DVB for ALL!

TROPHY

MVDS TROPHY RETRANSMITTERS

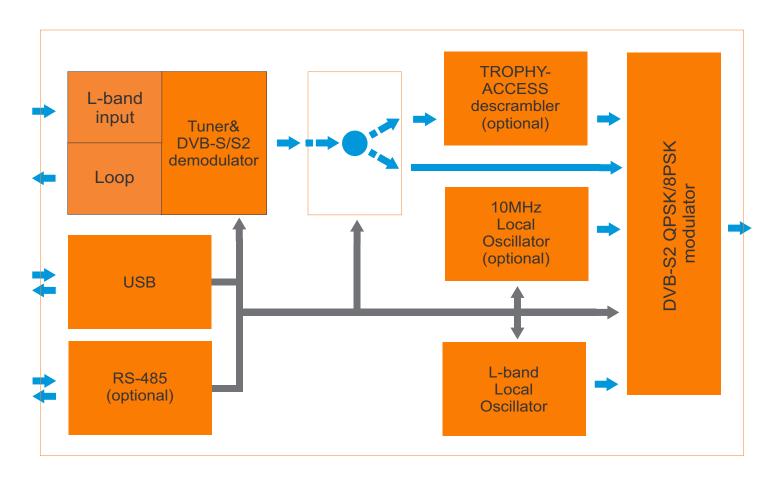## THE MAIN APPLICATION OF S2 to S2 TRANSMODULATOR

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.

The main element of the repeater is the DVB-S/S2 to DVB-S2 ATD-54 Transmodulator.

As can be seen from the diagram, the carrier is demodulated and the digital stream is fed to the embedded DVB-S2 modulator input. Data and tables are not changed. Thus, the signal at the Transmodulator output is no different from the signal at the head-end output. Of course, it is necessary to ensure such signal quality at the Transmodulator input that the demodulator can restore data losses using the Forward Error Correction mechanisms (FEC).
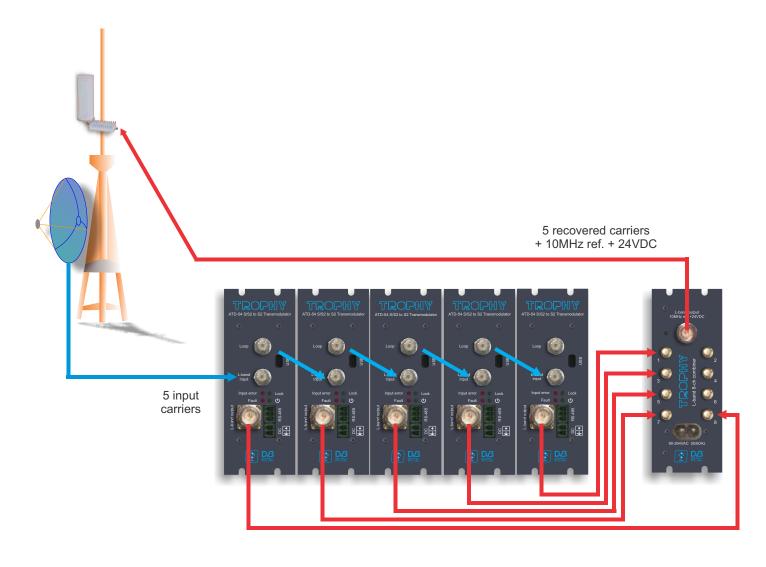
If you receive a signal scrambled with TROPHY-ACCESS CAS, you have the ability to open all programs using the built-in TROPHY-ACCESS descrambler.

It is possible to use Transmodulators in two design versions:

Solution 1 - as a group of separate single-channel devices

Solution 2 - as a 19-inch unit in which 1 to 8 modules can be installed.

Both of these options will be discussed below.

THE RETRANSMITTER AS A GROUP OF SEPARATE TRANSMODULATORS

The signal from the receiving antenna goes to the input of the first Transmodulator and then, through the LOOP outputs, goes to the following Transmodulators. The LOOP has an amplifier and thus the signal level does not decrease when came to the next device. The output signal from each Transmodulator goes to the input of the Combiner. An injector is installed at the output of the Combiner. Injector adds a 10MHz ref and +24VDC to the group carrier.

5 recovered carriers
+ 10MHz ref. + 24VDC

5 input carriers

MANAGEMENT OF SEPARATE TRANSMODULATORS

Each Transmodulator equipped by Micro USB connector for Virtual COM-port interface. The protocol specification is CDC (Communication Device Class).
In order to be able to configure the Transmodulator configuration on the SERIAL connection use any terminal program on your computer, for example:
TeraTerm for Windows
USB Terminal for Android
Get Terminal for iOS
Picocom for Linux

USB serial port settings:

*   bits per second........115200;
*   data bits..................8;
*   parity.......................none;
*   stop bit....................1;
*   flow control...............none.

Command **help** indicates all available commands for Transmodulator parameters managing.

The above solution does not have remote management capability. If this feature is necessary for you, then please consider the following solution.

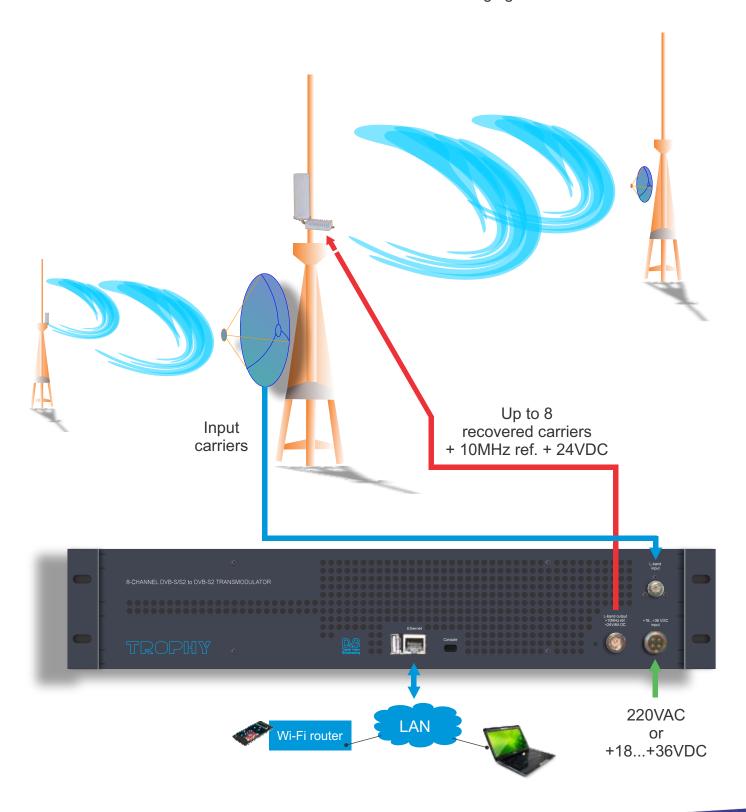## THE RETRANSMITTER AS A 19-INCH BOX IN WHICH TRANSMODULATORS INSTALLED

The signal from the receiving antenna goes to the input of the Multichannel Box. The group output signal has a 10MHz ref and +24VDC.
Multichannel Transmodulator has a WEB-interface for remote managing.

Input carriers

Up to 8
recovered carriers
+ 10MHz ref. + 24VDC

8-CHANNEL DVB-S/S2 to DVB-S2 TRANSMODULATOR

TROPHY

L-band input

L-band output
+10MHz ref.
+24V/6A DC

+18...+36 VDC input

Ethernet

Console

LAN

Wi-Fi router

220VAC
or
+18...+36VDC

GENERAL INFORMATION

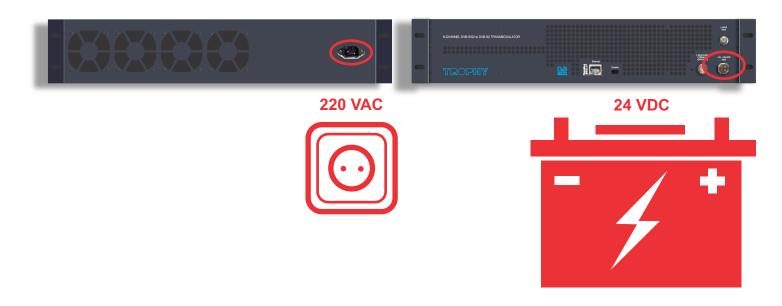8-CHANNEL 2U/19" BOX FOR DVB-S/S2 to DVB-S2 TRANSMODULATORS designed for MVDS retransmitters.

2U/19" BOX has:

- Embedded Remote Access Controller;
- Embedded 8-channel L-band Combiner;
- Embedded 24VDC/6A Power Supply for Block Up Converter feeding;
- Embedded 10MHz ref. Injector;
- 8 slots for ATD-54 Transmodulator modules installing;
- Embedded 12VDC/6A Power Supply for Transmodulators feeding;
- 4x60mm FANs.

The BOX is produced in two modifications:

powered by 220VAC	powered by 18 ... 36VDC supply

220 VAC

24 VDC

MANAGEMENT OF MULTICHANNEL TRANSMODULATOR

19-inch BOX equipped by WEB-interface. You can manage all input and output parameters remotely. See the MAIN menu of the multichannel device.

#	Tuner	Rx Freq.	Signal	SNR	Transm.	Tx Freq.	Temp	
1	Lock	1900MHz	-20dBm	16.3dB	Ok	1000MHz	44°C	Edit
2	Lock	1900MHz	-17dBm	16.3dB	Ok	1050MHz	43°C	Edit
3	Lock	1900MHz	-9dBm	16.4dB	Ok	1100MHz	39°C	Edit
4	Lock	1900MHz	-9dBm	16.3dB	Ok	1150MHz	40°C	Edit
5	Lock	1900MHz	-8dBm	15.7dB	Ok	1200MHz	37°C	Edit
6	Communication error!							
7	Communication error!							
8	Communication error!							

— Number of RS-485 port of Transmodulator

Tuner — Current mode (LOCK, UNLOCK, ERRORS) of the Transmodulator tuner

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

PARAMETERS MENU

Press EDIT button and manage parameters of each Transmodulator.

Modal Header

Input Frequency (MHz)	1635
Input Symbol Rate (kSpS)	30000
LNB Power	18V ▼
Output Frequency (MHz)	1462
Output Symbol Rate (kSpS)	35000 ⇕
Modulation - FEC	8PSK - 5/6 ▼
Roll-off	0.25 ▼
Output attenuation (dB)	-11

Accept   **Cancel**

Input Frequency   Frequency of input transponder, 950...2150 MHz

Input Symbol Rate   S/R of input transponder, 1...45000 kSpS

LNB Power   Mode of LNB control

Off
13V
18V
13V 22kHz
18V 22kHz

Output Frequency   Frequency of output transponder, 950...2150 MHz

Output Symbol Rate   S/R of output transponder, 1...35000 kSpS

Modulation - FEC   Mode of output carrier

QPSK
QPSK - 1/3
QPSK - 2/5
QPSK - 1/2
QPSK - 3/5
QPSK - 2/3
QPSK - 3/4
QPSK - 4/5
QPSK - 5/6
QPSK - 8/9
QPSK - 9/10
8PSK
8PSK - 3/5
8PSK - 2/3
8PSK - 3/4
8PSK - 5/6
8PSK - 8/9
8PSK - 9/10
16APSK
16APSK - 2/3
16APSK - 3/4
16APSK - 4/5
16APSK - 5/6
16APSK - 8/9
16APSK - 9/10
32APSK
32APSK - 3/4
32APSK - 4/5
32APSK - 5/6
32APSK - 8/9
32APSK - 9/10

Roll-off   Roll-off factor, 0,2 ; 0,25 ; 0,35

Output attenuation   Attenuation of level of output carrier, 0...-31.5 dB