Headend Manual

Contents

1 DDM Installation

DDM, the Digital Devices Manager, is the configuration utility for the headend.

The current version of DDM is available on this website:

- https://headend.digitaldevices.de/

These operating systems are supported:

- MacOS (Intel 64 Bit)
- Windows (Intel 64 Bit)

2 Ports

2.1 Intel Hardware

2.1.1 Output

2.1.2 Quattro LNB

Tuner 1	Tuner 2	Tuner 3	Signal
1	5	9	vertical lower
2	6	10	vertical upper
3	7	11	horizontal lower
4	8	12	horizontal upper

2.1.3 Multiswitch or Quad LNB

Tuner 1	Tuner 2	Tuner 3	Signal
1	5	9	LNB / multiswitch port
2	6	10	LNB / multiswitch port
3	7	11	LNB / multiswitch port
4	8	12	LNB / multiswitch port

2.1.4 Unicable

Tuner 1	Tuner 2	Tuner 3	Signal
1	5	9	Unicable
2	6	10	not used
3	7	11	not used
4	8	12	not used

2.2   ARM Hardware
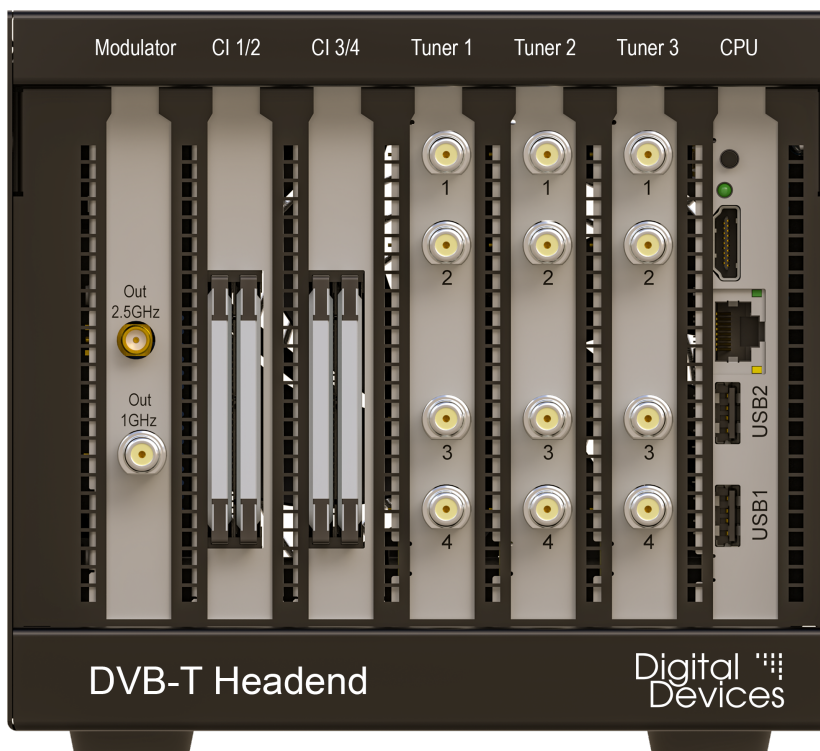
2.2.1 Output

2.2.2 Quattro LNB

Tuner 1	Tuner 2	Tuner 3	Signal
1	1	1	vertical lower
2	2	2	vertical upper
3	3	3	horizontal lower
4	4	4	horizontal upper

2.2.3 Multiswitch or Quad LNB

Tuner 1	Tuner 1	Tuner 1	Signal
1	1	1	LNB / multiswitch port
2	2	2	LNB / multiswitch port
3	3	3	LNB / multiswitch port
4	4	4	LNB / multiswitch port

2.2.4 Unicable

Tuner 1	Tuner 2	Tuner 3	Signal
1	1	1	Unicable

Tuner 1	Tuner 2	Tuner 3	Signal
2	2	2	not used
3	3	3	not used
4	4	4	not used

3   Initial Setup

This section describes the initial setup of the headend. This includes configuring the host name, the IPv4 addresses and setting a password.

For setup with DDM, the headend must be in the same LAN as the PC. Alternatively, a graphical user interface and a command line shell are also available on the console of the headend. In this case, however, an HDMI monitor, a USB keyboard and, for the GUI, a USB mouse are required.

3.1   DDM

For initial setup with DDM, the headend must be in the same LAN, i.e. there must only be switches but no routers between DDM and the headend. IPv6 must be activated on the computer with DDM.

3.1.1   Discovery

The headend sends an IPv6 multicast packet immediately after a restart. This is repeated ten times at seven-second intervals, after which only one packet is sent every 70 seconds.

The `IPv6 Discovery` button can be used to directly request a response from headends.

As soon as the DDM recognizes a new headend, it is entered in the device list and a connection is established. If the device is not configured to the default password, a pop-up window appears for entering the password.

A click on `Setup` opens the setup window of the headend.

3.1.2   Tab: Info

The fields **Label** and **Location** can be used to identify a headend if there are more than one entries on the list.

These two fields are only saved in the local DDM setup, not on the headend.

3.1.3   Tab: System

The host name should be set here. The name must begin with a lower case letter, followed by up to 15 lower case letters or numbers. Special characters are not allowed.

3.1.4   Tab: Network

The IPv4 and IPv6 addresses can be set here for LAN-1 and/or LAN-2, as well as the address of the gateway.

One or more DNS server addresses must be entered in DNS. If no local DNS server is used, several public DNS servers can also be set via the menu button.

3.1.5   Save & reboot

The configuration is saved with the (Save) button.

The headend can now be switched off and installed at its planned location.

3.2   Graphical User Interface on the Console

A HDMI monitor, a USB keyboard and a USB mouse must be connected to the headend.

The graphical user interface is started by logging in with the user name `admin`.

The host name should be set first. The name must begin with a lowercase letter, followed by up to 15 lowercase letters or numbers. Other characters, including uppercase letters, are not permitted.

Now the IPv4 and IPv6 addresses can be set for LAN-1 and/or LAN-2, as well as the address of the gateway.

Save the data with (Save) and restart the system with (Reboot).

Digital Devices Headend

Version	System Manager	Stream Manager	Stream Engine	Driver	Linux Kernel	Operating System	uptime 00:11:25
0.10.14	0.10.19	0.10.16	0.1.1.7	0.9.38_pre6	3.16.3	5.15.41-0-lts	

[Save] [Revert]   [Change Password]   [Check for Software Update]   [Software Update & Reboot] [Reboot]   [Power-Off]   [Exit GUI]

System
  Hostname: vhe

IPv4
  LAN-1: 192.168.10.190/24
  LAN-2:
  Gateway: LAN-1 ▾   192.168.10.1

IPv6
  LAN-1: static address ▾   fd00::dd:10/64
  LAN-2: Link-local only ▾

DNS
  Nameserver 1: 9.9.9.9
  Nameserver 2: 149.112.112.112
  Nameserver 3:

3.3   Command Line Interface

Login as `root`. There is no default password.

3.3.1   setup-hostname

Use the command `setup-hostname` to set the hostname. The hostname must start with a lowercase letter and contain up to 15 lowercase letters or digits. Other characters, including uppercase letters, are not allowed.

3.3.2   setup-interfaces

Use the command `setup-interfaces` to configure the IPv4 address.

The command first ask for the name of the interface.

Enter `eth0` for LAN-1 or `eth1` for LAN-2.

Enter the IPv4 address for `eth0` or `eth1`. Entering `none` removes the current address. Entering `dhcp` will be overwritten later by the administration software.

Enter the netmask and the gateway address.

Configure a second interface, or enter `done` to end the program.

3.3.3   Save to disk & Reboot

Use the command `lbu ci -d` to save all changes permanently on disk.

Use the command `reboot` to reboot the device.

4   Main Window

The (Add Device) button opens a window for entering another headend.

The (IPv6 Discovery) button starts IPv6 Discovery on the LAN.

The (DVB-S Setup) button opens the DVB-S window.

The $\boxed{\text{Check for DDM software update}}$ button checks whether a new version of DDM is available.

The main window contains one line per headend.

- State
    - white = no connection
    - green = if all fields in the Status Monitor are green
    - yellow = if all fields in the Status Monitor are yellow
    - red = if all fields in the Status Monitor are red
    - Click on this field to open/close the Status Monitor window
- ID - consecutive number

The following data is stored locally:

- Name
- Location
- Address - IPv4 or IPv6
- Port - TCP port number, default 3584

The following data is stored on the headend:

- Hostname
- SysID - MAC address
- ModID - Modulator Serial Number

Device Control contains the following fields:

- Connection status
    - white = inactive
    - yellow = connection established
    - green = connected
- $\boxed{\text{Setup}}$ - opens the setup window
- $\boxed{\text{Monitor}}$ - opens the status monitor
- Menu Button - opens the context menu
- Software Version Number

Streaming contains the following fields:

- Streaming Status
    - green = streamer is running
    - red = streamer is stopped
- $\boxed{\text{Edit}}$ starts the streaming editor with the current data
- $\boxed{\text{New}}$ starts the streaming with an empty file
- Software Version Number

Type contains the device type.

- HE = Headend
    - Modulator
        * C(24) = FSM 24
        * C(16) = FSM 16
        * C(8) = FSM 8
        * T(14) = DVB-T SDR Modulator V2
    - Tuner Cards ($\times 3$ means three cards)

∗ SX2(8) = Max SX8

Status contains:

- up DDDD HH:MM:SS = Uptime of the headend

Context menu:

- Connect / Disconnect
- Edit Parameters - Name, Location, Address, Port
- Setup - opens the Setup window
- Monitor - opens the Status Monitor window
- Change remote password
- Reboot
- Shutdown
- Clear Remote Data - Hostname, SysID, ModID
- Remove Device
- Add Device
- New Streaming File
- Open Streaming File. . .
- DVB-S Setup
- DVB-T Setup
- IPv6 Discovery
- Check for software update

The connection to the headend can be activated/deactivated in the menu with "Connect" and "Disconnect" or by clicking on the status square.

5   Monitor Window

6 Satellite Setup Window

Remote Database

DVB-S			
Sat Scans Version	**Sat Names Version**	**Last Refresh**	
2023-04-26 21:12:08	2023-02-27 21:41:54	33 seconds ago	refresh

Position	Name	Scanned	Cached	Remote	Factory
E0130	Hotbird 13			2023-02-24 09:38:16	2023-03-16 15:36:35
E0192	Astra 19.2°E	2023-03-16 15:33:02		2023-02-24 09:24:40	2023-03-16 15:33:02

Context menu of a line in the satellite database:

- rename (change the name)
- download (download the data from the SATINFO database)
- delete scanned satellite data
- delete downloaded satellite data
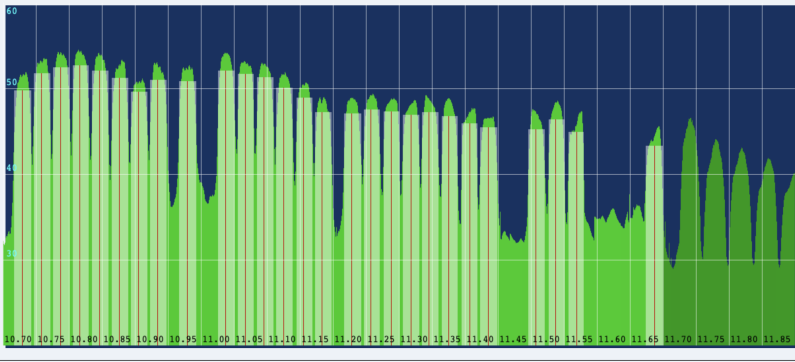- upload satellite data (not implemented)

Spectrum Scan:

Remote Database

DVB-S			
Sat Scans Version	**Sat Names Version**	**Last Refresh**	
2023-04-26 21:12:08	2023-02-27 21:41:54	44 seconds ago	refresh

Spectrum E0192

V lower | V upper | H lower | H upper | 2023-03-16 15:33:02 | Scanned | Factory | Close

Position	Name	Scanned	Cached	Remote	Factory
E0130	Hotbird 13			2023-02-24 09:38:16	2023-03-16 15:36:35
E0192	Astra 19.2°E	2023-03-16 15:33:02		2023-02-24 09:24:40	2023-03-16 15:33:02

The buttons V lower V upper H lower H upper switch between the four bands.

The buttons Scanned Cached Factory switch between the self-scanned data, the download data and the factory data.

The Close button closes the spectrum scan.

7 Setup Window

Info | System | Network | Satellites | Unicable | CAM | Notify   Reboot | Save | Save & Close | Revert | Cancel | i

The status box shows the connection status to the headend.

The tabs are explained in the following sections.

The **Unicable** tab is only shown, when Unicable has been configured on the **Satellites** tab.

The **CAM** tab is only shown, when CAM slots are present.

(Reboot) reboots the headend. The button cannot be clicked as long as changes have not yet been saved. If the button is outlined in red, then a reboot is needed to activate some changed parameters.
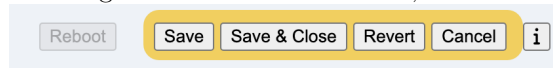
(Save) saves changes permanently, but the setup window remains open.

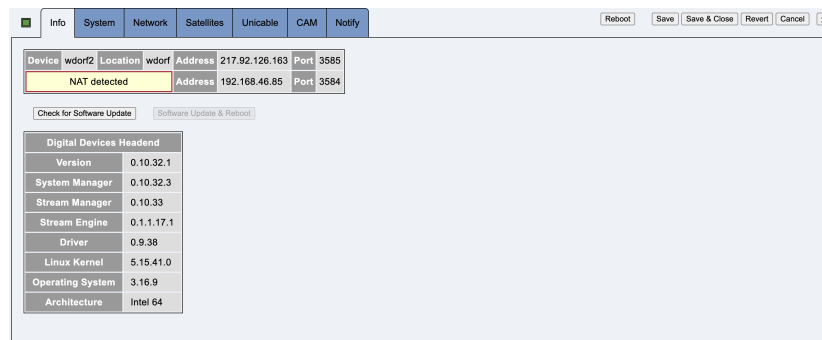(Save & Close) saves changes permanently and closes the setup window.

(Revert) cancels all changes, but the setup window remains open.

(Cancel) cancels all changes and closes the setup window.

If changes have not been saved, the buttons have a yellow background:

7.1   The Info tab

This tab contains information about the connection to the headend, as well as software and firmware version numbers.

The fields **Device** and **Location** are used to identify a headend if the DDM manages several headends. This data is only saved locally in the DDM, not on the headend.

(Check for Software Update) starts a software update check.

If a software update is possible, (Software Update & Reboot) becomes clickable and has a yellow or red background.

7.1.1   Software Update Check

A green background means that an update should be carried out.

A yellow or red background means that a software update check should be carried out as soon as possible.

7.1.2   Software Update

A green background means that the update is most likely possible without a reboot. Only individual components are restarted.

A yellow background means that the headend will be rebooted after the update.

A red background means that an update should be made as soon as possible.

7.1.3   Firmware Update

After a successful firmware update, the headend must be switched off for three seconds. To do this, the plug must be pulled out of the socket. Using the On/Off switch on the front panel does not work.

(Intel Hardware only)

7.2   The System tab

This tab contains the system configuration.

7.2.1   System

Hostname contains the name of the system. The name may consist of up to 15 lower case letters and numbers. The first character must be a letter.

SSH Remote Access allows access for the Digital Devices Service Team via the Internet. If this option is activated, the headend accepts SSH connections on port 22.

7.2.2   Timezone

The following regions exist:

- none
- Africa
- America (North, Central, South, Caribbean, West Indies)
- Asia (incl. Eastern Russia and Japan)
- Europe (incl. western Russia)
- Oceania (Australia, New Zealand, Pacific, Antarctica)

- Universal (UTC ±12 hours)

The list of time zones is specified by the operating system on the headend.

7.2.3 NTP

NTP is used to synchronize the time of the headend.

Up to four NTP servers can be entered. The fields can contain a domain or an IPv4 address.

The menu button allows a quick selection of public NTP servers.

The domain `de.pool.ntp.org` is recommended for operation in Germany.

7.3 The Network tab

This tab contains the network configuration.

7.3.1 IPv4

LAN-1 contains the IPv4 address including the subnet size, e.g. `192.168.1.1/24`.

LAN-2 contains the IPv4 address including the subnet size, e.g. `10.4.2.6/8`.

Gateway contains a combo box that can be used to select the interface on which the gateway is located, as well as the IPv4 address of the gateway.

7.3.2 IPv6

One of the following operating modes can be selected for both interfaces:

- link-local only

The headend uses only the link-local address and does not listen to router announcements. Connections outside the LAN are not possible.

- auto configuration

The headend automatically configures itself to the existing IPv6 network (SLAAC). Connections to the Internet are possible. However, incoming connections are not reliable, as the dynamic IPv6 address changes over time.

- static address

The headend is configured to a static IPv6 address. Outgoing and incoming connections to the Internet are possible if a global IPv6 address (`2000::/3`) is used. When using a private address (`fd00::/8`), the headend is not reachable from the Internet.

7.3.3 DNS

DNS contains up to three IP addresses of name servers.

The menu button allows the selection of public DNS servers.

No software update is possible without configured DNS servers.

7.3.4 Proxy

7.4 The Satellites tab

This tab configures the satellite setup.

7.4.1 Mode: LNB Direct Connect

This mode is selected if a Quattro LNB is connected to all tuner cards.

7.4.2 Mode: Multiswitch

This mode is selected if a multiswitch or quad LNB is connected to all tuner cards.

The headend uses DiSEqC for selection.

7.4.3 Mode: Unicable

This mode is selected if a Unicable system is connected to all tuner cards.

7.4.4 Mode: Test Card

This mode sends a test image on all modulator channels.

7.4.5   Satellite Selection

7.4.5.1   LNB Direct Connect

The connected satellite is configured here for the tuner cards.

Only satellites whose data is available in the local database are displayed.

Unknown satellites must first be scanned using **SI Scan**.

7.4.5.2   Multiswitch and Unicable

The connected satellite is selected here for positions A, B, C and D.

Only satellites whose data is available in the local database are displayed.

Unknown satellites must first be scanned using **SI Scan**.

7.4.6   Scan

The scan mode is configured and started here.

Position selects the satellite position (Multiswitch and Unicable only). If the name of the satellite is known, it is displayed in the field behind it.

Tuner Card selects the tuner card on which the scan is to be performed.

Button (Start) starts a complete scan of a satellite. First a spectrum scan, to locate transponders, then a SI scan to find all satellite data. At the end of a successful scan, the data can be saved in the local database.

Button (Input 1-4) starts a spectrum scan on all four inputs.

Buttons (Input 1) (Input 2) (Input 3) (Input 4) start a spectrum scan on the named input.

Note: Streaming is stopped during scanning.

7.5   The Unicable tab

Vendor [None ▾] Model [Please select ▾] Protocol [   ]

Tuner Card #1

Slot #1 Frequency PIN	Slot #2 Frequency PIN	Slot #3 Frequency PIN	Slot #4 Frequency PIN	Slot #5 Frequency PIN	Slot #6 Frequency PIN	Slot #7 Frequency PIN	Slot #8 Frequency PIN
Slot #9 Frequency PIN	Slot #10 Frequency PIN	Slot #11 Frequency PIN	Slot #12 Frequency PIN	Slot #13 Frequency PIN	Slot #14 Frequency PIN	Slot #15 Frequency PIN	Slot #16 Frequency PIN
Slot #17 Frequency PIN	Slot #18 Frequency PIN	Slot #19 Frequency PIN	Slot #20 Frequency PIN	Slot #21 Frequency PIN	Slot #22 Frequency PIN	Slot #23 Frequency PIN	Slot #24 Frequency PIN
Slot #25 Frequency PIN	Slot #26 Frequency PIN	Slot #27 Frequency PIN	Slot #28 Frequency PIN	Slot #29 Frequency PIN	Slot #30 Frequency PIN	Slot #31 Frequency PIN	Slot #32 Frequency PIN

Tuner Card #2

Slot #1 Frequency PIN	Slot #2 Frequency PIN	Slot #3 Frequency PIN	Slot #4 Frequency PIN	Slot #5 Frequency PIN	Slot #6 Frequency PIN	Slot #7 Frequency PIN	Slot #8 Frequency PIN
Slot #9 Frequency PIN	Slot #10 Frequency PIN	Slot #11 Frequency PIN	Slot #12 Frequency PIN	Slot #13 Frequency PIN	Slot #14 Frequency PIN	Slot #15 Frequency PIN	Slot #16 Frequency PIN
Slot #17 Frequency PIN	Slot #18 Frequency PIN	Slot #19 Frequency PIN	Slot #20 Frequency PIN	Slot #21 Frequency PIN	Slot #22 Frequency PIN	Slot #23 Frequency PIN	Slot #24 Frequency PIN
Slot #25 Frequency PIN	Slot #26 Frequency PIN	Slot #27 Frequency PIN	Slot #28 Frequency PIN	Slot #29 Frequency PIN	Slot #30 Frequency PIN	Slot #31 Frequency PIN	Slot #32 Frequency PIN

Tuner Card #3

Slot #1 Frequency PIN	Slot #2 Frequency PIN	Slot #3 Frequency PIN	Slot #4 Frequency PIN	Slot #5 Frequency PIN	Slot #6 Frequency PIN	Slot #7 Frequency PIN	Slot #8 Frequency PIN
Slot #9 Frequency PIN	Slot #10 Frequency PIN	Slot #11 Frequency PIN	Slot #12 Frequency PIN	Slot #13 Frequency PIN	Slot #14 Frequency PIN	Slot #15 Frequency PIN	Slot #16 Frequency PIN
Slot #17 Frequency PIN	Slot #18 Frequency PIN	Slot #19 Frequency PIN	Slot #20 Frequency PIN	Slot #21 Frequency PIN	Slot #22 Frequency PIN	Slot #23 Frequency PIN	Slot #24 Frequency PIN
Slot #25 Frequency PIN	Slot #26 Frequency PIN	Slot #27 Frequency PIN	Slot #28 Frequency PIN	Slot #29 Frequency PIN	Slot #30 Frequency PIN	Slot #31 Frequency PIN	Slot #32 Frequency PIN

This tab contains the Unicable configuration and is only available, if Unicable is activated on the Satellite tab.

Vendor chooses the vendor of the unicable system, **Model** the device from that vendor. **Protocol** displays the protocol of the device.

- **EN 50494** Unicable version 1, max 8 slots
- **EN 50607** Unicable version 2 (JESS), max 32 slots

You can choose the slot numbers for each tuner card.

Note: Unicable version 1 cannot feed all 24 tuners.

If a slot is activated on a tuner card, the field disappears from the view of the other tuner cards.

If a slot is activated on a tuner card and the Unicable system works with PINs, the PIN can be configured. Values from 0 to 255 are possible. An empty field deactivates the PIN.

In "Custom" mode, the frequency can be set for an activated slot. Values from 950 to 2150 are possible (MHz). The value 0 or an empty field indicates a slot that cannot be used.

7.6   The CAM tab

CAM 1	Connect	Close	closed
CAM 2	Connect	Close	closed
CAM 3	Connect	Close	closed
CAM 4	Connect	Close	closed

This tab is only displayed if CAM slots are present.

[Connect] establishes a connection to the corresponding CAM.

[Close] closes the connection to the corresponding CAM.

7.7   The Notify tab

This tab contains options to notify admins when certain events are triggered on the headend.

7.7.1   Messages

There are five categories of messages:

- reboot: Triggered when the Managemange Agent is started for the first time after a reboot
- start message: Is triggered when the Management Agent is started
- configuration changed: Triggered when the configuration changes
- streaming setup changed: Is triggered when a new channel setup has been saved
- test: Test event, is only triggered manually

Each category has a priority:

- off
- very low
- low
- normal
- high
- very high

The button send test messages to all enabled services sends the test event to all active services.

7.7.2   Mail

The sending of mails is configured here.

SMTP Server Address contains the IP address of the local SMTP server.

Server Port is the port number for delivering the mail. The default is 587.

Username and **Password** contain information if authentication is required.

From contains the sender address. The default is the host name with the addition "(Digital Devices Headend)".

To contains the list of destination addresses, separated by a comma or space.
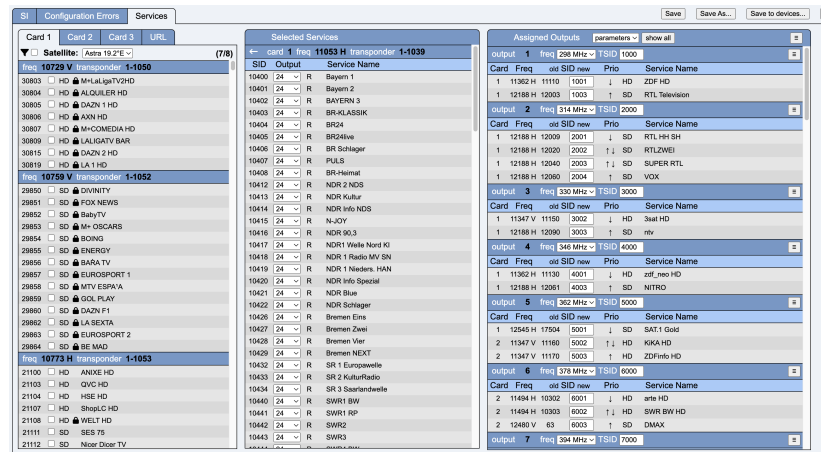
7.7.3   Pushover

Sending via the https://pushover.net service is configured here.

Token contains the API token/key of the application.

Target contains the group key or the user key of the target.

8   Streaming Editor Window

The Stream Editor is used to configure the DVB services.

It can be started in several ways.

- selecting **New** in the **File** Menu

- (New) in the device overview
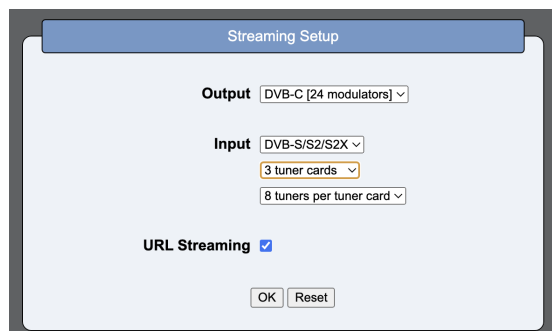
A dialog box appears where you can select the number of DVB-S tuner cards and the number of DVB-C/-T modulators.

- (Edit) in the device overview

The current status is read from the headend. DDM must be connected to the headend and the streamer must be active on the headend.

8.1   File > New

The number of DVB-S tuner cards and the number of DVB-C/-T modulators are configured in a dialog.

8.2 The SI tab

This tab contains parameters for NIT and TOT.

8.2.1 NIT

Network ID is a value from 1 to 65535. The values from 1 to 65279 are officially assigned. The values from 65280 to 65535 are reserved for private use.

Network Name contains the name of the network. Only US-ASCII characters should be used.

8.2.2 TOT

Country is the country code. It consists of exactly three uppercase letters. The default value is "ZZZ".

Region is a region ID. The value range is from 0 to 63. The default value is "0".

Timezone is the internal name of the time zone. The default value is "CET".

8.3 The Configuration Errors tab

Errors that occurred when reading from the headend are displayed here.

If an error occurs, this tab is initially shown.

If only warnings occur, the Services tab is initially shown.

8.4 The Services tab

This tab is used for service parameter configuration.

8.4.1 Input

This column is used to select the required services.

The transponders are listed sorted by frequency. In addition to frequency and polarization, the Network ID and the Transponder Stream ID are also displayed.

The services of a transponder are sorted by Service ID (first column). The checkbox selects a service, which is then immediately displayed in the next column (Selected Services).

The white right arrow in the transponder can be used to scroll directly to the corresponding transponder entry in the middle column.

Card 1	Card 2	Card 3		

▼ ☐ **Satellite:** 19.2° East ⌄ (7/8)

freq	**10729 V**	transponder	**1-1050**	
30803	☐ HD	🔒 M+ LaLiga 1 HD		
30804	☐ HD	🔒 ALQUILER HD		
30805	☐ HD	🔒 DAZN 1 HD		
30806	☐ HD	🔒 AXN HD		
30807	☐ HD	🔒 M+COMEDIA HD		
30809	☐ HD	🔒 LALIGATV BAR		
30815	☐ HD	🔒 DAZN 2 HD		
30819	☐ HD	🔒 LA 1 HD		

freq	**10744 H**	transponder	**1-1051**	→
28721	☐ SD	tagesschau24		
28722	☑ SD	ONE		
28724	☑ SD	arte		
28725	☑ SD	phoenix		
28726	☐ SD	Test-R		

freq	**10759 V**	transponder	**1-1052**	
29850	☐ SD	🔒 DIVINITY		
29851	☐ SD	🔒 FOX NEWS		
29852	☐ SD	🔒 BabyTV		
29853	☐ SD	🔒 M+ VERY BRITISH		
29854	☐ SD	🔒 BOING		
29855	☐ SD	🔒 ENERGY		
29856	☐ SD	🔒 BAŘA TV		
29857	☐ SD	🔒 EUROSPORT 1		
29858	☐ SD	🔒 MTV ESPA¹A		
29859	☐ SD	🔒 GOL		
29860	☐ SD	🔒 DAZN F1		
29862	☐ SD	🔒 LA SEXTA		
29863	☐ SD	🔒 EUROSPORT 2		
29864	☐ SD	🔒 BE MAD		

freq	**10773 H**	transponder	**1-1053**	
21100	☐ HD	ANIXE HD		

When the filter is activated (checkbox next to the filter symbol), the filter options appear.

Card 1	Card 2	Card 3		

▼ ☑ **Satellite:** 19.2° East ⌄ (7/8)

Service Type: television and radio services ⌄

Access: all ⌄

Provider: all ⌄

Search: 🔍

(1102/1211) Reset Filter

Service Type allows filtering according to specific services.

Access has the following selection:

- Free to All

- Encrypted

With **Provider** you can search for all services of a specific provider. Since there are unfortunately typing errors and different views of capitalization, it is possible that a provider is represented with several similar entries.

Search is a free search mask where you can search by name, provider, service IDs and frequencies.

8.4.2   Selected Services

This column shows the services selected in the left-hand column, sorted by tuner card and transponder frequency.

Output selects one of the output channels / modulators.

CAM selects one of the four available CAMs for decoding. A CAM can only be active on a single transponder. However, the entire transponder is not decrypted, but the encrypted services must be explicitly marked for decryption using the checkbox.

8.4.3   Assigned Outputs

This column is sorted according to the output modulators.

The global menu button offers the following options:

show all All outputs are displayed, even if they have no service
reset all SID Reset all SIDs
reset all parameters Reset all parameters

Assigned Outputs						≡

output 1 freq 306 MHz ∨ symrate 6900 mod QAM 256 ∨ TSID 1000   ≡

Card	Freq	old SID new		Prio	Service Name	20.0 %	10.0 Mbps
2	10994 H	1	1001	↓	HD	SES UHD Demo Channel	7.0 Mbps
2	10744 H	28725	1002	↑	SD	phoenix	3.0 Mbps

output 2 freq 314 MHz ∨ symrate 6900 mod QAM 256 ∨ TSID 2000   ≡

Card	Freq	old SID new		Prio	Service Name	6.0 %	3.0 Mbps
2	10744 H	28722	2001		SD	ONE	3.0 Mbps

output 3 freq 322 MHz ∨ symrate 6900 mod QAM 256 ∨ TSID 3000   ≡

Card	Freq	old SID new		Prio	Service Name	46.0 %	23.0 Mbps
2	10744 H	28724	3001	↓	SD	arte	3.0 Mbps
2	11837 H	28110	3002	↑↓	SD	BR Fernsehen Nord	3.0 Mbps
2	11837 H	28107	3003	↑↓	SD	BR Fernsehen Süd	3.0 Mbps
2	11494 H	10303	3004	↑↓	HD	SWR BW HD	7.0 Mbps
2	11494 H	10304	3005	↑	HD	SWR RP HD	7.0 Mbps

output 4 freq 330 MHz ∨ symrate 6900 mod QAM 256 ∨ TSID 4000   ≡

Card	Freq	old SID new		Prio	Service Name	28.0 %	14.0 Mbps
2	11494 H	10301	4001	↓	HD	Das Erste HD	7.0 Mbps
2	11494 H	10302	4002	↑	HD	arte HD	7.0 Mbps

output 5 freq 338 MHz ∨ symrate 6900 mod QAM 256 ∨ TSID 5000   ≡

Card	Freq	old SID new		Prio	Service Name	34.0 %	17.0 Mbps
2	11582 H	10326	5001	↓	HD	BR Fernsehen Nord HD	7.0 Mbps
2	11582 H	10331	5002	↑↓	HD	phoenix HD	7.0 Mbps
3	11954 H	28008	5003	↑	SD	KiKA	3.0 Mbps

output 6 freq 346 MHz ∨ symrate 6900 mod QAM 256 ∨ TSID 6000   ≡

Card	Freq	old SID new		Prio	Service Name	18.6 %	9.3 Mbps
2	11954 H	28007	6001	↓	SD	3sat	3.0 Mbps
2	11954 H	28013	6002	↑↓	R	Dlf	0.3 Mbps
2	11954 H	28014	6003	↑↓	SD	zdf_neo	3.0 Mbps
3	11954 H	28006	6004	↑	SD	ZDF	3.0 Mbps

output 7 freq 354 MHz ∨ symrate 6900 mod QAM 256 ∨ TSID 7000   ≡

8.4.3.1   Output Header

freq selects the DVB-C frequency of the modulator. This frequency can only be active on one modulator.

symrate is the symbol rate. Default is 6900.

mod is the selection of the modulation method. Default is QAM 256.

tsid is the transport stream ID of the modulator.

The menu button in **Output** offers the following options:

(Output n)

reset SID reset the SIDs on this output

(All Outputs)

reset SID reset the SIDs on all outputs
set frequencies set the frequencies on neighboring channels, starting from this output

set symrate set all symbol rates to the value of this output
set modulation set all modulation methods to the value of this output
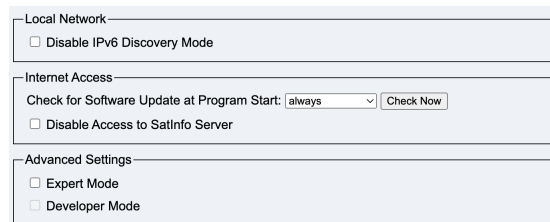
8.4.3.2 Service

Card contains the ID (1, 2 or 3) of the tuner card

Freq contains the input transponder frequency and polarization

old SID new contains the original SID and a field for entering an output SID. The default is the input SID.

Prio is a priorization of the services. If the bandwidth on the output becomes scarce, low-priority services are deactivated. The list can be sorted manually using the arrows.

9 Preferences Window

10 Service

https://digitaldevices.de/en/contact-2/