

B-IRD *Eagle* **DRP 393**
DIGITAL

MPEG-4 Receiver / Decoder
Instruction Manual



*

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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. At least 1 RU space is required above the module for heat dissipation in the 19" rack.

Depending on the Frontend used and the operating adjustments, the input port carries DC voltage (13V / 18V, max. 500 mA).

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

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 be terminated.

Suggestion: CAT 6E Ethernet cable for GigEthernet

Subject CA modules

To guarantee a reliable function we recommend to use CA modules from the following manufactures:

- *MASCOM (Alphacrypt Family)*
- *ASTON*
- *SMiT*

Please pay attention to use the latest software- / hardware version.

The CA module diversity of other manufactures is increasing permanently, the using of them might be possible but Blankom Digital is not able to guarantee for faultless operating in all cases.

If an encryption mode is not provided by the manufacturer, Blankom Digital is willing to support the implementation if possible.

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General description

DRP 393 is an MPEG-4 receiver / decoder in a 19" 1 RU housing. MPEG-2/MPEG-4 SD/HD signals can be processed. The input signals are demodulated, descrambled, decoded and are available as ASI transport stream / stream and also as a video and audio signal at the output. For the descrambling, DRP 393 has a twin DVB-CI slot, which enables appropriate CAM modules to decode the complete transport stream. Optionally, different Frontends are available (DVB-S/DVB-S2, IP-Frontend) for receiving the Transport stream. As a standard, the device has one ASI input. Optionally, the received transport stream can also be streamed in an IP network via a Gigabit-Ethernet interface. Another option is that the A/V signal can be made available on a HD-SDI/SDI output.

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 DRP 393 comprises:

- 1 x ASI input
- 2 x ASI output
- 1 x ASI test output (front side)
- Twin DVB common interface for the CAM modules
- MPEG2 / MPEG4 decoder
- 1 x Video output CVBS
- 1 x Video test output (front side)
- 2 x Audio output (Stereo / dual-tone, XLR balanced)
- 1 x Audio test output (front side)
- 1 x SPDIF output, two-channel decoded or Dolby Digital pass through
- 1 x SFP interface for inclusion of Gigabit Ethernet SFP modules
- 1 x data interface (output, max. 38,4 kbps, RS-232)
- 10/100 Mbit LAN interface for web browser and SNMP
- Isolated / potential-free switching contacts
- LCD display with wheel and status LEDs
- 2 x Wide-range power supply units for redundancy (DRP393-02 only)

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

- DVB-S/DVB-S2 Frontend in 50 Ohm or 75 Ohm (with LNB supply and 22kHz switch signal) design, SCPC filter
- DVB-S/DVB-S2 16APSK-/32APSK Frontend, 50 Ohm and 75 Ohm design, SCPC filter
- DVB-T/C Frontend
- DVB-T2 Frontend
- IP Frontend (Gigabit-Ethernet) with electric / optical SFP module
- MPTS after SPTS transformation (for IP)
- Service filter, PID filter
- Descrambler function for IP and ASI outputs
- BISS descrambler
- 2 additional audio outputs with adapter cable
- Additional video output (not simultaneously with SDI output)
- HD-/SD-SDI output with embedded audio and additional AES/EBU interface
- SDI Genlock

Input

Different DVB Input Frontends can be implemented. HF input variants are 75 Ohm F-port or 50 Ohm SMA-port.

ASI interface

There are 2 equivalent ASI outputs on the back side of the device. There is 1 ASI test output on the device front panel. If a fault occurs, the ASI operating outputs can be switched off. The test output cannot 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, an ASI input is provided for on the back side of the device. If an additional frontend is implemented, it is possible to switch over between the ASI and Frontend input.

MPEG-4 video decoder

The decoder supports MPEG-4 part10 (AVC, H.264) as well as MPEG-2 decoding. During an anamorphous 16:9 video transmission, the decoder generates a Letterbox video format from this signal. Moreover, the decoder can generate a SDTV signal (720x576) in the Letterbox format from the HDTV signal (1920x1080i, 1280x720p) by "downscaling". This decoder also supports DVB subtitling. The output signal is the analogue CVBS signal.

DRP 393 supports extensive VBI functionalities: The teletext lines, the data lines and the WSS signal as well as the test lines are entered in the analogue output signal.

All the 13 data bytes are transferred to the VPS data line (line 16). The audio status is generated according to the selected audio output format (basis: Audio output 1). The CNI code can be manually entered if it is not available within the TS (Transport stream).

The test lines 17, 18, 330, 331 and 329 are generated within the device. Line 331 can be assigned the CCIR or ramp signal. Line 329 can be assigned the sinx/x signal, teletext or data line.

The WSS signal (line 23) is generated according to the aspect ratio of the video output signal. If the letterbox conversion leads to a disturbing stream like a "string of beads" in the enabled video signal, this can be suppressed with the WSS letterbox muting function (blanking / suppression of line 59).

A colour bar test signal can be enabled for the purpose of testing.

2nd Video output

Optionally a 2nd video output is available. This output cannot be simultaneously integrated in the device with the HD-/SD-SDI option.

HD-SDI/SDI output

The HD-/SD-SDI output is an optional setting / configuration for DRP 393. It is designed as an additional plug-in module. This option supports SD-SDI with a data rate of 270 Mbps as well as HD-SDI with a data rate of 1.485 Gbps. Up to 4 additional audio channels can be embedded in the SDI signal. Besides, a separate output is available AES/EBU audio signal.

Audio decoder

The basic device has 4 audio output channels (2 stereo / dual-tone). Two audio PIDs can be decoded within the device. Thus, the audio track for blind persons (e.g. ZDF) and the dual tone can be generated from two stereo PIDs (e.g. Arte). The level of every audio output can be set individually.

Dolby Digital is decoded and given out as a stereo signal.

Optionally, 4 other audio output channels can be activated.

Note: Dolby Digital (AC3) and MPEG audio signals cannot be decoded simultaneously!

For test purpose, 1 kHz test signal, nominal level +6 dBm can be enabled. The test signal is available on all audio outputs.

Digital audio output SPDIF

The PID selected for audio decoder 1 can also be given out via the digital SPDIF output. If a Dolby Digital signal (AC3) is selected, the AC3 signal (which is not decoded) can also be given out ("pass thru").

SDI Genlock

Genlock allows the synchronisation of the screen change of several analog video sources.

The reference signal will be identified and synchronized with the frame start. If the reference signal is lost, Genlock is automatically switched to an internal sync signal (Free Run Mode). This function is switchable.

A delay between reference frame start and SDI output start is adjustable (latenz offset).

In case of overflow or no load of the buffer, caused by frequency deviation, one frame will be skipped or repeated.

Wide-range power supply unit:

DRP 393 has a two wide-range power supply units for redundancy (D103.92 only). 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 from 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 Optionen

Description	Type
IP-Input Streaming (SFP module required) Reception of MPEG2 transport stream encapsulated in UDP over IP interface	APA103-51
IP-Output Streaming (MPTS) incl. Service/PID-Filtering (SFP module required) Transmission of MPEG2 transport stream encapsulated in UDP over IP interface. For reducing data rate selected services can be filtered out.	Bundle with SFP-Modul: OPD103-30
IP-Output Streaming (SPTS) incl. Service/PID-Filterung (SFP module required) Incoming MPEG2 transport stream with several services (MPTS) are split into several transport streams with one service (SPTS) and streamed out over IP interface. For reducing data rate selected services can be filtered out.	Bundle with SFP-Modul: OPD103-31
Multi-Service-Decryption Decryption of several services of a MPEG2 transport stream. The number of decrypted services is dependent of the type of CAM.	APA103-55
NDS Due to the NDS Certification procedure NDS decryption is an option.	APA103-56
BISS Decryption BISS (Basic Interoperable Scrambling System) Descrambler, MODE 0, MODE 1, BISS-E	BISS by CAM See ordering codes
DVB-Subtitling Graphical overlay of service information within the MPEG2 transport stream.	APA103-58
IP Input Pro-MPEG FEC	APA103-61

DRP 393 MPEG-4 Receiver/Decoder

Ordering Codes

	Name	Type	Ordering code	Remarks
	Receiver / Decoder Basic Version, MPEG-2 Only	DRP 393	D103.01	MPEG-2
	H.264AVC MPEG-4 DRP393	APA103-50	D103.01 + OPD10301 5000	MPEG-4
Frontends	DVB-S/S2 75 Ohm F	OPD103-02	OPD10301 0200	<i>In this range only one Option is possible!</i>
	DVB-S/S2 50 Ohm SMA	OPD103-13	OPD10301 1300	
	DVB-T/C 75 Ohm F	OPD103-03	OPD10301 0300	
	DVB-T2 75 Ohm F	OPD103-04	OPD10301 0400	
	DVB-S/S2 APSK 75 Ohm F	OPD103-09	OPD10301 0900	
	DVB-S/S2 APSK 50 Ohm SMA	OPD103-18	OPD10301 1800	
Out	SDI Genlock	OPD103-06	OPD10301 0600	<i>In this range only one Option is possible!</i>
	HD-SDI/SDI AES/EBU	OPD103-07	OPD10301 0700	
	2.Videoausgang/2 nd Video output	OPD103-14	OPD10301 1400	
Adapter	Adapter Mini-Combicon-D-SUB-9	PUZ 157	Z120.01	Cable adapter!
	Adapter D-SUB-15 - XLR	PUZ 158	Z121.01	
	Adapter XLR - DIN PUZ104	PUZ 159	Z122.01	
Optionen	IP-Input Streaming Interface	APA103-51	OPD10301 5100	<i>SFP Modul necessary!</i>
	IP-Output Streaming (MPTS)	APA103-52	OPD10301 5200	
	IP-Output Streaming (SPTS)	APA103-53	OPD10301 5300	
	Multi-Service-Decryption	APA103-55	OPD10301 5500	
	NDS Decryption	APA103-56	OPD10301 5600	<i>Customer related NDS certification.</i>
	BISS Decryption	DCA 315	F038.01	BISS by CAM
	DVB-Subtitling	APA103-58	OPD10301 5800	
	IP Input Pro-MPEG FEC	APA103-61	OPD10301 6100	

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

Front view



LED Marking	Colour	Function
INPUT	Green	Input signal available
	Red	Input signal missing
	Orange	Invalid input signal
STATUS	Green	Function OK
	Red	Function faulty (see LCD display)
	Orange	Function critical (see LCD display)
FAULT	Red	Internal hardware fault

Control with display and navigation wheel

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, one 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)

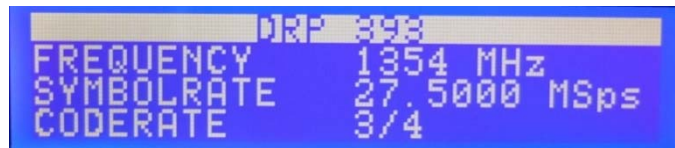
For changing the configurations, the user must select "CFG" in the corresponding menu and keep the wheel pressed for at least 3 sec. until a * appears behind "CFG". Then, the user can select the corresponding parameters with the wheel, which are presented with a blinking display.

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 most important information about the configured channel are displayed. Example:



DRP 393 MPEG-4 Receiver/Decoder

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
Input DVB-S/DVB-S2	Status	
	Frequency	Configuration satellite IF frequency
	Symbol rate	Configuration symbol rate
	DVB-S Mode	Configuration DVB-S/DVB-S2 receiving mode DVB-S Receive only DVB-S signals DVB-S2 Receive only DVB-S2 signals Automatic Automatic identification of DVB-S and DVB-S2 signals
	LNB Voltage (only at 75 Ohm)	Configuration LNB voltage (selection sat. polarization) OFF LNB Power off 13V Polarization vertical 18V Polarization horizontal
	LNB 22 kHz Tone (only at 75 Ohm)	Configuration 22KHz tone (selection low/high-band) OFF low band ON high band
	SCPC Mode	ON/OFF Configuration of transport stream ID for SCPC signals



Decoder	Under preparation	
Audio	Under preparation	
Video	Under preparation	



Logbook	Events	Display of all 256 logbook entries
	Erase	Erase all logbook entries
System	Reset/Presets	Reset: Restart with stored parameters Presets: Attention: Preset resets the IP addresses LAN default: 192.168.0.202
	Version	Display of the device type, SW versions and serial no.
	Date/Time	Configuration date and time
	LCD Contrast	Configuration contrast of display



Common Interface	Top Slot	Display CA module informationen
	Bottom Slot	



LAN	Control	IP address (192.168.000.202) Subnet mask (255.255.255.000) Gateway address (192.168.000.001) MAC address Display
	Data	(Option)

Control with web server

DRP 393 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 DRP 393 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:	192.168.0.202
	Subnet mask:	255.255.255.0
	Gateway address:	192.168.0.1
Data Port (SFP option)	Standard IP address:	192.168.0.203
	Subnet mask:	255.255.255.0
	Gateway address:	192.168.0.1

Home

After configuring the current IP address of DRP 393 on the web browser, the device notifies itself with the following status information. You can request for further information and configurations by selecting the corresponding menu items on the left side.

DRP 393

- [Home](#)
- [Input](#)
- [Service Filtering](#)
- [Conditional Access](#)
- [TS Output](#)
- [Decoder](#)
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- [Logbook](#)

- [Contact](#)



DRP393 RECEIVER/DECODER



IP Address: [194.55.8.212](#)
 Device Label: [TecCenter, 31162 Bad Salzdetfurth](#)
 Program: [ID 0x6D66 - ZDF](#)
 Current Event: [20.01.11, 09:05:00 - Volle Kanne Service täglich](#)
 Next Event: [20.01.11, 10:30:00 - Lena - Liebe meines Lebens \(82\)](#)
 Device Status: OK

DRP 393 MPEG-4 Receiver/Decoder

Under **System**, you can configure the date, time and LCD contrast of the display. If you press *Reset*, the device restarts with the saved parameters.

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

Note: While *Presetting* via the web browser or SNMP the IP address is **not** reset to the factory setting!
While *Presetting* via the front panel, the IP address is reset to the factory setting (192.168.0.202 and 192.168.0.203).

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 "Download". The file that is read out must be sent to HilKOM Digital along with the purchase order for the option. A file that is delivered by HilKOM Digital having the corresponding options is then loaded in DRP 393 via "Download". Activation of software options is not free of cost.

Logbook shows all logbook entries of the DRP 393. A maximum of 256 logbook entries can be stored. Then the oldest entries are overwritten by new events. *Clear logbook* delete all entries, *Save logbook* save all entries in a Textfile "LOGBOOK_DRP393_xxxxxxx.log" (xxxxxxx=serial-no) in the specified Downloadarea.

Logout exits the configuration mode with a security message.

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

Name <input type="text"/>	The default login settings are:
Password <input type="password"/>	Name: admin
<input type="button" value="Login"/>	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.

After making all the entries, the configuration must be transferred to the device by clicking *Set*. If you click **Refresh**, the data can be once again read in by the device. Thus, you can check the changes made to a configuration.

Input

DRP 393

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

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Input

Source:

Status: LOCKED

TSID / ONID: 0x044D / 0x0001

Input Rate (Payload): 38.015 (36.188) Mbps

Packet Length: 188 Bytes

No.	ID	Type	Mode	Name
1	0x6DCA	digital tv service	FTA	Das Erste
2	0x6DCB	digital tv service	FTA	Bayerisches FS Süd
3	0x6DCC	digital tv service	FTA	hr-fernsehen
4	0x6DCE	digital tv service	FTA	Bayerisches FS Nord
5	0x6DCF	digital tv service	FTA	WDR Köln
6	0x6DD1	digital tv service	FTA	SWR Fernsehen BW

If the input source ASI is selected the status, the transport stream ID (TSID), the original network ID (ONID) as well as the gross and net data rate are displayed.

Depending upon the implemented Input Frontend, the user can obtain corresponding status information by clicking on *Input*. The image presented above applies to the input source ASI (Basic).

Input-DVB-S/S2 (Option)

DRP 393
Logged in as: admin (194.55.8.18)
Logout

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Input

Source: DVB-S/S2

Frequency Mode:	SAT-IF	Status:	LOCKED
SAT IF [MHz]:	<input style="width: 80%;" type="text" value="1354"/>	TSID / ONID:	0x0437 / 0x0001
Symbol Rate [MSps]:	<input style="width: 80%;" type="text" value="27.5000"/>	Input Rate (Payload):	38.015 (35.559) Mbps
DVB Standard:	AUTOMATIC	SAT-IF:	1354.2 MHz
LNB Voltage:	OFF	SAT-IF-Level:	<= -65 dBm
LNB 22 kHz Tone:	OFF	BER:	<1.2E-07
SCPC Mode:	OFF	Standard:	DVB-S
		Code Rate:	3/4
		C/N (Reserve):	11.9 (6.7) dB

No.	ID	Type	Mode	Name
1	0x6D66	digital tv service	FTA	ZDF
2	0x6D6B	digital tv service	FTA	ZDFinfokanal
3	0x6D6E	digital tv service	FTA	zdf_neo
4	0x6D70	digital tv service	FTA	ZDFtheaterkanal
5	0x6D67	digital tv service	FTA	3sat
6	0x6D68	digital tv service	FTA	KiKa
7	0x6D71	digital radio sound service	FTA	DRadio Wissen
8	0x6D6C	digital radio sound service	FTA	DKULTUR
9	0x6D6D	digital radio sound service	FTA	DLF

If the input source DVB-S/S2 is selected, you will go to 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. In this way the SAT-ZF DVB-S/S2 signal is selected as the input signal. ASI and IP Input are disabled.

The lock-in range of the input frequency is ± 5 MHz while the retaining range is ± 12 MHz. The symbol rate must be precisely specified. The lock-in range of the symbol rate is $\leq \pm 100$ ksps. By pre-selecting the DVB-S modes DVB-S or DVB-S2 the tuning procedure of the DRP 393 is accelerated. However the usual mode of operation is AUTOMATIC.

The menu items 'LNB Voltage' and 'LNB 22 kHz Tone' are only displayed for the 75 Ohm variant and 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 DRP 393 tunes on the selected transport stream. The TSID must be entered in hexa-decimal format.

IP Input (option):

The input source "IP" is accessible if this option is activated. The configuration of the IP Frontend is given below.

DRP 393 Logged in as: [admin \(194.55.8.18\)](#) [Logout](#)

Input

Source:

Protocol: Status: LOCKED

Destination Port / IP Address: / TSID / ONID:

Input Rate (Payload): Packet Length:

No.	ID	Type	Mode	Name
1	0x6DCA	digital tv service	FTA	Das Erste
2	0x6DCB	digital tv service	FTA	Bayerisches FS Süd
3	0x6DCC	digital tv service	FTA	hr-fernsehen
4	0x6DCE	digital tv service	FTA	Bayerisches FS Nord
5	0x6DCF	digital tv service	FTA	WDR Köln
6	0x6DD1	digital tv service	FTA	SWR Fernsehen BW

Standard data protocol is UDP. RTP or proMPEG is optionally available. RTP enables fault detection during transmission. ProMPEG includes fault protection that can correct transmission faults but needs additional band width. 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 224.0.0.0 to 239.255.255.255 are reserved for Multicast transfer (one source, multiple recipients).

Service Filtering

Service filtering allows the filtering of services out of the transportstream. All DVB tables are adapted according to the selection .

DRP 393 Logged in as: [admin \(194.55.8.18\)](#) [Logout](#)

Service Filtering

Service Filter Mode:

Data Rate: Total / Payload / max. Payload

Input:

Output:

No.	Select	Mode	ID	Type	Name
1	<input checked="" type="checkbox"/>	passed	0x6DCA	digital tv service	Das Erste
2	<input checked="" type="checkbox"/>	passed	0x6DCB	digital tv service	Bayerisches FS Süd
3	<input checked="" type="checkbox"/>	passed	0x6DCC	digital tv service	hr-fernsehen
4	<input checked="" type="checkbox"/>	passed	0x6DCE	digital tv service	Bayerisches FS Nord
5	<input checked="" type="checkbox"/>	passed	0x6DCF	digital tv service	WDR Köln
6	<input checked="" type="checkbox"/>	passed	0x6DD1	digital tv service	SWR Fernsehen BW

Service Filter mode:

- Off: No filtering function, all services are passed through.
- Drop mode: The selected services are filtered out , all other services are passed through If a new service is in the transport stream this service will be passed through.
- Pass mode: The selected services are passed through, all other services are filtered out . If a new service is in the transport stream this service will be filtered out.

Conditional Access

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

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Logged in as: admin (194.55.8.18)
Logout

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Conditional Access > Common Interface

Common Interface
BISS

Slot TOP

CA PMT List: only - add

CA Module: AlphaCrypt Pro

CA System IDs: 0x0500 0x0648 0x1702 0x1722 0x1762 0x4A20 0x0B00 0x0100 0x1833 0x1834 0x0D05 0x0D22 0x0D95

Status: OK

Slot BOTTOM

CA PMT List: only - add

CA Module: NO CAM INSERTED

CA System IDs:

Status:

No.	ID	Type	Mode	ES PIDs	Name	CA Decryption	Status
1	0x6DCA	digital tv service	FTA	8	Das Erste	OFF	
2	0x6DCB	digital tv service	FTA	7	Bayerisches FS Süd	OFF	
3	0x6DCC	digital tv service	FTA	6	hr-fernsehen	OFF	
4	0x6DCE	digital tv service	FTA	7	Bayerisches FS Nord	OFF	
5	0x6DCF	digital tv service	FTA	6	WDR Köln	OFF	
6	0x6DD1	digital tv service	FTA	6	SWR Fernsehen BW	OFF	

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 support 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.

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 Config*.

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

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.

BISS Decryption (Option)

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

DRP 393 MPEG-4 Receiver/Decoder

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 DRP393 is realized with Alphacrypt Classic Pro.

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

The screenshot shows the DRP 393 web interface. At the top left is the logo "DRP 393". On the right, it says "Logged in as: admin (194.55.8.125)" and "Logout". The main heading is "Conditional Access > Common Interface". Below this, there are two tabs: "Common Interface" and "BISS". Under the "BISS" tab, there are "Set" and "Back" buttons. The main content area displays "AlphaCrypt 3.23 Pro (c) Mascom GmbH" and a "Module Mainmenu" with the following items: "1/ Information", "2/ Smartcard", "3/ Email Messages", "4/ Parental Control", "5/ Module Options", and "6/ Quit". Below the menu is the instruction "Select item and press OK". At the bottom, there is a field labeled "Select Menu 1-6:" with a cursor in it, and "Set", "Main Menu", and "Back" buttons.

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

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Conditional Access > Common Interface

Common Interface **BISS**

Set Back

AlphaCrypt 3.23 Pro (c) Mascom GmbH

BISS service IDs (hexadecimal/decimal)

1/ 1:	3779 / 14201
2/ 2:	377D / 14205
3/ 3:	2135 / 08501
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).

DRP 393 **Conditional Access > Common Interface**

Common Interface **BISS**

Set Back

Please enter the ID in decimal:

Input:

Set Main Menu Back

DRP 393 **Conditional Access > Common Interface**

Common Interface **BISS**

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.

IP Output MPTS

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TS Output > MPTS

MPTSSPTS

Set

Datarate Mode: OUTPUT = INPUT

ASI Output: ENABLED

IP Output: ENABLED

IP Data Protocol: UDP

IP Port Channel: 4007

IP Destination Address: 239.1.1.9

No.	ID	Type	Mode	Name
1	0x6DCA	digital tv service	FTA	Das Erste
2	0x6DCB	digital tv service	FTA	Bayerisches FS Süd
3	0x6DCC	digital tv service	FTA	hr-fernsehen
4	0x6DCE	digital tv service	FTA	Bayerisches FS Nord
5	0x6DCF	digital tv service	FTA	WDR Köln
6	0x6DD1	digital tv service	FTA	SWR Fernsehen BW

The outgoing MPTS-IP data stream is configured in this menu. Standard protocol is UDP, RTP or proMPEG are optionally available on request. The most efficient protocol is UDP. The proMPEG protocol increases the data rate by up to 100% depending on the configuration. A port must be selected for establishing a connection with the receiver. The source (DRP 393) and the receiver must use the same port. Furthermore the IP address of the receiver must be entered (Unicast).

Multicast is possible by selecting the destination IP address. IP addresses in the range 224.0.0.0 to 239.255.255 are Multicast addresses. The receiver must be set on the corresponding Multicast address.

Individual services from the transport stream can be removed if these do not have to be transferred in MPTS. For this, three settings are available in the "Service Filter Mode":

OFF: The service filter is disabled and all services of the input data stream are given out via MPTS.

PASS MODE: All services that are marked in the overview (selected services are ticked) are transferred. All other services are blocked. If services are transmitted only occasionally in an input transport stream or if the program assignment is changed only the marked services are transferred and all the other services in the TS are blocked.

DROP MODE: In the drop mode all services that are marked are filtered out. All other services are transferred. If the multiplex of the transport stream changes the changed or new services to be added are also transferred. Only the marked services are removed from the TS.

If a service is removed from the transport stream all the elementary PIDs belonging to this service are filtered out. All PIDs belonging to a service are listed in the PMT (Programme Association Table). DRP 393 gets the assignment from PID and Service. The elementary PIDs include video PID, audio PID, Teletext PID, subtitle PID etc.

IP Output SPTS

The processing of the SPTS data streams can be configured in the following menu for the signal processing of IP boxes.

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TS Output > SPTS

MPTS
SPTS

IP Data Protocol: UDP

No.	Service ID Name	Port	Destination Address	Output
1	0x6DCA - Das Erste	1001	192.168.0.204	DISABLED
2	0x6DCB - Bayerisches FS Süd	1002	192.168.0.204	DISABLED
3	0x6DCC - hr-fernsehen	1003	192.168.0.204	DISABLED
4	0x6DCE - Bayerisches FS Nord	1004	192.168.0.204	DISABLED
5	0x6DCF - WDR Köln	1005	192.168.0.204	DISABLED
6	0x6DD1 - SWR Fernsehen BW	1006	192.168.0.204	DISABLED
7	0xFFFF - ID n/a	1007	192.168.0.204	DISABLED
8	0xFFFF - ID n/a	1008	192.168.0.204	DISABLED
9	0xFFFF - ID n/a	1009	192.168.0.204	DISABLED
10	0xFFFF - ID n/a	1010	192.168.0.204	DISABLED
11	0xFFFF - ID n/a	1011	192.168.0.204	DISABLED
12	0xFFFF - ID n/a	1012	192.168.0.204	DISABLED
13	0xFFFF - ID n/a	1013	192.168.0.204	DISABLED
14	0xFFFF - ID n/a	1014	192.168.0.204	DISABLED
15	0xFFFF - ID n/a	1015	192.168.0.204	DISABLED

A MPTS input data stream can be converted into several SPTS IP output signals in DRP 393. Every individual service can be transferred as SPTS via different ports or receiver IP addresses.

DRP 393 MPEG-4 Receiver/Decoder

Decoder

The decoder menu item has other sub-menu items with Audio, Video and Streaming. Basically you can select the program in the Decoder main menu and the desired audio PIDs. Further configuration is made in the following sub menu.

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Decoder > Main

Main | **Audio** | Video | Data Output | SDI

Program: ID 0x6DCA - Das Erste
Audio 1: 0x0066 - deu - MPEG-1 Audio
Audio 2: none

Current Event: 20.01.11, 10:03:00 - Brisant
Next Event: 20.01.11, 10:45:00 - Immer Ärger mit den Paukern

All the programs available in the transport stream are listed in the selection screen "Program". The service ID and the name of the programs are displayed. If a HD programme is selected a downscaling automatically takes place. At the CVBS output an analogue video signal conforming to the standard is available. MPEG4 AVC, H.264, MPEG2HD as well as MPEG2 encoded video transport streams can be decoded.

If the selected service offers several audio PIDs the audio stream to be decoded can be selected in the menu "Audio". The audio PID, language as well as audio coding type are displayed. Two audio streams that are encoded in the same manner and are available via the corresponding analogue outputs can be decoded simultaneously.

A mixed decoding of MPEG and AC3-encoded audio streams is not possible!

The DRP 393 supports the following audio codecs: MPEG1, MPEG2, Dolby Digital, Dolby Digital Plus, HE AAC, HE-AAC+.

Decoder audio

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Decoder > Audio

Main Audio Video Data Output SDI

Set

Test Tone: OFF

Test Output: OUTPUT 1

Output 1 Dual Channel Mode: OFF

Gain Output 1: +0.0 dB

Gain Output 2: +0.0 dB

Gain Output 3: +0.0 dB

Gain Output 4: +0.0 dB

SPDIF Output: DISABLED

Dolby Downmix: STEREO

Dynamic Range Compression Mode: LINE MODE

Service: ID 0x6DCA
Input Audio Status PES / VPS: stereo / stereo

A 1 kHz test tone can be enabled for testing. The nominal level of the test tone is +6 dBm. The test tone is available on all analogue outputs. The audio test output (6.3 mm phone jack) on the front side can be connected on the four analogue outputs that are available. The level of the test output is -20 dB relative to the selected audio output.

DRP 393 has two audio decoders. Thus two audio streams (PIDs) can be decoded simultaneously. A dual tone signal can be generated from both the decoded stereo signals via the function "Output 1 Dual Channel Mode" that is then given out at the audio output 1. For this select "continuous" under Channel mode. The "ZDF" particularly is transmitting an audio stream for blind people that is not sent continuously but only for special broadcastings. This is indicated in a special identification signal (DC status). Select the mode "EN301775 DC STATUS ONLY" for activation.

The amplification of all four audio outputs can be set separately. The setting range is -30 dB to +10 dB. 0 dB corresponds to an audio output level of +6 dBm at a digital level control of -6 dBFS. Individual outputs can be switched off with "MUTE". The audio output signal at output 3 corresponds to the audio signal of output 1; accordingly the audio signal at output 4 is identical with the audio signal at output 2.

DRP 393 also has a digital SPDIF audio output. The audio signal of the audio decoder 1 is available at SPDIF if selected. In the "BYPASS" mode the audio data stream is not decoded but directly routed to output. Thus an AC3-encoded audio signal is available at the output and can be processed externally. In the "DECODED" mode the audio stream is available as decoded signal. In the "DECODED AND DOWNMIX" mode a stereo signal is generated from a multi-channel AC3 signal (e.g. Dolby 5.1).

For the analog stereo output there are two different types of stereo downmixes:

One type is a stereo-compatible "Dolby Surround Prologic" downmix, that is suitable for Dolby Surround Pro Logic® decoding. This kind of downmix is also called Pro Logic or Left total/Right total (Lt/Rt).

The other type is a simple "Stereo" representation (called Left only/Right only, or Lo/Ro) suitable for playback on a stereo hi-fi or on headphones. This signal can also be used to derive a mono signal.

Decoder video

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Decoder > Video

[Main](#) [Audio](#) **Video** [Data Output](#) [SDI](#)

[Set](#)

Video Format:	<input type="text" value="PAL"/>
VBI VITS:	<input type="text" value="ON"/>
VBI Teletext:	<input type="text" value="ON"/>
VBI Dataline 16:	<input type="text" value="ON"/>
VBI WSS:	<input type="text" value="ON"/>
VBI Usage Line 329:	<input type="text" value="TELETEXT"/>
VBI Line 331:	<input type="text" value="RAMP"/>
Letterbox WSS Mute:	<input type="text" value="OFF"/>
VPS CNI Code:	<input type="text" value="0xDC1 - ARD"/>
Subtitling:	<input type="text" value="OFF"/>
Color Bars:	<input type="text" value="OFF"/>
SD Output Aspect Ratio:	<input type="text" value="4:3/LETTERBOX"/>

Service: [ID 0x6DCA](#)
Resolution: [720x576](#)
Aspect Ratio: [16:9](#)
Frame Rate: [25](#)
Chroma: [4:2:0](#)
Encoding System: [PAL](#)
Teletext 1st Field Lines: [7 8 9 10 11 12 13 14 15 20 21 22](#)
Teletext 2nd Field Lines: [7 8 9 10 11 12 13 14 15 20 21 22](#)
Input VPS Time: [20.01. 10:45](#)
VPS Data Unit: [available in teletext PID stream and PDC descriptor](#)
WSS Data Unit: [available in teletext PID stream](#)

DRP 393 has extensive VBI processing options. Teletext is extracted from the input transport stream and inserted in the corresponding lines of the analogue CVBS output signal. The Teletext line in use are displayed in the Teletext info field.

If a VPS data unit is available in the input data stream this is extracted, evaluated and inserted in line 16 of the analogue output signal. In this process **all** 13 relevant data bytes of the VPS data line are processed. The current tone status of the output signal is modified according to the selected settings. Thus the corresponding dual tone identification is inserted in the VPS line at time of the conversion of 2 stereo audio signals. If no VPS data unit is available in the input data stream a VPS data line is generated internally that contains the current audio tone status information. In that case the VPS CNI code should also be entered manually so that the television receiver can correctly display and save the program setting. The configured CNI code is also inserted in the data line.

The WSS information (Wide Screen Signalling) is extracted from the WSS data unit that is available in the input data stream. Depending upon the selected aspect ratio this information is modified and inserted in line 23. The video signal is converted to the Letterbox format at a 16:9 anamorphous video transmission and at a selected aspect ratio of 4:3. The aspect ratio of the video signal available at the CVBS output corresponds to the identification that is inserted in the WSS line 23.

Video test lines (VITS) specified by CCIR and/or ITU are generated in DRP 393. Thus the standard lines 17, 18, 330 and 331 are inserted in the CVBS signal. Either the standardised CCIR G2 signal for line 331 or optionally a ramp (for SNR measurements) is inserted in line 331 depending on configuration. Line 329 can be used in DRP 393 in different ways. Firstly an additional test line "sinx/x" can be entered for group delay time measurements and secondly this line can also be used for further VPS information if data is available for this line or if the line can be reserved for the assignment of Teletext.

A test image can be generated in DRP 393 for testing (colour scale, colour bar 75%). If this menu item is enabled the test image is exclusively given out. The decoded video signal is suppressed. VBI information is not generated.

The DVB Subtitling can be enabled via the menu item "Subtitling". If the programme supplier offers several subtitling languages you can select a corresponding language.

In some cases the video encoders of the programme supplier may completely interpret the analogue line 23 as an active video line. If the video signal is transmitted as a 16:9 anamorphous signal and if a Letterbox signal is generated from this in the decoder the corresponding line 23 then appears as line 59 in the visible picture area. This appears in the form of white spots that are disturbing. With the menu selection "WSS Letterbox Mute" line 59 can be inserted as black line. This setting does not influence the entering of VBI information of DRP 393. The WSS information generated in the device is also inserted in the Letterbox format in the "correct" line 23 for the video output.

Data output

In the Data output sub-menu, you can select a PID data stream and transfer it to the data output (Submin-D: Data). Please ensure that the PID stream has a maximum data rate of 38.4 kbps. The data rate to be achieved depends on the uniformity of the packets of the data stream. The PID of the low-speed data stream must be entered via the menu "PID".

The screenshot shows the web interface for DRP 393. The top left corner displays the logo "DRP 393" in orange. The top right corner shows the user is logged in as "admin (194.55.8.18)" with a "Logout" link. A navigation menu on the left lists various system options: Home, Input, Service Filtering, Conditional Access, TS Output, Decoder, LAN, System, User Accounts, Update, Version, License, Logbook, and Contact. The main content area is titled "Decoder > Data Output" and contains several tabs: "Main", "Audio", "Video", "Data Output", and "SDI". The "Data Output" tab is active. Below the tabs, there is a "Set" button. The configuration fields are: "UART:" with a dropdown menu set to "OFF", and "PID:" with a text input field containing "0x1FFF".

Decoder SDI (Option)

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Decoder > SDI

[Main](#) [Audio](#) [Video](#) [Data Output](#) **SDI**

SDI Mode: ONLY SD OUTPUT

VBI Teletext: ON

VBI Dateline 16: ON

VBI WSS: ON

VBI Line 329: ON

VBI VITS: ON

Audio 1: ON

Audio 2: ON

AES: AUDIO 1

Genlock: OFF

Free Run Mode: OFF

Output 1: ON

Output 2: ON

Vert. Offset [Lines]: 0

Hor. Offset [Clock Pulses]: 0

Genlock Status: [unlocked](#)

Output Video Format: [576i@50Hz](#)

If DRP 393 is equipped with the SDI option the menu "SDI" appears in the decoder main menu. The "Decoder SDI" menu appears when you click on "SDI".

There are two selection options in the "SDI Mode" menu:

SD/HD OUTPUT: The SDI output signal corresponds to the resolution of the decoded video signal i.e. if a SD video signal is decoded a 270 Mbps SD-SDI signal is available at the SDI output. In that case the analogue CVBS video output also carries the corresponding analogue video signal. If a HD video signal is decoded a HD-SDI signal with a data rate of 1.485 Gbps is available at the SDI output. In this case the analogue CVBS output is disabled.

SD ONLY OUTPUT: The SDI signal is given out with a data rate of 270 Mbps. If a HD programme is decoded a downscaling takes place on the basis of the SD resolution. The analogue CVBS video signal is given out simultaneously.

If a SD-SDI signal is given out there is an option of transferring VBI information in the SDI. Information for Teletext, data line 16, WSS, test lines and line 329 is directly transmitted digitally in the corresponding lines. The individual VBI information can also be disabled. Disabling the VBI transmission via SD-SDI does not have any influence on the insertion of VBI information in the analogue CVBS signal. The VBI information is not available for a HD-SDI output.

SD- and HD-SDI signals are transmitted with embedded audio. 2 stereo-/dual-tone (4-channel) audio signals can be transmitted in the SDI signal. The sampling rate for embedded audio signals is specified as 48 kHz by default. If a service is received with another audio sampling rate (e.g. 32 kHz, 44.1 kHz) and transmitted via SDI the sampling rate is internally automatically converted to 48 kHz. Besides a digital audio output conforming to AES/EBU is available. A stereo-/dual-tone signal can be transmitted via AES/EBU.

LAN

All the IP configurations for the Ethernet interfaces for the control port (RJ45, control port) and the optional Gigabit Ethernet Port (SFP, data port) are made under *LAN*.

The screenshot shows the web interface for the DRP 393 device. The page title is "LAN > Interfaces". The user is logged in as "admin (194.55.8.18)". The interface has a sidebar with navigation links: Home, Input, Service Filtering, Conditional Access, TS Output, Decoder, LAN, System, User Accounts, Update, Version, License, Logbook, and Contact. The main content area has two tabs: "Interfaces" (selected) and "SNMP". Below the tabs is a "Set" button. The configuration is divided into two sections: "Control Device" and "Data Device".

Control Device	
IP Address:	194.55.8.212
Subnet Mask:	255.255.255.0
Gateway Address:	194.55.8.1

Data Device	
IP Address:	192.168.0.203
Subnet Mask:	255.255.255.0
Gateway Address:	192.168.0.1
Speed/Duplex Mode:	AUTO-NEGOTIATION

Additional information shown at the bottom of the interface:

- SFP-Module: plugged
- Vendor: AVAGO
- Connection: Link is up: 1000 Mbps (full duplex)

The IP addresses that have to be entered here are addresses of the control and data port of DRP 393. A web browser can be accessed via the IP address of the control port of the DRP 393. SNMP protocol and traps are also sent from this address.

Tests of the connection of the data port can be done with the ping-command.

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

DRP 393 MPEG-4 Receiver/Decoder

LAN-SNMP

The DRP 393 has a built-in SNMP agent. With this agent the device can be integrated in a Network Management System (NMS). If an error / fault occurs corresponding traps are sent to the NMS. The target addresses for the ztraps can be entered in this menu.

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LAN > SNMP

Interfaces | **SNMP**

SNMPv2c:

SNMP MIBs: [BLAIKOM_Root.mib](#) [BLAIKOM_DRP393.mib](#)

Community

Read:

Set:

Trap

User	IP Address	Comment	Mode
1	<input type="text" value="194.55.8.18"/>	<input type="text"/>	<input type="button" value="ON"/>
2	<input type="text" value="192.168.0.203"/>	<input type="text"/>	<input type="button" value="OFF"/>
3	<input type="text" value="192.168.0.203"/>	<input type="text"/>	<input type="button" value="OFF"/>
4	<input type="text" value="192.168.0.203"/>	<input type="text"/>	<input type="button" value="OFF"/>

Alarm Severity

Application:

Input Signal:

BER:

TSID Changed:

FPGA:

EEPROM:

Power Supply:

FAN:

Decryption:

Download Application:

Download Bootmanager:

Download Decoder:

Download FPGA:

Download FPGA CPU:

Decoder:

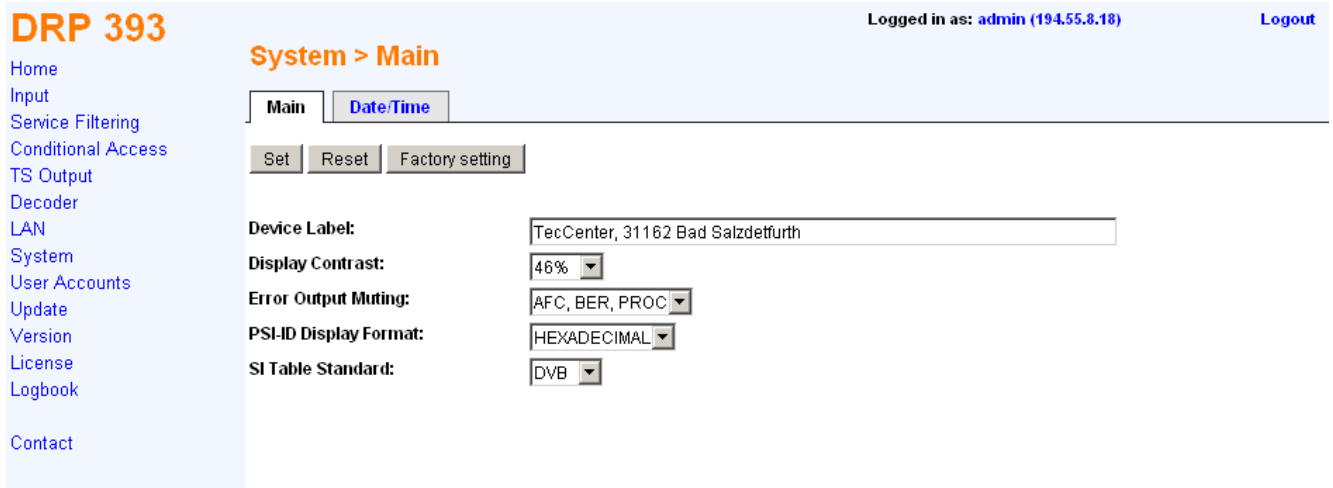
CAM:

AFC:

Alarm Severity enables the user to activate SNMP traps for different types of events.

System

Device Information is a free editable field with information about e.g. the location or decoded service 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. *Error Output Muting* allows the complete switch off of output signals in case of an error to prevent intermediate output signal behavior. With *PSI-ID Display Format* the user can toggle between hexadecimal and decimal display format. *SI Table Standard* allows the selection between DVB (default) or ATSC table processing for DVB or ATSC compliant transport streams.



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 (192.168.0.202 and 192.168.0.203).

DRP 393 MPEG-4 Receiver/Decoder

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.

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Logged in as: admin (194.55.8.18)
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User Accounts

	Name	Password	Group
1	admin	*****	ADMIN
2			OFF
3			OFF
4			OFF
5			OFF
6			OFF
7			OFF
8			OFF

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"/>
Service Filtering	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conditional Access	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IP Output	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Decoder	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LAN	<input checked="" 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"/>

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.

Version lists information of the internal status of the device. No configurations can be done.

DRP 393

Logged in as: [admin \(194.55.8.125\)](#) [Logout](#)

- Home
- Input
- Service Filtering
- Conditional Access
- TS Output
- Decoder
- LAN
- System
- User Accounts
- Update
- Version
- License
- Logbook
- Contact

Version

Model:	DRP393 SDI
Bootloader:	1.00 (05.03.09 10:20:02)
Application:	4.20 (16.02.12 15:27:18)
Decoder:	4.37 (15.11.10 14:51:00)
FPGA:	3.31 (20.07.11 08:24:55)
FPGA CPU:	3.30 (07.07.11 13:27:09)
FPGA SDI Genlock:	1.00 (16.02.12 15:00:00)
Serial Number:	L300002
Device Type ID:	D103.01
MAC Address 1:	00:50:C2:D8:37:56
MAC Address 2:	00:50:C2:D8:37:57

The different software files for a new release of the DRP 393 are compressed in a zip file with the name *DRP393-Release-yy.zip*. The meaning of the different files in the zip file is given in the table below.

	Name of the SW file	Remarks
Bootloader Version		
Application Version	drp393-application-vxxx.drp	
Decoder Version	drp393-decoder-vxxx.drp	
FPGA Version	drp393-fpga-vxxx.drp	DRP 390 without Option SDI
	drp393-fpga-main-sdi_board-added-vxxx.drp	DRP 393 with Option SDI
FPGA CPU Version	drp393-fpga-cpu-vxxx.drp	
SDI FPGA Version	drp393-fpga-sdi-vxxx.drp	DRP 393 with Option SDI

For software update select Update

- Select Softwarefile (.drp) via *Durchsuchen (Select)*
- Click *Start*
- An automatic Reset updates the SW version.

To check the success of a download please click refresh and verify the software version.

Update

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

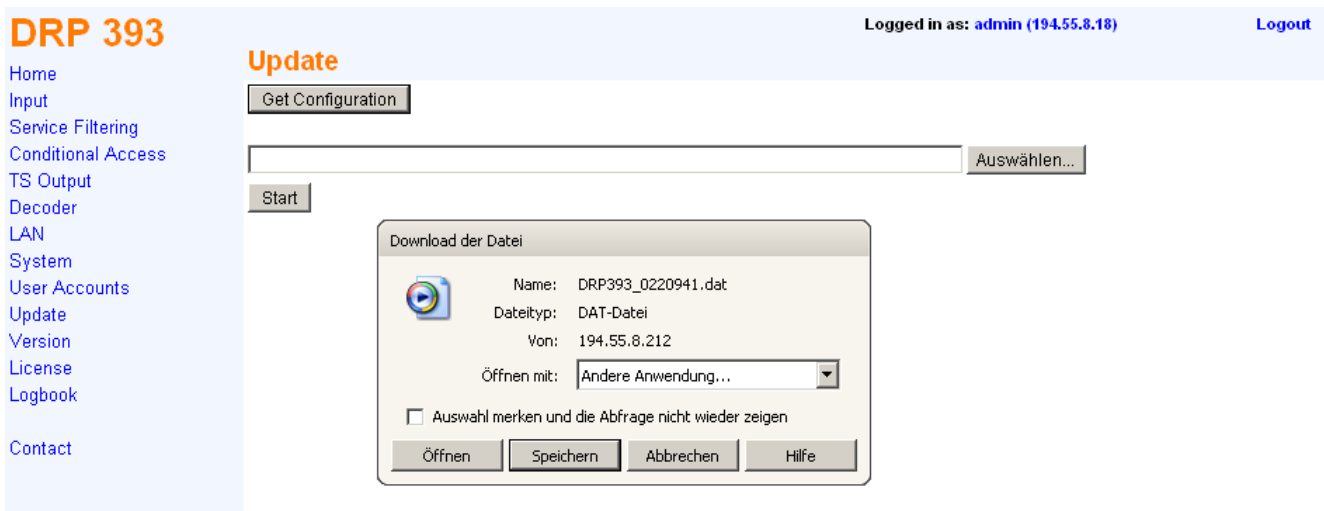
1. Software update (see under *Version*)
2. Get configuration
3. Activation of software options

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 DRP393 again.

- Click *Get Konfiguration*
- Save Config file „DRP393_xxxxxxx.dat“.

Activating of Software Options



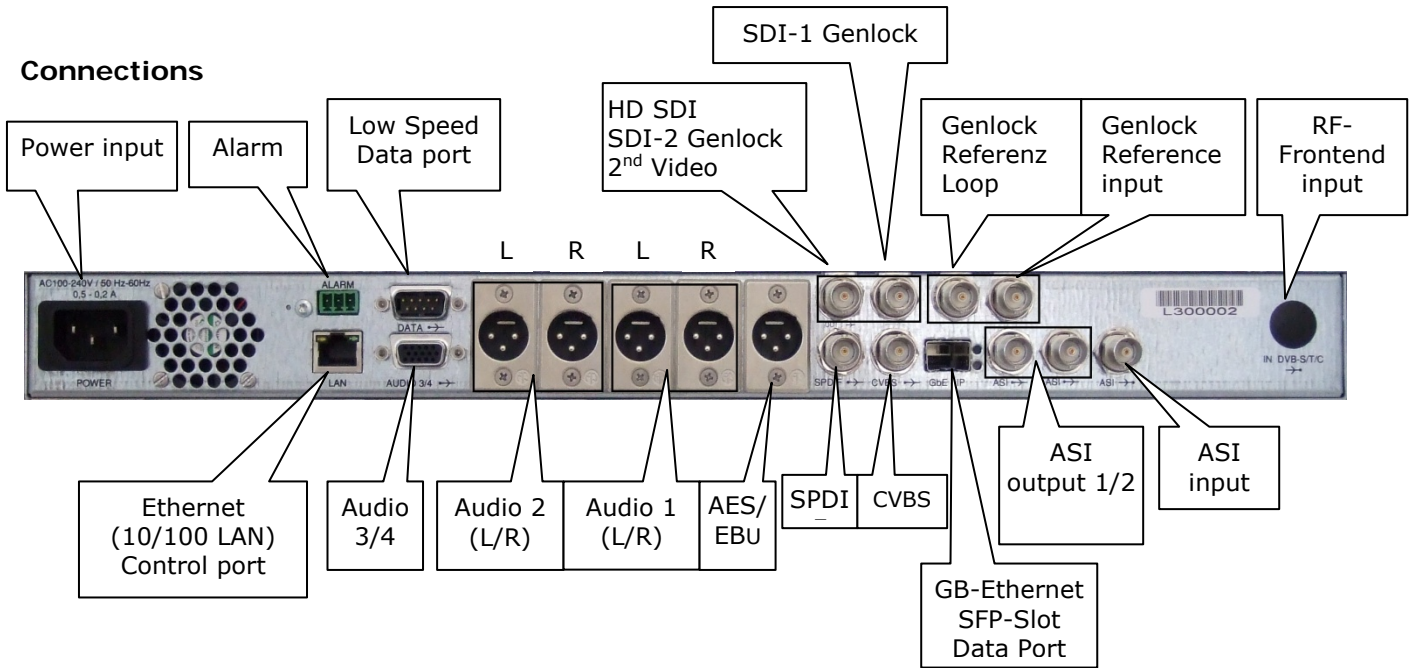
- Click *Get Konfiguration*
- Save the configuration file „DRP393_xxxxxxx.dat“ and
- Send it via email to HilKOM Digital (service@hilkom-digital.de).

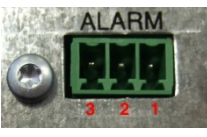
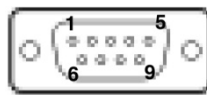

After receiving a written Order HilKOM Digital will

- Create a Key file „DRP393-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.



Type	Interface	Description
	Power Connector	100 to 240 V AC,
J 45	Ethernet (10/100 LAN)	1 TxD+, 2 TxD-, 3 RxD+, 6 RxD-
Mini CombiCon	Alarm	 <p>Correct working: 1-3 closed Alarm: 1-2 closed</p>
9-pin Sub-D	Data	 <p>2: RxD 3: TxD 5: GND 7: RTS 8: CTS</p>
15-pin Sub-D	Audio 3/4	<p>1 B3+ 11 A3+ 2 B3- 12 A3- 4 B4+ 14 A4+ 5 B4- 15 A4- 3, 6-10, 13 GND</p>
XLR	Audio 1/2 AES/EBU	 <p>1: Ground 2: + 3: -</p>
BNC	SDI Genlock reference loop	Coaxial connector, 75 Ohm
BNC	SDI Genlock reference input	Coaxial connector, 75 Ohm
BNC	SDI-1 Genlock output	Coaxial connector, 75 Ohm
BNC	HD-SDI/SDI or SDI-2 Genlock output or 2 nd Video	Coaxial connector, 75 Ohm
BNC	SPDIF	Coaxial connector, 75 Ohm
BNC	CVBS	Coaxial connector, 75 Ohm
BNC	ASI Out 1/2	Coaxial connector, 75 Ohm
BNC	ASI In	Coaxial connector, 75 Ohm
F/SMA/BNC	Input	Depending on the frontend
SFP slot	GigEthernet (SFP)	SFP module Electrical or optical (Option)

Technical data

DRP 393	
SAT input (Option)	
Input frequency	950 MHz to 2150 MHz
Lock-in range	± 5 MHz
Retaining range	±12 MHz
Input impedance	75 Ohm, F Connector / 50 Ohm SMA-Connector
LNB supply:	
Voltage	13V / 18V, reversible, can be switched off
Current	Max 500mA, short-circuit proof
Input impedance (optional)	50 Ohm, SMA, without remote power supply
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)	
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)	¼; 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

IP Frontend (Option)	
Input	SFP, electrical RJ45, optical LC
Format	Gigabit Ethernet, UDP, Uni-und Multicast RTP, proMPEG
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)
Decoding	
MPEG 2	MP@HL and lower level
MPEG 4 Part 10, H.264/AVC	MP@L4.0, HP@L4.0 and lower level
Audio	MPEG 1, MPEG 2, MPEG 4 AAC, AAC V2.0, AC3 (DD), EAC3 (DD+)
Descrambling	
Hardware	Dual PC-Card slot (CAM)
CA systems	Viaccess, Conax, Irdeto, Seca, Mediaguard, Nagravision, NDS
BISS (option)	
Number of descrambled services	Multiservice Descrambling, min 16 PIDs
Analogue video output	
Output	75 Ohm, BNC
Standard	PAL/NTSC
Subtitling	DVB/Closed Captioning
Level	1 Vss
Reflection / return loss	>34 dB
Test output	75 Ohm, BNC
Video parameter	
Video-frequency signal / noise ratio	≥ 78 dB (line 19, weighted filter in conformance with CCIR Rec.567-1)
Video-frequency signal / noise ratio	≥ 72dB (unweighted)
Amplitude-frequency response	≤ ± 0.4 dB (10 Hz - 5 MHz, CCIR 18)
Differential amplification	≤ 1%
Differential phase	≤ 1.5 °
Pulse tilt / droop	≤ 0.5%
2-T pulse	K = ≤ 1%
DC offset	≤±70 mV
Analogue audio output	
Output	600 Ohm loaded impedance, XLR (pin)
Level	+6 dBm @ -6 dBFS, +10 dB...-30 dB variable
Clipping level	>+18 dBm
Amplitude distortion 20 Hz - 20 kHz	<±0.5 dB
Harmonic distortion attenuation 40 Hz -5 kHz	>90 dB
Signal-to-noise ratio	78 dB CCIR weighted, 85 dB CCIR unweighted
Channel cross-talk attenuation	>90 dB
Test output	6.3mm jack -20dBr
Other outputs	Sub-D plug-and-socket connector, 15-pole
SDI output (SD) (Option)	
Output	75 Ohm, BNC
Data format	Embedded Audio, embedded VBI (can be switched off)
Data rate	270 Mbps
HD-SDI output (Option)	
Output	75 Ohm, BNC
Data format	Embedded Audio,
Data rate	1,485 Gbps; 1,485/1,001 Gbps (US)

DRP 393 MPEG-4 Receiver/Decoder

AES/EBU (AES3) Audio output (Option)	
Output	600 Ohm, 3pol XLR, plug
Audio level	+6dBm
Digital audio output SPDIF	
Output	75 Ohm, BNC
Data format	AC3, AAC, not decoded; PCM Audio, decoded
Data rate	32 kbit/s ... 640 kbit/s
SDI Genlock	
Reference signal in/out	75 Ohm, BNC, Loop-through
Supported reference signals	Analogue Trilevel-Sync Signal for HD Analogue Bilevel-Sync Signal PAL/NTSC
Outputs	75 Ohm, BNC, 2x, selectable
Data format	Embedded Audio, 2 x 2 channels
Supported video-formats	576i@50Hz; 720p@50Hz; 1080i@50Hz 480i@60Hz; 720p@60Hz; 1080i@60Hz
ASI output	
Output	2x ASI (in conformance with EN 50083-9), 75 Ohm, BNC
Reflection / return loss	> 18 dB
Format	188 Byte, can be switched over to descrambled TS
Test output (front side)	75 Ω BNC
Data output	
Output	Sub-D 9-pole, RS-232
Auxiliary Data	Max. 38,4 kbps (e.g. RDS)
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/CAM)
Power supply	100V _{AC} to 240 V _{AC}
Redundant power supply	DRP393-02 (D103.02)
EMC	EN 50083-2
Safety	EN 60950-1

History

Revision	Modifications	Date
A	First Release	1.04.2009
B	Screenshots added, BISS (Option)	28.04.2009
C	Screenshots added, SDI (Option)	8.07.2009
D	Revision	20.07.2009
E	SW Version: 2.00	6.10.2009
F	Download in more detail.	2.11.2009
G	SW Version: 2.20 New: LAN SNMP. User Accounts, Version, Frontend 50 Ohm	28.01.2010
H	Screenshot (Version) updated, SW Options described, Option list updated.	2010-06-28
I	System Menu:DVB or ATSC selectable Decoder Audio: ProLogic or Stereo selectable Decoder – Video: NTSC selectable Technical data: DVB-T/C/T2	05.11.2010
J	Screenshots renew	2011-01-20
K	BISS Decryption described.	2011-08-19
L	Editorial changes regarding BISS	2011-08-23
M	Editorial changes regarding Closed Captioning, PSU redundancy for DRP393-02	2011-09-12
N	New: SDI Genlock, ProMPEG; Bundles removed	2012-03-07
O	Editorial changes, Subject CAM modules inserted	2012-09-27
P	Correct password on Blankom	2013-05-24

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