

DVB for ALL!



TROPHY



Product catalogue

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AMD-53A-S2

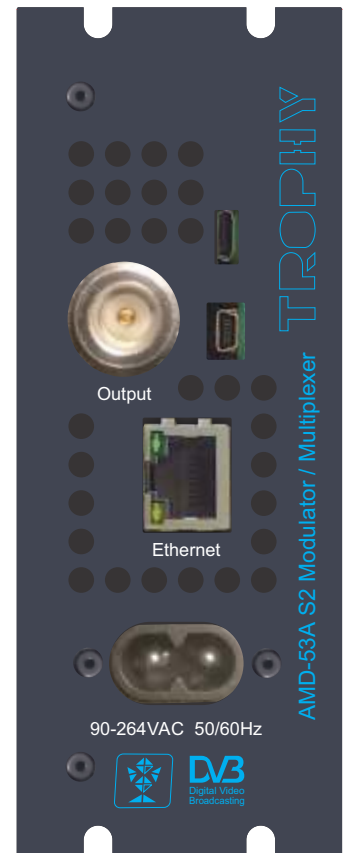
DVB-S2 MODULATOR / MULTIPLEXER

Overview

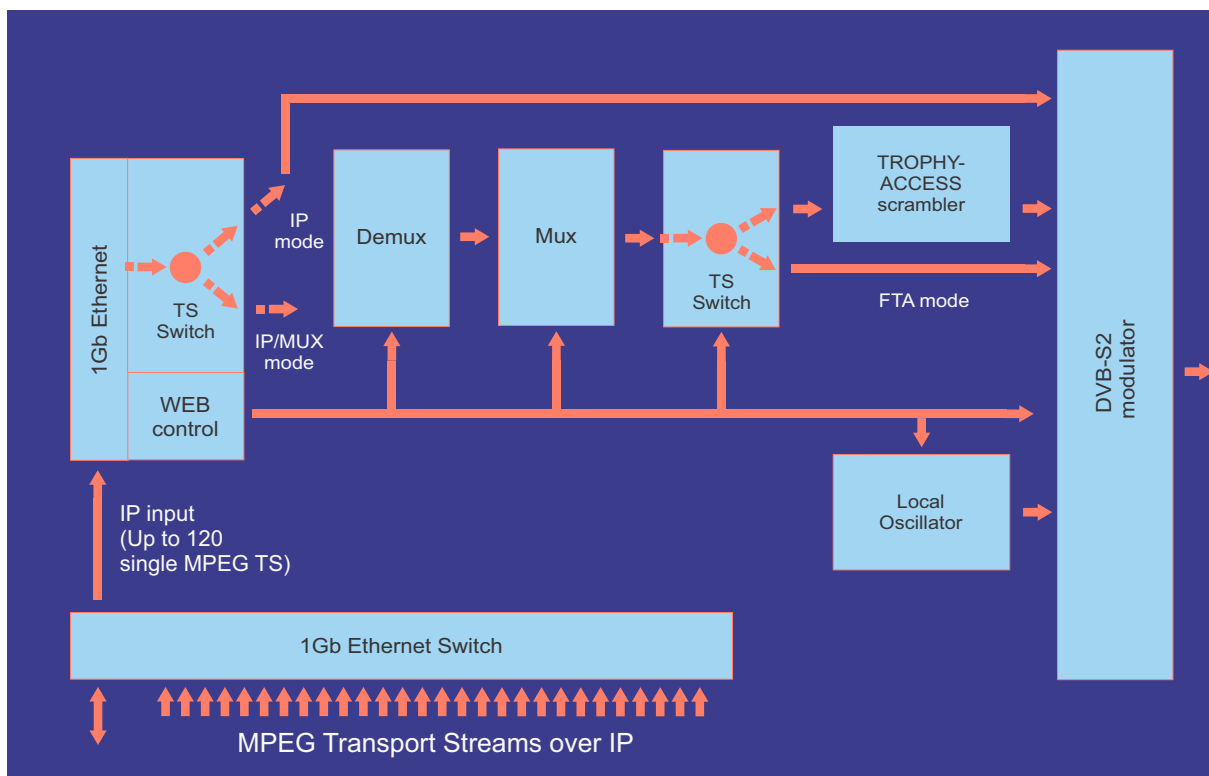
- The AMD-53A-S2 DVB-S2 converts MPEG Transport Stream over IP into QPSK/8PSK signal to transmit them in BUC (Block UP Converter).
- DVB-S2 carrier from available up to 120 transport streams are multiplexed and generated. The internal processing allows the output of DVB signals in full HD resolution.
- Built-in support for TROPHY-ACCESS Conditional Access System for content protection. Software license to enable TROPHY-ACCESS scrambler solution;
- The device receives a data stream via Gigabit Ethernet. It can receive up to 120 transport streams from the TROPHY HeadEnd or from another IP sources included MPEG transport streams.

Device versions

Features	Part No.			
	53001	53002	53003	53004
FTA only	+		+	
TROPHY-ACCESS CAS		+		+
EPG (EIT) supporting			+	+



Diagram



AMD-53A-S2

DVB-S2 MODULATOR / MULTIPLEXER

Specifications

Standards	
Carrier ID	ETSI 103 129
DVB-S2	EN 302 307
MPEG-TS	EN 301 210
DVB MPEG-TS over IP	ETSI TS 102 034
MPEG-2 PSI Tables (PAT,PMT,NIT etc)	EN 300 468 (additional license for EPG)
IP input	
Stream port + WEB interface	Ethernet, 10/100/1000 Base-T
Connector	RJ-45
Streaming protocol	UDP/RTP, Unicast/Multicast
Streaming mode	CBR/VBR
RF Output	
L-Band	900MHz to 2150MHz, 1MHz step
SNR	> 40dB @ -10dBm – 8PSK – 30Mbaud
Shoulders rejection	< -50dB @ -10dBm & f/fN=1,5 for 20% roll-off
Main RF output	N Type, 50 Ohm
Output level	-5dBm max
Attenuation	0 to -47dB; 0,1dB step
Embedded encryption	TROPHY-ACCESS 3.0 (additional license)

AMD-53A-S2

DVB-S2 MODULATOR / MULTIPLEXER

Multiplexer	
Quantity of multiplexed channels	up to 120
PID quantity supported	All PIDs of input FTA services
Modulation	
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
Supported DVB modes	CCM: Constant Coding and Modulation
	VCM: Variable Coding and Modulation
	SeamlessACM: Adaptive Coding and Modulation
DVB-S2 frames	Short (16200), Normal (64800)
Pilots	On or Off
Variable symbol rate	From 1 to 35Mbaud, step 1Baud
Control & Monitoring	Web Browser Control & Monitoring
	10/100/1000 Base-T Ethernet ports
Physical	90 to 240VAC/50Hz/15W
	2kg Weight
	0°C to 50°C temperature range
TROPHY-ACCESS 3.0 options	
Type of scrambler	FPGA based, doesn't match CSA algorithm
Size of the decoder address field	32 bits
Quantity of addressable decoder	16 millions
The number of serviced channels	without any restrictions
The number of packets serviced	without any restrictions
Automatic decoder disconnection	with zero balances in the subscriber account
Individual addressable message	up to 120 characters

AMX-53

IP to ASI MULTIPLEXER

Overview

MAIN FUNCTIONS OF AMX-53 MULTIPLEXER:

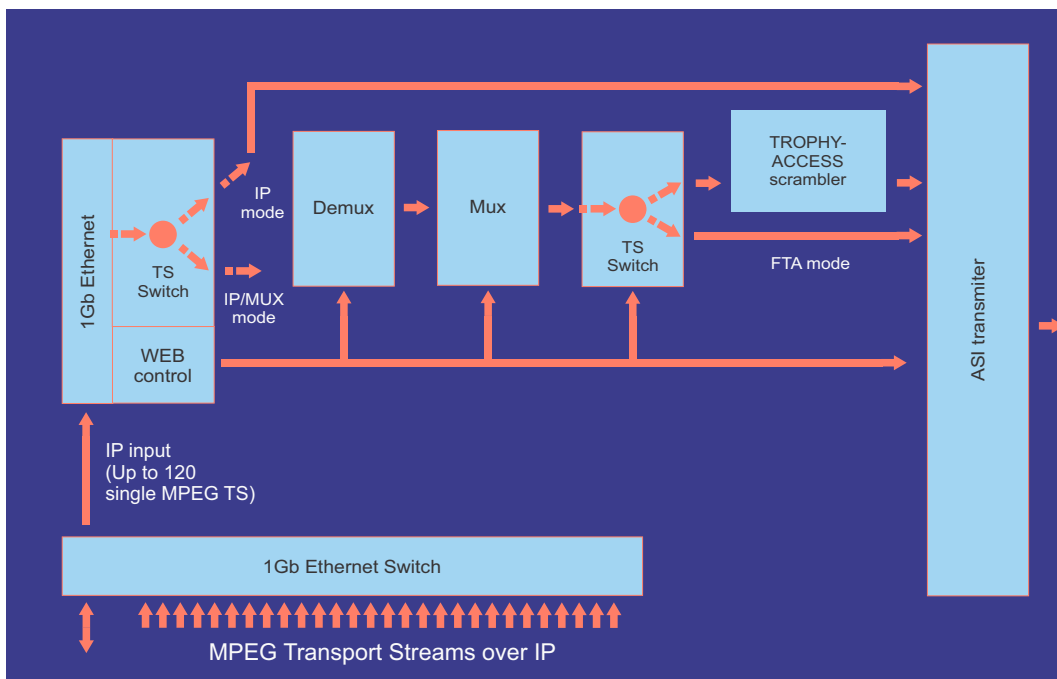
- multiplexes MPEG TS streams to ASI-DVB stream with bit rate from 2 Mbps up to 200 Mbps;
- provides up to 120 independent multiplexed MPEG transport streams to a single ASI stream, with built-in support for TROPHY-ACCESS Conditional Access System for content protection. Software license to enable TROPHY-ACCESS scrambler solution;
- takes full advantages of the IP technology to provide a cost effective, highly reliable and flexible solution;
- has highly efficient multiplexing algorithms with PCR correction;
- provides transport Stream rates up to 200 Mbit/s;
- supports all PIDs of input services, including EIT and LCN;
- supports Full PID remapping of a FTA channels;
- provides effective compensation of network jitter;
- supports Control and Set-Up via WEB-interface;
- has high performance and reliability.

Device versions

Features	Part No.			
	3001	3002	3003	3004
TROPHY-ACCESS CAS		+		+
EPG (EIT) supporting			+	+



Diagram



AMX-53

IP to ASI MULTIPLEXER

Specifications

Standards	
Carrier ID	ETSI 103 129
MPEG-TS	EN 301 210
DVB MPEG-TS over ASI	EN50083-9; ETSI TR 101 891
DVB MPEG-TS over IP	ETSI TS 102 034
MPEG PSI Tables (PAT,PMT,NIT etc)	EN 300 468 (additional license for EPG table)
ASI output	
TS transfer format	MPEG-TS, 188 bytes over ASI
Level range	200...880 mV
Data rate	2...200 Mbps
ASI transfer format	continuous, burst
Connector	BNC socket (two connectors in Part No.3002,3004)
Impedance	75 Ohm
IP (stream port + WEB interface)	
Connector	Ethernet, 10/100/1000 Base-T, RJ-45
Streaming protocol	UDP/RTP, Unicast/Multicast
Streaming mode	CBR/VBR
Encryption 0,25 to 200Mbps	TROPHY-ACCESS (additional license)
Quantity of multiplexed channels	Up to 120
PID supported	All PIDs of input FTA services

Control & Monitoring	
	Web Browser Control & Monitoring
	100/1000 Base-T Ethernet ports
Physical	
	90 to 240VAC/50Hz/15W
	0°C to 50°C temperature range, 2kg Weight
TROPHY-ACCESS Options	
Type of CAS	FPGA based, doesn't match CSA algorithm
Size of the decoder address field	32 bits
Quantity of addressable decoder	16 millions
The number of serviced channels	without any restrictions
The number of packets serviced	without any restrictions
Automatic decoder disconnection	with zero balances in the subscriber account
Individual addressable message	up to 120 characters

AMD-54

ASI to DVB-S2 MODULATOR

Overview

AMD-54 is a modulator designed for applications over satellite or MVDS in full compliance with DVB-S2 standard.

The AMD-54 covers the full L-band (950/2150MHz) and offers a useful Symbol Rate up to 35 MSymb/s. The modulator has been designed to deal with the requirements of the ETSI EN 302 307 & EN 300 421.

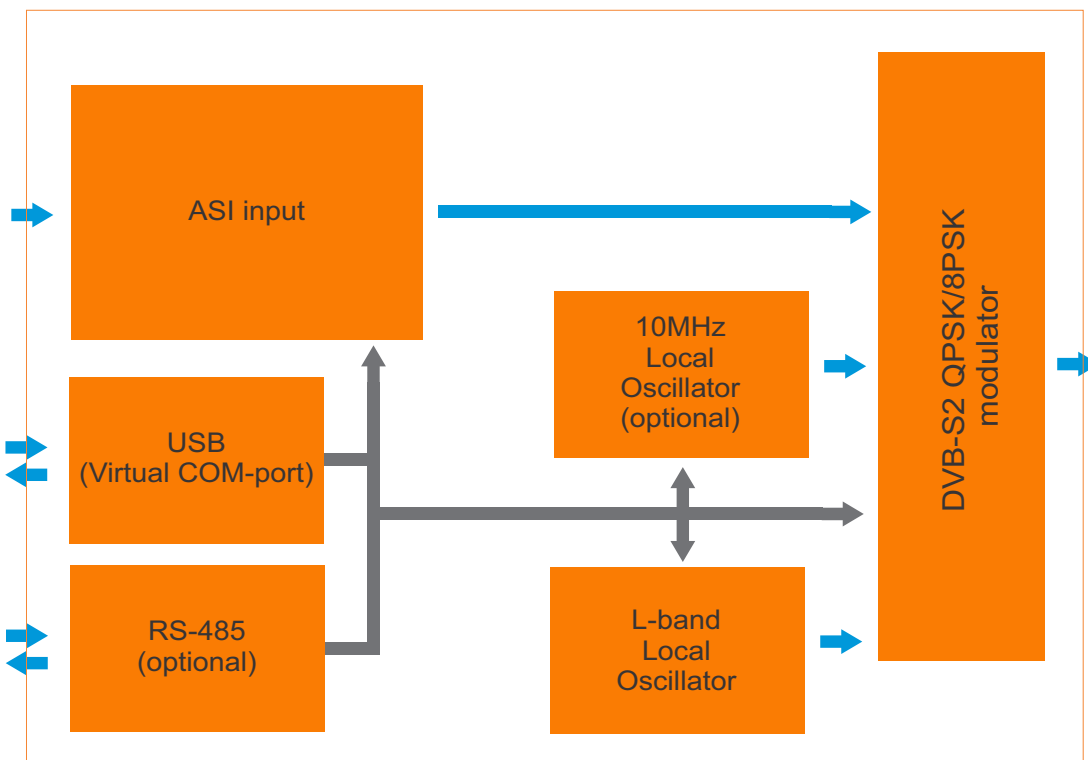
The modulator converts ASI transport stream into QPSK/8PSK signal to transmit them in BUC (Block Up Converter).

Device versions

Features	Part No.			
	14001	14002	14003	14004
10MHz ref. embedded		+		+
Remote Access Controller			+	+



Diagram



AMD-54

ASI to DVB-S2 MODULATOR

SPECIFICATIONS	
Standards	
Carrier ID	ETSI 103 129
DVB-S2	EN 302 307
Control&Monitoring	
USB connector	Micro USB
RS-485 connector (optional)	Screw type
Descrambler mode	TROPHY-ACCESS (additional license)
ASI Input	
TS transfer format	MPEG-TS, 188/204 bytes over ASI
Level range	200...880 mV
Data rate	2...110 Mbps
Connector	BNC, 75 Ohm
RF Output	
L-Band	900MHz to 2150MHz, 1MHz step
Connector	N-Type, 50Ω
10 MHz Local Oscillator (optional)	0...+5dBm, injected to output signal
SNR	> 40dB @ 0dBm
Attenuation range	0dB to -31.5dB, 0.5dB step
Modulation	
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	Up to 35MSymb/s
Physical	
	12V DC/15W, 1kg Weight, 0°C to 50°C

AMD-55

DVB-S/S2/S2X MODULATOR / MULTIPLEXER



Overview

AMD-55 is a modulator/multiplexer designed for applications over satellite in full compliance with the DVB-S, DVB-DSNG, DVB-S2 and DVB-S2X standards.

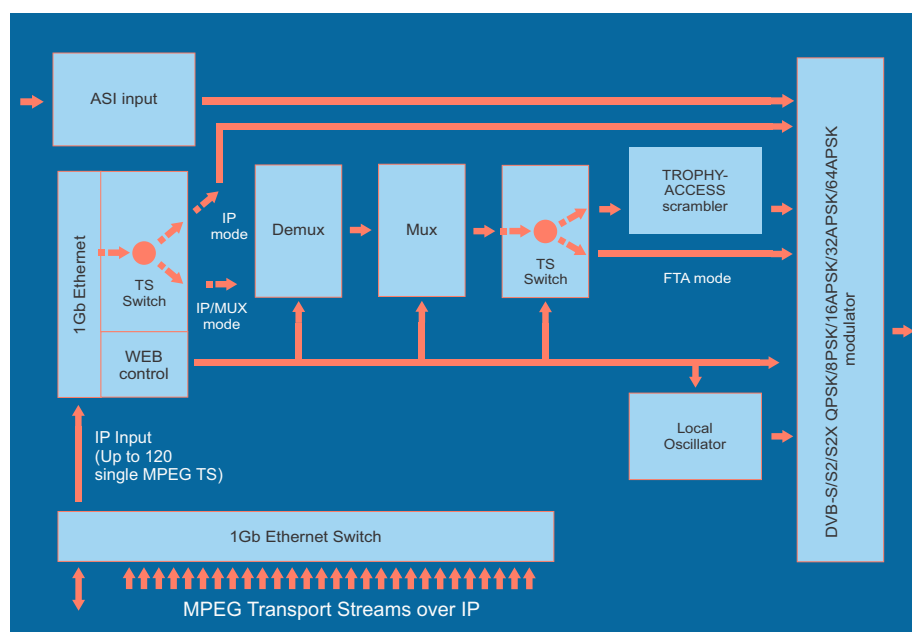
The Modulator/MUX covers the full L-band (950/2150MHz) and offers a useful bitrate up to 72Mbps. The Modulator/MUX supports all new MODCOD & the 64 APSK constellation. The new roll-off (from 5% to 15% by step of 1%) are available with any satellite standards DVB-S included.

The Modulator/MUX receives a data stream via Gigabit Ethernet or ASI. It can receive up to 120 transport streams from the TROPHY Head End or from another IP sources included MPEG transport streams.

Device versions

Features	Part No.							
	55001	55002	55003	55004	55005	55006	55007	55008
FTA only	+		+		+		+	
TROPHY-ACCESS CAS		+		+		+		+
EPG (EIT) supporting			+	+			+	+
DVB-S2X & DSNG profiles					+	+	+	+

Diagram



Standards	
Carrier ID	ETSI 103 129
DVB-S/S2/S2X	ETSI EN 302 307: part I and part II
MPEG-TS	EN 301 210
DVB MPEG-TS over ASI	EN50083-9; ETSI TR 101 891
DVB MPEG-TS over IP	ETSI TS 102 034
MPEG-2 PSI Tables (PAT&PMT)	EN 300 468
ASI input (optional)	
TS transfer format	MPEG-TS, 188/204 bytes over ASI
Level range	200...880 mV
Data rate / Symbol Rate	0.25...200 Mbps / 0.05...72MSymb
ASI transfer format	continous, burst
Connector	BNC socket
Impedance	75 Ohm
IP input (stream port + WEB interface)	
Connector	RJ-45
Streaming protocol	UDP/RTP, Unicast/Multicast
Streaming mode	CBR/VBR
Encryption	TROPHY-ACCESS (additional license)
RF Output	
L-Band	950MHz to 2150MHz, 10kHz step
IF-Band 70MHz	50MHz to 90MHz, 10kHz step (optional)
SNR	> 40dB @ 0dBm – 8PSK – 30Mbaud
Shoulders rejection	< -50dB @ 0dBm & f/fN=1,5 for 20% roll-off
Main RF output	Type N (50Ohm - L-band; 75Ohm – IF-Band)
Attenuation range	+7dBm to -35dBm / 0,1dB step

Multiplexer	
Quantity of multiplexed channels	up to 120
PID quantity supported	All PIDs of input services. Output EIT tables (optional).
Modulation	
DVB-S	Outer/Inner FEC: Reed Solomon / Viterbi QPSK: 1/2, 2/3, 3/4, 5/6, 7/8 Roll-off: 0.35
DVB-S2	Outer/Inner FEC: BCH/LDPC QPSK: 1/4, 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
DVB-S2X	Same like DVB-S2 + all MODCODs for QPSK/8PSK/ 16APSK/32APSK + 5 MODCODs for 64APSK
Supported DVB modes	CCM: Constant Coding and Modulation VCM: Variable Coding and Modulation ACM: Adaptive Coding and Modulation Short (16200) and long (64800) frame Roll-off values: from 0.05 up to 0.35 Test Modes: Pilots; Single/Boosted sine tone; PRBS TS stream Up to 72MHz bandwidth
Control & Monitoring	
	Web Browser Control & Monitoring
	10/100/1000 Base-T Ethernet ports
Physical	
	90 to 240VAC/50Hz/35W
	7kg weight, 485mm x 330mm x 50mm dimensions
	0°C to 50°C temperature range
TROPHY-ACCESS Options	
Type of CAS	Cardless, doesn't match CSA algorithm
Size of the decoder address field	32 bits
Quantity of addressable decoder	16 millions
The number of serviced channels	without any restrictions
The number of packets serviced	without any restrictions
Automatic decoder disconnection	with zero balances in the subscriber account
Individual addressable message	up to 120 characters

AMD-57

DVB-T/T2 MODULATOR / MULTIPLEXER



Overview

The AMD-57 converts transponders included IP or ASI transport stream into COFDM signal to transmit them in Terrestrial TV transmitter or MMDS Up-Converter.

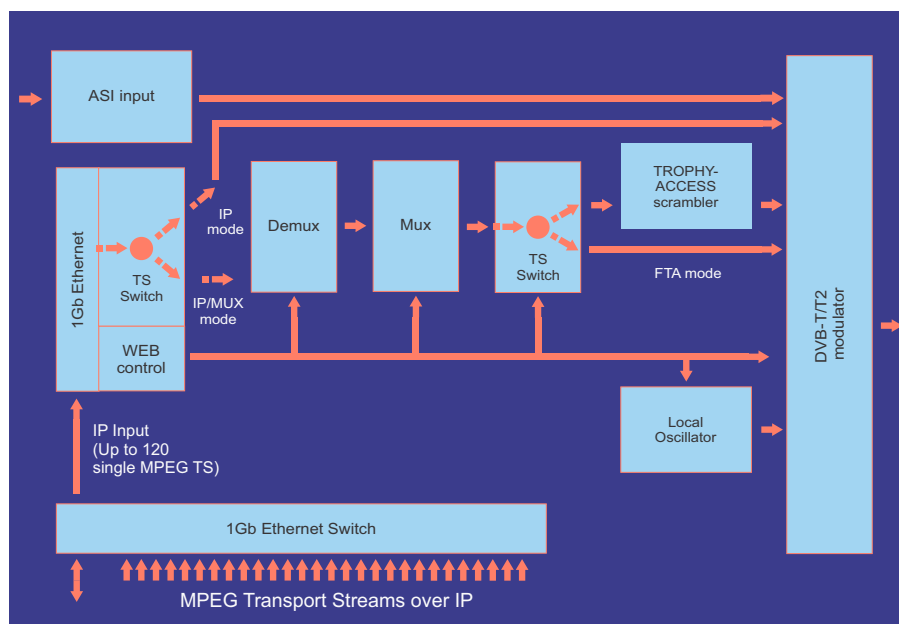
DVB-T/T2 carrier from available up to 120 transport streams are multiplexed and generated. The internal processing allows the output of DVB signals in full HD resolution. The device receives a data stream via Gigabit Ethernet or ASI.

The AMD-57 integrates all the mechanisms required to feed transmitter sites with ASI or IP streams in highly secure formats. MODULATOR include all the latest state-of-the art technological features, and Broadcasters are able now to take full advantage of this second generation Terrestrial Digital TV technology, and deploy techniques such as SISO/MISO and Multi-PLP layered modulation.

Device versions

Features	Part No.			
	57001	57002	57003	57004
FTA only	+		+	
TROPHY-ACCESS CAS		+		+
EPG (EIT) supporting			+	+

Diagram



AMD-57

DVB-T/T2 MODULATOR / MULTIPLEXER

Standards	
DVB-T2	EN 302 755, TS 102 831, TS 102 773 (T2-MI)
DVB-T	EN 300 744, TS 101 191
MPEG-TS	EN 301 210
DVB MPEG-TS over ASI	EN50083-9; ETSI TR 101 891
DVB MPEG-TS over IP	ETSI TS 102 034
MPEG-2 PSI Tables (PAT&PMT)	EN 300 468
ASI input	
TS transfer format	MPEG-TS, 188/204 bytes over ASI
Level range	200...880 mV
Data rate	up to 80 Mbps
ASI transfer format	Packet/burst mode
Connector	BNC socket
Impedance	75 Ohm
IP input (stream port + WEB interface)	
Connector	RJ-45
Streaming protocol	UDP/RTP, Unicast/Multicast
Streaming mode	CBR/VBR
Encryption	TROPHY-ACCESS (additional license)
RF Output	
VHF/UHF	from 30 MHz up to 900 MHz, 0 dBm
Monitor output	from 30 MHz up to 900 MHz, -30 dBm
Bandwidths	5 MHz, 6 MHz, 7 MHz and 8 MHz
Clock and Synchronization	High quality internal clock, 10 MHz & 1 PPS, Optional Onboard GPS, Clock and time source redundancy management, NTP synchronization

AMD-57

DVB-T/T2 MODULATOR / MULTIPLEXER

Multiplexer	
Quantity of multiplexed channels	up to 120
PID quantity supported	All PIDs of input services. Output EIT tables (optional).
Modulation	
Stream input redundancy manag.	primary & secondary
Modulation modes	System A, System B, Multi-PLP
Constellation	QPSK, 16 QAM, 64 QAM, 256 QAM
FFT	1k, 2k, 4 k, 8k, Extended 8k, 16k, Extended 16k, 32k
Transmission modes	MFN, SFN-SISO, SFN-MISO
Guard Intervals	1/128, 1/32, 1/16, 19/256, 1/8, 19/128, 1/4
FEC	1/2, 3/5, 2/3, 3/4, 4/5, 5/6
Test modes	PRBS, Sinus, Spectrum-Gap and Null Symbol insertion
Digital Pre-correction	Linear and Non-Linear pre-correction, Signal Clipping
Control & Monitoring	
	Web Browser Control & Monitoring
	10/100/1000 Base-T Ethernet ports
Physical	
	90 to 240VAC/50Hz/35W
	7kg weight, 485mm x 330mm x 50mm dimensions
	0°C to 50°C temperature range
TROPHY-ACCESS Options	
Type of CAS	Doesn't match CSA algorithm
Size of the decoder address field	32 bits
Quantity of addressable decoder	up to 16 mln
The number of serviced channels	without any restrictions
The number of packets serviced	without any restrictions
Automatic decoder disconnection	with zero balances in the subscriber account
Individual addressable message	up to 120 characters

TA-1012

DVB-S/S2 to IP/ASI Streamer/Descrambler

Overview

TA-1012 Streamer designed to broadcast in unicast on an IP network or ASI interface the services (TV or Radio programs) issued from FTA or TROPHY-ACCESS digital reception; in case of TROPHY-ACCESS encrypted signal, a **Software license to enable the TROPHY-ACCESS professional descrambler solution** has been enabled.

Characteristics:

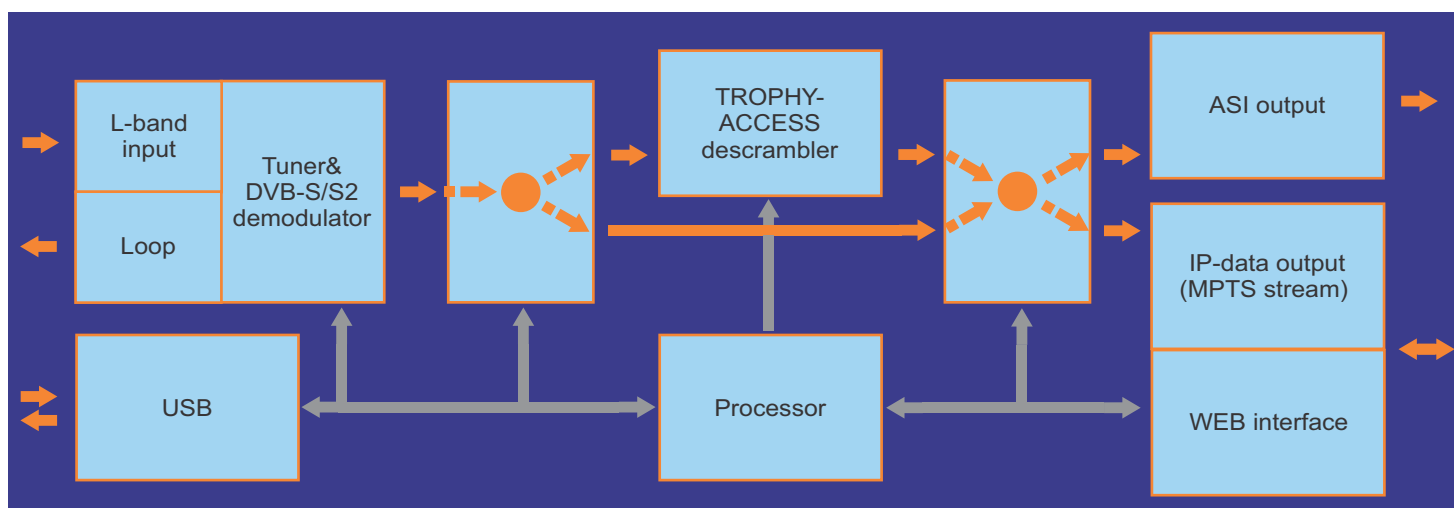
- Input: one DVB-S/S2 QPSK/8PSK transponder;
- Outputs: MPTS IP and ASI streams;
- Descrambling up to 120 TROPHY-ACCESS channels;
- UDP transmission protocol;
- Web interface for configuration and setting.

Streamer/Descrambler is designed to:

- receive full DVB-S/S2 transponder;
- encapsulate full Transport Stream to unicast UDP-packets;
- transmit Transport Stream to ASI-output;
- descramble TROPHY-ACCESS services.



Diagram



Standards	
DVB MPEG-TS over IP	ETSI TS 102 034
DVB-S2	EN 302 307
DVB MPEG-TS over ASI	EN50083-9; ETSI TR 101 891
Control&Monitoring	
USB Virtual COM-port	Micro USB connector
WEB-Interface	Web Browser Control, RJ-45 connector
Descrambler mode	
	TROPHY-ACCESS decoder (additional license)
RF Input	
L-band	950MHz to 2150MHz, 1MHz step
Input Symbol Rate	From 1 to 45MSymb/s, 1KSymb/s step
Demodulation	QPSK, 8PSK
LNB control	13/18V(on/off), 22 kHz(on/off)
Connectors	Two F-connectors (Input & LOOP), 75Ω
IP stream port	
Connector	RJ-45 connector, 100Mb Ethernet
Streaming protocol	UDP/Unicast, up to 90Mb
ASI output	
TS transfer format	MPEG-TS, 188 bytes over ASI
Level range	200...880 mV
Data rate	up to 200Mb
Connector	BNC connector (female), 75 Ohm
Physical	
	230VAC/12W, 1kg Weight, 0°C to 50°C

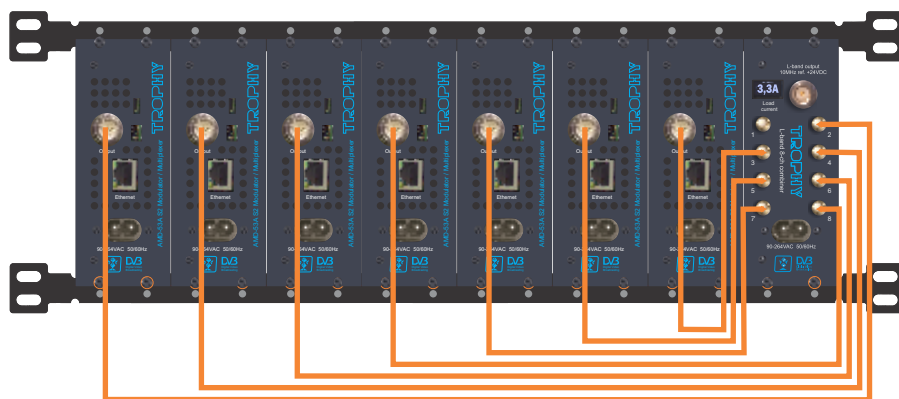
Overview

The device combines up to eight L-band carriers, injects 10MHz reference signal and 24VDC voltage (optional) and passes group signal for feeding to BUC (Block Up Converter).

Combiner has embedded 24V / 6.3A power supply unit.

The input signals are provided via SMA-connectors. The output signal are provided via N-connectors.

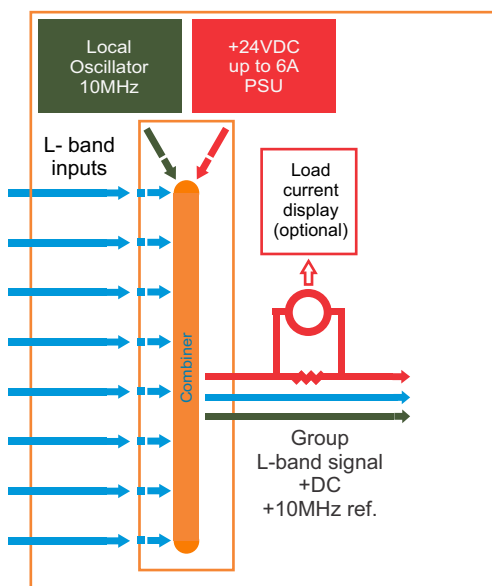
Part No.12002 Combiner has an OLED display that shows the Load Current. This is very convenient for MVDS system installation and operation. The engineer can immediately identify the kind of problem



Device versions

Features	Part No.	
	12001	12002
Load Current display		+

Diagram



SPECIFICATIONS	
Input/output signal frequency range	950...2150MHz
Number of inputs	Eight
Insert loss 950...2150MHz	16 dB
10MHz reference stability	10ppm
10 MHz ref. level	+5 dBm
RF interfaces	8 x SMA connectors, 1 x N-connectors, 50 Ohm
Injection DC voltage	+ 24VDC
DC rated current	up to 6.3A
Rated power	150W
DC Ripple & Noise (max.)	240mVp-p
Input AC voltage	90...264VAC
Displaying of current load	0.49inch OLED display (Part No.12002)
Physical	
Working temperature	0°C to +70°C
Dimensions	245x132x51mm
Weight	2kg

Overview

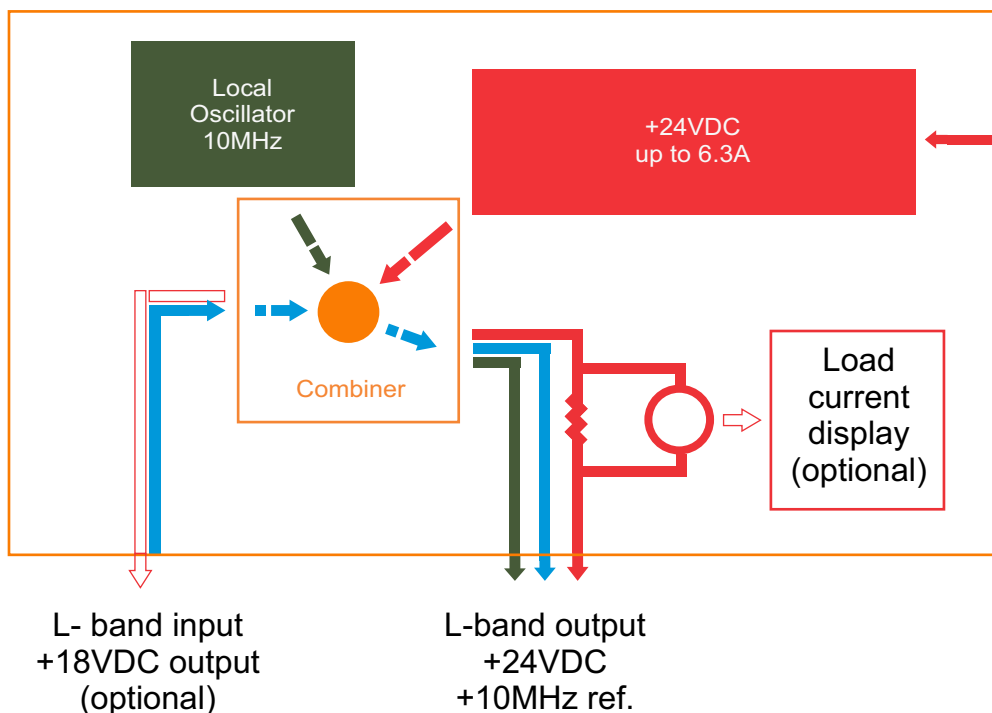
The device passes L-band signal and injects 10MHz reference signal and 24VDC voltage for feeding of BUC (Block Up Converter).

- Injector has 24V / 6.3A power supply unit sourced by 220 VAC or 18~36VDC, or 33.6 ~ 62.4VDC (see the Part. No table).
- Injector has embedded 18V / 0.5A source for feeding of LNB (see the Part. No table).
- Injector has OLED display to show the load current (optional, Part No.8007 - 8012).

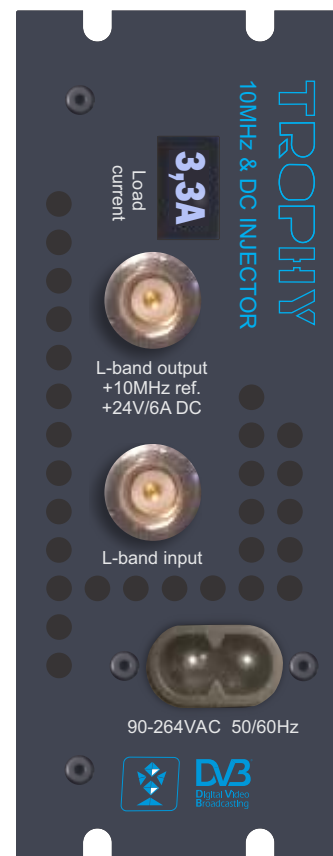
Device versions

Features	Part No.											
	8001	8002	8003	8004	8005	8006	8007	8008	8009	8010	8011	8012
Powered by 220VAC	+			+			+			+		
Powered by 18 ~ 36VDC		+			+			+			+	
Powered by 33.6 ~ 62.4VDC			+			+			+			+
Embedded +18DC for LNB				+	+	+				+	+	+
Display of Load Current							+	+	+	+	+	+

Diagram



Power source
220VAC
or 18 ~ 36VDC
or 33.6 ~ 62.4VDC
(optional)



SPECIFICATIONS	
Input signal frequency range	950...2150MHz
Insert loss 950...2150MHz	5 dB
10MHz reference stability	+/- 10ppm
10 MHz ref. level	+5 dBm
RF interface	2 x N-connectors, 50 Ohm
Injection DC voltage	+ 24VDC/ 6.3A
LNB feeding voltage (optional)	+ 18VDC / 0.5A
Cooling	2 FANs, 40x40mm, 12V/24V
Power Factor	90...264VAC/150W (See Part No. in table)
	18 ~ 36VDC/150W (See Part No. in table)
	33.6 ~ 62.4VDC/150W (See Part No. in table)
Displaying of current load	0.49inch OLED display (Part No. 8007-8012)
Physical	
Working temperature	0°C to +60°C
Dimensions	245x132x51mm or 285x148x51mm
Weight	up to 3kg

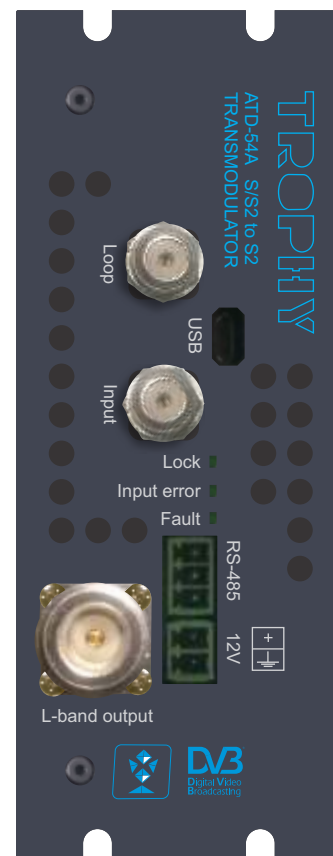
Overview

The TRANSMODULATOR:

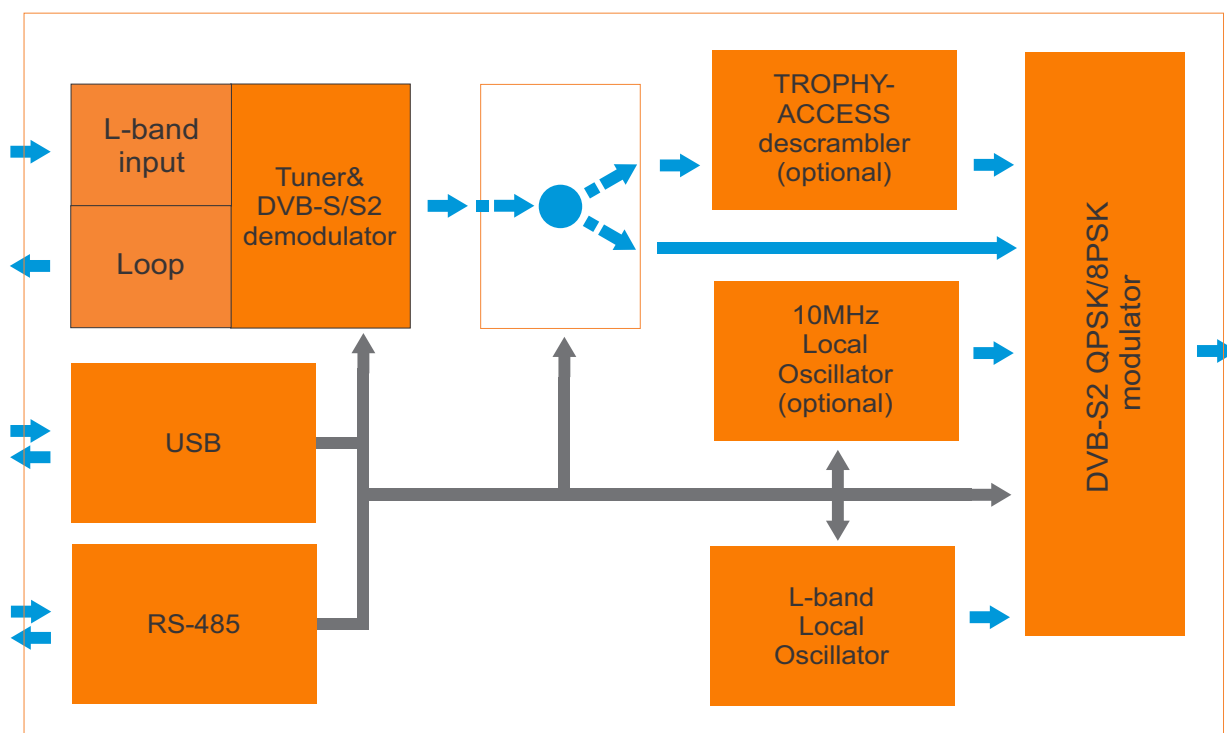
- receives&demodulates DVB-S or DVB-S2 transponder;
- descrambles all TROPHY-ACCESS channels (optional);
- modulates new DVB-S2 transponder to transmit in BUC (Block Up Converter). As a result, the maximum MER value for the new carrier is restored. The form and quality of the repeater signal becomes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

Device versions

Features	Part No.					
	4001	4002	4003	4004	4005	4006
Powered by 12VDC	+		+		+	
Powered by 90...264VAC		+		+		+
10MHz ref. embedded			+	+	+	+
TROPHY-ACCESS descrambler					+	+



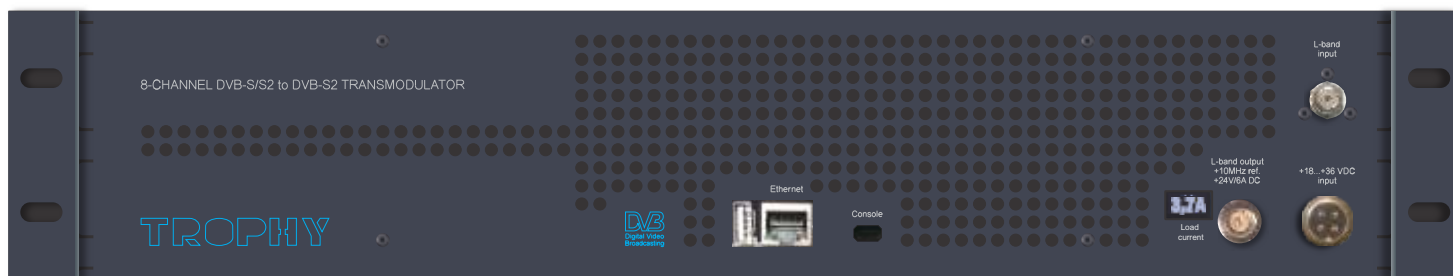
Diagram



ATD-54A DVB-S/S2 to DVB-S2 TRANSMODULATOR

Standards	
Carrier ID	ETSI 103 129
DVB-S2	EN 302 307
Control&Monitoring	
USB Virtual COM-port	Micro USB
WEB-Interface / RS-485	By REMOTE ACCESS CONTROLLER connected via RS-485 BUS
Descrambler mode	TROPHY-ACCESS (additional license)
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	2xF-connectors, 50Ω (IN+LOOP)
RF Output	
L-Band	900MHz to 2150MHz, -5dBm max
Connector	N-Type, 50Ω
10 MHz Local Oscillator (optional)	0...+5dBm, injected to output signal
SNR	> 40dB @ -5dBm
Attenuation range	0dB to -47dB, 0.5dB step
Modulation	
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, equal to or higher (not more 20% of bitrate) than the input Symbol Rate
Voltage	12V DC or 220V AC (see Part No. table), 15W
Physical	1kg Weight, 0°C to 60°C

8-ch BOX for DVB-S/S2 to DVB-S2 TRANSMODULATORS



Device designed for MVDS retransmitters.

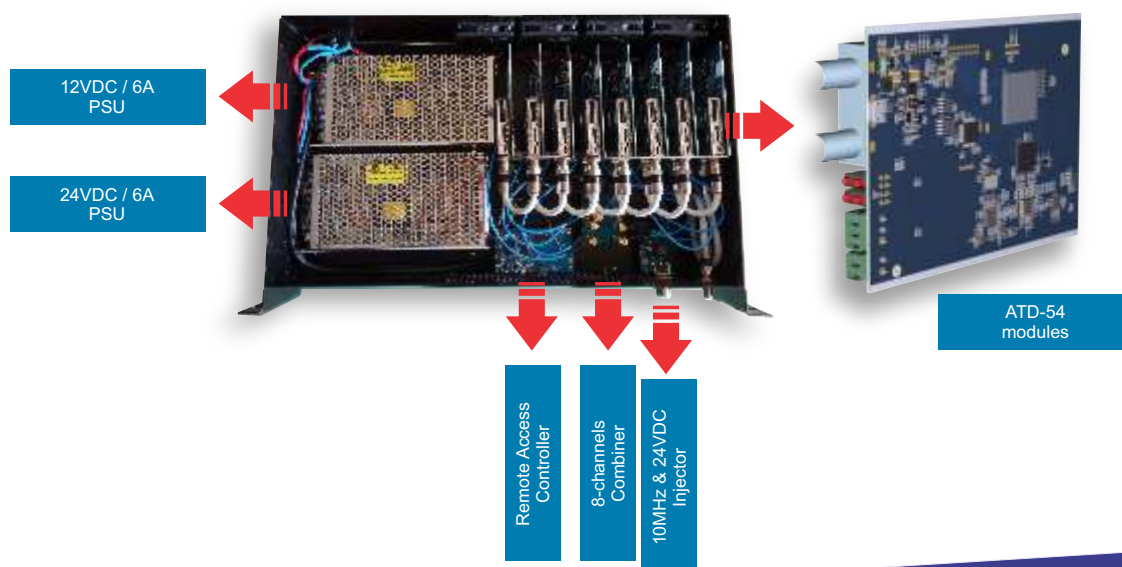
2U/19" BOX has:

- Embedded Remote Access Controller;
 - Embedded 8-channel L-band Combiner;
 - Embedded 24VDC/6A Power Supply for Block Up Converter feeding;
 - Embedded 10MHz ref. Injector.
- Injector has OLED display to show the load current (optional, Part No.14003, 14004);
- 8 slots for ATD-54 Transmodulator modules installing;
 - Embedded 12VDC/6A Power Supply for Transmodulators feeding;
 - 4x60mm FANs.

Device versions

Features	Part No.			
	14001	14002	14003	14004
Powered by 220VAC	+		+	
Powered by 18 ~ 36VDC		+		+
Display of Load Current			+	+

Diagram



8-ch BOX for DVB-S/S2 to DVB-S2 TRANSMODULATORS

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
Output level of each Transmodulator	-5dBm
Insert loss of Combiner&Injector	12 dB
10 MHz Local Oscillator; +24VDC / 6A	0...+5dBm, injected to output signal
SNR	> 40dB @ 0dBm
Attenuation range	From 0dB to -47dB; 0.5dB step
DVB-S2 FEC	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, equal to or higher (not more 20% of bitrate) than the input Symbol Rate
Physical	
	+18V...+36VDC or 220VAC optional; 250W; 48cmx31cmx8.5cm; 6kg weight; 0°C to 60°C

OMNIDIRECTIONAL SLOTTED ANTENNA

Overview

PROFI series slotted omnidirectional antenna is used like the transmitting H-polarization outdoor antenna for terrestrial Ku-band broadcasting.

Antenna aperture is:

360° Azimuth Beam; 9° Elevation Beam.

Antenna is a slotted twenty-element array implemented on a 19x9.5mm waveguide made of galvanized brass. Antenna has a circular directivity pattern.

Radio-transparent shelter is made of fiberglass material using polyester binders. The outer surface of the shelter is covered with a gelcoat to protect against ultraviolet radiation from the sun as well as to prevent icing. Connecting unit is 19x9.5mm flange waveguide.

Operating frequency bands:

10.7-11.5 GHz

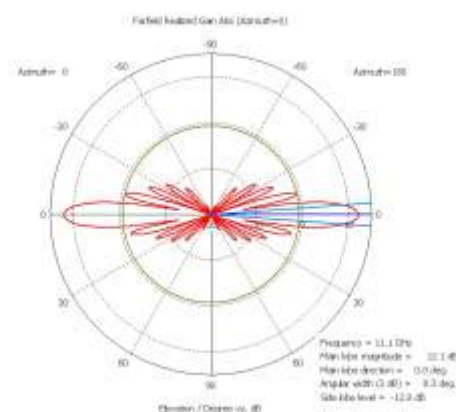
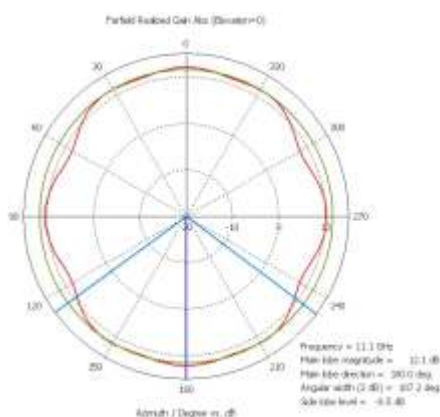
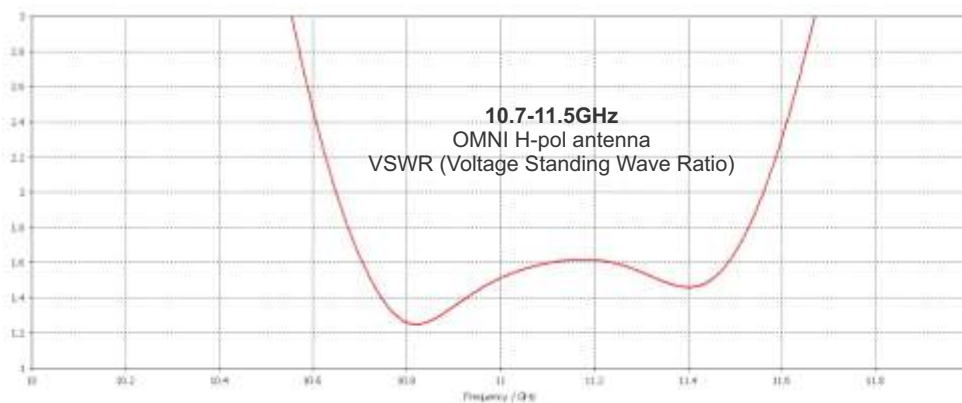
11.7-12.5 GHz

12.6-13.25 GHz

13.75-14.5 GHz



Diagram



Specifications	
Frequency range	10,7...11,5GHz
	11,7...12,5GHz
	12.75...13.25GHz
	13.75...14.5GHz
Signal polarization	Horizontal
Cross-polarization	25dB, not less
Gain	up to 12dBi
Gain variation in the aperture	± 2 dB, not more
HPBW	360° horizontal; $9 \pm 0.1^\circ$ vertical
Input power	40W, up to
VSWR in operation band	No more than 1.5
Type of flange	WR-75
Operation temperature	-40...+80°C
Weight	1 kg
Dimensions	245x115x115mm
Type of performance	Waterproof
Mounting	On vertical pipe with 40mm(max) diameter

2W BUC (Block Up Converter)

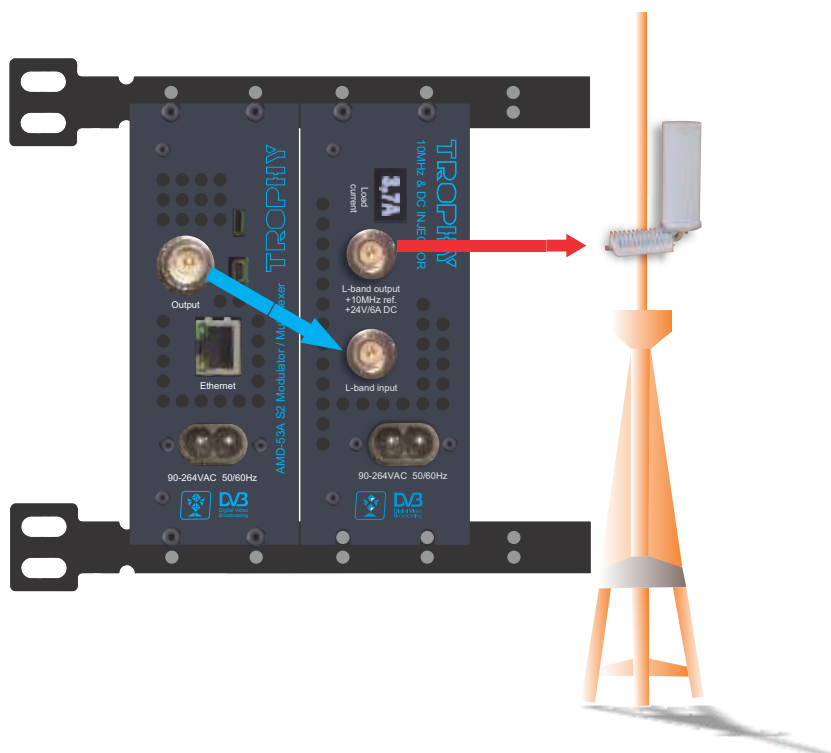


Overview

The BUC converts a 950...1750 (or 950...1450) MHz range signal to the:

10,7...11,5GHz,
11,7...12,5 GHz,
12,25...12,75 GHz
or 12,75...13,25 GHz range.

- BUC is ideal for Broadband VSAT RF terminals and MVDS broadcasting;
- 33dBm output power;
- Optional Internal Reference source;
- RoHS Compliant;
- Small Size & Mass;
- Power Consumption : 35W Max;
- Air Humidity : up to 100%;
- Two years Warranty.



Specifications		
Input frequency range		950 ... 1750 MHz (Type L and E) 950 ... 1450 MHz (Type D and G)
Output frequency range		10700 ... 11500 MHz (Type L) 11700 ... 12500 MHz (Type E) 12250 ... 12750 MHz (Type D) 12750 ... 13250 MHz (Type G)
L.O. frequency		9750,00 MHz (Type L) 10750,00 MHz (Type E) 11300,00 MHz (Type D) 11800,00 MHz (Type G)
Linear Gain		58.0 dB (typical)
Nonuniformity of the gain		1.0 dB
Frequency Sense		Non-inverted
Spurious	In band Out of band	-60dBc -50dBc
Phase Noise	100Hz 1kHz 10kHz 100kHz	-60dBc/Hz -70dBc/Hz -80dBc/Hz -90dBc/Hz
10MHz External Reference level		-5 ... +5 dBm
Output power		2W (33dBm min 1dB Compression Point)
Operating voltage		+15 ... +24VDC
Power consumption		35W
Typical input signal level		85dB/uV
Input impedance		75 Ohm ; 50 Ohm
Operation temperature		-40 ... +55 °C
Dimensions, mm / Weight, kg		176,1 x 161,5 x 65 / 1,8
Interfaces		
Input interface		F-connector or N-type
Output interface		WR75G

4W BUC (Block Up Converter)

Overview

The BUC converts a 950...1750(1450) MHz range signal to the 10,7...11,5GHz, 11,7...12,5 GHz or 12.75...13.25GHz range.

- BUC is ideal for Broadband VSAT RF terminals and MVDS broadcasting;
- 36dBm output power;
- Optional Internal Reference source;
- RoHS Compliant;
- Small Size & Mass;
- Power Consumption : 35W Max;
- Air Humidity : up to 100%;

Operating frequency bands:

10.7-11.5 GHz
11.7-12.5 GHz
12.6-13.25 GHz
13.75-14.5 GHz



4W BUC (Block Up Converter)

Specifications		
Input frequency range		950 ... 1750 MHz (Type L and E) 950 ... 1450 MHz (Type G)
Output frequency range		10700 ... 11500 MHz (Type L) 11700 ... 12500 MHz (Type E) 12750 ... 13250 MHz (Type G)
L.O. frequency		9750,00 MHz (Type L) 10750,00 MHz (Type E) 11800,00 MHz (Type G)
Linear Gain		58.0 dB (typical)
Nonuniformity of the gain		1.0 dB
Frequency Sense		Non-inverted
Spurious	In band Out of band	-60dBc -50dBc
Phase Noise	100Hz 1kHz 10kHz 100kHz	-60dBc/Hz -70dBc/Hz -80dBc/Hz -90dBc/Hz
10MHz External Reference level		-5 ... +5 dBm
Output power		4W (36dBm min 1dB Compression Point)
Operating voltage		+15 ... +24VDC
Power consumption		35W
Typical input signal level		70dB/uV
Input impedance		75 Ohm ; 50 Ohm
Operation temperature		-40 ... +55 °C
Dimensions, mm / Weight, kg		176,1 x 161,5 x 65 / 1,8
Interfaces		
Input interface		F-connector or N-type
Output interface		WR75G

8W BUC (Block Up Converter)

Overview

The BUC converts a 950...1750(1450) MHz range signal to the 10,7...11,5GHz, 11,7...12,5 GHz or 12.25...12.75GHz range.

- BUC is ideal for Broadband VSAT RF terminals and MVDS broadcasting;
- 39dBm output power;
- Optional Internal Reference source, MS connector;
- RoHS Compliant;
- Small Size & Mass;
- Power Consumption : 120W Max;
- 18...24VDC / 36...60VDC / MS Con. 18...24VDC / MS Con. 85...265VAC options;
- Air Humidity : up to 100%;
- Two years Warranty.



Operating frequency bands:

10.7-11.5 GHz

11.7-12.5 GHz

12.25-12.75 GHz

8W BUC (Block Up Converter)

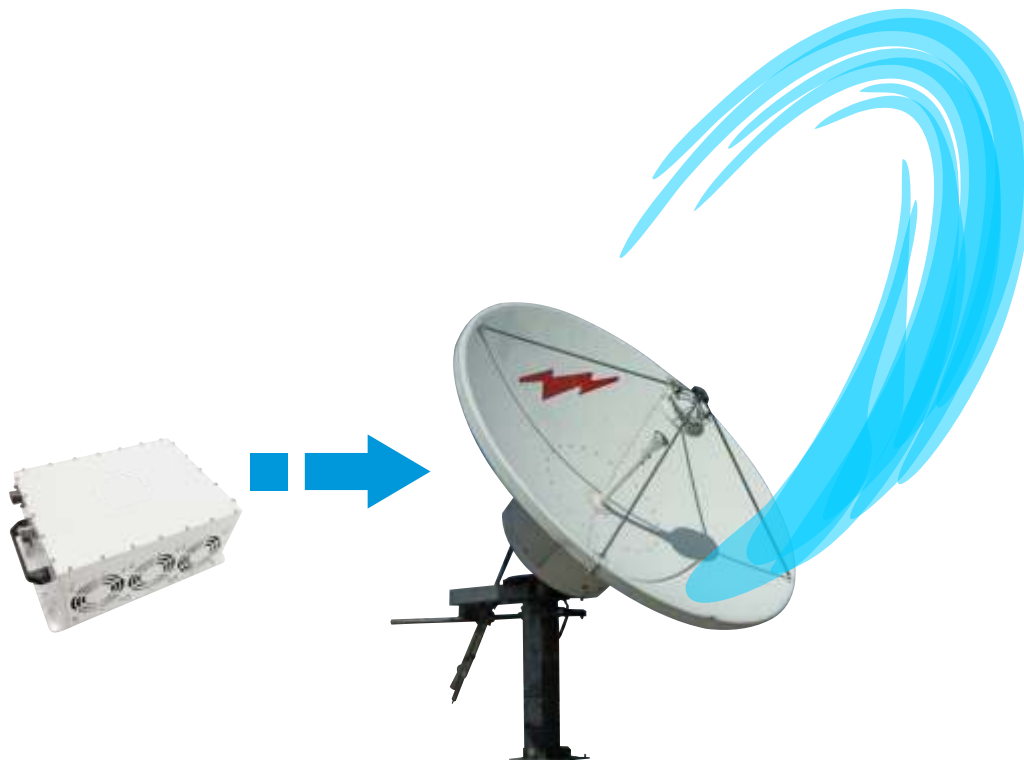
Specifications		
Input frequency range		950 ... 1750 MHz (Type L and E) 950 ... 1450 MHz (Type D)
Output frequency range		10700 ... 11500 MHz (Type L) 11700 ... 12500 MHz (Type E) 12250 ... 12750 MHz (Type D)
L.O. frequency		9750,00 MHz (Type L) 10750,00 MHz (Type E) 11300,00 MHz (Type D)
Linear Gain		65.0 dB (typical)
Nonuniformity of the gain		1.0 dB
Frequency Sense		Non-inverted
Spurious	In band Out of band	-50dBc -50dBc
Phase Noise	100Hz 1kHz 10kHz 100kHz	-60dBc/Hz -70dBc/Hz -80dBc/Hz -90dBc/Hz
10MHz External Reference level		-5 ... +5 dBm (Lock Detector shuts off Tx in case of LO unlocked)
Output power		8W (39dBm min 1dB Compression Point)
Operating voltage DC (optional VAC)		18 ..24, 36..60VDC (Optional MS Connector) 85..265VAC
Power consumption		120W
Typical input signal level		85...90dB/uV
Input impedance		75 Ohm ; 50 Ohm
Operation temperature		-40 ... +55 °C
Dimensions, mm / Weight, kg		220 x 194.2 x 103.5 / 4,5
Interfaces		
Input interface		F-connector or N-type
Output interface		WR75G

80W BUC (Block Up Converter)

Overview

The BUC converts a 950...1700MHz range signal to the 13.75...14.5GHz range.

- BUC is ideal for Broadband VSAT RF terminals and MVDS broadcasting;
- 49dBm output power;
- Optional Internal Reference source, MS connector;
- RoHS Compliant;
- Small Size & Mass;
- Power Consumption : 800W Max;
- Powered by 85...265VAC;
- Air Humidity : up to 100%, IP55;
- Two years Warranty.



80W BUC (Block Up Converter)

Specifications		
Input frequency range		950 ... 1700 MHz
Output frequency range		13750 ... 14500 MHz
L.O. frequency		12800,00 MHz
Linear Gain		75.0 dB (typical)
Nonuniformity of the gain		1.0 dB
Frequency Sense		Non-inverted
Spurious	In band Out of band	-60dBc -50dBc
Phase Noise	100Hz 1kHz 10kHz 100kHz	-65dBc/Hz -75dBc/Hz -85dBc/Hz -95dBc/Hz
10MHz External Reference level		-5 ... +5 dBm Lock detector shuts off Tx in case of LO unlocked
Reference Auto Sensing (Optional)		Internal Ref. in the absence of external Ref.
Internal Ref. stability		±2 ppm
Output power		80W (49dBm min 1dB Compression Point)
Operating voltage DC (optional VAC)		85..265VAC
Power consumption		800W max.
Input impedance		75 Ohm or 50 Ohm
Operation temperature		-40 ... +55 °C
Dimensions & Weight		272 x 202 x 129.6mm / 7,6 kg
Interfaces		
Input interface		F-connector or N-type
Output interface		WR75G
M&C Function (Optional)		RS-485, RS-232, Ethernet, SNMP

Overview

FFMPEG MiniPC Transcoder designed to digital-to-digital conversion of one type of encoded data (video or audio) to another using FFMPEG solution.

Characteristics:

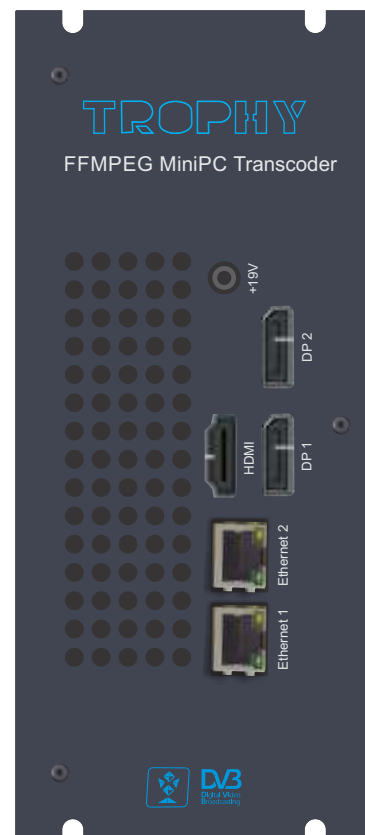
- LINUX OS.
- Transcoder converts audio or video formats. Device has possibility to transcode up to 2 HDTV services depends on parameters of transcoding. It can encode in real-time from various hardware and software sources.
- Convenient WEB-interface for setting transcoding parameters.
- Possibility to enter advanced FFMPEG commands using the command-line for video and audio editing: FFmpeg provides a variety of editing features, such as cutting, merging, and trimming video and audio files. Users can also add or remove audio tracks, adjust volume levels, and modify other properties, such as framerate and resolution.

Main menu:

The screenshot shows the main configuration menu of the FFMPEG MiniPC Transcoder. It features a blue header with navigation tabs: 'Setup', 'Status', and 'Device service'. The main area is divided into several sections for configuring transcoding parameters:

- Hardware acceleration:** Includes a checkbox for 'Hardware acceleration', a 'Timeout, ms' field set to 5000, and an 'Auto restart' checkbox.
- Input URL:** A text field containing 'http://example.com:8080/feeds/inputs'.
- Read input at native frame rate:** A checkbox.
- Pixel format:** Radio buttons for 'Same as source' (selected) and 'Other', with a dropdown menu.
- Keyframe interval, frames:** Radio buttons for 'Same as source' (selected) and 'Other', with a dropdown menu.
- Video scaling, px:** Radio buttons for 'Same as source' (selected) and 'Other', with 'Width' and 'Height' input fields.
- Optional parameters:** A text field with a slash (/).
- Video encoder:** Radio buttons for 'H.264' (selected), 'H.265', and 'Other', with a dropdown menu.
- Bitrate, Mb:** A text field set to 5000.
- Optional parameters:** A text field with a slash (/).
- Audio encoder:** Radio buttons for 'AAC' (selected), 'MP3', and 'Other', with a dropdown menu.
- Bitrate, kb:** A text field set to 64.
- Optional parameters:** A text field with a slash (/).
- Output stream format:** Radio buttons for 'MPEGTS' (selected) and 'Other', with a dropdown menu.
- Output destination:** A text field containing 'http://192.168.88.220:12345/pt_size=1316'.
- Log level:** Radio buttons for 'Quiet' (selected), 'Error', 'Warning', 'Info', 'Verbose', and 'Debug'.
- Logs:** A button labeled 'request data'.

At the bottom, there are 'Apply' and 'Cancel' buttons, and an 'Add service' button with a plus icon.



Specifications

HardWare	
Processor	Intel i5-1335U
RAM	16G DDR5
SSD	256G
Front panel connectors	
LAN	2*ETHERNET 2.5G
HDMI	1*HDMI 2.0
DisplayPort	2*DP 2.0
Rear panel connectors	
USB	3*3.2USB
TypeC	1*TypeC
Mic	1*3.5mm Jack
Control&Monitoring	
WEB	Web browser control
USB Virtual COM-port	USB connector
SoftWare	
OS	Linux / Ubuntu
FFMPEG	Version _____
Phisical	
Interface language	English
Supply voltage	+12VDC 4A, external
Wattage	up to 50W
Temperature range	0...40 C
Dimensions	180x120x45
Weight	2 kg

Overview

FFMPEG Multichannel Transcoder designed to digital-to-digital conversion of one format of encoded data (video or audio) to another using FFMPEG solution.

Characteristics:

- LINUX OS.
- Transcoder converts audio or video formats. Device has possibility to transcode up to 14 HDTV services. It can encode in real-time from various hardware and software sources.
- Convenient WEB-interface for setting transcoding parameters.
- Possibility to enter advanced FFMPEG commands using the command-line for video and audio editing: FFMPEG provides a variety of editing features, such as cutting, merging, and trimming video and audio files. Users can also add or remove audio tracks, adjust volume levels, and modify other properties, such as framerate and resolution.



Specifications

HardWare	
Processor	Intel i9-14900K
RAM	16G DDR5
SSD	256G
Front panel connectors	
LAN	Realtek Ethernet 2.5Gb
HDMI	HDMI 2.0
DisplayPort	DP 2.0
Rear panel connectors	
USB	4*3.2USB, 4*2.0USB
TypeC	1*TypeC
Mic	3*3.5mm Jack
Control&Monitoring	
WEB	Web browser control
USB Virtual COM-port	USB connector
SoftWare	
OS	Linux / Ubuntu or Debian
FFMPEG	Version _____
Phisical	
Interface language	English
Supply voltage	220VAC
Wattage	up to 500W
Temperature range	0...40 C
Dimensions	4U, 465.2 x 430.0 x 176.0 (mm)
Gross Weight	15 kg

TROPHY TA-1006 Set Top Box

Overview

The device is a Satellite/Terrestrial/Cable Combo H.264/H.265 Set-Top-Box with embedded TROPHY-ACCESS decoder.

- The STB can display addressed messages and “watermarks” with ID number of embedded decoder using commands from HeadEnd.
- The STB has effective tuner for satellite and MVDS broadcastings.

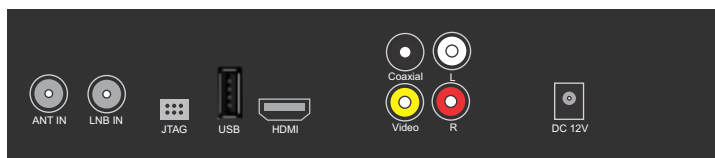
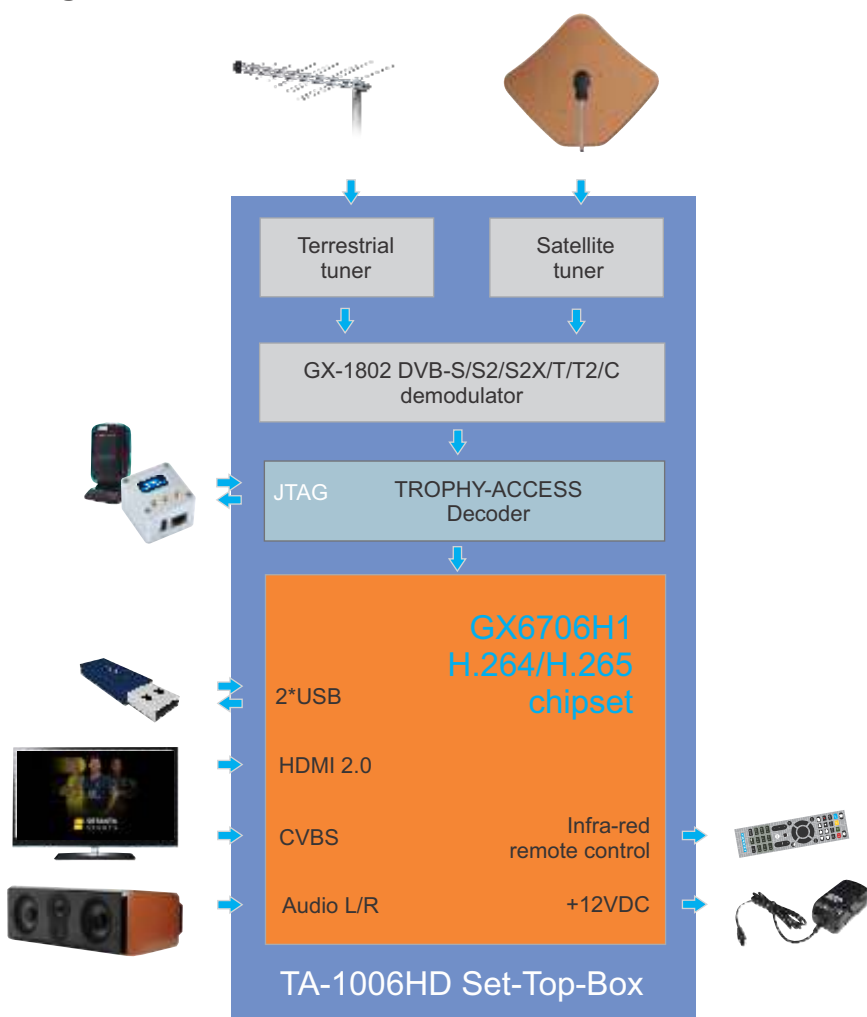


Diagram:



Satellite mode	
Standards	EN 300 421 (DVB-S); EN 302 307 (DVB-S2); EN 302 307-2V1.4.1 (DVB-S2X)
Demodulation	QPSK, 8PSK
Input level	-65...-25 dBm
Symbol rate	1...55 Msymb/s (QPSK); 1... 45 Msymb/s (8PSK)
FEC	1/2_2/3_3/4_5/6_7/8 (QPSK) 1/2_3/5_2/3_3/4_4/5_5/6_8/9_9/10 (8PSK)
Input frequency range	950...2150 MHz
Terrestrial mode	
Standard	EN 300 744 (DVB-T); EN 302 755 v1.3.1 (DVB-T2)
Demodulation	BPSK/QPSK/16QAM/64QAM/256QAM
Minimum input level	from -96dBm(QPSK, 1/2) to -76dBm (256QAM, 5/6)
Symbol rate	0.45~8.5Mbauds
Guard interval	1/4,19/256,1/8,19/128,1/16,1/32,1/128
Pilot pattern	PP1~PP8
FFT mode	1k,2k,4k,8k,16k,32k
Bandwidth	7MHz/ 8MHz
Input frequency range	470...870 MHz
Cable mode	
Standard	EN 300 429 ITU J.83 Annex A/B/C (DVB-C)
Demodulation	64/128/256QAM
Symbol rate	5~7.1Mbauds
Input frequency range	62~858MHz
Common specs	
Input resistance	75 Ohm
Tuning step	1 MHz
Video Coding	MPEG-2/ H.264/ H.265
Picture ratio	4:3; 16:9
Connectors	LNB in, RF in, HDMI, A/V output, 2*USB2.0, JTAG
Output resolution	up to 1920×1080p@60fps
Color system	PAL, NTSC YUV4:2:2/YUV4:4:4
Sound	MPEGI/II, MP3, AAC
Trophy-Access 3.0 Decoder	Embedded FPGA IC
Chipset	GX6706H1
EPG	Multilingual
Interface language	6 languages
Addressed messages	Up to 170 bytes + ID number “watermarks”
Supply voltage	+12VDC 2A, external
Dimensions	180x120x45

Overview

The TROPHY-ACCESS 3.0 Conditional Access System does not use the CSA algorithm, which ensures high reliability and the absence of the possibility of pirated viewing, called Card-sharing. The scrambler is integrated into the hardware of TROPHY brand modulators/multiplexers. The Decoder is integrated into the hardware of TROPHY Set-Top-Boxes. The Billing Server and DVB-BILLING PRO software provide the ability to manage subscriptions. The Decoder automatically turns off if the subscriber account balance is insufficient. Subscription data is transmitted to the MODULATOR/MULTIPLEXER via Ethernet.

When powered on, decoder receives its mask from the transponder. This information is duplicated on all transponders. Therefore, when switching programs or switching to other transponders, the decoder operates according to the received mask and descrambles programs instantly. When the subscription (selected package) changes, the mask for that decoder also changes. The decoder receives a new mask, which is stored in the decoder until the power is turned off.

The Decoder automatically turns off if the subscriber account balance is insufficient.

Subscription data is transmitted from the Billing server to the MODULATOR/MULTIPLEXER via the Ethernet.

Options	
Type of CAS	Cardless, doesn't match CSA algorithm
Polynomial length	2048 bits
The size of the decoder address field	32 bits
Quantity of addressable decoders	16 millions
The number of serviced channels	without any restrictions
The number of packets serviced	without any restrictions
Automatic disconnection of the decoder	with zero balances in the account

Overview

The DVB-BILLING PRO software is designed to manage the subscriber's base and manage the decoders in large commercial DVB broadcasting networks using the TROPHY-ACCESS 3.0 Conditional Access System.

The DVB-BILLING PRO software is supplied with the Billing Server. Depending on the order, the Billing Server can be either the simplest (demo version) or the most complex, up to a group of servers assembled using cluster technology.

The main functions of the Statistics Server are:

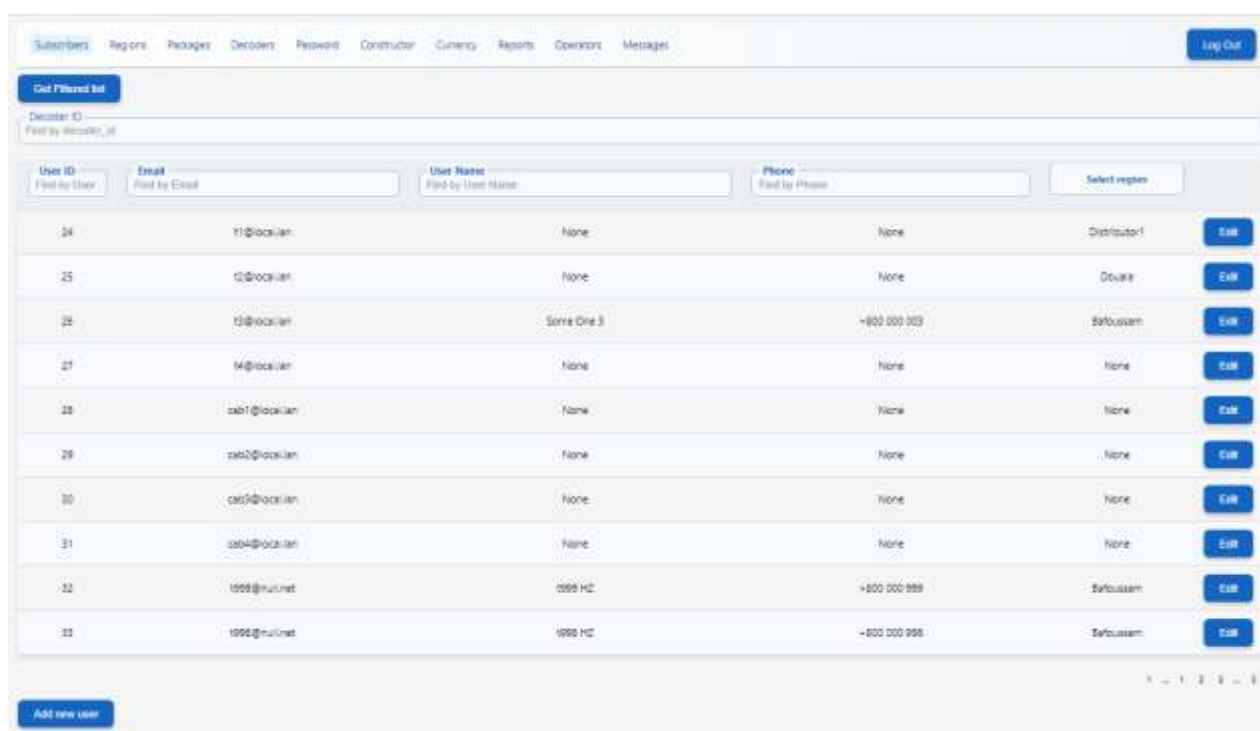
- management of subscriber decoders;
- keeping records of subscriber payments;
- creating various reports on payments;
- integration of the Billing Server with the system of bank payment terminals and bank acquiring.
- sending of addressed messages and broadcast messages (watermarks etc.) to the subscriber's decoders.

The DVB-BILLING PRO software consists of three components:

- Billing system database;
- Billing system web interface;
- Website with Subscriber personal account functionality.

These program components interact with each other and allow Billing Operators and Subscribers to manage Packages and Balances.

The program components can be hosted on the same server or on separate servers.



The screenshot displays the 'Subscribers' management interface. At the top, there is a navigation menu with links: Subscribers, Regions, Packages, Decoders, Password, Constructor, Currency, Reports, Operators, Messages, and a Log Out button. Below the menu is a 'Get Filtered list' button and a search bar for 'Decoder ID' with the hint 'Find by decoder_id'. Underneath are four search filters: 'User ID' (Find by User), 'Email' (Find by Email), 'User Name' (Find by User Name), and 'Phone' (Find by Phone), along with a 'Select region' dropdown. The main area contains a table with 10 rows of subscriber data. Each row has a 'User ID', 'Email', 'User Name', 'Phone', 'Region', and an 'Edit' button. The table data is as follows:

User ID	Email	User Name	Phone	Region	Edit
24	11@localian	None	None	Distributer1	Edit
25	12@localian	None	None	Distrib	Edit
26	13@localian	Some One 3	+800 000 000	Bafoussam	Edit
27	14@localian	None	None	None	Edit
28	1501@localian	None	None	None	Edit
29	1502@localian	None	None	None	Edit
30	1503@localian	None	None	None	Edit
31	1504@localian	None	None	None	Edit
32	1505@nullnet	1505 HC	+800 000 000	Bafoussam	Edit
33	1506@nullnet	1506 HC	+800 000 000	Bafoussam	Edit

At the bottom left, there is an 'Add new user' button. At the bottom right, there is a pagination control showing '1 - 1 2 3 ... 8'.

TROPHY-ACCESS programmer

Overview

Remote TROPHY-ACCESS PROGRAMMER is designed to program TROPHY-ACCESS decoders embedded into Set-Top-Boxes.

The PROGRAMMER has a unique serial number and is provided to the distributor who remotely uploads decoder images. The ordered images are located on the TROPHY ELECTRONICS central server.



Diagram:



Overview

STI441C DVB-T/T2/C to IP streamer designed to broadcast in multicast on an IP network the services (TV or Radio programmes) issued from FTA or encrypted digital reception. The IP streams can be viewed using an IPTV set-top-box or a software video player. The streamer can descramble encrypted services by two conditional access (CA) modules. Modules are intended for indoor use only.

Input services

Input source: Demod. 1 x Demod. 2 x Demod. 3 x +
Demod. 4 x USB 1 x

Demod. 1	Bitrate
All TS Demod. 1	19.13
LRT TELEVIJUA HD	4.94
LRT TELEVIJUA	1.75
LRT PLUS	3.39
LRT PLUS HD	8.44

Demod. 2	Bitrate
All TS Demod. 2	18.76
Lietuvos Rytas	1.13
CurrentTime	2.39
LNK	1.16
Info TV	1.58
2TV	1.48
TV8	2.25
TV1	1.59
TV3	2.37
TV6	1.03
STV	0.70
Deit TV	2.47

Demod. 3	Bitrate
All TS Demod. 3	0.10
SLO-TV1	0.00
SLO-TV2	0.00
TV K-C	0.00
SLO-TV3	0.00
HRT-TV1	0.00
HRT-HR1	0.00
RBC-TV	0.00

Demod. 4	Bitrate
All TS Demod. 4	0.00
SLO-TV1	0.00
SLO-TV2	0.00
TV K-C	0.00
SLO-TV3	0.00
HRT-TV1	0.00
HRT-HR1	0.00
RBC-TV	0.00

USB 1	Bitrate
LTV World	3.60

Output streams

Services	IP address	IP port	Bitrate	Enable
LRT TELEVIJUA HD	239.192.11.0	1234	4.94	✓
LRT PLUS HD	239.192.11.4	1234	8.44	✓
LNK	239.192.11.2	1234	1.16	✓
Info TV	239.192.11.3	1234	1.58	✓
2TV	239.192.11.5	1234	1.48	✓
SLO-TV1	239.192.11.6	1234	0.00	✓
SLO-TV2	239.192.11.7	1234	0.00	✓
LTV World	239.192.11.8	1234	3.60	✓
LTV World	239.192.11.9	1234		Append



Characteristics:

- Input: four DVB multi program transport streams (MPTS).
- Output: up to 256 simultaneous, IP-encapsulated services (TV or Radio programs), with individual multicast addresses and 4 MPTS streams.
- • Information filtering of DVB tables.
- • UDP & RTP transmission protocols.
- • Web interface for configuration and setting.
- • SAP & SDP protocols that facilitate automatic service selection on the user's STB and provide information to external servers.
- • PID filtering.
- • PSI/SI parsing.
- • Transparent ECM & EMM messaging.
- • PAT, PMT and SDT table regeneration.
- • Routing of CAT, EIT, TDT tables.
- • Configurable QoS marking.
- • Configurable Time To Live.
- • TS file streaming from USB flash.
- • Single cable interface (EN50494, EN50607) support.

Specifications

RF input	
Standard	DVB-T/T2/C
AGC range	45...80 dBuV
Number of channels	4
Input frequency range	47...862 MHz
Impedance	75Ohm
DC output for preamplifier	12V / 100mA
IP output	
Standard	IEEE802.3 1000 Base-T (10/100 Base-T is not supported)
Stream rate	up to 200 Mbps
Transmission protocols	UDP/RTP
multicast, MPTS, SPTS	Yes
CA modules	2 slots
Control port	IEEE802.3 10/100 Base-T
Current consumption	12V / 0.6A without external DC feeding and CAM 1.1A with two CAM's and maximal external load
Operating temperature range	0 ÷ +50 C
Dimensions/Weight (packed)	36x198x112 mm/0.84 kg

SDI-482C Multichannel 8 x DVB-S/S2/S2X to IP streamer

Overview

SDI482C DVB-S/S2/S2X to IP streamer designed to broadcast in multicast on an IP network the services (TV or Radio programmes) issued from FTA or encrypted digital reception. The IP streams can be viewed using an IPTV set-top-box or a software video player. The streamer can descramble encrypted services by two conditional access (CA) modules.

Characteristics:

- Input: eight (sdi482C) DVB multi program transport streams (MPTS).
- Output: up to 512 simultaneous, IP-encapsulated services (TV or Radio programs), with individual multicast addresses and 8 MPTS streams.
- • Information filtering of DVB tables.
- • UDP & RTP transmission protocols.
- • Web interface for configuration and setting.
- • SAP & SDP protocols that facilitate automatic service selection on the user's STB and provide information to external servers.
- • PID filtering.
- • PSI/SI parsing.
- • Transparent ECM & EMM messaging.
- • PAT, PMT and SDT table regeneration.
- • Routing of CAT, EIT, TDT tables.
- • Configurable QoS marking.
- • Configurable Time To Live.
- • TS file streaming from USB flash.
- • Single cable interface (EN50494, EN50607) support.



Input services			Output streams					
Input source			Services	IP address	IP port	Bitrate	Enable	
Demod. 1 X	Demod. 2 X	+	HD Rai 1 HD	239.192.11.2	1234	7.85	✓	
Demod. 3 X	Demod. 4 X		HD Rai 2 HD	239.192.11.3	1234	7.86	✓	
Demod. 5 X	Demod. 6 X		HD Rai 3 HD	239.192.11.4	1234	8.48	✓	
Demod. 7 X	Demod. 8 X		HD Rai Sport + HD	239.192.11.5	1234	6.15	✓	
			HD Rai 4 HD	239.192.11.6	1234	5.64	✓	
			HD Rai Movie HD	239.192.11.7	1234	4.21	✓	
			SR Rai Movie	239.192.11.8	1234	1.50	✓	
			SR Rai 4	239.192.11.9	1234	1.54	✓	
			HD MDR Sachsen HD	239.192.11.11	1234	12.30	✓	
			HD hr-fernsehen HD	239.192.11.12	1234	9.36	✓	
			HD tagesschau24 HD	239.192.11.13	1234	5.69	✓	
			HD ONE HD	239.192.11.14	1234	5.93	✓	
			HD ARD alpha HD	239.192.11.15	1234	6.10	✓	
			HD SR Fernsehen HD	239.192.11.16	1234	9.34	✓	
			HD Radio Bremen HD	239.192.11.17	1234	3.44	✓	
			SR BBC World News Europe HD	239.192.11.18	1234	8.90	✓	
			SR NHK WORLD-JPN	239.192.11.19	1234	9.05	✓	
			HD Al Jazeera English HD	239.192.11.20	1234	7.89	✓	
			HD 3sat HD	239.192.11.21	1234	15.42	✓	
			TVRUS	239.192.11.55	1234			Append

Demod. 1	Bitrate	
All TS Demod. 1	63.99	+
HD Rai 1 HD	8.35	+
HD Rai 2 HD	7.60	+
HD Rai 3 HD	6.25	+
HD Rai Sport + HD	6.16	+
HD Rai 4 HD	5.65	+
HD Rai Movie HD	4.19	+
HD Rai 4K	22.80	+
Rai Radio 1	0.36	+
Rai Radio 2	0.36	+
Rai Radio 3	0.36	+
Rai Radio3 Classica	0.36	+
Rai GR Parlamento	0.30	+
Rai Isoradio	0.30	+
Rai Radio	0.36	+

Specifications

RF input	
Standard	DVB-S/S2/S2X
AGC range	45...85 dBuV
Symbol rate	2...45 Msymb/s
FEC	1/2_2/3_3/4_5/6_7/8 (QPSK) 1/2_3/5_2/3_3/4_4/5_5/6_8/9_9/10 (8PSK)
Number of channels	8
Input frequency range	950...2150 MHz
Impedance	75Ohm
IP output	
Standard	IEEE802.3 1000 Base-T (10/100 Base-T is not supported)
Stream rate	up to 0.6Gbps
Transmission protocols	UDP/RTP
multicast, MPTS, SPTS	Yes
CA modules	2 slots
Control port	IEEE802.3 10/100 Base-T
Current consumption	12V / 1A without external DC feeding and CAM 3.2A with two CAM's and maximal external load
Operating temperature range	0 ÷ +50 C
Dimensions/Weight (packed)	48.5x198x112 mm/0.97 kg

Overview

The devices are transmodulators with 8 DVB-S/S2 input channels and 8 DVB-T (tdx480) or 8 DVB-C (tdq480) output channels. The devices are designed for digital transmodulation with Transport Stream Processing of TV or Radio programmes issued from FTA (Free to air) or encrypted digital reception.

Devices filter services, modify SI (Service Information), generate NIT (Network Information table), LCN (Local Channel Number), can remultiplex services from any input to any output. All of the configurations can be changed by using the Web Interface.

- **tdx480** – octal transmodulator - with eight DVB-S/S2 input channels and eight DVB-T output channels.
- **tdq480** – octal transmodulator - with eight DVB-S/S2 input channels and eight DVB-C output channels.

Characteristics:

- Integrated 2x8 multiswitch
- TS processing: any service to any output
- PCR restamping
- service filtering
- PSI/SI regeneration
- NIT generation
- PMT version monitoring
- BISS descrambling
- Web control and SNMP monitoring
- loop through RF distributing at input and output
- DIN rail or wall mounting
- robust die-cast housing
- connectors:
 - RF input/output - type F;
 - Ethernet control interface - RJ-45;
 - screw terminal block for DC entry power distribution bus



Specifications

RF input		
Demodulation	QPSK, 8PSK	
Input level	55...95 dBuV	
Input resistance	75 Ohm	
Symbol rate	2...45 Msymb/s (QPSK) 2... 37 Msymb/s (8PSK)	
FEC	1/2_2/3_3/4_5/6_6/7_7/8 (QPSK) 1/2_3/5_2/3_3/4_4/5_5/6_8/9_9/10 (8PSK)	
Input frequency range	950...2150 MHz	
Tuning step	1 MHz	
LNB control	0/14/18 V, 300 mA max, DiSEqC 1.0 EN50494, EN50607	
RF output	TDX480	TDQ480
DVB standard	OFDM (DVB-T)	QAM (DVB-C)
Frequency range	170-230 MHz / 470-862 MHz	96-862 MHz
Channel allocation	4 + 4	
Level / impedance	90 dBuV (0 ÷ -15.0 dB by 1 dB step) / 75 Ohm	
TS bit rate	< 31 Mbit/s	< 53 Mbit/s
MER	35dB	40dB
Modulation	QPSK, QAM16, QAM64	QAM16, 32, 64, 128, 256
Channel bandwidth	7MHz / 8MHz	4...8,3MHz
Guard Interval	1/32, 1/16, 1/8, 1/4	
FEC	1/2, 2/3, 3/4, 5/6, 7/8	
Symbol Rate		3.5...7.2 Msymb/s
Transmission mode	2K	
Management port	standard IEE802.3 10/100 Base T	
Current consumption	12V / 1A	12V / 1.1A
Temperature range	0° ÷ +45°C	
Dimensions / Weight	48.5x198x112 mm/0.9 kg	

Overview

Steel chassis for the TROPHY devices installing into 19 inch rack.

