

# UFOpro

## User Guide








**Revision History**

Date	Version	Description	Author
12.10.2023	1.0	First Draft	KDS

This guide contains some symbols to call your attention.

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 DANGER	The DANGER symbol calls your attention to a situation that, if ignored, may cause physical harm to the user.
 CAUTION	The CAUTION symbol calls your attention to a situation that, if ignored, may cause damage to Our product.
 NOTE	The NOTE symbol calls your attention to important information.
 TIP	The TIP symbol calls your attention to additional information that, if followed, can make procedures more efficient.
Red Arrow	The Red Arrow symbols point to import details mention the context above or below an image.
Blue Arrow	The Blue Arrow symbol indicates the motion path of an item in an operation step.
 Thick Arrow	The thick Arrow symbol calls your attention to a series of operation steps mentioned in the context.

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This guide also contains the following text conventions.

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<b><i>Bold Italic</i></b>	The bold Italic text indicates a button to click, an item in the drop-down menu to select, or a certain item in the UI.
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# 1 Chassis Overview

## 1.1 Front Panel

UFO 101 is a new generation of compact media platform which focuses on cost-effective commercial TV market and traditional DTV market.

With powerful embedded Gigabit switch, optional commercial/broadcast level encoder modules and multi-mode receiver and modulator modules, it has been preconfigured to meet all the major video delivery requirements of signal receiving, descrambling, encoding, multiplexing, modulation and IP processing depending on a variety of models.

Due to its compact design, powerful functions, super practical price and low operational cost, it's a perfect choice for commercial video delivery applications for hotel, campus, hospital, MDU and more kinds of cable TV and IPTV systems, where massive programs are required to be processed, saving you more space and expense.



1. Cooling air intake
2. 4 RJ45 ports for remote network management
3. Status and Power Indicators and Reset button

## 1.2 Back Panel



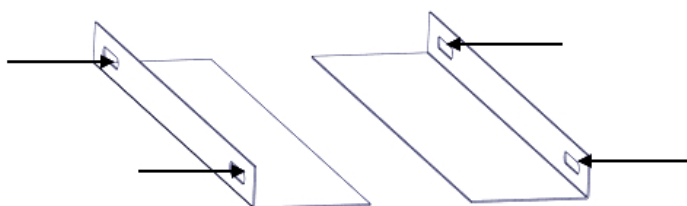
1-6	hot-swappable modules
7	Ground

## 2 Installation

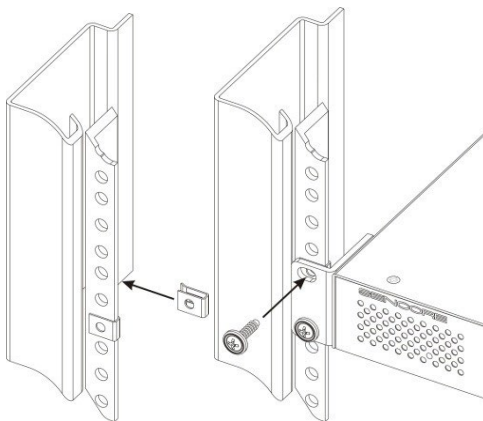
### 2.1 Rack Installation

The UFO 101 is designed to be mounted in a standard 19" rack. It takes 1RU of rack space. To install it into a rack, please use the following steps:

1. Determine the desired position in the rack for the UFO 101. Make sure that the air intake on the top of the unit and the exhausts on the back of the unit will not be blocked.
2. Install the brackets at desired position if there's no supporting plate in the rack.



3. Insert the rack mount clips into place over the mounting holes in the rack.
4. Slide the UFO 101 into the position in the rack.
5. Secure the chassis to the rack by installing the four supplied screws through the front mounting holes and tightening.



### 2.2 AC Power Connection

Please only use the supplied 3-prong power connector or one with equal specifications. NEVER tamper with or remove the grounding pin. This could cause damage to UFO 101, personnel, or property. Make sure the power outlet is switched off before plug or unplug the power cable from the panel of UFO 101.



When you take the equipment from a cold condition into a much warmer and humid condition, the equipment should be acclimated to the warm and humidity condition for at least 30 minutes. Powering up a non-acclimated unit may lead to shortcut or other damage to electronic components.



A professional UPS system is recommended for better performance of your content distribution system.

## 3 Module Overview

### 3.1 UFO 101 Base unit

UFO 101	Basic Function
Baseboard	120 inputs & 120 outputs IP channel

### 3.2 Receiver Modules

Module	Description
UFO 111/4	<ul style="list-style-type: none"> <li>4-channel DVB-S2 receiving descrambling board (two DVB-S2 signal input interfaces, two CAM slots)</li> </ul>
UFO 110/4   UFO 101/8	<ul style="list-style-type: none"> <li>4/8-channel DVB-S2/FTA receiving board (four DVB-S2 signal input interfaces, 4 LNB independent power supply, no CAM slot, with shield), support 64APSK (DVB-S2X)</li> </ul>
UFO 131/4	<ul style="list-style-type: none"> <li>4-channel DVB-T/T2 receiver board (one signal input interface, support signal internal loop, two CAM slots)</li> </ul>

### 3.3 Encoder Modules

Module	Description
UFX 150/4	<ul style="list-style-type: none"> <li>4-channel HDMI HD encoding board (commercial grade), support H.264 HD/SD, MPEG (supported), AC3 (optional), AAC (optional), support superimposed OSD subtitles, station logos, two-dimensional codes, do not support interlaced video signal input</li> </ul>



## 3.4 Modulator Modules

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Module	Description
UFO 220/16	<ul style="list-style-type: none"><li>16-channel non-adjacent QAM-A/C modulation board.</li></ul>

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## 3.5 Function Modules

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Module	Description
UFO 151	<ul style="list-style-type: none"><li>Gigabit IP multiplexing processing module, with 2 RJ45 Gigabit ports, supports UDP/RTP protocol, and supports a maximum of 120 inputs and 120 outputs per port.</li></ul>

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## 4 Web GUI

### 4.1 Web GUI Overview

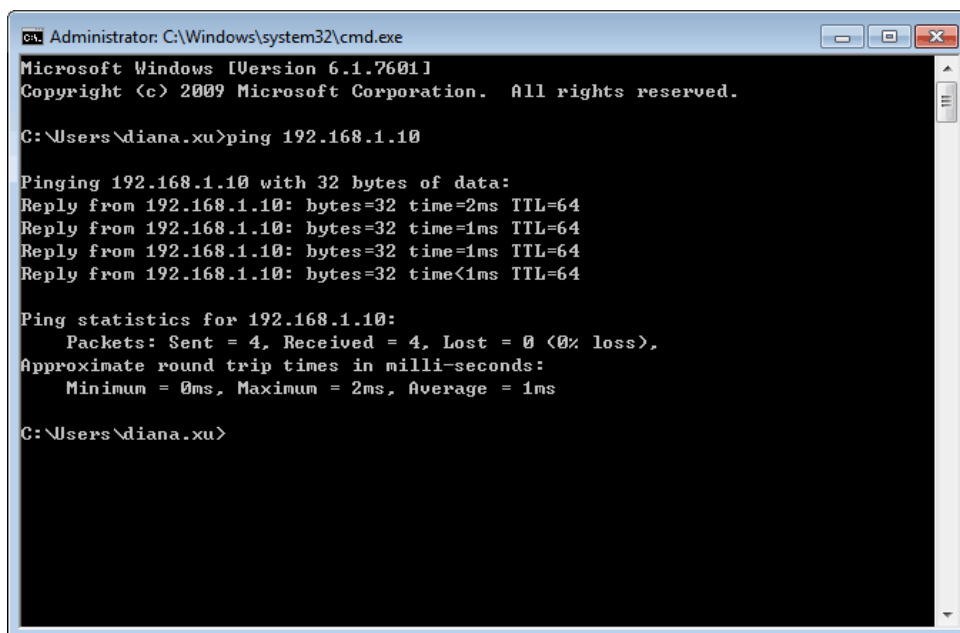
#### 4.1.1 Connect the Management Port

Factory network settings of the Management Port:

- IP address 192.168.1.10
- Subnet Mask 255.255.255.0
- Gateway 192.168.1.254

Take the following steps to access the Web GUI in a browser.

- Connect laptop/computer to UFO 101 management port directly.
- Set the IP address of the laptop/computer in the same network segment with the UFO 101 Baseboard. UFO 101 will occupy up to 7 IP addresses if it's fully loaded as each module has its own IP address including the baseboard. **Please avoid possible IP address conflict between management PC and UFO 101 unit.**
- Check the physical connection by ping command.



```
Administrator: C:\Windows\system32\cmd.exe
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\diana.xu>ping 192.168.1.10

Pinging 192.168.1.10 with 32 bytes of data:
Reply from 192.168.1.10: bytes=32 time=2ms TTL=64
Reply from 192.168.1.10: bytes=32 time=1ms TTL=64
Reply from 192.168.1.10: bytes=32 time=1ms TTL=64
Reply from 192.168.1.10: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 1ms

C:\Users\diana.xu>
```



UFO 101 has an embedded gigabit switch inside the chassis. You can use it as a switch with other devices together. The four network ports are respectively used for managing and streaming.

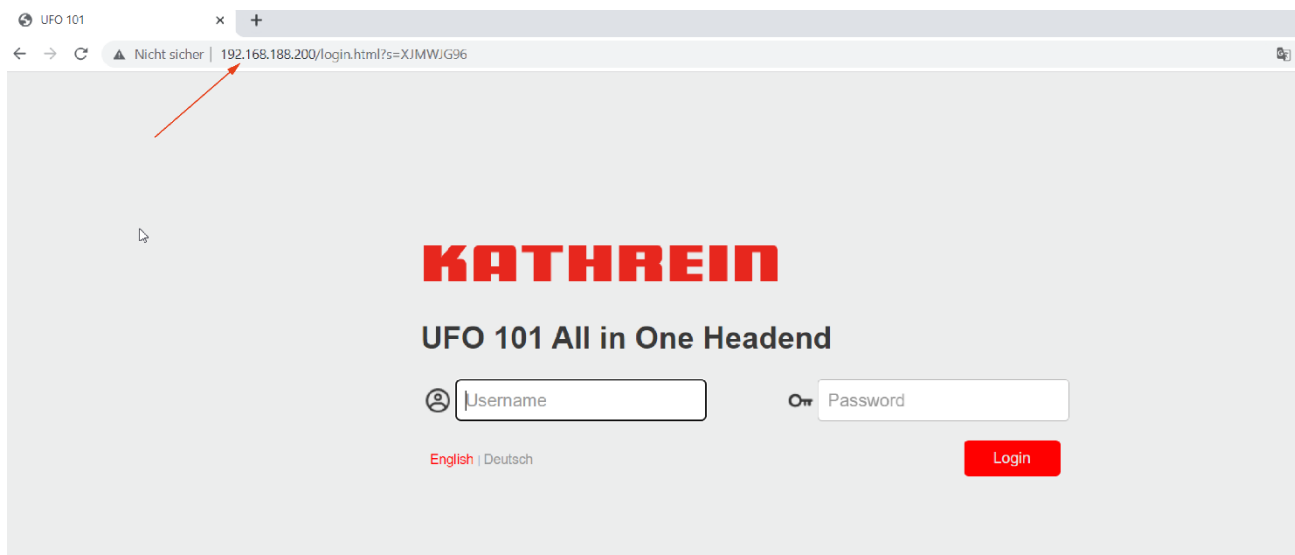
From left to right, port 1 and port 2 are used for management, port 3 and port 4 are used for data transmission. A good method of checking IP output is to play the IP streams using VLC player directly.



If you want to connect a switch between UFO 101 and PC or other devices, this switch should support IGMP V2 and IGMP snooping function. If the switch you used is not configured properly, it could cause some network issue.

## 4.1.2 Logging into the Web GUI

Enter the UFO 101 Baseboard IP address into the URL field of any recommended Web browsers (IE8 or above, Firefox, and Google Chrome) to access the login page. The default user name and password are both admin. Click **Login** to log into the GUI.

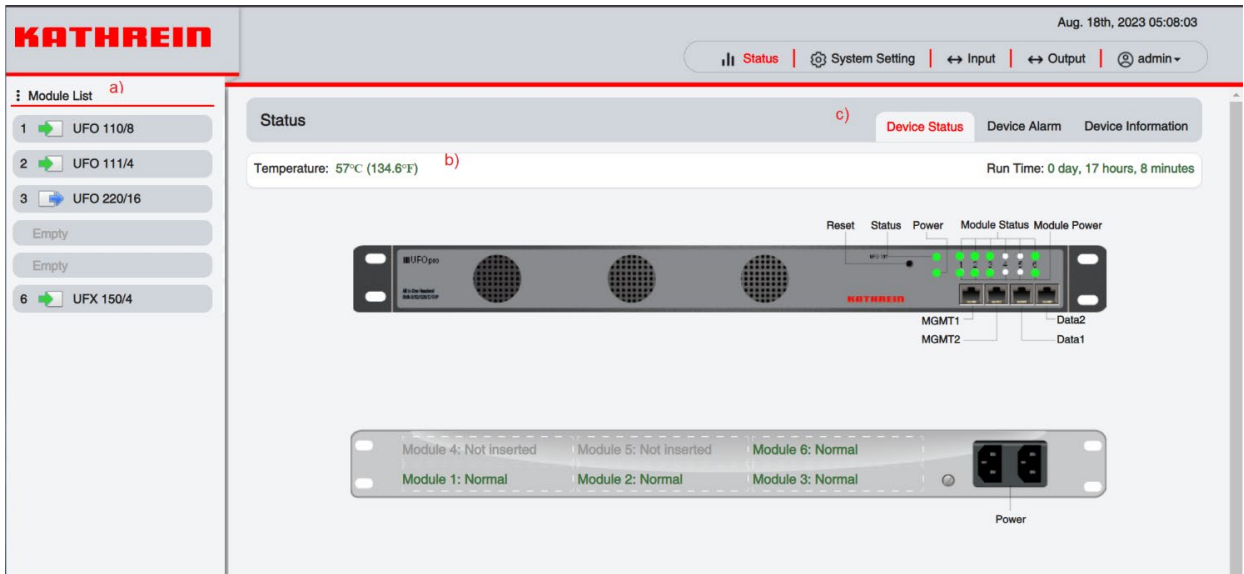


## 4.2 Status

### **Status>Device status**

After a successful login, you will always enter the status overview page, where you can check the device status of:

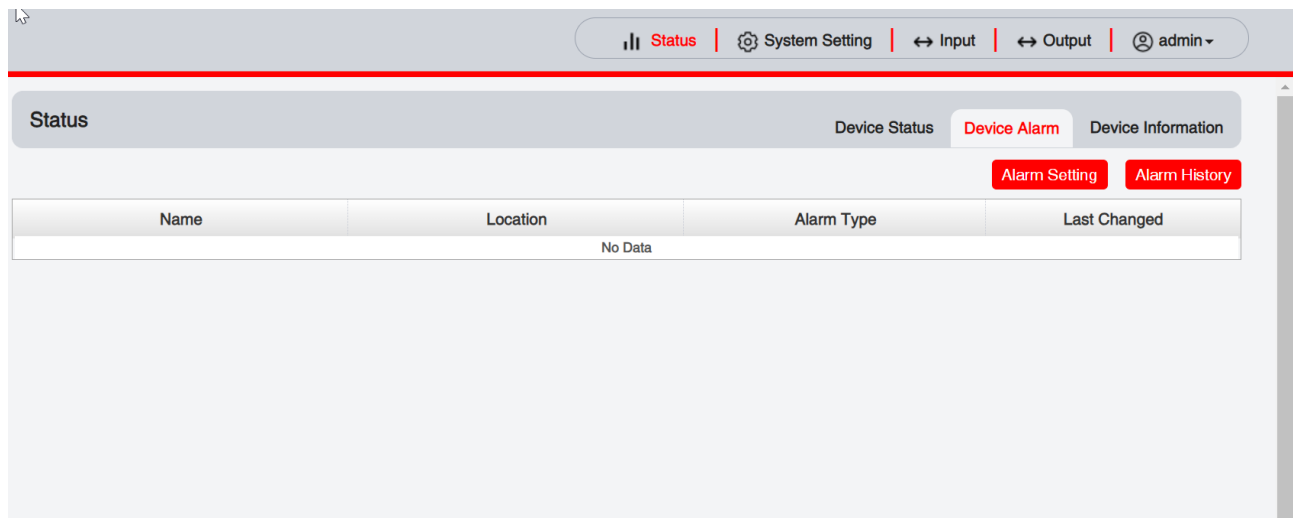
- a) Module List: it shows the module(s) inserted
- b) Device host operating status, running status of fans and other status display options
- c) Menu Bar and time display



We use only IE, Firefox and Chrome for testing procedures. If you use other browsers, like Microsoft Edge, you may encounter incomplete UI layouts, and configure setting in these browsers may lead to errors.

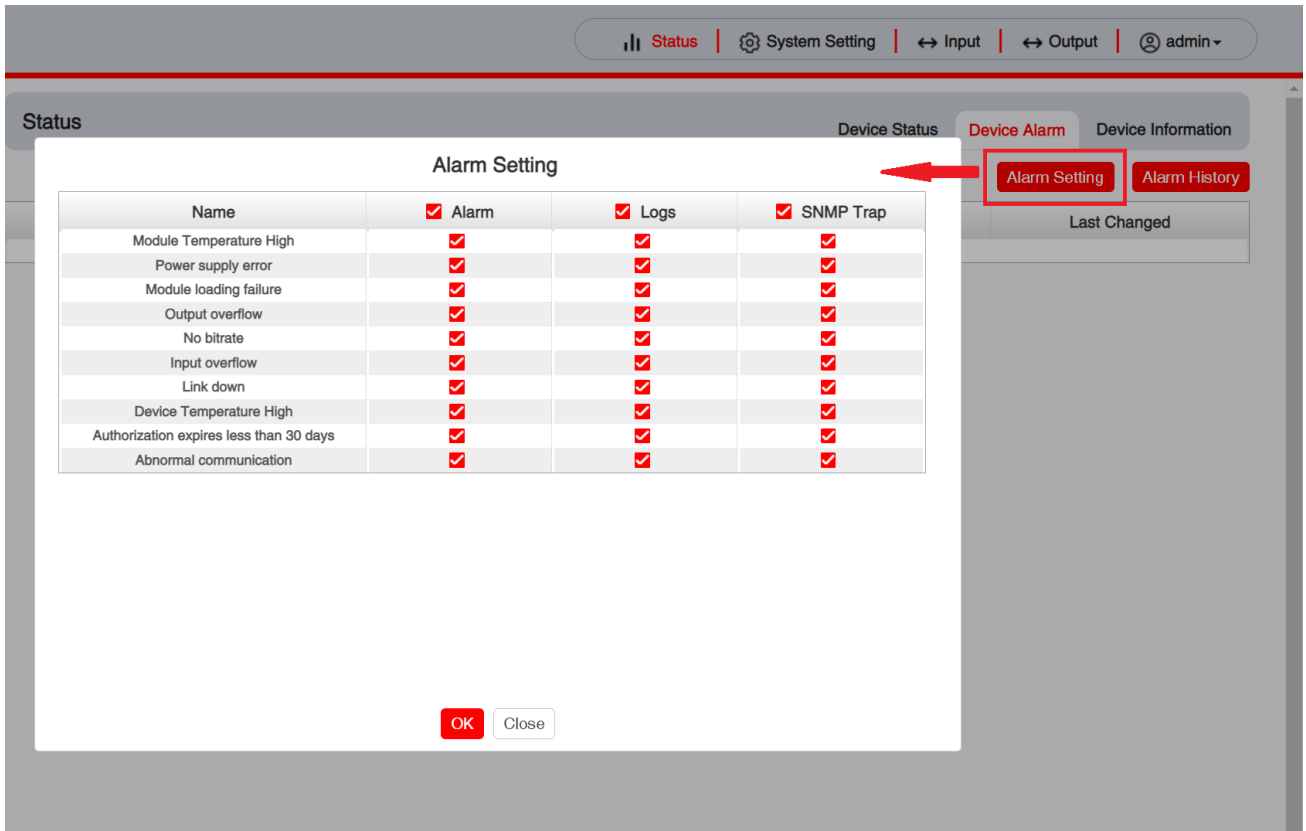
**Status>Device Alarm**

**Device Alarm** page shows the alarm settings and alarm record.



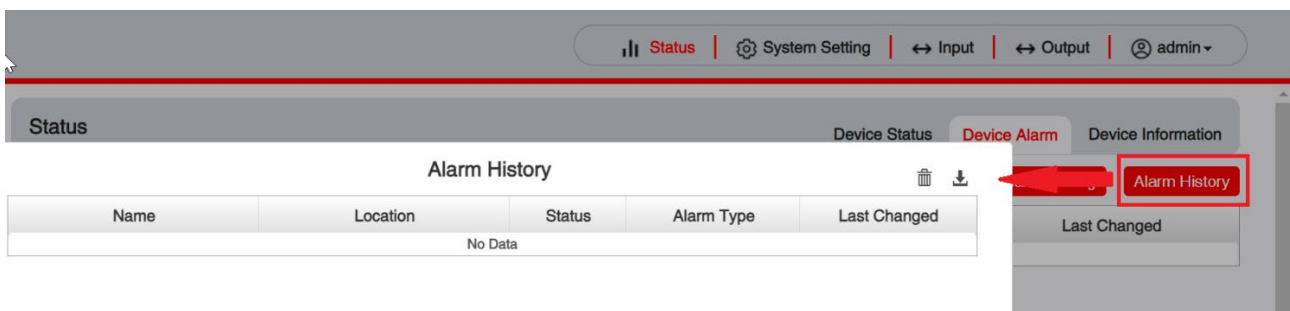
**Status>Device alarm>Alarm Settings**

**Alarm setting** lets the user set the alarms, logs, SNMP Trap, and different alarm parameters the user wants to see.



**Status>Device alarm>Alarm Record**

**Alarm Record** lets the user see the name of the alarm, the location, if it is still active, and the last time it was changed.



**Status>Device Information**

**Device Information** page shows the firmware version, software version, Build Version and hardware version of baseboard and each inserted module.

Status			
Device Status    Device Alarm <b>Device Information</b>			
Module	Firmware Version	Software Version	Hardware Version
Baseboard	V0.2.1103	V1.6.6	V0.0.0.1
1.UFO 110/8	V6.0.256	V1.6.1	V0.0.0.1.1
2.UFO 111/4	V6.0.256	V1.5.7	V0.0.0.1
3.UFO 220/16	V57.3.0	V1.6.0	V0.0.0.1.0
6.UFX 150/4	V0.0.574	V1.5.5	V0.0.1.1.1

## 4.3 System Setting

Click the **System Setting** on the top right corner to enter the system setting page where you can find **Network, Time Setting, System Manage, Password, NMS Register, Advanced Setting, and SNMP**

**System Setting> Network**

In **Network** page you can assign a static IP address to UFO 101's baseboard. Click the **Apply** button on the right side to make the change take effect.

|| Status
⚙️ **System Setting**
↔ Input
↔ Output
👤 admin ▾

System Setting
**Network**   System   Time   User   SNMP

**Advanced Setting**

**IPV4**   IPV6
**Apply**

Host Name: 
Domain: 
**OK**
FDQN: None

Module Name	IP Address	Subnet Mask	Default Gateway	DNS Server IP	MAC Address
NMS	<input type="text" value="192.168.188.10"/>	<input type="text" value="255.255.255.0"/>	<input type="text" value="192.168.188.1"/>	<input type="text" value="0.0.0.0"/>	A0:69:86:07:25:64
DATA	<input type="text" value="10.37.99.10"/>	<input type="text" value="255.255.255.0"/>	<input type="text" value="10.37.99.254"/>	<input type="text" value="0.0.0.0"/>	A0:69:86:07:25:63

**Tips**

- When the subnet of the internal Baseboard IP address is changed, the IP addresses of all the modules will follow the subnet change automatically.
- The IP addresses of all the modules will be automatically set to follow-on immediately after the Baseboard address.
- IMPORTANT:** To avoid IP address conflicts, ensure that all the IP addresses assigned within the chassis (Baseboard and Modules) are not used elsewhere in the network.

**Note to avoid IP conflict when you set the baseboard IP address. The occupied IP section will be displayed in this page on the top red area.**

### System Setting> Time

In **Time** page you can see the current system time, change **Time Zone**, choose system time **Mode** (Manual or Automatic), enable/disable **Auto Sync** and modify **NTP Server Address** in Automatic mode or change the current system **Time** in Manual mode. Click the **Apply** button on the right side to make the change take effect.

- **Automatic** mode

System Setting		Network	System	Time	User	SNMP
System Time	Aug. 18th, 2023 05:20:04					<b>Apply</b>
Time Zone	UTC +0: 00					
Mode	Automatic					
NTP Server Address	192.168.1.113					
Auto Sync	Disable					

- **Manual** mode

System Setting		Network	System	Time	User	SNMP
System Time	Aug. 18th, 2023 05:20:27					<b>Apply</b>
Time Zone	UTC +0: 00					
Mode	Manual					
NTP Server Address	Automatic					
Auto Sync	Disable					

### System Setting>System

In **System** page you can do an upgrade, import or export configuration, import or export license (only for baseboard), reboot the whole unit, restore it to factory setting (only for baseboard), set SNMP MIB, export log and clear log (only for baseboard).

The screenshot shows the 'System Setting' page with the following sections and options:

- Upgrade:** Select Module (Automatic Detection), Upgrade (Browse, Upload)
- Configuration:** Import Configuration (Browse, Upload), Export Configuration (Export)
- License:** Product ID (EB06143220029), Import License (Browse, Upload), Export License (Export)
- Standard:** Select Standard (DVB, OK), Select LCN Standard (International, OK)
- SNMP MIB:** Export MIB (Export)
- Logs:** Open
- Reboot Subboard:** Reboot Subboard (1: UFO 110/8, OK)
- Clear Power Alarm:** Clear
- Others:** Reboot, Reset to Defaults

### System Setting > User

In **User** page you can reset login password.

The screenshot shows the 'User' page with an 'Add User' dialog box. The dialog box contains the following fields:

- Account: [3-18]
- Password: [2-20]
- Confirm Password: [2-20]
- Phone: [ ]
- Status: enable

The background shows a table with columns for Account and Operator, and a 'Password' button.



### System Setting> SNMP

In **SNMP Setting** page you can SNMP traps addresses.

The screenshot shows the 'SNMP' configuration page. At the top, there are navigation tabs: Network, System, Time, User, and **SNMP**. Below the tabs, there is an 'Apply' button. The main configuration area includes:

- SNMP:** A dropdown menu set to 'Enable'.
- Trap IP Address1 (IPv4):** A text input field containing '0.0.0.0' and an 'Enable:' checkbox.
- Trap IP Address1 (IPv6):** A text input field containing '2001::c0a8:1af' and an 'Enable:' checkbox.
- Trap IP Address2 (IPv4):** A text input field containing '0.0.0.0' and an 'Enable:' checkbox.
- Trap IP Address2 (IPv6):** A text input field containing '2001::c0a8:1ae' and an 'Enable:' checkbox.
- Read-Only Community:** A text input field containing 'public'.
- Read-Write Community:** A text input field containing 'private'.

### System Setting> Advanced Setting

In **Advanced Setting** page you can do some changes about standard, priority, Language, Authorized Use Time, Destination Module Number, Reverse Proxy, CA Descriptor, PAT Sync Update, PAT Version, reboot the Switch Module.

The screenshot shows the 'Advanced Setting' configuration page. At the top, there are navigation tabs: Network, System, Time, User, SNMP, and **Advanced Setting**. Below the tabs, there is an 'Apply' button. The main configuration area includes:

- Standard:** A dropdown menu set to 'DVB' with a red warning icon.
- Priority Encoding:** A dropdown menu set to 'Auto' with a red warning icon.
- Language:** A dropdown menu set to 'English'.
- Authorized Use Time:** A dropdown menu set to 'Stay With First Level Authorized Time' and a 'Never expires' button with a red warning icon.
- Destination Module Number:** A dropdown menu set to '4' with a red warning icon.
- Reverse Proxy Enable:** A dropdown menu set to 'Enable' with a red warning icon.
- CA Descriptor Filter:** A dropdown menu set to 'Disable' with a red warning icon.
- PAT Sync Update:** A dropdown menu set to 'Disable' with a red warning icon.
- PAT Version:** A dropdown menu set to 'Disable' and a text input field containing '0', both with red warning icons.
- VLAN Enable:** A dropdown menu set to 'Enable' with a red warning icon.
- ARP VLAN Tag:** A dropdown menu set to '2' with a red warning icon.
- SSH/Telnet:** A dropdown menu set to 'Enable' with a red warning icon.
- Reboot Switch Module:** A red button labeled 'Reboot Switch Module'.

## 4.4 Input

Click the **IP Input** on the top line to go into IP input page where you can see **Status, Basic Setting, IGMP Setting** and **Service Configuration**.

### Input >Status

In this page, you can check Total bitrate, each channel Total Bit Rate, IP Address and Port, Effective Bit Rate, TS Analysis and Service List.

Status	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	TS Analysis	Service List
●	31.826	42.585		
●	0.000	0.000		
●	0.000	0.000		

Click the icon ( ) in the **TS Analysis** list to see the TS analyzing result of this channel. Click the icon ( ) in the **Service List** to see the Services of each channel.

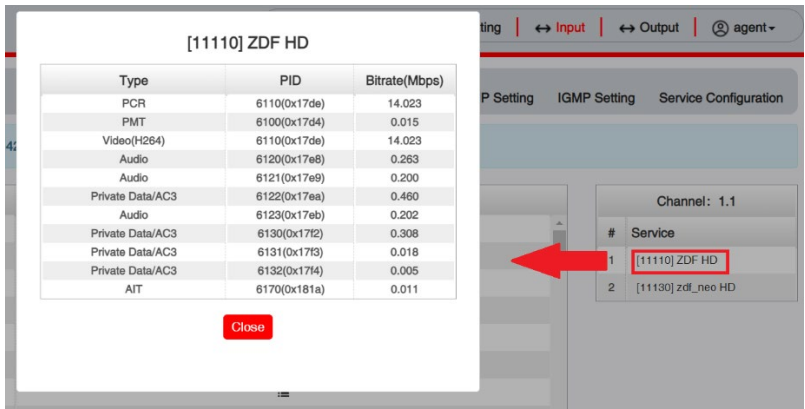
- TS Analysis

Click **Reset Counter** button to clear continuity count errors and restart counting. Fill in the search bar with the key words of PID / Bit rate / bandwidth / table type / service name in the search bar to get the info you want.

PID	Bitrate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service
0x000	0.015	0.035	0	PAT	
0x101	0.015	0.035	0	Other	
0x104	0.025	0.057	0	Other	
0x117	0.025	0.059	0	SDT	
0x118	0.773	1.818	0	Other	
0x120	0.025	0.057	0	Other	
0x176(8100)	0.015	0.035	0	PMT	ZDF HD
0x176(8110)	14.029	32.951	0	PCR, Video	ZDF HD

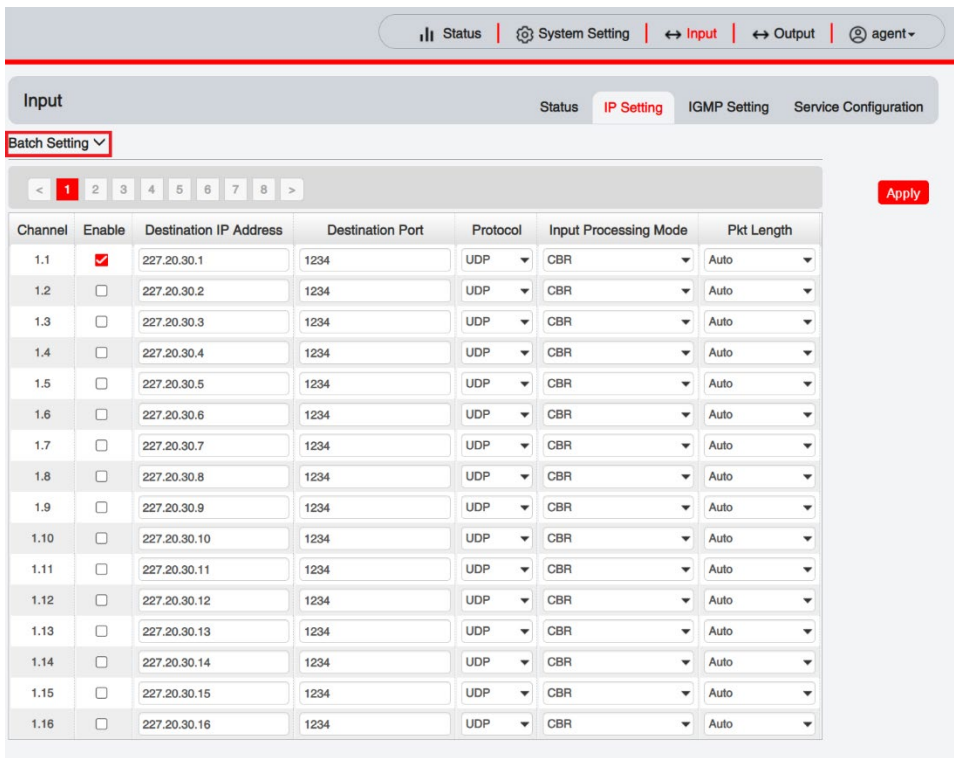
- Service List

Click a service name to check the detailed info of this service.



### Input > IP Settings

Here you can configure IP input parameters: **Destination IP Address**, **Destination Port**, **Protocol** (UDP/RTP), and **TS Packets Per IP Packet**. Click **Apply** to make the setting take effect.



If you want to configure a batch of channels, please click **“Batch Setting”**.

To set the IP input parameters in batch, you can check the boxes before parameters you need then choose/modify the values. Click **Apply** to make the setting take effect.

**Input**
Status **IP Setting** IGMP Setting Service Configuration

[Batch Setting ^](#)

Select All

Enable Disable ▾

Protocol UDP ▾

Input Processing Mode CBR ▾

Start Channel-End Channel 1 - 120

Destination IP Address 227.10.20.80 Same ▾

Destination Port 1234 Same ▾

Pkt Length Auto ▾

**Apply**

**Batch Setting**

< 1 2 3 4 5 6 7 8 >

Channel	Enable	Destination IP Address	Destination Port	Protocol	Input Processing Mode	Pkt Length
1.1	<input checked="" type="checkbox"/>	227.20.30.1	1234	UDP ▾	CBR ▾	Auto ▾
1.2	<input type="checkbox"/>	227.20.30.2	1234	UDP ▾	CBR ▾	Auto ▾

### Input >IGMP Settings

User can set IGMP version, IGMP Automatic report, and IGMP Report Cycles in this page.

**Input**
Status IP Setting **IGMP Setting** Service Configuration

IGMP Version: V2 ▾

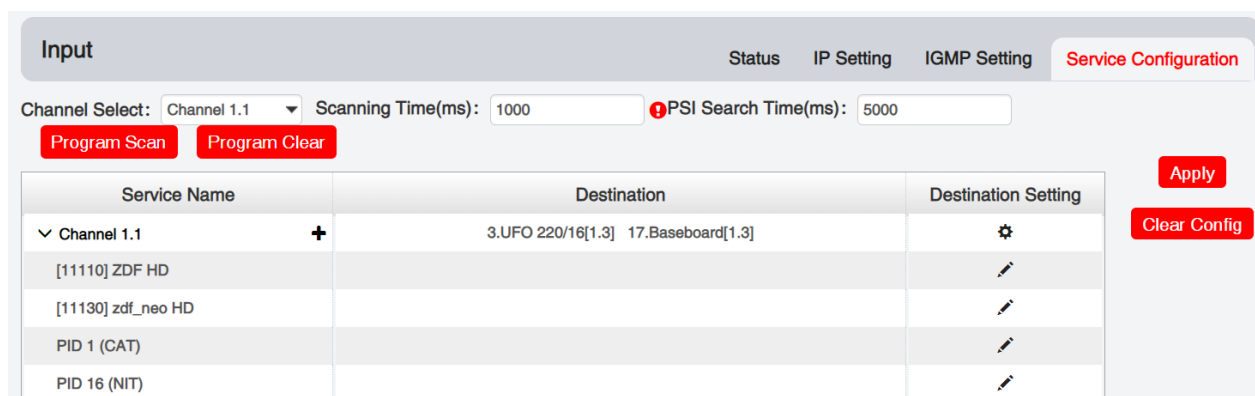
IGMP Automatic Report: Enable ▾

IGMP Report Cycle(s): 15

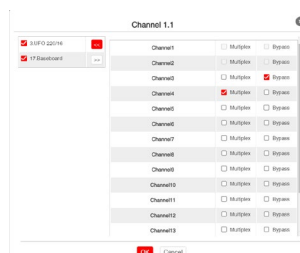
**Apply**

### Input >Service Configuration

To stream an input source, you can configure the destination in this page.



- Multiplex or Bypass stream: Click the setting icon (⚙️), check the output module, and then you can set the output channel of this stream. After you select bypass mode, this output channel will be occupied only by this stream and when you set other stream output channels, this channel will not be available in this time.
- Multiplex services: You should click the service line setting icon (✎) to make the certain service output from certain channel combining with other services. The operation you can refer to multiplex stream output.



After setting output destination, click **Apply** to make it take effect. The destination channel will be displayed in the channel/service line. And you can also click **Clear Config** to clear all of the configuration.



There is a channel scan button (Channel Scan) on top. Normally the input service list of each channel will load itself on this page, but when you change the input source, the list could not refresh immediately. You can refresh the changed channels manually by selecting the channel and clicking the channel scan button.

## 4.5 Output

### Output >Status

The IP Output status information you can check on this page is similar as that of IP input. The TS analysis and service list function are also available.

The screenshot shows the 'Output >Status' page with a 'Status' tab selected. At the top, it displays 'Total Bitrate: 85.176 Mbps'. Below this is a table with the following columns: Channel, IP Address: Port, Effective Bitrate, Total Bitrate(Mbps), Bitrate, TS Analysis, and Service List.

Cha...	IP Address: Port	Effective Bitrate...	Total Bitrate(Mbps)	Bitrate	TS Analysis	Service List
1.1	227.10.20.1 : 1234	41.471	42.591	Normal	👁	☰
1.2	227.10.20.2 : 1234	41.298	42.585	Normal	👁	☰
1.3	0.0.0.0 : 0	0.000	0.000	Normal	👁	☰
1.4	0.0.0.0 : 0	0.000	0.000	Normal	👁	☰
1.5	0.0.0.0 : 0	0.000	0.000	Normal	👁	☰
1.6	0.0.0.0 : 0	0.000	0.000	Normal	👁	☰
1.7	0.0.0.0 : 0	0.000	0.000	Normal	👁	☰
1.8	0.0.0.0 : 0	0.000	0.000	Normal	👁	☰
1.9	0.0.0.0 : 0	0.000	0.000	Normal	👁	☰
1.10	0.0.0.0 : 0	0.000	0.000	Normal	👁	☰

### Output >IP Settings

Setting IP output channels is also similar to Setting IP input with addition of PSIP.

The screenshot shows the 'Output >IP Settings' page with the 'IP Setting' tab selected. It includes a 'Batch Setting' dropdown, 'TX Interval: 100 (ms)' and 'Null Packet Filter: Disable' options, and an 'Apply' button. Below these is a channel configuration table with a tabbed interface (1-8) and the following columns: Channel, Enable, Source Port, Destination IP, Destination Port, Protocol, Pkt Length, Bitrate, and Enable Destination MA.

Channel	Enable	Source Port	Destination IP ...	Destination ...	Protocol	Pkt Length	Bitrate(...)	Enable Destination MA
1.1	<input checked="" type="checkbox"/>	1000	227.10.20.1	1234	UDP	7	100	Disable
1.2	<input checked="" type="checkbox"/>	1000	227.10.20.2	1234	UDP	7	60	Disable
1.3	<input type="checkbox"/>	1000	227.10.20.3	1234	UDP	7	15	Disable

- Multicast output setting: You should fill the fit multicast IP addresses as output in the **Destination IP Address** box. **Please avoid IP conflict among baseboard, encoder modules (see encoder modules page) and other devices when you set the multicast output.**

- Unicast output setting: You should fill the unicast receiving end's IP addresses in the **Destination IP Address** box.
- Destination MAC: Normally you do not need to enable the Destination MAC switch. Only in some specific case where the unicast stream cannot be received due to unknown reasons, you can enable Destination MAC and fill in the correct receiver MAC in instead of using unicast IP addresses.



**Constant Rate** of any output channel/TS/port ought to be set manually about 2 Mbps higher than the **Effective Bitrates** in the corresponding output channel/TS/port, since the **Effective Bitrates** might fluctuate a little bit. If you set the **Constant Rate** much higher than the **Effective Bitrates**, there will be lots of null packets in the output transport stream.

If you want to configure a batch of channels, please click “**Batch Setting**”.

Batch Setting of IP output channels is also similar to that of setting IP input.

Output
Status
IP Setting
Service Configuration
PSIP

[Batch Setting ^](#)

Select All

Enable Disable

Source Port 1000

Protocol UDP

Bitrate 25 (Mbps)

Start Channel-End Channel 1 - 120

Destination IP Address 227.10.20.80 Same

Destination Port 1234 Same

Pkt Length 7

Enable Destination MAC Disable AA:BB:CC:DD:EE:FF

Apply

Batch Setting

---

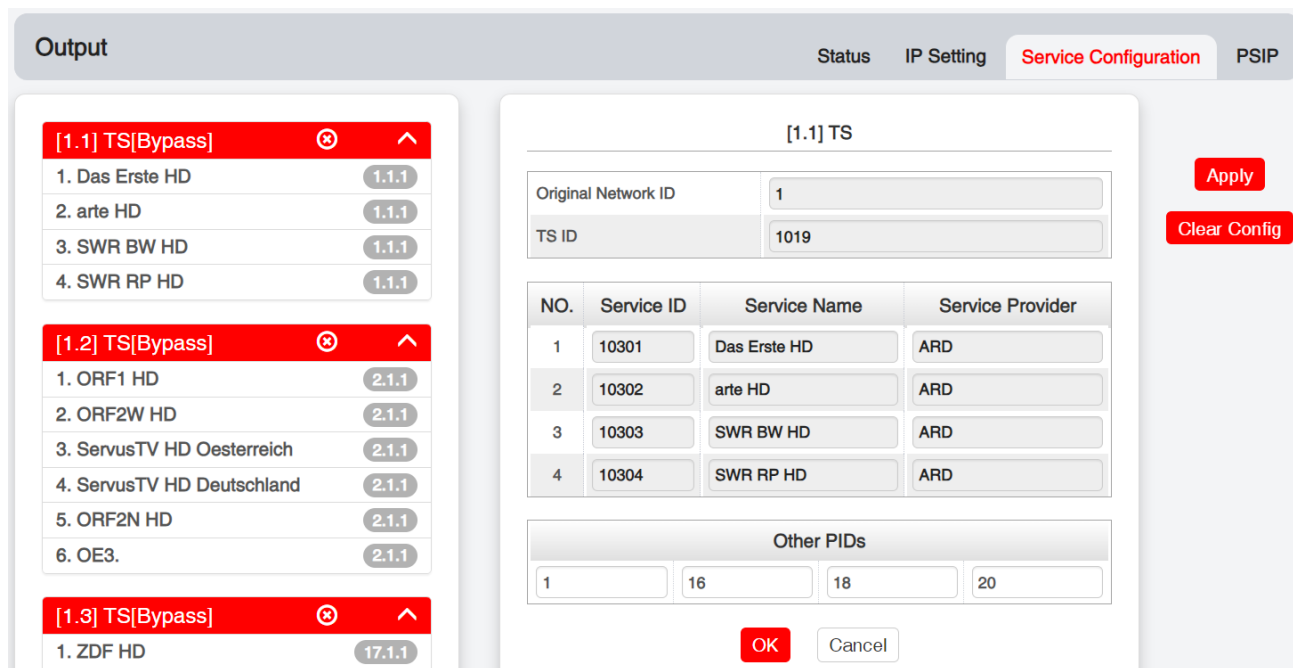
TX Interval: 100 (ms) Null Packet Filter: Disable

< 1 2 3 4 5 6 7 8 >

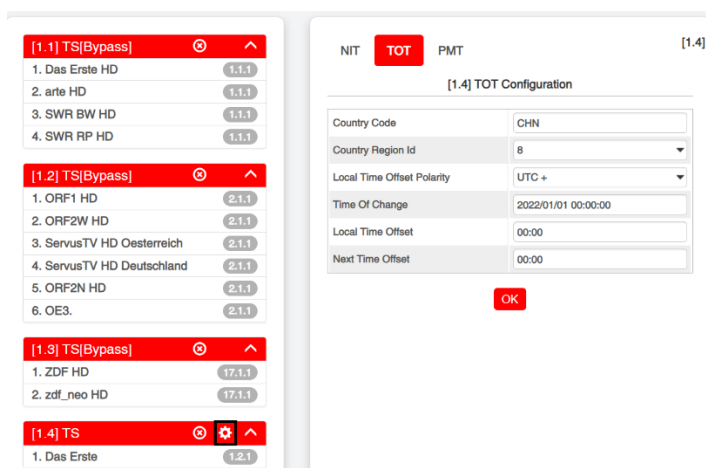
Channel	Enable	Source Port	Destination IP ...	Destination ...	Protocol	Pkt Length	Bitrate(...)	Enable Destination MA
1.1	☑	1000	227.10.20.1	1234	UDP	7	100	Disable
1.2	☑	1000	227.10.20.2	1234	UDP	7	60	Disable

### Output >Service Configuration

You can make configuration for output services and TS.



- TS setting: Click TS line (the red area) to configure Original Network ID, TS ID and each Service ID, Service Name, and Service Provider.
- NIT setting: Please refer to UFO 120/16 module.
- TOT setting: Configuration parameters about TOT.





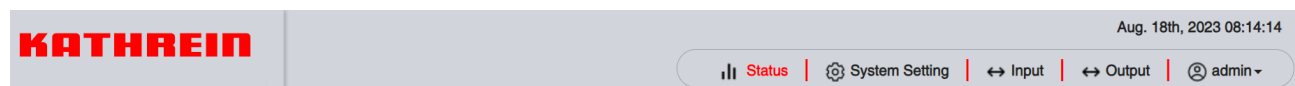
➤ **Output >PSIP**

PSIP page lets you out different tables such as PAT, PMT, SDT and the likes.

Channel	Select All	PAT Insert	PMT Insert	SDT Insert	NET Insert	CAT Insert	TDT Insert	TOT Insert
1.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## 4.6 Admin

Click **Agent** and you can choose to set the password or to log out.



# 5 Module Configuration

## 5.1 Receiver Modules

### 5.1.3 UFO 111/4

UFO 111/4 is a 4-channel DVB-S/S2 receiving descrambling board (two DVB-S2 signal input interfaces, two CAM slots).



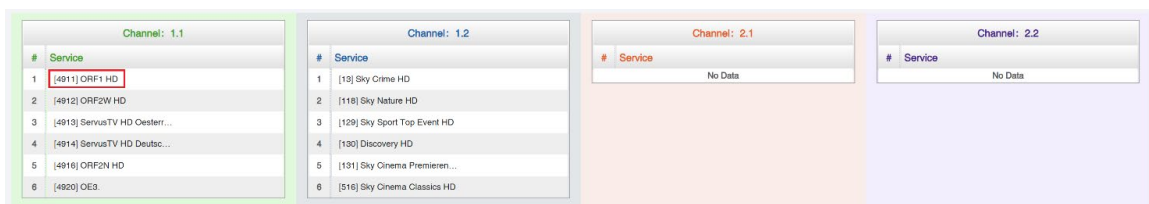
#### UFO 111/4 >Status

UFO 111/4												Status	CI	Blis	Basic Setting	Service Configuration	IP Output	System
Channel	Locked Status	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	PER	RF Level	CNR(dB)	Link Margin(dB)	FEC Code Rate	Modulation	TS Analysis	Service List							
1.1	Locked	42.594	41.524	0.00000000	-43dBm (65dB $\mu$ V)	18.000	9	2/3	8PSK	⊕	■							
1.2	Unlocked	0.000	0.000	0.00000000	-	0.000	0	1/2		⊖								

Click **TS Analysis** of each channel, you can see TS Bitrate Analysis. Click **Reset Counter** to reset the Continuity Count Error counter. In Search bar, you can input key words or numbers, such as PIDs, Type or Service, for a quickly search.

Channel 1.1 TS Analysis							Reset Counter
PID	Bitrate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service		
0x0(0)	0.004	0.009	0	PAT			
0x1(1)	0.003	0.007	0	Other			
0x10(16)	0.001	0.002	0	Other			

Click the icon to check service information of all the inputs.



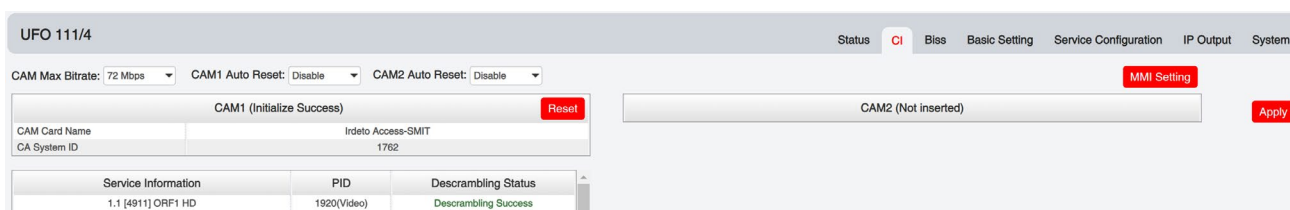
You can check program details by clicking the program item.

[4911] ORF1 HD

Type	PID	Bitrate(Mbps)
PCR	1920(0x780)	8.123
PMT	107(0x6b)	0.003
StreamType:27-Video(H264)	1920(0x780)	8.123
StreamType:6-Private Data/AC3	1921(0x781)	0.469
StreamType:6-Private Data/AC3	1922(0x782)	0.469
StreamType:6-Private Data/AC3	1925(0x785)	0.301
AIT	7310(0x1c8e)	0.002
PrivateData	7311(0x1c8f)	0.501
ECM	120(0x78)	0.005
ECM	122(0x7a)	0.005
ECM	270(0x10e)	0.009
ECM	272(0x110)	0.005
ECM	320(0x140)	0.009
ECM	461(0x1cd)	0.008
ECM	470(0x1d6)	0.006
ECM	480(0x1e0)	0.006

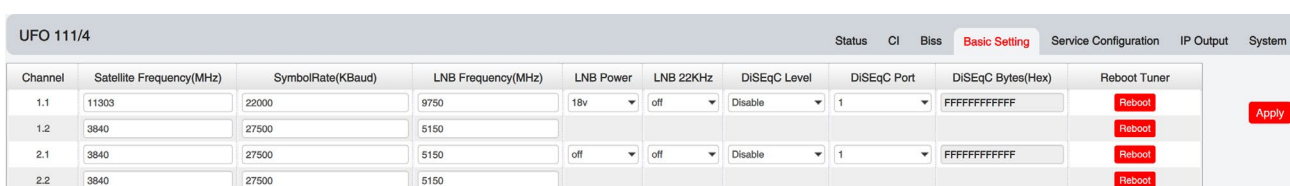
### UFO 111/4 >CI

For the encrypted services received on UFO 121/4 module receiver, CI slot is needed to decrypt and re-broadcast the services. The UFO 121/4 has 2 CAM slots and can decrypt services depending on the capability of the CAM module and Smart Card. You can select the CAM Max Bit Rate from 48Mbps to 108Mbps in pull-down list depending on the total effective bitrate of services you want to decrypt at.



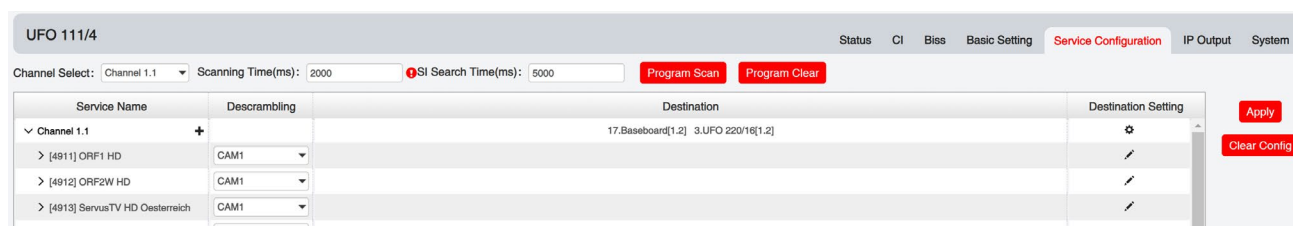
Click the **Apply** button on the right side to make the change takes effect.

### UFO 111/4 >Basic Setting





Name	Range
Frequency (MHz)	950~14500
Symbol Rate(KSym/s)	1000~45000


### UFO 111/4 >Service Configuration



Service Configuration page is where you can manage the received services and output them to their designated interface. The configuration of all modules in UFO 101 is mostly the same.

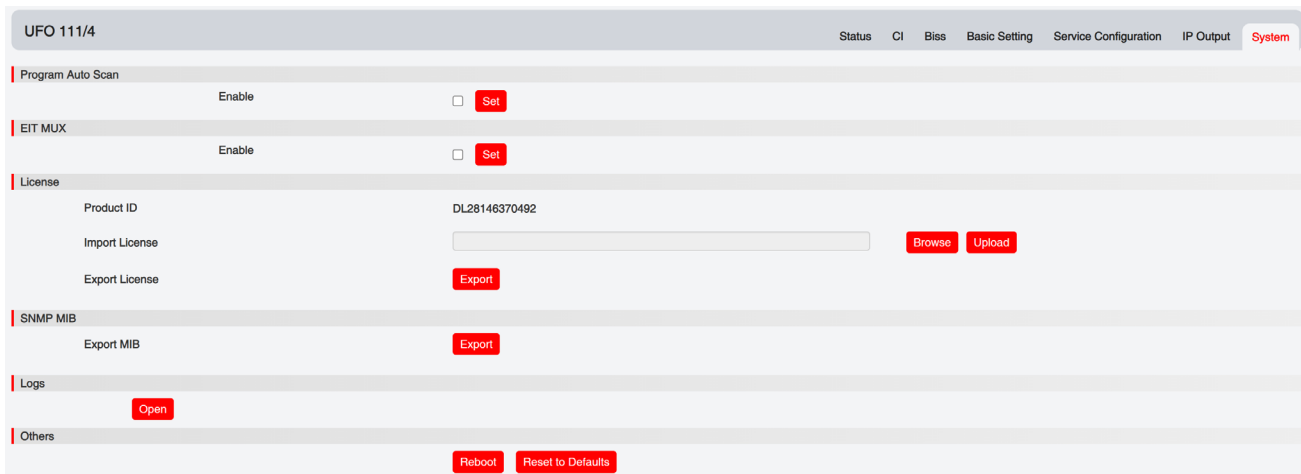
First, you need to scan the port on each LOCKED TS. Each port might be scanned automatically or needed to be scanned manually when its source is changed.

After scanning each channel, you can start to configure the services. You need to click **Apply** button after you configure service to CAM for descrambling, otherwise the descrambling configuration will not be saved. Then you can choose the services to be routed, you can output each service by clicking the icon  and  below "Destination Settings". You can route a whole stream or a service(s) from the input channel toward the available output channels (IP or RF). Two types of routing are possible.

1. **Bypass mode.** In this mode, you can route a whole input transport stream towards an IP or RF output which will be occupied only by this stream. Any attempt of routing other stream/service towards this channel will be an error. This mode can only be set by clicking the icon  on the TS.
2. **Multiplex mode** is the counter part of the bypass mode. This mode allows the administrator to perform the following operations:
  - a. Route a single service towards an output channel to create SPTS.
  - b. Route services towards a single output channel to create MPTS.
  - c. Route service/s AND stream/s from multiple channels towards a single output channel to create MPTS.

In **Descrambling Settings** there are CAM1, CAM2, No Descrambling to choose. Click **Apply** or **Clear Configuration** button on the right side to make the change take effect or clear all configurations.

**UFO 111/4 >System**



On **System** page you can enable the Program Auto Scan, EIT MUX. Besides you can also perform **Import/Export License**, **Reboot** the module, **Restore the unit to factory defaults** and **Log Export & Clear**.

**5.1.4 UFO 110/4 | UFO 110/8**

UFO 110/4 is a 4-channel, UFO 110/8 is is a 8-channel DVB-S/S2/S2XFTA receiving module with 4/8 RF connectors, and 4 LNBS that are independently powered. S2 supports up to 32APSK, S2X supports up to 64APSK.



## UFO 110/4 | 110/8 > Status

UFO 110/8											
<span>Status</span> <span>Bliss</span> <span>Basic Setting</span> <span>Service Configuration</span> <span>IP Output</span> <span>System</span>											
Channel	Locked Status	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	PER	RF Level	CNR(dB)	Link Margin(dB)	FEC Code Rate	Modulation	TS Analysis	Service List
1.1	Locked	42.586	41.458	0.000000000	-39dBm (89dBμV)	16.800	9	2/3	8PSK		
2.1	Locked	38.015	36.233	0.000000000	-43dBm (65dBμV)	17.400	12	3/4	QPSK		
3.1	Unlocked	0.000	0.000	0.000000000	-	0.000	0	1/2			
4.1	Unlocked	0.000	0.000	0.000000000	-	0.000	0	1/2			

Click **TS Analysis** of each channel, you can see TS bit rate analysis. Click **Reset Counter** to reset the Continuity Count Error counter. In Search bar, you can input key words or numbers, such as PIDs, Type or service, for a quickly search.

Channel 1.1 TS Analysis					
<span>Reset Counter</span>					
<input type="text" value="Search"/>					
PID	Bitrate(Mbps)	Bandwidth(%)	Continuity Count Error	Type	Service
0x0(0)	0.006	0.014	0	PAT	
0x1(1)	0.003	0.007	0	Other	
0x10(16)	0.003	0.007	0	Other	
0x11(17)	0.010	0.023	0	SDT	
0x12(18)	0.748	1.757	0	Other	

Click the icon to check service information of all the inputs.

Channel: 1.1		Channel: 2.1		Channel: 3.1		Channel: 4.1	
#	Service	#	Service	#	Service	#	Service
1	[10301] Das Erste HD	1	[11110] ZDF HD	1	[17500] SAT.1	1	[12008] RTL Television
2	[10302] arte HD	2	[11130] zdf_neo HD	2	[17501] ProSieben	2	[12004] RTL Regional NRW
3	[10303] SWR BW HD			3	[17502] kabel eins	3	[12005] RTL HB NDS
4	[10304] SWR RP HD			4	[17503] WELT	4	[12006] RTL Bayern
				5	[17504] SAT.1 Gold	5	[12009] RTL HH SH
				6	[17505] Pro7 MAXX	6	[12020] RTLZWEI
				7	[17506] sixx	7	[12030] TOGGO plus
				8	[17507] SAT.1 Bayern	8	[12040] SUPER RTL

You can check program details by clicking the program item.

## UFO 110/4 | 110/8 > Basic Setting

UFO 110/8									
<span>Status</span> <span>Bliss</span> <span>Basic Setting</span> <span>Service Configuration</span> <span>IP Output</span> <span>System</span>									
Channel	Satellite Frequency(MHz)	SymbolRate(KBaud)	LNB Frequency(MHz)	LNB Power	LNB 22KHz	DISEqC Level	DISEqC Port	DISEqC Bytes(Hex)	Reboot Tuner
1.1	11494	22000	9750	18v	off	Disable	1	FFFFFFFFFFFF	<span>Reboot</span>
2.1	11362	22000	9750	18v	off	Disable	1	FFFFFFFFFFFF	<span>Reboot</span>
3.1	12545	22000	10600	18v	22KHz	Disable	1	FFFFFFFFFFFF	<span>Reboot</span>
4.1	12188	27500	10600	18v	22KHz	Disable	1	FFFFFFFFFFFF	<span>Reboot</span>
5.1	3840	27500	5150	off	off	Disable	1	FFFFFFFFFFFF	<span>Reboot</span>
6.1	3840	27500	5150	off	off	Disable	1	FFFFFFFFFFFF	<span>Reboot</span>
7.1	3840	27500	5150	off	off	Disable	1	FFFFFFFFFFFF	<span>Reboot</span>
8.1	3840	27500	5150	off	off	Disable	1	FFFFFFFFFFFF	<span>Reboot</span>

Channel 1.1, 1.2, 1.3, ... and 1.8, 4 LNBS are powered independently.

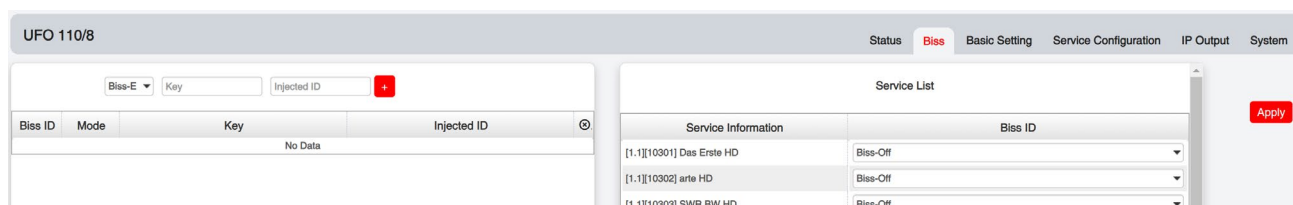
Name	Range
Satellite Frequency (MHz)	950~14500
Symbol Rate(KBaud)	1000~45000
LNB Frequency(MHz)	0~13550
LNB Power	Off/13v/18v
LNB 22KHz	Off/22KHz
DISEqC Level	1.0, 1.1, 1.1+1.0, Manually Defined, Disable
DISEqC Port	1,2,3,4
DISEqC Bytes	In HEX

The absolute value of the difference between the Satellite Frequency and the LNB Frequency must be in the range [950, 2150].

Click the **Apply** button on the right side to make the changes made take effect.

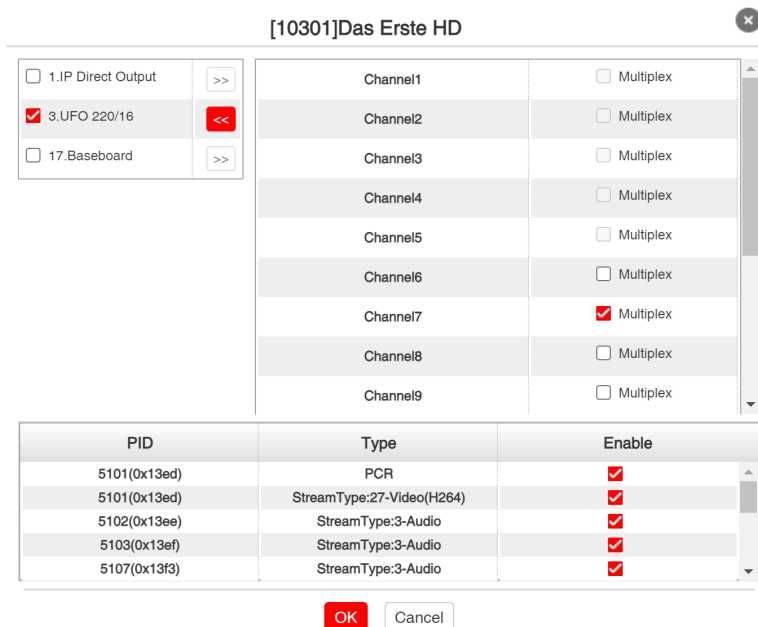
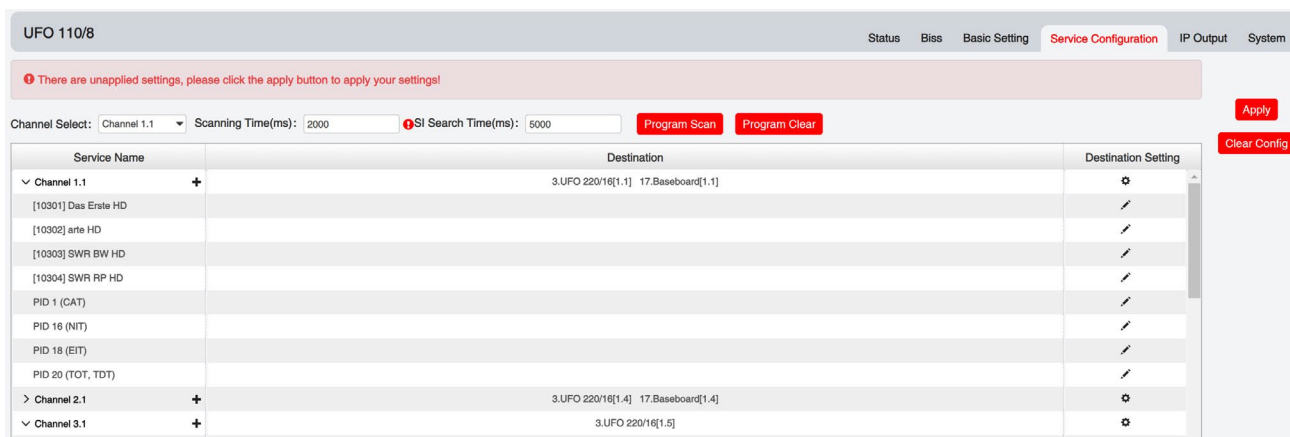
### UFO 110/4 | 110/8 > Biss

Here you can create **Biss ID**, including **Mode**, **Key** and **Injected ID**. And you can check the Service Information in the **Service List**, then select **Biss ID/Biss-Off** for the services.



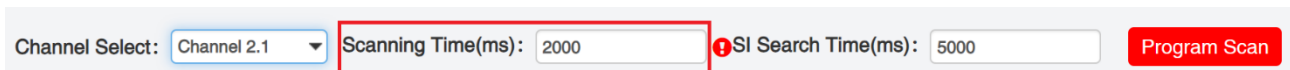
Click the **Apply** button on the right side to make the changes made take effect.

**UFO 110/4 | 110/8 > Service Configuration**

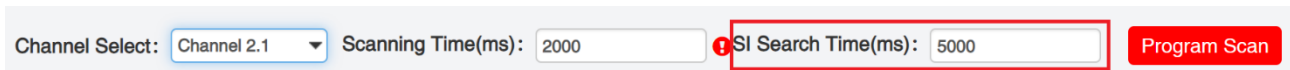


Click **Apply** or **Clear Configuration** button on the right side to make the changes made take effect or clear all configuration.

- **Scanning Time (ms)**1000~12000. Please try to increase this value if service name is not present, while it will slow down scanning process.



- **SI Search Time (ms)**5000~12000. Please try to increase this value if SI is not present, while it will slow down scanning process.

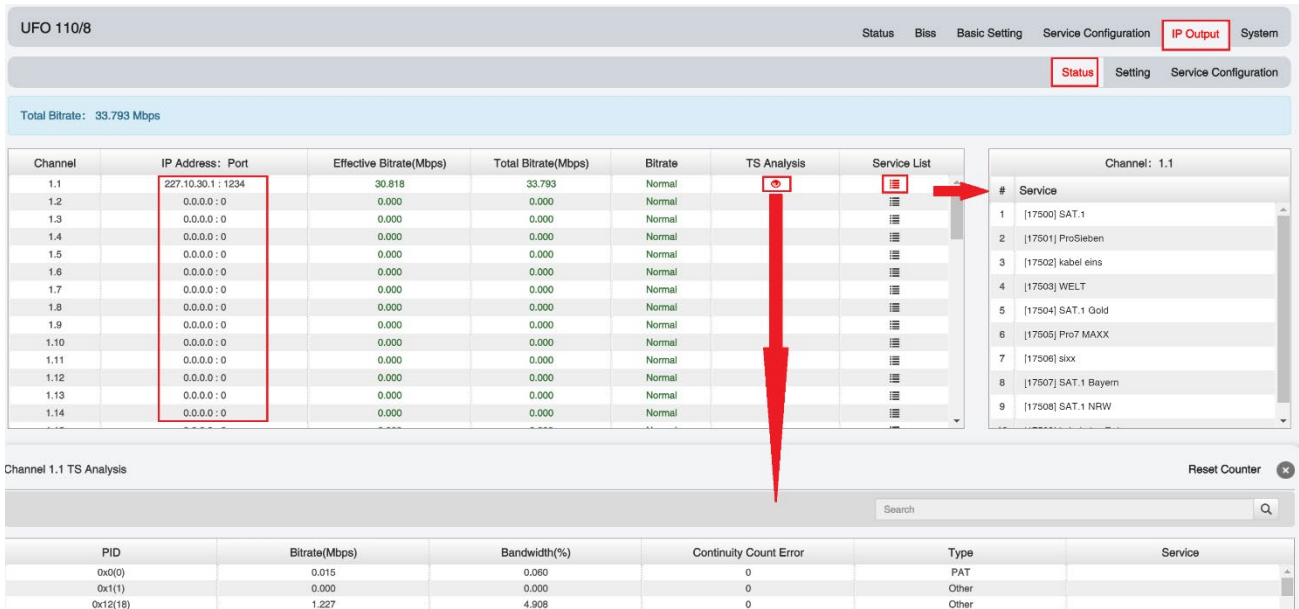




**UFO 110/4 | 110/8 > IP Output**

This feature enables you to output S2 services directly without involving baseboard processing. No baseboard resources will be consumed in this way.

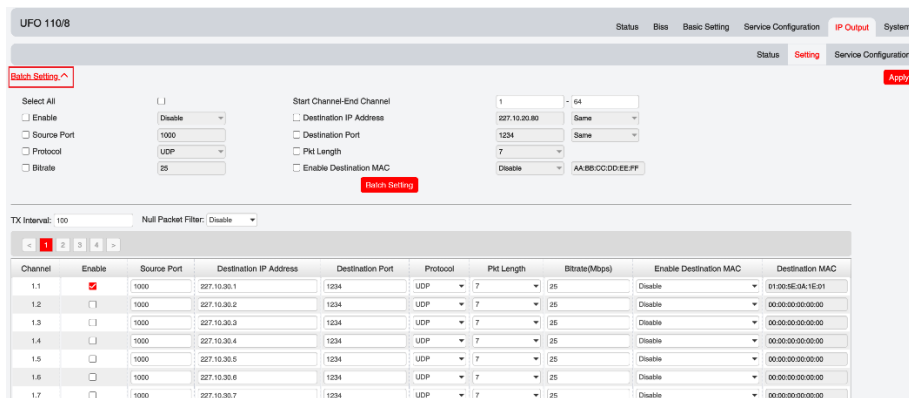
**IP Output > Status** > This page shows detailed status of each channel. The TS Analysis and Service List here have the same function to those on the Status page. See the image below for reference.



**IP Output > Settings** > On this page, there are three tabs where you can modify the multicast IP, ports and parameters of IP Output. There is also Batch Setting. The destination IP address can be multicast IP address or unicast IP address.

There are 64 IP output channels. Mark the Enable checkbox in front of each channel. Input the correct Multicast/Unicast IP address, port and appropriate output bitrate, and select a correct output protocol. Click **Apply** to make the changes take effect.

Batch Setting is where you can input the IP output parameters in batch. See the image below for reference.

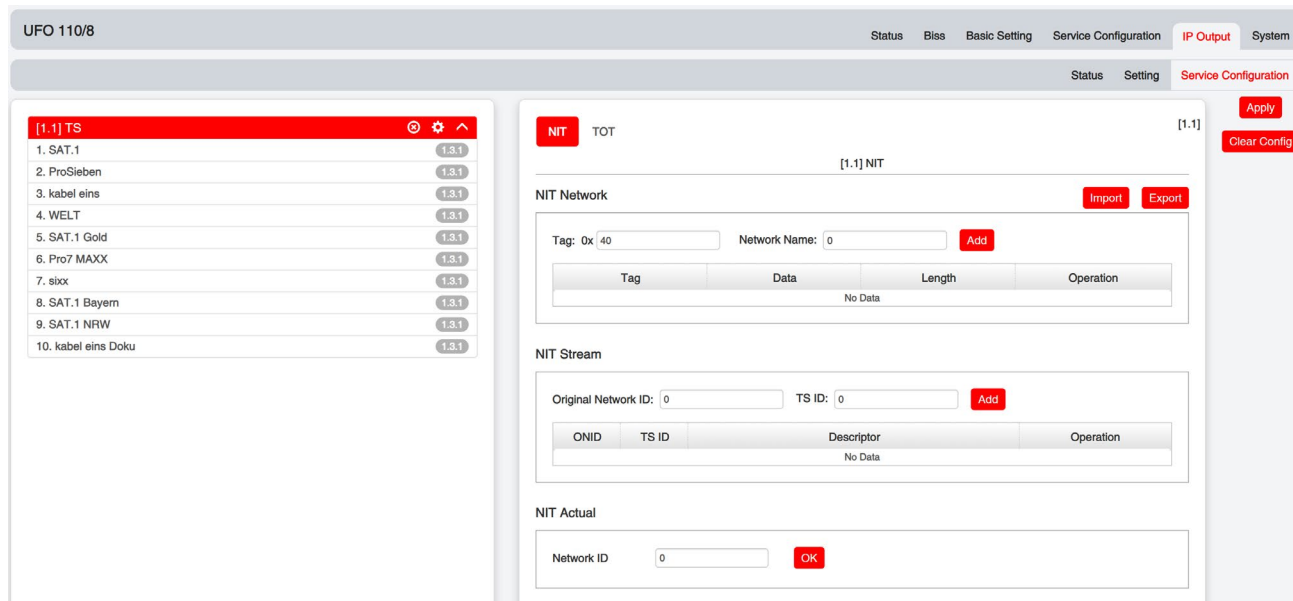





If you want to use IP output channels in the receiver module and baseboard IP output channel at the same time, you should avoid multicast IP addresses conflicts. If there are two identical IP addresses enabled concurrently, both the multicast transport streams will be affected.

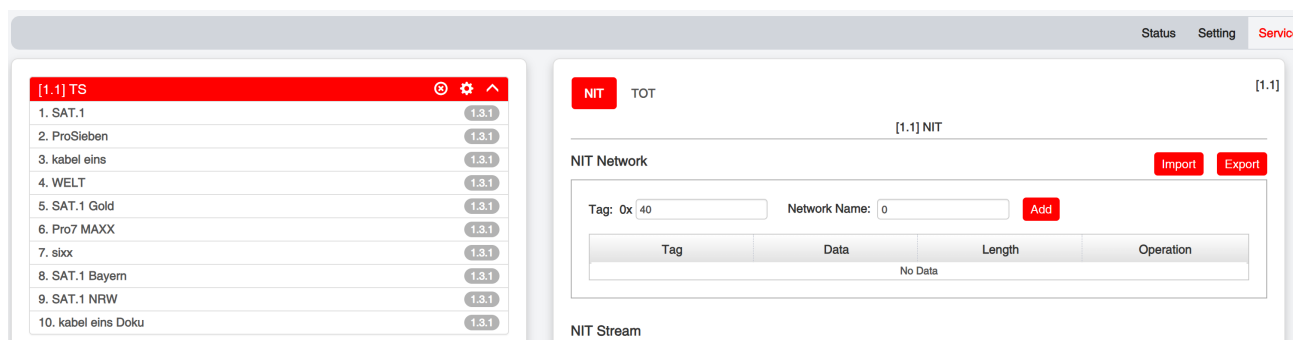
**IP Output > Service Configuration** Users can make configuration for output services.

- TS setting: Click TS line (the red area) to make the modification of Original Network ID, TS ID and each Service ID, Service Name, and Service Provider, etc.



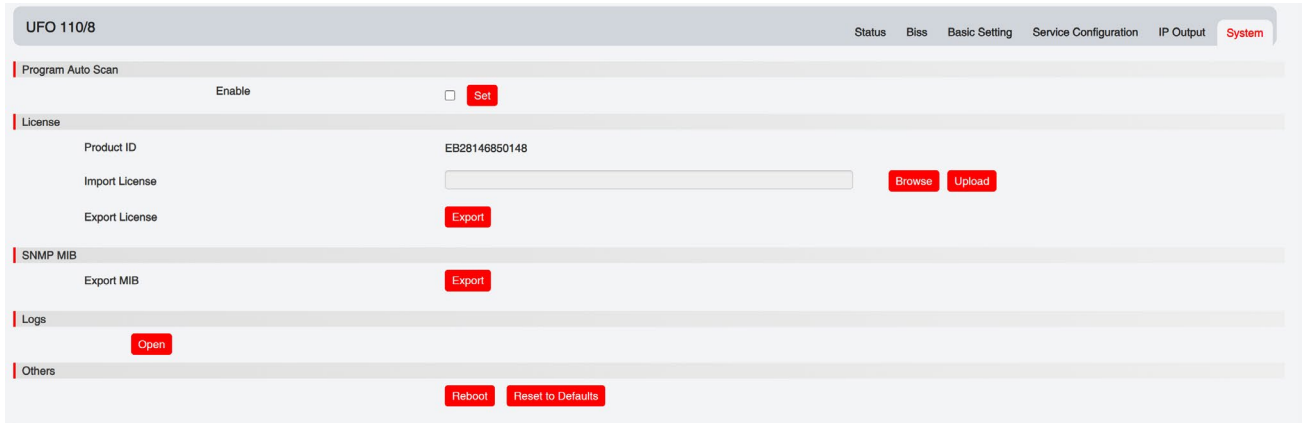
- TS setting: Click TS line (the red area) to configure Original Network ID, TS ID and each Service ID, Service Name, and Service Provider, etc.

- NIT setting: Click the icon  to modify NIT Network and NIT Stream.



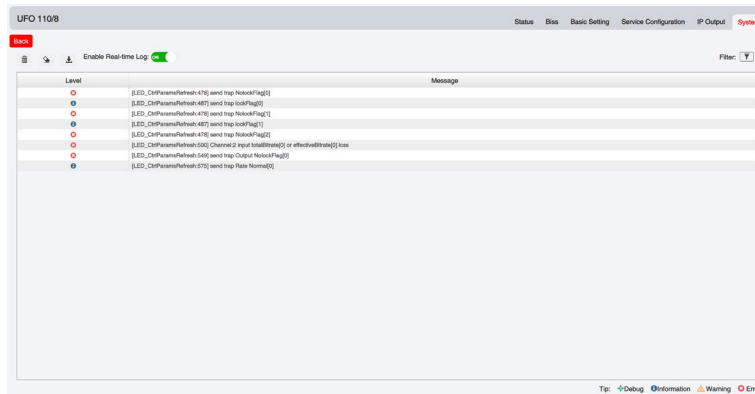
**UFO 110/4 | 110/8 > System**





On **System** page you can Enable/Disable Program Auto Scan, import/export **License**, export SNMP MIB files, **Reboot** module, restore **factory default settings** and manage **logs**.

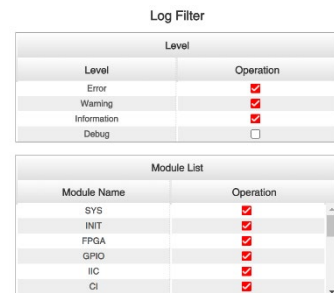


**Log Manage**>This page shows the logs of the module. If there are issues encountered on this module, exporting the logs will help R&D team to analyze and fix them.

Turn on **Enable Real-time Log** switch, see the real time log messages and the security level of each message below.



- Click  to clear all log messages on the screen.
- Click  to delete all log information.
- Click  to export log information.
- Click  to filter desired log messages.



Clicking the filter icon, you can simply select what logs to be included.



## 5.1.6 UFO 131/4

UFO 131/4 is a 4-channel DVB-T/T2 receiving and descrambling module with 1 RF connectors and 2 CI slots.



Module configuration is similar to UFO 111/4.

### **UFO 131/4 >Basic Setting**

UFO 131/4							Status	CI	Basic Setting	Service Configuration	System
Channel	Locked Status	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	RF Level	TS Analysis	Service List					
1.1	Unlocked	0.000	0.000	-	👁	☰					
1.2	Unlocked	0.000	0.000	-	👁						
1.3	Unlocked	0.000	0.000	-	👁						
1.4	Unlocked	0.000	0.000	-	👁						

Name	Range
Frequency (KHz)	47000~862000
Bandwidth (Mbps)	6 / 7 / 8 M

Click the **Apply** button on the right side to make the change take effect.

**Status, CI, Service Configuration** and **System** please refer to UFO 111/4.

## 5.2 Encoder Modules

### 5.2.1 UFX 150/4

UFX 150/4 is a 4-channel HDMI input encoder which supports H.264 HD/SD or MPEG-2 SD encoding. The module supports MPEG1-L2, AAC and AC3 audio encoding.



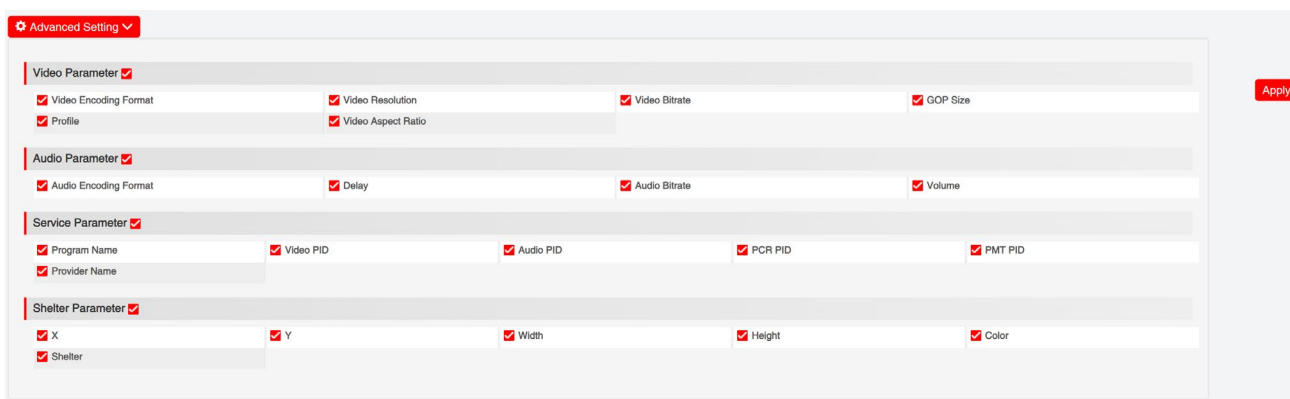
#### UFX 150/4 >Status

UFX 150/4								
<span>Status</span> <span>Basic Setting</span> <span>Insertion</span> <span>Output</span> <span>System</span>								
HDCP turned on.								
Program	Signal	HDCP Encryption	Input Video Resolution	Output Video Resolution	Total Bitrate(Mbps)	Effective Bitrate(Mbps)	TS Analysis	Program Name
1	✓	Unencrypted	1280x720_50p	1280x720_50p	12.486	12.486	👁	Program-01 📧
2	✗	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-02 📧
3	✗	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-03 📧
4	✗	Unencrypted	No_Video	No_Video	0.000	0.000	👁	Program-04 📧

#### UFX 150/4 >Basic Setting

UFX 150/4								
<span>Status</span> <span>Basic Setting</span> <span>Insertion</span> <span>Output</span> <span>System</span>								
<span>⚙️ Advanced Setting &gt;</span>								
Program	Video Encoding Format				Video Bitrate(Kbps)			
1	H.264				12000			
2	H.264				8000			
3	H.264				8000			
4	H.264				8000			
<span>Apply</span>								
HDCP Test Mode: <span>on</span> <span>🔗 HDCP test mode is for test purposes only. Please make sure you have the right to use the content!</span>								

Click **Advanced Setting** to see all parameters you can modify and check what specific parameters you want to set and see. Click the **Apply** button on the right side to make the change take effect.



Setting range:

Video Encode Settings	Range	Video Encode Settings	Range
<b>Video Type</b>	H264 , MPEG2	<b>GOP Close</b>	Disable, Enable
<b>Video Bitrate (Kbps)</b>	600~20000	<b>PCR2 PID</b>	32~8190
<b>Video Mode</b>	CBR, VBR	<b>PMT PID</b>	32~8190
<b>Video Max Bitrate (Kbps)</b>	20000	<b>Service Name</b>	Length is 1~16
<b>Video Min Bitrate (Kbps)</b>	0	<b>Service Provider Name</b>	Length is 1~16
<b>Video Resolution</b>	Auto , 1920×1080_60i , 1920×1080_50i , 1920×1080_30p , 1920×1080_25p , 1080×720_60p, 1080×720_50p, 720×480_60i , 720×576_50i	<b>VLC Mode</b>	CABAC CAVLC
<b>Video Frame Bitrate</b>	Auto 59.94/29.97	<b>Profile</b>	HIGH MAIN
<b>Video PID</b>	32~8190	<b>Level</b>	3.0,3.1,3.2 4.0,4.1,4.2
<b>GOP Structure</b>	IPPB, IPPP, IBP	<b>Video Aspect Ratio</b>	Auto 16x9_LetterBox

16x9\_CutOff

4x3\_PillarBox

4x3\_CutOff

**GOP Size**                      6~63

Audio Encode Settings	Range	Audio Encode Settings	Range
<b>Encoding Type</b>	AC3 MPEG1_Layer2 MPEG2_AAC MPEG4_AAC	<b>Audio Sampling Bitrate (KHz)</b>	48
<b>Audio Mode</b>	Dual Channel Mono Stereo	<b>Audio PID</b>	32~8190
<b>Encoding Bitrate(Kbps)</b>	128~384 (AC3) 64~384(MPEG1_Layer2) 32~384(MPEG2_AAC/ MPEG4_AAC)	<b>Volume</b>	0~8

**UFX 150/4 >Basic Setting**

⚙️ Advanced Setting ▼
Apply

**Video Parameter**

Video Encoding Format  
 Profile

Video Resolution  
 Video Aspect Ratio

Video Bitrate

GOP Size

**Audio Parameter**

Audio Encoding Format

Delay

Audio Bitrate

Volume

**Service Parameter**

Program Name  
 Provider Name

Video PID

Audio PID

PCR PID

PMT PID

**Shelter Parameter**

X  
 Shelter

Y

Width

Height

Color

Video Encode Settings	Range	Video Encode Settings	Range
Video Type	H264	PCR2 PID	32~8190
GOP Size	1~99	PMT PID	32~8190
Video Resolution	Auto , 1920×1080_60i , 1920×1080_50i , 1920×1080_30p , 1920×1080_25p , 1080×720_60p 1080×720_50p , 720×480_60i , 720×576_50i	Program Name	Length is 1~16
Profile	HIGH MAIN	Provider Name	Length is 1~16
Video PID	32~8190		

Audio Encode Settings	Range	Audio Encode Settings	Range
Audio Type	MPEG1_Layer2 AC3 AAC	Audio PID	32~8190
Audio Bit rate(Kbps)	32~192	Volume(dB)	-20~20
Delays(ms)	-2000~2000		

Shelter Parameters	Range	Shelter Parameters	Range
Shelter	Enable/Disable	X	0~1920 (Dual)
Y	0~1080 (Dual)	Width	2~1920 (Dual)
Height	2~1080 (Dual)	Color	White/Black/Blue/Green/Red



## UFX 150/4 >Output

UFX 150/4 Status Basic Setting Insertion **Output** System

Direct IP Output **Multiplexing**

Program	Enable	Destination IP Address	Destination Port	Enable Destination MAC	Destination MAC
1	<input checked="" type="checkbox"/>	227.10.20.90	1234	Disable	01:00:5E:0A:14:5A
2	<input type="checkbox"/>	227.10.20.90	1235	Disable	00:00:00:00:00:00
3	<input type="checkbox"/>	227.10.20.90	1236	Disable	00:00:00:00:00:00
4	<input type="checkbox"/>	227.10.20.90	1237	Disable	00:00:00:00:00:00

**Apply**

Direct IP Output **Multiplexing**

Program	Enable	Destination IP Address	Destination Port	Enable Destination MAC	Destination MAC
1	<input checked="" type="checkbox"/>	227.10.20.90	1234	Disable	01:00:5E:0A:14:5A
2	<input checked="" type="checkbox"/>	227.10.20.90	1235	Disable	00:00:00:00:00:00
3	<input checked="" type="checkbox"/>	227.10.20.90	1236	Disable	00:00:00:00:00:00
4	<input checked="" type="checkbox"/>	227.10.20.90	1237	Disable	00:00:00:00:00:00

**Apply**

For the Output, both models have direct IP output and multiplexing, but only UFX 150/4 has RTMP output settings.

This feature is specifically for single program encoding and IP output directly. Outputting in this way will not occupied baseboard multicast bandwidth.



If you want to use IP output channel in the encoder module and the baseboard IP module at the same time, you should avoid a multicast IP address conflict. If there are two same IP addresses enabled meantime, all the multicast videos will be affected.

- **Destination IP Address** and **Destination Port**: Using for multicast IP addresses or unicast IP addresses and ports.
- **Enable Destination MAC**: Generally, you do not need to enable this option. This is reserved for exceptional cases where the unicast stream cannot be received with unicast IP addresses. You can enable destination MAC and streaming out by setting Destination MAC.

UFX 150/4 Status Basic Setting Insertion **Output** System

Direct IP Output **Multiplexing**

Program	Program Name	Destination	Destination Setting
1	Program-01	3.UFO 220/16[1..5]	
2	Program-02		
3	Program-03		
4	Program-04		

**Apply**  
**Clear Config**

### To use **Multiplexing mode on service level**

1. Click on the pencil icon . There will always be a Base Board selection for the IP output and other Output options depending on the modules inserted.
2. Select the correct Output and Channel you want to output the Service to.

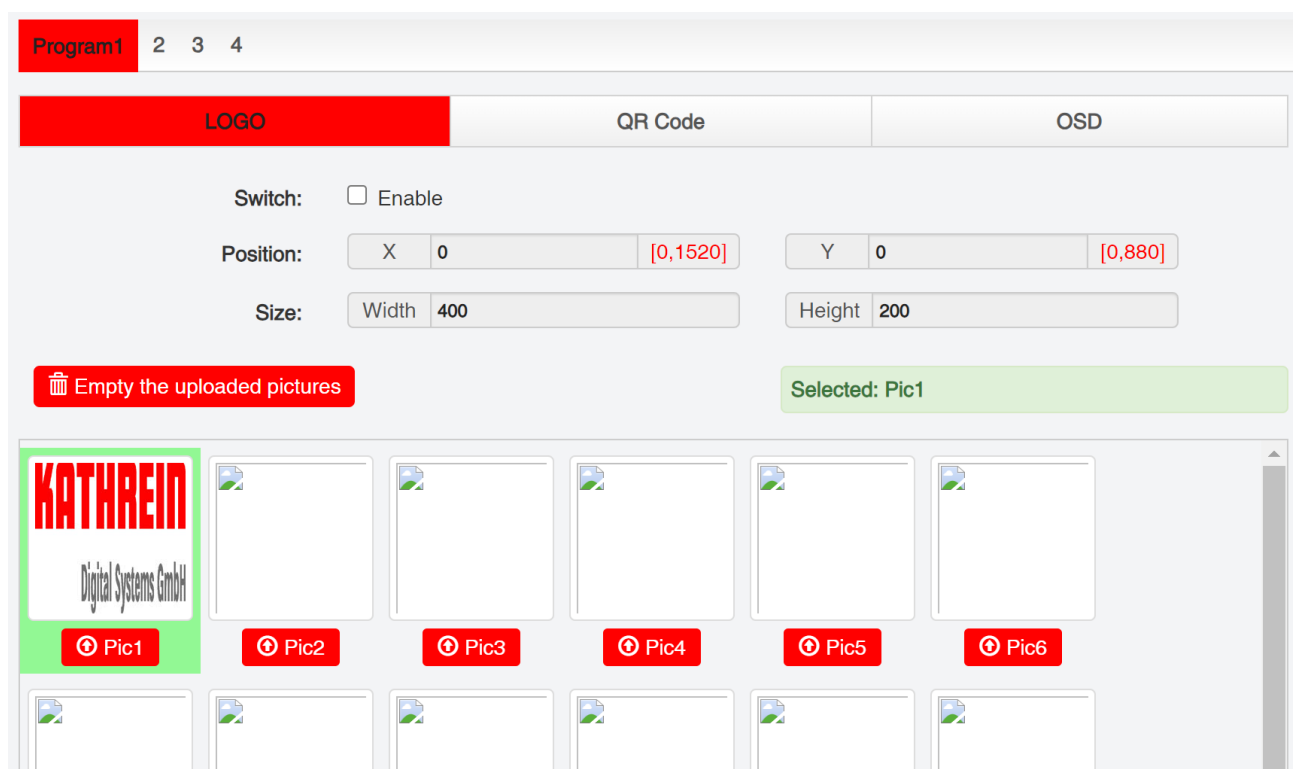
3. Check Multiplex for the Channel you want to output through. You can output multiple services in the same channel or output the same service in multiple channels.

**UFX 150/4 >Insertion**

You should choose a program first before you set Insertion.



- **LOGO setting:** you can upload several pictures at the same time, and pick one to show on the screen. The field of the selected picture will turn green.



LOGO Parameter	Range	LOGO Parameter	Range
Position X	0~1920 (Dual)	Position Y	0~1080 (Dual)
Size width	0~1920 (Dual)	Size Height	0~1080 (Dual)

- **OSD setting:**

Program1 2 3 4

LOGO QR Code **OSD**

Switch:  Enable

Position: Bottom

Position Offset: 0 [0~200]

Horizontal Pixel: 1920

Font Size: 20

Display Interval: 3

OSD: Welcome!

Subtitle Parameter	Range	LOGO Parameter	Range
Position	Bottom/Top/Middle	Position Offset	-200~200
Horizontal Pixel	10~1920	Scrolling Speed	1~20
Front Color	White/Black/Blue/Green/ Red/Yellow	Front Size	0~100
Display Interval	0~100		

➤ **QR Code setting:** QR Code picture picking method is same as LOGO setting.

Program1 2 3 4

LOGO QR Code OSD

Switch:  Enable

Position: X 10000 [0,1820] Y 980 [0,980]

Size: Width 100 Height 100

Empty the uploaded pictures Image not selected

LOGO Parameter	Range	LOGO Parameter	Range
Position X	0~1920 (Dual)	Position Y	0~1080 (Dual)
Size width	0~1920 (Dual)	Size Height	0~1080 (Dual)

**UFX 150/4 >System**

Please refer to CR2-DVBC module.

## 5.3 Modulation Output modules

### 5.3.1 UFO 220/16

➤ **UFO 220/16**

UFO 220/16 module supports modulating 16 non-adjacent or channels with 1 RF female port for modulating output and 1 RJ45 network port is reserved for future use. QAMA and B share the same Hardware but Different Software. If you need to change the Module from A to B, please contact your local support for assistance.

Module configuration is similar to IP Setting.



#### **UFO 220/16 >Status**

This page show the current Status of the Modulator

UFO 220/16

Status
Basic Setting
Output
PSIP
System

Temperature: 50°C (122°F) Tip: The module will automatically power off when the temperature reaches or exceeds 74 degrees Celsius(165.2 degrees Fahrenheit)!

Channel	Effective Bitrate(Mbps)	Total Bitrate(Mbps)	Bitrate	TS Analysis	Service List
1.1	41.364	50.869	Normal	👁	☰
1.2	41.417	50.869	Normal	👁	☰
1.3	0.000	50.869	Normal	👁	☰
1.4	31.850	50.869	Normal	👁	☰
1.5	30.825	50.869	Normal	👁	☰
1.6	0.000	0.000	Normal	👁	☰
1.7	0.000	0.000	Normal	👁	☰
1.8	0.000	0.000	Normal	👁	☰
1.9	0.000	0.000	Normal	👁	☰
1.10	0.000	0.000	Normal	👁	☰
1.11	0.000	0.000	Normal	👁	☰
1.12	0.000	0.000	Normal	👁	☰
1.13	0.000	0.000	Normal	👁	☰
1.14	0.000	0.000	Normal	👁	☰

### UFO 220/16 >Basic Setting

This page is where you can modify or set the frequency for the RF modulation. UFO 220/16 has 16 non-adjacent channels.

Channel	Enable	Frequency(KHz)	Bandwidth(MHz)	Constellation	SymbolRate(KBaud)
1.1	<input checked="" type="checkbox"/>	200000	8	QAM256	6900
1.2	<input checked="" type="checkbox"/>	208000	8	QAM256	6900
1.3	<input type="checkbox"/>	216000	8	QAM256	6900
1.4	<input type="checkbox"/>	224000	8	QAM256	6900
1.5	<input type="checkbox"/>	232000	8	QAM256	6900
1.6	<input type="checkbox"/>	240000	8	QAM256	6900
1.7	<input type="checkbox"/>	248000	8	QAM256	6900
1.8	<input type="checkbox"/>	256000	8	QAM256	6900
1.9	<input type="checkbox"/>	264000	8	QAM256	6875
1.10	<input type="checkbox"/>	272000	8	QAM256	6875
1.11	<input type="checkbox"/>	280000	8	QAM256	6875
1.12	<input type="checkbox"/>	288000	8	QAM256	6875
1.13	<input type="checkbox"/>	296000	8	QAM256	6875
1.14	<input type="checkbox"/>	304000	8	QAM256	6875
1.15	<input type="checkbox"/>	312000	8	QAM256	6875
1.16	<input type="checkbox"/>	320000	8	QAM256	6875

Click the **Apply** button on the right side to make the change take effect.

Name	Range	Name	Range
<b>Bandwidth</b>	6M, 7M, 8M	<b>RF level</b>	0~63 (dB μ V) 60~123 (dBmV)
<b>Symbol Rate (KBaud)</b>	4400~6956	<b>Frequency (KHz)</b>	48000~858000
		<b>Constellation</b>	QAM16/32/64/128/256

### UFO 220/16 >Output

QAM Output will be different from the Receiver and Encoder module. Since the QAM module is an output module like IP output, all services configured in receiver, encoder and IP input will be seen here.

- TS setting: Please refer to IP output service configuration.
- LCN setting: You need to add NIT streams of all frequencies in the base TS (frequency), which is used for your STB to automatically search and identify all the TS (frequencies) LCN information.
  - Check or reset Original Network ID and TS ID of each TS (frequency).Each TS should have different IDs.
  - Fill the Original Network ID and TS ID of each TS (frequency) in the field of the base TS (frequency) and then click **Add** to create a NIT stream for this TS (frequency).
  - Click **+Descriptor** then LCN Descriptor to check all the programs which are contained in this frequency. Then set programs LCN.

**NIT**

TOT

[1.6]

**NIT Network**

**Import** **Export**

Tag: 0x  Network Name:  **Add**

Tag	Data	Length	Operation
No Data			

**NIT Stream**

Original Network ID:  TS ID:  **Add**

ONID	TS ID	Descriptor	Operation
No Data			

**NIT Actual**

**Logical Channel Number** **Add**

TS	Service ID	Service Name	LCN [0, 1023]	Visible Service Flag	<input type="checkbox"/>
1.1	10301	Das Erste HD	<input type="text" value="1"/>	Visible	<input type="checkbox"/>
1.1	10302	arte HD	<input type="text" value="2"/>	Visible	<input type="checkbox"/>
1.1	10303	SWR BW HD	<input type="text" value="3"/>	Visible	<input type="checkbox"/>

**Service List** **Add**

TS	Service ID	Service Name	Service Type	<input type="checkbox"/>
1.1	<input type="text" value="10301"/>	Das Erste HD	Advanced Codec HD Digi x	<input type="checkbox"/>
1.1	<input type="text" value="10302"/>	arte HD	Advanced Codec HD Digi x	<input type="checkbox"/>
1.1	<input type="text" value="10303"/>	SWR BW HD	Advanced Codec HD Digi x	<input type="checkbox"/>

**Satellite Delivery System**

Frequency (MHz)  [0,15000]

SymbolRate (Ksymbol/s)  [1,45000]

Polarization

Advanced Parameters

**Terrestrial Delivery System**

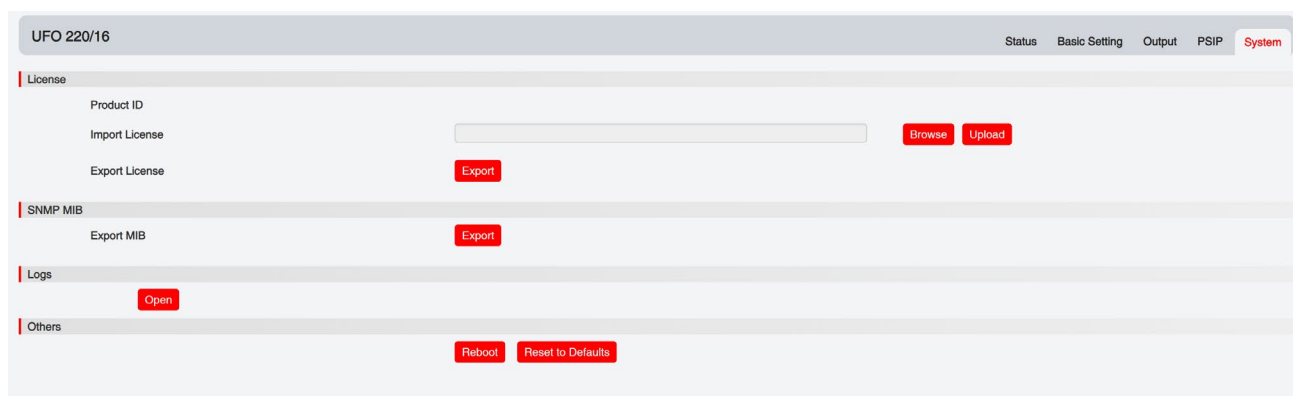
Centre Frequency  [1, 4294967295](10Hz)

Bandwidth

Advanced Parameters

- Click **+Descriptor** and add the **Cable Descriptor** in. Then fill in the correct frequency and symbol rate and choose the correct constellation of the TS (frequency).Then click **OK**. (this operation should be set on Modulator module only).
- Do same operations to add next TS (frequency) until NIT streams of all the frequencies have been included. At last click Apply button to let all configuration take effect. Then searching programs in your STB, you will get all programs in order of LCN which you set.

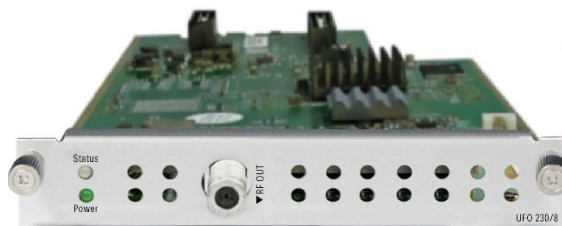
### UFO 220/16> System



On the **System** page you can **Import/Export License**, **Reboot** module, **Reset to Defaults** and **Manage Logs**.

### 5.3.13 UFO 230/8

UFO 230/8 module supports up to 4/8 adjacent frequencies modulating with 1 RF female connector for output.



Module configuration is similar to IP Setting.



**UFO 230/8>Basic Setting**

The screenshot shows the 'Basic Setting' tab for the UFO 230/8 device. At the top, there are tabs for 'Status', 'Basic Setting', 'Output', 'System', and 'PSIP'. Below the tabs, there are input fields for 'RF Level: 40 (dBmV / dBuV)' and 'PSI/SI Interval(ms): 100'. The main part of the interface is a table with 8 rows, each representing a channel (1.1 to 1.8). Each row has columns for 'Channel', 'Enable' (checkbox), 'Frequency(KHz)', 'Bandwidth(MHz)', 'FFT Mode', 'GI Mode', 'QAM Mode', and 'Convolutional Coding'. The 'Apply' button is located on the right side of the table.

Click the **Apply** button on the right side to make the change take effect.

Name	Range	Name	Range
<b>Bandwidth</b>	6M, 7M, 8M	<b>RF level</b>	0-31.5dBmV/60-91.5dB $\mu$ V
<b>Frequency (KHz)</b>	48000~862000		

**UFO 230/8>Output**

- TS setting: Please refer to IP output configuration.
- LCN setting: You need to add NIT stream of all frequencies in the base TS (frequency) which is used for your STB auto search and identifies all the TS (frequencies) LCN information.
  - Check or reset Original Network ID and TS ID of each TS (frequency). Each TS should have different IDs.
  - Fill the Original Network ID and TS ID of each TS (frequency) in the field of the base TS (frequency) and then click **Add** to create a NIT stream for this TS (frequency).
  - Click **+Descriptor** and **Cable Descriptor**. Then fill in the correct frequency and symbol rate and choose the correct constellation of the TS (frequency) and then click **OK** (this operation should be set on Modulator module only).
  - Click **+Descriptor** and add the **LCN Descriptor** to check all the programs which are contained in this frequency. Then set programs LCN.

**NIT** TOT [1.6]

**NIT Network** Import Export

Tag: 0x40 Network Name: 0 Add

Tag	Data	Length	Operation
0x40	0	1	x

**NIT Stream**

Original Network ID: 0 TS ID: 0 Add

ONID	TS ID	Descriptor	Operation
0	0	[0x33] Logical Channel Number x	x +Descriptor
		[0x44] Cable Delivery System x	
		[0x41] Service List x	

**NIT Actual**

Network ID: 0 Version Number: 0 OK

**Logical Channel Number** Add

TS	Service ID	Service Name	LCN [0, 1023]	Visible Service Flag	
1.1	10301	Das Erste HD	1	Visible	<input type="checkbox"/>
1.1	10302	arte HD	2	Visible	<input type="checkbox"/>
1.1	10303	SWR BW HD	3	Visible	<input type="checkbox"/>
1.1	10304	SWR RP HD	4	Visible	<input type="checkbox"/>
1.2	4911	ORF1 HD	5	Visible	<input type="checkbox"/>
1.2	4912	ORF2 HD	6	Visible	<input type="checkbox"/>
1.2	4913	ServusTV HD Osterreich	7	Visible	<input type="checkbox"/>
1.2	4914	ServusTV HD Deutschland	8	Visible	<input type="checkbox"/>

**Service List** Add

TS	Service ID	Service Name	Service Type	
1.1	10301	Das Erste HD	Digital Television Service x	<input checked="" type="checkbox"/>
1.1	10302	arte HD	Digital Television Service x	<input checked="" type="checkbox"/>
1.1	10303	SWR BW HD	Advanced Codec HD Digi x	<input type="checkbox"/>
1.1	10304	SWR RP HD	Advanced Codec HD Digi x	<input type="checkbox"/>

**Logical Channel Number** Add

TS	Service ID	Service Name	LCN [0, 1023]	Visible Service Flag	
1.1	10301	Das Erste HD	100	Visible	<input checked="" type="checkbox"/>
1.1	10302	arte HD	2	Visible	<input checked="" type="checkbox"/>

- Repeat the operations to add next TS (frequency) until NIT streams of all the frequencies have been included. Finally click Apply button to let all configuration take effect. Then searching programs in your STB, you will get all programs in the order of LCN which you set.

## 6 Appendices

### Appendix A – Power Consumption

UFO 101 Power supply	max. 120W
UFO 101 Chassis	max. 16W
UFO 121/4	max. 9W
UFO 110/4	max. 38W
UFO 110/8	max. 70W
UFO 111/4	max. 22W
UFO 131/4	max. 8W
UFO 230/8	max. 14W
UFO 220/16	max. 20W
UFO 230/8	max. 14W
UFX 150/4	max. 11W
UFO 151	max. 7W

Comments: The chassis includes both the baseboard's and fan's

### Appendix B – Abbreviations

<b>8VSB</b>	Vestigial sideband modulation with 8 discrete amplitude levels
<b>16VSB</b>	Vestigial sideband modulation with 16 discrete amplitude levels
<b>AAC</b>	Advanced Audio Coding
<b>AC-3</b>	Also known as Dolby Digital
<b>ASI</b>	Asynchronous Serial Interface

<b>ATSC</b>	Advanced Television Systems Committee
<b>AV</b>	Audio Video
<b>BAT</b>	Bouquet Association Table
<b>BER</b>	Bit Error Ratio
<b>Bit Rate</b>	The rate at which the compressed bit stream is delivered
<b>BNC</b>	British Naval Connector
<b>CAM</b>	Conditional Access Module
<b>CAT</b>	Conditional Access Table
<b>CAT6</b>	Category 6 – Cable standard for gigabit Ethernet
<b>CBR</b>	Constant Bitrate
<b>CI</b>	Common Interface
<b>CVBS</b>	CompositeVideoBroadcastSignal
<b>CC</b>	Closed Caption
<b>dB</b>	Decibel
<b>DVB</b>	Digital Video Broadcasting
<b>EIT</b>	Event Information Table
<b>EPG</b>	Electronic Program Guide
<b>FEC</b>	Forward Error Correction
<b>GOP</b>	Group of Pictures
<b>HD</b>	High Definition
<b>HDCP</b>	High-bandwidth Digital Content Protection
<b>HDMI</b>	High Definition Multimedia Interface
<b>I/O</b>	Input/output
<b>Kbps</b>	1000 bit per second
<b>LCN</b>	Logical Channel Number
<b>LNB</b>	Low-Noise Block
<b>LO</b>	Local Oscillator
<b>Mbps</b>	1,000,000 bits per second
<b>MER</b>	Modulation Error Ratio

<b>MIB</b>	Management Information Base
<b>MPTS</b>	Multi-program Transport Stream
<b>NIT</b>	Network Information Table
<b>OFDM</b>	Orthogonal Frequency-Division Multiplexing
<b>PAT</b>	Program Association Table
<b>PCR</b>	Program Clock Reference
<b>PID</b>	Packet Identifier
<b>PMT</b>	Program Map Table
<b>PSI</b>	Program Specific Information
<b>PSU</b>	Power Supply Unit
<b>QAM</b>	Quadrature Amplitude Modulation
<b>QPSK</b>	Quadrature Phase-Shift Keying
<b>SD</b>	Standard Definition
<b>SDI</b>	Serial Digital Interface
<b>SDT</b>	Service Description Table
<b>SI</b>	Service Information
<b>SNMP</b>	Simple Network Management Protocol
<b>SNR</b>	Signal Noise Ration
<b>SPTS</b>	Single Program Transport Stream
<b>TDT</b>	Time and Date Table
<b>TS</b>	Transport Stream
<b>VBR</b>	Variable Bitrate

## Appendix C

Please contact our sales/regional representatives or support hotline for any help, product information, and troubleshooting.