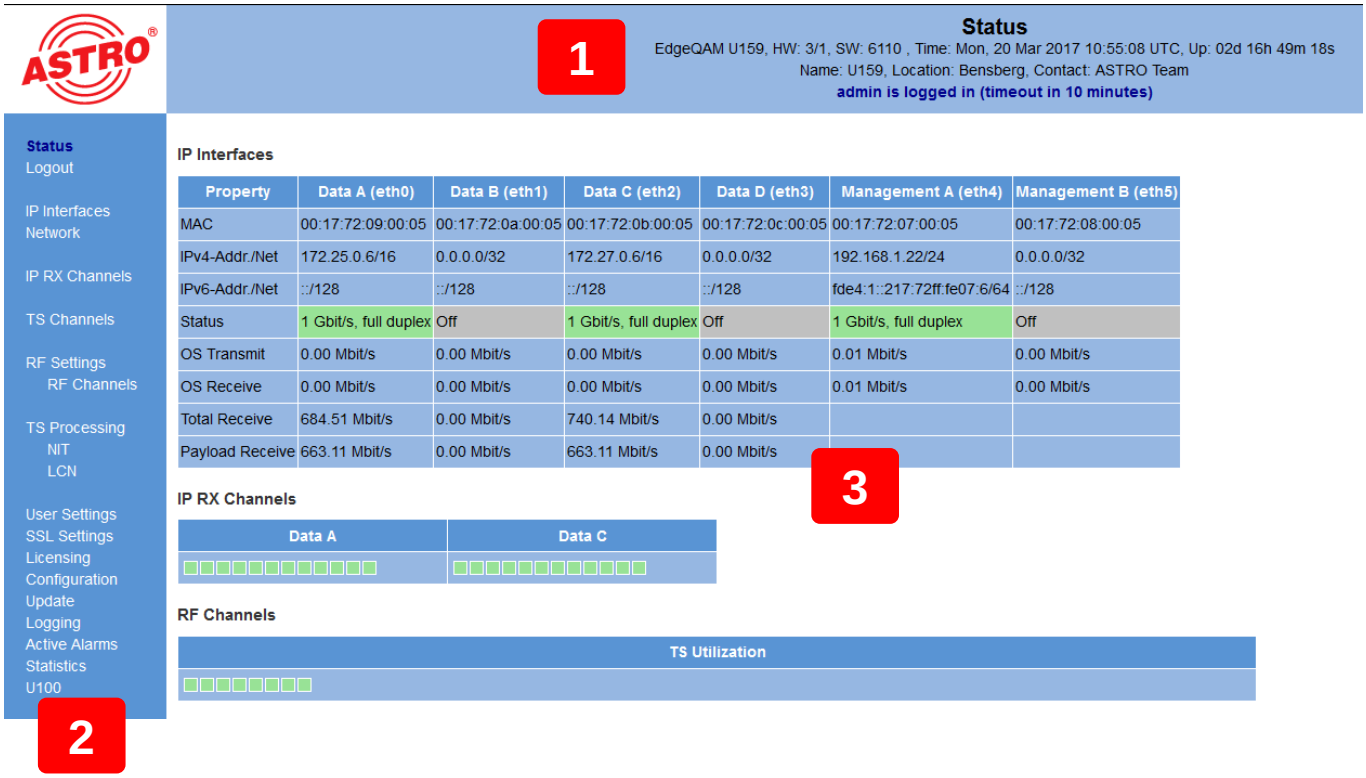
U 159

IP-to-QAM

First Steps

Web GUI - Overview



1

STATUS LINE (HEADER): Displays general information of the module

- HW: Hardware Version
- SW: Software Version
- Time: Date and Time
- Up: Runtime since reboot
- Name, Location, Contact: Corresponds to the settings made in “Network / SNMP Access”

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NAVIGATION MENU: Displays the individual configuration areas which you can select by clicking the mouse. A detailed description of these areas can be found on the following pages.

- Status: Short information about module
- Login / Logout: Login / Logout page
- IP Interfaces: Configuration of IP interfaces (Data and Management)
- Network: Configuration of routing, DNS, SNMP etc.
- IP RX Channels: Configuration of input signal
- TS Channels: Configuration of transport streams based on input signals
- RF Settings: Configuration of output signal (level, frequency grid)
  - RF Channels: Configuration of output channels (adding, removing, TS source, frequency etc.)
- TS Processing: Enable/Disable the NIT
  - NIT: NIT Configuration and adding external TS
  - LCN: LCN configuration
- User Settings: Configuration of timeout time, password policy, user accounts
- SSL Settings: SSL Configuration
- Licensing: Overview and Upload licenses
- Configuration: Download and Upload of configuration files (XML)
- Update: Software update, Reboot, Restore default settings
- Logging: Logfile
- Active alarms: Displays existing alarms (errors)
- Statistics: Collecting, View and Download statistics about module
- U100: Configuration of module position in base unit and amount of power supplies

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CONTENT AREA (MAINFRAME): The respective configuration form – depending on the menu item selected – is displayed here.

Status

- **IP Interfaces:** IP-Addresses, Status, Incoming bandwidth and payload receive.
- **IP RX Channels:** Status of receiving channels. Mouse over the elements will give more detailed information.
  Status is greenlighted (ON) when SFP is inserted. Please use SFPs without some specific vendor code.
- **RF Channels:** Status of output channels. Mouse over the elements will give more detailed information.
- **Monitoring:** Some values of temperature and voltage of device.
- **U100 Power Supply:** Status of power supply.

IP Interfaces

Property	Data A (eth0)	Data B (eth1)	Data C (eth2)	Data D (eth3)	Management A (eth4)	Management B (eth5)
MAC	00:17:72:09:00:05	00:17:72:0a:00:05	00:17:72:0b:00:05	00:17:72:0c:00:05	00:17:72:07:00:05	00:17:72:08:00:05
IPv4-Addr./Net	172.25.0.6/16	0.0.0.0/32	172.27.0.6/16	0.0.0.0/32	192.168.1.22/24	0.0.0.0/32
IPv6-Addr./Net	::/128	::/128	::/128	::/128	fde4:1::217:72ff:fe07:6/64	::/128
Status	1 Gbit/s, full duplex	Off	1 Gbit/s, full duplex	Off	1 Gbit/s, full duplex	Off
OS Transmit	0.00 Mbit/s	0.00 Mbit/s	0.00 Mbit/s	0.00 Mbit/s	0.01 Mbit/s	0.00 Mbit/s
OS Receive	0.00 Mbit/s	0.00 Mbit/s	0.00 Mbit/s	0.00 Mbit/s	0.01 Mbit/s	0.00 Mbit/s
Total Receive	684.51 Mbit/s	0.00 Mbit/s	740.14 Mbit/s	0.00 Mbit/s		
Payload Receive	663.11 Mbit/s	0.00 Mbit/s	663.11 Mbit/s	0.00 Mbit/s		

IP RX Channels

Data A	Data C

RF Channels

TS Utilization

Monitoring

Temperature front	35.94 °C	Temperature centre	43.19 °C	Temperature preamp	48 °C	Temperature DAC	67.75 °C
Temperature backplane	59 °C	Fan	10546 RPM	Voltage 5.0	4.90 V	Current 5.0	7.88 A
Voltage 1.0	1.02 V	Current 1.0	2.10 A	Voltage 1.1	1.11 V	Current 1.1	2.30 A
Voltage 1.5	1.49 V	Voltage 1.8	1.79 V	Voltage 2.5	2.49 V	Voltage 3.3	3.31 V
Voltage 13 front	13.35 V	Voltage 13 main	12.72 V	Voltage 13 back	13.26 V		

U100 power supply

Left	Right		
Not fitted	DC	Fan	Temp

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IP Interfaces

- **Data Interfaces:** Here you configure the IP Interfaces.
- **Management Interfaces:** Here you configure the Management Interfaces.

Data Interfaces

Property	Data A (eth0)	Data B (eth1)	Data C (eth2)	Data D (eth3)
MAC	00:17:72:09:00:05	00:17:72:0a:00:05	00:17:72:0b:00:05	00:17:72:0c:00:05
Active	(•) on ( ) off	( ) on (•) off	(•) on ( ) off	( ) on (•) off
Status	1 Gbit/s, full duplex	Off	1 Gbit/s, full duplex	Off
IPv4-Addr./Net	172.25.0.6 / 16	172.26.0.6 / 16	172.27.0.6 / 16	172.28.0.6 / 16
IPv6-Addr./Net	:: / 128	:: / 128	:: / 128	:: / 128

Management Interfaces

Property	Management A (eth4)	Management B (eth5)
MAC	00:17:72:07:00:05	00:17:72:08:00:05
Active	(•) on ( ) off	( ) on (•) off
Status	1 Gbit/s, full duplex	Off
IPv4-Addr./Net	192.168.1.22 / 24	192.168.5.22 / 24
IPv6-Addr./Net	fde4:1::217:72ff:fe07:6 / 64	fde4:5::217:72ff:fe08:6 / 64

Apply Discard

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- **Routing:** Configure gateway and routing tables. Leave empty if no gateway exist.
- **DNS:** Configure DNS
- NTP: Configure time source for time and date displaying on header.
- **System Log:** Configure system log server.
- **SNMP Trap Receiver:** Configure SNMP trap receiver.
- **SNMP User:** Configure SNMP User.
- **SNMP Access:** This information displayed on header and in SNMP messages.

Routing

Protocol	Gateway	Routed IP-Network	Action
IPv4	192.168.1.100	default	
IPv6	::	default	

Note: Use 0.0.0.0 for unused IPv4-Addresses and :: for unused IPv6-Addresses.

DNS

Property	Value	Action
Search suffix	labor.astro	
DNS-Server (IPv4 or IPv6)	0.0.0.0	

NTP

Property	Host Name	Action
NTP-Server	192.168.1.70	
NTP-Server		

System Log

Property	Host Name	Action
System Log-Server		
System Log-Server		

SNMP Trap Receiver

Property	Host Name	Port	Community	Version	Inform Msg.	Security	Action
Trap Receiver		162	public	v2c			

v2c
v3

SNMP User

Property	User / Community	Version	Access	Security	Action
User		v2c	read		

v2c
v3

read
read/write

SNMP Access

Property	Value	Action
Name	U159	
Location	Bensberg	
Contact	ASTRO Team	
MIB	AstroStrobel-EdgeQAM64.mib	

IP RX Channels

Adding of IP RX Channels

To add some IP signal source do following steps:

1) Type IP Address and Port of the IP TS
2) Specify Data Port where it coming from
3) Push Plus-Button on left
4) Push APPLY

You also can configure the state of incoming stream (off, cold, hot), FEC and Source Address of an incoming TS.

Adding / Deleting of IP RX Channels

Action	Selection	State	Address	Port	FEC	Data Port	Source Address	Add TS Chan.
⊕	Number: 8	off (off / cold / hot)	230.148.1.1	10000	☐	☑A ☐B ☐C ☐D	0.0.0.0	☑
⊖		"9 14-22" to remove multiple channels number of the lower table)						

IP RX Settings - (0 Channels)

No.	State	Address	Port	FEC	Data Port	Source Address	TS-ID	ON-ID	TS-Info - Alias manual
Use the upper table to add IP RX Channels!									

Apply Discard

For adding more channels just type number of channels. The receiving channels will added with increasing last octet by +1.

IP RX Settings - (8 Channels)

No.	State	Address	Port	FEC	Data Port	Source Address	TS-ID	ON-ID	TS-Info - Alias manual
1.	hot	230.148.1.1	10000	☐	A B C D	0.0.0.0	0	0	-
2.	hot	230.148.1.2	10000	☐	A B C D	0.0.0.0	0	0	-
3.	hot	230.148.1.3	10000	☐	A B C D	0.0.0.0	0	0	-
4.	hot	230.148.1.4	10000	☐	A B C D	0.0.0.0	0	0	-
5.	hot	230.148.1.5	10000	☐	A B C D	0.0.0.0	0	0	-
6.	hot	230.148.1.6	10000	☐	A B C D	0.0.0.0	0	0	-
7.	hot	230.148.1.7	10000	☐	A B C D	0.0.0.0	0	0	-
8.	hot	230.148.1.8	10000	☐	A B C D	0.0.0.0	0	0	-

Last modifications are not applied!

Apply Discard

After adding receive channels it take few seconds until the TS info (alias) and its actual status (green/red/grey) is read. You can also change it manually.

IP RX Settings - (8 Channels)

No.	State	Address	Port	FEC	Data Port	Source Address	TS-ID	ON-ID	TS-Info - Alias manual
1.	hot	230.148.1.1	10000	☑	A B C D	0.0.0.0	1101	1	- Das Erste
2.	hot	230.148.1.2	10000	☑	A B C D	0.0.0.0	1019	1	- Das Erste HD
3.	hot	230.148.1.3	10000	☑	A B C D	0.0.0.0	1079	1	- 3sat
4.	hot	230.148.1.4	10000	☑	A B C D	0.0.0.0	1011	1	- ZDF HD
5.	hot	230.148.1.5	10000	☑	A B C D	0.0.0.0	1025	1	- BR Fernsehen Süd HD
6.	hot	230.148.1.6	10000	☑	A B C D	0.0.0.0	1010	1	- 3sat HD
7.	hot	230.148.1.7	10000	☑	A B C D	0.0.0.0	1089	1	- RTL Television
8.	hot	230.148.1.8	10000	☑	A B C D	0.0.0.0	1107	1	- SAT.1

IP RX Channels

Receive channels can be sorted according state, IP addresses, Port, FEC, Data Port, Source Address, TS-ID, ON-ID or Alias.

Deleting of IP RX Channels

1) Type number of channel which you want to delete
2) Push Minus-Button on left
3) Push APPLY

Adding / Deleting of IP RX Channels

Action	Selection	State	Address	Port	FEC	Data Port	Source Address	Add TS Chan.
⊕	Number: 1	hot	230.144.2.1	10000	☑	☐A ☐B ☑C ☐D	0.0.0.0	☐
⊖	1-8	(Use e.g. "9 14-22" to remove multiple channels number of the lower table)						

IP RX Settings - (16 Channels)

No.	State	Address	Port	FEC	Data Port	Source Address	TS-ID	ON-ID	TS-Info - Alias manual
1.	hot	230.144.1.1	10000	☑	A B C D	0.0.0.0	1101	1	Das Erste
2.	hot	230.144.1.2	10000	☑	A B C D	0.0.0.0	1019	1	Das Erste HD
3.	hot	230.144.1.3	10000	☑	A B C D	0.0.0.0	1079	1	3sat
4.	hot	230.144.1.4	10000	☑	A B C D	0.0.0.0	1011	1	ZDF HD
5.	hot	230.144.2.1	10000	☑	A B C D	0.0.0.0	1101	1	Das Erste
6.	hot	230.144.2.2	10000	☑	A B C D	0.0.0.0	1019	1	Das Erste HD
7.	hot	230.144.2.3	10000	☑	A B C D	0.0.0.0	1079	1	3sat
8.	hot	230.144.2.4	10000	☑	A B C D	0.0.0.0	1011	1	ZDF HD
9.	hot	230.148.1.1	10000	☑	A B C D	0.0.0.0	1101	1	Das Erste
10.	hot	230.148.1.2	10000	☑	A B C D	0.0.0.0	1019	1	Das Erste HD
11.	hot	230.148.1.3	10000	☑	A B C D	0.0.0.0	1079	1	3sat
12.	hot	230.148.1.4	10000	☑	A B C D	0.0.0.0	1011	1	ZDF HD
13.	hot	230.148.1.5	10000	☑	A B C D	0.0.0.0	1025	1	BR Fernsehen Süd HD
14.	hot	230.148.1.6	10000	☑	A B C D	0.0.0.0	1010	1	3sat HD
15.	hot	230.148.1.7	10000	☑	A B C D	0.0.0.0	1089	1	RTL Television
16.	hot	230.148.1.8	10000	☑	A B C D	0.0.0.0	1107	1	SAT.1

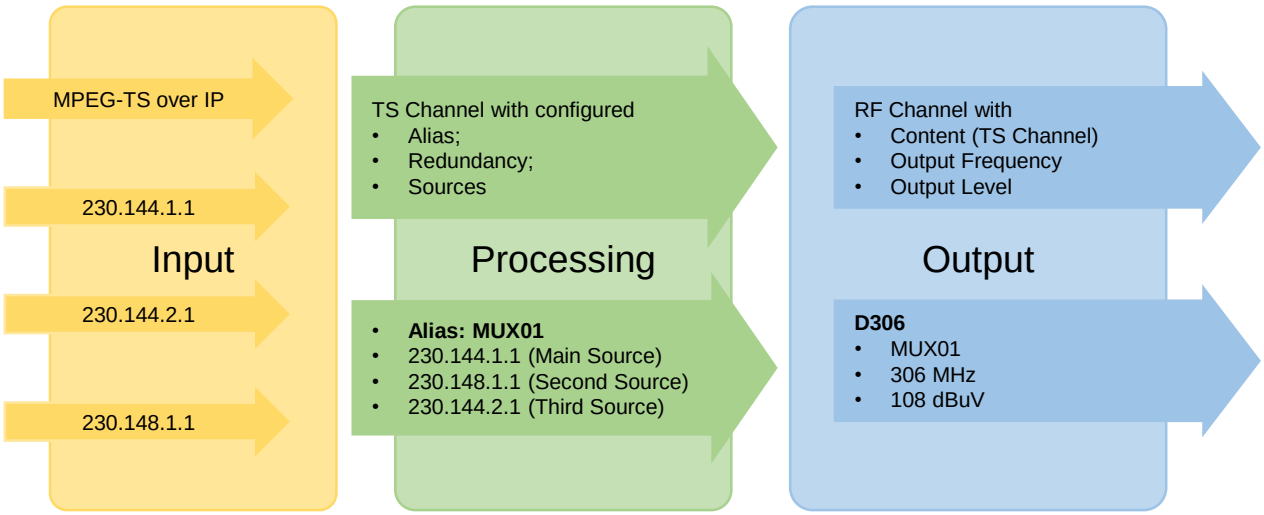
Channels 1-8 from the table above deleted.

IP RX Settings - (8 Channels)

No.	State	Address	Port	FEC	Data Port	Source Address	TS-ID	ON-ID	TS-Info - Alias manual
1.	hot	230.148.1.1	10000	☑	A B C D	0.0.0.0	1101	1	Das Erste
2.	hot	230.148.1.2	10000	☑	A B C D	0.0.0.0	1019	1	Das Erste HD
3.	hot	230.148.1.3	10000	☑	A B C D	0.0.0.0	1079	1	3sat
4.	hot	230.148.1.4	10000	☑	A B C D	0.0.0.0	1011	1	ZDF HD
5.	hot	230.148.1.5	10000	☑	A B C D	0.0.0.0	1025	1	BR Fernsehen Süd HD
6.	hot	230.148.1.6	10000	☑	A B C D	0.0.0.0	1010	1	3sat HD
7.	hot	230.148.1.7	10000	☑	A B C D	0.0.0.0	1089	1	RTL Television
8.	hot	230.148.1.8	10000	☑	A B C D	0.0.0.0	1107	1	SAT.1

TS Channels

TS Channels is the main part of the module U159. It is a processing part, which gather all receiving signal, create so called TS channels. These TS channels referred to RF output signal.
Multiple signal sources (Transport Streams from different sources with same content) can be gathered in a single TS channel.



TS Channels

TS Channels are configured channels (Alias, Source, Redundancy, Switching time in case of signal loss). They are used for configuring the output signal (RF channels).

If “Adding TS Channels” was done in previous menu (IP RX Channels), initially you see these channels (see below).

You can also add / delete TS channels by Plus- or Minus-Button.

Adding / Deleting of TS Channels

Action	Selection	
⊕	Number: 1	
⊖		(Use e.g. "9 14-22" to remove multiple channels number of the lower table)

TS Channel Settings - (16 Channels)

No.	Alias	Active Source	Details
1.	New TS (230.144.1.1)	Das Erste (Port A - 230.144.1.1:10000-Src.0.0.0.0)	⚙
2.	New TS (230.144.1.2)	Das Erste HD (Port A - 230.144.1.2:10000-Src.0.0.0.0)	⚙
3.	New TS (230.144.1.3)	3sat (Port A - 230.144.1.3:10000-Src.0.0.0.0)	⚙
4.	New TS (230.144.1.4)	ZDF HD (Port A - 230.144.1.4:10000-Src.0.0.0.0)	⚙
5.	New TS (230.144.2.1)	Das Erste (Port C - 230.144.2.1:10000-Src.0.0.0.0)	⚙
6.	New TS (230.144.2.2)	Das Erste HD (Port C - 230.144.2.2:10000-Src.0.0.0.0)	⚙
7.	New TS (230.144.2.3)	3sat (Port C - 230.144.2.3:10000-Src.0.0.0.0)	⚙
8.	New TS (230.144.2.4)	ZDF HD (Port C - 230.144.2.4:10000-Src.0.0.0.0)	⚙
9.	New TS (230.148.1.1)	Das Erste (Port A - 230.148.1.1:10000-Src.0.0.0.0)	⚙
10.	New TS (230.148.1.2)	Das Erste HD (Port A - 230.148.1.2:10000-Src.0.0.0.0)	⚙
11.	New TS (230.148.1.3)	3sat (Port A - 230.148.1.3:10000-Src.0.0.0.0)	⚙
12.	New TS (230.148.1.4)	ZDF HD (Port A - 230.148.1.4:10000-Src.0.0.0.0)	⚙
13.	New TS (230.148.2.1)	Das Erste (Port C - 230.148.2.1:10000-Src.0.0.0.0)	⚙
14.	New TS (230.148.2.2)	Das Erste HD (Port C - 230.148.2.2:10000-Src.0.0.0.0)	⚙
15.	New TS (230.148.2.3)	3sat (Port C - 230.148.2.3:10000-Src.0.0.0.0)	⚙
16.	New TS (230.148.2.4)	ZDF HD (Port C - 230.148.2.4:10000-Src.0.0.0.0)	⚙

Last modifications are not applied!

Apply Discard

After any change (add / delete, Alias change etc.) save by pushing “APPLY”. Depending on amount of channels it take up to 15 seconds for applying changes.

Example

Receiving four channels (Das Erste, Das Erste HD, 3sat and ZDF HD), each from four different sources.

TS Channel Settings - (16 Channels)

No.	Alias	Active Source	Details
1.	MUX01-Link1-Source1	Das Erste (Port A - 230.144.1.1:10000-Src.0.0.0.0)	
2.	MUX01-Link1-Source2	Das Erste (Port A - 230.148.1.1:10000-Src.0.0.0.0)	
3.	MUX01-Link2-Source1	Das Erste (Port C - 230.144.2.1:10000-Src.0.0.0.0)	
4.	MUX01-Link2-Source2	Das Erste (Port C - 230.148.2.1:10000-Src.0.0.0.0)	
5.	MUX02-Link1-Source1	Das Erste HD (Port A - 230.144.1.2:10000-Src.0.0.0.0)	
6.	MUX02-Link1-Source2	Das Erste HD (Port A - 230.148.1.2:10000-Src.0.0.0.0)	
7.	MUX02-Link2-Source1	Das Erste HD (Port C - 230.144.2.2:10000-Src.0.0.0.0)	
8.	MUX02-Link2-Source2	Das Erste HD (Port C - 230.148.2.2:10000-Src.0.0.0.0)	
9.	MUX03-Link1-Source1	3sat (Port A - 230.144.1.3:10000-Src.0.0.0.0)	
10.	MUX03-Link1-Source2	3sat (Port A - 230.148.1.3:10000-Src.0.0.0.0)	
11.	MUX03-Link2-Source1	3sat (Port C - 230.144.2.3:10000-Src.0.0.0.0)	
12.	MUX03-Link2-Source2	3sat (Port C - 230.148.2.3:10000-Src.0.0.0.0)	
13.	MUX04-Link1-Source1	ZDF HD (Port A - 230.144.1.4:10000-Src.0.0.0.0)	
14.	MUX04-Link1-Source2	ZDF HD (Port A - 230.148.1.4:10000-Src.0.0.0.0)	
15.	MUX04-Link2-Source1	ZDF HD (Port C - 230.144.2.4:10000-Src.0.0.0.0)	
16.	MUX04-Link2-Source2	ZDF HD (Port C - 230.148.2.4:10000-Src.0.0.0.0)	

Configuring TS channels with redundancy option:

Detailed TS Channel Settings for "MUX01"

Name	Source	Sort	Add source (same priority)
Main	Das Erste (Port A - 230.144.1.1:10000) - hot Das Erste (Port A - 230.148.1.1:10000) - hot		
1. Redundance	Das Erste (Port C - 230.144.2.1:10000) - hot Das Erste (Port C - 230.148.2.1:10000) - hot		
2. Redundance	Not selected		

Same Priority within a line

Lower priority

Property	Value
Automatic Redundancy	on / off
Timeouts	In case of failure switch after 5 seconds, switch back to higher priority after 300 seconds. Apply Timeouts to all TS-Channels

OK Apply Discard Cancel

Configured TS channels with redundancy option:

TS Channel Settings - (4 Channels)

No.	Alias	Active Source	Details
1.	MUX01	Das Erste (Port A - 230.144.1.1:10000-Src.0.0.0.0)	
2.	MUX02	Das Erste HD (Port A - 230.144.1.2:10000-Src.0.0.0.0)	
3.	MUX03	3sat (Port A - 230.144.1.3:10000-Src.0.0.0.0)	
4.	MUX04	ZDF HD (Port A - 230.144.1.4:10000-Src.0.0.0.0)	

RF Settings

Configuring limit of output channels (16, 32 or 64), output level and frequency grid used.

Frequency grid can be uploaded manually.

RF Main Settings

Property	Value	Description
Used RF Channels	up to 64 Channels	max. System Level: **108.0 dBµV**
System Level	108.0 dBµV	min. System Level: **80.0 dBµV**
RF Output	on off standby	
Current Channel Grid	D114-D874	Channel spacing: 8 MHz (114,0 - 874,0 MHz)

Apply Discard

up to 16 Channels
up to 32 Channels
up to 64 Channels

D114-D874
D73-D834
D242-D1002
D113-Grid

Available Channel Grids

Name	Description	Action
D114-D874	Channel spacing: 8 MHz (114,0 - 874,0 MHz)	[used]
D73-D834	Channel spacing: 8 MHz (73,0 - 834,0 MHz)	Delete
D242-D1002	Channel spacing: 8 MHz (242,0 - 1002,0 MHz)	Delete
D113-Grid	Channel spacing: 8 MHz (113,0 - 874,0 MHz)	Delete
Add Grid	Durchsuchen... Keine Datei ausgewählt.	Upload

RF Channels

Add / Delete RF channels by Plus- / Minus-Button. Add multiple channels by “Number”. For each channel the output frequency will set automatically (next adjacent frequency in the channel grid).

Adding / Deleting of RF Channels

Action	Selection	Enable	Modulation	Channel	Attenuator
⊕	Number: 1	☑	256 QAM	D306	0.0 = 108.0 dBµV
⊖		(Use e.g. "9 14-22" to remove multiple channels number of the lower table)			

RF Channel Settings - (4 Channels)

No.	Enable	Transport Stream	Modulation	Channel [Freq.]	Attenuator	Details
1.	☑	Please select	256 QAM	D306	0.0 = 108.0 dBµV	⚙
2.	☑	Please select	256 QAM	D314	0.0 = 108.0 dBµV	⚙
3.	☑	Please select	256 QAM	D322	0.0 = 108.0 dBµV	⚙
4.	☑	Please select	256 QAM	D330	0.0 = 108.0 dBµV	⚙

Last modifications are not applied!

Apply Discard

Choose transport stream (configured before on “TS Channels”):

RF Channel Settings - (4 Channels)

No.	Enable	Transport Stream	Modulation	Channel [Freq.]	Attenuator	Details
1.	☑	MUX01	256 QAM	D306	0.0 = 108.0 dBµV	⚙
2.	☑	MUX02	256 QAM	D314	0.0 = 108.0 dBµV	⚙
3.	☑	MUX03	256 QAM	D322	0.0 = 108.0 dBµV	⚙
4.	☑	MUX04	256 QAM	D330	0.0 = 108.0 dBµV	⚙

Apply Discard

Detailed RF Channel Settings

Property	Value	
Transport Stream		
Modulation	256 QAM	☐ Transfer settings to all channels
Symbol Rate	6.900 MBaud	
Output Frequency	306.000 MHz	
Output Level	108.0 dBµV	

OK Cancel

TS Processing

NIT
Choose between static, dynamic NIT or NIT from remapped PIDs.

NIT Processing

Property	Value
NIT-Mode	dynamic

TDT/TOT Settings

Property	Value
TDT/TOT Insertion	off

Apply Discard

Configuring NIT:.

Dynamic NIT Processing Settings		
Network ID	4711	
Network Name	ASTRO	
NIT Version	Actual: 6	Set:
Insert LCN	enabled disabled	
Insert Service List Descriptors	enabled disabled	
NIT Insertion Interval	10000 ms	
Current Output NIT		

Add External Transport Streams

TS-ID	ON-ID	Frequency	Modulation	Symbol Rate	
1	1	306.0 MHz	256 QAM	6.900 MBaud	Add to NIT

External Transport Streams

No.	TS-ID	ON-ID	Channel - Frequency	Modulation	Symbol Rate	Remove

Apply Discard

Generate LCN:

Adding services to LCN Table

LCN	SD Service name	HD Service name	Radio Service name
1	Please select for adding service	Please select for adding service	Please select for adding service

LCN Table - (total number: 6)

LCN	Service name	Type	Serv-ID	TS-ID	ON-ID	Remove	Action
1	Das Erste	SD-TV	28106	1101	1		
2	ZDF	SD-TV	28006	1079	1		
3	Das Erste HD	HD-TV	10301	1019	1		
4	ZDF HD	HD-TV	11110	1011	1		
5	DKULTUR	Radio	28012	1079	1		
6	DLF	Radio	28013	1079	1		

Property	Value
Descriptor Type	NorDig(V1)

User Settings

User Settings

Property	Account Type	Enabled	Name	New Password	Retype New Password	Action
1. Log-In Account	admin		admin			
2. Log-In Account	user	☑	user			⊖
3. Log-In Account	user	☑	controller			⊖
4. Log-In Account	view	☑	lock			⊖ ⊕
Timeout	10 minutes					
Enforce password policy	☐					
Disallow anonymous access	☐					
Logout with confirmation	☐					

If password policy is enforced, passwords have to consist of at least 8 characters and at least one lowercase letter, one uppercase letter, one nu
Otherwise, the minimum length is 5 characters with no further restrictions.

Note: There ist no hidden password. Do not forget your password or you will be locked out.

SSL Settings

SSL Settings

Property	Enabled
HTTPS	☐
Redirect HTTP requests to HTTPS	☐

Key and Certificate settings

Property	Value	Action	
		RSA Encryption	ECDSA Encryption
Regenerate device key, CSR and self signed certificate	RSA Key: 2048 ECDSA Curve: secp384r1	↻	↻
Generate CSR		◌	◌
Download CSR		↓	↓
Upload device certificate in PEM format	Durchsuchen... Keine Datei ausgewählt.	↑	↑
Clear certificate and generate self signed certificate		🗑	🗑
Upload Diffie-Hellman (DH) im PEM format	Durchsuchen... Keine Datei ausgewählt.	↑	

CSR Settings

Property	Value
Country (C)	DE
State (ST)	
Locality (L)	
Organization (O)	
Organizational Unit (OU)	
Common Name (CN)	
Period of validity in days	10000

Licensing

Licensing

Property	Value
Enabled Data Ports	A
Max. RF Channels	16
Redundancy	Enabled
FEC	Disabled
TLS (SSL)	Disabled
Radius	Disabled
TS Processing	no multiplexer
TS Analyzer	Disabled
QAM Monitoring	Disabled

Upload license file

Filename	Action
Durchsuchen... Keine Datei ausgewählt.	

Configuration

Last log:

```
2017-03-20 13:05:15,000 - INFO - The system will reboot in a few seconds...
2017-03-20 13:05:15,000 - INFO - Please wait a few minutes for a new login!
```

Delete this log

SD-Card: 378 MB free.

Configuration Files

Type of Data	File Name - download / upload	Action
	Durchsuchen... Keine Datei ausgewählt.	
NETWORK	network.xml	
USER	user.xml	
FREQGRIDS	freqgrids.xml	
SETTINGS	settings.xml	
LCN	lcn.xml	
MODULES	modules.xml	
STATIC_NIT	static_nit.xml	
	File Name - download	
LICENSES	licenses.xml	
IP	ip.xml	
STATUS	status.xml	
MODULE	module.xml	

Update

Software Update / Reboot

Property	Value
Update archive (u159xxxx.up)	Durchsuchen... Keine Datei ausgewählt. Upload
Update mode	Upload only
Backup software	is identical to current software
System reboot	Reboot

SD-Card: 378 MB free.

Available Update Archives

Filename	Size	Version	Install	Delete
u1596100.up	37.36 MiB	6100	Install	Delete
u1596110.up	38.53 MiB	6110	Install	Delete

Upload Update archive via server

Property	Value	Action
(T)FTP Server address	192.168.1.70	
Protocol	FTP TFTP	
FTP Username (e.g. anonymous)	anonymous	
FTP Password (e.g. guest)	•••••	
Path	/update/	
Version		
Mode	Please Select	⇄

For a quick start you may want to use the Tftpd32 server. Please adjust your firewall to allow (T)FTP traffic.
Please consider that the given path must exist on the server before any transfer is started.

Note: Load config excludes IP Interface Settings.

Logging

Logfile

```
2017-03-20 15:13:04,812 muxcontrol                  INFO     channel 2 is switching to backup
2017-03-20 15:13:04,803 muxcontrol                  INFO     channel 0 is switching to backup
2017-03-20 15:13:04,792 muxcontrol                  INFO     channel 1 is switching to backup
2017-03-20 15:13:04,779 muxcontrol                  INFO     channel 3 is switching to backup
2017-03-20 15:12:04,797 muxcontrol                  INFO     channel 2 is switching to backup
2017-03-20 15:12:04,783 muxcontrol                  INFO     channel 0 is switching to backup
2017-03-20 15:12:04,771 muxcontrol                  INFO     channel 1 is switching to backup
2017-03-20 15:12:04,758 muxcontrol                  INFO     channel 3 is switching to backup
2017-03-20 15:11:04,843 muxcontrol                  INFO     channel 2 is switching to backup
2017-03-20 15:11:04,832 muxcontrol                  INFO     channel 0 is switching to backup
2017-03-20 15:11:04,819 muxcontrol                  INFO     channel 1 is switching to backup
2017-03-20 15:11:04,806 muxcontrol                  INFO     channel 3 is switching to backup
2017-03-20 15:10:22,074 ledweb                      INFO     user 'admin' logged in
2017-03-20 15:10:04,827 muxcontrol                  INFO     channel 2 is switching to backup
2017-03-20 15:10:04,819 muxcontrol                  INFO     channel 0 is switching to backup
2017-03-20 15:10:04,810 muxcontrol                  INFO     channel 1 is switching to backup
2017-03-20 15:10:04,800 muxcontrol                  INFO     channel 3 is switching to backup
2017-03-20 15:09:04,841 muxcontrol                  INFO     channel 2 is switching to backup
2017-03-20 15:09:04,827 muxcontrol                  INFO     channel 0 is switching to backup
2017-03-20 15:09:04,813 muxcontrol                  INFO     channel 1 is switching to backup
2017-03-20 15:09:04,802 muxcontrol                  INFO     channel 3 is switching to backup
2017-03-20 15:08:04,987 muxcontrol                  INFO     channel 2 is switching to backup
2017-03-20 15:08:04,978 muxcontrol                  INFO     channel 0 is switching to backup
```

Delete this log

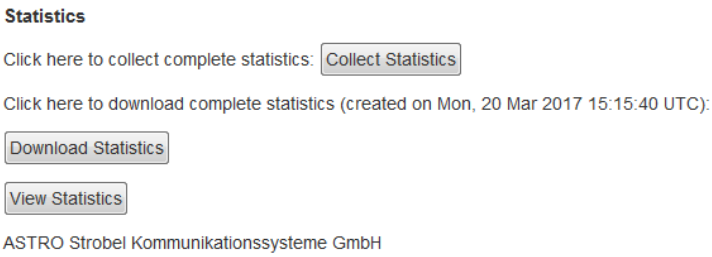
Active alarms

Active Alarm Table

Time	OID	Extension	Severity	Message
2017-03-20 13:22:43.984440+00:00	1.3.6.1.4.1.22886.3.159.2.6.1	2	error	Data: C Address: 230.144.2.1 Alias: Das Erste data loss
2017-03-20 13:21:30.233328+00:00	1.3.6.1.4.1.22886.3.159.2.6.1	20	error	Data: A Address: 230.148.1.2 Alias: Das Erste HD data loss
2017-03-20 13:22:44.087941+00:00	1.3.6.1.4.1.22886.3.159.2.6.1	14	error	Data: C Address: 230.144.2.4 Alias: ZDF HD data loss
2017-03-20 13:19:58.172967+00:00	1.3.6.1.4.1.22886.3.159.2.6.1	12	error	Data: A Address: 230.144.1.4 Alias: ZDF HD data loss
2017-03-20 13:19:57.654640+00:00	1.3.6.1.4.1.22886.3.159.2.6.1	0	error	Data: A Address: 230.144.1.1 Alias: Das Erste data loss
2017-03-20 13:22:44.042709+00:00	1.3.6.1.4.1.22886.3.159.2.6.1	6	error	Data: C Address: 230.144.2.2 Alias: Das Erste HD data loss
2017-03-20 13:21:30.252646+00:00	1.3.6.1.4.1.22886.3.159.2.6.1	24	error	Data: A Address: 230.148.1.3 Alias: 3sat data loss
2017-03-20 13:22:44.068528+00:00	1.3.6.1.4.1.22886.3.159.2.6.1	10	error	Data: C Address: 230.144.2.3 Alias: 3sat data loss
2017-03-20 13:21:30.187398+00:00	1.3.6.1.4.1.22886.3.159.2.6.1	16	error	Data: A Address: 230.148.1.1 Alias: Das Erste data loss
2017-03-20 13:19:57.706631+00:00	1.3.6.1.4.1.22886.3.159.2.6.1	4	error	Data: A Address: 230.144.1.2 Alias: Das Erste HD data loss
2017-03-20 13:21:30.271943+00:00	1.3.6.1.4.1.22886.3.159.2.6.1	28	error	Data: A Address: 230.148.1.4 Alias: ZDF HD data loss
2017-03-20 13:08:23.862192+00:00	1.3.6.1.4.1.22886.3.159.2.7.2	None	warning	Mainboard calibration EEPROM invalid
2017-03-20 13:19:57.723598+00:00	1.3.6.1.4.1.22886.3.159.2.6.1	8	error	Data: A Address: 230.144.1.3 Alias: 3sat data loss
2017-03-20 13:08:23.774297+00:00	1.3.6.1.4.1.22886.3.159.2.7.3	None	warning	Backplane calibration EEPROM invalid

ASTRO Strobel Kommunikationssysteme GmbH

Statistics



U100