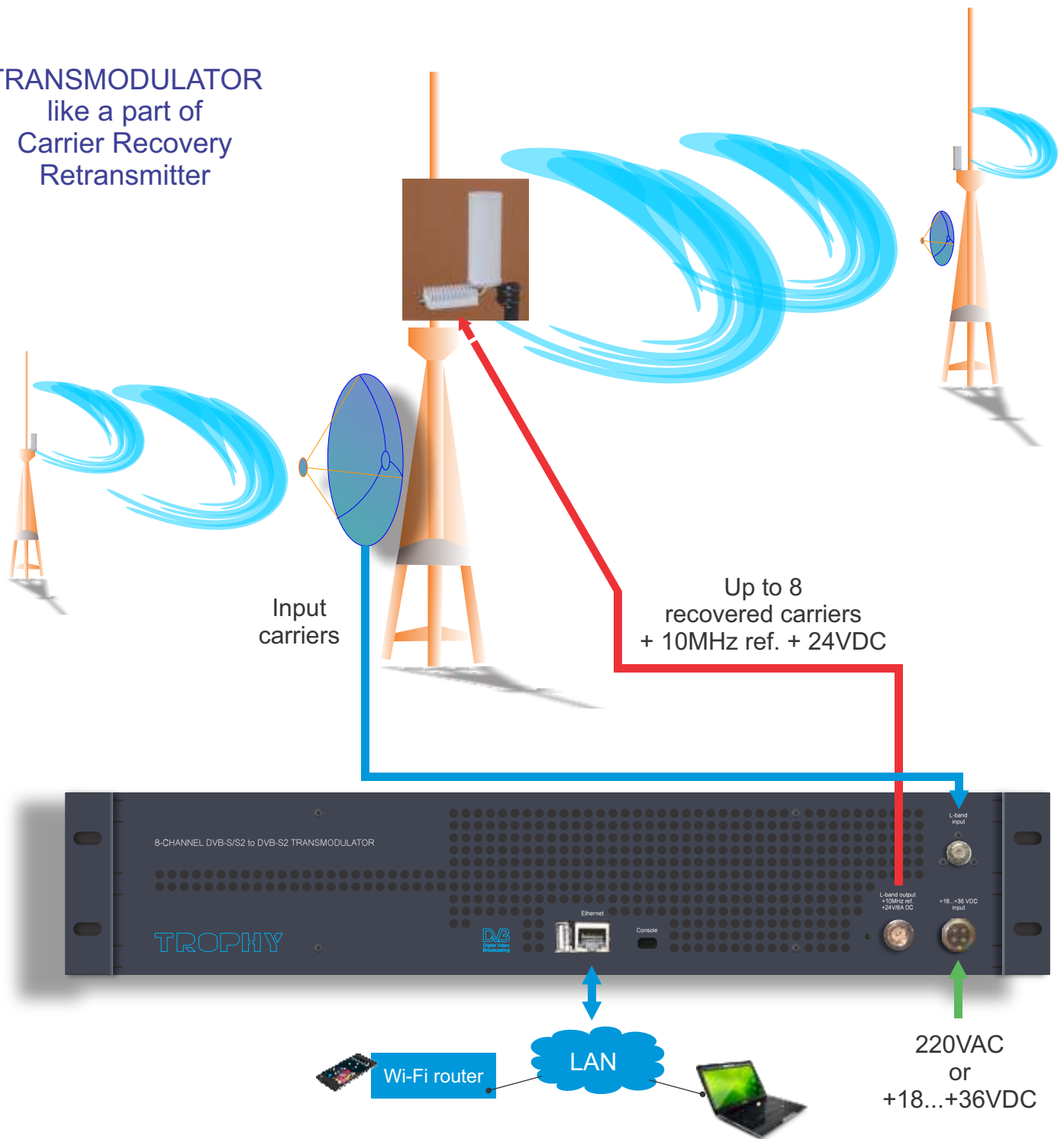


THE MAIN APPLICATION OF DVB-S2 to DVB-S2 TRANSMODULATORS

Experience of MVDS terrestrial broadcasting shows that DVB-S2 carrier must be restored after a second signal receiving/transmission. This fully restored signal parameters. The output signal coincides with the signal characteristics (MER, VBER, CBER, C/N etc.) which is transmitted from the Head-End. In addition, possible to form a new frequency grid, if necessary.

TRANSMODULATOR
like a part of
Carrier Recovery
Retransmitter



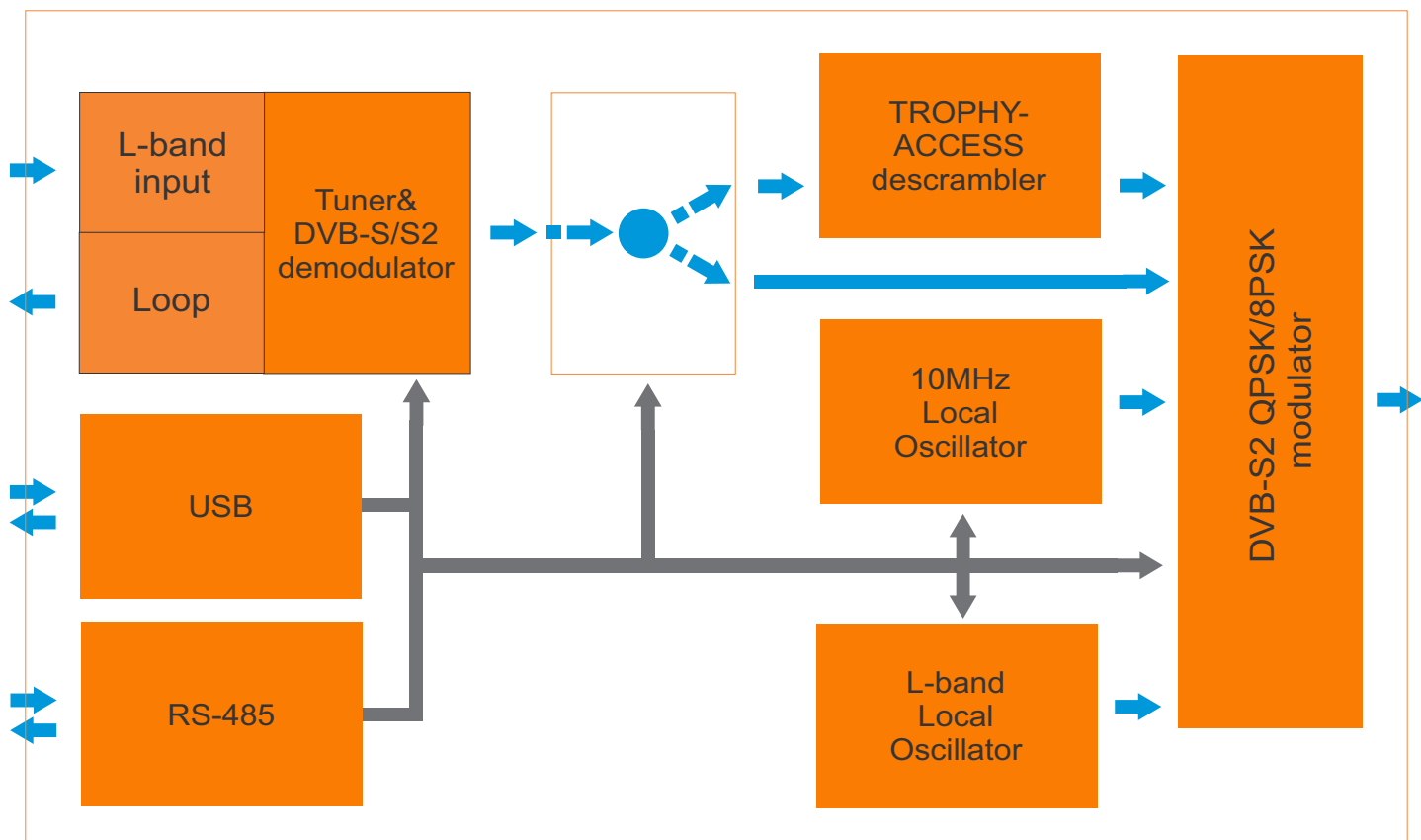
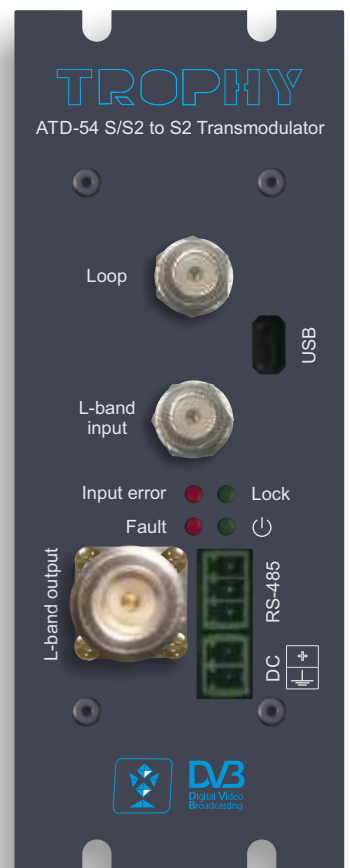
GENERAL INFORMATION

ATD-54-S/S2 to DVB-S2 TRANSMODULATOR is a brand new transmodulator from DVB-S/S2 to DVB-S2 designed for MVDS application in full compliance with DVB-S2 standard.

The ATD-54-S/S2 to DVB-S2 TRANSMODULATOR:

- receives&demodulates DVB-S or DVB-S2 transponder;
- descrambles all TROPHY-ACCESS channels (optionally);
- modulates new DVB-S2 transponder to transmit in MVDS Block UP Converter (BUC). As a result, the maximum MER value for the new carrier is restored. The form and quality of the repeater signal becomes the same as that of the base station signal.

Attention! Symbol rate of output transponder must be equal to or bigger than symbol rate of input transponder. But output symbol rate must not exceed more than 20% value of input symbol rate.



NETWORK MANAGEMENT VIA EMBEDDED REMOTE ACCESS CONTROLLER

Embedded Remote Access Controller provides WEB-control and monitoring of Transmodulators parameters via Internet. Remote Access Controller connects with Transmodulators by RS485 BUS.

CONFIGURATIONS VIA ETHERNET INTERFACE

If it is necessary to change the basic configuration, the particular HTML user interface must be called up on a computer connected to the device(s). All the settings can be made via Internet Browser. How the user interface works is almost self-explanatory. Any special features of use will be explained in the following chapters.

To use all functions of the device by WEB-interface activate Java Script in your browser settings. Network connection to the computer System requirements: - PC/laptop with 10/100/1000 Mbit Ethernet interface - any Internet browser, capable JAVA script (Google Chrome is recommended). The device has to be connected to PC network using an Ethernet cable. The default IP address of the device is 10.10.10.20. In order to access the WEB interface of the device from a PC, the PC has to be in the 255.255.255.0 subnet. If multiple devices are connected to the same network each device must be set to its own unique IP address to avoid address conflicts. After these settings, the IP address of the PC has to be adjusted to match the network.

The Remote Access Controller uses a modern WEB-interface. You can go to the Controller's menu, knowing the IP-address (url) of the device. To gain local access to the Controller, you can connect to it via an Ethernet cable.

In order to connect to the Controller remotely, it is necessary to connect the Controller to the Internet router. You can manage the Controller locally or remotely from a laptop or smartphone.

MANAGEMENT VIA WEB-INTERFACE

Embedded REMOTE ACCESS CONTROLLER uses the Linux Debian OS.

Install the terminal program (PuTTY for Windows) on your computer for setup the REMOTE ACCESS CONTROLLER configuration on the SSH-connection.

IP address by default: **10.10.10.10**

Protocol: **SSH**

Login: **admin**

Password: **admin**

It is mandatory to change the root password for confidential !

Use your favorite editor for edit the file `/etc/tmod_ctrl.conf`

```
serial port: /dev/ttyS1
port: 80 #http port
address : 1,2,3,4,5,6,7,8 #transmodulators addresses delimited by commas
username: admin
password: 0e7138b4f83fb2ce806c4ed9642511ad
```

- Serial port. `/dev/ttyS1` is serial port by default;
- HTTP port. `80` is http port by default;
- Address. You can indicate original numbers of RS-485 ports of your Transmodulators. You can see these port numbers on the stickers on the modules (From 1 to 8 numbers by default). In addition, you have the ability to change the port number from 1 to 255 by sending commands via the USB control port of each Transmodulator;
- Username. WEB-interface username. Change the login and password for confidential !
- Password. WEB-interface password. The program will automatically scramble password after restarting of this service.

When the IP address for the REMOTE ACCESS CONTROLLER has been entered into the address field of the browser, a connection will be made to the device and the appropriate check-in window will be displayed. Enter your confidential username and password.

TRANSMODULATORS LIST MENU

First of all, you can see numbers of RS-485 ports of Transmodulators which connects to the RS-485 BUS. You can see these port numbers on the stickers on the modules. In addition, you have the ability to change the port number from 1 to 255 by sending commands via the USB control port of each Transmodulator (see page10 of ATD-54-S_S2 to S2 transmodulator datasheet).

#	Tuner	Rx Freq.	Signal	SNR	Transm.	Tx Freq.	Temp	
1	Lock	1635MHz	-115dBm	6.3dB	Ok	1462MHz	23°C	Edit
2	Errors	1635MHz	-35dBm	7.4dB	Ok	1462MHz	32°C	Edit
3	Lock	1635MHz	-54dBm	8.5dB	Fault	1462MHz	107°C	Edit
4	Lock	1635MHz	-122dBm	5.6dB	Ok	1462MHz	21°C	Edit
24	Lock	1635MHz	-123dBm	5.2dB	Ok	1462MHz	21°C	Edit

#	Number of RS-485 port of Transmodulator
Tuner	Current mode (LOCK, UNLOCK, ERRORS) of Transmodulator's NIM
Rx Freq.	Frequency of input DVB-S/S2 transponder, MHz
Signal	Level of input signal, dBm
SNR	Signal / Noise ratio of input signal
Transm.	Common state of Transmodulator (OK, FAULT)
Tx Freq.	Frequency of output DVB-S2 transponder, MHz
Temp	Current temperature of chipset, °C
Edit	PARAMETERS MENU button

SPECIFICATIONS	
Standards	
Carrier ID	ETSI 103 129
DVB-S2	EN 302 307
Control&Monitoring	
WEB-Interface	Ethernet 10/100 Mb, RJ-45 connector
Virtual COM-port	Micro USB connector
Descrambler mode	TROPHY-ACCESS (additional licenses)
RF input	
L-band	900MHz to 2150MHz, 1MHz step
Input Symbol rate	From 1 to 45MSymb/s, 1KSymb/s step
LNB control	13/18V, on/off, 22 kHz
Connectors	F-connector, 75Ω
RF Output	
L-Band	900MHz to 2150MHz, 1MHz step, up to 8 carriers
Connector	N-Type, 50Ω
10 MHz Local Oscillator +24VDC / 6A	0...+5dBm, injected to output signal
SNR	> 40dB @ 0dBm
Attenuation range	0dB to -31.5dB, 0.5dB step
DVB-S2	QPSK: 1/3, 2/5, 1/2, 3/5, 2/3, 3/4, 4/5, 5/6, 8/9, 9/10 8PSK: 3/5, 2/3, 3/4, 5/6, 8/9, 9/10
Output Symbol rate	From 1 to 35MSymb/s, 1KSymb/s equal to or higher than the input Symbol Rate
Physical	
	+18V...+36VDC or 220VAC optional up to 250W; 6kg Weight; 0°C to 60°C