The selected menu is shown inversely. You can select the menu by simply pressing the navigation wheel.

If the navigation wheel is not operated for 30 minutes, the display illumination is automatically switched off. If you start a new operation, the lights will be switched on once again!

Configuration mode (CFG)

For changing the configurations, the user must select "CFG" in the corresponding menu and keep the wheel pressed for at least 3 sec. until a * appears behind "CFG". Then, the user can select the corresponding parameters with the wheel, which are presented with a blinking display. You can now change the configuration with the navigation wheel. If a parameter is changed "SAVE" appears in the display; by pressing the navigation wheel, this parameter can be selected for saving. "SAVE" is displayed inversely; the configuration is saved in the device by simply pressing the wheel.

After 30 sec. the configuration mode is switched off automatically if the navigation wheel is not in use.

Operation display

If an input signal is connected the the state of the signal is indicated.



Description of menu

The main menu items can be selected with the navigation wheel. By pressing the wheel, the user navigates to the sub-menus, which are selected in the same manner. The configurations can only be changed in the configuration mode (select "CFG" and press the wheel for at least 3s).

Main Menu	Sub-menu Parameter	Description
Logbook	Events	Display of all 512 logbook entries
	Erase	Erase all logbook entries
System	Reset/Preset	Reset: Restart with stored parameters Preset: Restart with factory settings Attention: Preset resets the IP addresses to default
	Version	Display of the device type, SW versions and serial no.
	LCD Contrast	Configuration contrast of display
LAN	Control	IP address (192.168.0.200) Subnet mask (255.255.255.000) Gateway address (192.168.0.001) MAC address Display

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Control with web server

DRD 700 has an integrated web server. This web server allows the configuration and status requests with a standard web browser (Recommended: Internet Explorer V.8 and higher, Firefox V.3.6.x and higher, Opera V.11.50 and higher). If you enter the current IP address of the DRD 700 into the web browser, the device can be operated.

For deliveries that are made ex works, the following default IP addresses are configured. If the IP address is not known, the factory configuration can be restored via Preset.

Factory configuration Control Port	Standard IP address:	192.168.0.200
	Subnet mask:	255.255.255.0
	Gateway address:	192.168.0.1
Data Port 1	Standard IP address:	192.168.1.200
	Subnet mask:	255.255.255.0
	Gateway address:	192.168.1.1
Data Port 2 (SFP-Option)	Standard IP-address:	192.168.1.201
	Subnet-mask:	255.255.255.0
	Gateway-address:	192.168.1.1

Home

After configuring the current IP address of DRD 700 on the web browser, the device is responding with the following status information. You can request further information and configurations by selecting the corresponding menu items on the left side.



All the configuration entries are password-protected. Thus, the following login window appears after you click a configuration menu item:

name

password

The default login settings are:

Name: **admin**
Password: **Blankom**

Requests for status and logbook entries are allowed without login. Click the logout button to exit the configuration mode after the device is configured so as to avoid unauthorized access to the device. If no further entries are made, the system automatically exits the configuration mode. The fallback time can be adjusted by the user ([User Accounts](#)).

Input

The screenshot shows the DRD 700 web interface. At the top right, it says "Logged in as: admin (194.55.8.125)" and "Logout". The main heading is "Input". Below it are tabs for "Status", "TS 1", "TS 2", "TS 3", and "TS 4". A table lists the transport streams:

TS	Source	Status	TSID / ONID	Input Rate (Payload)
1	DVB-S/S2 75 (1)	LOCKED	0x4FB0 / 0x055F	39.068 (37.161) Mbps
2	OFF			
3	DVB-S/S2 75 (3)	UNLOCKED		
4	DVB-S/S2 75 (1)	LOCKED	0x4FB0 / 0x055F	39.068 (37.161) Mbps

Input allows the selection of the sources of the transport stream for further processing. The source of the transport streams can be either ASI, IP or different DVB frontends if assembled. A click on the particular transport stream number gives more status information about selected source .

IP Input (option):

The input source "IP" is accessible if this option is activated. IP 2 is configurable if the redundancy option is activated and a SFP modul is inserted.

Max. four MPTS/SPTS transport streams can be received via IP input. By using IGMPv.3 the source port IP address can be specified (SSM: Source Specific Multicast).

Standard data protocol is UDP. The selected data protocol must correspond to the IP source protocol! In the same manner the IP address and the port channel of the source must match. Multicast is possible by selecting the corresponding IP addresses. Addresses in the range 225.x.x.x to 232.x.x.x and 234.x.x.x to 238.x.x.x are reserved for Multicast transfer (one source, multiple recipients).

Input-DVB-S/S2 (Option)

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Input > TS 1

Status
TS 1
TS 2
TS 3
TS 4

Source: DVB-S/S2 75 (1)

<p>Frequency Mode: SAT-DOWNLINK</p> <p>SAT-Downlink [MHz]: 11097</p> <p>LNB Frequency [MHz]: 9750</p> <p>SAT-IF: 1347 MHz</p> <p>Symbol Rate [MSps]: 29.9500</p> <p>DVB Standard: AUTOMATIC</p> <p>LNB Voltage: OFF</p> <p>LNB 22 kHz Tone: OFF</p> <p>SCPC Mode: OFF</p>	<p>Status: LOCKED</p> <p>TSID / ONID: 0x4FB0 / 0x055F</p> <p>Input Rate (Payload): 29.617 (28.597) Mbps</p> <p>SAT-IF: 1346.1 MHz</p> <p>Level: -41 dBm</p> <p>BER: <1.0E-07</p> <p>Standard: DVB-S</p> <p>Code Rate: 7/8</p> <p>C/N (Reserve): 16.3 (9.0) dB</p>
---	---

DVB-S2

MIS ISI: 2

APSK Mode: OFF

PL Descrambling: OFF

No.	ID	Type	Mode	Name
1	0x0191	0x01 - digital tv service	CA	TF1 HD
2	0x0192	0x01 - digital tv service	CA	FRANCE 2 HD
3	0x0193	0x01 - digital tv service	CA	M6 HD
4	0x0197	0x01 - digital tv service	FTA	KTO
5	0x0198	0x01 - digital tv service	FTA	TV8 MONT BLANC
6	0x0194	0x01 - digital tv service	CA	ARTE HD
7	0x01A3	0x01 - digital tv service	CA	FRANCE 0
8	0x0195	0x01 - digital tv service	FTA	Normandie TV
9	0x0199	0x01 - digital tv service	FTA	NRJ Paris
10	0x0196	0x01 - digital tv service	FTA	Vosges Television

The selection of the input source DVB-S/S2 will show the following configuration menu, where you can configure the parameters required for DVB-S/DVB-S2. Click *Set* to transfer the configured data to the device. By this the SAT-ZF DVB-S/S2 signal is selected as the input signal. ASI and IP Input are disabled. The symbol rate must be precisely specified. By pre-selecting the DVB-S or DVB-S2 mode the tuning procedure of the DRD 700 is accelerated. However the usual mode of operation is AUTOMATIC.

The menu items 'LNB Voltage' and 'LNB 22 kHz Tone' can be configured accordingly.

The SCPC mode should be enabled if a narrow-band transport stream (< approx. 5 Msps) has to be received and if there are several narrow-band transport stream on the transponder at the same time. By entering the transport stream ID (SCPC TSID) it is ensured that the DRD 700 tunes on the selected transport stream. The TSID must be entered in hexa-decimal format.

Common Interface

This menu gives an overview of the programs included in the transport stream (TS). Moreover the user procures information as to whether the transport stream is encrypted and how many elementary stream PIDs of a service are in the transport stream.

Multiple Service Decryption (also called Multi-decryption or Bulk Descrambling) is supported. Depending on the CAM in operation up to 16 PIDs can be decoded in general. Professional CAMs are supporting up to 32 PIDs.

There are a lot of different CAMs with different hardware and software option on the market please contact your CAM vendor for more information about the number of services the CAM can descramble. Please use officially supported CAMs only to avoid decryption problems.

The menu item *Common Interface* provides information about the used CAM and the supported CA System ID of the encoding system. With the CA PMT List, you can select from different initialisation methods during the Multi-Decryption function. Some CAMs do not support all the methods.

- only-add: The CA-PMT list is activated via 'only' and 'add' commands.
- first-more-last: The CA-PMT list is activated via 'first', 'more' and 'last'.

If you click on **No** the Descrambling Monitoring System (DMS) menu will open. Here you can select individual elementary PIDs for decoding via the common interface. After finishing all entries the configuration must be transferred to the device by clicking *Set*.

The *Reset button* allows a targeted resetting of one CAM.

A click on *CAM MMI* gives the access to more information about CAM and Smart Card via an additional menu.

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Common Interface Slot 1

Status
Slot 1
Slot 2
Slot 3
Slot 4

Set
CAM Reset
CAM MMI

Source: TS 1 - DVB-S/S2 75 (1)

CA PMT List: only - add

CA Module: not inserted

CA System IDs:

Status:

No.	ID	Type	Mode	ES PIDs	Name	CA Decryption	Status
1	0x0191	0x01 - digital tv service	CA	5	TF1 HD	OFF	
2	0x0192	0x01 - digital tv service	CA	4	FRANCE 2 HD	OFF	
3	0x0193	0x01 - digital tv service	CA	5	M6 HD	OFF	
4	0x0197	0x01 - digital tv service	FTA	7	KTO	OFF	
5	0x0198	0x01 - digital tv service	FTA	3	TV8 MONT BLANC	OFF	
6	0x0194	0x01 - digital tv service	CA	3	ARTE HD	OFF	
7	0x01A3	0x01 - digital tv service	CA	0	FRANCE 0	OFF	
8	0x0195	0x01 - digital tv service	FTA	2	Normandie TV	OFF	
9	0x0199	0x01 - digital tv service	FTA	3	NRJ Paris	OFF	
10	0x0196	0x01 - digital tv service	FTA	2	Vosges Television	OFF	

BISS Decryption

Basic Interoperable Scrambling System, usually known as **BISS**, is a satellite signal scrambling system.

Using BISS the transmission is protected by a 12 digit "session key" that is agreed by the transmitting and receiving parties prior to transmission. The key is entered into both the encoder and decoder, this key then forms part of the encryption of the digital TV signal and only receivers with the correct key will decrypt the signal.

BISS Decryption with DRD700 is realized with Alphacrypt Classic Pro.

Select the appropriate slot > "CAM MMI" > "5" for Module Options > "5" for BISS Settings:

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CAM MMI Slot 1

AlphaCrypt 3.23 Pro (c) Mascom GmbH

BISS Menu

- 1/ Display/edit BISS service-IDs
- 2/ Enter Injected ID
- 3/ BISS decryption: ON
- 4/ Back

Please select with OK

Select Menu 1-4:

"3" and ENTER for BISS decryption ON, and "1" to edit the service IDs.

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CAM MMI Slot 1

Status Slot 1 Slot 2 Slot 3 Slot 4

Set Back

AlphaCrypt 3.23 Pro (c) Mascom GmbH

BISS service IDs (hexadecimal/decimal)

1/ 1: xxxx / xxxxxx
2/ 2: xxxx / xxxxxx
3/ 3: xxxx / xxxxxx
4/ 4: ---- / ----
5/ 5: ---- / ----
6/ 6: ---- / ----
7/ 7: ---- / ----
8/ 8: ---- / ----
9/ Back

Please select with OK

Select Menu 1-9:

Set Main Menu Back

Select a free BISS setting, create a new setting or select a matched setting.

Enter the service-ID in decimal format and the 6 SW bytes (decimal).

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CAM MMI Slot 1

Status Slot 1 Slot 2 Slot 3 Slot 4

Set Back

Please enter the ID in decimal:

Input:

Set Main Menu Back

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CAM MMI Slot 1

Status Slot 1 Slot 2 Slot 3 Slot 4

Set Back

Please enter the SW bytes in decimal:

Input:

Set Main Menu Back

After successful entering the settings, go back to the service list (Common Interface Slot x) and set the CA Decryption of the appropriate service to ON.

Multiplexer

This menu allows the multiplexing of services to new output data streams. Up to four new data streams can be created from the services of the four selected input data streams.

First select the service ID mode (SID Mode) from the source list box (AUTO, MANUAL), afterwards the TSID and ONID. Finally set the (maximum) output data rate (Data Rate). If the SID mode is MANUAL please check that every output service-ID is selected only once otherwise there will be PID collisions.

The Add button allows to add new services.

Note: The data rate of all services within one new transport stream may not exceed the total output data rate. Normally the data rate of the services are variable (VBR) therefore the output data rate should be high enough to avoid data rate problems.

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Multiplexer > MUX 1

MUX 1
MUX 2
MUX 3
MUX 4

SID Mode:

TSID:

ONID:

Data Rate [Mbps]:

Output Rate Payload: 24.845 Mbps

No.	Source	Priority	Output SID	Status	
1	TS 1 - 0x6D66 - ZDF	<input type="checkbox"/>	<input type="text" value="0x0001"/>	OK	Delete
2	TS 2 - 0x6DCA - Das Erste	<input type="checkbox"/>	<input type="text" value="0x0002"/>	OK	Delete
3	TS 3 - 0x2EE3 - RTL Television	<input type="checkbox"/>	<input type="text" value="0x0003"/>	OK	Delete
4	TS 4 - 0x7034 - arte	<input type="checkbox"/>	<input type="text" value="0x0004"/>	OK	Delete

MPTS Output

The outgoing MPTS-IP data streams are configured in this menu. To establish a connection the destination address and the port have to be selected. Standard protocol is UDP. RTP and Pro-MPEG FEC (Option) is selectable

Multicast is possible by selecting the adequate multicast destination IP address. IP addresses in the range of 225.x.x.x to 232.x.x.x and 234.x.x.x to 238.x.x.x are multicast addresses. The receiver must be set to the corresponding multicast address.

The 4 MPTS transport streams can be switched to the ASI outputs.

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Output > MPTS

MPTS SPTS

Set

No.	Source	ASI Enabled	IP Enabled	Port	Destination Address	Protocol
1	TS 1 MUX 1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1000	224.168.1.204	UDP
2	TS 2 MUX 2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1001	224.168.1.204	UDP
3	TS 3 MUX 3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1002	224.168.1.204	UDP
4	TS 4 MUX 4	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1003	224.168.1.204	UDP

SPTS Output

The outgoing SPTS-IP data streams are configured in this menu. First select the service for the SPTS stream in the source list box and then configure the IP destination address and the port. Standard protocol is UDP. RTP is selectable.

Multicast is possible by selecting the adequate multicast destination IP address. IP addresses in the range of 225.x.x.x to 232.x.x.x and 234.x.x.x to 238.x.x.x are multicast addresses. The receiver must be set to the corresponding multicast address.

The current software version allows up to 28 SPTS streams.

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Output > SPTS

MPTS SPTS

Set

EIT Insertion: ON

SAP Insertion: ON

No.	Source	Enabled	Port	Destination Address	Protocol	
1	TS 1 - 0x6DCA - n/a	<input checked="" type="checkbox"/>	1234	224.1.1.1	UDP	Delete
2	TS 1 - 0x6DCB - n/a	<input type="checkbox"/>	1006	224.1.1.5	UDP	Delete
3	TS 1 - 0x6DCC - n/a	<input type="checkbox"/>	1007	224.1.1.5	UDP	Delete
4	TS 1 - 0x6DCF - n/a	<input type="checkbox"/>	1008	224.1.1.5	UDP	Delete

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The EIT (Event Information table) Insertion button allows the insertion of EIT tables. The SAP (Session Announcement Protocol) Insertion button allows the generation of announcement information for SAP clients like the VLC player according to RFC 2974.

Note:

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

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

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

LAN

All the IP configurations for the Ethernet interfaces for the control port (RJ45, control port) and the Gigabit Ethernet Ports (SFP, data port) are made under *LAN*. Data device 1 is configured as standard. Data device 2 is an option for redundancy and only configurable if the port has a licence.

The screenshot shows the web interface for the DRD 700. The top left has the logo 'DRD 700' and a navigation menu with items: Home, Input, Common Interface, Output, LAN, System, User Accounts, Update, Version, License, Logbook, and Contact. The top right shows 'Logged in as: admin (194.55.8.18)' and a 'Logout' link. The main content area is titled 'LAN > Interfaces' and has tabs for 'Interfaces', 'SNMP', 'Telnet', and 'Redundancy'. Below the tabs is a 'Set' button. A table displays configuration for three interfaces: Control, Data 1, and Data 2. The table has rows for IP Address, Subnet Mask, Gateway Address, Speed/Duplex Mode, SFP-Module, Vendor, and Connection. The Control interface has IP 192.168.61.143, Subnet 255.255.255.0, Gateway 192.168.61.1, and is 'Link is up: 100 Mbps (half duplex)'. Data 1 has IP 192.168.1.200, Subnet 255.255.255.0, Gateway 192.168.1.1, and is 'Link is down'. Data 2 has IP 192.168.1.201, Subnet 255.255.255.0, Gateway 192.168.1.1, and is 'Link is down'. All Speed/Duplex Mode settings are 'AUTO-NEGOTIATION'. SFP-Module and Vendor are 'plugged' and 'FINISAR CORP.' respectively for Data 1 and Data 2.

	Control	Data 1	Data 2
IP Address:	192.168.61.143	192.168.1.200	192.168.1.201
Subnet Mask:	255.255.255.0	255.255.255.0	255.255.255.0
Gateway Address:	192.168.61.1	192.168.1.1	192.168.1.1
Speed/Duplex Mode:	AUTO-NEGOTIATION	AUTO-NEGOTIATION	AUTO-NEGOTIATION
SFP-Module:		plugged	plugged
Vendor:		FINISAR CORP.	FINISAR CORP.
Connection:	Link is up: 100 Mbps (half duplex)	Link is down	Link is down

If a SFP module is inserted additional information about vendor and status of the SFP are shown.

LAN-SNMP

The DRD 700 has an built-in SNMP agent. With this agent the device can be integrated in an Network Management System (NMS). If an error / fault occurs corresponding traps are sent to the NMS. The target addresses for the traps can be entered in this menu.

DRD 700 Logged in as: admin (194.55.8.18) [Logout](#)

Home
Input
Common Interface
Output
LAN
System
User Accounts
Update
Version
License
Logbook
Contact

LAN > SNMP

[Interfaces](#) | **SNMP** | [Telnet](#) | [Redundancy](#)

SNMPv2c:

SNMP MIBs: [BLANKOM_Root.mib](#) [BLANKOM_DRD700.mib](#)

Community

Read:

Set:

Trap

User	IP Address	Comment	Mode
1	<input type="text" value="192.168.0.100"/>	<input type="text"/>	<input type="text" value="OFF"/>
2	<input type="text" value="192.168.0.101"/>	<input type="text"/>	<input type="text" value="OFF"/>
3	<input type="text" value="192.168.0.102"/>	<input type="text"/>	<input type="text" value="OFF"/>
4	<input type="text" value="192.168.0.103"/>	<input type="text"/>	<input type="text" value="OFF"/>

Alarm Severity

INPUT:

STATUS:

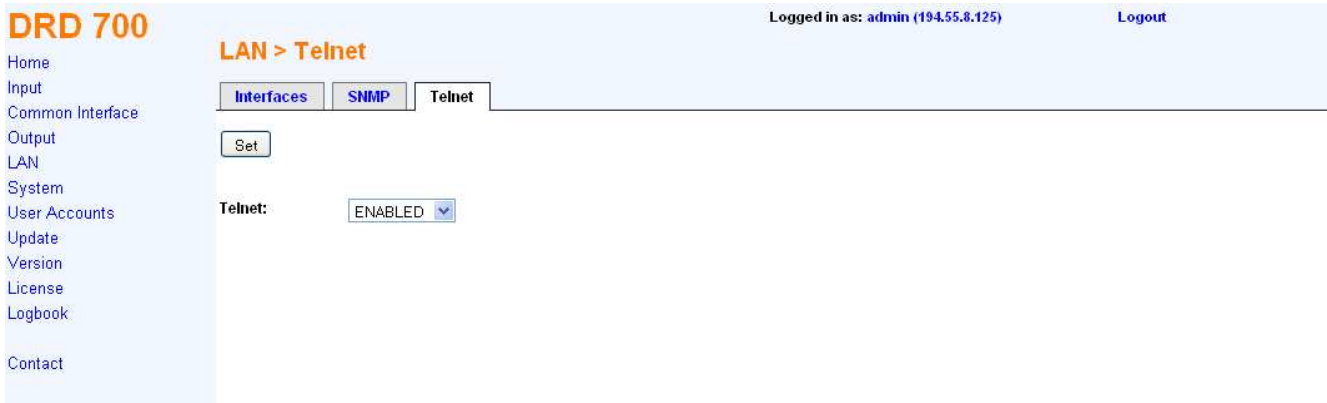
FAULT:

Alarm Severity enables the user to activate SNMP traps for different types of events. Under SNMP-MIBs the MIBs of the DRD 700 can be downloaded out of the device.

DRD 700 Quad Multistream Processor

LAN-Telnet (Option)

Telnet enables the access to the DRD 700 via command line interface.

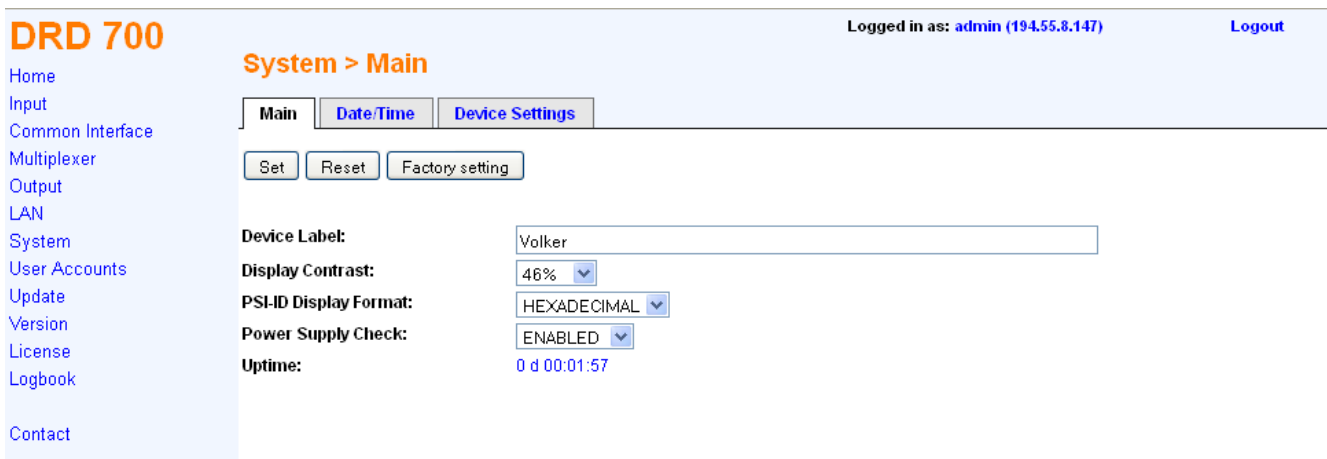


System

Device Label is a free editable field with information about e.g. the location or available services for easy identification of the device. This label is displayed in the web start menu and included in SNMP. *Display Contrast* allows the change of the contrast of the LCD display.

With *PSI-ID Display Format* the user can toggle between hexadecimal and decimal display format.

Power Supply Check: If only one power supply is used, the alarm (Power Failure) can be deactivated. (Otherwise the alarm is generated if one of the two power supplies is faulty)



If you click *Reset*, the device restarts with the saved parameters.

If you click *Factory setting*, the device is reset to the factory parameters.

Note: While *Factory setting* via the web browser or SNMP the IP address is **not** reset to the factory setting!
While *Factory setting* via the front panel, the IP address is reset to the factory setting (192.168.0.200 and 192.168.1.200/192.168.1.201).

DRD 700
Logged in as: [admin \(194.55.8.147\)](#)
[Logout](#)

- [Home](#)
- [Input](#)
- [Common Interface](#)
- [Multiplexer](#)
- [Output](#)
- [LAN](#)
- [System](#)
- [User Accounts](#)
- [Update](#)
- [Version](#)
- [License](#)
- [Logbook](#)
- [Contact](#)

System > Date/Time

Main
Date/Time
Device Settings

Date-Time Sync Mode: NTP SERVER

Date: 10.07.12

Time: 10:24:08

Time Offset: + 1.0 h

NTP Server 1: 192.53.103.108 n/a

NTP Server 2: 192.53.103.104 n/a

NTP Sync Interval [min]: 60

Daylight Saving Time: EUROPEAN

Sync Threshold [s]: 4

Date-Time Sync Mode: source of the system clock; OFF, NTP server, or one of the transport streams TS1 to TS4

Time Offset: deviation to GMT

NTP-Server 1/2: IP addresses of NTP-Server 1 and 2

NTP Sync Interval: time interval to synchronise the internal clock with time of the NTP-server

Daylight Saving Time: summer-/wintertime (Europe only)

Sync Threshold: maximum allowed deviation to synchronize the internal clock

DRD 700
Logged in as: [admin \(194.55.8.147\)](#)
[Logout](#)

- [Home](#)
- [Input](#)
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System > Device Settings

Main
Date/Time
Device Settings

No.	Name	Creation Date/Time	Version	Save	Open/Load	Delete
1	<input style="width: 100%;" type="text" value="Setting No.1"/>	10.07.12,10:25:05	3.23a			
2	<input style="width: 100%;" type="text" value="Setting No.2"/>	10.07.12,10:25:16	3.23a			

Up to 16 settings can be defined with *Create* and stored (*Save*) or reloaded (*Open/Load*) in the device.

Export/Import allows to save all settings in one file (Setting_DRD700_XXXXXX.dat) on an external storage.

Note: Activating of a new setting can produce a short signal lost!

DRD 700 Quad Multistream Processor

User Accounts

User Accounts allows the configuration of access rights for other users. Besides you can change the standard login according to the user requirements so that the security of the device in a network is guaranteed. Under *Fallback Time* you can configure the automatic fallback time after a login.

DRD 700
Logged in as: **admin (194.55.8.125)**
[Logout](#)

- Home
- Input
- Common Interface
- Output
- LAN
- System
- User Accounts
- Update
- Version
- License
- Logbook
- Contact

User Accounts

	Name	Password	Group
1	<input type="text" value="admin"/>	<input type="password" value="*****"/>	ADMIN <input type="button" value="v"/>
2	<input type="text"/>	<input type="password"/>	ADMIN <input type="button" value="v"/>
3	<input type="text"/>	<input type="password"/>	OFF <input type="button" value="v"/>
4	<input type="text"/>	<input type="password"/>	OFF <input type="button" value="v"/>
5	<input type="text"/>	<input type="password"/>	OFF <input type="button" value="v"/>
6	<input type="text"/>	<input type="password"/>	OFF <input type="button" value="v"/>
7	<input type="text"/>	<input type="password"/>	OFF <input type="button" value="v"/>
8	<input type="text"/>	<input type="password"/>	OFF <input type="button" value="v"/>

Fallback Time:

Access Level	Group 1	Group 2	Group 3	Group 4
Input	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Common Interface	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Multiplexer	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Output	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LAN	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
System	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Preset	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Update	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clear Logbook	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Access level allows to define four different user rights for selected WEB sites. *Admin* is able to choose between four different classes of user rights for different accounts. The user rights and accounts can be assigned by the *Admin* only.

Update

In the **Update** menu the following actions can be done:

1. Software update
2. Get configuration
3. Activation of software options

For the software update please select the update file and start the update process with the start button. Please read the release notes carefully for additional hints.

Get Configuration

The config file contains system relevant settings. It is possible to get this file to save it and to write it back to the DRD 700 again.

- Click *Get Konfiguration*
- Save Config file „DRD700_xxxxxxx.dat“.

The screenshot shows the DRD 700 web interface. At the top, it says "DRD 700" and "Logged in as: admin (194.55.8.125) Logout". On the left is a navigation menu with items: Home, Input, Common Interface, Output, LAN, System, User Accounts, Update (highlighted), Version, License, Logbook, and Contact. The main content area is titled "Update" and contains a "Get Configuration" button. Below that is a section "File transfer to DRD 700" with a file input field and a "Durchsuchen..." button, and a "Start" button. At the bottom is a section "TFTP File URL" with a text input field containing "ftp://194.55.8.16/drd700-application-xxxx.drd" and a "Start" button.

Activating of Software Options

- Click *Get Configuration*
- Save the configuration file „DRD700_xxxxxxx.dat“ and
- send it via email to Blankom (service@blankom.de).

After receiving a written Order Blankom will

- Create a Key file „DRD700-Option-Key-SerNr_xxxxxxx.dat“ and
- send it back via email to the customer
- Click *Durchsuchen(Select)*
- Select Key file.
- Click *Start*

An automatic Reset after this procedure updates the option list. Via *License* the success of enabling a new option can be checked.

DRD 700 Quad Multistream Processor

Version

[Version](#) lists information of the internal status of the device. No configurations can be done.

DRD 700	Version	Logged in as: admin (194.55.8.147)	Logout
Home	Model:	DRD700 4xDVB-S/S2 75	
Input	Bootloader:	1.00 (20.12.10 11:27:14)	
Common Interface	Application:	3.23a (09.07.12 16:35:48)	
Multiplexer	FPGA:	3.04 (15.06.12 17:30:55)	
Output	FPGA CPU:	3.07 (09.07.12 14:11:27)	
LAN	Serial Number:	0223751	
System	Device Type ID:	D135.01	
User Accounts	MAC Address 1:	00:50:C2:B7:5B:84	
Update	MAC Address 2:	00:50:C2:B7:5B:85	
Version			
License			
Logbook			
Contact			

License

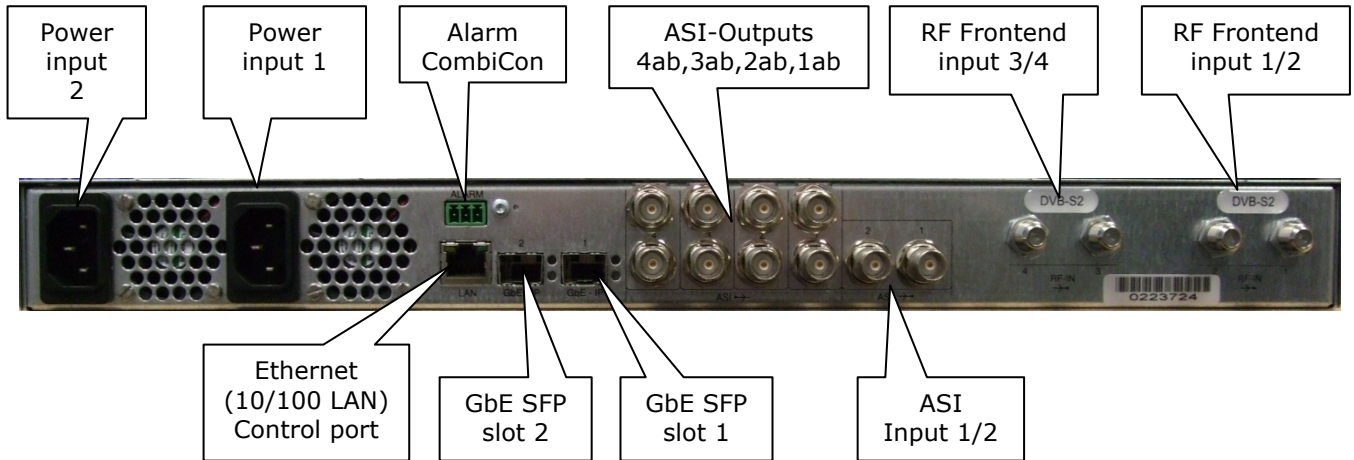
License show all the available as well as activated software options. It is also possible to activate further options at a later time through a license file that can be applied for.

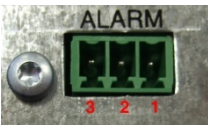
For activating another software option, select "Get configuration" under the menu item "Update". The file that is read out must be sent to Blankom along with the purchase order for the option. A file that is delivered by Blankom having the corresponding options is then loaded in DRD 700 via "Download". Activation of software options is not free of cost.

Logbook shows all logbook entries of the DRD 700. A maximum of 512 logbook entries can be stored. Then the oldest entries are overwritten by new events. *Erase* delete all entries, *Save to File* save all entries in a Textfile "LOGBOOK_DRD 700_xxxxxxx.log" (xxxxxxx=serial-no) in the specified Downloadarea.

Logout exits the configuration mode with a security message.

Connections



Type	Interface	Description
IEC connector	Power Connector 1/2	100 to 240 V AC,
J 45	Ethernet (10/100 LAN)	1 TxD+, 2 TxD-, 3 RxD+, 6 RxD-
Mini CombiCon	Alarm	 Correct working: 1-3 closed Alarm: 1-2 closed
BNC	8 x ASI Out, 1-4 a/b	Coaxial connector, 75 Ohm
BNC	2 x ASI In, 1/2	Coaxial connector, 75 Ohm
F	RF-Input 1/2, 3/4	Depending on the frontend
SFP slot 1	GbE (SFP)	SFP module
SFP slot 2	GbE (SFP)	SFP module (Option)

DRD 700 Quad Multistream Processor

Technical data

DRD 700	
SAT input (Option)	
Input frequency	950 MHz to 2150 MHz
Lock-in range	± 5 MHz
Retaining range	±12 MHz
Input impedance	2 x 75 Ohm, F Connector
LNB supply:	
Voltage	13V / 18V, reversible, can be switched off
Current	Max 400mA, short-circuit proof
Input level	-65 dBm to -25 dBm
Bandwidth	36 MHz
DVB-S	
Modulation	QPSK
Symbol rate	1 to 45 Msps
Lock-in range	≤ ± 100 ksps
Roll-off	35%
Inner coding (FEC)	1/2; 2/3; 3/4; 5/6; 7/8 Viterbi, K=7
DVB-S2 (QPSK, 8PSK)	
Modulation	QPSK, 8PSK (incl. DVB-S)
Symbol rate	1 to 36 MS/s (QPSK) 1 to 30 MS/s (8PSK)
Roll-off	20, 25, 35 %
FEC Code rates (depending upon the type of modulation)	1/2; 3/5; 2/3; 3/4; 4/5; 5/6; 8/9; 9/10
DVB-S2 (16APSK, 32APSK)	
Only for Input 1 and 3!	
Modulation	QPSK, 8PSK, 16APSK, 32APSK (incl. DVB-S)
Symbol rate	1 to 50 MS/s (QPSK, 8PSK) 1 to 40 MS/s (16APSK) 1 to 30 MS/s (32APSK) t.b.d.
Roll-Off	20, 25, 35 %
FEC Code rates (depending upon the type of modulation)	1/4; 1/3; 2/5; 1/2; 3/5; 2/3; 3/4; 4/5; 5/6; 8/9; 9/10
FEC-Frame	Normal (64800bits), Short (16200bits)
	CCM, ACM, VCM
DVB-T (Option)	
Modulation	COFDM
Input frequency	47 MHz to 862 MHz
Input level	-80 dBm to -10 dBm
Symbol rate	All for 7 MHz and 8 MHz bandwidth
DVB-T2 (Option)	
Modulation	COFDM
Input frequency	47 MHz to 862 MHz
Input level	-80 dBm to -10 dBm
Symbol rate	All for 7 MHz and 8 MHz bandwidth
DVB-C (Option)	
Modulation	16-, 32-, 64-, 128-, 256-QAM
Input frequency	47 MHz to 862 MHz
Input level	-60 dBm to -10 dBm
Symbol rate	2 Msym/s ... 7 Msym/s
Bandwidth	2 MHz, 4 MHz, 7 MHz, 8 MHz

ISDB-T (Option)	
<i>Modulation</i>	COFDM, 2k,4k,8k
Input frequency	47 MHz to 862 MHz
Input level	-80 dBm to -10 dBm
Symbol rate	All for 6 MHz bandwidth
IP Frontend (Option)	
Input	SFP, electrical RJ45, optical LC
Format	Gigabit Ethernet, UDP, Uni-und Multicast RTP, proMPEG
Data rate	Max. 200 Mbit/s
IP Data Port (Option)	
Output	SFP, electrical RJ45, optical LC
Format	Gigabit Ethernet, UDP, Uni-und Multicast, RTP (Option), proMPEG (Option), MPTS (Option) , Service Filter (Option), SPTS (Option)
Data rate	Depending on input data rate
ASI input	
Input	2 x ASI (in conformance with EN 50083-9), 75 Ohm, BNC
Reflection / return loss	> 18 dB
Format	188/204 Byte
Data rate	Max. 200 Mbit/s
ASI output	
Output	8 x ASI (in conformance with EN 50083-9), 75 Ohm, BNC
Reflection / return loss	> 18 dB
Format	188 Byte
Data rate	Max. 200 Mbit/s
Monitoring, configuration	
Ethernet	IP check port, RJ45, LAN
Format	10/100M, TCP/IP, SNMP, Web server, Software Download
Alarm	Potential-free relay contact
General	
Power consumption	25 Watt (without LNB powering)
Power supply	100V _{AC} to 240 V _{AC}
Dimensions	482 x 44 x 260 mm (19" 1RU)
Weight	4.7 kg
EMC	EN 50083-2
Safety	EN 60950-1

History

Revision	Modifications	Date
A	First Release	21.03.2011
B	Editorial changes, SPTS streaming	22.07.2011
C	BISS Decryption described.	12.08.2011
D	Editorial changes	23.08.2011
E	Processing	01.12.2011
F	New: ProMPEG, ISDB-T	26.04.2012
G	RTP, Device Settings new. SAP	10.07.2012
H	Editorial changes	08.04.2013

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