Octopus Net Series

MANUAL

Version: V 1.11 from 17.09.2014

Instruction after §18 battery law (BattG)

Information obligation according to battery law BattG)

Make sure that your used batteries / accumulators, as prescribed by the legislature, to a municipal collection center or in stores on site dispose. The disposal in the normal household waste is prohibited and violates the Battery law. The disposal is free for you. You are welcome for purchased batteries/accumulators from us, after use to return to us for free. The return of the batteries / accumulators to us must be sufficient postage in all cases. Returns of batteries / accumulators must be sent to: Digital Devices GmbH, Möwestrasse 45a, D-81827 München

Batteries that contain hazardous substances are labeled clearly with the symbol of a crossed out wheelie bin. Furthermore there is under the symbol of the crossed out wheelie bin, the chemical designation of the relevant pollutants. Examples are: (Pb) Lead, (Cd) cadmium, (Hg) mercury. You have also the option to read this information again in the documents accompanying for the goods or in the operating instructions of the respective manufacturer.

GPL Software

You are entitled to distribute the GPL software on the basis of the provisions of the GPL and / or modify. You can download a copy of the corresponding source code for the binaries of the GPL Software (the "GPL Source Files"), please request this with your name and address at Digital Devices. Use to request either GPL@digitaldevices.de or Digital Devices GmbH, Möwestr. 45a, D-81827 Munich Address.For a processing fee of EUR 1.- we will send you the GPL Source Files on a CD or an equivalent physical medium. The offer for requesting the GPL Source Files is valid for three (3) years from the date of purchase of the software product.

Ihre Digital Devices GmbH München

Contents

Digital Devices

1. Safety instructions & Tips

1.1 General information

- Please read and follow these safety instructions. To ensure reliable operation and long durability of your Octopus Net.
- Keep this manual within reach of the Octopus Net for an easy reference at any time. The Octopus NET we continuously developed, a recent version of this document can be downloaded from our website.

1.2 Operational safety

- The connection of the Octopus Net should be done by a qualified technician or a person with appropriate knowledge in network technology.

  Please contact your supplier if you have the following technical problems with your Octopus Net:

  - Your Octopus Net has come into contact with liquid.
  - The Octopus Net is not working properly.

- If a repair is necessary, please contact our authorized service partners or directly the manufacturer.
- Note: Do never leave children unattended play with electrical devices, they can't recognize possible hazards.

1.3 Installation site

- To avoid an electrical short circuit, you should wait after transporting the device with the commissioning until it has assumed the ambient temperature.
- Large temperature or humidity differences can cause condensation moisture build, which can lead to a short circuit.
- Protect the Net Octopus from moisture, dust, heat and direct sunlight.
- Place the Octopus Net on a flat, stable, vibration-free surface in order to avoid accidents.
- Lightning strike damages (over-voltage damage) can only be avoided if ALL cables are disconnected to external devices and networks, including the telephone network in case of a lightning storm. (Most damage is caused by lightning strikes over the antenna / cable TV, followed by damage over the power grid)

1.4 Electromagnetic compatibility

- The guidelines for electromagnetic compatibility (EMC) must be adhered to when connecting the Octopus Net.
- To avoid malfunctions and loss of data, you should keep a minimum distance of one meter from high frequency and magnetic interference sources (from a TV, mobile phone, speakers, etc.)

1.5 Cleaning

- Wipe the Octopus Net only with a soft, dry cloth
- Unplug before cleaning the power plug and the connection cables

1.6 Data backup

- Before performing the installation of third party software on your PC, back up your data to an external storage medium (CD, DVD, USB drive, external hard disk).
- Claims for damages of any data loss and any resulting consequential damages can't be claimed.

2. Octopus Net Overview

2.1 SAT>IP protocol

SAT > IP is a new standard for the reception and distribution of satellite television, which has been developed by the companies SES SA / Luxembourg and Astra Germany GmbH / Unterföhring.

SAT> IP is converting television signals from satellite (DVB-S and DVB-S2) into IP signals for the purpose of using them on terminals in the respective network. In this way all IP-based

devices like Tablets, PCs, laptops, smartphones, connected TVs, game consoles and media players with TV Programs are supplied via the local network. This allows satellite television in best quality on devices that do not have built-in satellite receiver. Satellite signals can be

For further information, please check www.satip.info

2.2 Octopus Net Server

The Octopus NET is basically a server. It is able to stream live TV to IPTV enabled devices within the local network. Thus, the Octopus Net Server virtually converts various terminal devices into a Full HD TV for satellite and cable television. Via LAN and / or WLAN free channels are being distributed within the local network in Full HD quality. Depending on the model, up to 4 streams, can be used on stationary and mobile devices simultaneously.

2.3 SAT>IP Clients

For use on a terminal device, an additional client software is required, if it is not pre-installed. The to-use client software is already available on the market from various producers for the operating systems iOS (iPhone, iPad, iPod), Android, Mac OS and Windows. Currently in preparation is software for Smart TV, Windows Phone, Windows RT and Kindle Fire HD.

A list of available SAT > IP client software is presented on the website: http://www.satip.info

2.4 Minimum Requirements

In order to view HDTV programs properly, high-performance SAT> IP clients or UPnP-enabled clients are needed. High-resolution content (HDTV) requires a powerful network and capable clients in order to show content flawlessly. A failure-free HD performance is only assured if an appropriate network and a powerful client are available. SAT > IP clients can cause additional costs, so be sure to check that individually. An internet browser is required to open the configuration menu of the Octopus Net. Network speed should be 1 gigabit (recommendation) for a LAN environment, in case of WLAN environments for the N standard (300 Mbps) are recommended.

3. Allgemeines

3.1 Delivery content

- Digital Devices Octopus Net SAT>IP Network Tuner
- Octopus Net, external (network tuner, 5 Port Switch, casing)
- integrated DD DuoFlex twin tuner expansion (Tuner features depending on model)
- integrated Common Interface
- external power adapter
- Wall mount
- Manual

3.2 Specifications

- SAT>IP for 2 or 4 users (extendable by DuoFlex modules)
- Cascading of several Octopus NET possible
- SAT > IP protocol version 1.2 (upgradeable)
- Updates through a web configurator via LAN
- Singlecast / Multicast via UDP / RTP
- 1 or 2 twin tuners included (depending on the model)
- 5 port managed Gigabit-Switch (5 x 10/100/100 Ethernet)
- IPv4 and IPv6 protocols, multicast, IP filtering, full-duplex
- CI Support

Receiving module(s):

- DuoFlex S2 twin tuner expansion module (DVB-S2) or DuoFlex C/C2/T/T2 twin-tuner expansion module (modules support DVB-C/C2 or DVB-T/T2)
  A mixed configuration of the receiver modules is also possible (e.g. DVB-S2 and DVB-C/C2/T/T2)
- Frequency domain DVB-S2: L-band 950 to 2150 MHz
- 2 or 4x F sockets (75 Ohm)
- supports DiSEqC 2.x
- Unicable support (SCR / single cable solution according to EN50494) for DVB-S2 Equipment
- Singlecable solution (Master/Slave signal distribution) at DVB-C/C2/T/T2 configuration

Miscellaneous:

- On / off switch
- Powered by external 12V power supply, 220v 50-60Hz
- Maximum power consumption: 12 watts (4 tuners) without LNB power
- Temperature range: -10 to 50 degrees Celsius
- Wall mount
- Dimensions W x H x D: 45 x 127 x 127 mm
- Weight: 500 grams
- Made in Germany

3.3 Description

Front View of the Octopus Net

1. On/Off - Switch
2. LED 1 state
3. LED 2 state
4. Common Interface / CI Slot

Side view of the Octopus Net

1. **Opening slot for expansion / conversion of the twin tuner**
2. **Ventilation slots**
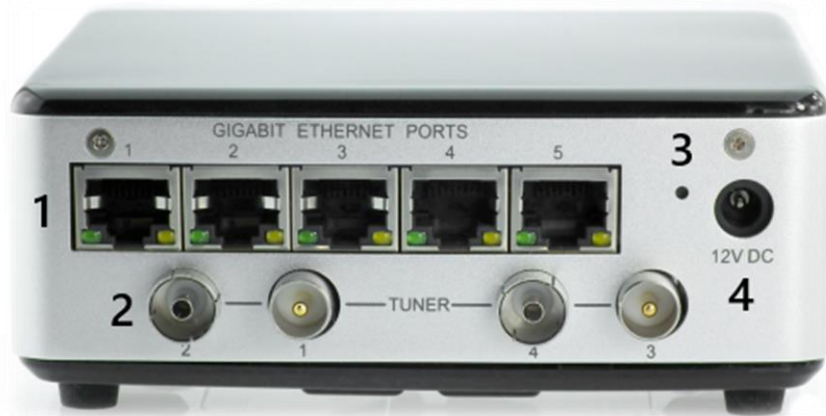
Rear view of the Octopus Net (4 Tuner DVB-C/T version)
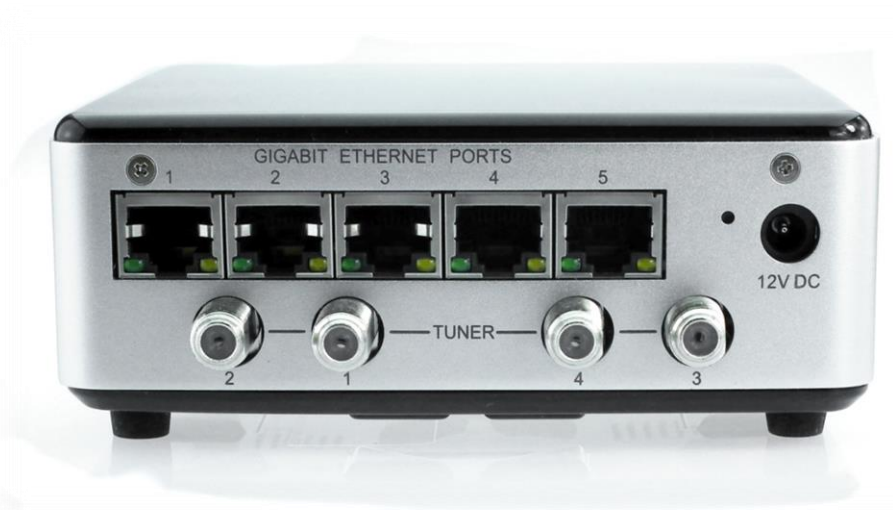
Rear View of the Octopus Net (4 tuner DVB-S2 version)

1. 5 Gigabit Ethernet ports
2. TV-tuner 1 to 4 (depending on model)
3. Reset button
4. Power connector for external power supply

Bracket for wall mounting (VESA compatible)

4. Commissioning

4.1 Network Environment

The Octopus Net can be used in network environments with LAN, WLAN and PowerLan. For trouble-free operation we recommend explicitly the following connection speeds:

LAN	100 Mbit/s network, recommended 1000 Mbit/s (GigaBit) environment
Wi-Fi	54 Mbit/s network, recommended 300 Mbit/s network environment
PowerLan	54 Mbit/s network, recommended 300 Mbit/s network environment

The five ports of the integrated Gigabit switch should preferably be used for terminal devices with SAT > IP Client, since they already have the ideal Quality of Service (QoS) configuration for the operation of SAT> IP as a factory setting.

4.2 Input signal

One asset of our Octopus NET is the modular design and expandability for more tuner modules. Depending on the model, the DuoFlex S2 (DVB-S2) and DuoFlex C/C2/T/T2 (DVB-C / DVB-C2 / DVB-T / DVB-T2) series of Digital Devices can be used as a tuner.

Technical specifications of different tuner modules and the Common Interface:

4.2.1 DVB-S/S2

Satellite features (DuoFlex S2): Twin Tuner • Symbol rate: up to 45Msps DVB-S2 • LNB Power: +14 VDC or +18 VDC or without power supply (up to 500mA) • L-band: 950 MHz to 2150 MHz DVB FEC: (Auto Spectral Detection) • Modulation QPSK/8PASK • Full support of DiSEqC 2.X Standard connections: • 20 pin connector for ribbon cable • L-band F-connectors (IEC 60169-24) (Supports power supply to the LNB)	Unicable compliant: • SCR / CENELEC EN 50494 (unicable ®) Security: • Produced and Designed compliant to European Standards DIN EN ISO 9001:2000 Environmental standards: • RoHS Konformität • WEEE DE 99353762

4.2.2 DVB-C/C2 and DVB-T/T2

Features of terrestrial tuners(DuoFlex C/C2/T/T2):	Twin tuner DVB-T/T2 features:
Twin Tuner DVB-C features: • Frequency range: 51-858 MHz • Every modulation and code type compliant to DVB-C specification • Symbol rates from 0.87 to 6.9 Mbaud • Sensitivity: 47dbµV (64QAM), 47dbµV (256QAM) • Master / slave mode Both tuners are being supplied by an antenna cable Standard connections: • IEC socket (input), IEC connector (output) • 20 pin Connector for ribbon cable	• Frequency range: 49-861MHz, 2k & 8k OFDM • All types of modulation compliant to DVB-T and DVB-T2 specification • Sensitivity: -82.6 dBm at 16 - QAM & 3/4 Security: • Produced and Designed compliant to European Standards DIN EN ISO 9001:2000 Environmental standards: • RoHS Konformität • WEEE DE 99353762

4.2.3 Mixed configuration

The modular design of the Octopus NET also enables a combination of DVB-S2, DVB-C/C2 and DVB-T/T2 tuners in the same device. Since the DuoFlex extension is a twin tuner, 2 DVB-S2 and 2 DVB-C/C2/T/T2 tuner are configurable.

4.2.4 Common Interface (CI)

Standard connections:	Security:
• 20-pin connector for ribbon cable • Power supply via a 4-pin floppy standard connector	• Produced and Designed compliant to European Standards DIN EN ISO 9001:2000 Environmental standards: • RoHS Compliance • WEEE DE 99353762

5. Octopus Net

5.1 First Step

Unpack your Octopus Net and check if all components are complete. If you have any questions, please immediately contact the support of the manufacturer.

5.2 Connection

Before use all plastic wrapping and packaging aid has to be removed and the Octopus Net should be put on a clean and even surface. The fitting with the included adapter for wall mounting should be done only after the completion of the setup.

Connect a LAN port of the Octopus Net with a network cable, which is connected to the home network (router / switch / access point). Hence, the Octopus Net automatically obtains an IP address, a DHCP server must be active on the network. (e.g. standard on commercial routers). The Octopus Net must be within the same network environment as the terminals. (same IP address range).

Connect the Octopus Net with the cable of your existing receiving system. For the reception of DVB-S2 connect the outputs of the LNB / multi-switch to appropriate antenna cables, each on an Octopus Net tuner. If Unicable / LNB / Multiswitch are utilized the wiring of the signal outlets has to be connected to the respective Octopus Net tuner through appropriate antenna cables. If necessary, use compliant Unicabel Multiswitch.

The reception of DVB-C/C2 and DVB-T/T2 only requires one cable per twin tuner.

2 tuner version of the Octopus Net:

Connect the output of an antenna socket or a DVB-T/T2 antenna via an appropriate antenna cable to the input of the Octopus Net Twin tuner card (IEC socket). The output of the twin-tuner card (IEC connector) can be used to supply additional devices (eg TV or Digital Devices products) if the Octopus NET is in operation. The built-in amplifier ensures that a signal is passed on without any loss in quality

4 tuner version of the Octopus Net:

The first twin tuner pair should be connected as described in the two-tuner version. Supply the second twin tuner couple with either a separate signal input, for example if you want to use the first twin tuner for DVB-C and the second twin tuner for DVB-T/T2.

Or you can use a short antenna cable (optional equipment) to connect the output (IEC connector) of the first twin tuner to the input (IEC connector) of the second twin tuner, if the reception type on both twin tuner pairs is the same.

Finally, connect the Octopus Net to the grid via the supplied mains adapter. Use only professionally installed main sockets 220-240V / 50-60Hz.

5.3. Commissioning

Turn the Octopus Net on using the power switch on the front side.

The Octopus Net then automatically hooks up to the network and receives a free IP address from the DHCP pool of the DHCP server (which typically is a component of routers). LED 1 on the front side indicates the operating state:

Off	=	Octopus Net is not in operation mode
Flashing	=	Octopus Net is booting up
On	=	Octopus Net is ready for operation

The Octopus Net is now ready for use in its original configuration.

To turn off the Octopus Net, hold the On/Off - switch at least 10 seconds pressed.

5.4 Configuration Menu

The following instructions for configuring the Octopus Net are based on firmware 1.29 (Q3/2014). A current version of the manual is available on our website www.digitaldevices.de.

5.4.1 Overview

The configuration of the Octopus Net is done via a web interface. The Octopus Net logs into the network with the name "OctopusNet". Accessing the configuration interface can be done in the following ways:

Access in Windows 7/8:

Open "computer" on the desktop and then select "network". The Octopus Net appears as "OctopusNet".

Double-click on the device and the configuration interface opens.

Access in Windows XP:

Please click "My Computer" on the desktop and then select "My Network Places". The Octopus Net appears as "OctopusNet". Double-click on the device and the configuration interface opens.

The configuration interface is also accessible through a browser by entering the IP address.

If you do not know the IP address of the device, please proceed as follows: With the right mouse button click on the Octopus Net under Network or My Network Places and select the menu item "Display device web page". Your standard web browser on a PC will then return the configuration web page. The current IP address of the device is displayed in the address bar of your browser.
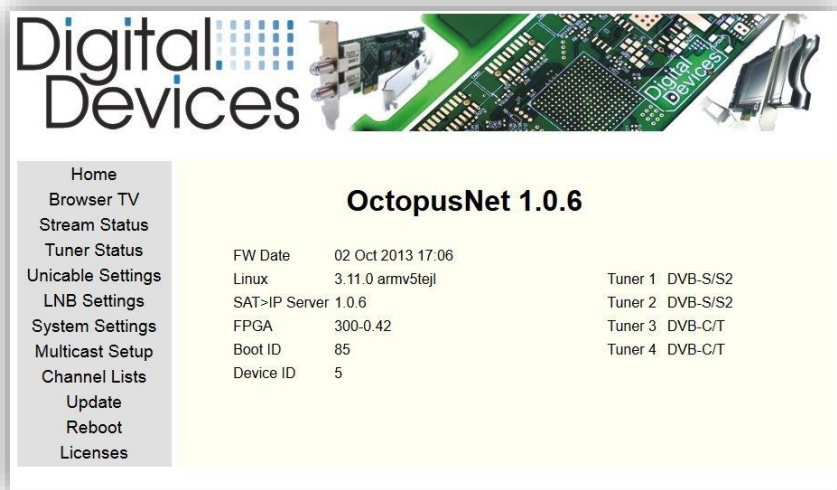

(Exemplary IP address)

5.4.2 Status Information

To get the information of the firmware version of your Octopus Net, please call up the configuration interface. More information about your device can be found by selecting the menu item "Home".

FW Date:	Date of the installed firmware version
Linux:	Version number of the installed Linux kernel
SAT > IP Server:	Version number of the Octopus SAT > IP server
FPGA:	Version number of the FPGA
Boot ID:	Required to identify multiple Octopus NET within a network
Device ID:	Required to identify multiple SAT > IP Server
Tuner 1-4:	Number of detected tuners and their reception method(s)

The menu option "Tuner Status" contains detailed information about a maximum of up to 8 tuners of the Octopus Net. In addition to displaying the current use of the tuners, further detailed information about the reception (Strength, Quality) can be read out for each individual tuner. By clicking the menu item "Stream status" additional information about the tuner utilization is being revealed. Furthermore, enhanced streaming information as well as the client in relation to the used tuner can be recognized.

5.4.3 Configuration

5.4.3.1 System Settings

Changes to these system settings should be made only by experienced users.

In the menu item "Layer 2 Quality of Service" (QoS), the prioritization of the SAT > IP streams in their network environment can be selected. Therefore you need hardware (e.g. router, switch) which supports this feature (QoS). For the configuration, please use the manuals of your network hardware.

If the Octopus Net after activation of the QoS does no longer function as intended, please disable this menu item again.

Important: The built-in network ports of the Net Octopus already have an internal QoS pre-adjusted. For optimal results please give these ports priority while your network hardware is used. The internal QoS feature has no affect on connected Network components which do not support these features.
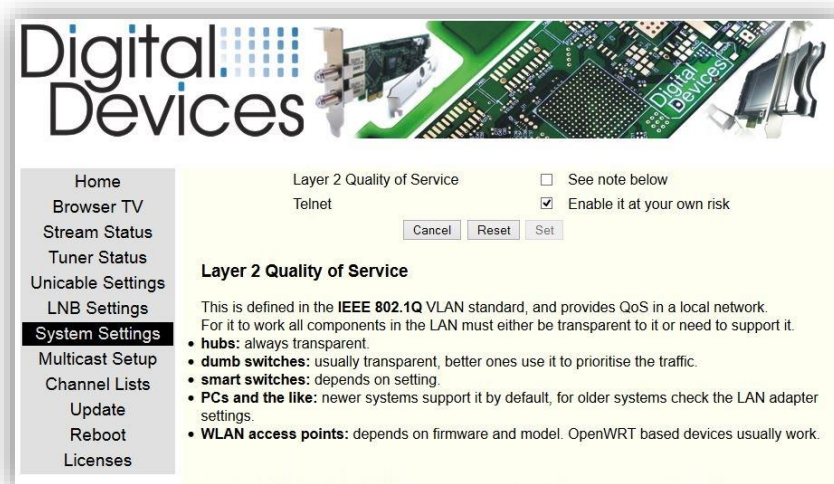
For access to the Octopus Net via "telnet", select the appropriate option from the menu. (This access type to Octopus NET should only use Linux professionals. We don't provide a guarantee based on damage caused by maloperation.)

5.4.3.2 LNB Settings

This menu item should only be changed upon instruction of Digital Devices support because changes may lead to an impaired SAT reception.

After entering the manual LNB configuration, you can directly adapt the setting to your environment. You can choose for which tuner and / or satellite (source) your customization is applied to. Without specifying these fields, the settings are applied to all available tuners.

With the "LOF" information offset values can be adapted to your environment. Use the guidelines in the manual of your LNB. Your closed configurations are then listed at the bottom. They can easily be removed again by pressing the "Clear" button.
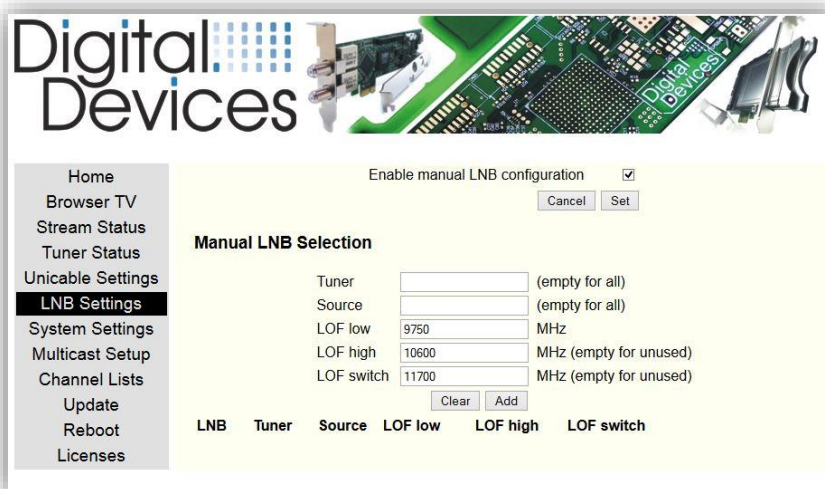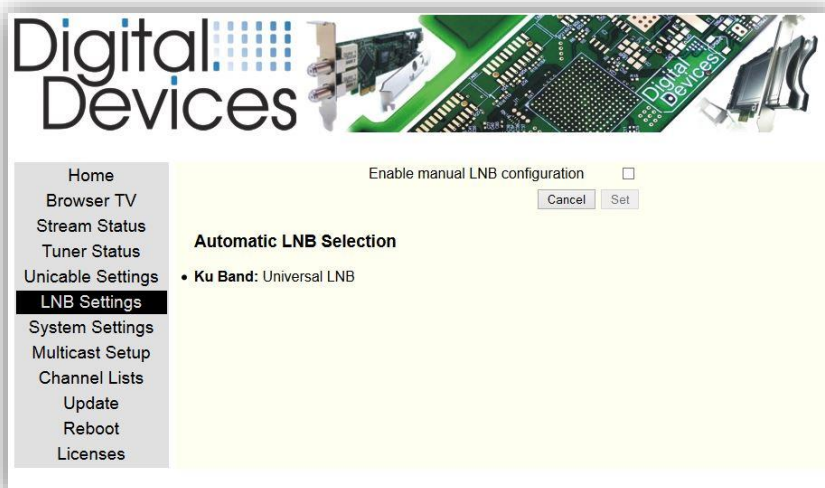
5.4.3.3 Unicable® Settings

Unicable® is only available if a DVB-S2 Model is used. For the support of Unicable® setting in the menu "Unicable Settings", Unicable-compatible hardware (Unicable® LNB and / or Unicable® switch) is required.

For the installation of these additional components please use the manuals of the respective manufacturer. Through activating the menu item "Enable Unicable (EN50494)" you can assign the unicable® channels to the respective tuners. A dual

use of unicable® channels is not possible. Coordination with other users or terminal configurations with unicable is mandatory required.

5.4.3.4 CI Settings

The CI in your Octopus Net can be used with any program (client), which call RTSP links with M3U lists. In the RTSP links is determined whether a transmitter should be decrypted with an existing CI. Programs that can handle M3U lists, is for example the VLC® player on your PC or MAC. Accordingly on your mobile device (smartphone or tablet) it is for example the Good Player ®. Of course, it is also possible to use the browser screen TV web interface of the Octopus Net. According to the SAT>IP standard, DVBViewer GE is currently suitable for the utilization of CIs.

To create M3U, XSPF and browser TV lists, you can use the Octopus Cast tool for Windows®. With the help of this tool you can easily create a M3U list. The tool can be found in the download section on www.digital-devices.de

<u>Preparation through Octopus Cast Tool</u>
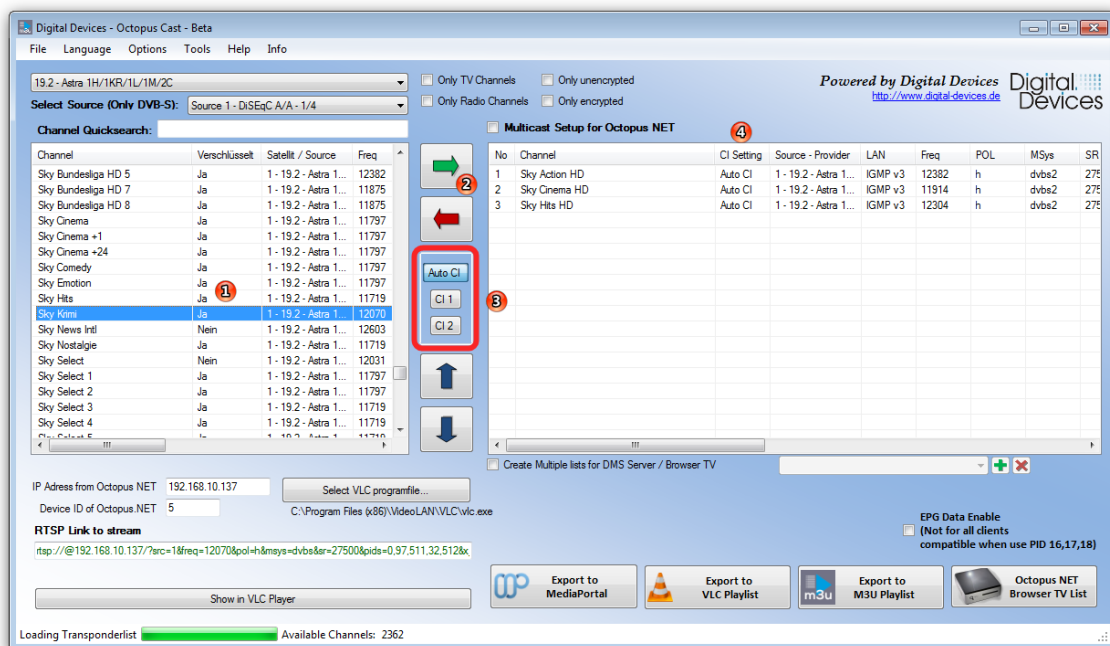
Install the Octopus Cast Tool and download a transponder list. In the active transponder list (1) you will get an overview of available channels and whether they are encrypted. Add the channels of the right list, which you would like to have in your M3U, XSPF list (XSPF extended file format for VLC) or Browser TV (DMS server). For adopting the channels you have the following choices: Auto CI, CI1 and CI2.

- Auto CI (default): If a channel is being selected, the next free CI is automatically accessed for decryption. Within RTSP request the parameter &x_pmt=<pmt>is consigned.
- CI1 / CI2: If you have multiple CIs inside your Octopus Net (two at maximum, e.g. Octopus Net rack) and different encryption methods (e.g. SKY and ORF) have to be applied, you can specify the CI with the respective encryption method. If your SKY card was in CI slot 1 for example and your ORF card in CI slot 2, then SKY has to be allot to CI 1 and ORF to CI 2 accordingly. Within RTSP request the parameter &x_pmt=<pmt> is consigned together with the additional parameter &x_ci=1 or &x_ci=2

The selection of CIs can be changed in the right list by selecting the channel and a right-click.

To get a preview of the channel in VLC, select a channel of the left list and set the transfer option (Auto CI, CI 1 or CI 2). The link displayed in the menu selection "RTSP link to the Stream" will automatically be augmented with the necessary parameters.

Utilization of CIs with M3U and XSPF lists
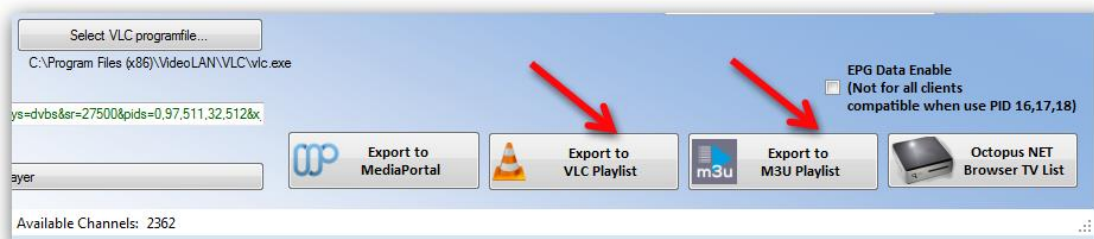
After adding the channel select the memory option "VLC playlist Export" in order to export the list into an XSPF format or "M3U playlist" to export them as a playlist in M3U or M3U8 format. After that the list can be opened with a player to access the channels.

Utilization of CIs on a TV browser (DMS)
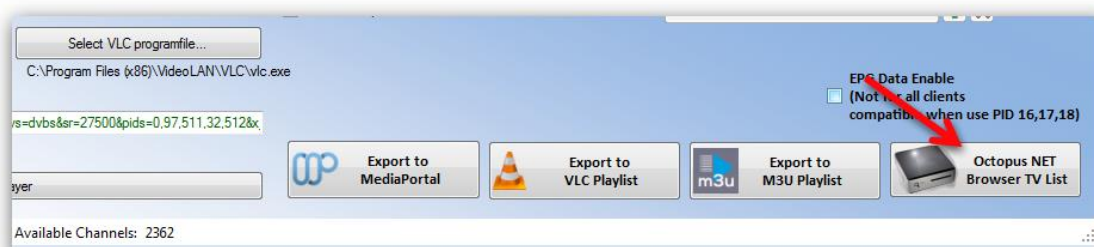
Once channels are added, selecting the memory option "Octopus Net Browser TV List" will generate a channel file. The channel file and sourcelist.csv are then to be packed in a ZIP or RAR archive.

The sourcelist.csv can be created or edited using a text editor and has the following structure:

```
KEY,CSVFILE,NAME,SYSTEM,SRC
"a19e","ChannelList","Astra 19.2 Senderliste","dvbs",1
```

KEY	"a19e"	Key for identification (selectable free, but should include not more than 4 characters)
CSVFILE	"ChannelList"	Name of the created Channel file without .csv
NAME	"Astra 19.2 channellist"	Name is displayed later for the channel list
SYSTEM	"dvbs"	Receiving system: dvbs, dvbc, dvbt oder dvbt2
SRC	1	The DVB-S source (DiSEqC LNB) - DVB-C or DVB-T is entered here 0

A sample file is available by accessing the web interface of your Octopus Net and starting the download.
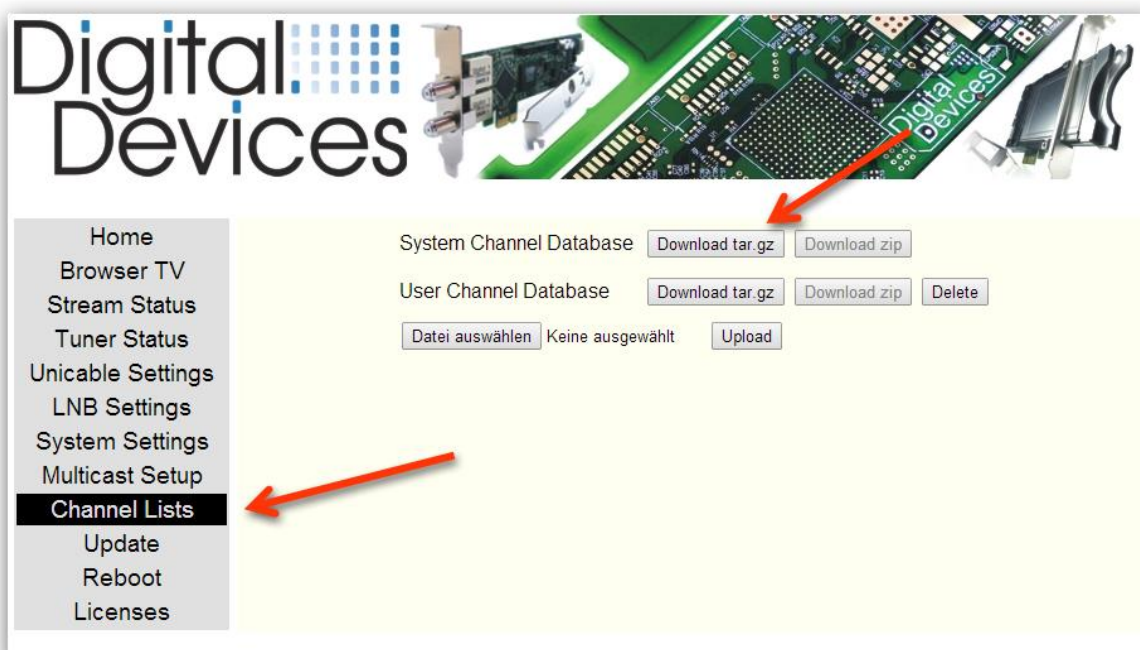
Select "Channel Lists" and then click at "System Channel Database" on "Download.tar.gz". This file can be unpacked with WinRAR®.

"Select file" allows the access of a zip file with your channel files/s and with a click on the "Upload" button it will be transferred into the Octopus Net.
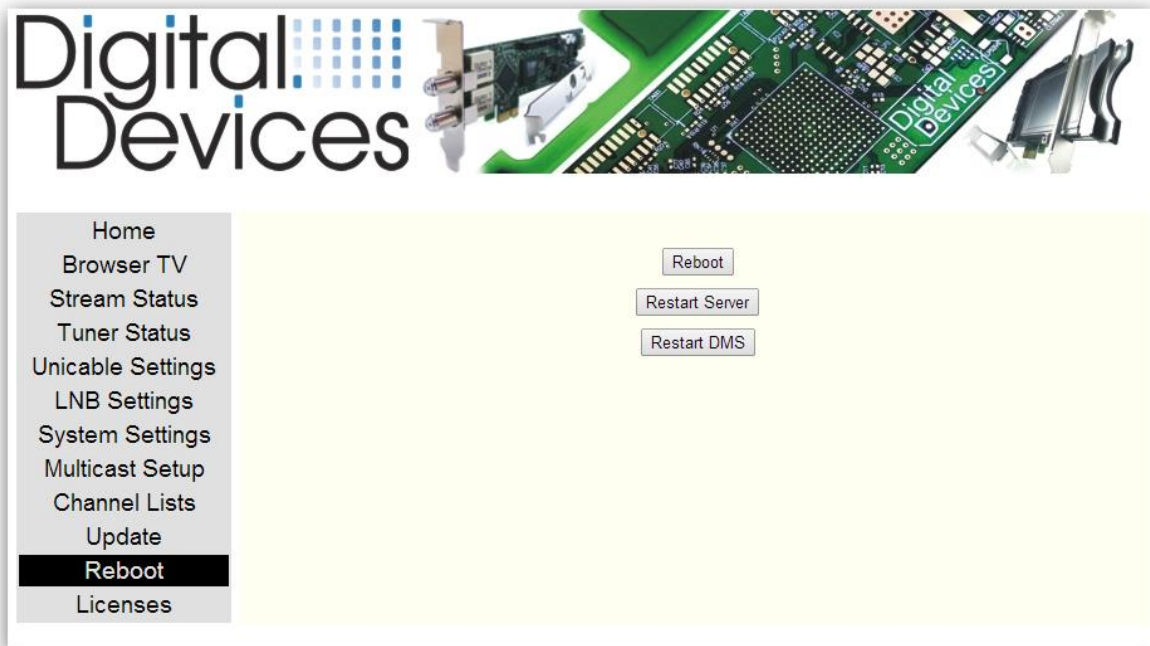
The DMS server of the Octopus Net needs to be restarted by selecting "Restart DMS", then, the loaded channel can be accessed under "TV Browser".

Already prepared channel lists are available in the download section on our website at: www.digital-devices.de

Request information on RTSP links with CI parameters

Example of an RTSP link with the use of "Auto CI"

**rtsp://@192.168.1.2/?src=1&freq=12070&pol=h&msys=dvbs -
&sr=27500&pids=0,97,511,32,512&x_pmt=97**

Example of an RTSP link with the use of preselected "CI 1"

**rtsp://@192.168.1.2/?src=1&freq=12070&pol=h&msys=dvbs -
&sr=27500&pids=0,97,511,32,512&x_pmt=97&x_ci=1**

Currently there is no menu item for the CI menu available inside the configuration interface. Updates will follow soon.

5.4.3.5 UPnP Settings

As soon as a firmware update is being released this category will be available. A recent version of the manual can be accessed on our website at www.Digital-Devices.de.

5.4.3.6 Multicast Setup

Multicast allows the streaming of a transponder or individual channels of a transponder into a network. A single tuner is able to process several TV channels simultaneously, which can be watched by any number of network participants. Each tuner can be assigned to another transponder. Basically there are two different methods which can be applied.

A permanent stream of a TV channels or transponders is capable of permanently streaming the signal into the network. Each client can lock into the stream. However, this results in a permanent network load, regardless of whether the TV channel is required or not.

Simply put, IGMP V3 allows that a stream can be requested and, thus, being activated. Basically, the first client involved activates the stream (IGMP join), the next client then may simply lock into the stream and, finally, the last client which leaves the stream disables the stream (IGMP leave). Thus, the network will only have to handle streams which are actually required.

Essentially, the network components have to support IGMP V3. Some switches / WLAN routers allow IGMP V3 to pass through on all ports, other switches ignore the protocol and do not even let it through. In case of streaming permanently into a WLAN network which does not support IGMP V3, multicast packets will be transmitted, so that the wireless network could quickly experience an overload. As an example the AVM Fritzbox 7390 supports IGMP V3 and by default multicast is let through into the LAN network, but is blocked for WLAN users. Working remains possible. Thus, it is important that the Octopus Net itself can easily separate wireless networks from other wired networks. While permanently streaming, you have the choice to decide which of the 5 ports on the built-in switch, should send the stream.

The Octopus Net supports a total of 12 simultaneous streams. Take note: Either a complete transponder (requires 1 stream) can be streamed or instead just your favored channels. Each TV channel occupies a single stream.

Some clients are not able to cope with fully streamed transponders. The software has to split the transponder and the PIDs of the desired program need to be filtered out in order to enable a proper rendering. Regardless of data or radio channels, the transponder is streaming just about everything. Eight transponders quickly reach 500 Mbit / s of data, and that is the amount of data what a network permanently would have to deal with.

There are two other feature that should be noted here only briefly. First it is possible, if not all streams are configured for multicast, access by Singlecast (eg from WLAN) on the Octopus Net. The Octopus Net directs a multicast TV channel to a single-cast participants. Details on that later.

A second possibility is to operate the Octopus Net in mixed mode (multicast and single-cast). For example, multicast use one or two tuners which are then occupied and the other tuners running in single-cast mode.

Note: It is of course possible between multicast and available Singlecast streams at e.g. with 8 tuners to make an own allocation.

The configuration options for the multicast setup:

In the configuration menu of the Octopus Net under "Multicast Setup" various sample configurations are included. Here once "Astra 19.2" selected.

By "Sample Download" you can download a sample file. Here you can see how the file is built. By "Select & Enable" a selected entry from the list can be activate.

Through the "Browse" button, a created file will be loaded into the Octopus NET and automatically uploaded and Enable. By "Disable" a running multicast will disabled.

The Digital Devices Octopus Cast tool helps you create, such individual multicast file / configuration. (Download at www.digital-devices.de) Documentation are inside the tool available.

Configuration Example: If the sample file is enabled, 11 streams "normal" assigned and a stream 10 (Kika) is streamed permanently only on ports 3,4 and 5.

Static Multicast Setup

Stream	Title	Destination	Lan-Ports
1	Das Erste	239.5.2.1:6670	
2	Bayerisches FS Nord	239.5.2.2:6670	
3	hr-fernsehen	239.5.2.3:6670	
4	SWR Fernsehen BW	239.5.2.4:6670	
5	WDR Köln	239.5.2.5:6670	
6	ZDF	239.5.2.6:6670	
7	zdf neo	239.5.2.7:6670	
8	zdf kultur	239.5.2.8:6670	
9	ZDFInfo	239.5.2.9:6670	
10	KiKA	239.5.2.10:6670	3 4 5
11	3sat	239.5.2.11:6670	

Current Settings [Download]
M3U List [Download]
Samples [Astra 19.2 ▾] [Download]
Select Sample [Astra 19.2 ▾] [Select & Enable]

[Durchsuchen…] Keine Datei ausgewählt. [Upload & Enable]

[Disable]

Under the menu item "Stream Status" you can now see that a permanent stream of data is sending out. Whether this is from a user is used or not, it does not matter. The other channels will be available only if they become activate when they are requested by IGMP V3.

|	Stream	Status	Input	Client	RTP Packets	Speed
Home	1	Stopped				
Browser TV	2	Stopped				
Stream Status	3	Stopped				
Tuner Status	4	Stopped				
Unicable Settings	5	Stopped				
LNB Settings	6	Stopped				
System Settings	7	Stopped				
Multicast Setup	8	Stopped				
Channel Lists	9	Stopped				
Update	10	Stopped				
Reboot	11	Running	2	239.5.2.11	67	
Licenses	12	Stopped				

With the menu item "M3U List", a M3U list of the active config can be downloaded via file. This can then, for example, VLC / MediaPortal / XBMC / etc. be used.

The multicast IP address is created by the Octopus Net itself and is not individually changeable. It is made up as follows: 239. <DeviceID> .2. <StreamID> (here, for example: 239.5.2.11).

Note: For questions regarding multicast configuration you can contact our support.

5.4.3.7 Channel Lists

The Octopus Net brings some channel lists from various providers from the factory with (automatic update via firmware update). These are grouped together under "System Channel Database". The Octopus Net can also handle personalized Channel List.
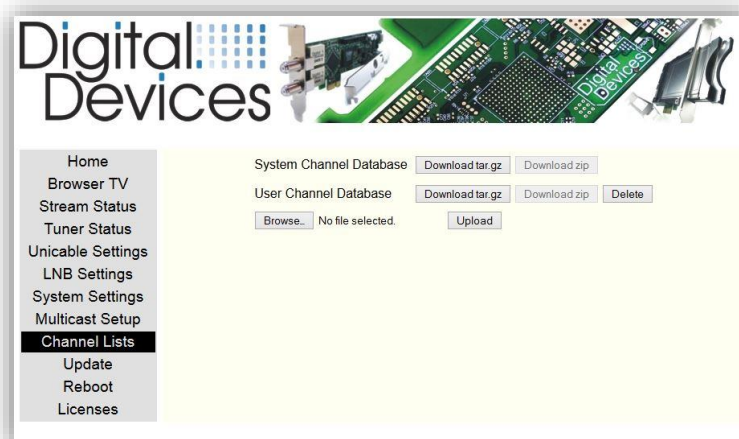
The Digital Devices Octopus Cast tool helps such a personalized "User Channel Database" to create (download at www.digital-devices.de). Documentation are inside the tools available.

After an upload of such a custom "User Channel Database" and a restart of the Octopus Net are these immediately available.

Note: With the button "Delete" at any time the factory-supplied "System Channel Database" can be reactivated.

5.4.4 Update

In the menu item "Update", you can easily update your Octopus Net to the latest firmware version.
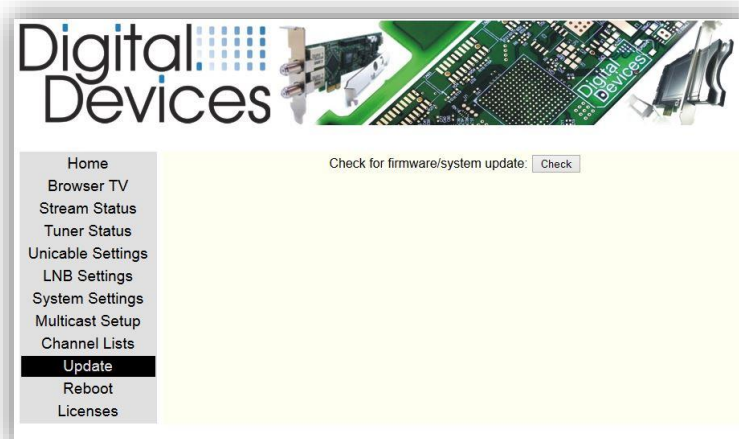
To use these functionality, the Octopus Net must have an active Internet connection. By clicking the "Check" button, an available firmware update on the server from Digital Devices will be searched and provided.
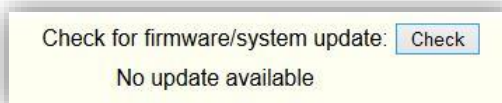
Please note: During the update of the Octopus

Net no clients can be used. The connection to any active clients in the mode live-TV or recording will be interrupted.

New firmware/system package available Update
Version: 13 Sep 2013 18:28

After you clicked the button "Update", the download will performed, following the Octopus NET will restarted. This usually requires about 2 to 3 minutes. Please check for an update if you can enable additional functionality of Octopus Net.

It is at any time possible to restore the previous firmware version. Proceed as follows:

- Turn off Octopus Net
- Press and hold reset button and turn on Octopus Net
- Release the reset button after more than 5 seconds
- Octopus Net restarts automatically and is after about 1 minute reachable again

5.5 Access via client

The Octopus Net can communicate with SAT>IP compliant clients (hardware and software), UPnP DMS Clients and browser-extensions. A latest overview of official SAT> IP clients can be found at www.satip.info.

Please note: Some SAT> IP Clients are chargeable to purchase.

5.5.1 Access via App

Install on your smart phone, tablet or desktop PC a SAT>IP compliant client. After the configuration of the client you can on an operating system of their choice (eg Android, iOS, Windows) access to the Octopus Net.

Example of a configuration on iOS / Android for the SAT> IP app from Elgato:

Buy the SAT>IP App of the manufacturer Elgato from the iTunes Store or Google Play. The app is a pure SAT>IP Client for use with SAT>IP servers from different manufacturers. It simulates a conventional "Living room Receiver" on your mobile device. The features like are Live-TV, channel scaning, EPG and Timeshift are available.

Note: The Elgato SAT>IP app currently supports only the types of reception DVB-S / S2 / T / T2.

Image source: Elgato.com

Install on your tablet / smartphone, the latest version of the "Elgato SAT>IP" app. When you launch first time the app it will automatically detects the Octopus Net. After a channel scan (menu item: Settings - Search stations ") are all found unencrypted SD channels in the app usable.
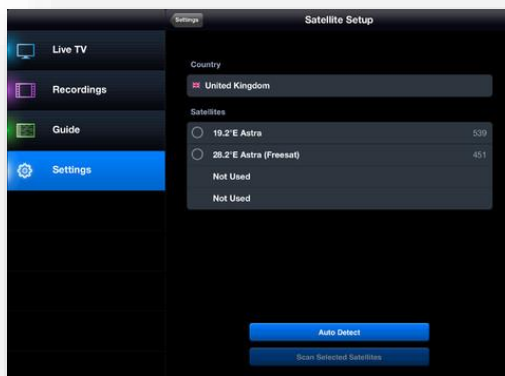

Image source: Elgato.com

5.5.2 Access via Windows OS

Install on your Windows Device a SAT>IP compliant client. After configuring the client, you can access the Net Octopus. About RTSP links you can access the Octopus Net, e.g. through the VLC player.

Please note that some software and hardware solutions are not suitable to show HD channels without interference.

Example of a configuration under Windows XP / 7 / 8 for the software Digital Devices TV:
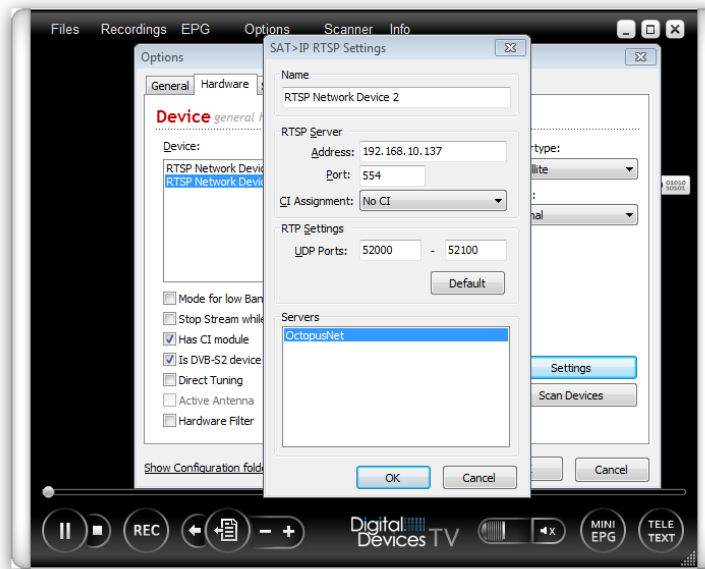

The Software *Digital Devices TV* come for free with the Octopus Net.

After installing the Digital Devices TV software, open the "Settings / Options" menu and select the "Hardware". Check the automatic detection of the Octopus Net (entry under device: "RTSP Network Devices").
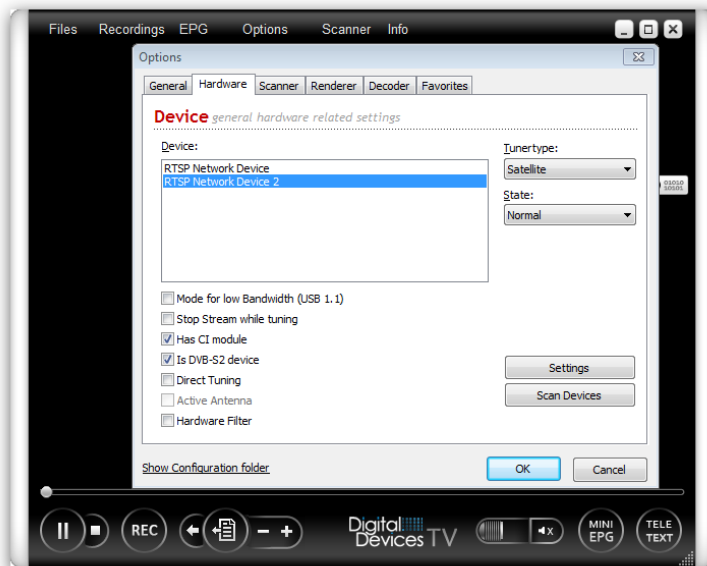
If required, adjust the entry for the "Tuner Type" to "satellite" or "cable".

In the menu item "Settings" you can read the network parameters of the detected Octopus Net and correct this if necessary. Changes to these settings you should make only in consultation with our support.
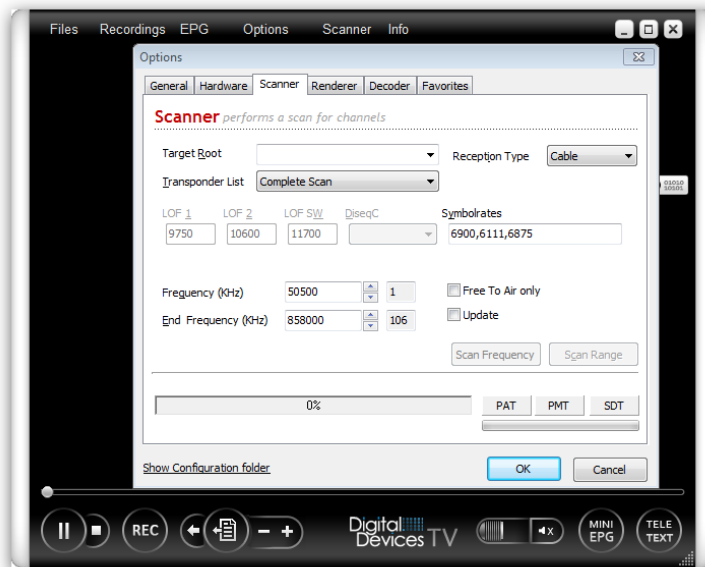

Users of DVB-S / S2 can immediately use live-TV, with the pre-installed transponder lists.

Note: Users of DVB-C and DVB-T / T2 must still perform a channel scan.

A "channel scan" you make with clicking the same named menu item. Then, select the correct transponder list for your content providers (e.g. cable Germany) or choose a "Complete Scan". You can give your channel scan a personal name.

Check the selection of the "reception type" and correct it if necessary. With a click of the button "Scan area" your current provider list will created. This process may take a few minutes.
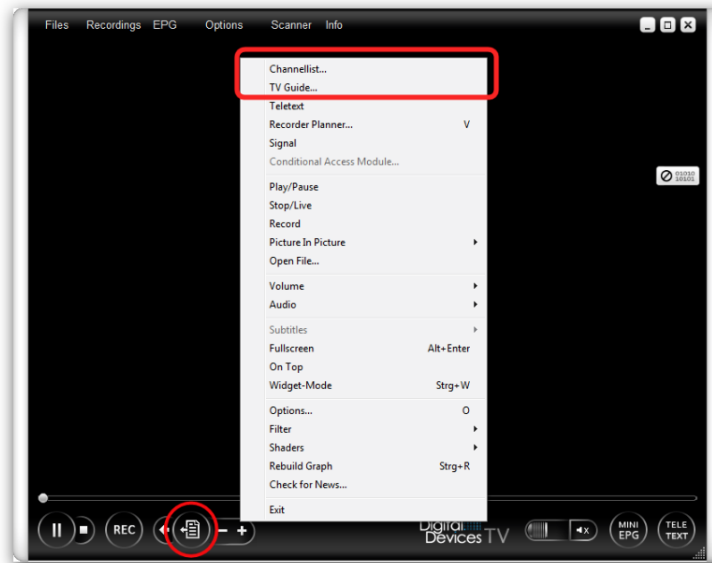
Click on the button "Open Channel" or by "right click", you can access the channel list and other functions.

For further Settings, please use the manual of Digital Devices TV.

5.5.3 Access via Linux OS

You can under a Linux operating system by various SAT>IP capable software clients use the Octopus Net. For the configuration, please refer to the information in the documentation of the respective software provider.

5.5.4 Access via Hardware Client

You can use various SAT> IP-capable receivers from different manufacturers as a hardware client with the Octopus Net. For the configuration, please refer to the information in the respective manufacturer's manual.
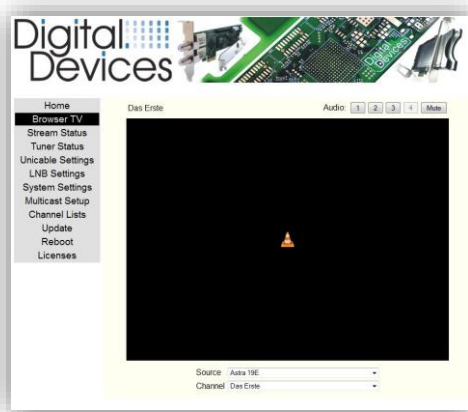
5.5.5 BrowserTV

About the Internet browser Firefox (desktop PC) can with an installed and activated Videolan / VLC AddOn the BrowserTV function be used.

Use the menu items "source" (providers) and channel for starting a playback. About the Configuration menu (Channel Lists) these points are customizable.

On an iPad, it is possible to use alternative software for receiving RTSP streams in addition to the VLC / Videolan player. Apps like VLC and GoodPlayer are good choices for the receiving of RTSP streams.
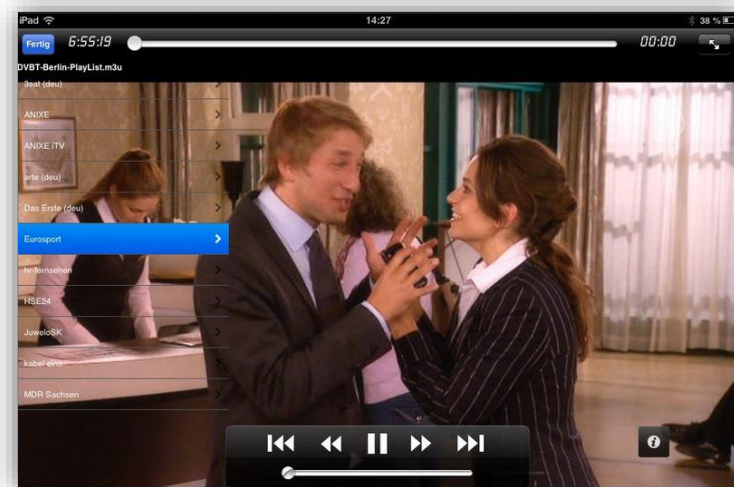
(BrowserTV on Desktop OS and iPad)

5.5.6 TV via M3U list

With the Digital Devices Octopus Cast Tool (Windows OS), a personal M3U list can be created. You can download this tool under www.digital-devices.de for create individual lists for M3U lists for numerous software solutions.

(M3U playlist in GoodPlayer)

5.6 Operation conditions

5.6.1 Regular operation

The Octopus Net can be operated in a network either alone, or together with further Octopus Net Devices.

Also SAT>IP servers from other manufacturers can be used together with the Octopus Net.

5.6.2 Cascaded operation

Several Octopus Net network tuner can be active in one network.

5.6.3 StandBy Mode

The Octopus Net has a power saving function. If no tuner in used, the Octopus Net has a power consumption about 3,5 Watt.

6. Hardware modification

The Octopus Net can optionally extended or upgraded depending on the model. So the Octopus Net models XX-2 (2 tuner version) can be extended by a further twin tuner module, to a 4 tuner version. Additionally can for all models the reception type be changed by replacing the tuner modules. A mixed reception type solution is also possible

Please note: The extension or modification of the Octopus Net should be done by a qualified technician or a person with appropriate knowledge in PC technology

### 6.1 Extension twin-tuner

The plastic bottom of the Octopus Net is secured by four screws, which also serve as feet. In addition, the bottom is held by plastic clips. The bottom can be opened without tools. Unscrew the 4 feet (by screw counter-clockwise).

Then carefully open with Help of the small notch in the plastic bottom (marked "pull upward"), the Octopus Net. Use no sharp-pointed tool! If you are not sure you should done the work by a professional. Damages that are caused by inappropriate opening are not covered by the warranty and guarantee.

Now you see directly the two holders for the twin tuner extensions. Connect the ribbon cable and the power plug (3.5 "floppy adapter) to the DuoFlex twin tuner extension. Insert the DuoFlex twin tuner extansion carefully into the holder. Fix this then with the two included screws.
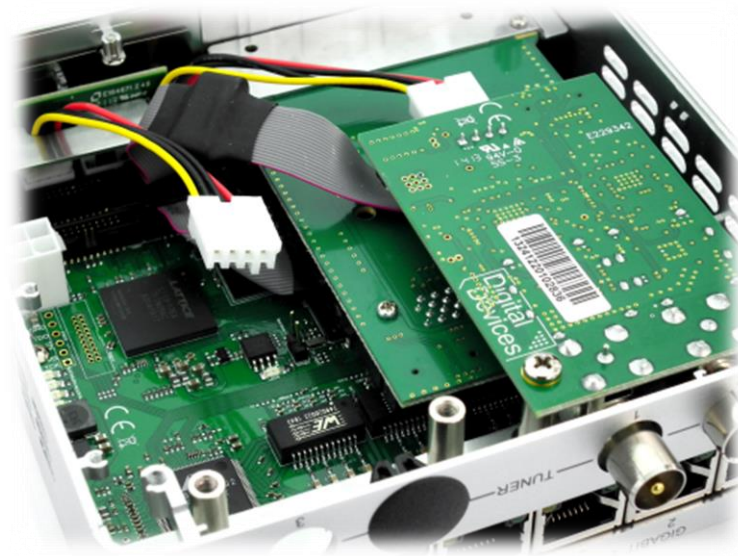
On closing please note the correct position of the bottom. Finally, you attach the cover with the four screws.

The extension is immediately recognized by the Octopus Net after a start without any additional configuration. However, you may need to make adjustments to unicable (only DVB-S/S2). In the "System Status" you can see the detected twin tuner with indication of the reception mode.

6.2 Replacing twin-tuner

Unscrew the 4 screws on the bottom of the Octopus Net. Then carefully open without a pointed tool the Octopus Net at the mark "pull upward". You see directly the two holders of the twin tuner extensions.

You can now remove existing twin-tuner and replace it with an alternative model. Remove only the respective two screws and remove the twin tuner carefully out of the holder. Disconnect the ribbon cable (data connection) and the power plug (3.5 "floppy adapter). Then remove the twin tuner completely from the Octopus Net.

Connect to the alternative DuoFlex twin tuner extension the ribbon cable (data connection) and the power plug (3.5 "floppy adapter). Mount the DuoFlex twin tuner expansion carefully into the bracket now. Fix it then with the two included screws. On closing please note the correct position of the bottom. Finally, you attach the cover with the four screws.

The changes are immediately recognized by the Octopus Net after a start without any additional configuration. However, you may need to make adjustments to unicable (only DVB-S / S2). In the "System Status" you can see the detected twin tuner with indication of the reception mode.

7. FAQ to Octopus Net

Q: How can I access the satellite configuration?

A: This occurs directly and exclusively on your used SAT>IP Client.

Q: How can I sort the channel?

A: This occurs directly and exclusively on your used SAT> IP Client.

Q: Why can I only find Channels in SD?

A: Some SAT> IP Clients allow only SD channels. For example: The iOS app from Elgato shows HD channels in older versions of the App, with a later update the HD channels was removed.

Q: Does the Octopus Net directly work in WMC?

A: No. But you can use additional software like DVBLink in the Windows Media Center for the use the Octopus NET

Q: Which version of DVBLink supports the Octopus Net?

A: From version 4.6.

Q: Does work the software eyeTV V3 for MAC OS with my SAT>IP Server?

A: eyeTV V3 works with SAT>IP servers from version 3.6.2 and currently supports ONLY the reception of DVB-S / S2.

Q: Will my SAT>IP server works with XBMC, Media Portal and other software products?

A: Yes! On our website you can find some guides to the possible software integrations.

8. Control LED

Description to follow.

9. Digital Devices

Digital Devices was founded in 2009 and is now a "GmbH" under German law.

Digital Devices GmbH has been profitable since the first fiscal year.

The company consists of a team of owners (Engineers) and covers a broad product range of products primarily in the DVB area and other related products.

Competence and development skills:

- Hardwaredesign, 3D Designs
- Softwaredevelopment (Windows- and Linux Driver)
- DVB-Technology
- programmable Logic (FPGA)
- HF-Technic

The focus of the designs is the seamless functionality between all Digital Devices products.

9.1 Product portfolio

Digital Devices launched its first DVB products in 2009 (satellite and cable/terrestrial) and added a Common Interface shortly after that. The portfolio has been expanded to a range of Tuner modules, bridges and DVB related products. Digital Devices has become a leading provider for embedded tuners in the PC market.

Digital Devices Product portfolio:

- Standard DVB cards, Common Interfaces and Bridge moduls (Windows and Linux)
- Headend devices
- PC mainboards
- Surveillance cameras and –systems

The DuoFlex series complements the Cine series by Twin Tuner extensions via ribbon cable (no additional PCIe slot required), especially in compact environments. The DuoFlex series is also available as an extension for the Octopus series.

The Octopus series offers numerous opportunities for special TV tuner environments for hobby but also especially for business solutions. Combinations with CI extensions and external solutions are an example of the flexible modular combining ability in our DVB-portfolio for the PC market.

Explore the world of Digital Devices under www.digitaldevices.de

9.2 Service Informations

In service cases, please contact our support at support.digital-devices.de. You can also reach us by phone and email.

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D 47228 Duisburg

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Notes: