XPanel user manual

V. 1

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1. FIRST LOAD

Before the XPanel application can be used, the following pre-steps must be executed through the regular GUI to ensure proper operation of the XPanel:

1.1. Encoder:

In the Encoder Services app, create at least one Video, Audio, Colour, Vanc and Test Generator Profile in the corresponding tabs.

In the Encoder Services app, create a Service Template following these steps:

1. Create an Encoder Service on the left panel, assigning the profiles created in the previous step to a specific physical Slot and SDI port.
2. Once the service is saved and present in the list of services, copy that service using the specific "Copy" button. That will create a service with 'unassigned' physical port, also known as Service Template.
3. Please ensure to choose a recognizable Label for your Service Template to be used later in the XPanel.
4. The service template can be edited on the right panel. These settings will also be editable in the XPanel but are used as a base for your work from the XPanel.
5. Do not forget to delete the encoder service created at the beginning in this step to free up that encoder resource and port.

1.2. Satellite Modulator:

In the S2X Output app (or apps, if there is more than one S2X Output module), create at least one Port Profile in the "Port Profiles" tab with the modulation parameters to be used. The “Output Mode” in the Profile must be set to Satellite as the XPanel specifies Satellite and BUC frequencies.

Then go to the "Modulator Settings" tab, click on each of the two outputs and, in the right panel, assign one Port Profile to each carrier. The selected Port Profiles will be used as a base for the operation from the XPanel, but all settings can be edited from there.

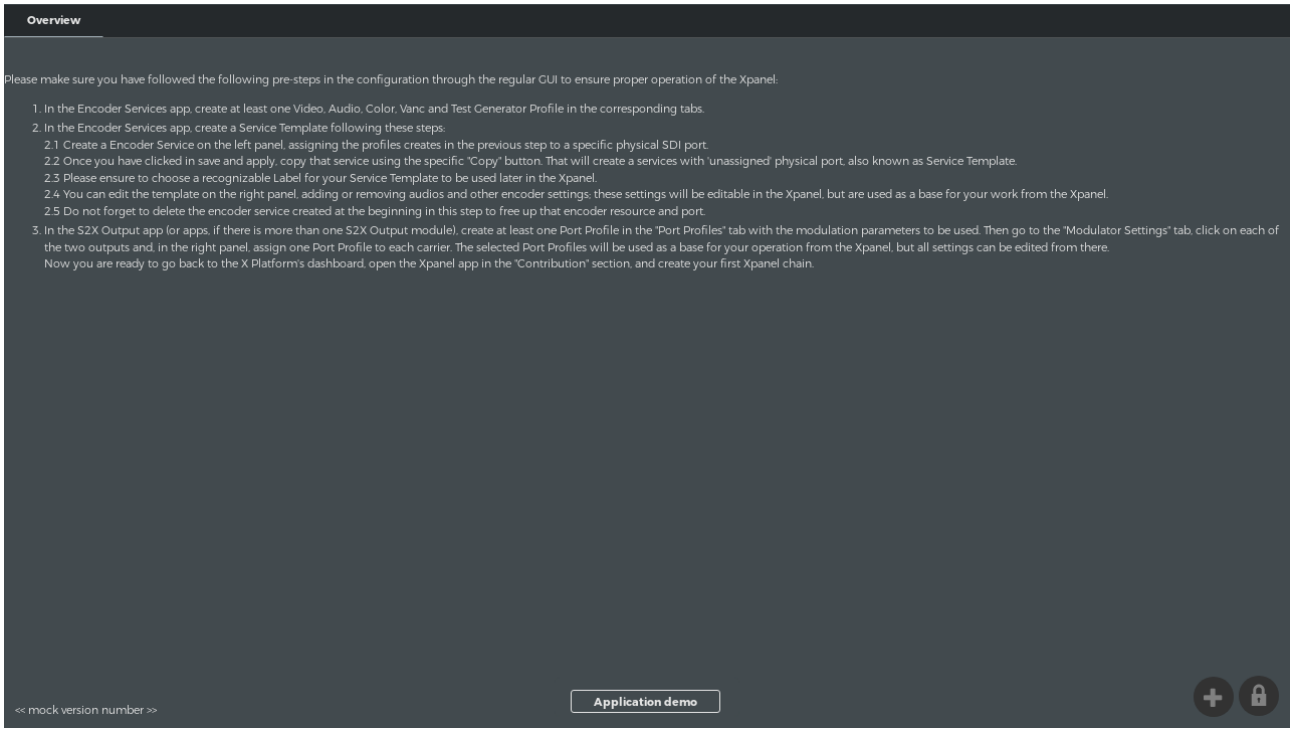
Open the XPanel application on the X Platform dashboard "Contribution" section when the base Encoder Satellite modulators configuration are completed. It is now ready to crate a chain of Encoders and modulators.

1.3. IP-Output:

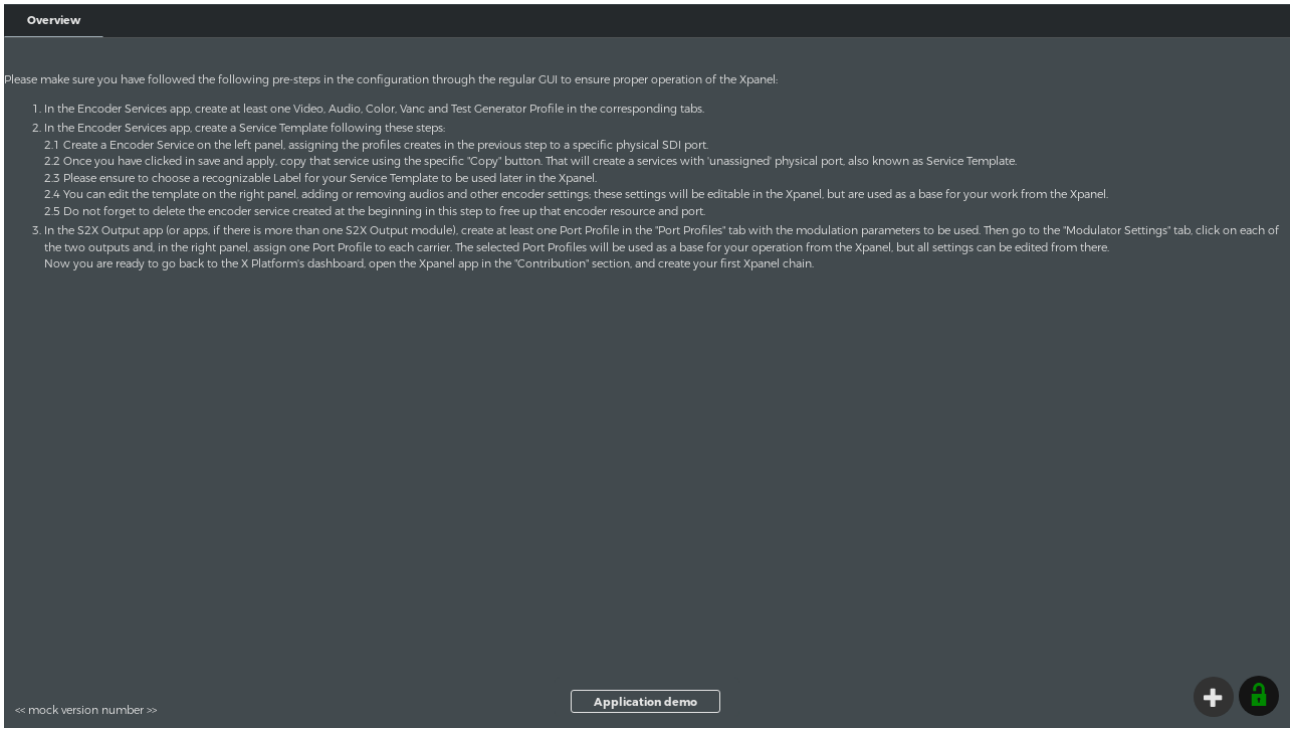
No pre-steps are needed to set up a chain with ip-output.

2. CREATING A CONTRIBUTION CHAIN WITH IP AND S2X OUTPUT

Changes can only be made when the XPanel is not in “locked” mode. “Lock” mode can be controlled by opening and closing the pad-lock icon in the bottom right corner.



Clicking the unlock button will enable contribution chain creation

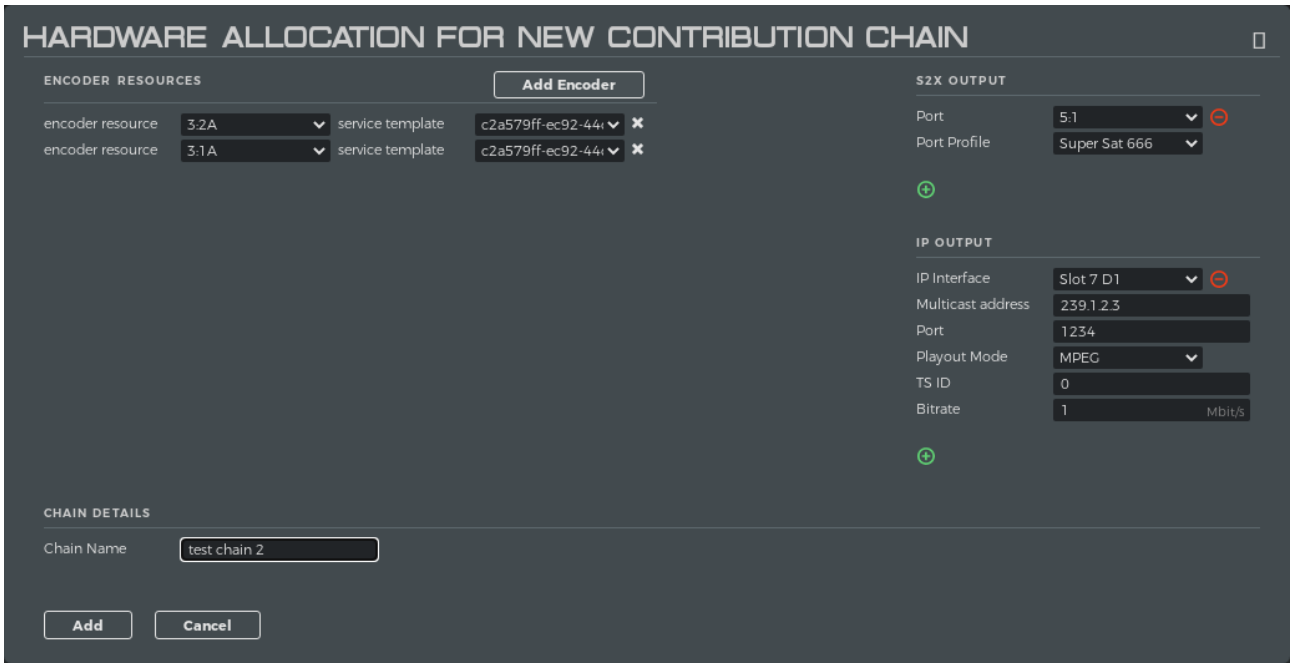


Click the add button (+) in the bottom right corner to see the chain creation dialog.

Give the new chain a name.

Add the number of encoders that shall be part of the outputs.

After adding chain name, some encoder resources, s2x and ip configuration choices:



You will now be taken back to the main view, where you can see the new contribution chain

MUX INFORMATION
CBR Bitrate: 1.00 Mbps
Configured bandwidth used: 224.8%
Auto adjust bitrate
BISS
Encoder 3:4
Encoder 3:0
Modulation
MOD
CW
Slot 5 Port: 1
Super Sat 666
Mode DVB-S1
Modcod QPSK 1/2
Frame Length NORMAL
Symbol Rate 90 Mbaud
BUC Frequency 0 MHz
Satellite Frequency 0 MHz
Spectrum Normal Spectrum
L-band Frequency 0 MHz
Roll Off x
Reference Output 10Mhz On
DC Output 24V On
RF LEVEL
Off
On Air
-0.1
-2.7 dBm
+0.1
-1
+1
COARSE RF ADJUSTMENT
-5
+5
Off
BISS
Encoder 3:4
Encoder 3:0
Ip Output
Off
On Air
Off
Application demo
<< mock version number >>

3. CONTROLLING RF PARAMETERS

Unintended changes are prevented by a “lock” mode. The mode is controlled by using the pad-lock button in the bottom right corner.

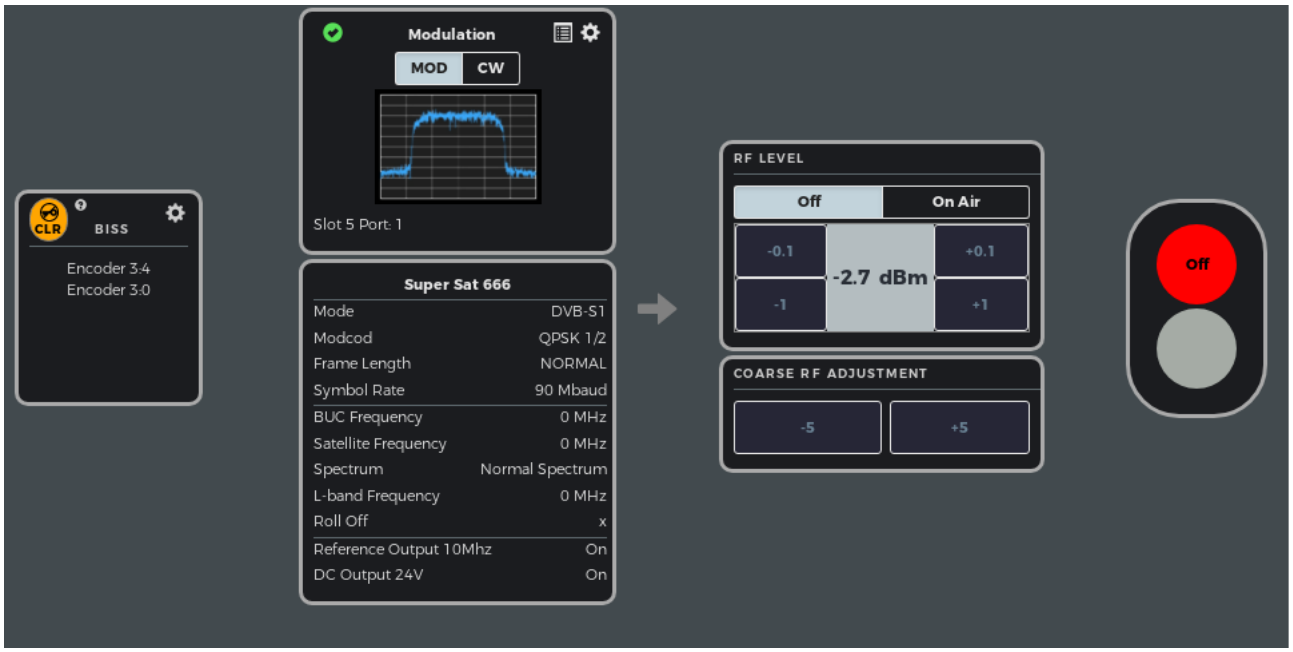
The output mode is default off (not transmitting) when the chain is created and can be set to “On Air” by the operator.

RF Levels can be instantly set in the RF Level section (no save button required).

RF parameter configuration page is opened by clicking on the “cog” in the Modulation icon.

RF frequencies are given as Satellite Frequencies and BUC (Block Upconverter) Frequency. The resulting L-band Frequency out of the Modulator is shown as status.

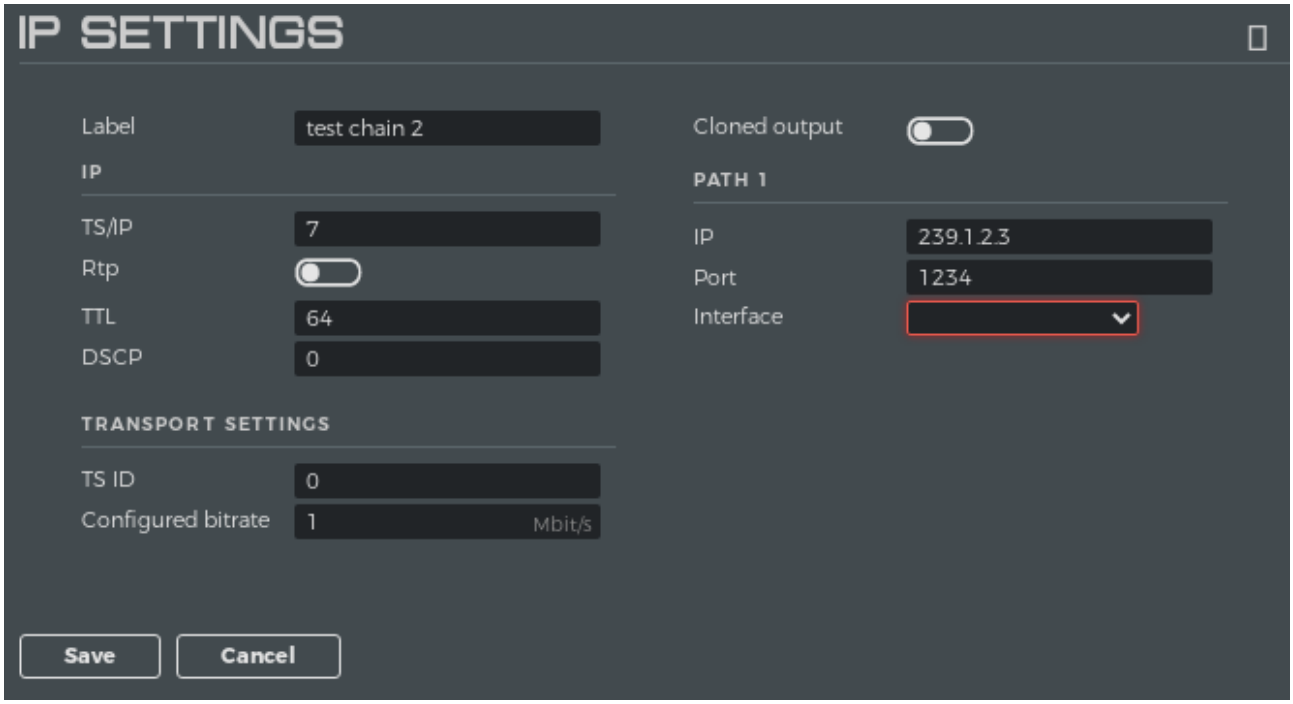
The Modulator Parameters gives the bandwidth available for the encoders.



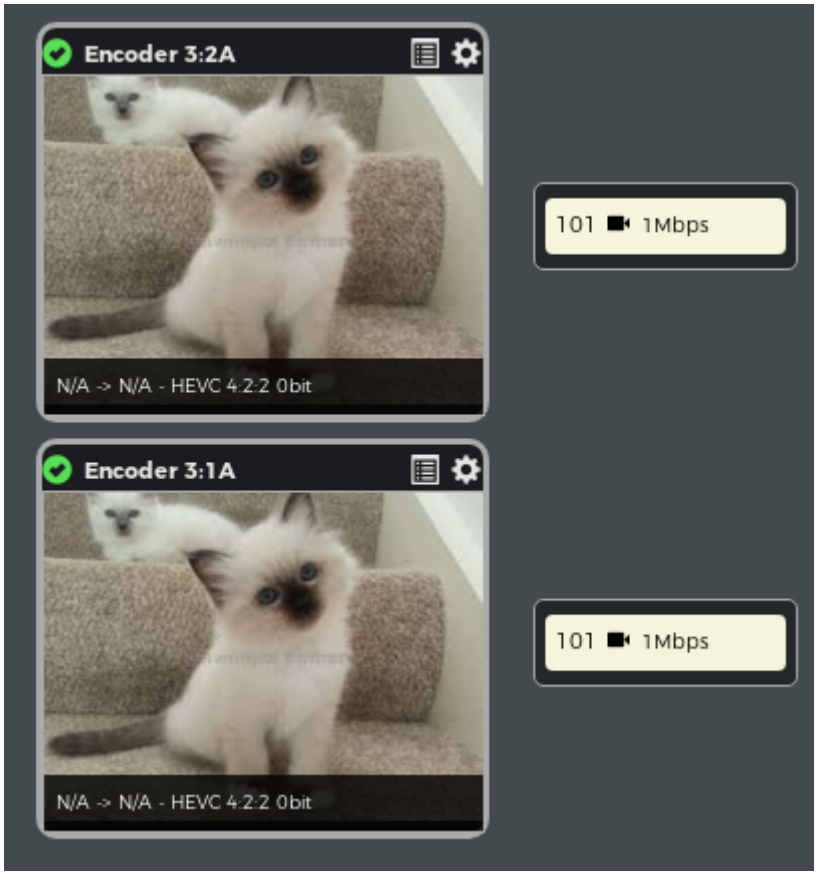
4. CONTROLLING IP SETTINGS

The output mode is default off when the chain is created and can be set to “On Air” by the operator.

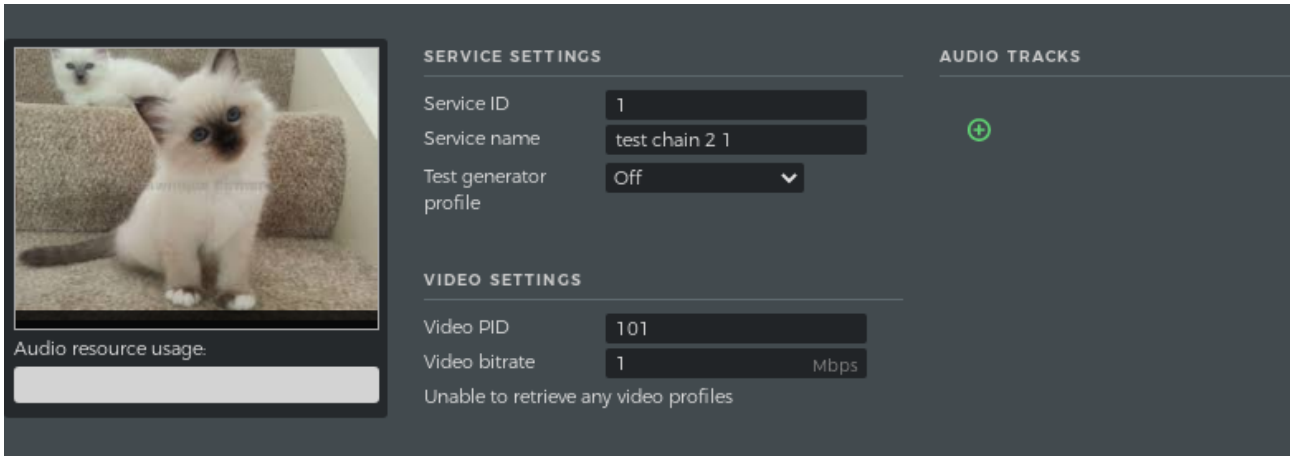
IP-putput settings page is opened by clicking on the “cog” on the IP-Output widget.



5. CONTROLLING ENCODING PARAMETERS



Encoder parameter configuration page is opened by clicking on the “cog” in the Encoder Thumbnail icon.



A range of parameters can be changed from XPanel.

Service parameters like service ID, service name etc

- Video Profile
- Enable/disable Test Generator and change of Profile
- Add/Remove/Change audio channels and parameters

The Encoded PIDs produced by each encoder are presented with icons and bitrates.

6. CONTROLLING BISS PARAMETERS

BISS parameter configuration page is opened by clicking on the “cog” in the BISS section.

XPanel supports the same BISS modes as the S2X Modulator provides.

The BISS icon will show whether a encoded stream is scrambled or not by changing color and text.

7. CONTROLLING MUX PARAMETERS

The total available bandwidth is defined by the satellite parameters. The available bandwidth can be automatically divided equally across the encoders feeding into the multiplex. This is triggered by manual actions.

XPanel subtracts all know bitrates from the total mux rate before calculating video bitrates. The API has an option for the operator to reserve bandwidth.