Operating instructions

TECHNINET BS7

Digital 16-way compact head-end station - DVB-S(2) / DVB-C

TechniSat

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2 About these instructions

These operating instructions are intended for professionals and describe how to connect and commission the TECHNINET BS7.

Read these instructions completely before using the appliance for the first time.

► For more information, please visit our website www.technisat.de.

⇒ The current operating instructions are available for download on the TECHNINET BS7 product page.

3 Intended use

The TECHNINET BS7 digital 16-channel head-end station converts 16 DVB-S(S2) signals into 16 QAM-modulated DVB-C output signals. It has 4 satellite IF inputs and an integrated multi-switch. A transport stream processor processes PSI/SI data, filters and modifies services, generates NIT (Net- work Information Table) and LCN (Logical Channel Number), inserts MPEG zero packets to adapt to the output data rate (stuffing) and regenerates the modified time references (time restamping) to avoid PCR-JiGer (Programme Clock Reference).

All 16 DVB-C output channels can be flexibly adjusted and switched on and off. The TECHNINET BS7 offers a user-friendly user interface for programming and allows access either locally on site or via remote access using a TCP/IP connection via an existing network infrastructure.

4 Explanation of symbols

	General warning symbol
!	Risk of material damage or malfunction

4.1 More symbols

Symbol	Meaning
►	Action plan
1, 2, 3...n	Action steps with fixed sequence
⇒	Result of an action plan
✓	Condition for the execution of an action step
-	Enumeration/list entry
Update, OK	Buttons or keys/connections on the device

5 Safety instructions

For your own protection, you should read the safety instructions carefully before installation.

All assembly and installation work must be carried out by qualified personnel. Qualified personnel are persons who, due to their training and experience, have sufficient knowledge in the field of BK system installation and are authorised to carry out such work by the relevant state authorities.

The installation personnel must be familiar with the relevant occupational safety and accident prevention regulations, guidelines and generally recognised technical rules (e.g. VDE regulations, DIN standards) to the extent that they are able to assess the safe working condition. Compliance with the relevant local assembly and installation regulations and guidelines is a prerequisite for the installation of satellite reception equipment.

The manufacturer accepts no liability for damage caused by improper handling, non-compliance with safety precautions or the use of non-original or unapproved system accessories.

- ► Do not install the appliance in the roof insulation. Also ensure that the device and power supply unit are surrounded by air. Select the installation location of the TECHNINET BS7 so that the ambient temperature does not exceed the maximum value of 45° C. Failure to do so may result in malfunctions and component failure.
- ► Install the system in a de-energised state.
- ► The mains plug must be easily accessible and easy to pull out/plug in.
- ► The antenna system must be earthed.
- ► The antenna system must be protected against lightning strikes in accordance with the regulations.
- ► The relevant European standards and VDE regulations for ensuring electrical safety must be observed.
- ► National authorisation regulations for broadcasting reception systems must be observed.
- ► Protect the device from moisture, liquids, dripping and splashing water.
- ► Install the appliance on a level, flame-retardant surface.
- ► Do not operate the appliance in damp rooms.
- ► Only use the appliance in temperate, non-tropical climates.
- ► Do not place any objects filled with liquids on the appliance.
- ► Only clean the surface.
- ► Use a dry cloth for cleaning.
- ► Comply with the permissible nominal temperature range; see "Technical data" on page 26
- ► Do not expose the appliance to direct sunlight.
- ► Do not set up the appliance near heat sources, e.g. heating.

The manufacturer is not liable for accidents caused by the user when the device has been opened or modified. Unauthorised opening and repair attempts will invalidate the warranty.

- ► Do not open, modify or damage the device or its components.
- ► Repairs to the device may only be carried out by the TechniSat service centre.
- ► Check the appliance for any damage before each use.
- ► Store and operate the appliance out of the reach of children.
- ► Do not change, remove or make unrecognisable any labels and markings affixed by the manufacturer.
- ► In the event of an accident, seek medical assistance immediately.

In the following cases, you should disconnect the appliance from the mains and ask a specialist for help:

- ► The device has been exposed to moisture or liquid has penetrated.
- ► in the event of malfunctions.
- ► in the event of severe external damage.

6 Controls and connections

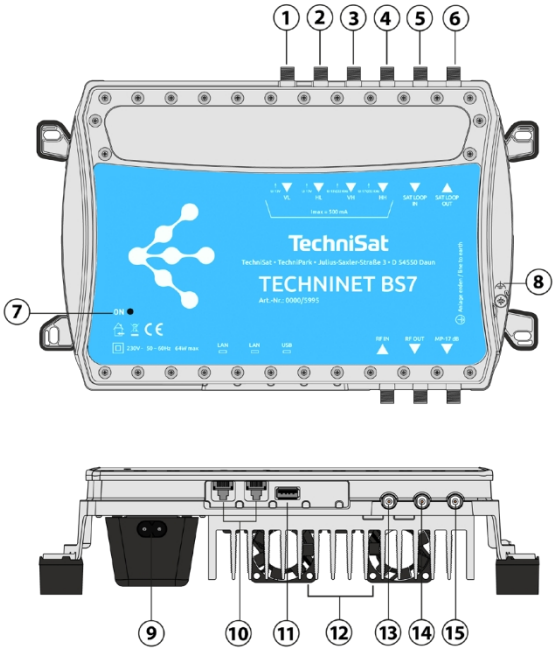


Fig. 6.1-1: Operating elements and connections

No	Name	Function
①	F socket **VL**	SAT IF input, vertical low band, 13V for LNB supply.
②	F socket **HL**	SAT IF input, horizontal low band, 18V for LNB supply.
③	F socket **VH**	SAT IF input, vertical high band, 13V/22kHz for LNB supply.
④	F socket **HH**	SAT IF input, horizontal high band, 18V/22kHz for LNB supply.
⑤	F socket **SAT LOOP IN**	Sat Loop input of a Master BS7 unit
⑥	F socket **SAT LOOP OUT**	Sat Loop output for slave BS7 unit
⑦	**Operating LED**	**Display** / **Meaning** LED (orange) – Poor/weak input signal, margin too small, input error detected, output power >85%, QAM channel overloaded. LED (green) – Operation, input/output signal OK. LED (red) – No input signal/overload of the input signal.
⑧	**Earthing screw**	Connection for potential equalisation.
⑨	**Power supply**	230 V, 50/60 Hz
⑩	**LAN** sockets	Network connection, 2 x RJ-45, 10/100 BaseT.
⑪	USB **socket**	For optional USB WLAN adapter 0010/5995
⑫	**LüŁer**	Do not cover the fan for optimum cooling of the BS7.
⑬	**RF-IN**	RF input of a master BS7
⑭	**RF-OUT**	RF output
⑮	**Test output**	Test output (-17dB)

7 Assembly

✓ "Safety instructions" on page 3 have been read and understood.

► Mount the TECHNINET BS7 horizontally on the mounting surface.

► Install the system with the required clearance as shown in Fig. 7.1-2

► Use 4 supplied spacers and 4X screws 4x65mm (not included) for fastening.

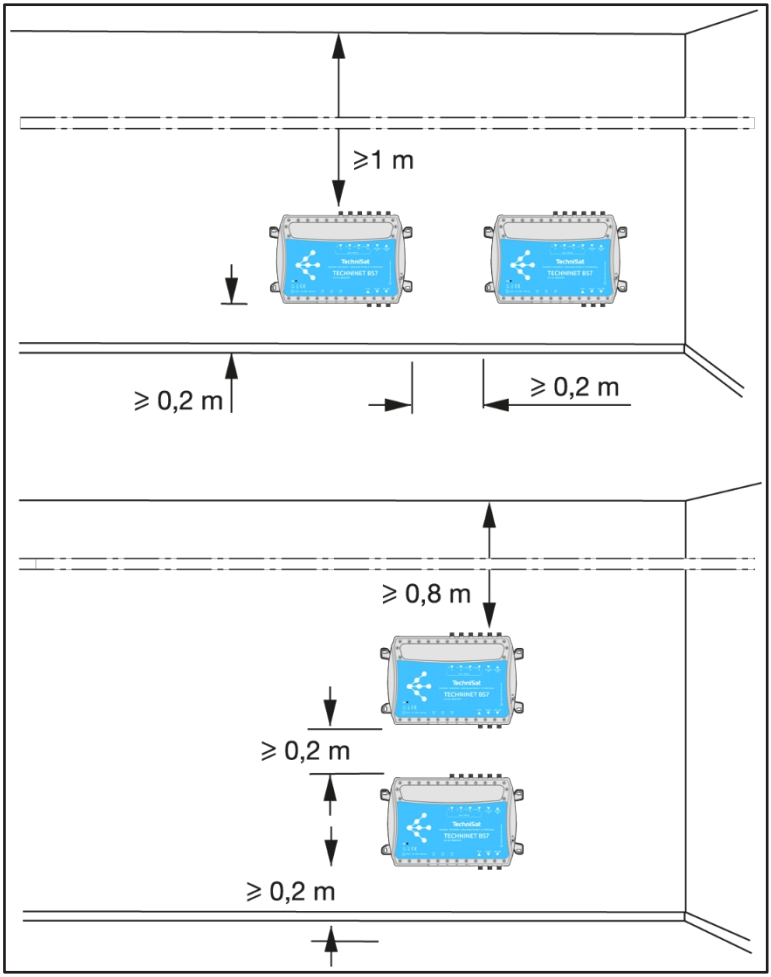


Fig. 7.1-2: Clearance and fastening required for ventilation

IMPORTANT!

Mount the BS7 as close to the floor as possible.

If it is not possible to mount the BS 7 next to each other, it is permissible to mount them on top of each other. Observe the recommended minimum distances as shown below.

Use the supplied spacers and appropriate screws** for wall mounting.

To avoid interference, use 75 Ω DC decoupled F terminating resistors (not supplied) on all unused connections.

8 V ewiring

1. Connect an equipotential bonding conductor (Cu,≥ 4 mm²) to the earthing screw; see ⑧ in Fig. 6.1-1 on page 5.
2. Connect the computer to the RJ45 socket using an Ethernet cable, if necessary via a network.
3. Connect RF signal lines for satellite IF and output; see Fig. 6.1-1 on page 5.
4. It is recommended to terminate unused RF inputs/outputs with 75 Ω DC decoupled F terminating resistors, e.g. with the 0002/3077 from TechniSat.
5. Ensure that the supply voltage corresponds to the specification on the TECHNINET BS7 and connect the head-end station to the power supply.

   ⇒ The head-end station starts, **the operating** LEDs indicate the operating status.

Display	Meaning
LED 🟠	Poor/weak input signal, margin too small, input error detected, output power >85%, QAM channel overloaded.
LED 🟢	Operation, input/output signal OK.
LED 🔴	No input signal/overload of the input signal.

- If 2 BS7 units are connected as a master-slave unit, connect the SAT LOOP OUT of the master unit to the SAT LOOP IN of the slave unit. The RF OUT output of the master unit is then connected to the RF IN of the slave unit.
- To be able to configure the master/slave unit together, connect both units with a LAN cable via one of the LAN sockets. Please also refer to chapter "9.13 Wizzard" on page 23.

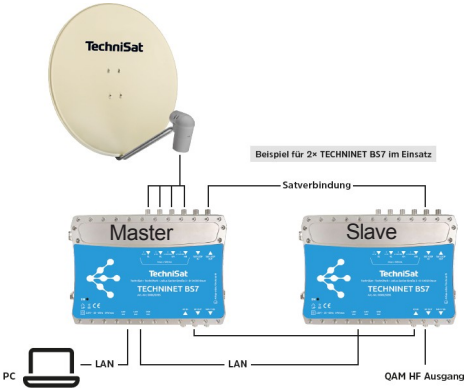


Fig. 8.1-3: Master-slave cabling

9 Configuration and operation

The device is operated via the miGels web browser graphical user interface.

✓ Computer is connected to the **LAN socket** ⑩ of the TECHNINET BS7 with a LAN cable.

✓ The 'link' LED on the **LAN socket** ⑩ lights up green.

► Configure the IP address of the PC/laptop so that the PC/laptop and the BS7 are in the same subnet. **Note: The network data of the BS7 can be found on the side label (IP address, MAC address).** See picture of the side label on the next page.

9.1 Example of direct connection under Microsoł Windows®

Open the Network and Sharing Centre under Control Panel, see Fig. 9.1-1.

Fig. 9.1-1: Network and eigabecenter

1. Click on **LAN connection** and the LAN connection status opens, Fig. 9.1-2.
2. Click on **Properties**

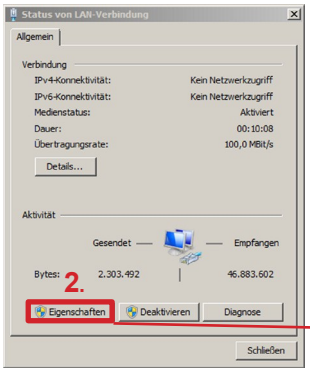


Fig. 9.1-2: Status of n LAN connections

3. Select the TCP/IPv4 element
4. Click on **properties**

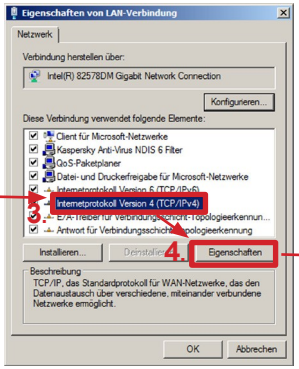


Fig. 9.1-3: Properties of LAN connections

5. Enter the IP address and the subnet mask of the BS7 (on the side label), except for the last digit range*.

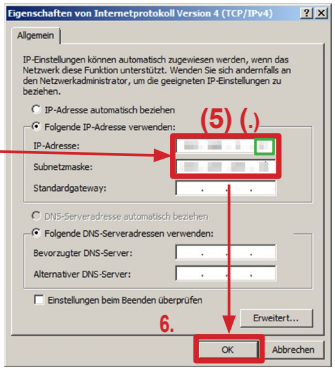


Fig. 9.1-4: Proprietary properties of Internet Protocol Version 4 (TCP/IPv4) (example image)

*** Attention!**

The last digit range of the IP address must be individually (1 - 255) and must not match the number range of the BS7. This is also referred to as the host address (area marked in green) of a device in the network.

6. Confirm the **IP address** and **subnet mask** entries with **OK**, Fig. 9.1-4.
7. To call up the BS7 user interface, open a web browser on your PC/laptop (Mozilla Firefox or Google Chrome recommended).

► Access the system in the web browser with **hUps://<IP address of the BS7 >**

⇒ The login **window** appears in the web browser.

Lateral label of the BS7

► Enter the user name **web** and the password **admin.** Click on **Log in**. **Note:**

- For a LAN connection via an Internet router, the IP address assigned to the BS7 by the DHCP server must be entered in the browser as the IP address of the BS7. This can be viewed via the router's user interface. For more information, please refer to the operating instructions for the router used.

9.1.1 Connection via WLAN

To connect the BS7 via WLAN, you need the optional WLAN adapter for the BS7 (item no.: 0010/5995), which you connect to the USB port of the BS7.

► After an automatic initialisation process, you can connect to t h e BS7 WLAN hotspot, which should now appear in the WLAN search of your PC/laptop.

► The SSID of the BS7 has the following format: **Techninet_mng_XXYYZZ**, where XXYYZZ corresponds to the end digits of the MAC address of the BS7. A WLAN password is not required.

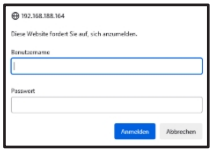
Note: The network data of the BS7 can be found on the side label (IP address, MAC address).

► To call up the BS7 user interface, open a web browser on the PC/laptop (Mozilla Firefox or Google Chrome recommended).

► Then enter the URL **hUps://<IP address of the BS7>** .

► Alternatively, the URL **hUp://config.local** also works.

⇒ The login **window** appears in the web browser.



► Enter the user name **web** and the password **admin.** Click on **Log in**.

Note for the master/slave configuration.

- To be able to configure the master/slave unit together, connect both units with a LAN cable via one of the LAN sockets.
- The connection via LAN or WLAN with a PC/laptop is made exclusively via the master unit. Both units are controlled and configured via a common user interface.

9.2 First-time operation

The TECHNINET BS7 is already pre-programmed at the factory. The channel configuration can be found in the list **TECHNINET BS7 pre-programming Astra 19.2°E**.

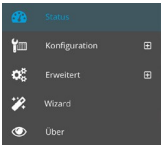
If the BS7 is operated on an Astra 19.2°E satellite system, the following should be displayed on the RF output can already be measured (if you measure directly on the BS7, use the test output).

Any preset programmes and channel assignments can be changed, which is described in the following chapters.

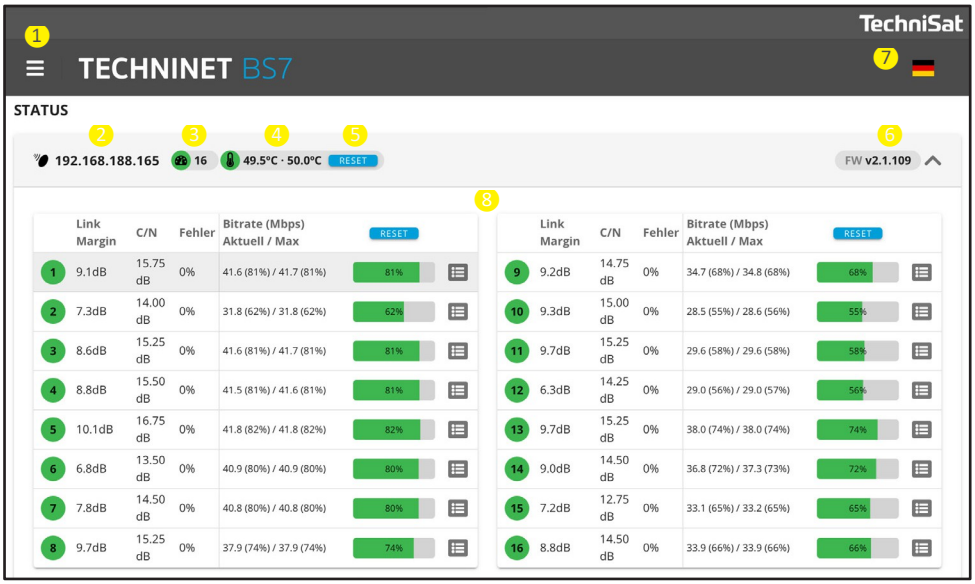
► After logging in for the first time, read the licence information and accept it by selecting the checkbox. Then click on **Save**.

9.3 Main page Status

► After saving the licence agreement, click on the hamburger symbol and select **> Status** in the drop-down menu that appears.



► The BS7 overview opens.

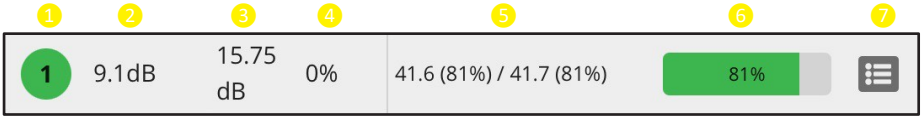


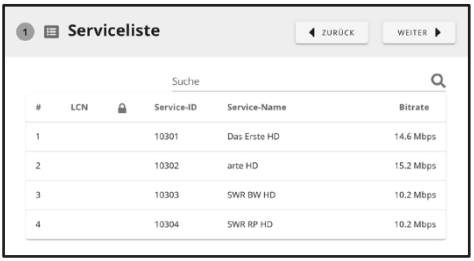
①	**Hamburger symbol**	Opens the drop-down menu with all BS7 functions.
②	**IP address**	Current IP address of the BS7.
③	**Output channels**	Active configured output channels.
④	**Temperature**	Current and maximum temperature reached by the BS7.
⑤	**Reset**	Reset the maximum temperature reached.
⑥	**Firmware**	Currently installed BS7 firmware.
⑦	**Language selection**	Language selection of BS7 (German, English, Spanish).
⑧	**List of output channels**	Shows all active output channels. The list can be expanded or collapsed by clicking on the upper status bar. The status of a channel can be read via the colour of the "LED":

LED (orange)	Poor/weak input signal, margin too small, input error detected, output power >85%, QAM channel overloaded.
LED (green)	Operation, input/output signal OK.
LED (red)	No input signal/overload of the input signal.

9.3.1 Channel overview

► Overview of a channel.

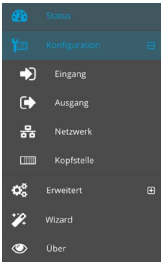


①	**LED" channel**	LED 🟠 — Poor/weak input signal, margin too small, input error detected, output power >85%, QAM channel overloaded. LED 🟢 — Operation, input/output signal OK. LED 🔴 — No input signal/overload of the input signal.
②	**Link Margin**	The link margin (LKM) is displayed in dB. It describes the difference between the actual signal quality and the minimum signal quality required for error-free processing of the signal.
③	**C/N**	"Carrier-to-noise ratio" (CNR) This is a measure of the quality of a signal that describes how strong the useful signal (carrier) is in comparison to the noise.
④	**Error**	Current error rate of the signal.
⑤	**Bit rate**	Current and maximum bit rate of the signal in Mbps and %. The maximum possible bit rate is 50.9 Mbps (100%).
⑥	**Bit rate**	Visualisation of the current bit rate in %.
⑦	**Service list**	Click to display the service list of the current channel.  The **BACK** & **NEXT** buttons can be used to quickly switch through the service lists of all 16 channels. All channels that are transmitted per channel are listed here. Click on the OK **buGon** at the bottom of the list to close the list view.

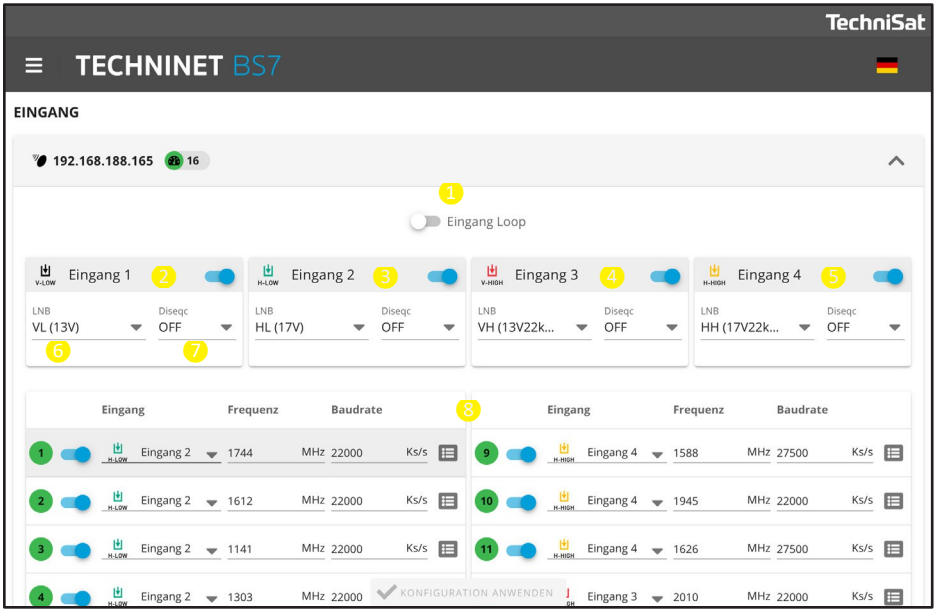
9.4 Configuration of satellite inputs

The 4 SAT IF inputs of the BS7 can be configured as required and are intended for use with standard QuaGro and QuaGro switch LNBs with an oscillator frequency (LOF) of 9,750 MHz (low) and 10,600 MHz (high). In the factory setting, the inputs are configured as printed on the front of the BS7 and do not need to be adjusted if connected correctly. To configure the inputs nevertheless, proceed as follows:

► Click on the hamburger symbol and **select > Configuration > Input** in the drop-down menu that appears. The configuration menu can be expanded and collapsed by clicking on the +/- box.



► The input configuration of the BS7 opens.



No	Name	Function
①	**Input loop**	If the BS7 is operated as a slave unit in a master/slave network, this option must be activated. The satellite IF inputs are switched off and the BS7 receives the satellite signals via the SAT LOOP IN input. This must therefore be connected to the master unit (SAT LOOP OUT).
②	**Sat input 1**	Vertical/Low. Can be activated/deactivated using the switch.
③	**Sat input 2**	Horizontal/Low. Can be activated/deactivated using the switch.

No	Name	Function
④	**Sat input 3**	Vertical/High/22kHz. Can be activated/deactivated via the switch.
⑤	**Sat input 4**	Horizontal/High/22kHz Can be activated/deactivated via the switch.
⑥	**LNB selection**	Example for input 1: Polarisation+ Band+ 22kHz selectable
⑦	**Diseqc switch**	OFF, A, B, C, D
⑧	**Transponder list**	Assignment of the satellite transponders to the output channels.

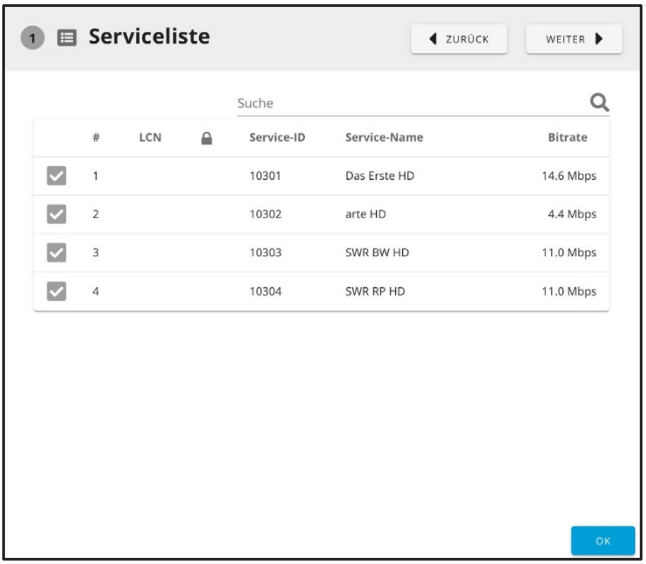
► 16 satellite transponders can be configured, which are listed in the transponder list. The transponder can always be activated or deactivated using the switch next to the transponder number. A deactivated transponder cannot be configured and is greyed out.

► Click on **Input** to assign an input signal to the transponder. Only active inputs can be assigned here.

► Click on **Frequency** to enter the transponder frequency or the IF frequency of the transponder.

► Click on **Baud rate** to enter the baud rate of the transponder in Ks/s.

► Click on the **service list symbol** to display the channels received:



► The **BACK** & **NEXT** buttons can be used to quickly switch through the service lists of all 16 transponders. All channels that are received per transponder are listed here. Click on the OK **buGon** at the bottom of the list to close the list view.

► Click on **APPLY CONFIGURATION** at the bottom of the list to apply changed settings.

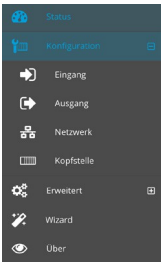
9.5 DVB-C output configuration

The 16 input channels or satellite transponders can be assigned to any of the 16 DVB-C output channels. On the user interface of the BS7, the input channels correspond to the output channels. This means that the input transponder in position 1 (channel 1) is also assigned to output channel 1 (in position 1).

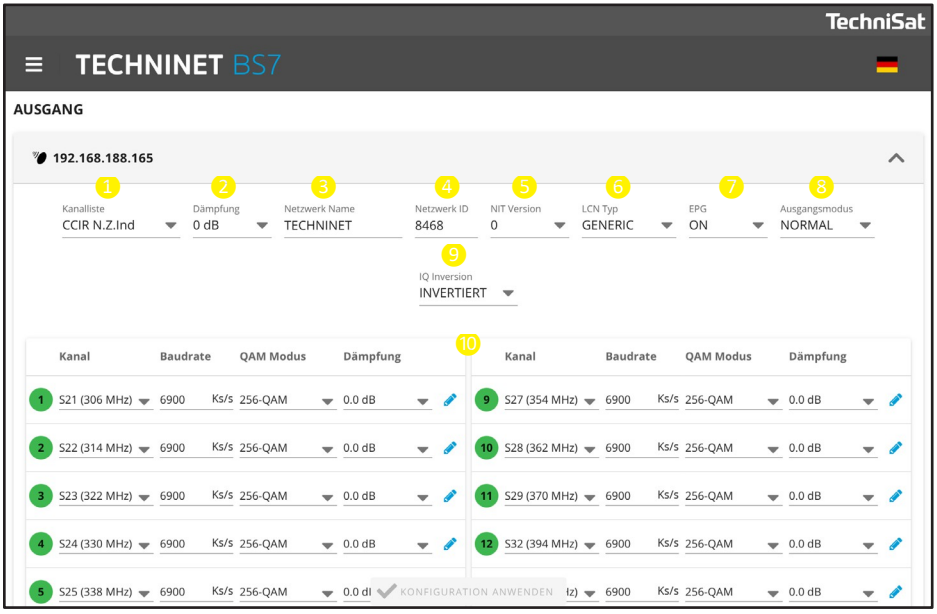
To configure the output assignment, proceed as follows:

Attention: Changes to the basic configuration in this menu require knowledge of the DVB-C standard. Incorrect settings can result in connected DVB-C receivers no longer being able to receive channels or reception being restricted.

► Click on the hamburger symbol and **select > Configuration > Output** from the drop-down menu that appears. The configuration menu can be expanded and collapsed by clicking on the +/- box.



► The initial configuration of the BS7 opens.



► Settings 1 - 9 are global output settings that apply to all output channels.

No	Name	Function
①	**Channel list / Channel grid**	Selection of the channel assignment used. This selection also defines the channel grid. For Europe, the CCIR N.Z.ind list should remain selected (neighbouring channel suitable).

No	Name	Function
②	**Damping**	Global output attenuation (can be changed separately for each output channel), 0 - 15 dB.
③	**Network name**	Describes the physical network in a form that can be read by the end customer. Whether the network name is displayed by the end devices depends on the individual device.
④	**Network ID**	Each network is assigned its own cable network ID, which acts as a unique identifier for networks. If there are more modulators in the network, they must have the same **network ID**.
⑤	**NIT version**	Selection of the NIT table Auto, 0-4. The Network Information Table carries a series of parameters in the digital data stream that are necessary for a search run at the end devices. The specific parameters within the NIT, such as ONID - Original Network ID and TS-ID - Transmitting Subscriber ID, can each be configured. Manual editing can also be used to add and change transmission parameters from other headends as well as from third-party headends. This means that simple channel management can already be ensured in the headend in the receiving devices
⑥	**LCN type**	Selection of the LCN type Generic, UK, Nordic.
⑦	**EPG**	The transmission of EPG data can be switched on or off.
⑧	**Output mode**	Selection of the output mode Normal, CW or ZERO.
⑨	**QAM inversion**	Selection of QAM modulation Normal or Inverted.
⑩	**Output channel list**	Channel list of DVB-C output channels.

► Click on **APPLY CONFIGURATION** at the bottom of the list to apply changed settings.

9.5.1 Channel configuration

The following parameters can be configured for the DVB-C output channel:

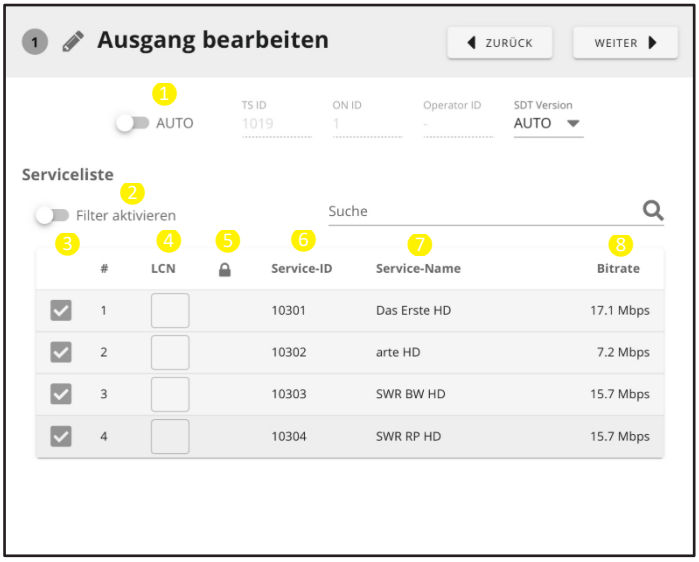
No	Name	Function
①	**DVB-C output channel**	Selection of the DVB-C output channel via which the stored channels can be received.
②	**Baud rate**	Setting the baud rate in Ks/s.
③	**QAM mode**	Selection of QAM modulation 16, 32, 64, 128, 256 QAM.
④	**Damping**	Output attenuation of the channel. 0 - 10 dB. Including the global attenuation, a maximum attenuation of 25 dB per output channel is therefore possible.
⑤	**Process output**	The transmitters that are transmitted per output channel can be edited here. See next chapter

► Click on **APPLY CONFIGURATION** at the bottom of the list to apply changed settings.

9.5.2 Edit output

► Click on the edit icon (⑤ Chapter 8.5.1) to edit the transmitters of the output channel.

Attention: Changes to the basic configuration in this menu require knowledge of the DVB-C standard. Incorrect settings can result in connected DVB-C receivers no longer being able to receive channels or reception being restricted.
It is therefore recommended to leave the auto mode activated and the filtering deactivated in order to ensure the greatest possible compatibility of receivers.



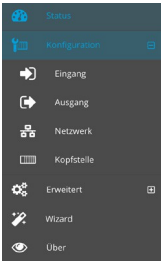
No	Name	Function
①	**Auto/Manual**	Switch for switching between auto mode and manual configuration.
②	**Activate filter**	If filtering is deactivated (standard setting), the BS7 is in "Transparent mode". Here, the reception parameters are taken from the input transponder. If filtering is active, the BS7 is in "Non-transparent" mode. Mode".
③	**Activate/deactivate transmitter**	Each individual transmitter from the receiver transponder can be activated or deactivated separately here. This is only possible if filtering is activated.
④	**LCN**	Logical Channel Numbering (logical channel sorting). The LCN data contains information about the preferred sequence in the programme list on the end devices. Each service can have an LCN. • Every service can have an LCN. • An LCN may not be assigned twice. • No assignment of an LCN means that LCN is not used for this service and the end device sorts this channel according to its own rules.
⑤	**Encryption**	Shows encrypted channels.
⑥	**Service ID**	The service ID of the transmitter.
⑦	**Service name**	The service name of the station.
⑧	**Bit rate**	The current bit rate of the channel.

► The **BACK** & **NEXT** buttons can be used to switch directly through the other output channels. Click on the **CLOSE button** at the bottom of the list to close the list view.

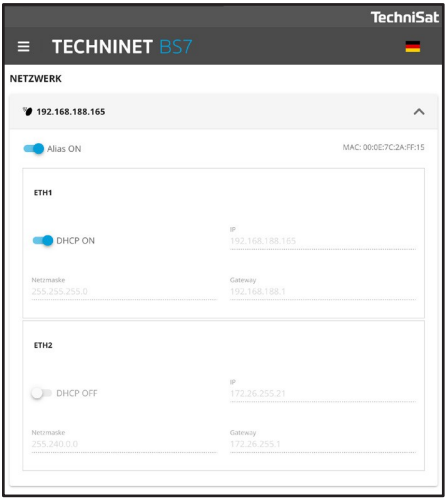
► Click **SAVE** to apply the changed settings.

9.6 Network

► Click on the hamburger symbol and **select > Configuration > Network** from the drop-down menu that appears. The configuration menu can be expanded and collapsed by clicking on the +/- box.



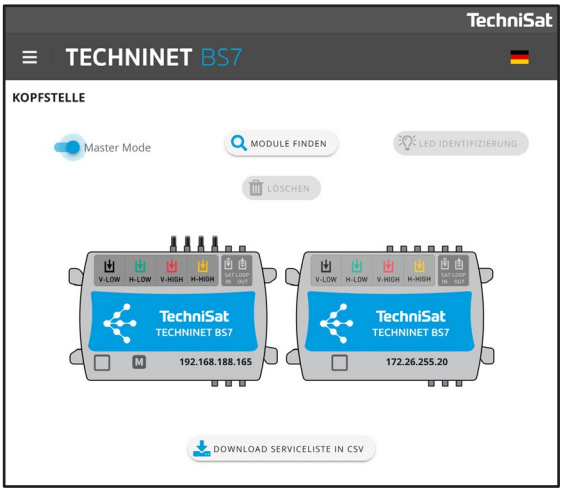
► Under the network configuration, you can change the parameters for the Ethernet connection, including the DHCP mode, network address, subnet mask and gateway. The MAC address of the device is also displayed for information purposes. DHCP mode must be switched off in order to make changes to the network configuration. The settings can be set separately for Ethernet port 1 (ETH1) and Ethernet port 2 (ETH2).



Attention: The IP address ("Alias IP") specified on the side label allows access to the device from a PC connected to the same network and cannot be changed by the user. You can deactivate this IP address using the **Alias ON** selector switch. It will
It is not recommended to deactivate this address (alias OFF), unless it is necessary because the device is connected to a network with this address range. DHCP is activated by default. If it is connected to a network that has a DHCP server, the BS7 automatically receives an IP address.
If an error occurs in one of the modules, an exclamation mark is displayed to indicate the type of error.

9.7 Headend

- ► Click on the hamburger symbol and **select > Configuration > Header** in the drop-down menu that appears. The configuration menu can be expanded and collapsed by clicking on the +/- box.
- ► This menu enables the management of multiple BS7 units and offers the option of configuring a BS7 unit as the master (**MASTER MODE**), adding a new unit connected via Ethernet using the "**FIND MODULE**" button (slave unit), deleting a BS7 that has already been found by selecting and clicking the "**DELETE**" button and identifying all connected units in an installation by flashing the front LED. For the LED identification of a unit, it is necessary that no changes are pending that are to be adopted. When the master mode is activated, a search for another BS7 unit (slave) is automatically started.



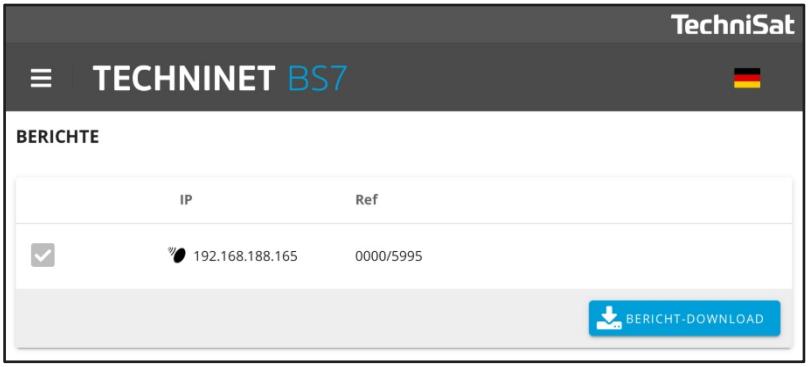
- ► The service list with all programme parameters can be downloaded as a .CSV file using the **DOWNLOAD SERVICE LIST IN CSV** button. This gives you a quick overview of which programmes are transmitted on which channels. This list can be helpful for the subsequent (manual) channel search on a receiver.

Note: The master unit centralises the control/communication. For this purpose, it is necessary that the connection between the units is maintained at all times using an Ethernet cable.
Furthermore, the master unit supplies the **SAT LOOP OUT** with the required signals for the slave unit (SAT LOOP IN) and manages the generation of the global output NIT table.

When activating a master/slave combination for the first time, you should start it using the wizard. See chapter "9.13 Wizard" on page 23.

9.8 Reports

- ► Click on the hamburger icon and select**> Advanced> Reports** from the drop-down menu that appears. The advanced menu can be expanded and collapsed by clicking on the +/- box.
- ► In this menu, it is possible to download a status report of the selected unit to facilitate troubleshooting in the event of a problem with the unit.



► Click on the **REPORT DOWNLOAD** button to download the report.

9.9 Manage configuration

► Click on the hamburger symbol and select **> Advanced > Manage configuration** in the drop-down menu that appears. The Advanced menu can be expanded and collapsed by clicking on the +/- box.

► This menu facilitates the export and import of headend configuration files. The configuration file can be used as a backup or to duplicate another BS7 unit.

Note: When importing a file, the number of BS7 units selected must match the number of units to be imported. This means that a master/slave configuration can only be imported into units configured as master/slave.
The user must activate the "Include network configuration" option if they wish to overwrite the current network settings with those of the imported file.

Attention: Depending on the imported network configuration, you may no longer have a connection to the headend or an individual unit.

► When importing a configuration, the number of activated satellite transponders is displayed and, if channel filtering is active, the number of processed channels is also displayed. If no filtering is used and all services from the input are passed on to the output, 0 services are displayed.

9.10 Restart/factory setting

► Click on the hamburger symbol and select **> Advanced > Restart/plant settings** in the drop-down menu that appears. The Advanced menu can be expanded and collapsed by clicking on the +/- box.

► All parameters are reset to the factory settings after confirmation.

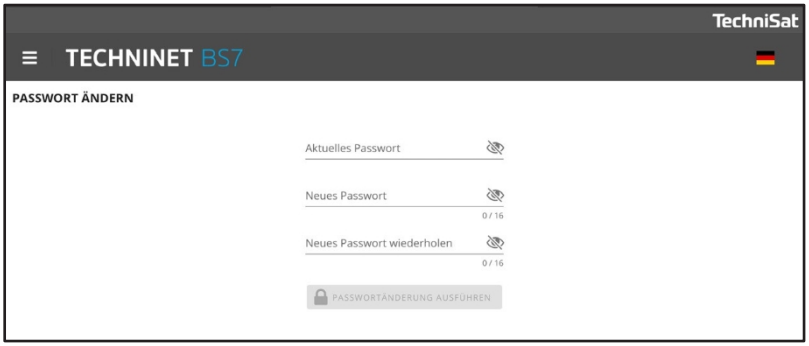
Attention: After calling up the factory settings, all configurations, including those of the network, are reset. Depending on the network configuration, you may no longer be able to establish a connection to the headend.

► Wait until all parameters have been restored. The restoration takes a few seconds.

► If there are problems with the reception of transmitters during operation or the BS7 no longer responds, a restart can provide a remedy. To do this, click on **RESTART**.

9.11 Change password

► Click on the hamburger symbol and select**> Advanced> Change password** from the drop-down menu that appears. Click on the +/- box to expand and collapse the extended menu.



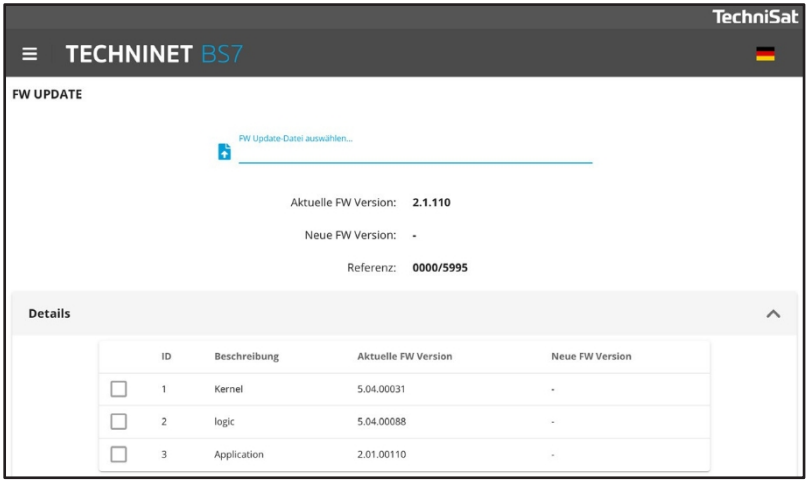
In this menu, you can change the password for access to the headend. In the case of multiple BS7 units, the password is changed simultaneously on all devices. It is not possible to change the password for just one of the connected units, unless it is a unit with an authentication error. In this case, the password of this unit does not match the password of the master unit and cannot be configured. You can select the unit with the authentication error and change the password to that of the master unit, provided you know the old password of the slave unit.

If you have forgotten the master password, please contact the technical support to find out how to recover it.

9.12 Firmware update

► Click on the hamburger symbol and select **> Advanced> FW Update** from the drop-down menu that appears. The Advanced menu can be expanded and collapsed by clicking on the +/- box.

This function can be used to update the BS7 firmware via a UPG file. Select Select FW update file and select the update file .UPG in your storage location. The current and the new version are displayed, together with detailed information on the areas to be installed that make up the update file.

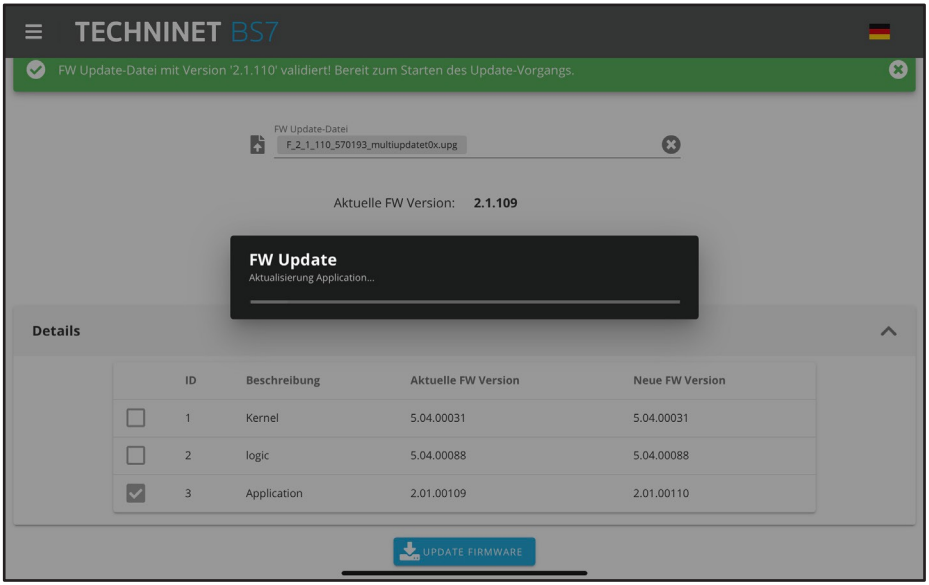


Attention! Always follow the instructions on the screen. Do not switch off the BS7 unit or disconnect it from the power supply during the update process.

► SchriGe 1.

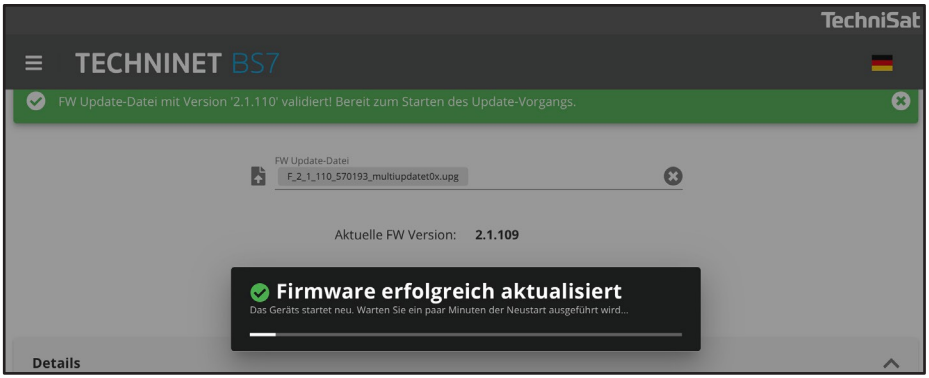
After selecting the firmware file, it is checked and prepared for updating the BS7. The areas of the BS7 to be updated are automatically displayed under **Details.** Click on **UPDATE FIRMWARE** to start updating the firmware.

► Step 2.



Wait for the update process to complete. This may take a few minutes. Do not disconnect the BS7 during the update process and do not disconnect it from the power supply.

► Step 3.



After the firmware has been successfully updated, the BS7 restarts.

9.13 Wizzard

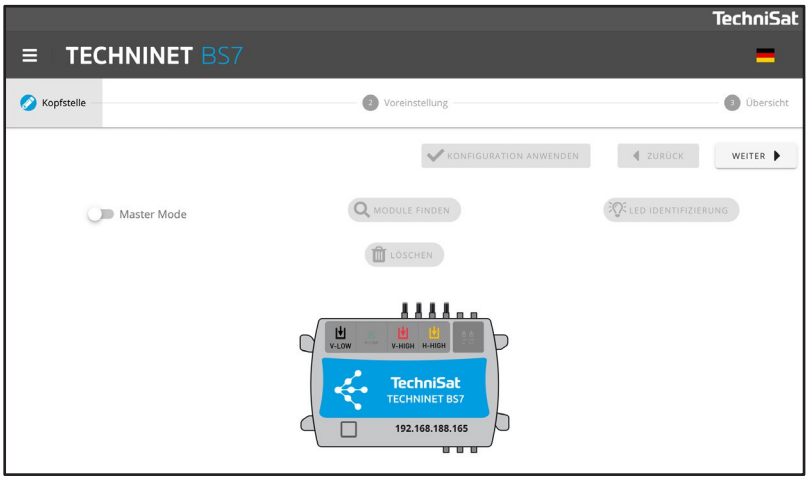
► Click on the hamburger icon and select> **Wizard** from the drop-down menu that appears. The advanced menu can be opened and closed by clicking on the +/- box.

Basic configurations can be selected easily using the wizard. In particular, the connection to a second BS7 in a master/slave network can be configured quickly and easily using the wizard.

Note:

The input transponders of a second. BS7, which was configured as a slave unit via the wizard, must then be reconfigured. These are then freely available and are no longer pre-programmed, as is the case with a master unit.

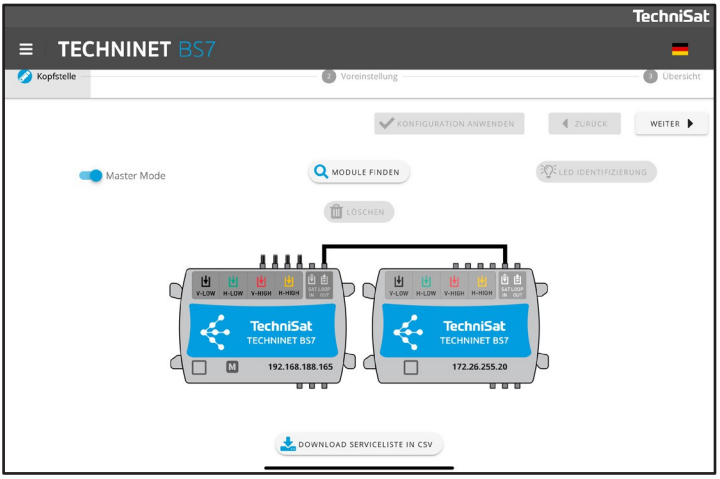
The output channels of the slave unit are matched to the output channels of the master unit so that there is no double assignment.



► Switch on the master mode to activate the master/slave mode. Make sure that both BS7 units are already properly connected for master/slave operation. For more details, see chapter "8 Wiring" on page 7.

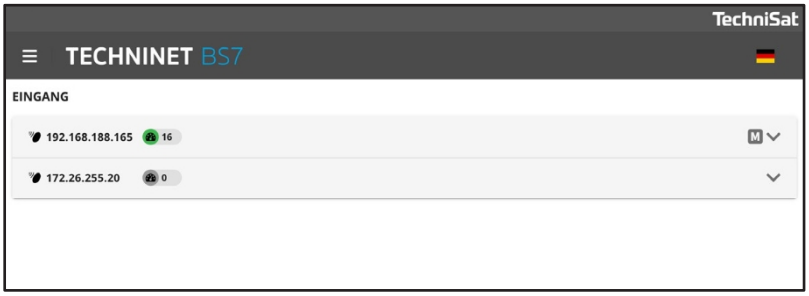
► The BuGon **MODULE FIND** can be used to identify the BS7 units. Units found are displayed graphically.

► The **DELETE** button deletes a module and the **IDENTIFY** LED flashes.



► The service list with all programme parameters can be downloaded as a .CSV file using the **DOWNLOAD SERVICE LIST IN CSV** button. This gives you a quick overview of which programmes are transmitted on which channels. This list can be helpful for the subsequent (manual) channel search on a receiver.

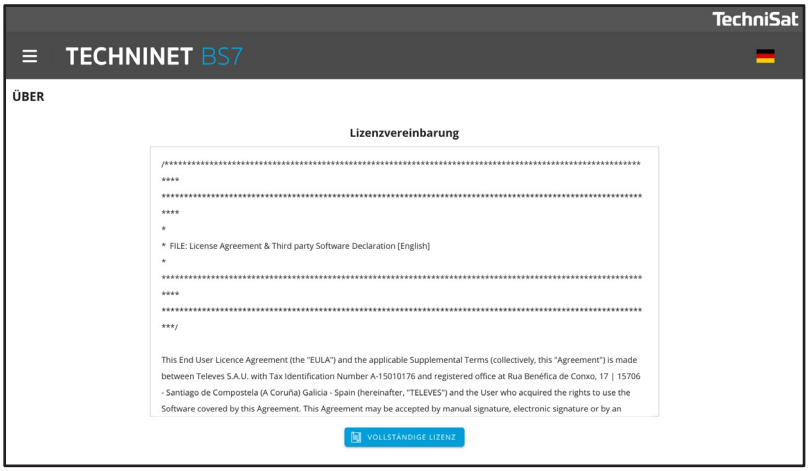
► Both the master unit and the slave unit can now be selected by clicking on the corresponding field. This selection is available in every menu. The **"M"** indicates the master unit.



9.14 About

► Click on the hamburger icon and select **> About** from the drop-down menu that appears. The advanced menu can be expanded and collapsed by clicking on the +/- box.

The licence agreement can be viewed here.



10 T echnical data

Technical data Art. No.			TECHNINET BS7 0000/5995	
Satellite inputs	*Input frequency*	MHz	950 - 2150	
	Symbol rate	Mbaud	2 - 42.5 (DVB-S) / 10-30 (DVB-S2/S2X)	
	Frequency steps	MHz	1	
	Input level	dBµV	49 to 84 (-60 to -25 dBm)	
	Connections	type	"F" - *Female*	
	Input impedance	Ω	75	
	LNB power supply [1]	V⎓ kHz	13-17- OFF / 22kHz (ON-OFF)	
	Satellite selection (DiSEqC)		A, B, C, D	
	Modulation		DVB-S2X	QPSK/8PSK, 8/16/32 APSK (EN302307-2)
			DVB-S2	QPSK, 8PSK (EN302307)
			DVB-S	QPSK (EN300421)
	Internal FEC		LDPC	9/10, 8/9, 5/6, 4/5, 3/5, 3/4, 2/5, 2/3, 1/3, 1/4, 1/2
	External FEC		BCH	Bose-Chaudhuri-Hocquenghem
	Roll-off factor	%	20, 25, 35	
	LNB type	Standard	Quattro LNB Quattro switch LNB	
	LOF	MHz	9,750 Low 10,600 High	

QAM modulator	*Modulation*	QAM	16, 32, 64, 128, 256
	Symbol rate	Mbaud	1 - 7.2
	Roll-off factor	%	15
	Block code		Reed Solomon (188,204)
	Scrambling		DVB ET300429
	Interleaving		DVB ET300429
	Bandwidth	MHz	<8.28 (7.2 Mbaud)
	Output spectrum		Normal / Inverted (*selectable*)

HF output	*Output frequency (selectable)*	MHz	46 - 862
	Frequency steps	kHz	250
	Max. Output level (selectable)	dBµV	*98±5*
	Damping (progr.)	dB	0-15 (global) 0-10 (per channel)
	Passage attenuation (typ.)	dB	< 1
	Connections	*type*	"F" *Female*
	Output impedance	Ω	75

General	*Mains connection*	V~ Hz	230 50/60
	Consumption [2]	P.max / W I.max / mA	64 625
	Protection class	IP	20
	Operating temperature	°C	-5 ~ 45
	Weight	kg	3
	Dimensions (WxHxD)	mm	285 x 200 x 76

11 Legal information

Hereby, TechniSat declares that the radio equipment type TechniNet BS7 is in compliance with Directive 2014/53/EU. The full text of the EU Declaration of Conformity is available at the following internet address:

hUp://konf.tsat.de/?ID=25301

TechniSat is not liable for product damage due to external influences, wear and tear or improper handling, unauthorised repairs, modifications or accidents.

Subject to changes and printing errors. Status 10/24.

 The latest version of the manual is available in PDF format in the download area of the TechniSat website at www.technisat.de.

TechniSat Digital GmbH
TechniPark
Julius-Saxler-Straße 3
D-54550 Daun/Eifel
www.technisat.de

CE

You can find a complete list of licence information in the download area for your product on the TechniSat website www.technisat.de.

11.1 Service instructions

This product is quality-tested and comes with a statutory warranty period of 24 months from the date of purchase. Please keep the invoice as proof of purchase. In the event of warranty claims, please contact the dealer of the product.

Please note!

For questions and information or if there is a problem with this device, please contact our technical hotline:

Mon. - Fri. 8:00 - 17:00 under Tel:

03925/9220 1271.

Repair orders can also be ordered directly online at www.technisat.de/reparatur.

If you need to return the device, please use only the following address:

TechniSat Digital GmbH
Service Centre
Nordstr. 4a
39418 Staßfurt

11.2 Disposal instructions

At the end of its service life, this product must not be disposed of with normal household waste, but must be taken to a collection point for the recycling of electrical and electronic equipment.

The packaging of your appliance consists exclusively of recyclable materials. Please sort them accordingly and return them to the "Dual System". This product is labelled in accordance with Directive 2012/19/EU on waste electrical and electronic equipment (WEEE) and must not be disposed of with normal household waste at the end of its service life, but must be handed in at a collection point for the recycling of electrical and electronic equipment.

The  symbol on the product, the instructions for use or the packaging indicates this.

The materials are recyclable according to their labelling. By reusing, material recycling or other forms of recycling old appliances, you are making an important contribution to protecting our environment.

Please ask your local authority for the responsible disposal centre. Ensure that empty batteries and electronic scrap are not disposed of with household waste, but disposed of properly (take back by specialist retailers, hazardous waste).

We hereby advise you to delete all personal data stored on the device on your own responsibility before disposing of the device.

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