DVBControl

DVBMosaic

User Manual
September 2020

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1 DVBMosaic

1.1 Introduction

DVBMosaic is part of the DVBControl software toolset which enables a powerful mosaic overview for multiple services coming from multiple Transport Streams.

Different Service components can be used:

- Video (SD/HD)
- Audio
- DVB-Subtitles (SD/HD)
- Teletext (Subtitles, Newsflash, Interrupted, Subpages)
- Images
- Clocks

Besides visualisation of all Services, different measurements can be enabled:

- Freeze detection
- Black detection
- Silence detection
- Concurrent Silence + Freeze detection
- Input lost detection
- PID lost detection
- Service lost detection
- Encryption detection
- Aspect Ratio Detection
- ETR-290 Level 1 Detection

All of these measurements can be customized for different parameters on different levels:

- Application preferences
- Input configuration
- Channel configuration
- Audio configuration

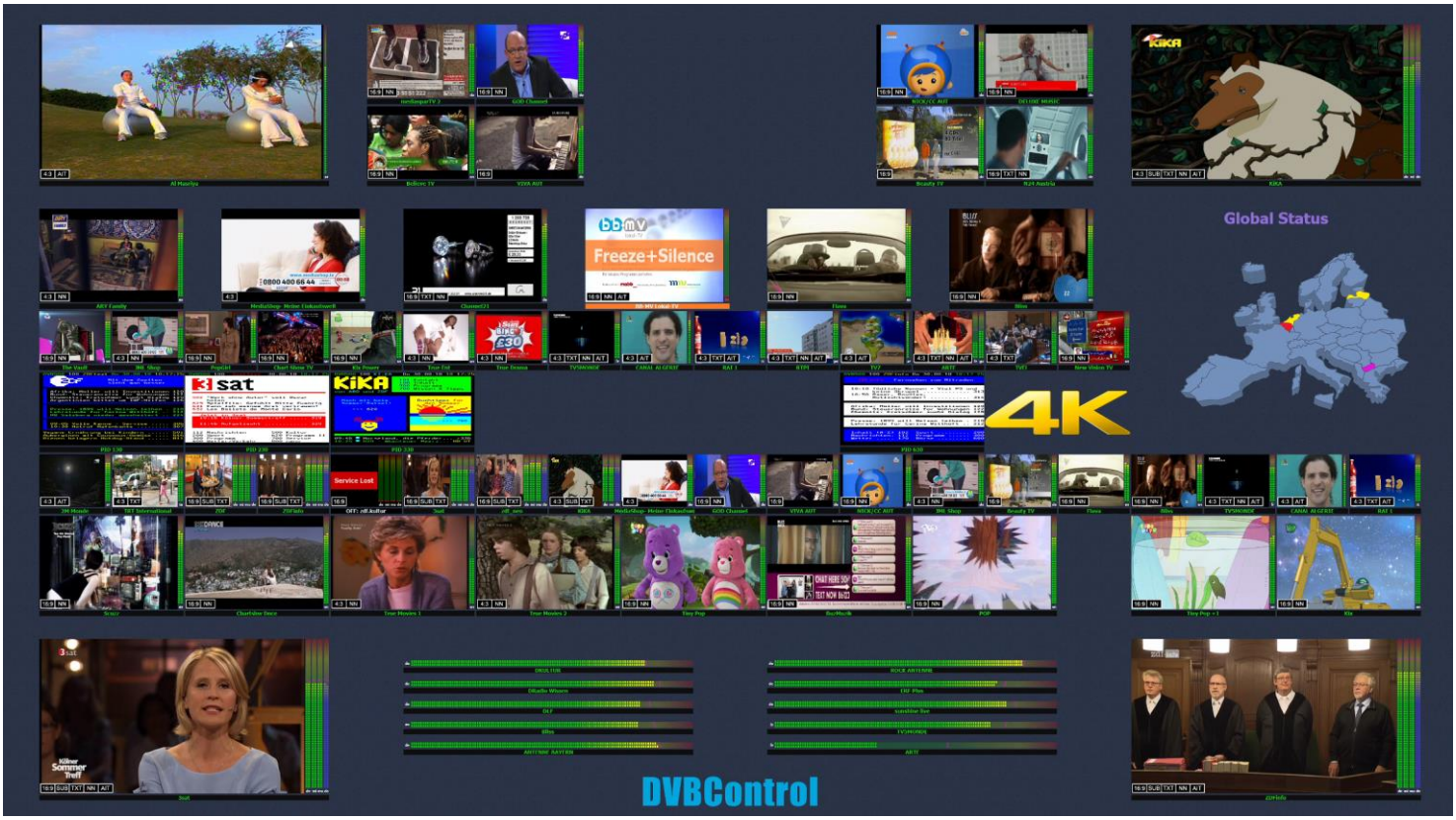
All measurements errors and clearing will be logged, but can also be signalled via multiple communication routes:

- Border visualisation
- Audio alerts
- SNMP traps
- Email sending
- SMS sending
- Syslog
- iPhone and Android notification
- DVBMonitor integration

When working in “Acknowledgement mode”, user acknowledgement is necessary to acknowledge the last detected errors. Until acknowledged, error signalling will be repeated by blinking borders and audio alerts.

Multiple Wall layout configurations (size, clock, positions) can be used in parallel.

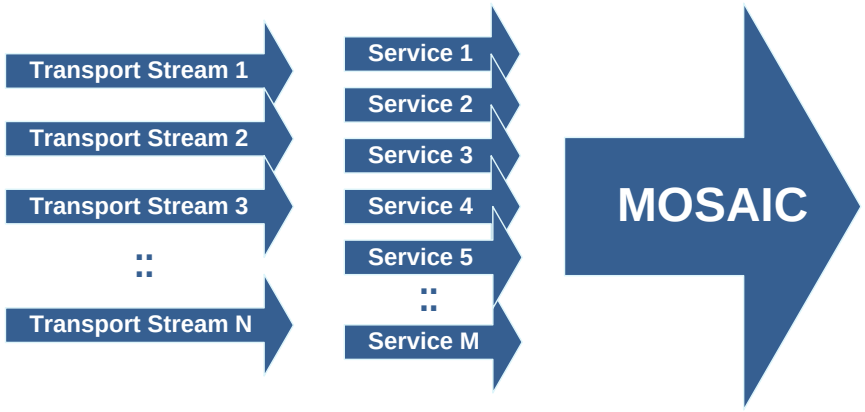
1.2 Example screenshots


Global Status
4K
DVBControl


MUX A-1
MUX A-2
MUX A-3
MUX A-4
MUX A-5
MUX A-6
MUX B-1
MUX C-1

1.3 Overview

Any combination of Transport Stream sources can be used to decode multiple TV, Radio, Teletext or Subtitle services.



Both pre-recorded and live broadcasted DVB Transport Streams (TS) can be used when provided as:

- File
- DVB-ASI (input via ASI input board)
- DVB-S (input via Satellite receiver board)
- DVB-T (input via Terrestrial receiver board)
- DVB-C (input via Cable receiver board)
- UDP/Multicast
- Streaming, RTMP, RTMP Tap
- Streaming, Smooth Streaming / Silverlight
- MPEG-DASH

See appendix B for all Input possibilities.

1.4 Licensing

For each DVBMosaic agent a valid license is needed.

Type no.	Description
Software Base:	
DC-Base	DVBMosaic base software license, including 10 License Points
DCL-Base	DVBMosaic Light base software license, including 10 Light License Points *
Software Options:	
DC+10	10 extra License Points
DCL+10	10 extra Light License Points (Can only be used with DCL-10 Base license)
DC+DD5	5 Dolby® Digital Plus decoders
DC+DD20	20 Dolby® Digital Plus decoders
DC+DD50	50 Dolby® Digital Plus decoders
DC+DE5	5 Dolby®-E decoders

* 'Light' means no checks enabled.

License point calculation

1 SD TV Service = 1 License Point
1 HD TV Service = 2 License Points
1 UHD TV Service = 4 License Points
1 LD TV Service = 0,5 License Point
  LD: Video resolution <= (720x576)/2 pixels
  SD: (Horizontal resolution <= 1024) & (Vertical resolution <= 576)
  HD: (Horizontal resolution <= 1920) & (Vertical resolution <= 1088)
  UHD: all resolutions above HD resolution

Every TV service has 1 Video and 1 Audio component
Video: MPEG-2, AVC, HEVC
Audio: MPEG, AAC
For Dolby decoding, also extra Dolby licenses are needed

1 Teletext or DVB-Subtitle = 0,5 License Point
1 Audio = 0,2 License Point
1 PID Monitoring = 0,2 License Point
ETR-290 Level 1 (MPTS) = 1 License Point
ETR-290 Level 1 (SPTS) = 0,2 License Point

Software Maintenance Support (SMS)

When purchasing the DVBMosaic base license, 1 year SMS (Software Maintenance Support) is included.

1.5 Requirements

DVBMosaic runs under the Microsoft Windows operating systems and has been verified on:

- Windows 10 (Professional and Ultimate)
- Windows Server 2016 or 2019.
- Windows Server is needed, when more than 64 IP inputs are used

All Windows updates needs to be installed, including platform updates.

Best performance can be guaranteed by working on modern PC systems such as:

- Processor: Intel Quad Core or better
- Processor speed >= 2,6 GHz
- Memory at least 16 GB RAM (**please consult the Intel website for configuration per CPU!**)
- Screen resolution 1920x1080
- Hard-disk: Only needed for OS and logging, so SSD 128GB or bigger is advised.

1.5.1 Graphics card

DVBMosaic requires a NVidia graphics adapter that supports at least **DirectX 10.1 (11 recommended) and has 1024 MB memory**.

1.5.2 Network card

We recommend to use the Intel Pro/1000 PT Server Adapter network card.

1.6 Benchmark

Amount of TV services which can be decoded real-time:

CPU	MPEG-2		AVC / H264		HEVC / H265		
	SD	HD	SD	HD	SD	HD	UHD / 4K
E5-2620v3	95	24	60	12	-	-	-
Dual E5-2620v3	*120**	36	90	18	-	-	-
Dual E5-2687v3	*120**	60	*120**	30	-	-	-
Dual E5-2630v4	*120**	60	*120**	30	70	21	3
Dual Silver 4114	*120**	60	*120**	30	70	21	3
Dual E5-2640v4	*120**	65	*120**	32	90	30	4
Dual Silver 4116	*120**	65	*120**	32	90	30	4
Dual Silver 4214	*120**	65	*120**	32	90	30	4

** Limited by transfer speed, not by CPU.*

Audio, Teletext and DVB-subtitle decoding does not require a lot of CPU power.

Default: Pre-scaling is on.

1.7 Multiple outputs

The standard output of DVBMosaic is the display connected to the computer (HDMI).

Different methods are possible for multi-output kind of situations:

Multiple displays in the same environment, showing the same wall
When using a multi-output graphical board, DVBMosaic can duplicate or the wall to multiple display outputs.

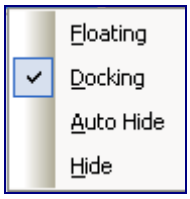
Multiple displays in the same environment, showing different tiles
When using a multi-output graphical board, DVBMosaic can spread the wall over multiple display outputs (eq. 2 displays, or 2x2 displays)
In this case the Wall editor will show a line, for the position where the display border is.
The view quality is still high. So in case of 2 HD (1920 x 1080) displays, the wall will have a 3640 x 1080 pixel output resolution.

Web-interface, for viewing in a remote location
DVBMosaic has a built-in web interface.
Besides the possibility to manage all properties, it is also possible to show the wall.
When showing the wall in the web interface, all information including overlay is shown real-time.
The video tiles are updates each second.
Multiple web-interfaces can be used in parallel.

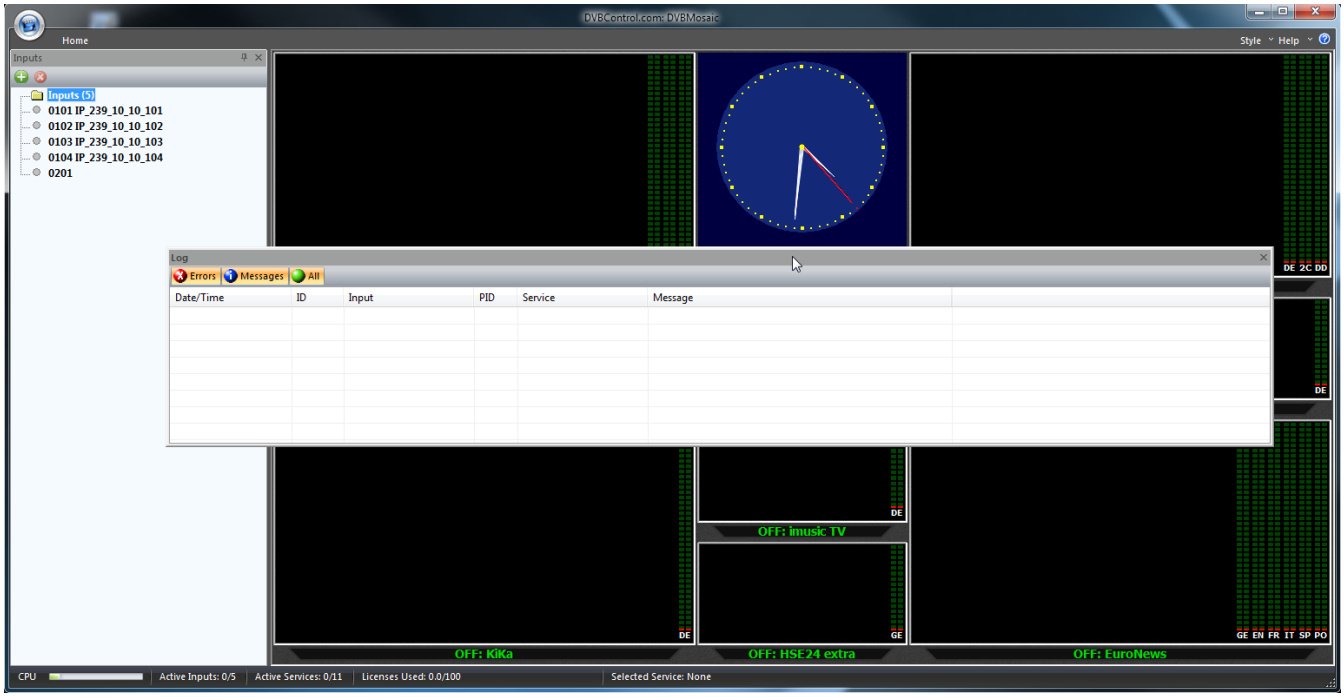
Output streaming, for viewing in a remote location
When the live DVBMosaic output has to be shown (including audio) in a remote location, a cheap HDMI-encoder-streamer can be used.
We prefer a external hardware encoder, instead of a built-in software encoder. This because a built-in encoder can influence the real-time behavior of all decoders used in DVBMosaic.

2 User Interface

All windows can be configured depending on the chosen Application Look:



- Floating, Docking, Auto Hide or Hide
- Change sizes
- Change positions



By clicking with the left-mouse button on a window and dragging it to another position, the various possible positions are shown.

2.1 File

External edited Wall configuration changes or Exit of the DVBMosaic application can be done via File.

File menu	Hot key	Principal functions
Make Backup		Backup all configuration settings
Restore Backup		Restore all configuration settings
Load Wall Configuration		Load Wall.xml configuration file
Save Wall Configuration		Save Wall.xml configuration file
Reload Wall Configuration		Reload Wall.xml configuration file
Exit	Alt + F4	This option exits DVBMosaic

2.2 Window

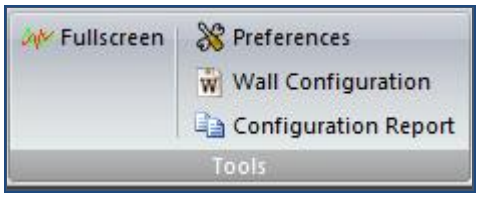
The basic windows are:

- Inputs
- Log View

Also the Selected Wall Number is shown.

2.3 Tools

DVBMosaic has different tools to measure Loudness.



Tools menu	Hot key	Principal functions
Fullscreen	F5	Toggle the Mosaic in Fullscreen/Edit mode
Preferences	Ctr l +P	Open Preferences edit window
Wall Configuration	Ctrl + W	Open the Wall Configuration window
Configuration Report	Ctrl + R	Open the Configuration Report

2.4 Inputs

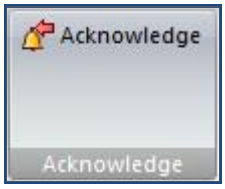
All Input related actions.

Inputs menu	Hot key	Principal functions/sub-options
Add Input		Add a new input to the Inputs Bar
Delete Input		Delete a input from the Inputs Bar
Configure Input		Configure the input settings
Start Mosaic	F3	Start all Inputs
Stop Mosaic	F4	Stop all Inputs

Details of the Input Bar are explained in chapter 3.

2.5 Acknowledge

In “Use Acknowledge System” mode, this key acknowledges the messages.

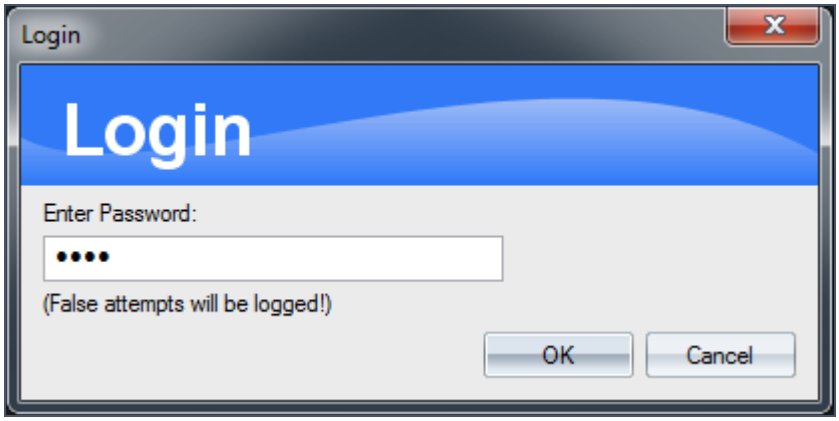


Acknowledge menu	Hot key	Principal functions
Acknowledge	Esc	Acknowledges new messages

2.6 Privilege

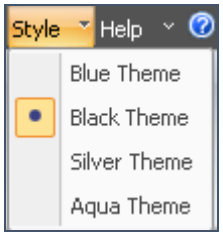
If the Password Protection option is enabled, Login is needed to be able to configure Preferences, Inputs or Wall configurations.

When pressing the Login button, the correct password needs to be entered in the following dialog:



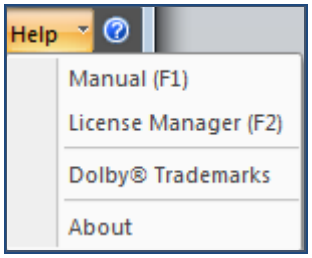
2.7 Style

Different layout styles (font, colour) can be chosen.



2.8 Help

All Help related subjects can be selected via the Help menu option.

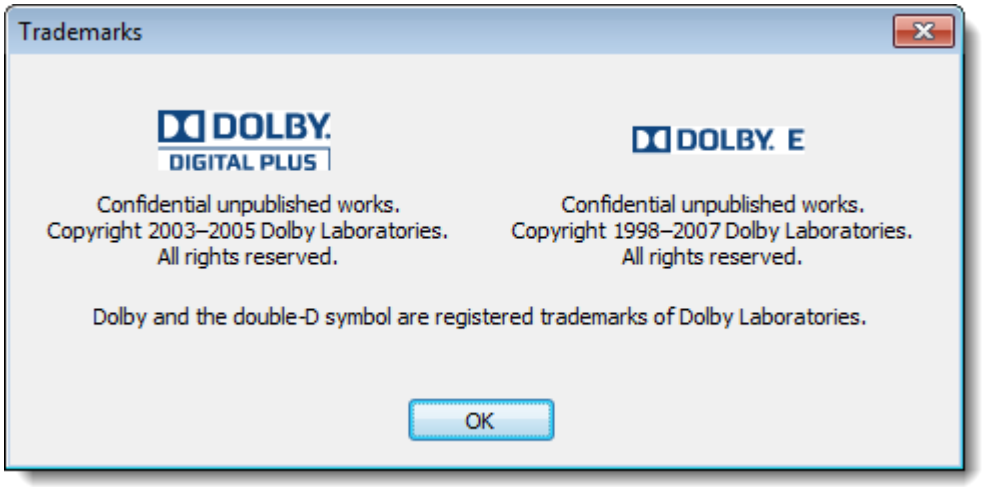


Help menu	Hot key	Principal functions
Manual	F1	Open the DVBAnalyzer Manual
License Manger	F2	Administers the application licenses
Dolby® Trademarks		Display Dolby® Trademarks
About		Displays the application version number information

Manual
Opens the DVBMosaic manual (PDF)

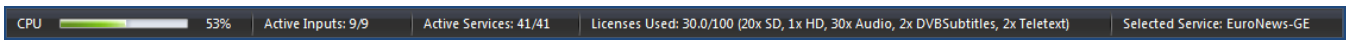
License Manager
Administers the application licenses.

Dolby® Trademarks
Displays the Dolby® Trademarks.



About DVBMosaic
Displays the application version number information.

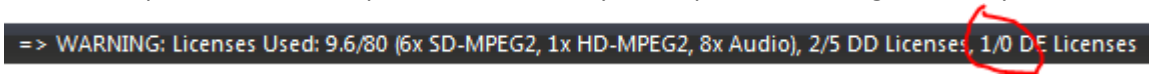
2.9 Status Bar



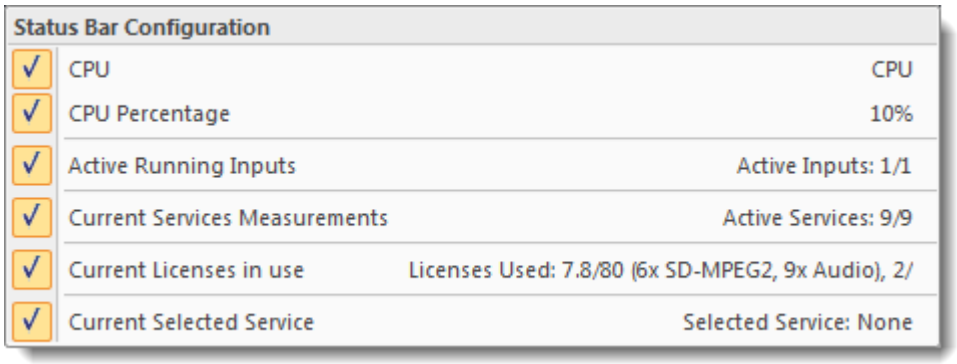
The Status Bar gives information about:

- CPU load
- Active Inputs
- Active Services
- Licenses Used, with detailed information about license sub components
- License Available
- Selected Service, including selected audio component

When not enough licenses are available in the dongle, a WARNING text will be shown.
In the example below the setup is done for 1 Dolby-E component, although no Dolby-E licenses are available.



With the right mouse button, showing information can be enabled/disabled.



2.10 General Preferences

Customized preferences have impact on behaviour and are categorized in different tabs:

General:

- Application
- Layout
- Measurements
- ETR 290 Options
- DVBMonitor Support
- Remote Web Interface
- Penalty Box
- Recording
- Output Streaming

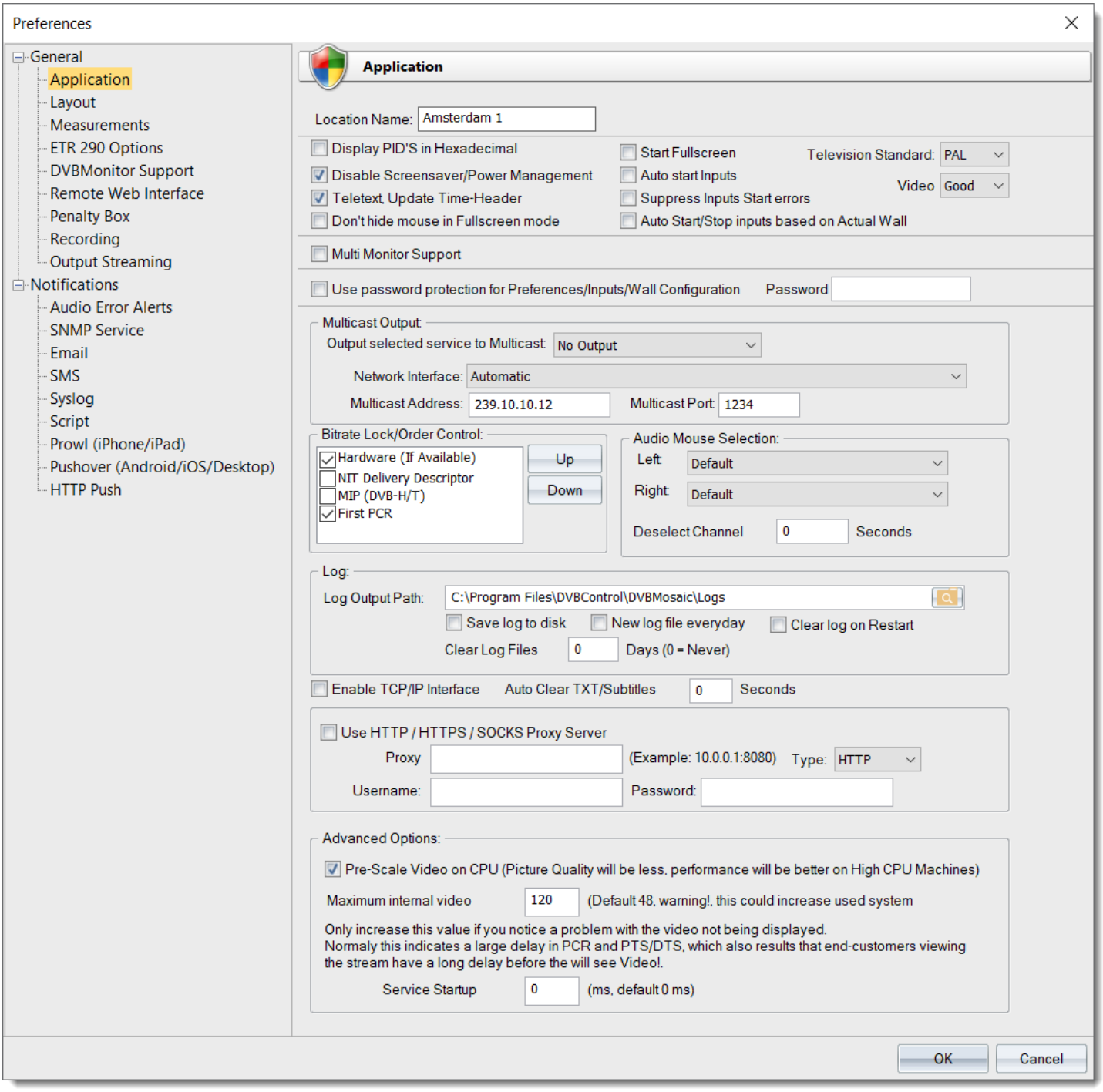
Notifications:

- Audio Error Alerts
- SNMP Service
- Email
- SMS
- Syslog
- Script
- Prowl (iPhone/iPad)
- Pushover (Android/iOS/Desktop)
- HTTP Push

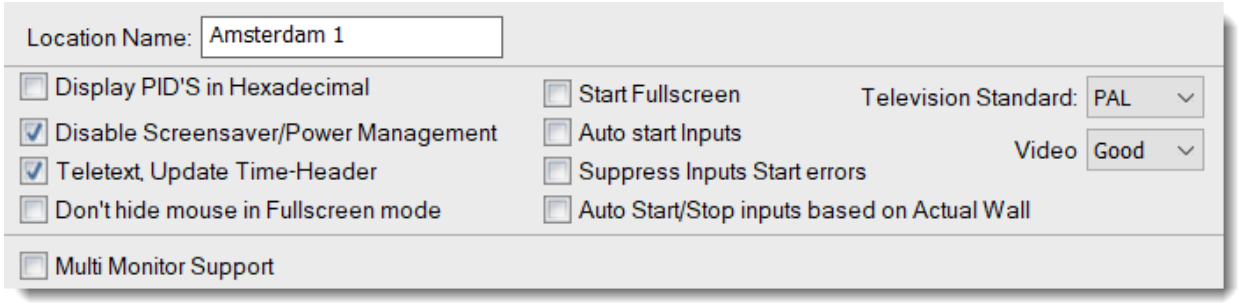
2.10.1 Application Preferences

Application settings for:

- General preferences
- Multi monitor
- Password protection
- Multicast Output
- Bitrate Lock/Order Control
- Log
- TCP/IP Interface
- Advanced Options



General preferences



Location Name
Setup of a Location name will make the DVBMosaic application easier recognizable when using multile Mosaic instances. The Location name will also be shown in the header of the Web page.

Display PID's in Hexadecimal
If enabled, all PID values are shown hexadecimal. Otherwise PID values are shown decimal.

Disable Screensaver/Power Management
If enabled, the PC will not go into Screensaver mode or Power Management mode.

Teletext, Update Time-Header
If enabled, the Teletext header "row 0" will be updated constantly although the selected Teletext page is not transmitted. If not enabled only the time of the update moment will be shown.

Don't hide mouse in Fullscreen mode
If enabled, the mouse tooltip will not be hided in Fullscreen mode.

Start Fullscreen
After application start, the application will be shown directly in Fullscreen mode.

Auto start Inputs
After application start, the input devices will be start directly.

Suppress input start errors
After start of Mosaic, the input start errors will be suppressed

Auto Start/Stop inputs based on Actual Wall
After a wall is launched, only the needed inputs are enabled. All not used inputs are disabled.

Television Standard
The following Broadcast norms can be selected:

- PAL
- NTSC

Video Quality
Decoding be done in better quality, but then also takes needs more CPU power:

- Good (default)
- Best

Multi Monitor

Possibility to use multiple monitor screens, connected to 1 DVBMosaic machine.

Multi Monitor Support
If enabled, the Mosaic output is spread across multiple displays which are connected to the DVBMosaic machine.

Password protection

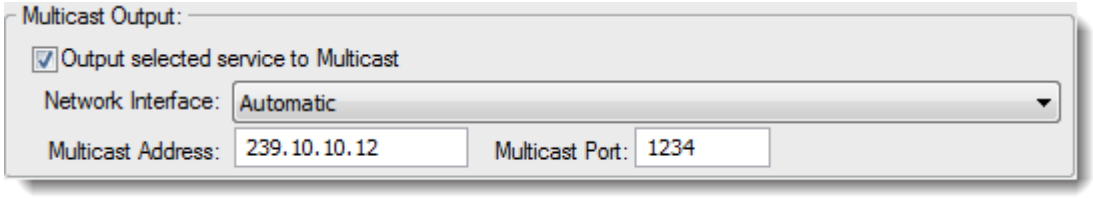
Possibility to 'password' protect the Preferences, Inputs and Wall configuration windows, for unwanted usage.

Use password protection
If enabled, you have to login before Preferences, Inputs and Walls can be configured.

Password
Use your own Password. Used password is not visible.

Multicast Output

Possibility to multicast output a Service. Therefor the Service has to have focus.



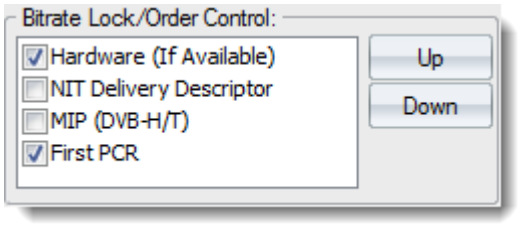
Output selected service to Multicast
If enabled, the Service with focus will be multicast out.

Network Interface
Selection of network interface, used for multicast output.

Multicast Address
IP address used for the multicast output.

Multicast Port
Port number used for the multicast output.

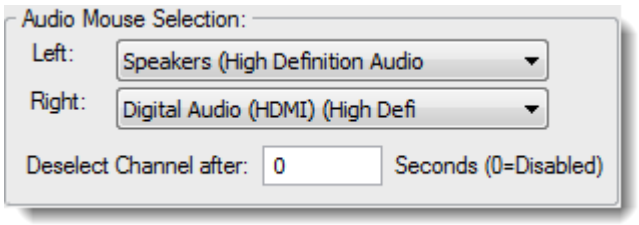
Bitrate Lock/Order Control



Selection in which priority (via Up/Down) the Transport stream bitrates method is used:

- Hardware (If Available)
- First PCR-PID found (Specially for File input)
- MIP (DVB-H/T)
- NIT Delivery Descriptor

Audio Mouse Selection

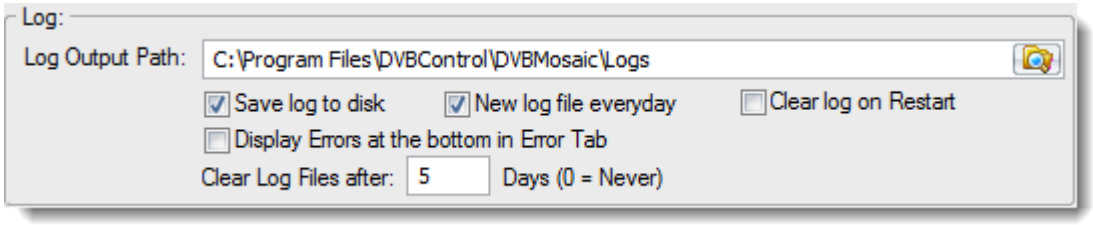


Focus on a service can be done, using the left or right mouse button.
The corresponding audio device will be used for audio listening.

After Selecting a service (by Mouse selection), it can also be deselected automatically after X seconds.
0 Seconds means that no automatically de-selection is chosen.

Log

Log lines can be saved on hard disk.



If “Save log to disk” is enabled, all log data will be saved to file.
When no “Log Output Path” is given, log files will be saved in the application log directory.

If “New log file everyday” is enabled, a new log file is created for every day.

If “Clear log on Restart” is enabled, the current application log will be cleared when the mosaic is started.

If “Display Errors at the bottom in Error Tab” is enabled, the log is sorted with the ‘resolved’ messages at the top, and the open/current errors at the bottom.

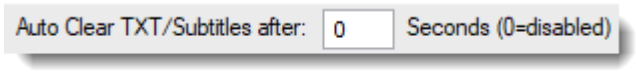
Log files can be cleared, by setting an amount of days by “Clear Log Files After”. 0 Days means that no log files will be cleared.

TCP/IP Interface

If enabled, external control via TCP/IP is possible.

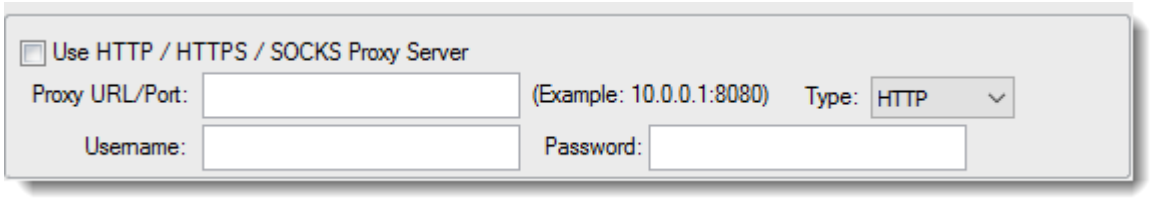
In the Help/RemoteTCP folder, example documentation is available.

TXT/Subtitle



Default (= 0) the presentation of a TXT/Subtitle is only cleared by a Clear-Screen TXT/Subtitle message.
The user can auto clear any TXT/Subtitle also by setting a time-out period.

HTTP / HTTPS / SOCKS Proxy Server



Use HTTP / HTTPS / SOCKS Proxy Server
If enabled, will enable the use of the HPPT / HTTPS / SOCKS Proxy Server.

Proxy URL/Port
URL and Port of Proxy Server.

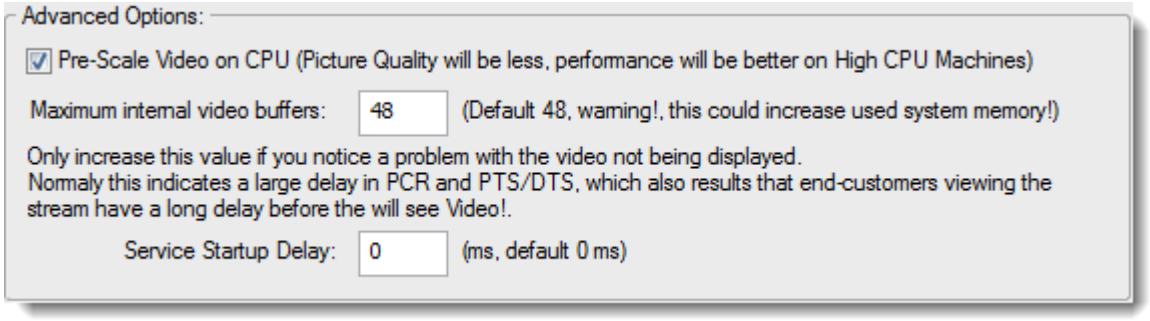
Type
Selection of Proxy Server type:

- HTTP
- Socks 4
- Socks 5

Username
Proxy Login Username.

Password
Proxy Login Password.

Advanced Options



Pre-Scale Video on CPU
If enabled, will enable pre-scaling video processing.
Picture Quality will be less, but performance will be better on High CPU Machines

Default, Pre-scaling is enabled.

If there are many video services to be monitored, this could cause a problem sending all the video frames to the graphics adapter (GPU). By using pre-scaling of source video before sending these video frames to the GPU, the video pipeline will be ¼ of the bandwidth.

'Auto' scaling factors are:

- For SD resolution, scaling factor: 2
- For HD resolution, scaling factor: 4
- For 4K resolution, scaling factor: 8

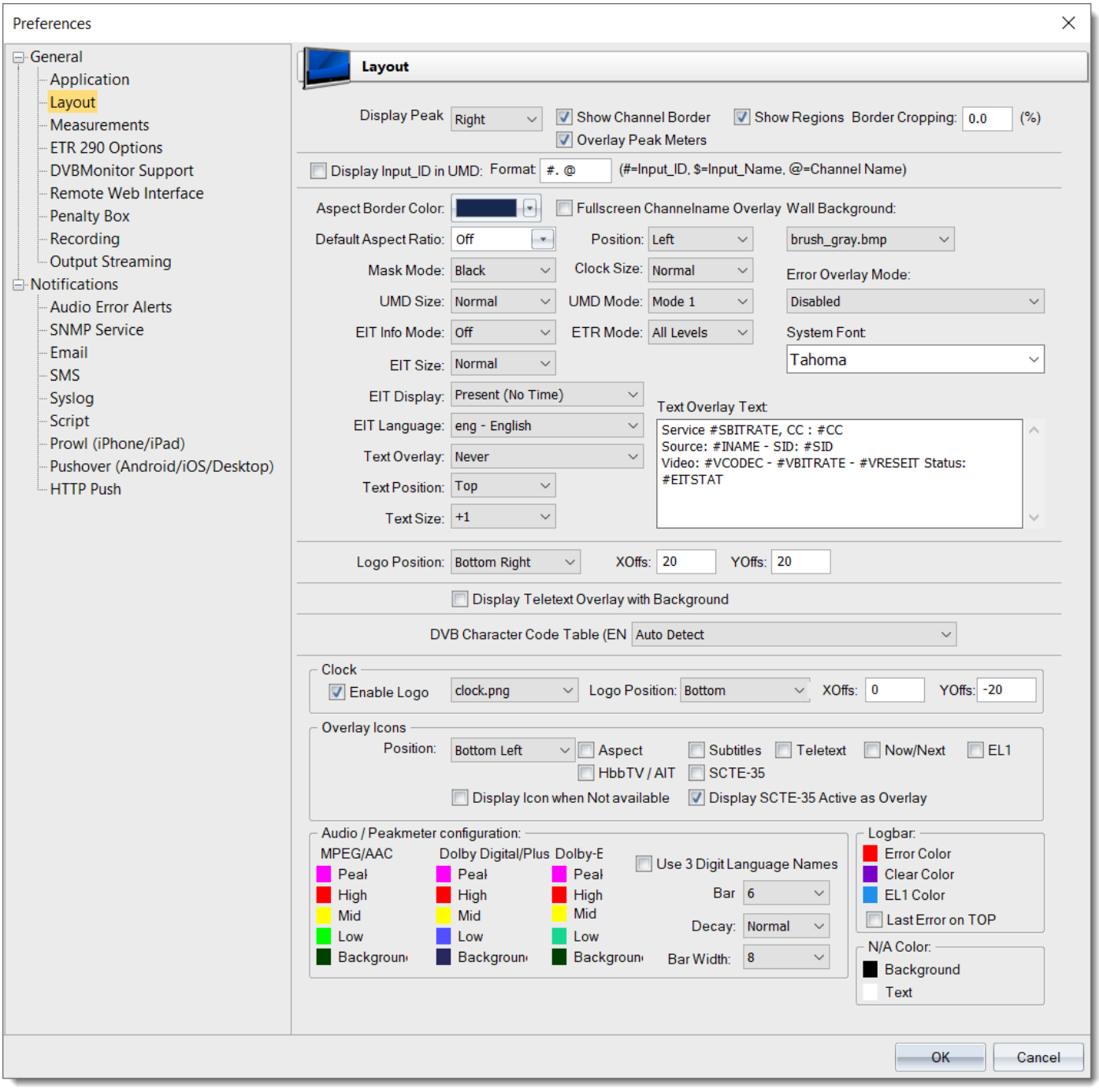
Maximum internal video buffers
The maximum amount of used video buffers (per video decoder) to buffer the video image frames before their PTS (Presentation Time Stamp) moment. Default is 48 and maximum is 280.

Service Startup Delay
If the CPU load gets to high when starting multiple Services, it is recommended to use a Service start-up Delay between each start-up of a Service.

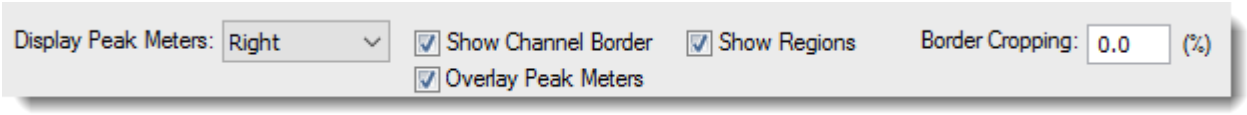
2.10.2 Layout Preferences

Layout settings for:

- General preferences
- Text Overlay
- Logo Position
- Teletext Overlay
- DVB Character Code Table
- Clock
- Overlay Icons
- Audio / Peakmeter configuration
- LogBar



General preferences



Display Peak Meters
Select position of audio peak meters:

- Right
- Left
- Off

Show Channel Border
If enabled, shows a white border around each channel.

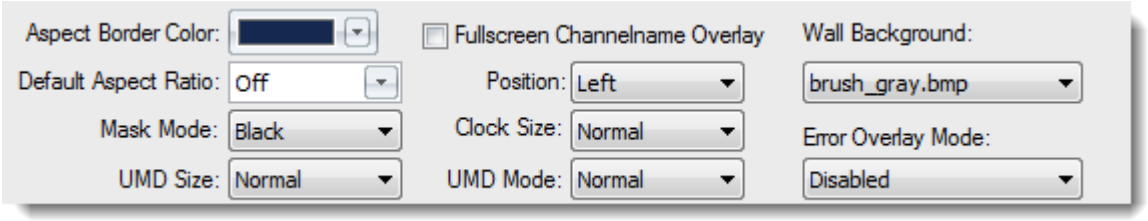
Overlay Peak Meters
If enabled, will show Piek Meters overlayed.

Show Regions
If enabled, shows an video overlay for the region which is used for Freeze/Black detection.

Border Cropping
Set percentage of wanted border cropping

Display Input_ID in UMD
If enabled, the UMD (Under Monitor Display) text of each service will be shown in the format style chosen:
= Input_ID
$ = Input_Name
@ = Channel name

If the Channel Name is made empty (in Channel Configuration) also the other format style components will not be shown.



Aspect Border Color
Pick color which should be used around the aspect ratio border.

Default Aspect Ratio
Select the default Aspect Ratio, which will be used default for the Channel Configuration in the Wall setup.

- Off

- Auto
- 4:3
- 16:9

Mask Mode
Preference mask mode which can be used to mask video images
- Mosaic
- Black
- Darken

UMD Size
The shown UMD (Under Monitor Display) text size can be chosen:
- Normal
- +1
- +2
- ..
- +12

Fullscreen Channelname overlay
If enabled, the service name will be overlayed in fullscreen mode.

Position
In fullscreen mode, the service name can be overlaid on different positions
- Left
- Center
- Right

Clock Size
The shown Clock size can be chosen:
- Normal
- +1
- +2
- ..
- +7

UMD Mode
The UMD background can be chosen:
- Mode 1 (Square)
- Mode 2 (Corners)
- Off

Wall Background
The wall background can be selected. Background files are located in the application/backgrounds directory and can be extended with user defined bmp files.

Error Overlay mode
The Error Overlay mode can be chosen:
- Disabled
- Normal Blink
- Acknowledge Blink
- Normal Blink + Error Duration
- Acknowledge Blink + Error Duration

EIT Info Mode
The EIT Info mode can be chosen:

- Off
- Top
- Bottom

EIT Size
The shown EIT text size can be chosen:

- Normal
- +1
- +2
- ..
- +12

EIT Display
The EIT Display mode can be chosen:

- Actual (No Time)
- Actual (With Time)
- Actual + Other (No Time)
- Actual + Other (With Time)

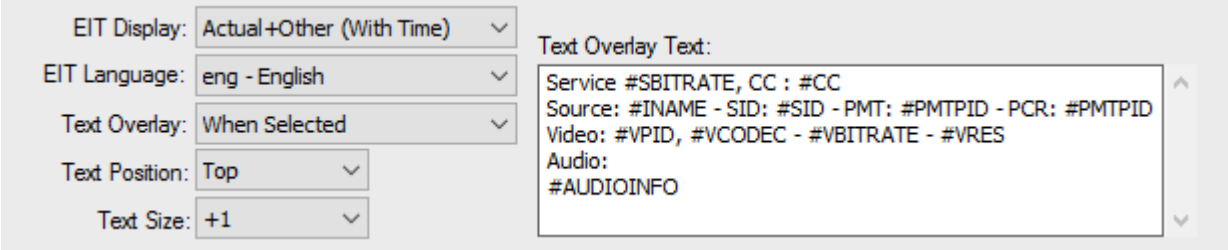
EIT Language
Selection of EIT language.
Default is eng (English)

ETR Mode
The ETR (ETR290 Level 1) Info mode can be chosen:

- All Levels
- Errors only

System Font
Default: Tahoma

Text Overlay



Possibility to overlay text

Text Overlay
The Text Overlay mode can be chosen:

- Never
- Always
- When selected
- When Fullscreen

Text Position
The Text Overlay Position can be chosen:

- Top
- Bottom

Text Size
The Text Overlay text size can be chosen:

- Normal
- +1
- +2
- ..
- +12

Text Overlay Text
The following tags can be used:
#SBITRATE = Service Bitrate (6.32 Mbps)
#CC = Total CC Errors (xx)
#INAME = Input Name
#SID = PMT program number
#VCODEC = Video Codec (MPEG-2/AVC/HEVC)
#VBITRATE = Video Bitrate (4.89 Mbps)
#VPID = Video PID
#VRES = Video Resolution (720x576)
#VFORMAT = Video Format (1080i/50)
#AUDIOINFO = Display information of the Audio PID's
#PMT_PID = PMT PID
#PCR_PID = PCR PID
#EITSTAT = EIT actual running status

Logo Position

Each Video service can have an extra logo overlay, which is selected in the Wall Configurator.

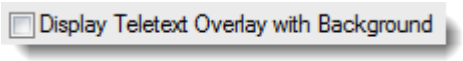
Logo position
Selection of Position of Service logo:

- Top Left
- Top Center
- Top Right
- Middle Left
- Middle Centre
- Middle Right
- Bottom Left
- Bottom Centre
- Bottom Right

XOffs
X-axis offset of logo position

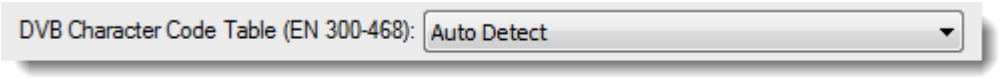
YOffs
Y-axis offset of logo position

Teletext Overlay



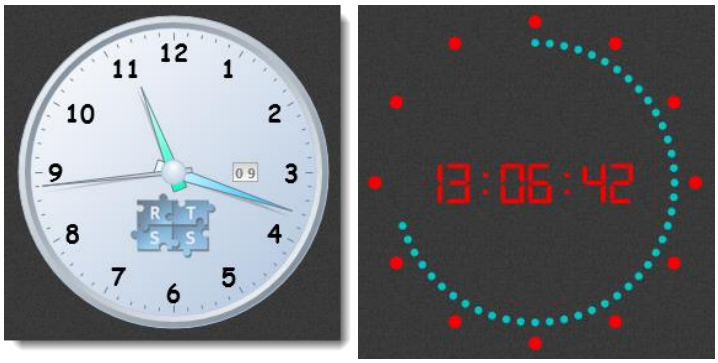
Display Teletext Overlay with Background
If enabled, Overlay of Teletext will be shown with using the Teletext background color.

DVB Character Code

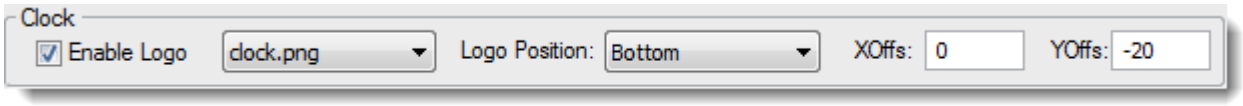


DVB Character Code Table
Selection of default Character Code Table.

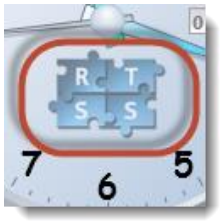
Clock



Analog clocks can enhancement using graphics and day display.



Enable Logo
If enabled, the graphic will be overlayed in the analog clock.



Logo position
Selection of Position of Service logo:

- Top
- Bottom
- Left
- Right

XOffs
X-axis offset of logo position

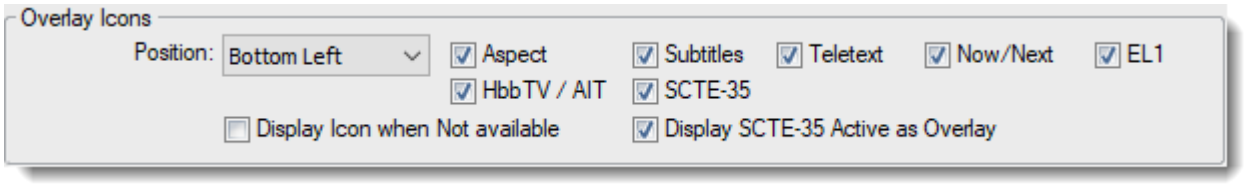
YOffs
Y-axis offset of logo position

Enable Day display
If enabled, the Day display will be overlayed in the analog clock.

Overlay Icons

Overlay of status indication for:

- 4:3 or 16:9 or 2.21:1 = Aspect ratio
- SUB = Subtitles
- TXT = Teletext
- NN = Now/Next
- EL1 = ETR290 Level 1
- AIT = HbbTV
- S35 = SCTE-35



Position
Selection of Position of Overlay Icons:

- Top Left
- Top Right
- Left
- Right
- Bottom Left
- Bottom Right

Aspect
If enabled, will show the Aspect Ratio as indicated in the MPEG header

Subtitles
If enabled, will show existence of Subtitles

Teletext
If enabled, will show existence of Teletext

Now/Next
If enabled, will show existence of Now/Next EPG information

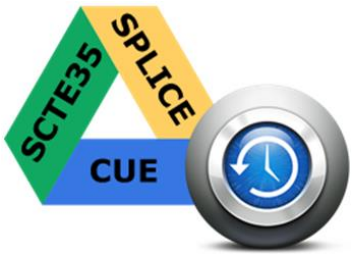
EL1
If enabled, will show existence of ETR290 Level 1 problems

HbbTV / AIT
If enabled, will show existence of HbbtTV / AIT

SCTE-35
If enabled, will show SCTE-35 (Cue tone) if the PMT table has a SCTE-35 referenced PID

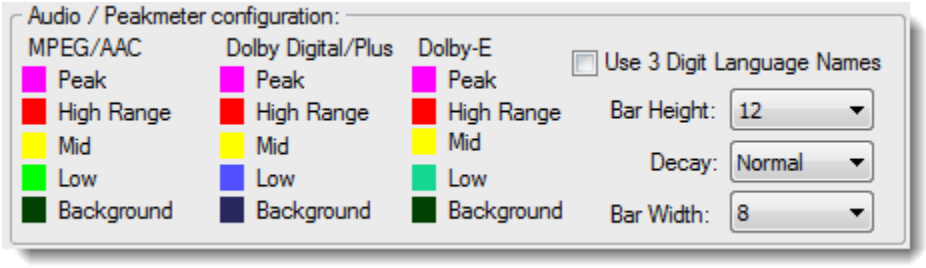
Display Icon when Not available
If enabled, will show also the Display Icon (with a Red Cross) when the component is not available

Display SCTE-35 Active as Overlay
If enabled, will show the SCTE-35 Active as an overlay on the video



Audio / Peakmeter configuration

Different colors can be chosen for MPEG/AAC, Dolby® Digital Plus and Dolby®-E audio.



Colors can be changed by clicking on the color, for

- Background
- Low Range
- Mid Range
- High Range
- Peak

Use 3 Digit Language Names
If enabled, will show 3 Digit Language Names

Bar Height
The Audio bar height can be changed in different units

- 6
- 8
- 10
- 12
- Full

Decay
The audio bar decay can be chosen:

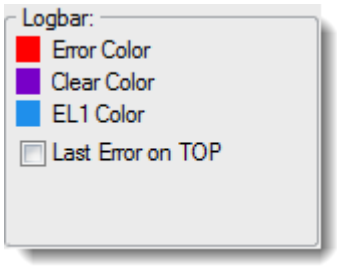
- Normal
- Slower
- Very slow

Bar Width
The Audio bar height can be changed in different units

- 8
- 10
- 12
- 14
- 16
- 20
- 22
- 24
- 26
- 28
- 30

Logbar

Different colors can be chosen for different severity log lines.



Colors can be changed for

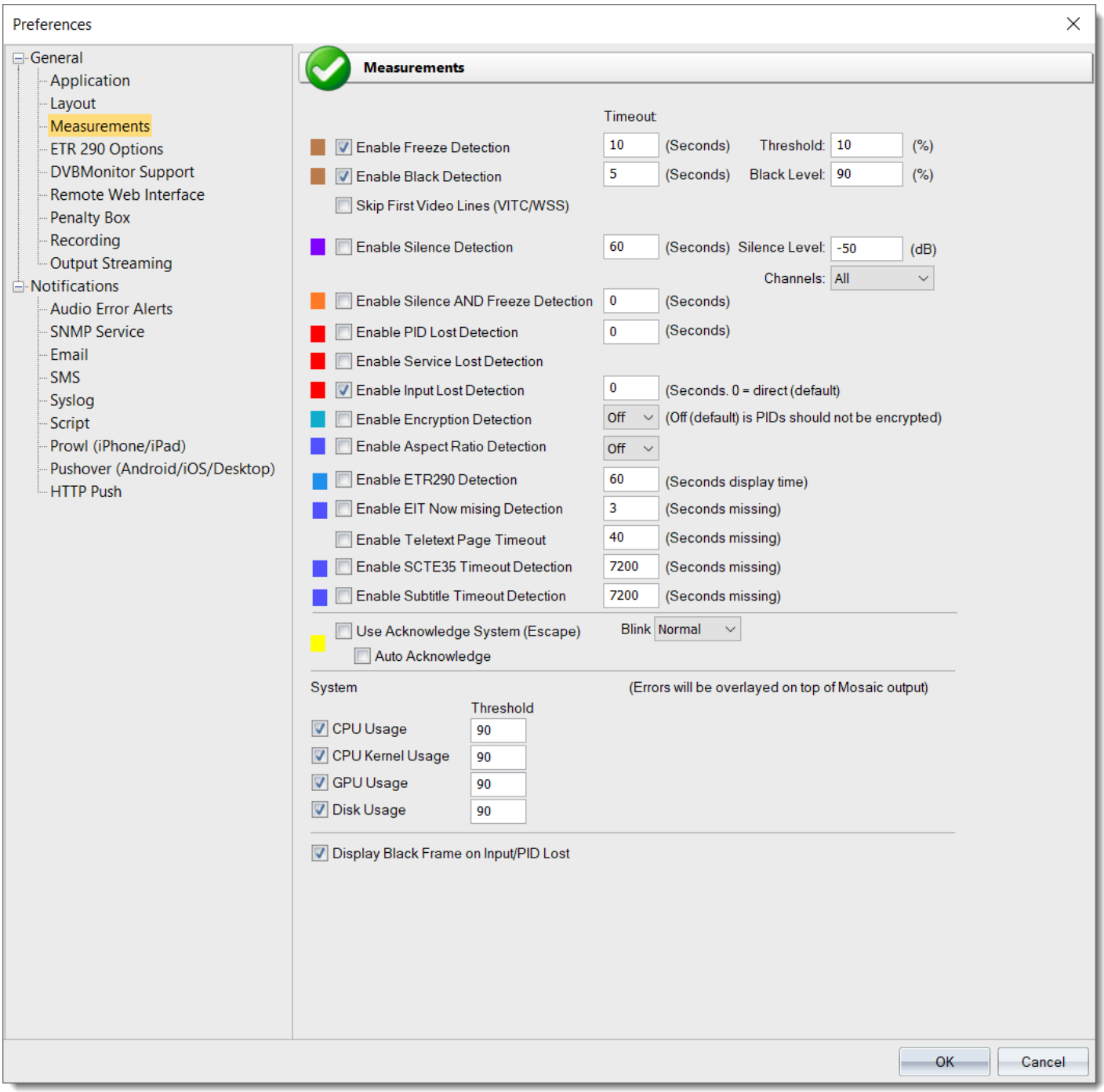
- Error color
- Clear color
- ETR-290 level 1 color

Last Error on TOP
If enabled, the last error will be shown on Top of the Logbar.
Otherwise, the last error will be shown at the bottom of the Logbar.

2.10.3 Measurements Preferences

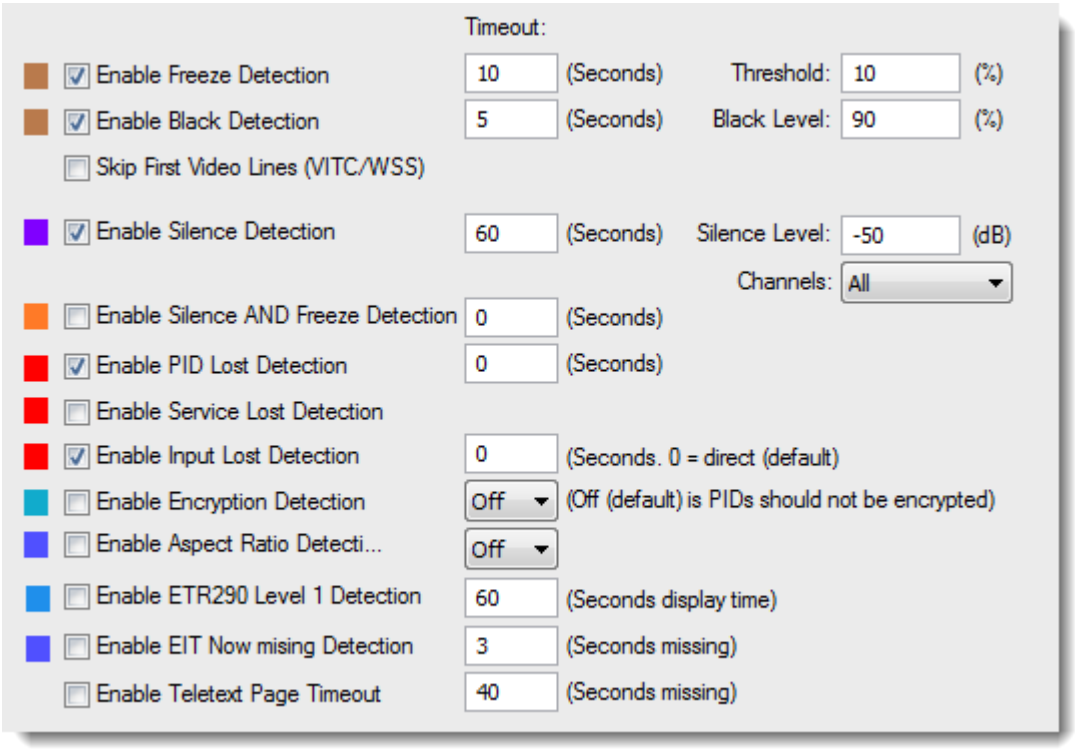
Measurements settings for:

- Checks
- Acknowledgement
- System Measurements
- Input/PID Lost
- Colors



Checks

Different measurements can be used:



Enable Freeze Detection / Timeout / Threshold
If enabled, Freeze Detection signalling will be given after xx Seconds of freeze using yy % threshold.
The % threshold means how many percentage of the image is allowed to be moving before an alarm will be raised. So, when using a high threshold percentage, an error will be activated quicker, than when using a low threshold percentage.
Signalling in the wall is given default by a brown border color.
Freeze Detection settings can be overruled for a specific channel, in the Wall Configurator.

Enable Black Detection / Timeout / Black Level
If enabled, Black Detection signalling will be given after xx Seconds of freeze using yy % black level.
The % black level sets the measured black level of an average image. So, when using a low percentage black level, an error will be activated more quickly, then when using a high percentage black level.
Signalling in the wall is given default by a brown border color.
Black Detection settings can be overruled for a specific channel, in the Wall Configurator.

Skip First Video Lines (VITC/WSS)
If enabled, the first 10 video lines are not interpreted for freeze detection.

Enable Silence Detection / Timeout / Silence Level
If enabled, Silence Detection signalling will be given after xx Seconds of Silence using yy dB as Silence level.
When using Dolby® Digital Plus audio, only the Left/Right track are used.
Signalling in the wall is given default by a purple border color.
Silence Detection settings can be overruled for a specific Audio PID, in the Audio PID Configurator.

Enable Silence + Freeze Detection / Timeout
If enabled, simultaneously detection of Silence and Freeze after xx Seconds. The threshold value of Freeze detection and the silence level of Silence detection are used.
Signalling in the wall is given default by an orange border color.
Silence + Freeze Detection settings can be overruled for a specific channel, in the Wall Configurator.

Enable PID Lost Detection
If enabled, loss of a single service component PID will be detected.
Signalling in the wall is given default by a red border color.
Video PID Lost detection settings can be overruled for a specific Video PID, in the Wall Configurator.
Audio PID Lost detection settings can be overruled for a specific Audio PID, in the Audio PID Configurator.

Enable Service Lost Detection
If enabled, loss of all service component PIDs (video, audio) will be detected.
Also the existence of the Service ID in the PAT is checked.
Signalling in the wall is given default by a red border color.
Service Lost Detection settings can be overruled for a specific channel, in the Wall Configurator.

Enable Input Lost Detection
If enabled, los of input will be detected after 2 seconds.
Signalling in the wall is given default by a red border color.

Enable Encryption Detection
If enabled, will detect encryption.
When selected 'Off', the PID should not be encrypted.
When selected 'On', the PID should be encrypted.
Signalling in the wall is given default by a light blue border color.
Encryption Detection settings can be overruled for a specific channel, in the Wall Configurator.

Enable Aspect Ratio Detection
If enabled, will detect faulty Aspect Ratio video services.
The detected video Aspect Radio, coming from the MPEG header, is compared with the selected Aspect Ratio:

- Off (follow the MPEG header)
- 4:3
- 16:9
- 2,21:1

Signalling in the wall is given default by a dark blue border color.
Aspect Ratio Detection settings can be overruled for a specific channel, in the Wall Configurator.

Enable ETR-290 Level 1 Detection
If enabled, will detect ETR-290 Level 1 faulty situations.
Signalling in the wall is given default by a blue border color.

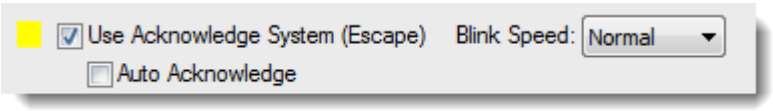
The 'ET1' overlay time can be changed for 'Seconds display time'

Enable EIT Now missing Detection
If enabled, will detect EIT Now missing situations.
Signalling in the wall is given default by a dark blue border color.

Enable Teletext Page Timeout
If enabled, will detect a Page Timeout for the selected Teletext Page.

Acknowledgement

User acknowledgement to acknowledge that errors are noticed.



Use Acknowledge System (Escape)
If enabled, user acknowledgement is necessary to acknowledge the last detected errors.
Visually the border of the related service is blinking between the error color and the acknowledgement color.
If audio is enabled, the selected audio track will be repeated until acknowledgement is realised.
Acknowledgement signalling in the wall is given default by a yellow border color.
Pushing the escape button will trigger the Acknowledgement.
Acknowledgement mode settings can be overruled for a specific channel, in the Wall Configurator.

Auto Acknowledge
If enabled, resolved errors will be automatically acknowledged.

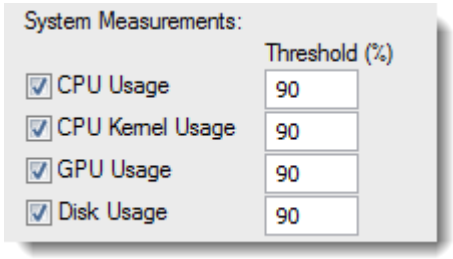
Blink Speed
The blinking speed can be chosen out of 3 different frequencies:

- Normal (once a second)
- Faster (twice a second)
- Fasters (five times a second)

Using the right mouse button, a separate channel can be acknowledged.

System Measurements

Different system measurements can be used.



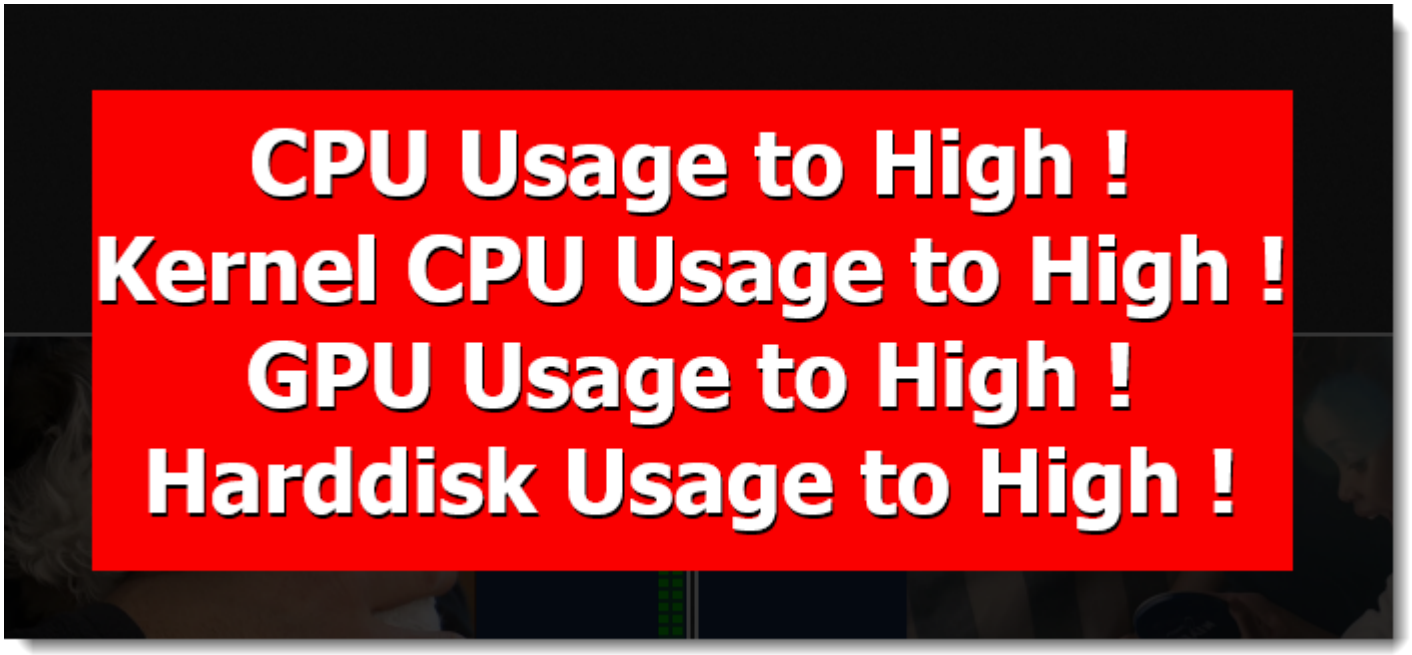
CPU Usage
Total CPU load
If enabled, an alarm will be raised when the total CPU load is higher than the specified Threshold.

CPU Kernel Usage
Each CPU core is checked independently.
If enabled, an alarm will be raised when one of the CPU core's kernel load is higher than the specified Threshold.

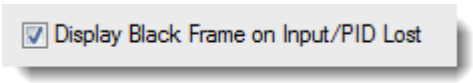
GPU Usage
If enabled, an alarm will be raised when the GPU load is higher than the specified Threshold.

Disk Usage
If enabled, an alarm will be raised when the Disk Usage of the 'C' directory is higher than the specified Threshold.

If one (or multiple) of the above error alarm rise, the main output of the mosaic display is covered with a dark overlay and a red message box will display the problem(s)



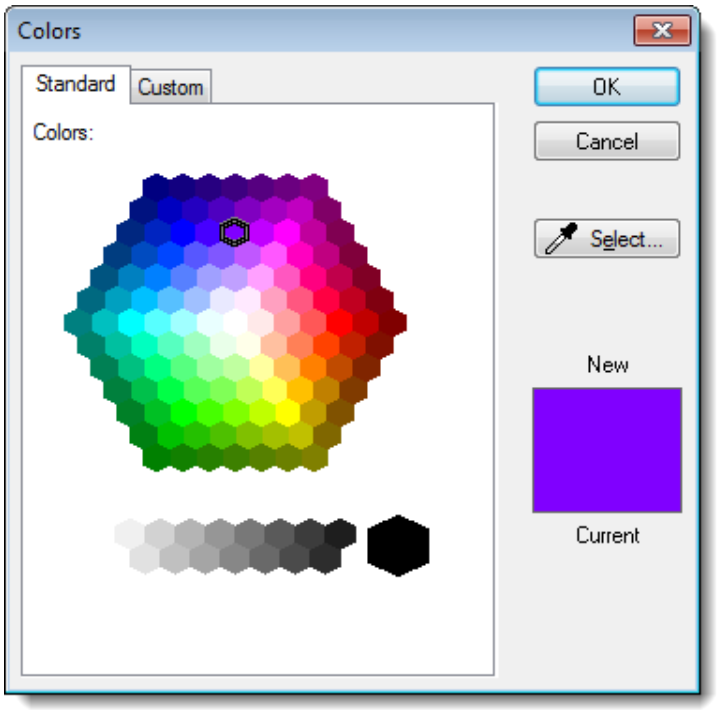
Input/PID Lost



If enabled, displays a Black Frame on Input/PID Lost.

Colors

All colors can be changed by clicking on the color square.



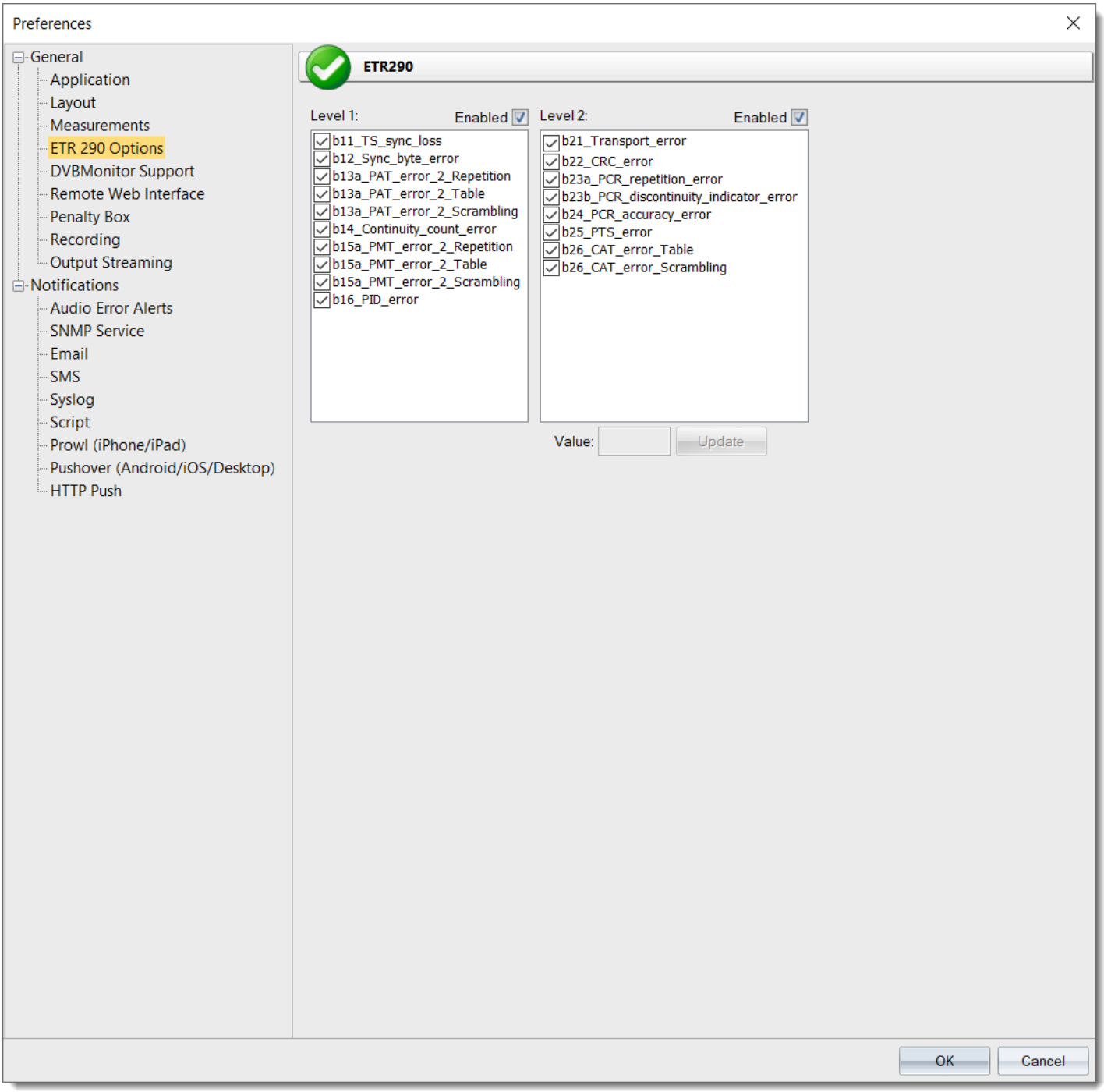
Check overlay/border priority

In case of multiple faults, the shown priority for the overlay text and border color are:

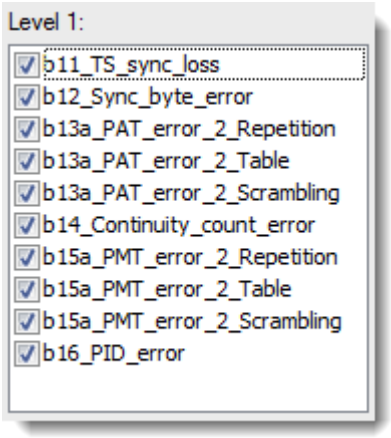
- Input Lost
- Encryption Error
- Service Lost
- PID Lost / Teletext
- Freeze+Silence
- Freeze Error
- Black Error
- Silence Error
- SCTE35 Timeout
- Aspect Error
- EIT Error
- ETR290 Error

2.10.4 ETR 290 Level 1/2 Options

ETR 290 Level 1/2 compliancy checks.



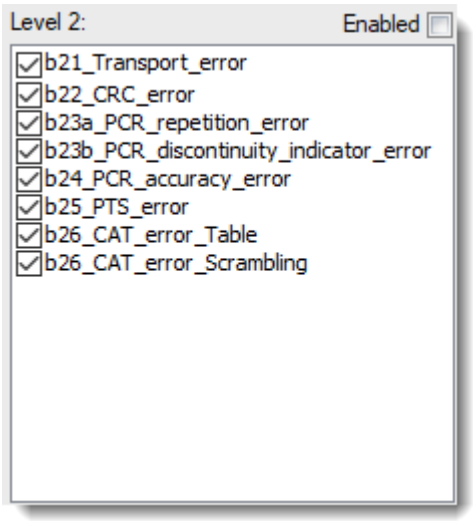
ETR-290 level 1



If enabled, ETR290 level 1 faulty situations are signalled.

The ETR 290 1.6 PID Error check will be skipped for SCTE-35 PIDs.

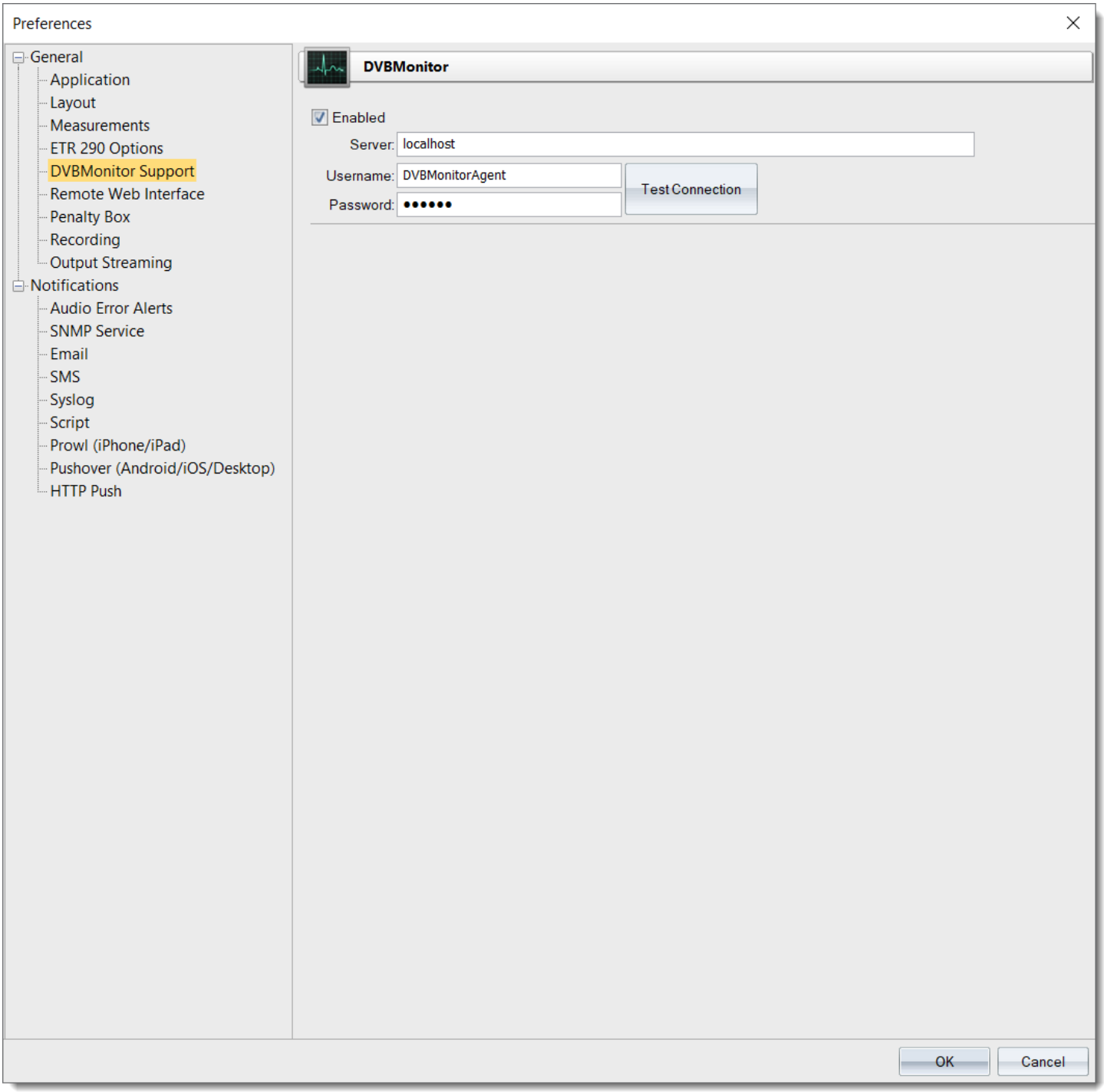
ETR-290 level 2



If enabled, ETR290 level 2 faulty situations are signalled.

2.10.5 DVBMonitor Support

Multiple DVBMosaic agents can seamlessly be integrated with the DVBMonitor Server and Clients. This will enable remote monitoring of all connected DVBMosaic Agents, from all over the globe.



Enable DVBMonitor Support
If enabled, messages will be forwarded to the DVBMonitor database.

Server
DVBMonitor database server name.

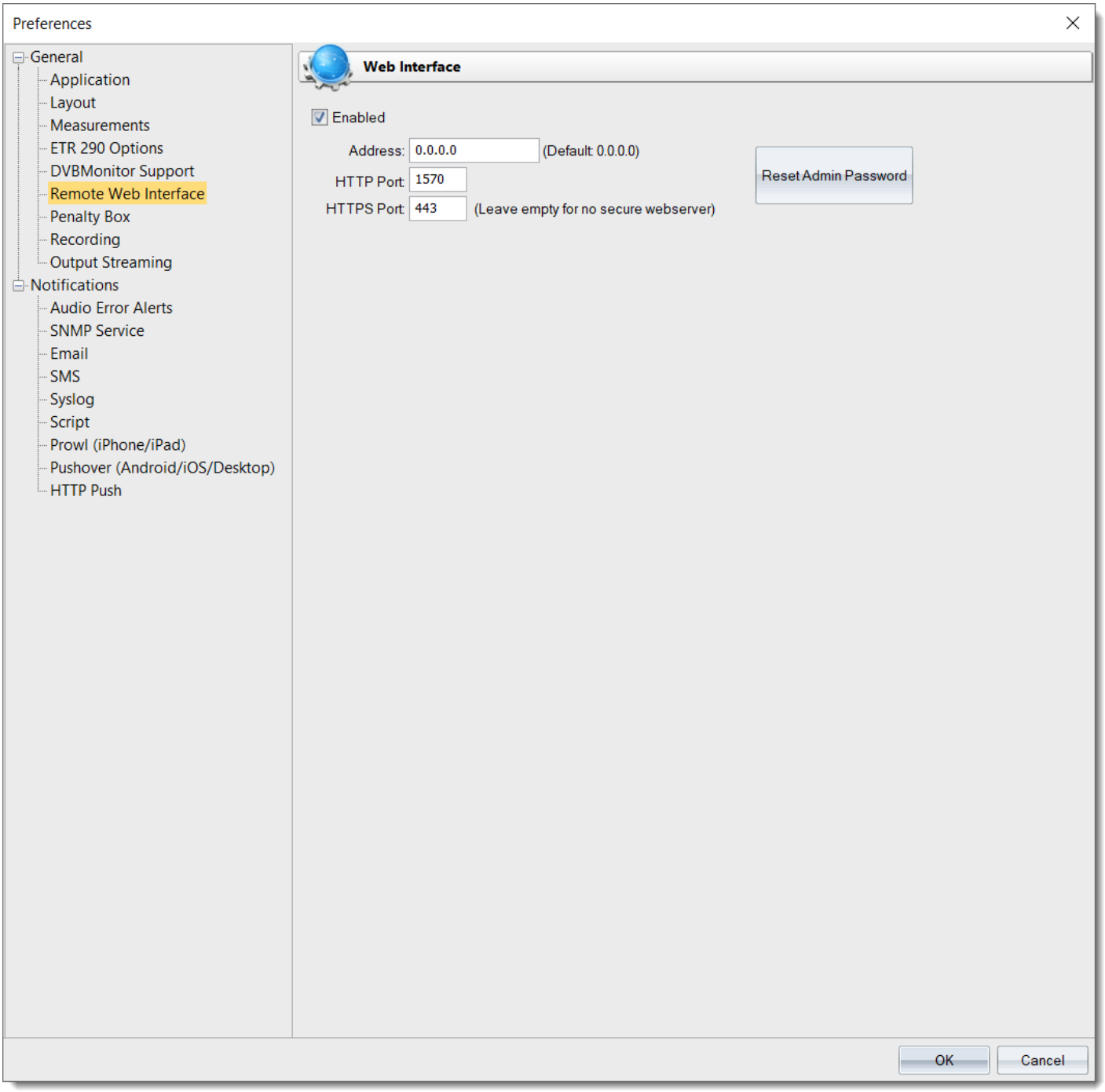
Username
DVBMonitor Login Username.

Password
DVBMonitor Login Password.

Test Connection
Possibility to test the connection with DVBMonitor.

2.10.6 Remote Web Interface

The Remote Web Interface enables viewing the Video thumbs and audio bars, via Web, on remote locations. Including selection, fullscreen and error display.



Enable Web Interface
If enabled, the Web Interface will be active.

Address
Web Interface IP address.
With 0.0.0.0 the binding is with all network adapters.
Otherwise the binding can only be realized with the adapter of the corresponding IP address.

HTTP Port
HTTP Web Interface Port number.

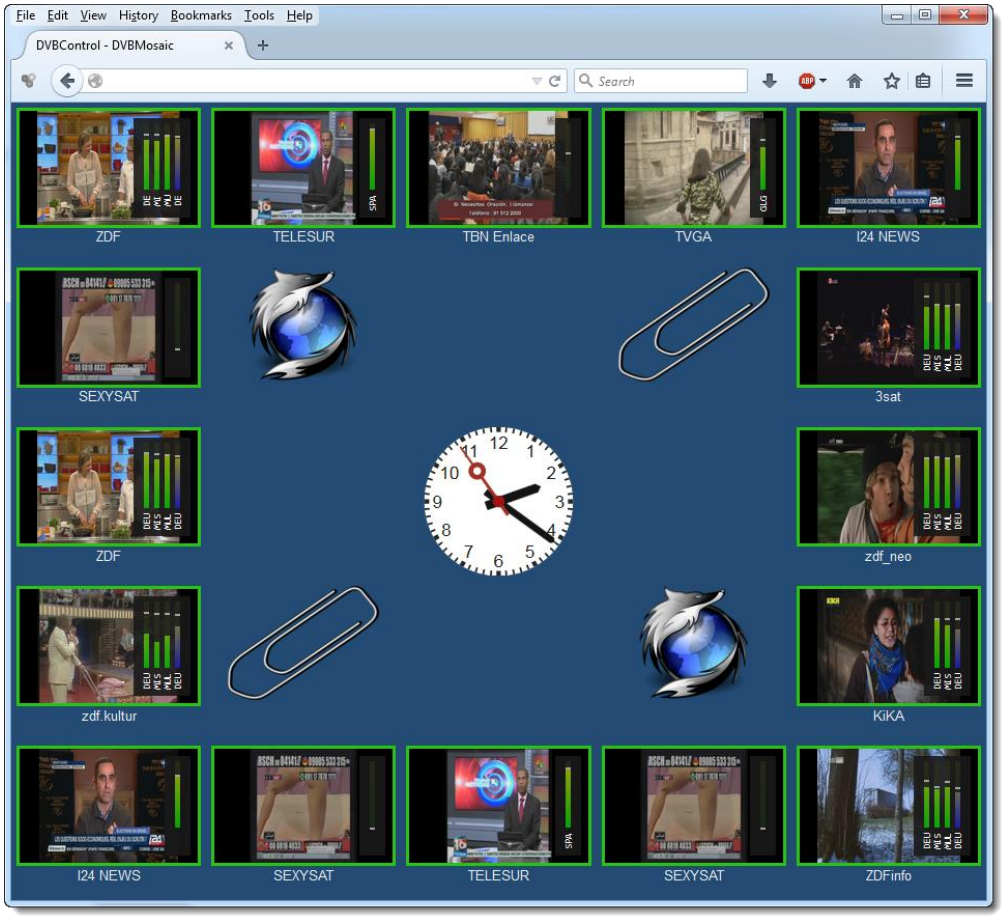
HTTPS Port
HTTPS Web Interface Port number.

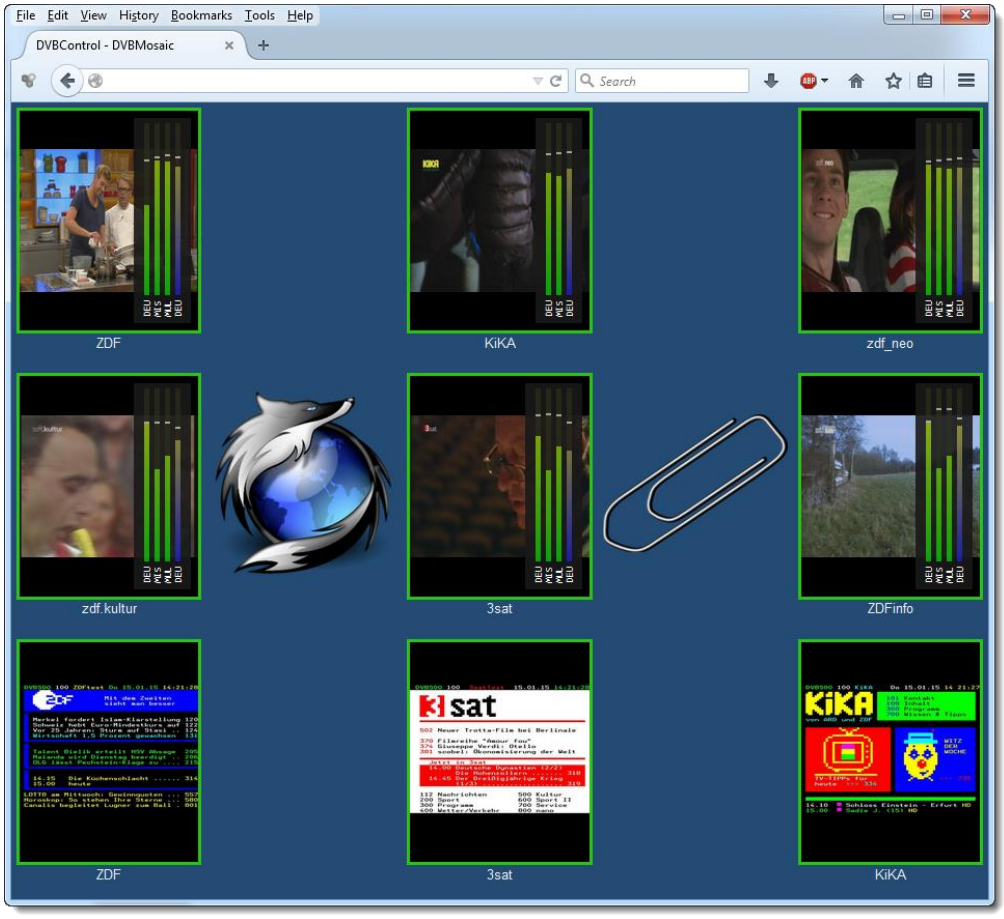
Reset Admin Password
Pushing this bottom will reset the Web-Interface admin password.

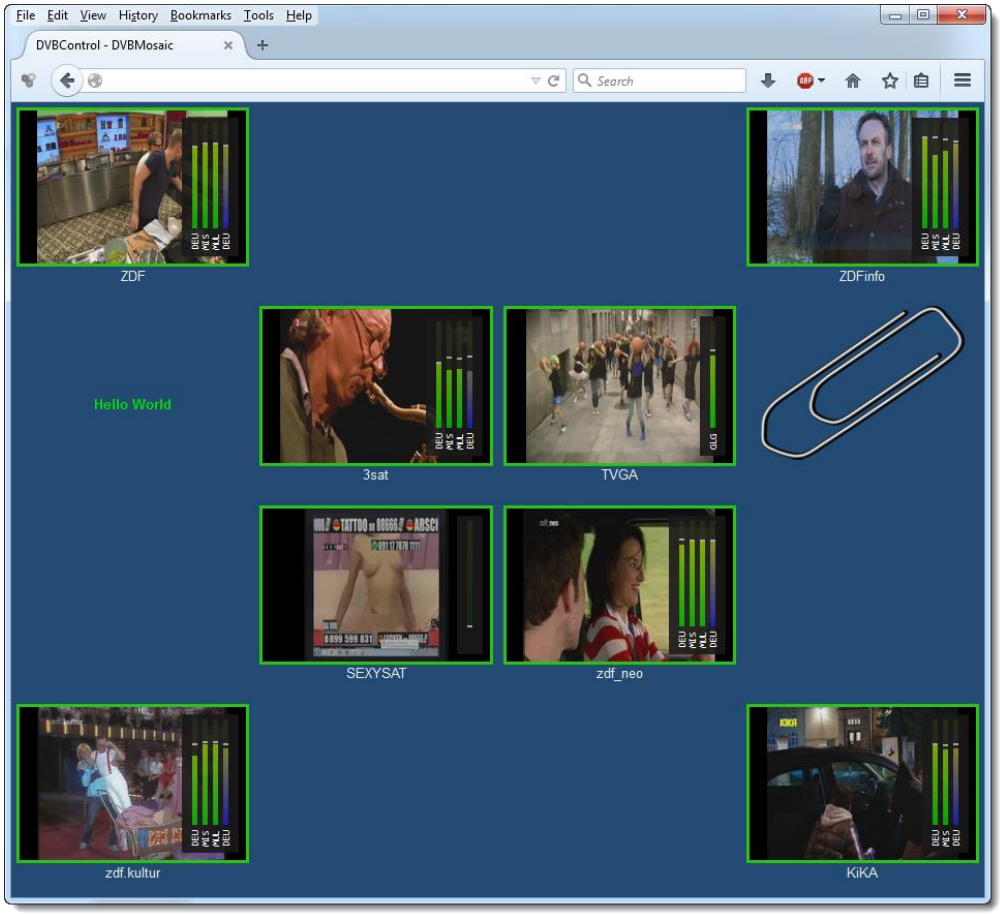
Web Interface examples

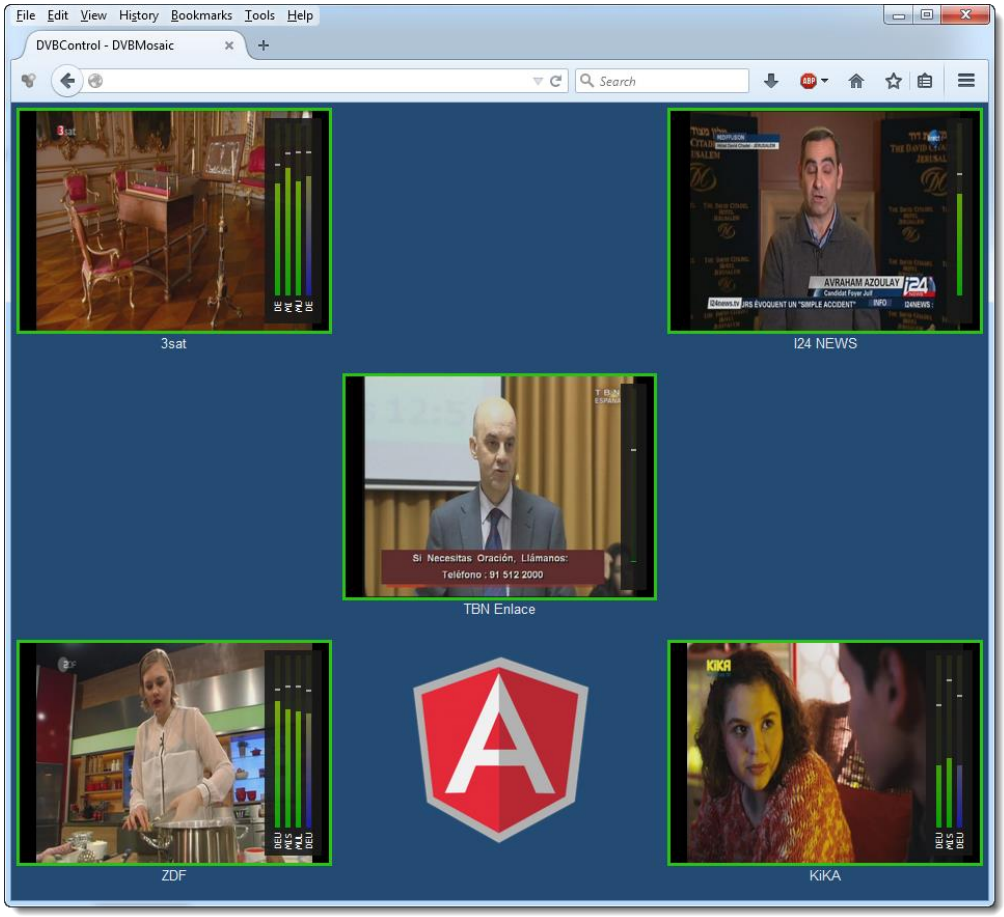
If the browser is on the same machine (chrome) you need to type
http://127.0.0.1:1570

For a remote machine, make sure the firewall of the DVBMosaic machine is disabled
If the management IP address of this DVBMosaic machine is 192.168.1.29 then you need to type (in Chrome)
http://192.168.1.29:1570


File Edit View History Bookmarks Tools Help
DVBControl - DVBMosaic
Search
ZDF
TELESUR
TBN Enlace
TVGA
I24 NEWS
SEXYSAT
3sat
ZDF
zdf_neo
zdf.kultur
KiKA
I24 NEWS
SEXYSAT
TELESUR
SEXYSAT
ZDFinfo

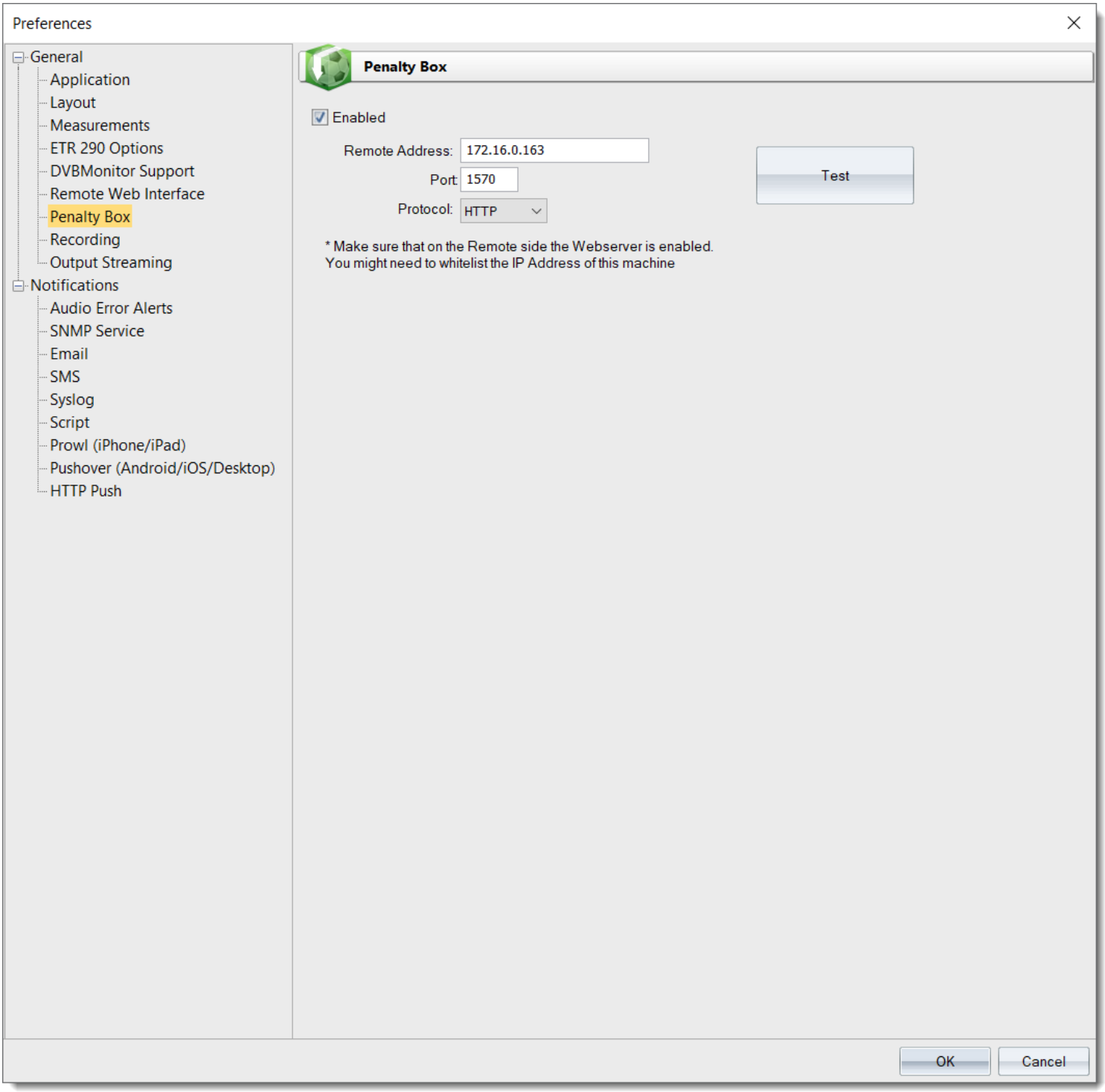

File Edit View History Bookmarks Tools Help
DVBControl - DVBMosaic
Search
ZDF
KiKA
zdf_neo
zdf.kultur
3sat
ZDFinfo
ZDF
3sat
KiKA


File Edit View History Bookmarks Tools Help
DVBControl - DVBMosaic
Search
ZDF
ZDFinfo
Hello World
3sat
TVGA
SEXYSAT
zdf_neo
zdf.kultur
KiKA


File Edit View History Bookmarks Tools Help
DVBControl - DVBMosaic
Search
3sat
I24 NEWS
Si Necesitas Oración, Llámanos:
Teléfono : 91 512 2000
TBN Enlace
ZDF
KiKA

2.10.7 Penalty Box

Possibility to enable error messages on a ‘remote’ Penalty Box engine.



Make sure that on the Remote side the Webserver is enabled.
You might need to whitelist the IP Address of this machine.

The Remote side DVBMosaic has to have a ‘Penalty Box’ item on his wall to show all the error items.
(See also 5.3.11)

Enable Penalty Box
If enabled, error messages will be forwarded to the ‘remote’ Penalty Box machine.

Remote Address
The IP number of the ‘remote’ DVBMosaic machine.

Port
The Port number of the ‘remote’ DVBMosaic machine.

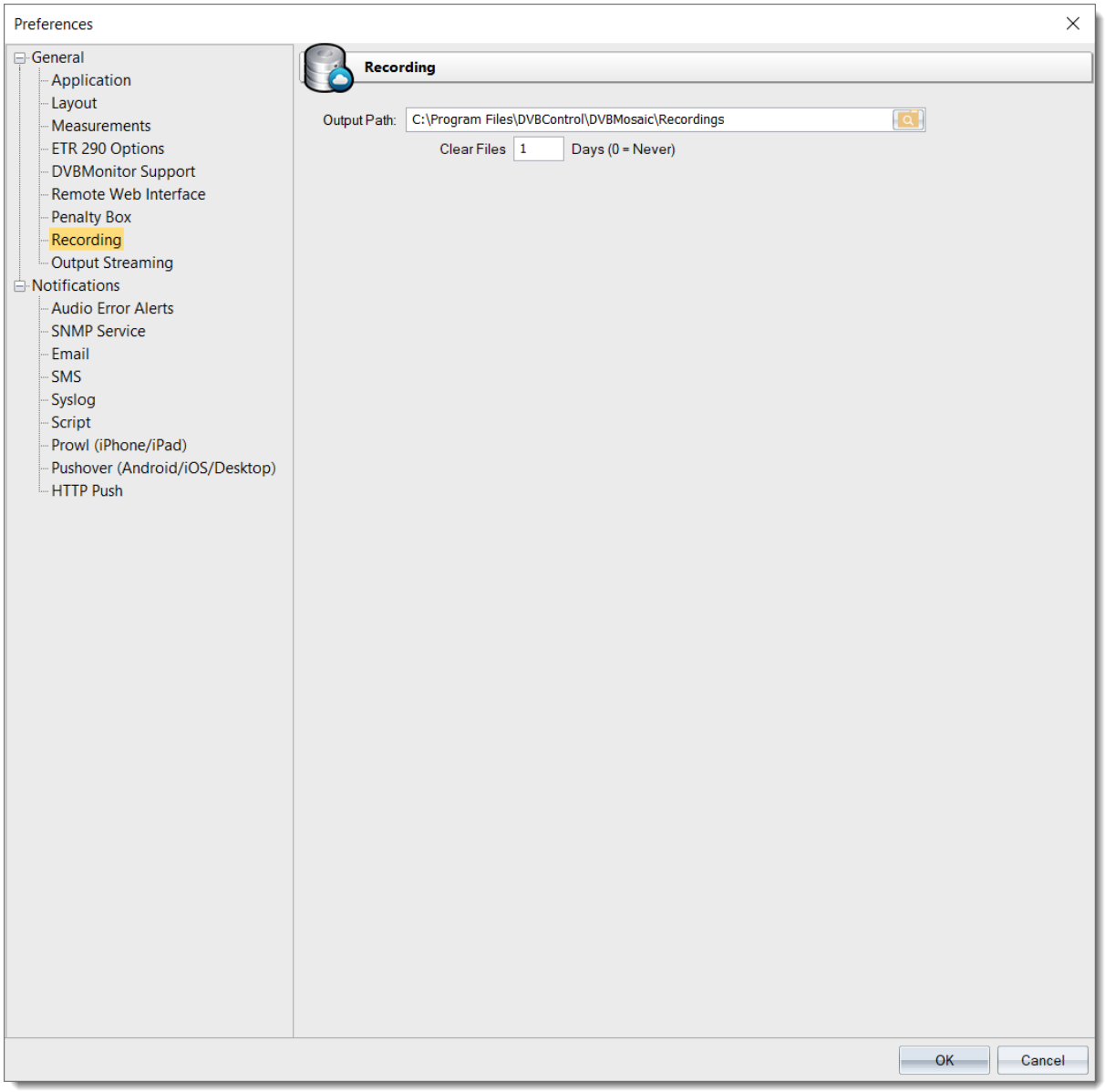
Protocol
The protocol chosen:

- HTTP
- HTTPS

Test Connection
Possibility to test the connection with ‘remote’ Penalty Box machine.
A dummy message will pop up on the ‘remote’ Penalty Box window.

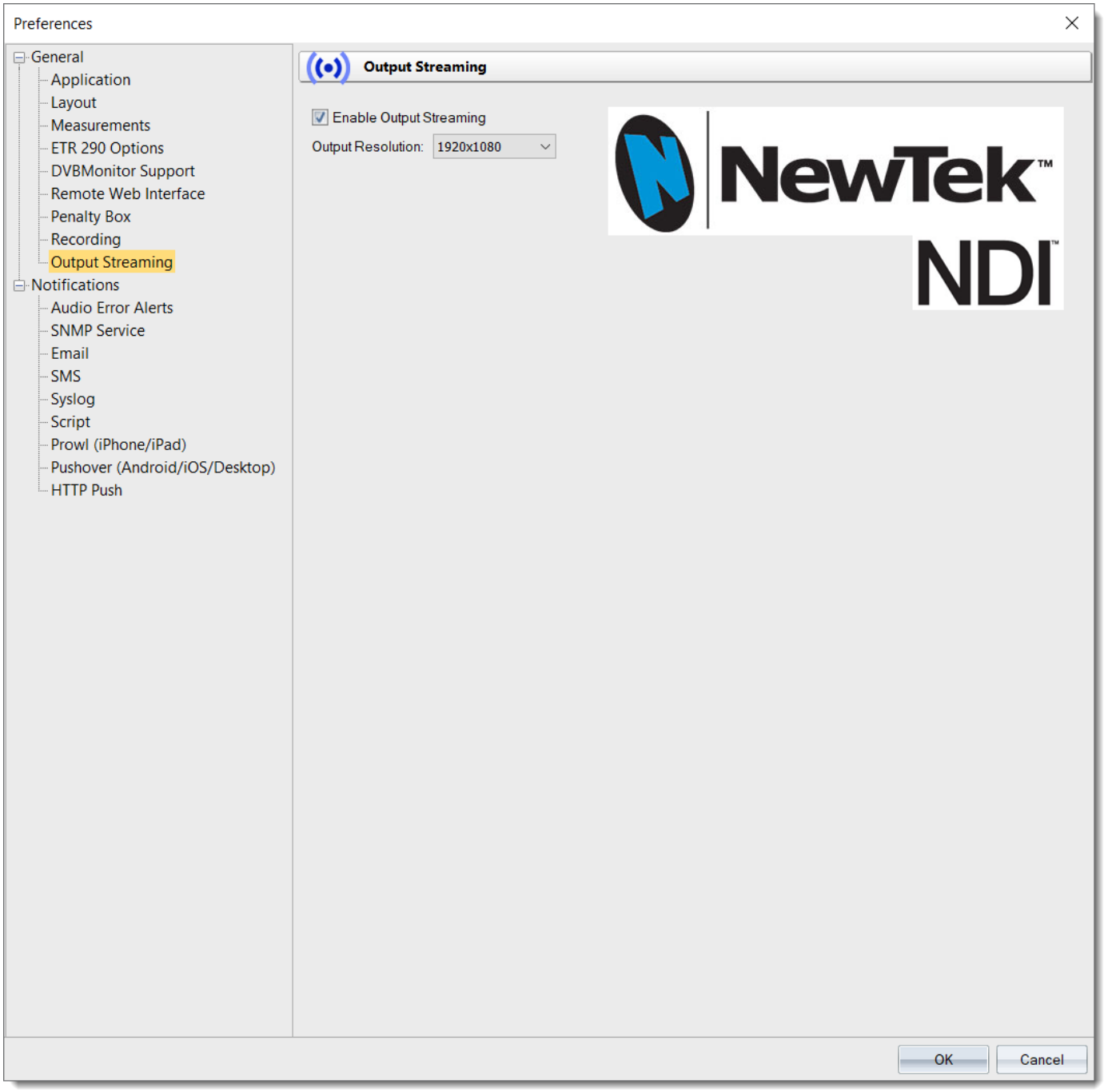
2.10.8 Recording

Possibility to record Services.



2.10.9 Output Streaming

Possibility to stream the display output as a Newtek NDI output stream.



Enable Output Streaming
If enabled, the display output will be streamed using NewTek NDI.

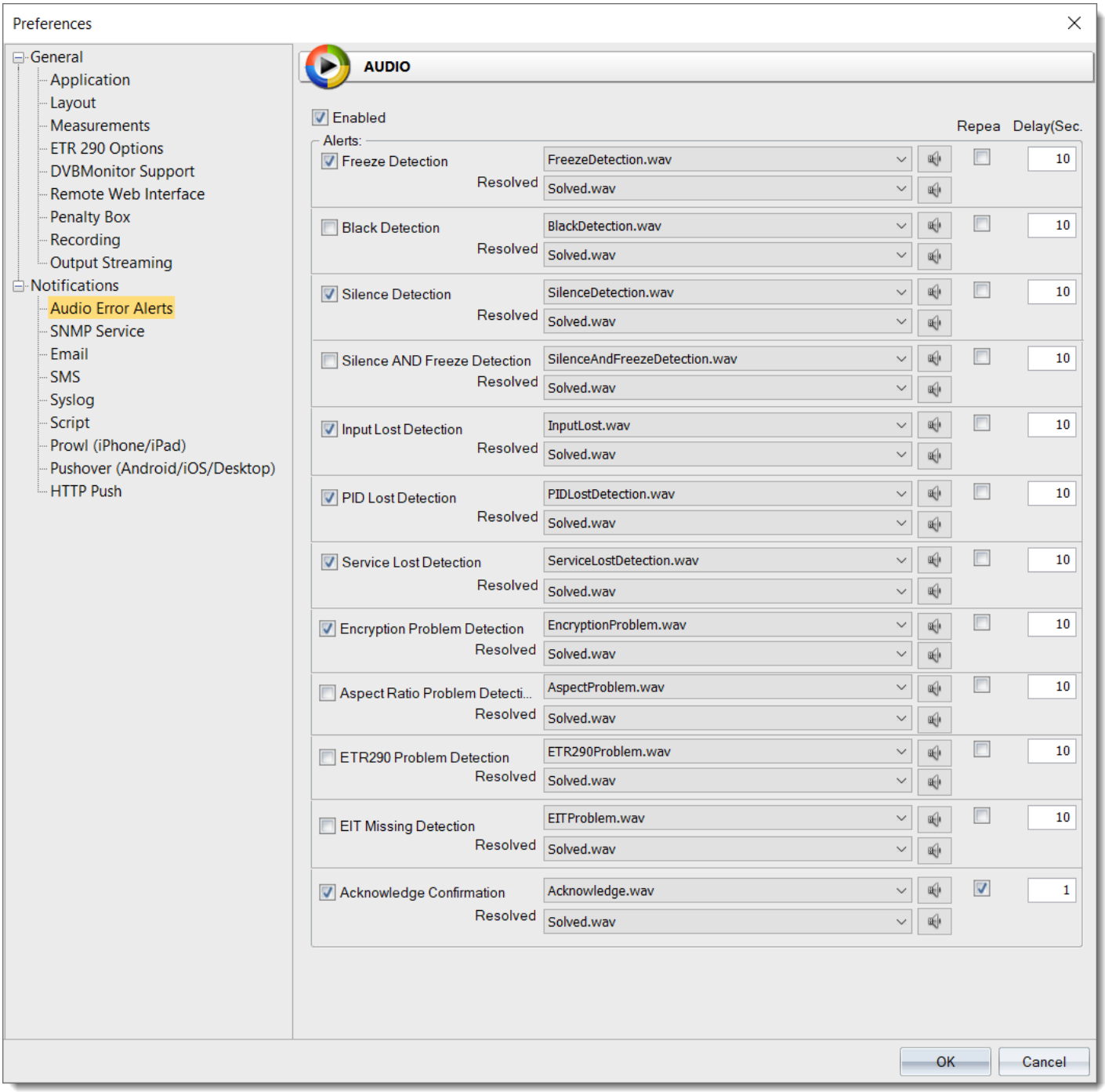
Output Resolution
The Resolution chosen:

- 960 x 540
- 1920 x 1080
- 3840 x 2160

2.10.10 Audio Preferences

Audio signalling makes use of Detection and Resolved wav files for each kind of Error detection.

The wav files are located in the application/audio directory and can be changed to user defined audio tracks.



Audio Support

Enable Audio Support
If enabled, audio will be used for giving alarms.

Alerts

Freeze Detection
If enabled, freeze detection will generate an Audio alert.

Black Detection
If enabled, black detection will generate an Audio alert.

Silence Detection
If enabled, silence detection will generate an Audio alert.

“Silence AND Freeze” Detection
If enabled, “Silence and Freeze” detection will generate an Audio alert.

Input Lost Detection
If enabled, loss of a Transport Stream input will generate an Audio alert.

PID Lost Detection
If enabled, loss of a single service component PID will generate an Audio alert.

Service Lost Detection
If enabled, loss of all service component PIDs (video, audio) will generate an Audio alert.

Encryption Problem Detection
If enabled, Encryption of a PID will generate an Audio alert.

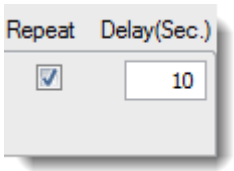
Aspect Ratio Problem Detection
If enabled, Encryption fault situations will generate an Audio alert.

ETR290 Level 1 Problem Detection
If enabled, ETR290 errors will generate an Audio alert.

Acknowledge Confirmation
If enabled, an acknowledgment confirmation will generate an Audio alert.

The  button gives the possibility to test and hear the selected audio track.

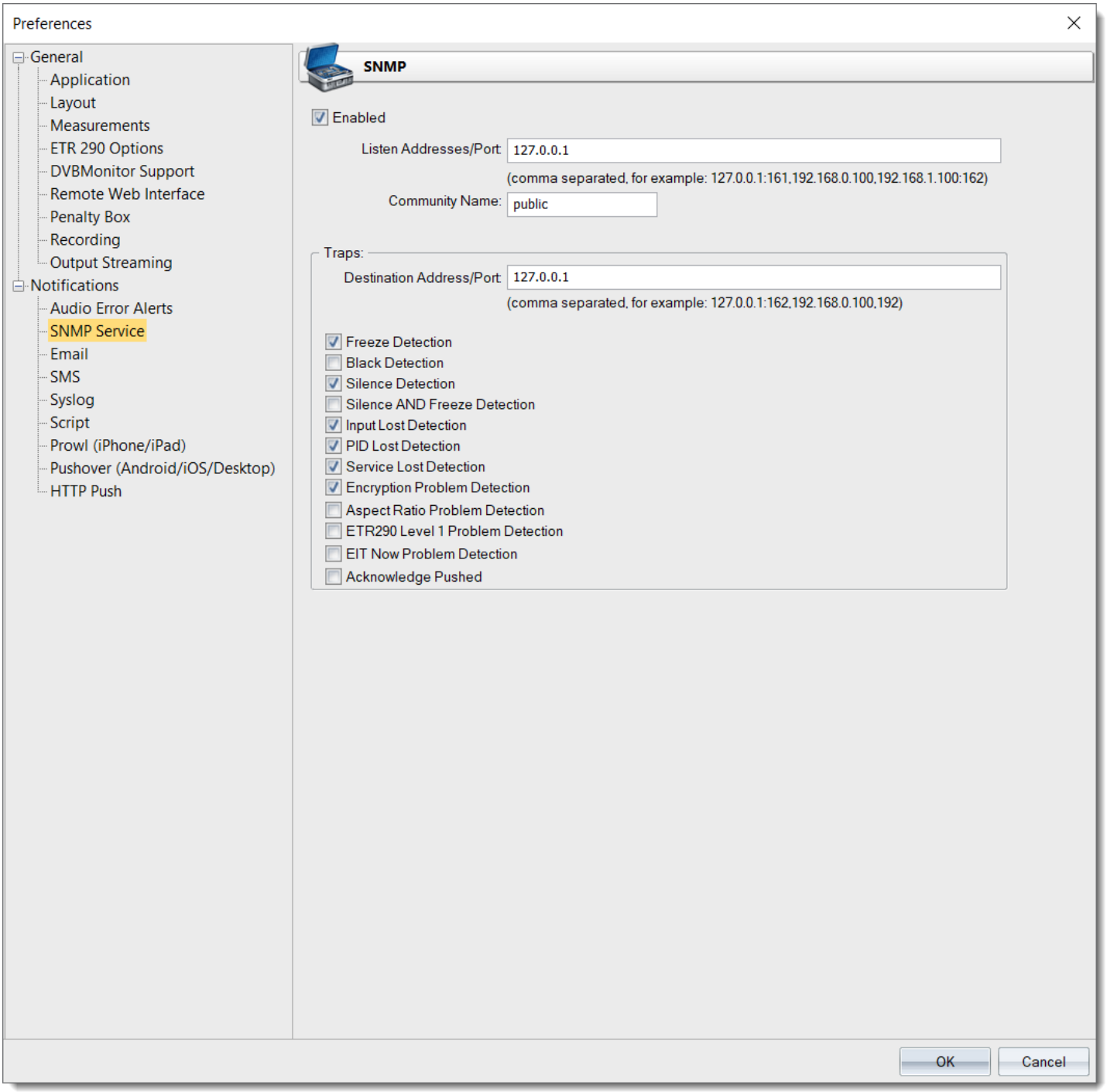
Audio tracks are default sent only once.
When selecting ‘Repeat’, the audio track will be sent every xx Delay seconds.



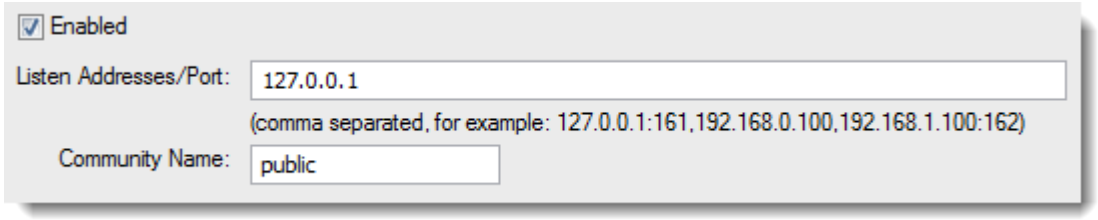
2.10.11 SNMP Preferences

SNMP (Simple Network Management Protocol) can be used to inform network-attached devices for the condition of DVBMosaic.

The DVB-DCSYSTEM-MIB.mib file can be found in the Program Files\DVBControl\DVBMosaic directory.



SNMP Service

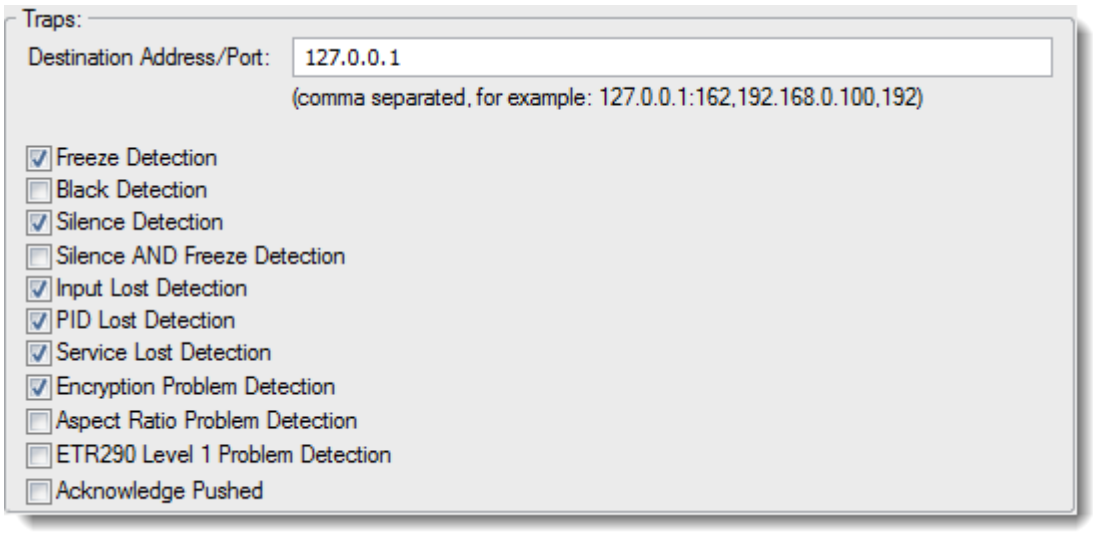


Enable SNMP Service
If enabled, SNMP will be used for giving alarms.

Listen Addresses/Port
Address/Port settings of the SNMP server.

Community Name
Set up of the SMNP Community Name.

Traps



Destination Addresses/Port
IP Address/Port settings for sending SNMP Traps.

Freeze Detection
If enabled, freeze detection will generate an SNMP trap.

Black Detection
If enabled, black detection will generate an SNMP trap.

Silence Detection
If enabled, silence detection will generate an SNMP trap.

“Silence AND Freeze” Detection
If enabled, “Silence and Freeze” detection will generate an SNMP trap.

Input Lost Detection
If enabled, loss of a Transport Stream input will generate an SNMP trap.

PID Lost Detection
If enabled, loss of a single service component PID will generate an SNMP trap.

Service Lost Detection
If enabled, loss of all service component PIDs (video, audio) will generate an SNMP trap.

Encryption Problem Detection
If enabled, Encryption of a PID will generate an SNMP Trap.

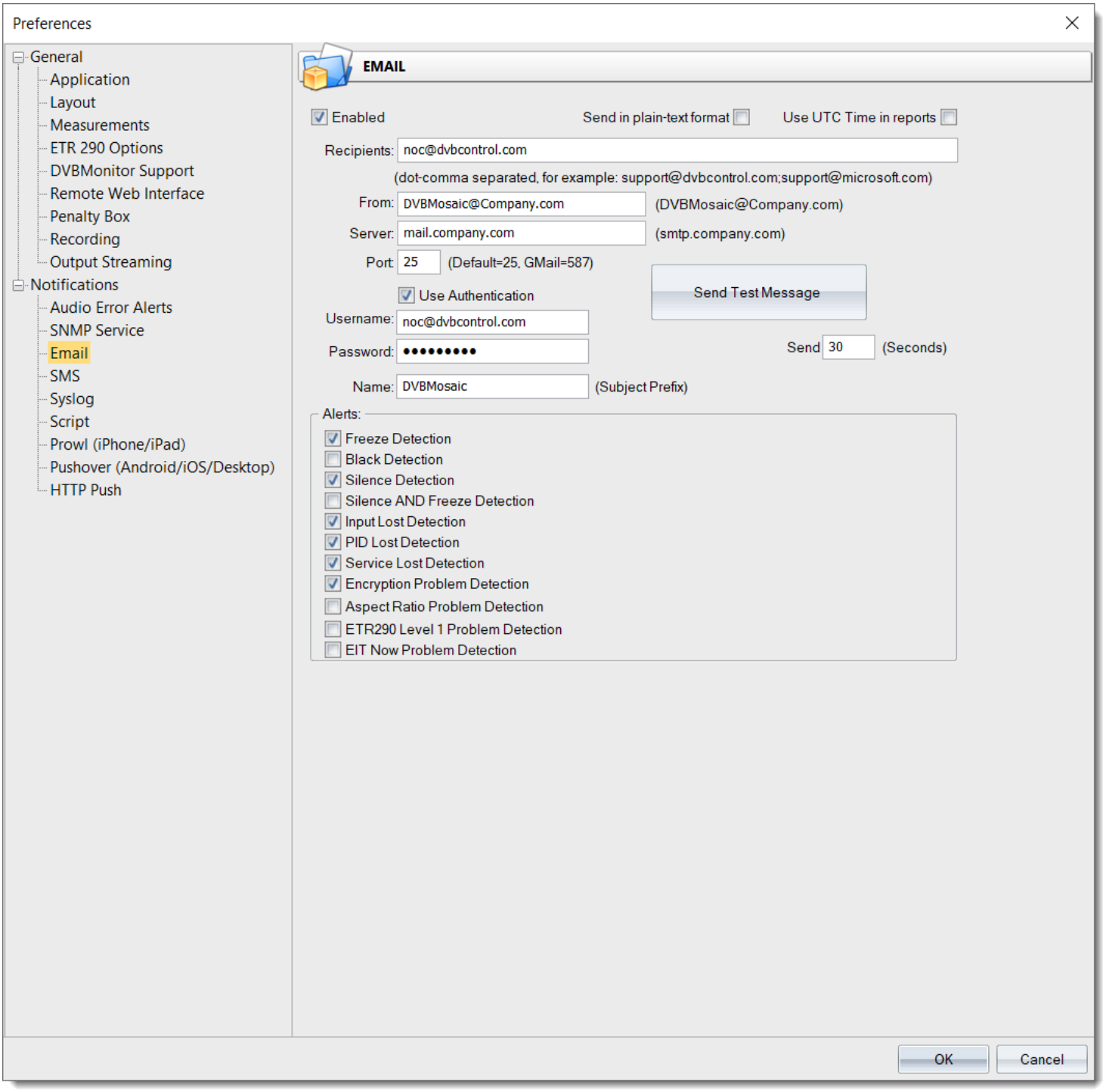
Aspect Ratio Problem Detection
If enabled, Encryption fault situations will generate an SNMP Trap.

ETR290 Level 1 Problem Detection
If enabled, ETR290 errors will generate an SNMP Trap.

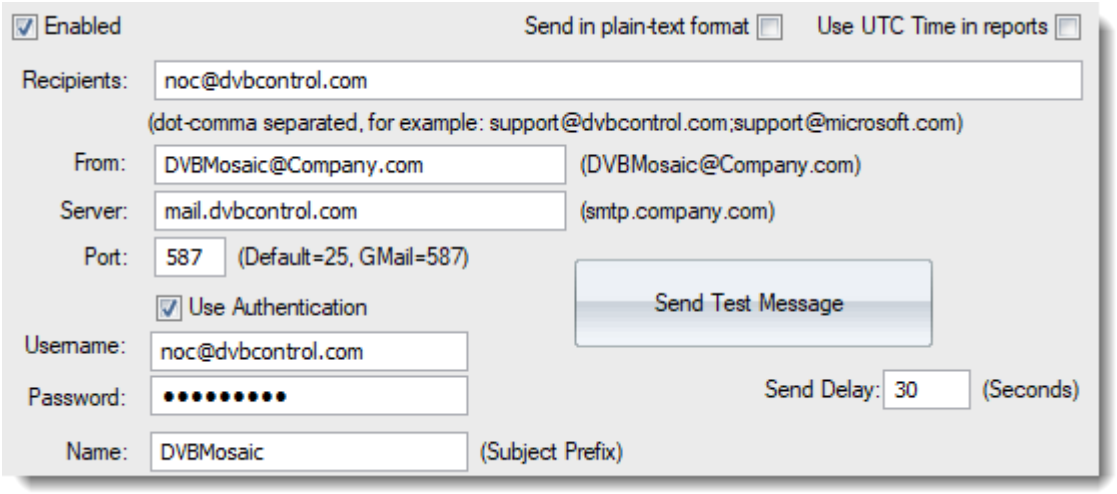
Acknowledge pushed
If enabled, using acknowledgements will also generate an SNMP Trap.

2.10.12 Email Preferences

Alerts can be send via Email with the following settings.



Email Support



Enable Email Support
If enabled, Email will be used for giving alarms.

Send in plain-test format
If enabled, the Email will be send in plain-text format.

Use UTC Time in reports
If enabled, UTC Time will be used in reports.

Recipients
Email addresses used for Email alarm signalling.

From
Email address used for sender.

Server
Email server.

Port
Email server, outgoing port number.

Use Authentication
This should be enabled when your mail server requires authentication.

Username
Username needed for authentication.

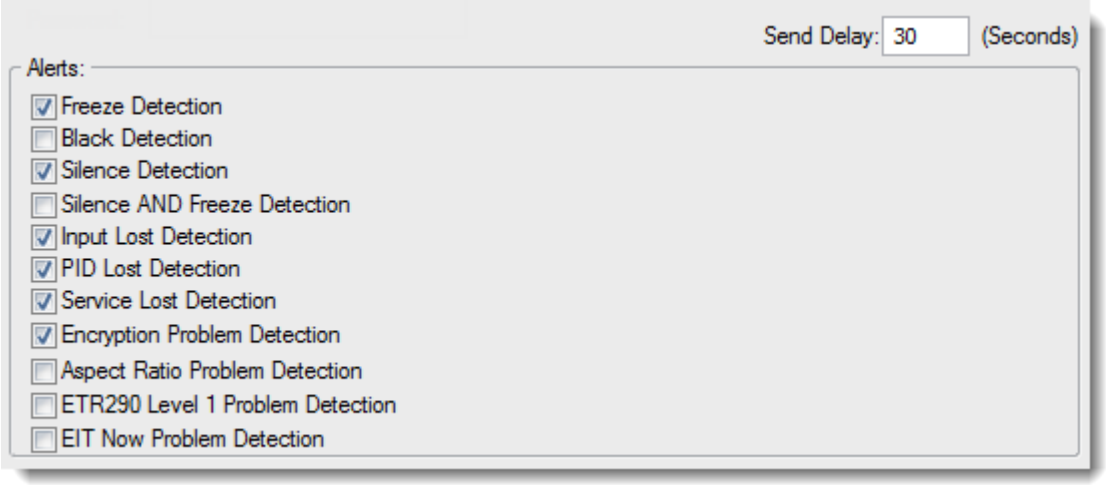
Password
Password needed for authentication.

Name
Option, to add a subject prefix.

Send Test Message

Email can only work when a working Email client/account is available on the machine.
To test if your Email client is fully functional, please use this button to send a test message.

Alerts



Send Delay
Delay before email is sent

Freeze Detection
If enabled, freeze detection will generate an Email.

Black Detection
If enabled, black detection will generate an Email.

Silence Detection
If enabled, silence detection will generate an Email.

"Silence AND Freeze" Detection
If enabled, "Silence and Freeze" detection will generate an Email.

Input Lost Detection
If enabled, loss of a Transport Stream input will generate an Email.

PID Lost Detection
If enabled, loss of a single service component PID will generate an Email.

Service Lost Detection
If enabled, loss of all service component PIDs (video, audio) will generate an Email.

Encryption Problem Detection
If enabled, Encryption of a PID will generate an Email.

Aspect Ratio Problem Detection
If enabled, Encryption fault situations will generate an Email.

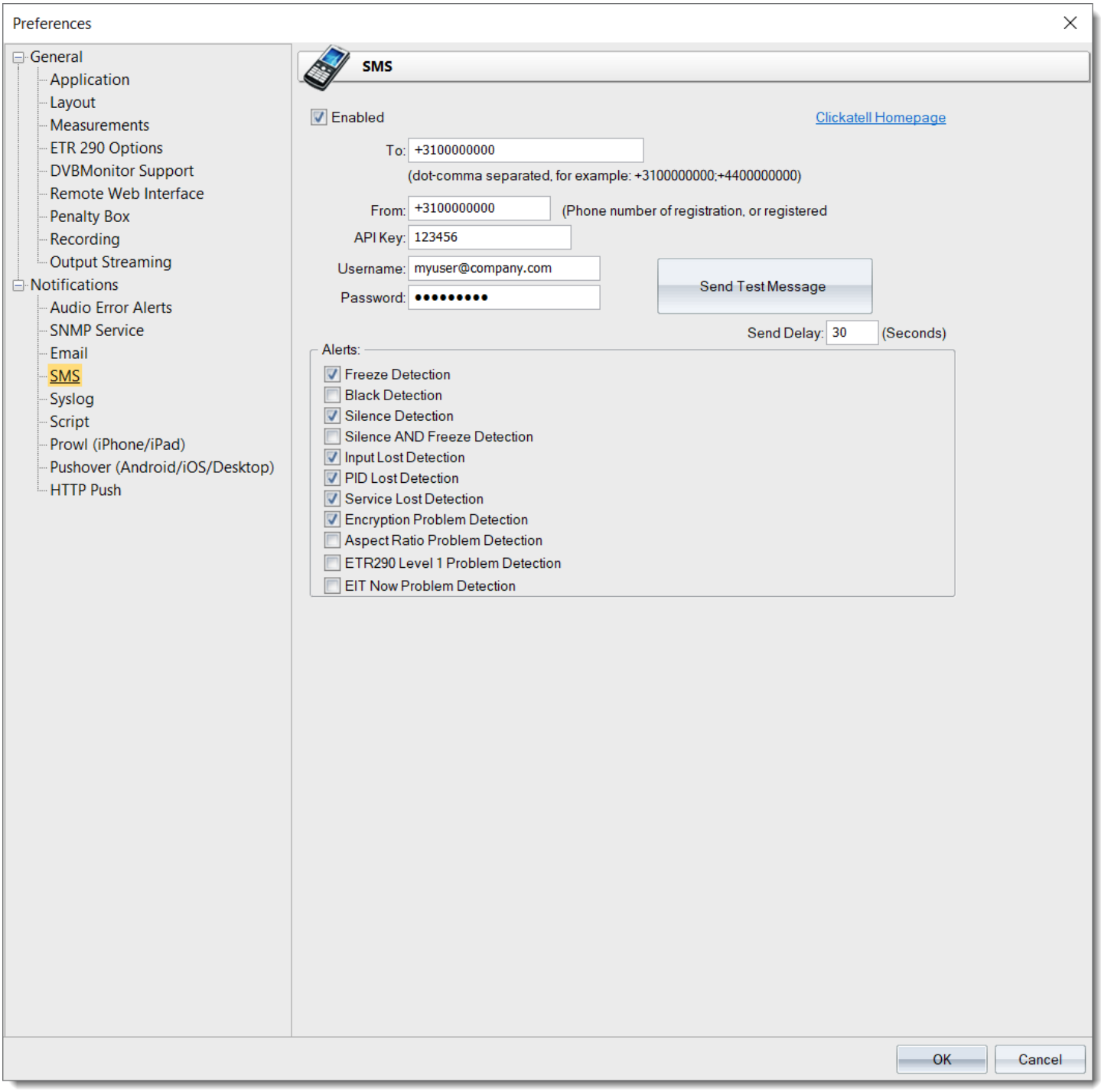
ETR290 Level 1 Problem Detection
If enabled, ETR290 errors will generate an Email.

EIT Now Problem Detection
If enabled, EIT Now Problem errors will generate an Email.

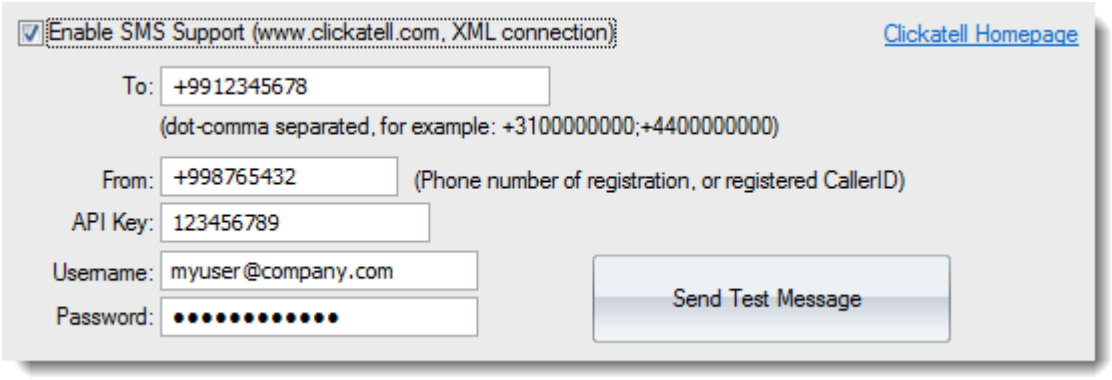
When using the 64 bit version of DVBMosaic, also a 64-bit mail client should be used.

2.10.13 SMS

Alerts can be send via SMS with the following settings.



SMS Support



Enable SMS Support
If enabled, SMS will be used for giving alarms.

Clickatell Homepage
Homepage for the Clickatell SMS gateway

To
Destination SMS number. Can be for multiple recipients.

From
Phone number of registration, or registered CallerID.

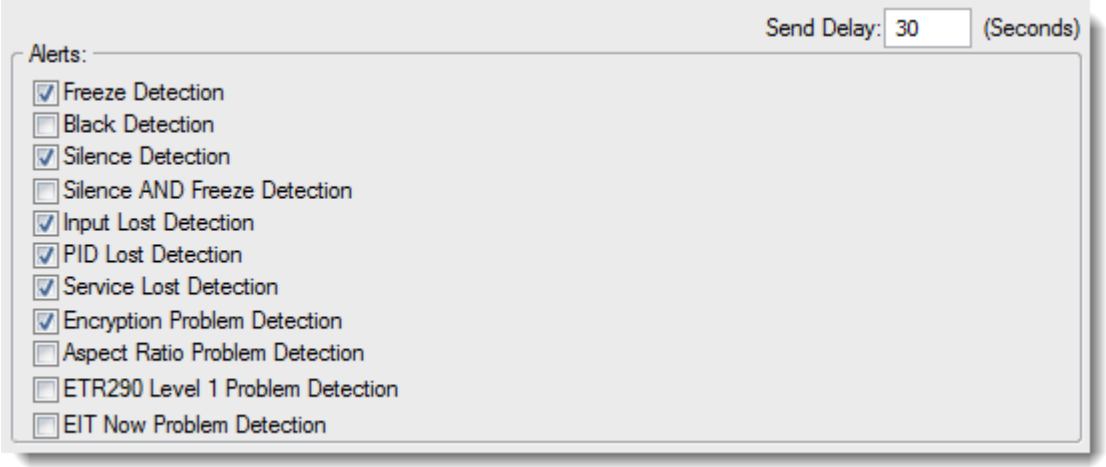
API Key
Application Programmable Interface Key.

Username
Username needed for authentication.

Password
Password needed for authentication.

Send Test Message
SMS can only work when SMS communication is available on the machine.
To test if your SMS service is fully functional, please use this button to send a test message.

Alerts



Send Delay
Delay before SMS is sent

Freeze Detection
If enabled, freeze detection will generate an SMS message.

Black Detection
If enabled, black detection will generate an SMS message.

Silence Detection
If enabled, silence detection will generate an SMS message.

"Silence AND Freeze" Detection
If enabled, "Silence and Freeze" detection will generate an SMS message.

Input Lost Detection
If enabled, loss of a Transport Stream input will generate an SMS message.

PID Lost Detection
If enabled, loss of a single service component PID will generate an SMS message.

Service Lost Detection
If enabled, loss of all service component PIDs (video, audio) will generate an SMS message.

Encryption Problem Detection
If enabled, Encryption of a PID will generate an SMS message.

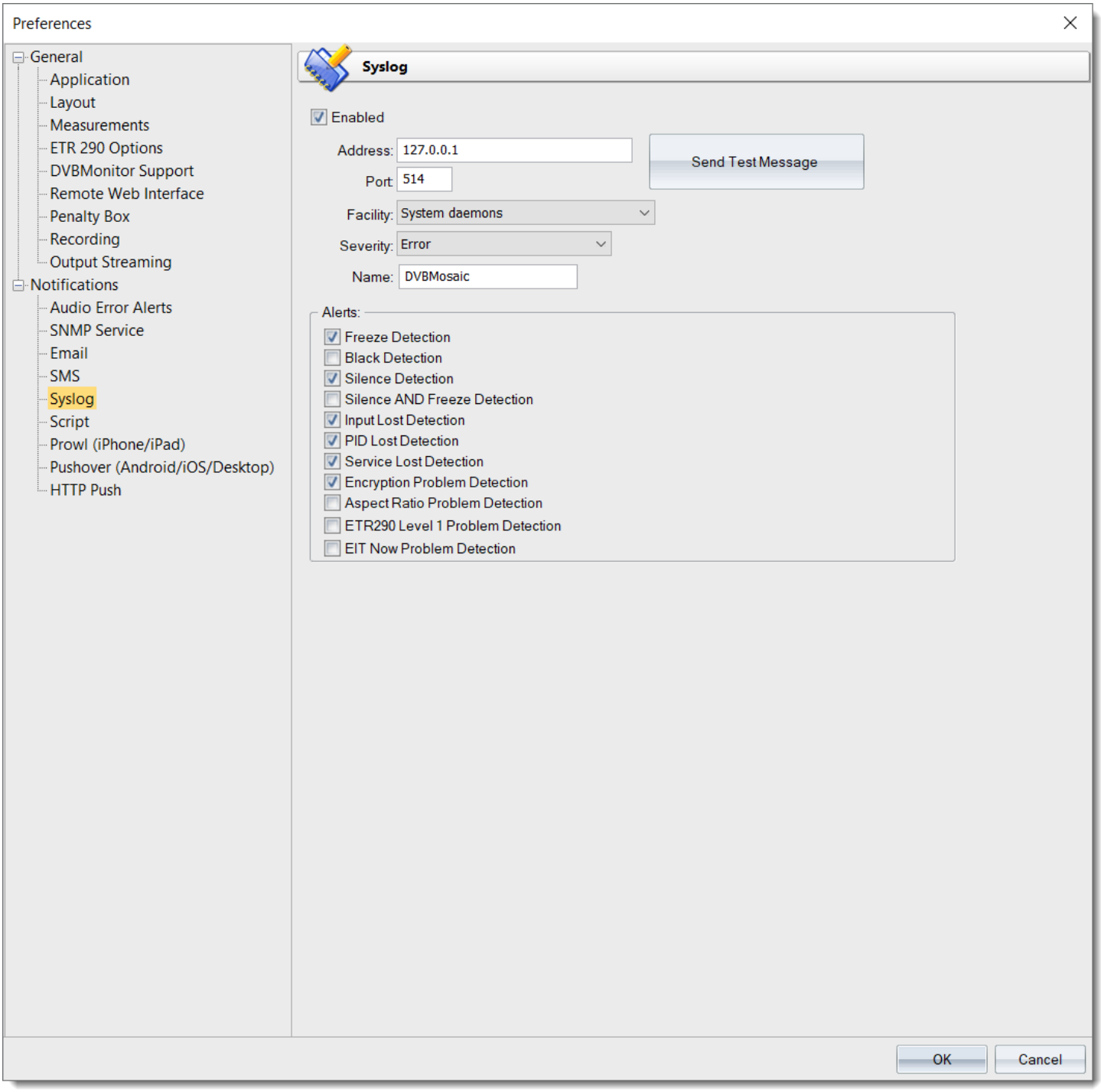
Aspect Ratio Problem Detection
If enabled, Encryption fault situations will generate an SMS message.

ETR290 Level 1 Problem Detection
If enabled, ETR290 errors will generate an SMS message.

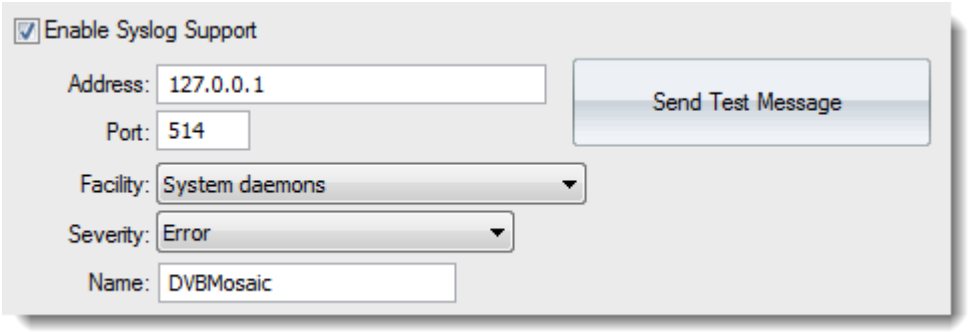
EIT Now Problem Detection
If enabled, EIT Now Problem errors will generate an SMS message.

2.10.14 Syslog

Alerts can be send via Syslog (Unix system logging daemon) with the following settings.



Syslog Support



Enable Syslog Support
If enabled, Syslog will be used for giving alarms.

Address
Syslog IP address.

Port
Syslog Port number.

Send Test Message
Syslog can only work when a working Syslog communication is available on the machine.
To test if your Syslog is fully functional, please use this button to send a test message.

Facility
Selection of Syslog facility.

Severity
Selection of used Syslog severity level.

Name
Name used in the Syslog.

Alerts

Freeze Detection
If enabled, freeze detection will generate a Syslog.

Black Detection
If enabled, black detection will generate a Syslog.

Silence Detection
If enabled, silence detection will generate an Email. a Syslog.

“Silence AND Freeze” Detection
If enabled, “Silence and Freeze” detection will generate a Syslog.

Input Lost Detection
If enabled, loss of a Transport Stream input will generate a Syslog.

PID Lost Detection
If enabled, loss of a single service component PID will generate a Syslog.

Service Lost Detection
If enabled, loss of all service component PIDs (video, audio) will generate a Syslog.

Encryption Problem Detection
If enabled, Encryption of a PID will generate a Syslog.

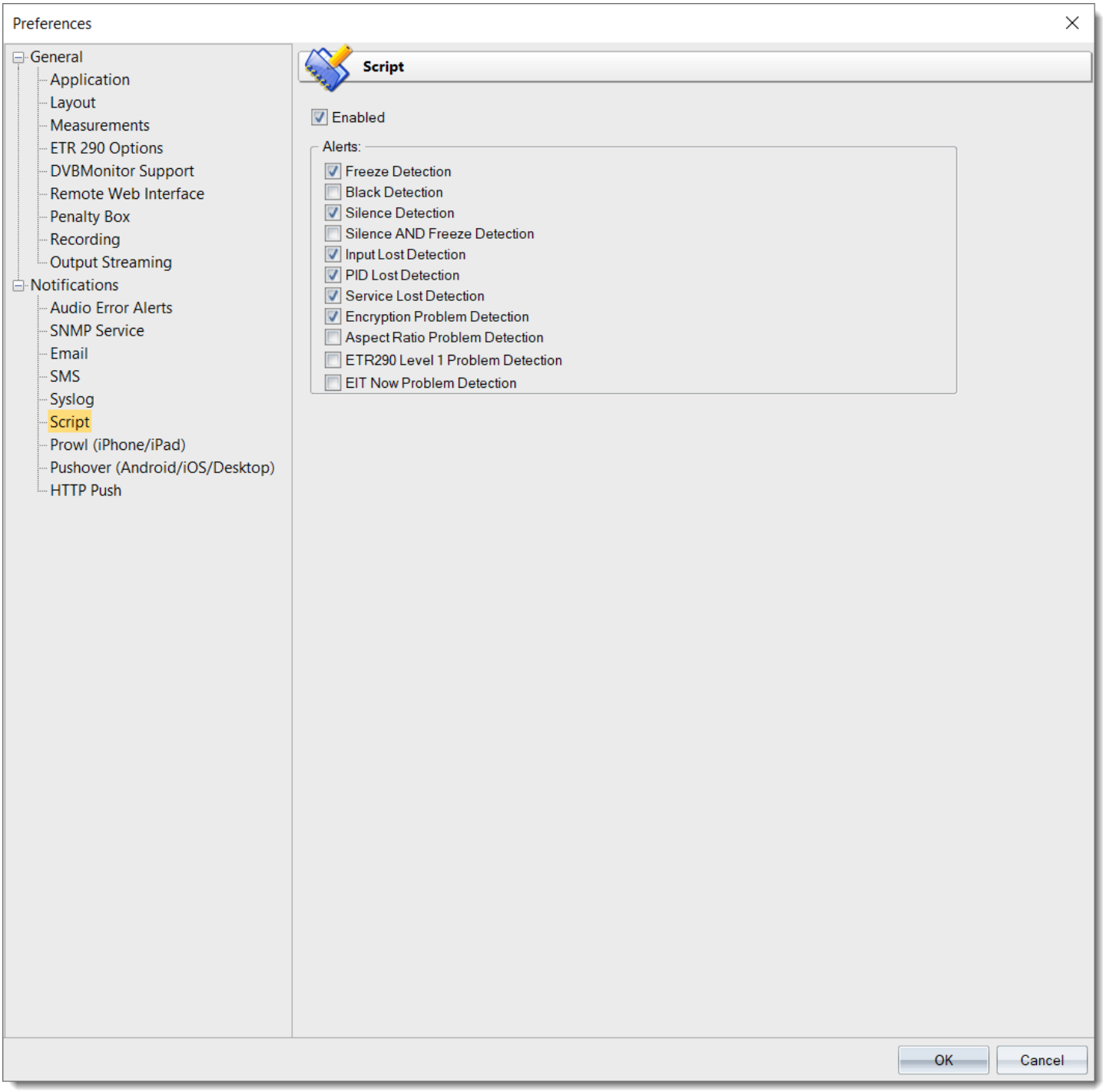
Aspect Ratio Problem Detection
If enabled, Encryption fault situations will generate a Syslog.

ETR290 Level 1 Problem Detection
If enabled, ETR290 errors will generate a Syslog.

EIT Now Problem Detection
If enabled, EIT Now Problem errors will generate a Syslog.

2.10.15 Script

The script system can be used to create custom actions related to errors/resolves.



Enable Script
If enabled, the scripts system will be active.

Alerts

The execution of scripts can be activated for:

Freeze Detection
If enabled, freeze detection will generate a Script action.

Black Detection
If enabled, black detection will generate a Script action.

Silence Detection
If enabled, silence detection will generate a Script action.

“Silence AND Freeze” Detection
If enabled, “Silence and Freeze” detection will generate a Script action.

Input Lost Detection
If enabled, loss of a Transport Stream input will generate a Script action.

PID Lost Detection
If enabled, loss of a single service component PID will generate a Script action.

Service Lost Detection
If enabled, loss of all service component PIDs (video, audio) will generate a Script action.

Encryption Problem Detection
If enabled, Encryption of a PID will generate a Script action.

Aspect Ratio Problem Detection
If enabled, Encryption fault situations will generate a Script action.

ETR290 Level 1 Problem Detection
If enabled, ETR290 errors will generate a Script action.

EIT Now Problem Detection
If enabled, EIT Now Problem errors will generate a Script action.

Script execution

The main script that is called is located in the Scripts folder and named global.bat.
You have to copy the provided _global.bat to global.bat.

Script Parameters

When the main script is called, the following parameters are passed through:

#1 - event_type (integer)

Where event_type can have the following meaning:

0	InputFail
1	Freeze
2	Black
3	Silence
4	FreezeAndSilence
5	ServiceLost
6	PIDLost
7	EncryptionProblem
8	AspectProblem
9	EITProblem
10	ETR290Problem
11	Acknoledge

#2 - status (integer)

Where status has the following meaning:

0	ERROR
1	UPDATE
2	RESOLVED

#3– severity_id (integer)

When status indicated ERROR or UPDATE, the severity level of the error is provided.

Where severity_id has the following meaning:

0	NA
1	Info
2	Warning
3	QoS
4	TNC
5	CM
6	POA
7	TOA
8	User 1
9	User 2
10	User 3
11	User 4

#4 - input_id (integer)

The unique ID of the input, or -1 when not applicable.

#5 - wallitem_name (string)

When a script is triggered related to a wall item, the name will be given.
If it is not related to a wall item (for instance Input Lost) this value is NULL.

#6 - pid (integer)

When a script is triggered related to a PID (For instance PID Lost), the pid number will be given, else this value is -1.

#7 – service_id (integer)

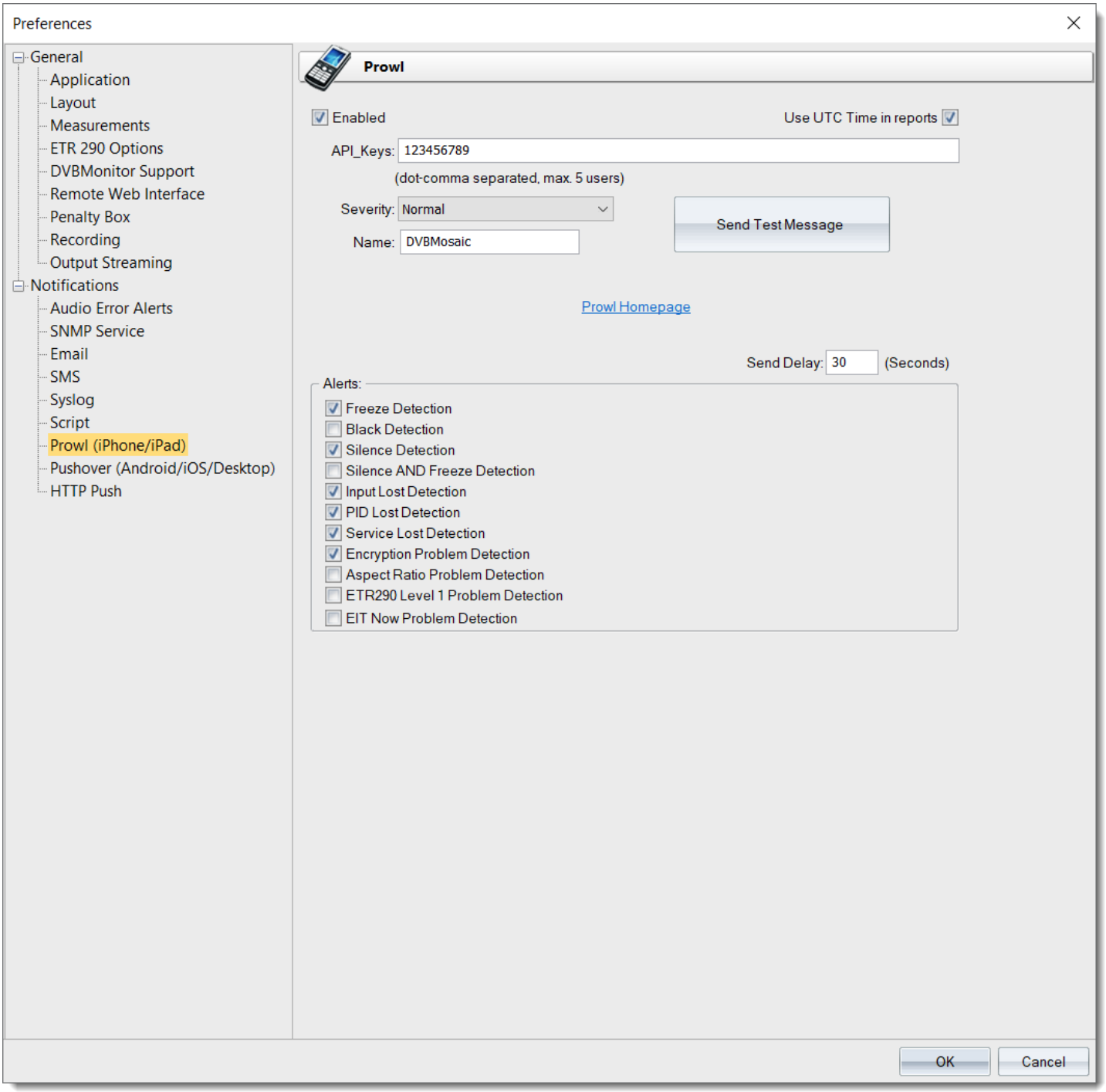
When a script is triggered related to a PID (For instance PID Lost), and this pid was referenced in a PMT, the service number (PMT program number) will be given, else this value is -1.

#8 - message (string)

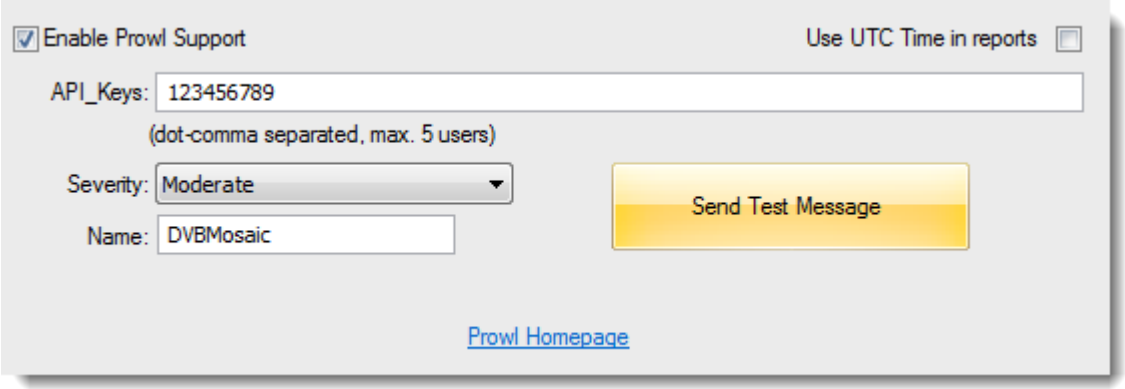
A short description of the event.

2.10.16 Prowl (iPhone/iPad)

Prowl can be used to send IPhone alerts.



Prowl Support



Enable Prowl Support
If enabled, prowl will be used for giving alarms.

Use UTC Time in reports
If enabled, UTC Time will be used in reports.

API keys
Prowl API key.

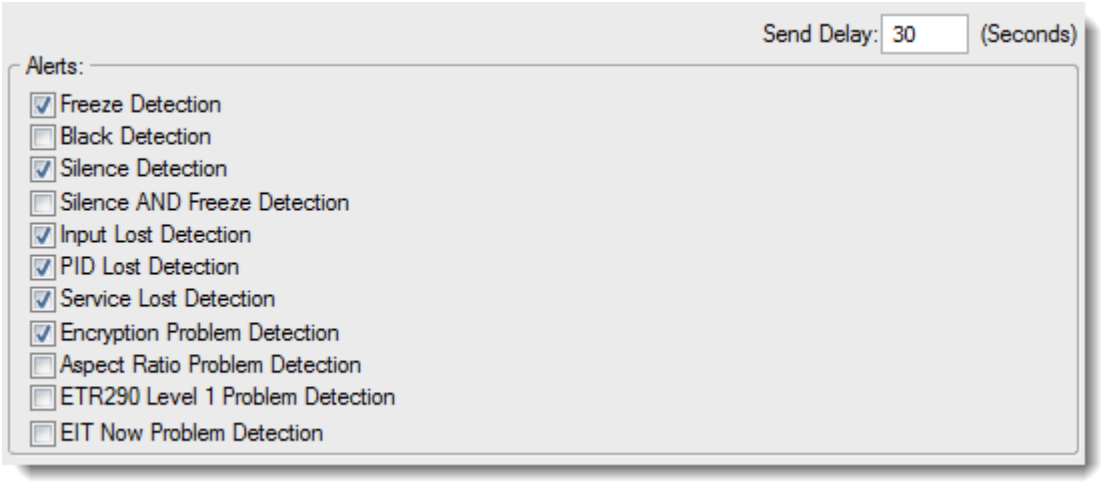
Send Test Message
Prowl can only work when a working Prowl communication is available on the machine.
To test if your Prowl is fully functional, please use this button to send a test message.

Severity
Selection of used Prowl severity level.

Name
Name used in the Prowl message.

Prowl Homepage
Homepage for the Prowl gateway.

Alerts



Send Delay
Delay before message is sent

Freeze Detection
If enabled, freeze detection will generate a Prowl request.

Black Detection
If enabled, black detection will generate a Prowl request.

Silence Detection
If enabled, silence detection will generate a Prowl request.

"Silence AND Freeze" Detection
If enabled, "Silence and Freeze" detection will generate a Prowl request.

Input Lost Detection
If enabled, loss of a Transport Stream input will generate a Prowl request.

PID Lost Detection
If enabled, loss of a single service component PID will generate a Prowl request.

Service Lost Detection
If enabled, loss of all service component PIDs (video, audio) will generate a Prowl request.

Encryption Problem Detection
If enabled, Encryption of a PID will generate a Prowl request.

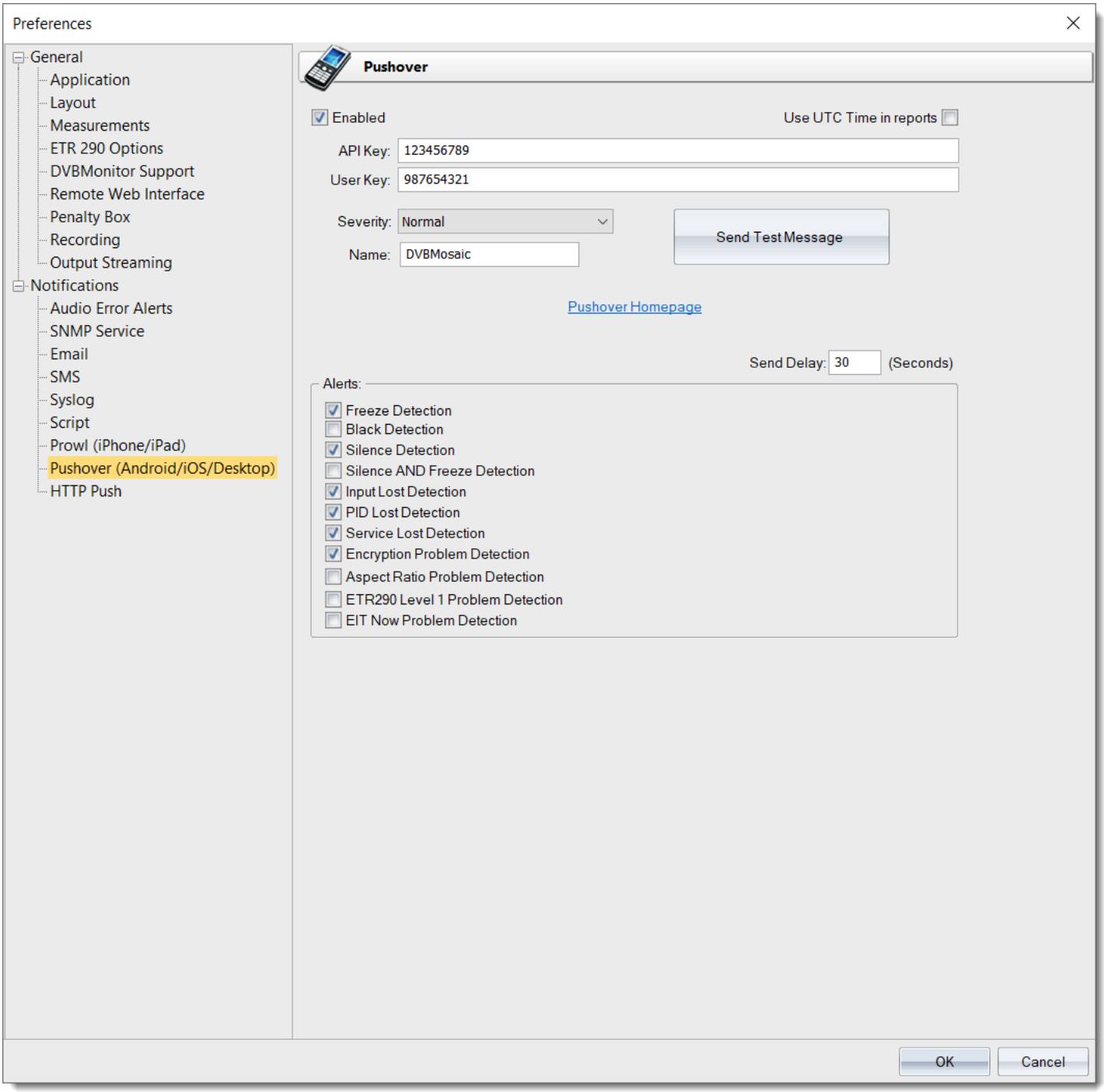
Aspect Ratio Problem Detection
If enabled, Encryption fault situations will generate a Prowl request.

ETR290 Level 1 Problem Detection
If enabled, ETR290 errors will generate a Prowl request.

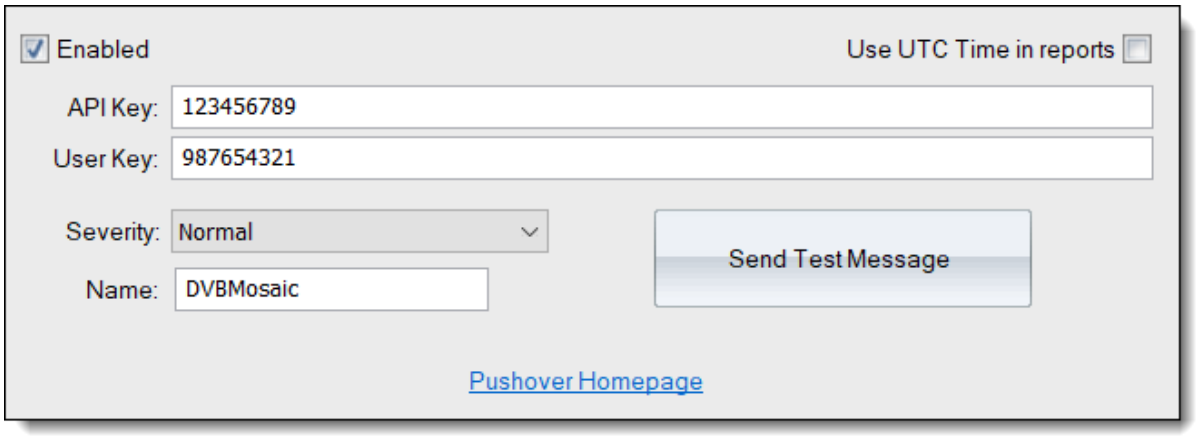
EIT Now Problem Detection
If enabled, EIT Now Problem errors will generate a Prowl request.

2.10.17 Pushover (Android/iOS/Desktop)

Pushover can be used to send alerts to any android, iOS or Desktop device.



NMA Support



Enabled
If enabled, Pushover will be used for giving alarms.

Use UTC Time in reports
If enabled, UTC Time will be used in reports.

API key
Pushover API key.

User key
Pushover User key.

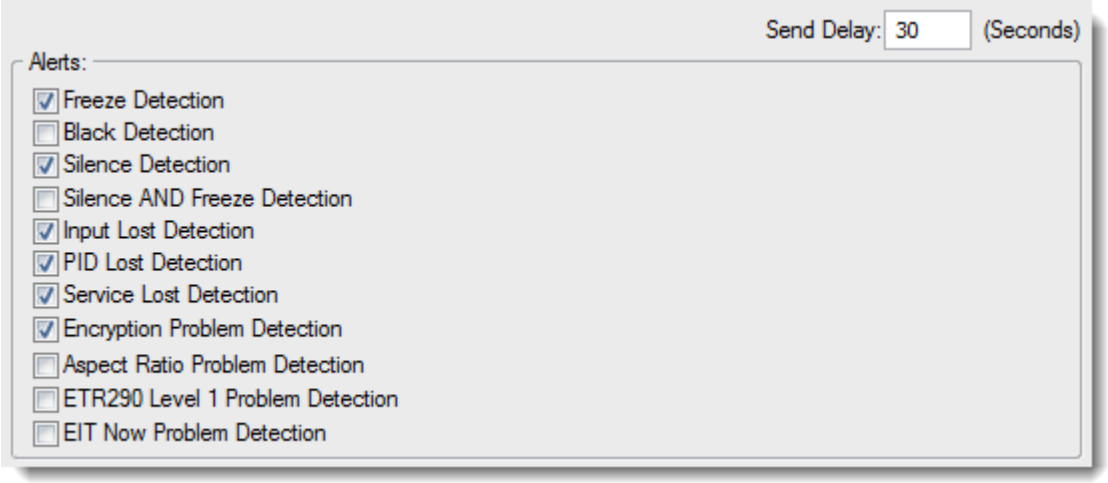
Send Test Message
Pushover can only work when a working Pushover communication is available on the machine.
To test if your Pushover is fully functional, please use this button to send a test message.

Severity
Selection of used Pushover severity level.

Name
Name used in the Pushover message.

Pushover **Homepage**
Homepage for the Pushover gateway.

Alerts



Send Delay
Delay before message is sent

Freeze Detection
If enabled, freeze detection will generate a NMA request.

Black Detection
If enabled, black detection will generate a NMA request.

Silence Detection
If enabled, silence detection will generate a NMA request.

“Silence AND Freeze” Detection
If enabled, “Silence and Freeze” detection will generate a NMA request.

Input Lost Detection
If enabled, loss of a Transport Stream input will generate a NMA request.

PID Lost Detection
If enabled, loss of a single service component PID will generate a NMA request.

Service Lost Detection
If enabled, loss of all service component PIDs (video, audio) will generate a NMA request.

Encryption Problem Detection
If enabled, Encryption of a PID will generate a NMA request.

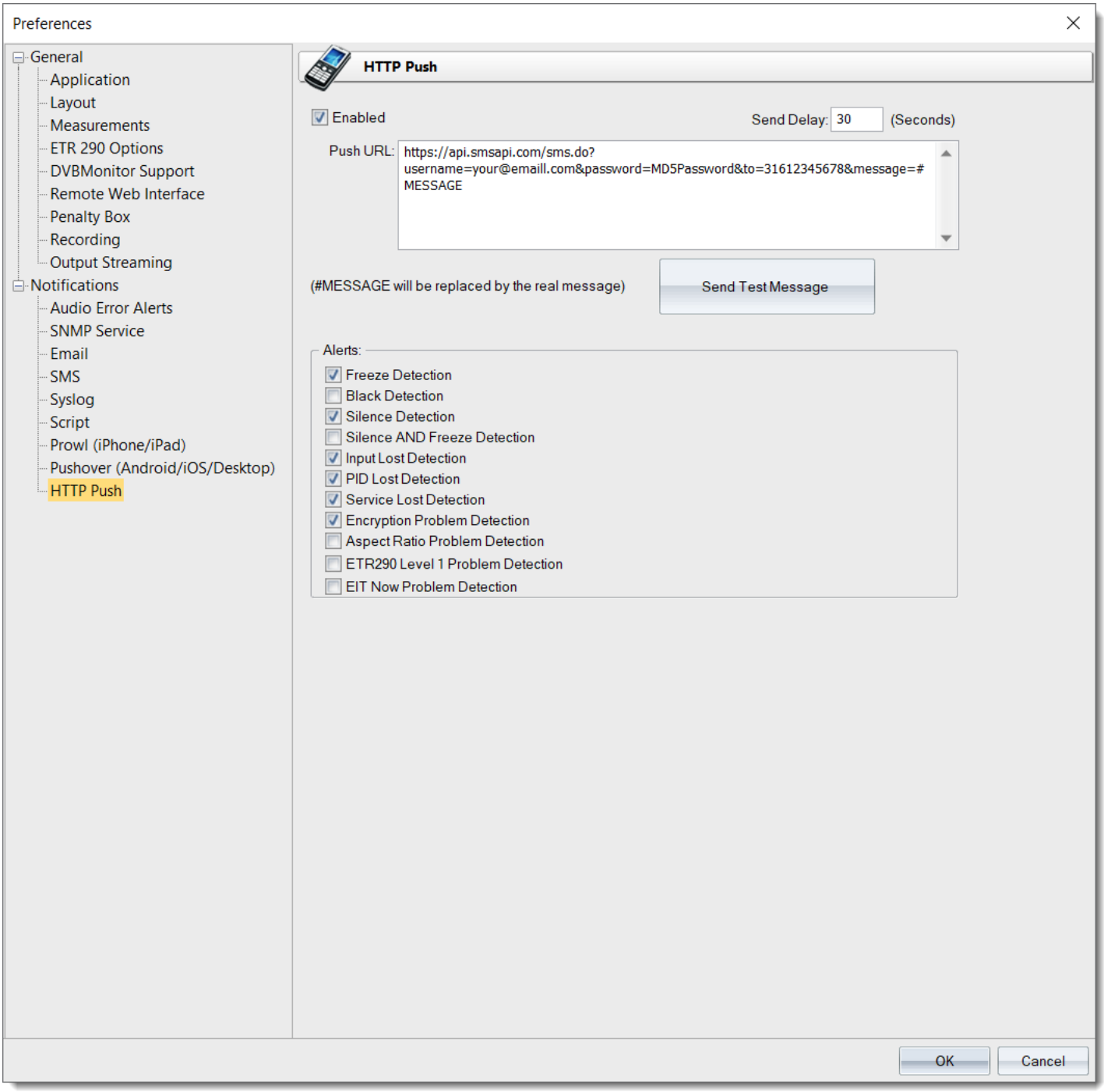
Aspect Ratio Problem Detection
If enabled, Encryption fault situations will generate a NMA request.

ETR290 Level 1 Problem Detection
If enabled, ETR290 errors will generate a NMA request.

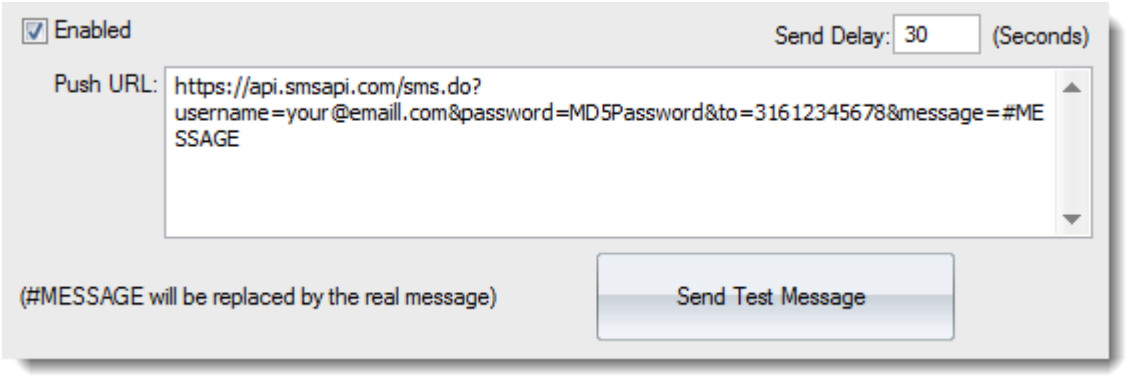
EIT Now Problem Detection
If enabled, EIT Now Problem errors will generate a NMA request.

2.10.18 HTTP Push

HTTP Push can be used to send alerts.



HTTP Push Support



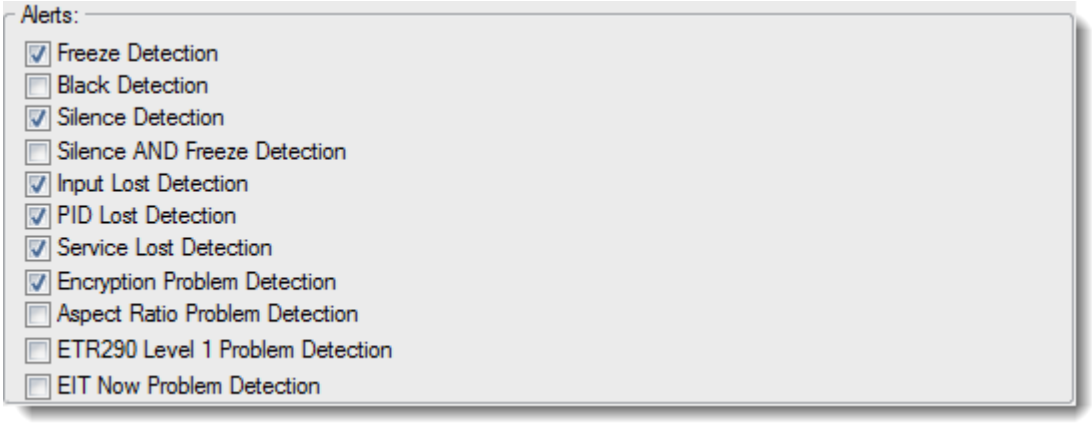
Enable HTTP Push Support
If enabled, HTTP Push will be used for giving alarms.

Send Delay
Delay before message is sent

Push URL
The URL which is pushed.

Send Test Message
NMA can only work when a working NMA communication is available on the machine.
To test if your NMA is fully functional, please use this button to send a test message.

Alerts



Freeze Detection
If enabled, freeze detection will generate a NMA request.

Black Detection
If enabled, black detection will generate a NMA request.

Silence Detection
If enabled, silence detection will generate a NMA request.

“Silence AND Freeze” Detection
If enabled, “Silence and Freeze” detection will generate a NMA request.

Input Lost Detection
If enabled, loss of a Transport Stream input will generate a NMA request.

PID Lost Detection
If enabled, loss of a single service component PID will generate a NMA request.

Service Lost Detection
If enabled, loss of all service component PIDs (video, audio) will generate a NMA request.

Encryption Problem Detection
If enabled, Encryption of a PID will generate a NMA request.

Aspect Ratio Problem Detection
If enabled, Encryption fault situations will generate a NMA request.

ETR290 Level 1 Problem Detection
If enabled, ETR290 errors will generate a NMA request.

EIT Now Problem Detection
If enabled, EIT Now Problem errors will generate a NMA request.

Here is a small NodeJS application that outputs the received message/headers:

```
const http = require("http");
const server = http.createServer((request, response) => {
  const { rawHeaders, httpVersion, method, socket, url } = request;
  const { remoteAddress, remoteFamily } = socket;
  console.log(
    JSON.stringify({
      timestamp: Date.now(),
      rawHeaders,
      httpVersion,
      method,
      remoteAddress,
      remoteFamily,
      url
    })
  );
  response.end();
});
server.listen(8888);
```

In each message the following headers are included:

[dtime] string (yyyy-mm-dd,hh:mm:ss:ms)
Date/Time of the error/resolve
For example when there should be a Freeze alarm triggered after 60 seconds, then the Date/Time will be set to 60 seconds ago (the moment the problem actually started)

[mtype] integer
This field has the following meaning::

```
 0 - MType_Unknown
 1 - MType_Mosaic_Started,
 2 - MType_Mosaic_Stopped,
```

```
 3 - MType_InputFail,
 4 - MType_Freeze,
 5 - MType_Black,
 6 - MType_Silence,
 7 - MType_FreezeAndSilence,
 8 - MType_ServiceLost,
 9 - MType_PIDLost,
10 - MType_EncryptionProblem,
11 - MType_AspectProblem,
12 - MType_ETR290Problem,
13 - MType_EITProblem,
14 - MType_Acknoledge,
15 - MType_TeletextProblem,
16 - MType_NotificationInsert,
```

[Status] integer
0 = Error
2 = Resolved

[InputID]
The ID of the input (If the error relates to a Input)

[PID]
ID of the PID (if the error relates to a PID)

[PID_2]
ID of the second PID (if the error relates to a second PID, for example a Freeze+Silence Alarm)

[ChannelID]
ID of the Wall Item (If the error relates to a Wall Item)

[ChannelName]
Name of the Wall Item (If the error relates to a Wall Item)

In DVBMosaic when you receive a `MType_Mosaic_Started`/`MType_Mosaic_Stopped`, all errors should be cleared
If you receive a `MType_InputFail` resolved, there are also no more open errors for services/PID's on for this Input

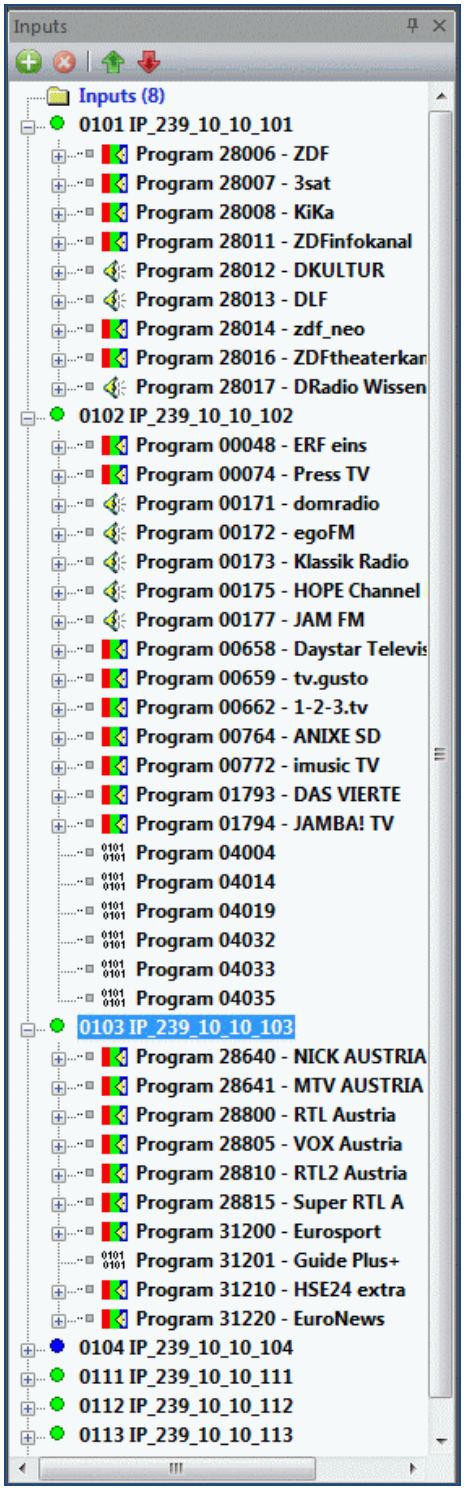
Configuration

- Inputs
- Log View
- Wall

3 Inputs

3.1 Input Bar

The Input Bar lists all configured input Transport Streams and components.



Different actions can be taken to change the inputs.

Icon	Description
	Add Input
	Delete Input
	Move Input up
	Move Input down

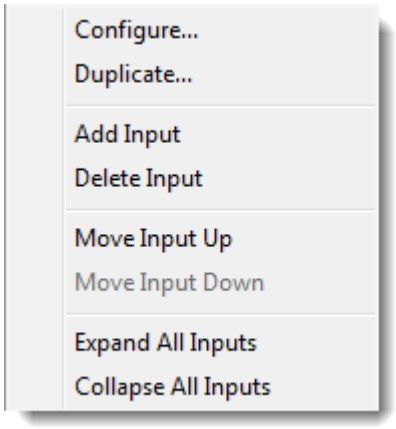
Add Input
A new input is configured. Chapter 3.2 will give all details about configuring inputs.

Delete Input
When selecting an input in the Input Bar, it can be deleted.

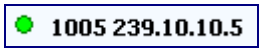
Move Input up
Moves a selected Input one position up in the Input tree.

Move Input down
Moves a selected Input one position down in the Input tree.

All actions are also available, by using the right mouse key.



Every entry in the Inputs Bar has an icon and a string concatenation of the Input ID and Input Name.

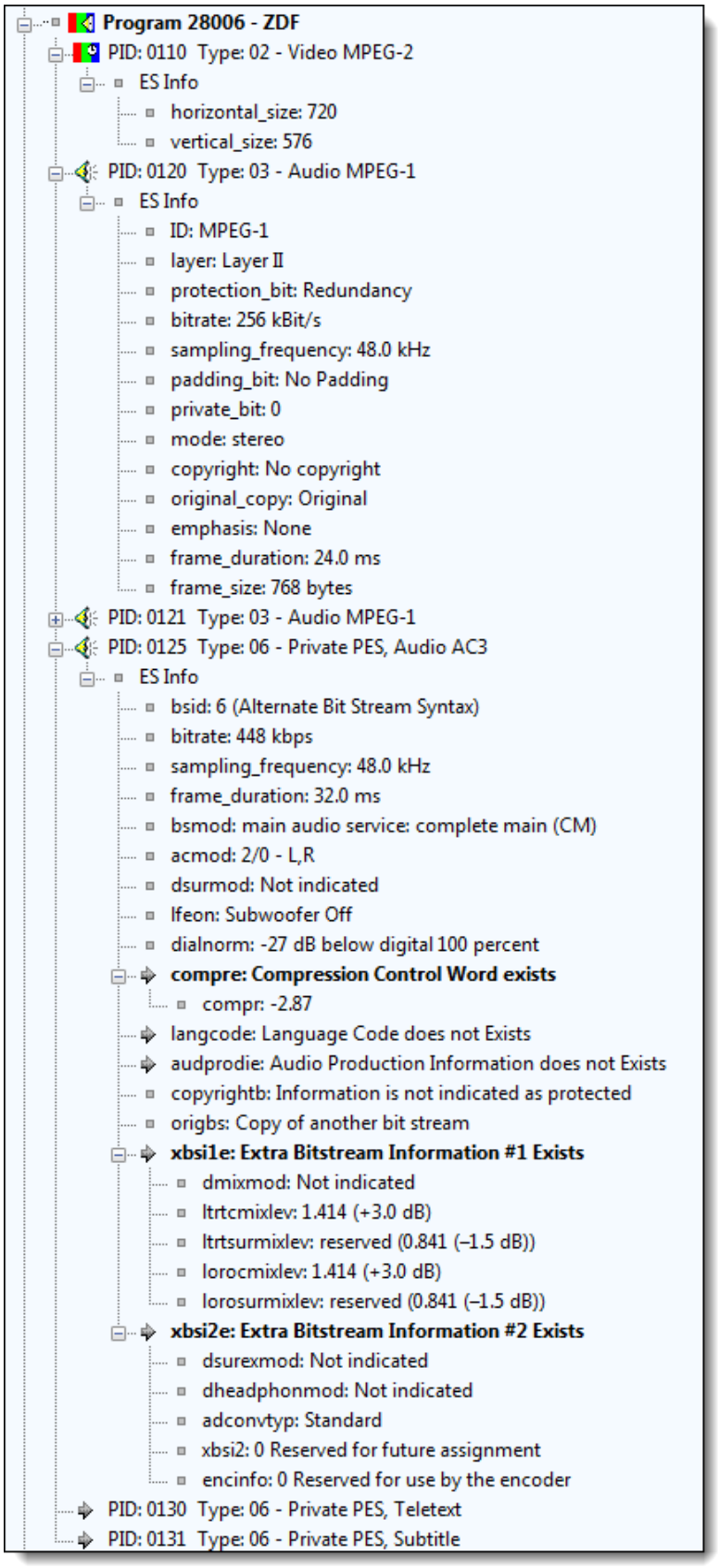


Different signalling is used for the input status:

Signalling		Description
	Green	No Error: Input activated
	Red	Error: Input not valid (TS timeout)
	Gray	Input not activated
	Blue	Error: Input not valid (TS timeout) anymore

ES Info

Opening PID entries, will show more ES info details.



3.2 Configure Input

In 2 situations, the Configure Input window is used:

- Create a new Input
- Change an existing Input

Create a new input

Via 3 ways a new input can be created:

- Select in the Inputs Bar
- Select Add Input in the Toolbar
- Select Add Input via the right mouse key

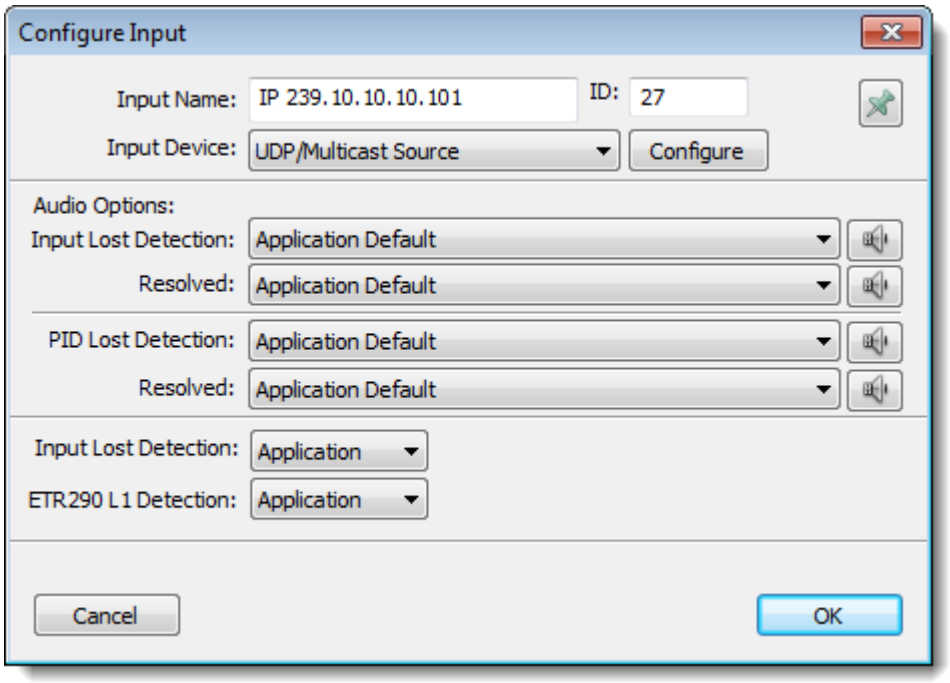
Change an existing input

Via 3 ways a existing input can be changed:

- Double clik on the Input entry
- Select Configure Input in the Tool Bar
- Select Configure via the right mouse key

Configure Input parameters

The Configure Input window gives the possibility to select an Input Transport Stream.



Input Name
Descriptive Input Name

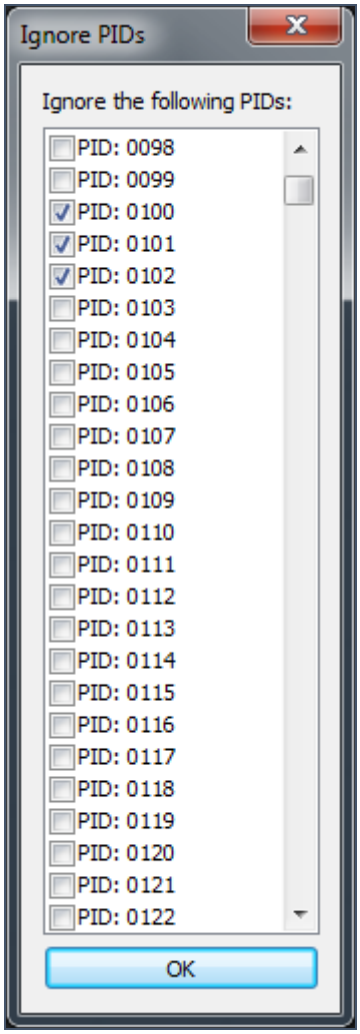
ID
Input identifier

Input Device
The Input selector

Source	Description
File	Transport Stream File
DVB-ASI	Input via ASI input board
DVB-S	Input via Satellite receiver board
DVB-C	Input via Cable receiver board
DVB-T	Input via Terrestrial receiver board
UDP/Multicast	Input via UDP Multicast packets

Configure
After selecting Configure, the Tuner window corresponding with the selected Input Device will pop-up.
See appendix B for all Input possibilities.

The  button gives the possibility to ignore PIDs on an Input.



If no PIDs are excluded the button will be shown as 

Audio options

Default the Preference Application settings are used as described in chapter 2.8 “General Preferences – Audio Preferences”.

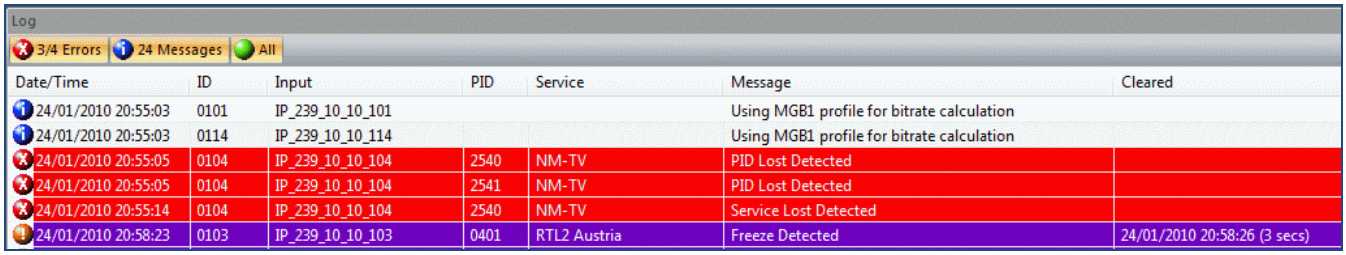
For each Input, specific audio signaling can be used for:

- Input Lost Detection
- PID Lost Detection

The  button gives the possibility to test and hear the selected audio track.

4 Log View

All DVBMosaic log information is displayed in the Log View window.



Different log types are used:

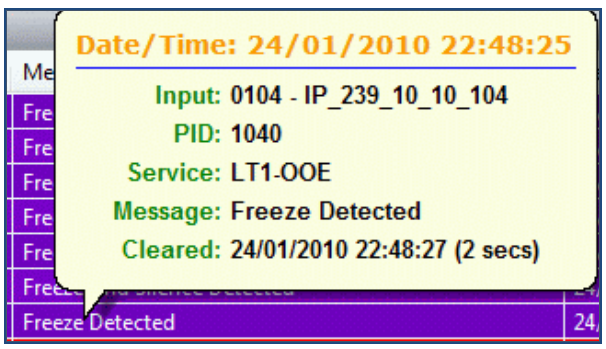
Signalling	Description
Error	Error log line
Warning	Warning log line
Info	Information log line

All new Error messages are shown with a red background.
When an Error message is cleared the type changes from Error to Warning type, with a purple background.

In different columns detailed information is given

Filter	Description
Date/time	The date and time the log information was generated
ID	Input Identifier
Input	Input Name
PID	Optional: The PID to which the log information was related
Service	Optional: The audio service name, corresponding with to the PID
Message	The log message
Cleared	The date and time when the error was cleared.

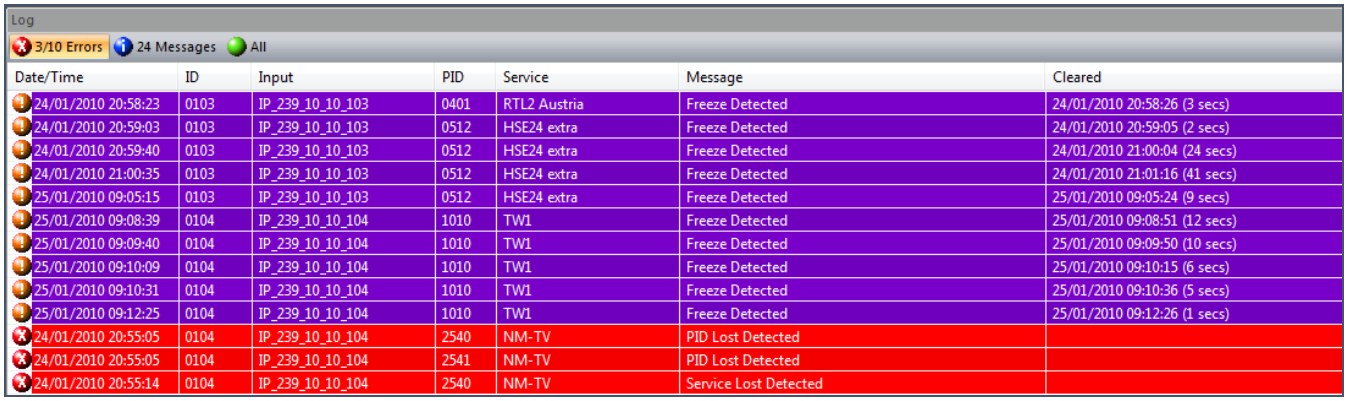
When hovering the mouse over a Log entry, a Tooltip will be displayed with all details.



Different tabs can be used to filter the log types:

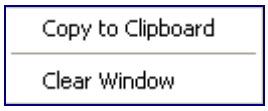
- Errors
- Messages
- All

Then number of entries is given in the tab name.
For Errors the number of open and solved errors are given.



Date/Time	ID	Input	PID	Service	Message	Cleared
24/01/2010 20:58:23	0103	IP_239_10_10_103	0401	RTL2 Austria	Freeze Detected	24/01/2010 20:58:26 (3 secs)
24/01/2010 20:59:03	0103	IP_239_10_10_103	0512	HSE24 extra	Freeze Detected	24/01/2010 20:59:05 (2 secs)
24/01/2010 20:59:40	0103	IP_239_10_10_103	0512	HSE24 extra	Freeze Detected	24/01/2010 21:00:04 (24 secs)
24/01/2010 21:00:35	0103	IP_239_10_10_103	0512	HSE24 extra	Freeze Detected	24/01/2010 21:01:16 (41 secs)
25/01/2010 09:05:15	0103	IP_239_10_10_103	0512	HSE24 extra	Freeze Detected	25/01/2010 09:05:24 (9 secs)
25/01/2010 09:08:39	0104	IP_239_10_10_104	1010	TW1	Freeze Detected	25/01/2010 09:08:51 (12 secs)
25/01/2010 09:09:40	0104	IP_239_10_10_104	1010	TW1	Freeze Detected	25/01/2010 09:09:50 (10 secs)
25/01/2010 09:10:09	0104	IP_239_10_10_104	1010	TW1	Freeze Detected	25/01/2010 09:10:15 (6 secs)
25/01/2010 09:10:31	0104	IP_239_10_10_104	1010	TW1	Freeze Detected	25/01/2010 09:10:36 (5 secs)
25/01/2010 09:12:25	0104	IP_239_10_10_104	1010	TW1	Freeze Detected	25/01/2010 09:12:26 (1 secs)
24/01/2010 20:55:05	0104	IP_239_10_10_104	2540	NM-TV	PID Lost Detected	
24/01/2010 20:55:05	0104	IP_239_10_10_104	2541	NM-TV	PID Lost Detected	
24/01/2010 20:55:14	0104	IP_239_10_10_104	2540	NM-TV	Service Lost Detected	

By using the right mouse key, extra actions can be taken:



5 Wall

5.1 Introduction

The Wall configuration creates the layout of the presented walls.
10 Walls can be used.

Configuration of the wall is done via the “Wall Configuration” button.

5.2 Menu Bar

The sub-menu options available in the Menu Bar selection are File and Options.

File

File menu	Principal functions
Load Wall	Load a Wall configuration from Hard Disk
Save Wall	Save the Wall configuration to Hard Disk
Exit	Exits the Configuration Wall window

Options

Options menu	Principal functions
Configuration Report	Display configuration details (see also paragraph 5.11)
Auto Populate Wall from Selected Input	Fill all Services from the selected Inputs, starting from the channel position which was selected.
Auto Populate Wall from All Inputs	Clears the total Wall (except Clock and Images). Then fills all channels left, with available Services from all Inputs.
Clear Wall	Clears the Wall configuration

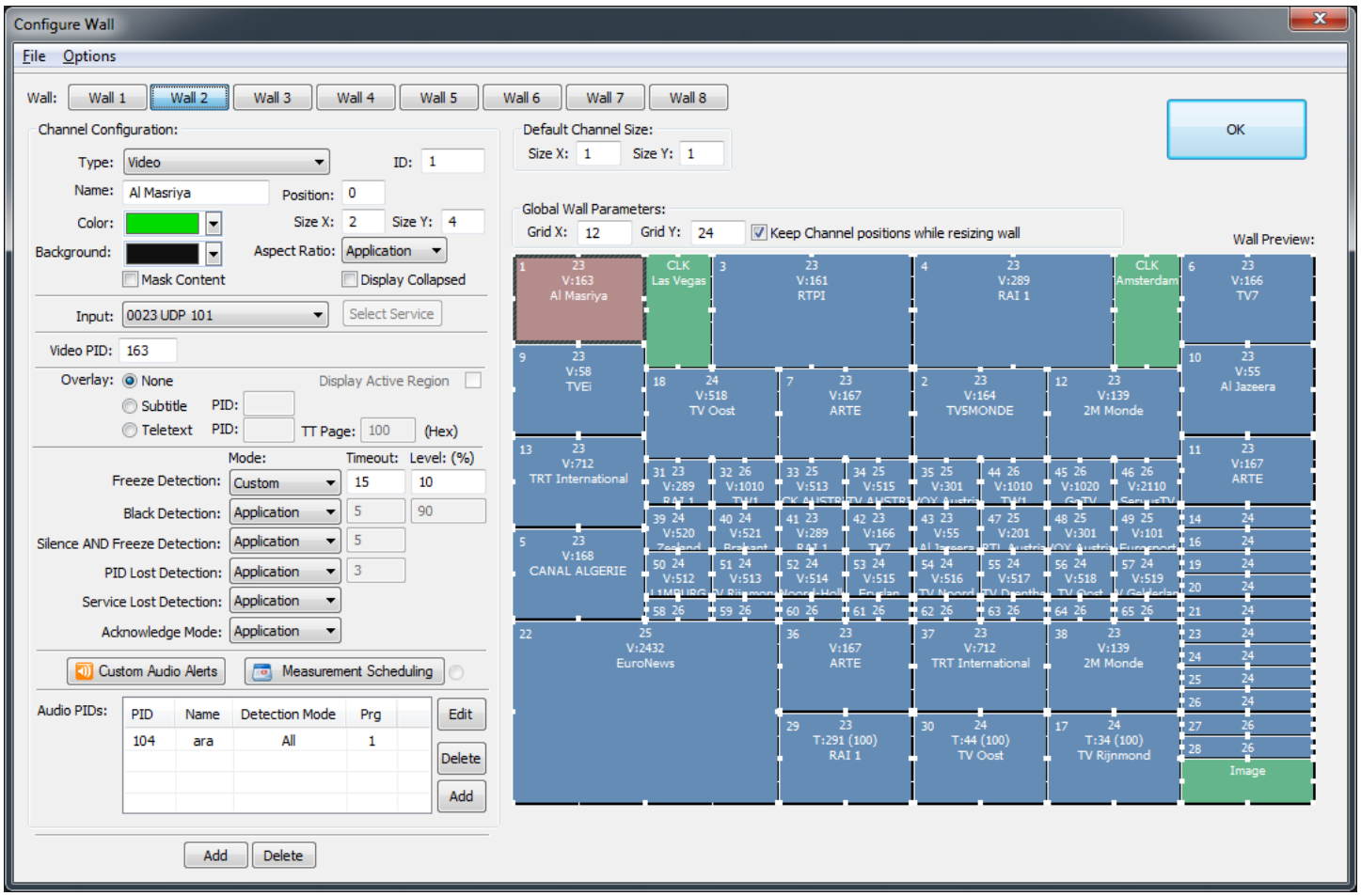
5.3 Configure Wall

First the appropriate Wall has to be selected.

In each Wall, by using the pull-down, it also possible to:

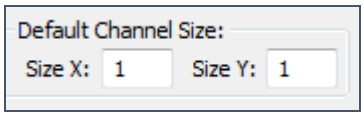
- Copy wall, to another wall
- Load wall
- Save wall

Secondly, the Global wall parameters have to be set. This way the general grid and optional a clock is chosen and can be seen at the Wall Preview.
Third, each Channel has to be configured.



Default Channel Size

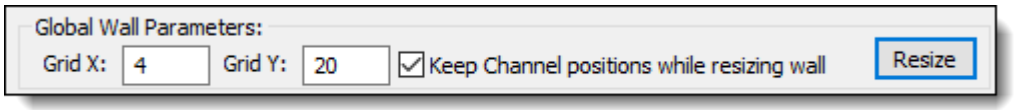
Settings which have to be chosen once, for each wall



Size X
The default number of cells used horizontal for a new channel.

Size Y
The default number of cells used vertical for a new channel.

Global Wall Parameters

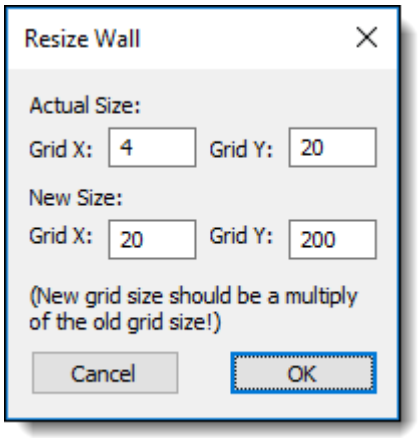


Grid X
The number of cells used horizontal for a Wall.

Grid Y
The number of cells used vertical for a Wall.

Keep Channel positions while resizing wall
If enabled, the channels will be using the same position after resizing the wall.

Resize
By pressing the Resize button, it is also possible to larger the grid, while all object stay in in ‘relative’ place.

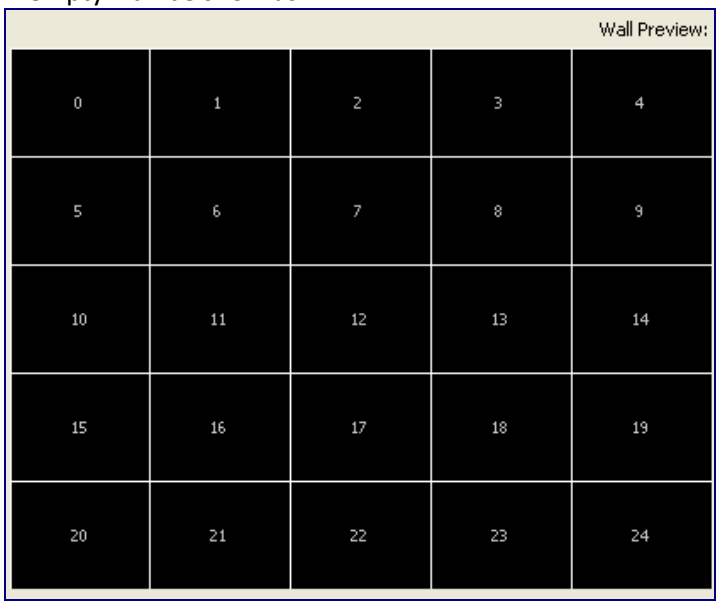


In the ‘Resize Wall’ the new Grid X and Y size can be given. Of course the new size has to be a multiple of the original size.

After setting the X and Y grid, a new Wall preview will be shown.
Each channel position number is shown in the centre of each channel grid.

Selecting an existing Channel configuration, can be done by mouse clicking a specific cell in the Preview Wall.

A empty wall be show as:

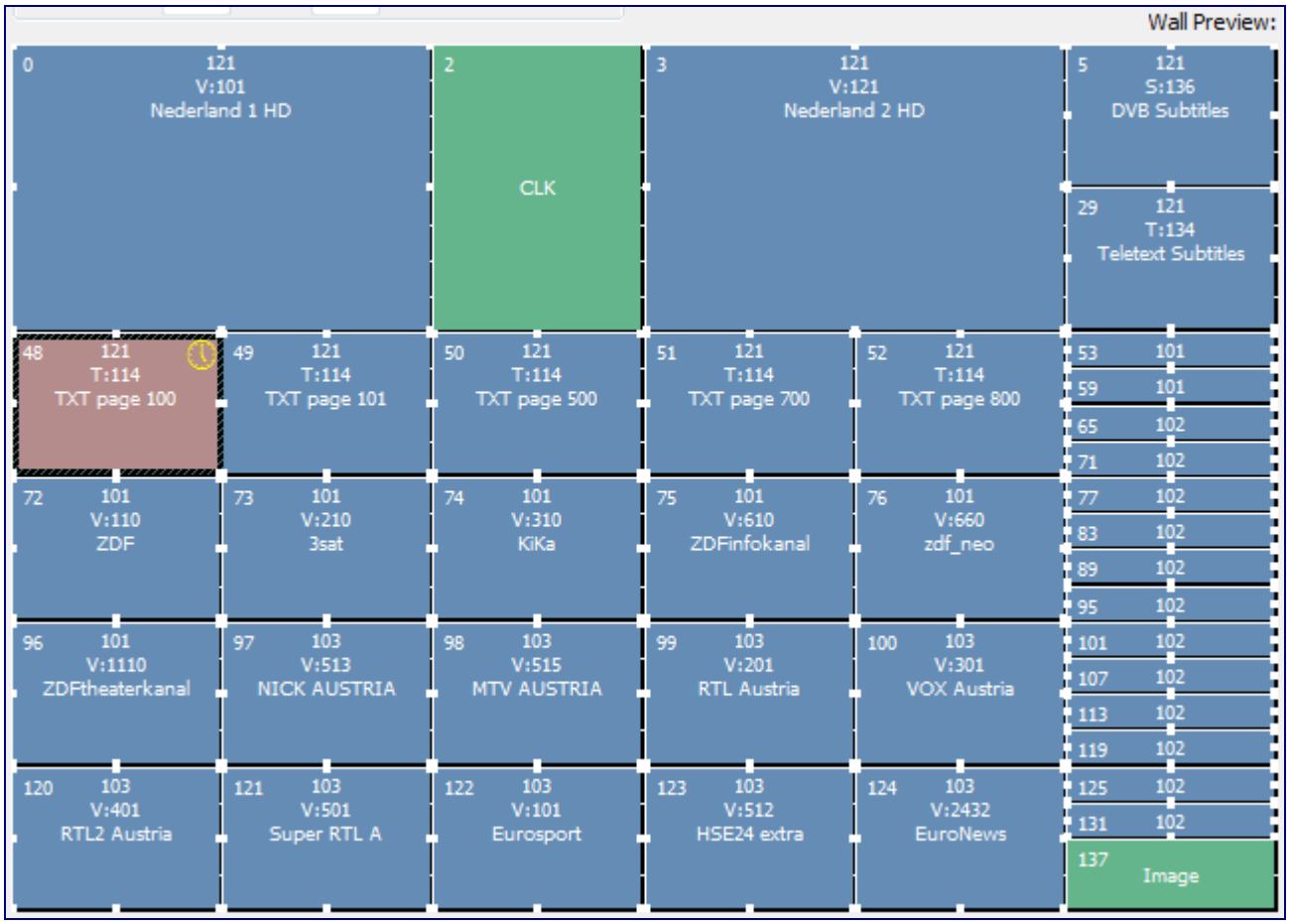


Channel Configuration

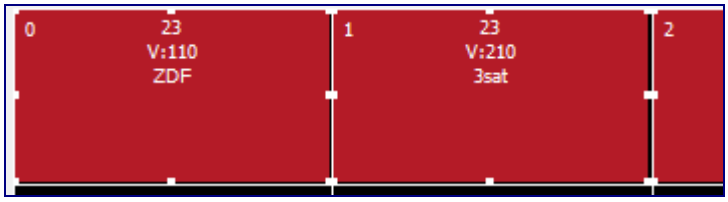
Selecting an existing Channel configuration, can be done by mouse clicking a specific cell in the Preview Wall. The focused Channel will be coloured brawn.

Channels can be deleted, copied and paste, using the right mouse button menu, or shortcuts.

Right mouse menu	Short key	Principal functions
Copy	Ctrl+C	Copy the selected channel
Paste	Ctrl+P	Paste the selected channel
Delete	<Delete>	Delete the selected channel



If an input is deleted, the related wall components will be coloured red.



For different types of input, a channel can be configured:

- Clock
- Image
- Video
- Subtitle
- Teletext
- Audio
- Service
- Text
- ETR290 Level 1
- PID Monitor
- Penalty Box
- Chart

By selecting the Type pull down, the required channel type can be configured.

Channel configuration

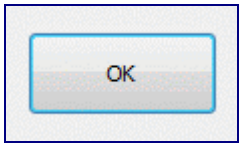
Add
After the channel configuration, the new Channel configuration will be added to the Wall.

Delete
Delete the selected Channel configuration out of the Wall.

Multi Monitor support

When using multiple displays connected to one machine, the grid has to be adjusted so shown services will not be split over different displays. It is also handy to choose a grid which can be divided over the multiple displays.

Wall exit

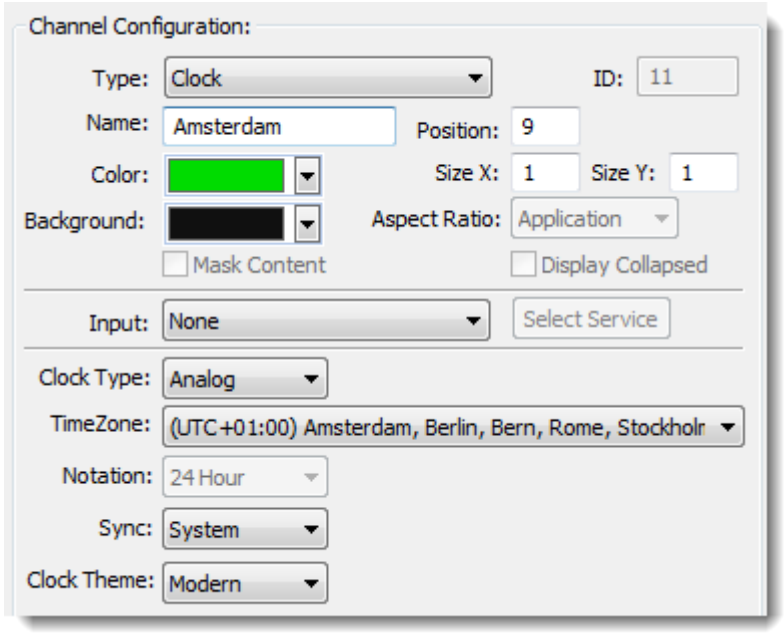


OK
Leave the Configure Wall window.

5.3.1 Clock

A real-time clock can be added to the wall by selecting the Clock type.

The clock uses the computer time.



Type
Select Clock

ID
Unique Identifier per Wall, which is used for external communication (e.q. SNMP, DVBMonitor).

Name
Clock name, presented above the clock.

Color
The color which could be used to highlight the Channel name.

Background
For a standard clock style, the background color can be selected.

Position
The position number of the clock.

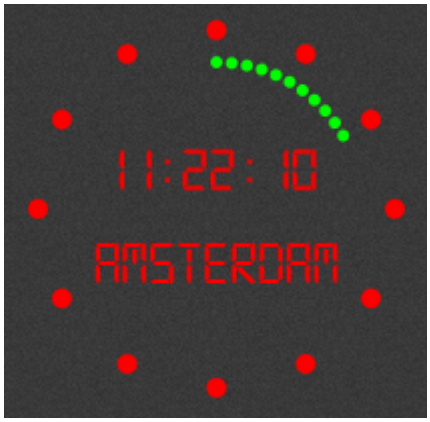
Size X
The horizontal size of the clock.

Size Y
The vertical size of the clock.

Clock Type
Selection of clock mode:

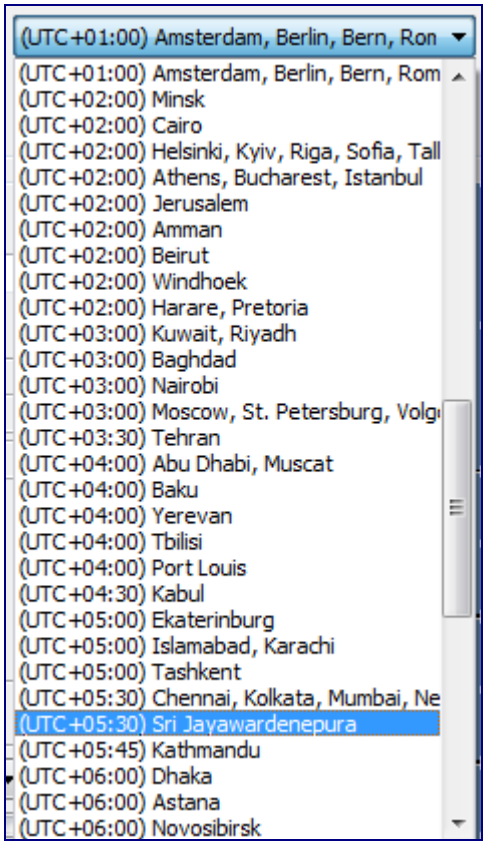
- Off
- Analog
- Digital
- Both (Analog and Digital)
- Broadcast

When using the 'Broadcast' clock type, also the colours for the inner and outer can be chosen:



TimeZone

UTC Offset can be used.



Notation

Selection of time notation:

- 24 Hour
- AM/PM

Sync
Selection of the clock synchronization source:

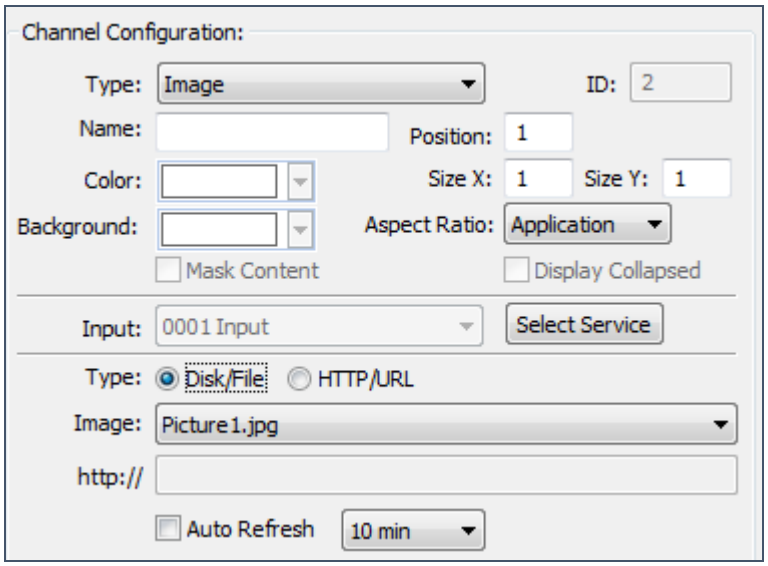
- System time
- Input (TDT/TOT/SIT) time

Clock Style
Selection of clock style:

- Standard
- Modern

5.3.2 Image

An Image can be added to the wall by selecting the Image type.



Type
Select Image

Name
Image name (only used for reporting).

Position
The position number of the image.

Size X
The horizontal size of the image.

Size Y
The vertical size of the image.

Aspect Ratio
A preferred Aspect Ratio can be chosen.

- Application (default)
- Off (stretch image)
- 4:3
- 16:9

Type
An image can be selected from different source types:

- Disk/File
- HTTP/URL

Image
Selection of the image file. Image files are stored in the /image directory.

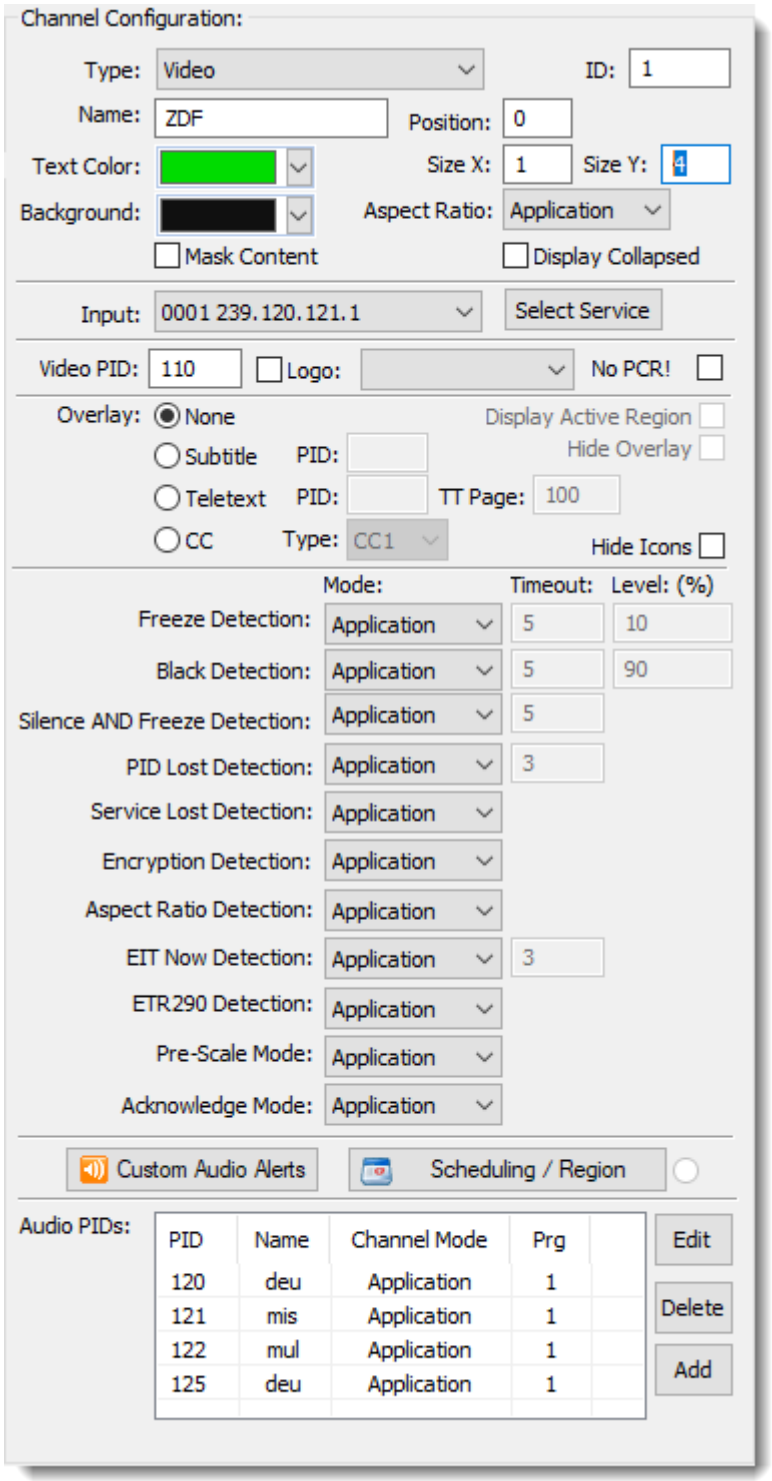
http://
URL of the webpage

Auto refresh
If enabled, the webpage can be refreshed automatically, using a selected interval:

- 1 min
- 5 min
- 10 min (default)
- 15 min
- 30 min
- 1 hour
- 12 hour
- 24 hour

5.3.3 Video

Video can be added to the wall by selecting the Video type.



Type
Select Video

ID
Unique Identifier per Wall, which is used for external communication (e.q. SNMP, DVBMonitor).

Name
The Channel name, which will be displayed with the video.

Color
The color which is used to highlight the Channel name.

Background
The channel name background color.

Mask Content
If enabled, the video image will be masked according the preferred mask mode which is chosen in Preferences – Application (Mosaic, Black or Darken).

Position
The position number of the channel.

Size X
The horizontal size of the channel, which can also be changed by using the handles at the border of the channel.

Size Y
The vertical size of the channel, which can also be changed by using the handles at the border of the channel.

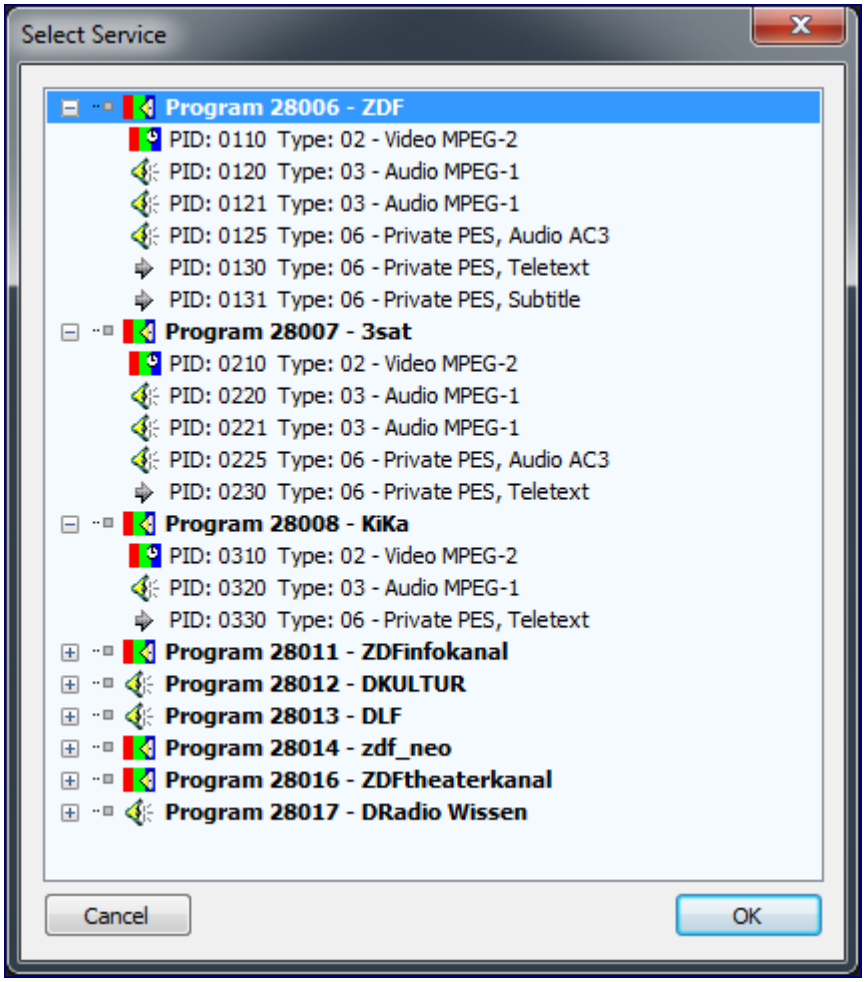
Aspect Ratio
A preferred Aspect Ratio can be chosen.

- Application (default)
- Off (stretch)
- Auto (following the MPEG header aspect ratio)
- 4:3
- 16:9

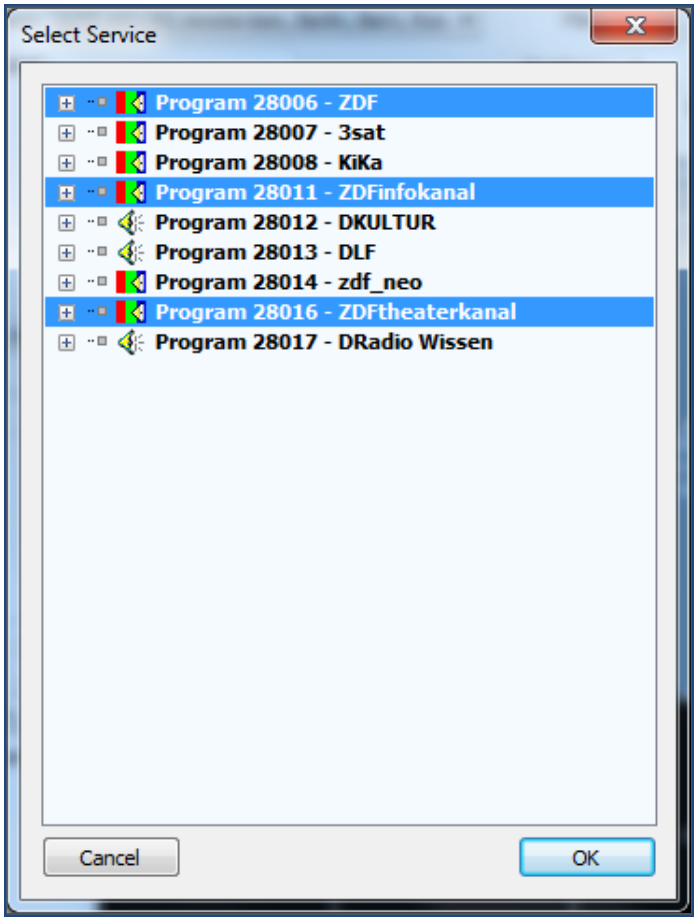
Display Collapsed
If enabled, the active video will not be shown. Only the UMD is shown.

Input
Pull down list of all available Transport Stream inputs.

Select Service
Instead of typing the appropriate Service and PID numbers, via Select Service the service and its components can directly be selected. Select Service will give all services which are found in the selected input Transport Stream, after have been in running mode.



Also multiple Services can be selected at once. Therefore, first a not used channel position in the Wall has to be selected.

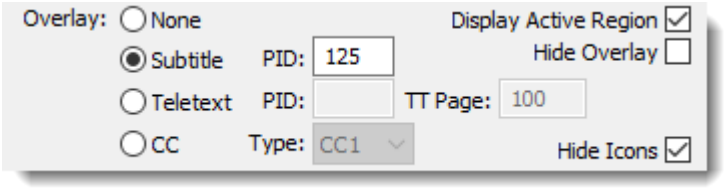


Video PID
Selected Video PID.

Logo
If enabled, a service logo can be selected which will be overlaid over the video signal.

No PCR!
Enable this option, if the PCR is not accurate or does not exist for this service

Overlay



Different types of overlay are possible:

- None
- DVB-Subtitle
- Teletext
- CC (Closed Captioning)

For DVB-Subtitle overlay, the DVB-Subtitle PID must be selected.
For Teletext overlay, the Teletext PID and Teletext page must be selected.

For CC (Closed Captioning) we support: CC1, CC2, CC3, CC4 and 708.

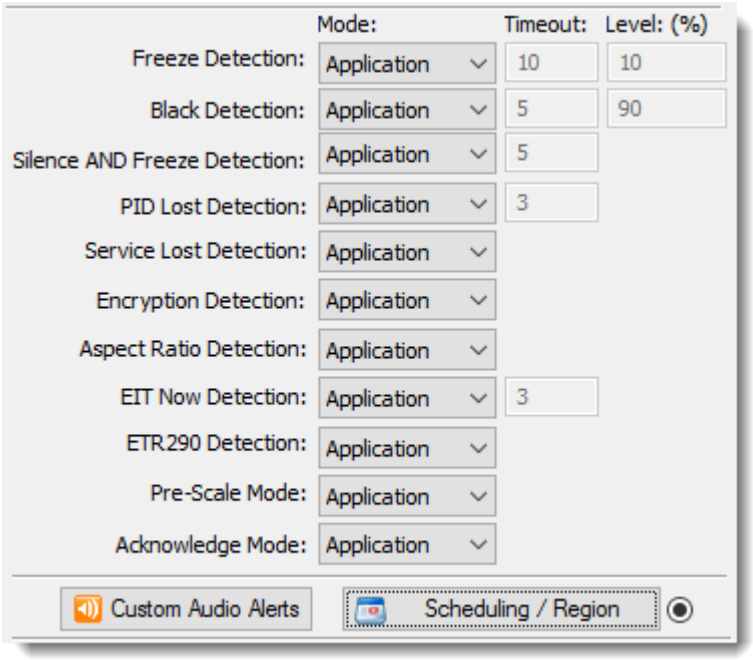
Display Active Region
If enabled, scales the active region to full display.

Hide Overlay
If enabled, the Subtitle or Teletext overlay will not be shown.
But the PID lost check and the Teletext Page Time-out check are still monitoring.

Hide Icons
If enabled, for this wall component no icons will be overlaid for:

- Aspect ratio
- Subtitles
- Teletext
- Now/Next
- ETR290 Level 1
- HbbTV
- SCTE-35

Measurements

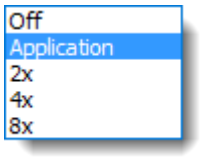


Default for each Channel the Preference Application settings are used as described in chapter 2.8 “General Preferences – Measurements”.

For each Channel, the settings can be overruled for:

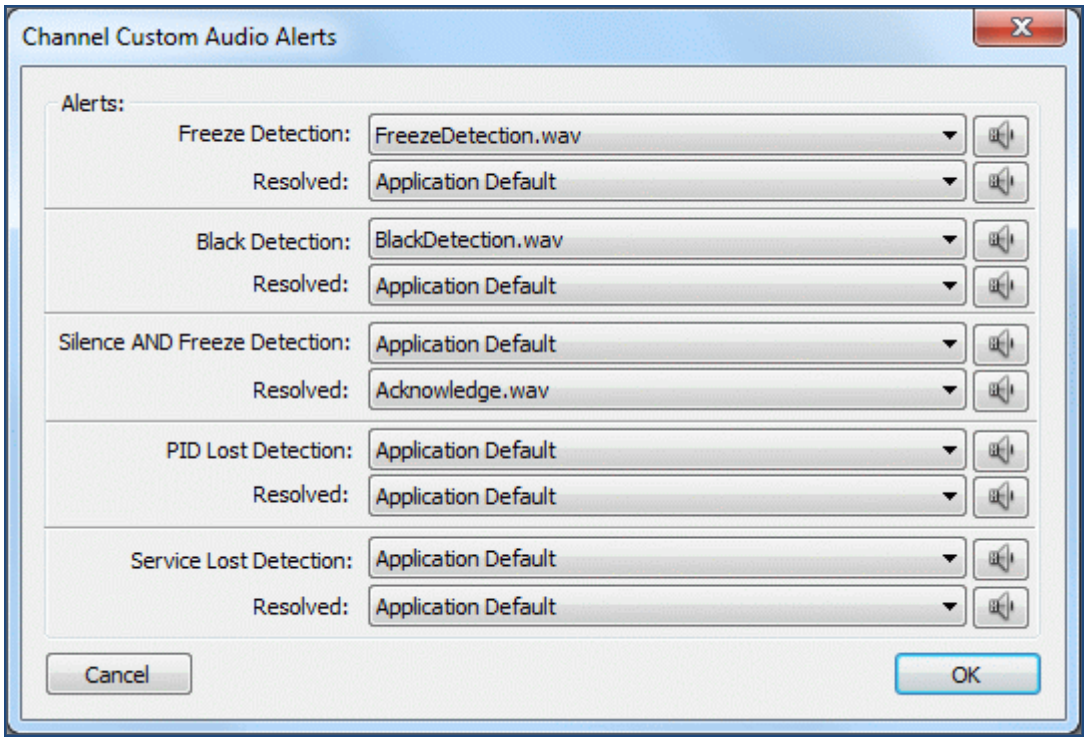
- Freeze Detection
- Black Detection
- Freeze/Silence Detection
- PID Lost Detection
- Service Lost Detection
- Encryption Detection
- Aspect Ratio Detection
- EIT Now Detection
- ETR290 Detection
- Pre-Scale Mode
- Acknowledge Mode

For Pre-scale mode, different scaling selections can be made



Custom Audio alerts

Default for each Channel the Preference Application settings are used as described in chapter 2.8 “General Preferences – Audio Preferences”.



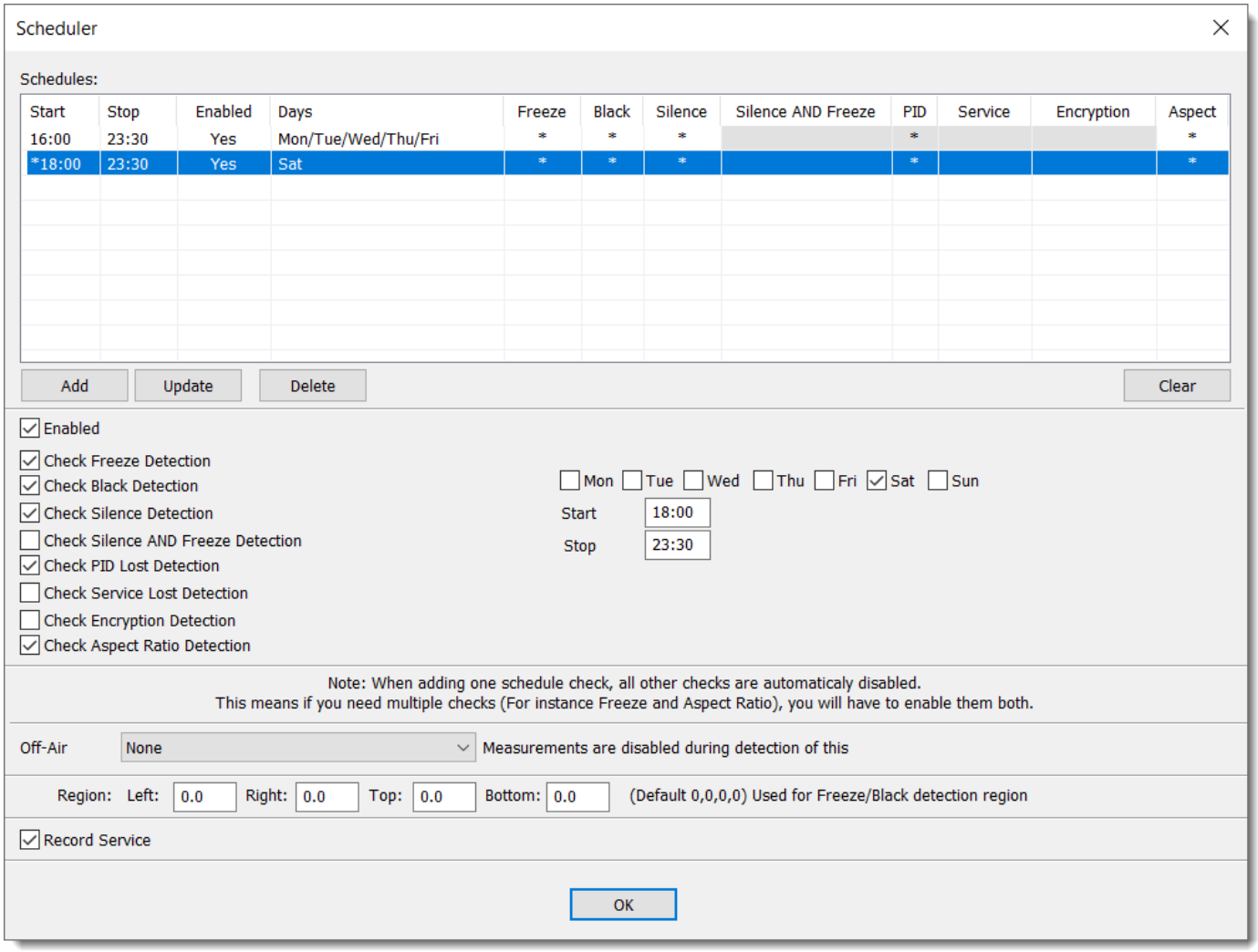
For each Channel, specific audio signaling can be used for:

- Freeze Detection
- Black Detection
- Silence/Freeze Detection
- PID Lost Detection
- Service Lost Detection

The  button gives the possibility to test and hear the selected audio track.

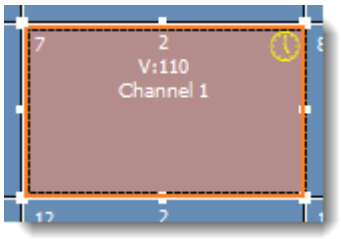
Measurement scheduling and Region

With the scheduling option you can specify which check is active on specific days between specific times. Multiple measurement schedules can be configured for a channel.



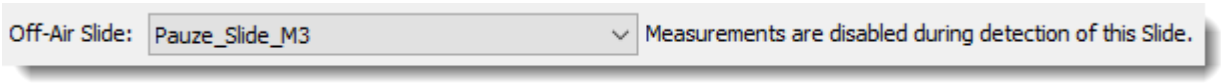
If a test is not used in the 'Configure Wall' setup, it will be shown grey in the Schedules overview list.

A small 'clock' icon on the right of the wall item indicates the use of Measurement Scheduling for this channel.



Slide Detection Setup

It is also possible to let the system detect a ‘Slide’ to ignore all errors. This can be used for channels that do not broadcast 24/7, or only during night times.



The first step is to make a snapshot/screenshot of the Slide. For this it is recommended to make a recording of the slide and use this as FILE input. When you see the slide, press CONTROL-SHIFT keys, and click with the LEFT mouse button on the channel. DVBMosaic will ask you where to store the slide on disk.

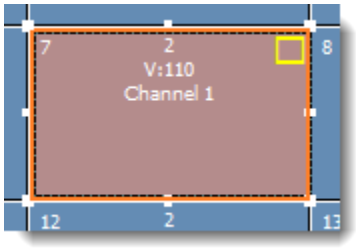
Next, start the ‘Slide Editor’ that you can find in the installation folder of DVBMosaic. Open the JPEG file, zoom in, and add unique/stable pixels by pressing the CONTROL + LEFT mouse button on the pixels.

Make sure there is enough space around the pixels, do not take for example a black pixel next to a white one (or via versa), but make sure there is enough black pixels around it
10 Slide points is a good amount.

Save this in the 'Slides' folder inside the DVBMosaic installation folder.

Open the wall configurator, select the Channel that should be checked against this slide, press the 'Measurement' button, and select the slide and press OK

A small icon “square with a cross” on the right of the wall item indicates the Slide Detection is active for this channel.

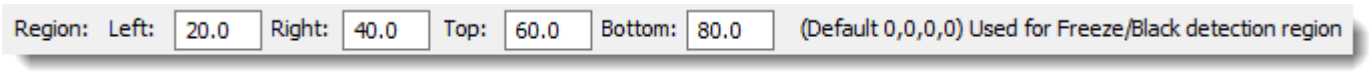


Next start the normal monitoring. When the slide is detected you will see a 'Pause' icon on top of the video, and the measurements will be stopped/solved.

Active Region

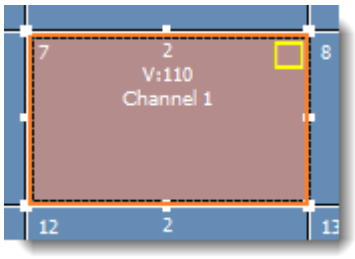
You can specify a region where the checks are active for black/freeze.

For instance, if you have a Tell-Sell channel with a border on the right, you only want to active the active content (the left part).
Or a music channel with a ticket tape (two different playout systems), you might want to measure only the active video. You can enable the display of the active Region in the Layout settings



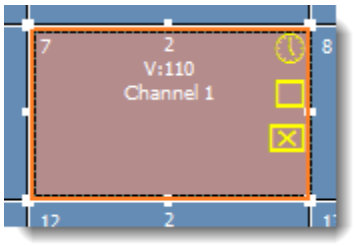
The values are set in %.

A small icon “square” on the right of the wall item indicates the Active Region filter is active for this channel.



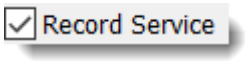
In the Mosaic view the region is shown in green.
Please be aware you have to enable the ‘Show Region’ preference.

If Scheduling, Slide Detection and Active Region are enabled, all three icons will be shown.

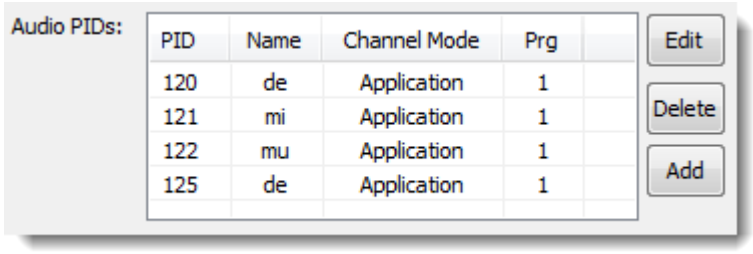


Record Service

When enables, the Service will be recorded 24/7



Audio PID configuration

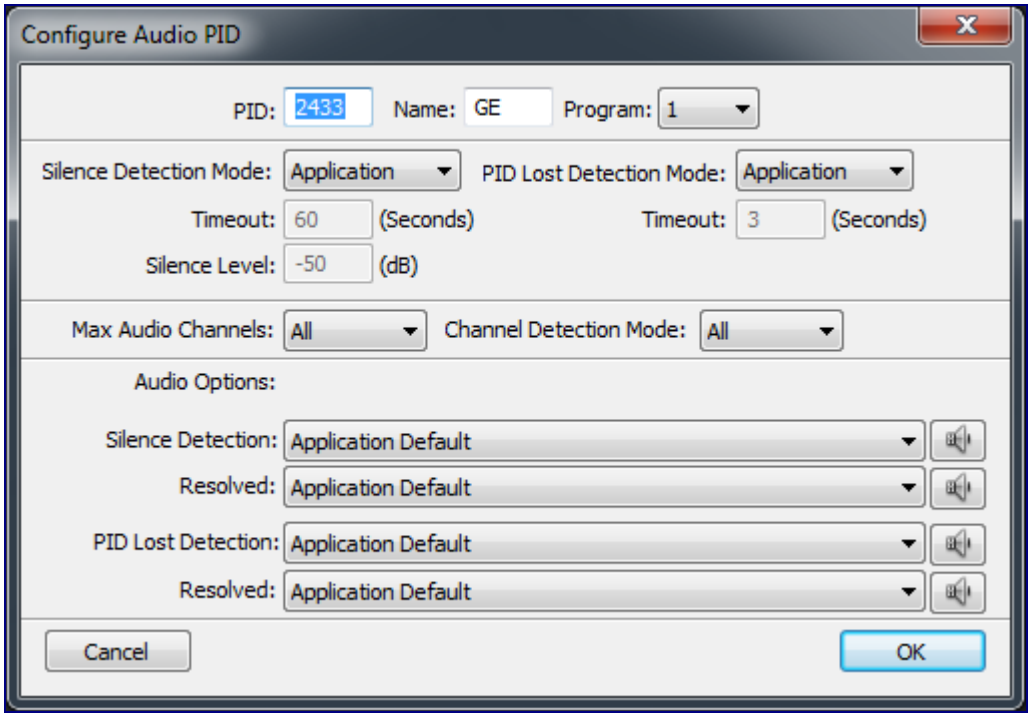


Maximal of 20 audio components can be used:

If an audio problem occurs (Silence, PID Lost, Input Lost) and no audio name is used, a red E* will be shown:

If an audio problem occurs (Silence, PID Lost, Input Lost) and an audio name is used, the audio name will be shown in red:

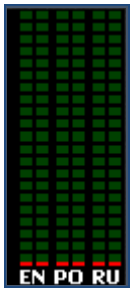
Audio PID's: Edit / Delete / Add
Editing (multiple) Audio PID's .



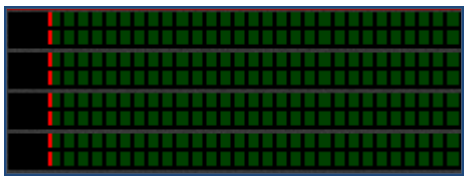
PID
Audio PID coming out of the Input Transport Stream.

If no Audio PID is given, there will not be shown any audio.
If Audio PID 0 is given, automatically the first Audio PID number coming from the PMT will be used.

Name
If the name of the audio component is used together with video, only the 2 first characters are shown.
If no name is used, also no name background will be shown.



When used without a Video PID, the audio components are interpreted as Radio services and the full name will be presented.



Program
Program selection, used for Dolby-E

Silence Detection Mode
Select the appropriate Silence Detection mode settings:

- Off (no silence detection)
- Application (use application settings)
- Custom (use custom settings)

Silence Level / Timeout
If custom Silence Detection enabled, Silence Detection signalling will be given after xx Seconds of Silence using yy dB as Silence level.

Max Audio Channels
Select the maximum number of audio components which should be shown.

- All
- 1
- 2
- 3
- 4
- 5
- 6

Channel Detection Mode
Select the appropriate Silence detection Channel mode (Now possible to check individual channels, ignored for PID's with more than two channels):

- All
- Separate

Use this option if you have two languages that share the same stereo audio.
(For example Left = Spanish and Right = English)
When enabled, silence detection is performed for each individual language (left/right)

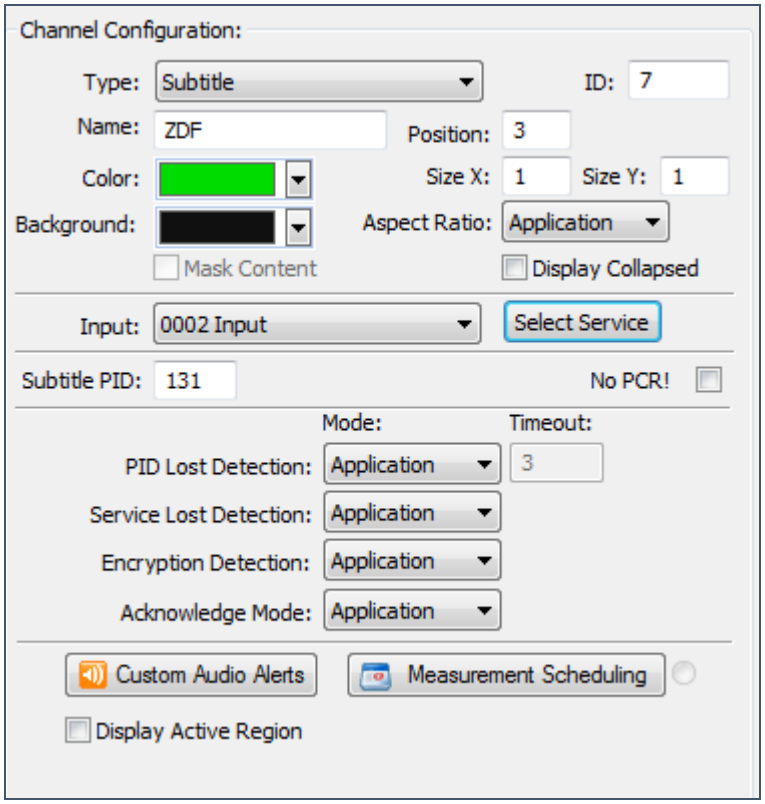
Audio options
Default the Preference Application settings are used as described in chapter 2.8 "General Preferences – Audio Preferences". For each Audio PID, specific audio signaling can be used for:

- Silence Detection
- PID Lost Detection

The  button gives the possibility to test and hear the selected audio track.

5.3.4 Subtitle

A DVB-Subtitle can be added to the wall by selecting the Subtitle type.



Type
Select Subtitle

ID
Unique Identifier per Wall, which is used for external communication (e.q. SNMP, DVBMonitor).

Name
The Channel name, which will be displayed with the subtitle.

Color
The color which is used to highlight the Channel name.

Background
The channel name background color.

Position
The position number of the channel.

Size X
The horizontal size of the channel, which can also be changed by using the handles at the border of the channel.

Size Y
The vertical size of the channel, which can also be changed by using the handles at the border of the channel.

Aspect Ratio
A preferred Aspect Ratio can be chosen.

- Application (default)
- Off (stretch)
- Auto (following the MPEG header aspect ratio)
- 4:3
- 16:9

Display Collapsed
If enabled, the active video will not be shown. Only the UMD is shown.

Input
Pull down list of all available Transport Stream inputs.

Select Service
Instead of typing the appropriate Service and PID numbers, via Select Service the service and its components can directly be selected. Select Service will give all services which are found in the selected input Transport Stream, after have been in running mode.

For each Channel the settings can be overruled for:

- PID Lost Detection
- Service Lost Detection
- Acknowledge Mode

Subtitle PID
Selected Subtitle PID.

No PCR!
Enable this option, if the PCR is not accurate or does not exist for this service.

Custom Audio Alerts
Specific audio signaling can be used for:

- PID Lost Detection
- Service Lost Detection

The  button gives the possibility to test and hear the selected audio track.

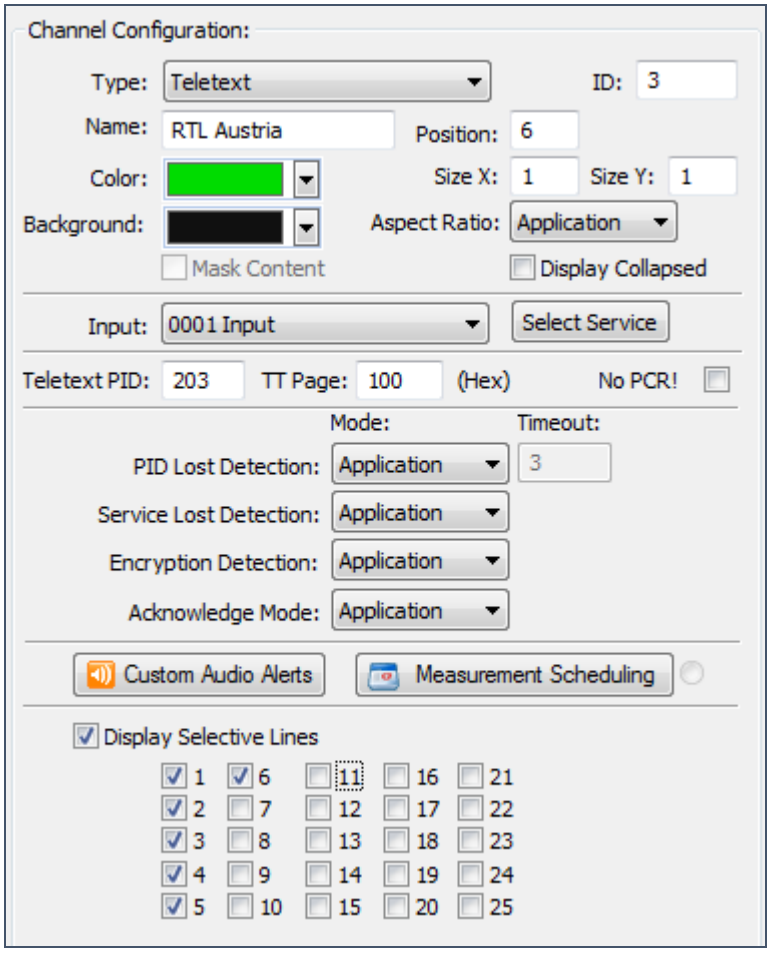
Measurement Scheduling
Multiple measurement schedules can be configured for:

- PID Lost Detection
- Service Lost Detection

Display Active Region
If enabled, scales the active region to full display.

5.3.5 Teletext

Teletext can be added to the wall by selecting the Teletext type.



Type
Select Teletext

ID
Unique Identifier per Wall, which is used for external communication (e.q. SNMP, DVBMonitor).

Name
The Channel name, which will be displayed with the teletext.

Color
The color which is used to highlight the Channel name.

Background
The channel name background color.

Position
The position number of the channel.

Size X
The horizontal size of the channel, which can also be changed by using the handles at the border of the channel.

Size Y
The vertical size of the channel, which can also be changed by using the handles at the border of the channel.

Aspect Ratio
A preferred Aspect Ratio can be chosen.

- Application (default)
- Off (stretch)
- Auto (following the MPEG header aspect ratio)
- 4:3
- 16:9

Display Collapsed
If enabled, the active video will not be shown. Only the UMD is shown.

Input
Pull down list of all available Transport Stream inputs.

Select Service
Instead of typing the appropriate Service and PID numbers, via Select Service the service and its components can directly be selected. Select Service will give all services which are found in the selected input Transport Stream, after have been in running mode.

For each Channel the settings can be overruled for:

- PID Lost Detection
- Service Lost Detection
- Acknowledge Mode

Teletext PID
Selected Teletext PID.

TT Page
Selected Teletext Page.

No PCR!
Enable this option, if the PCR is not accurate or does not exist for this service.

Custom Audio Alerts
Specific audio signaling can be used for:

- PID Lost Detection
- Service Lost Detection

The  button gives the possibility to test and hear the selected audio track.

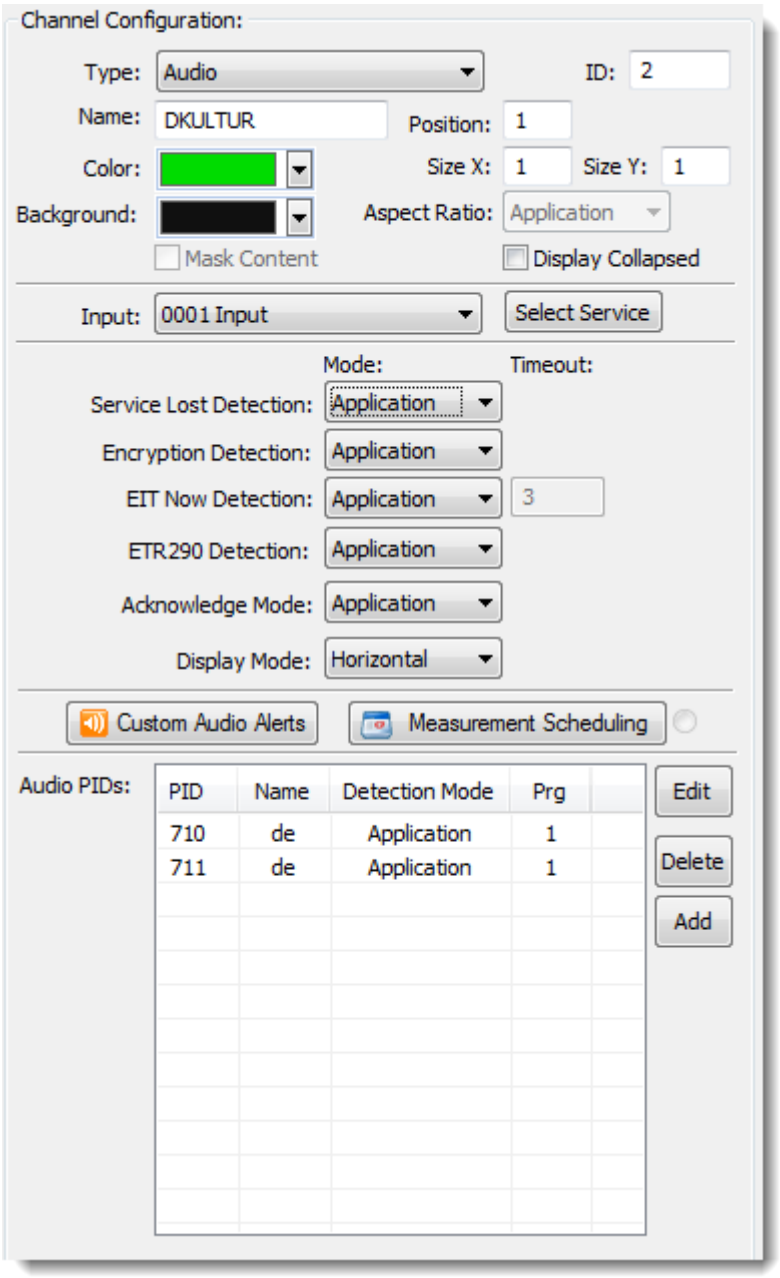
Measurement Scheduling
Multiple measurement schedules can be configured for:

- PID Lost Detection
- Service Lost Detection

Display Selective Lines
If enabled, only the selected Teletext lines will be presented.

5.3.6 Audio

Audio can be added to the wall by selecting the Audio type.



Type
Select Audio

ID
Unique Identifier per Wall, which is used for external communication (e.q. SNMP, DVBMonitor).

Name
The Channel name, which will be displayed with the audio.

Color

The color which is used to highlight the Channel name.

Background
The channel name background color.

Position
The position number of the channel.

Size X
The horizontal size of the channel, which can also be changed by using the handles at the border of the channel.

Size Y
The vertical size of the channel, which can also be changed by using the handles at the border of the channel.

Display Collapsed
If enabled, the active video will not be shown. Only the UMD is shown.

Input
Pull down list of all available Transport Stream inputs.

Select Service
Instead of typing the appropriate Service and PID numbers, via Select Service the service and its components can directly be selected. Select Service will give all services which are found in the selected input Transport Stream, after have been in running mode.

For each Channel the settings can be overruled for:

- Service Lost Detection
- Encryption Detection
- EIT Now Detection
- ETR290 Detection
- Acknowledge Mode
- Display Mode

Display Mode
Audio bars can be shown in different orientations:

- Horizontal
- Vertical

Custom Audio Alerts
Specific audio signaling can be used for:

- PID Lost Detection
- Service Lost Detection

The  button gives the possibility to test and hear the selected audio track.

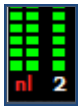
Measurement Scheduling
Multiple measurement schedules can be configured for:

- PID Lost Detection
- Service Lost Detection

Audio PID's: Edit / Delete / Add
Editing (multiple) Audio PID's .

If an audio problem occurs (Silence, PID Lost, Input Lost) and no audio name is used, a red E* will be shown:

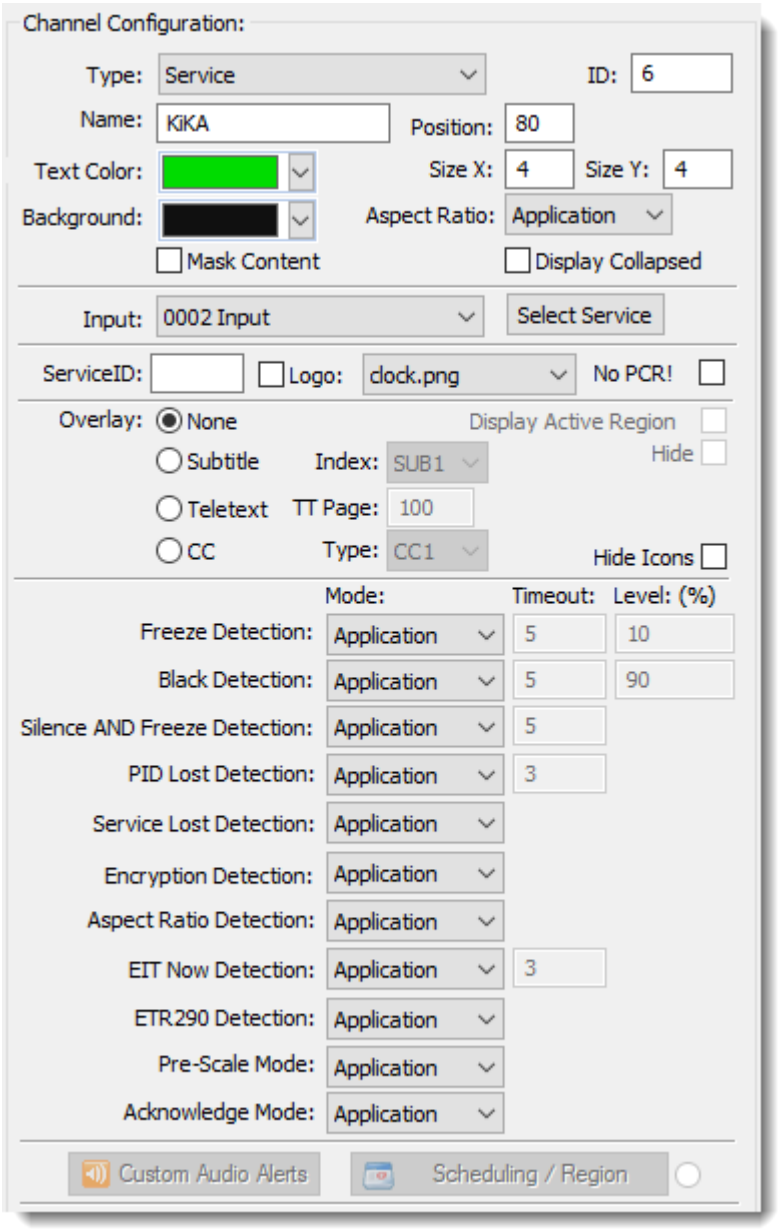
If an audio problem occurs (Silence, PID Lost, Input Lost) and an audio name is used, the audio name will be shown in red:



5.3.7 Service

A Service can be added to the wall by selecting the Service type.
Selecting a Service instead of a Video type, means that the PMT (Program Map Table) components are used, instead of using selected component PIDs. When the Service is using different PIDs the wall will follow.

Please be aware that the amount of used license points is dependent on the amount of separate decoded components. If a component is used more than once, but only has to be decoded once, also the needed points are only calculated once.



Type
Select Service

ID
Unique Identifier per Wall, which is used for external communication (e.g. SNMP, DVBMonitor).

Name
The Channel name, which will be displayed with the service.
[SDT_NAME] can be used to automatically show the SDT Service Name.

Color
The color which is used to highlight the Channel name.

Background
The channel name background color.

Position
The position number of the channel.

Size X
The horizontal size of the channel, which can also be changed by using the handles at the border of the channel.

Size Y
The vertical size of the channel, which can also be changed by using the handles at the border of the channel.

Aspect Ratio
A preferred Aspect Ratio can be chosen.

- Application (default)
- Off (stretch)
- Auto (following the MPEG header aspect ratio)
- 4:3
- 16:9

Display Collapsed
If enabled, the active video will not be shown. Only the UMD is shown.

Input
Pull down list of all available Transport Stream inputs.

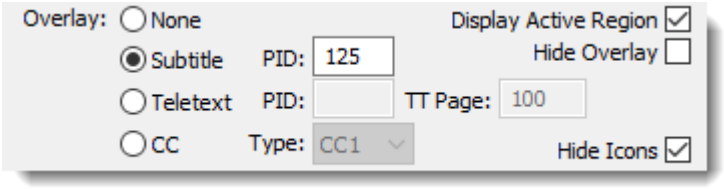
Select Service
Instead of typing the appropriate Service and PID numbers, via Select Service the service and its components can directly be selected. Select Service will give all services which are found in the selected input Transport Stream, after have been in running mode.

ServiceID
Selected Service PID.

Logo
If enabled, a service logo can be selected which will be overlaid over the video signal.

No PCR!
Enable this option, if the PCR is not accurate or does not exist for this service

Overlay



Different types of overlay are possible:

- None
- DVB-Subtitle
- Teletext
- CC (Closed Captioning)

For DVB-Subtitle overlay, the DVB-Subtitle PID must be selected.
For Teletext overlay, the Teletext PID and Teletext page must be selected.

For CC (Closed Captioning) we support: CC1, CC2, CC3, CC4 and 708.

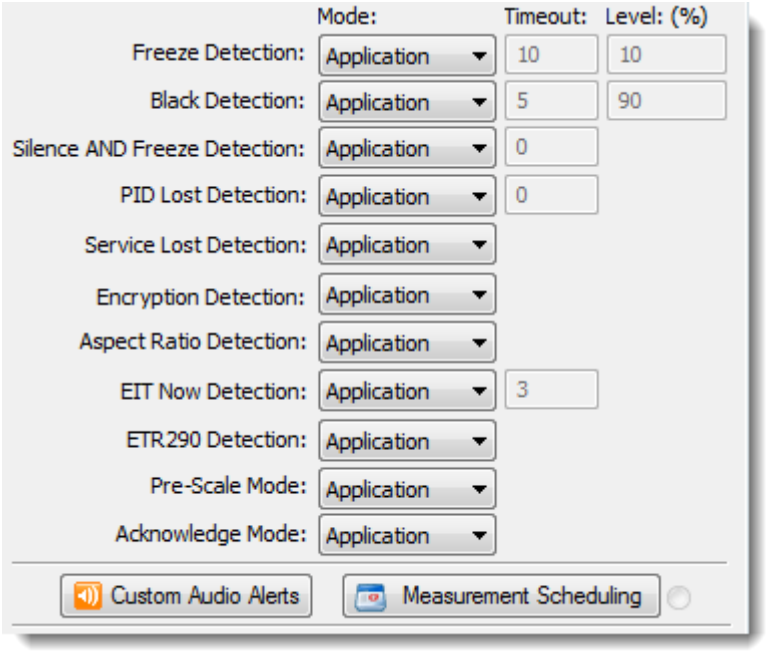
Display Active Region
If enabled, scales the active region to full display.

Hide Overlay
If enabled, the Subtitle or Teletext overlay will not be shown.
But the PID lost check and the Teletext Page Time-out check are still monitoring.

Hide Icons
If enabled, for this wall component no icons will be overlaid for:

- Aspect ratio
- Subtitles
- Teletext
- Now/Next
- ETR290 Level 1
- HbbTV
- SCTE-35

Measurements



Default for each Channel the Preference Application settings are used as described in chapter 2.8 “General Preferences – Measurements”.

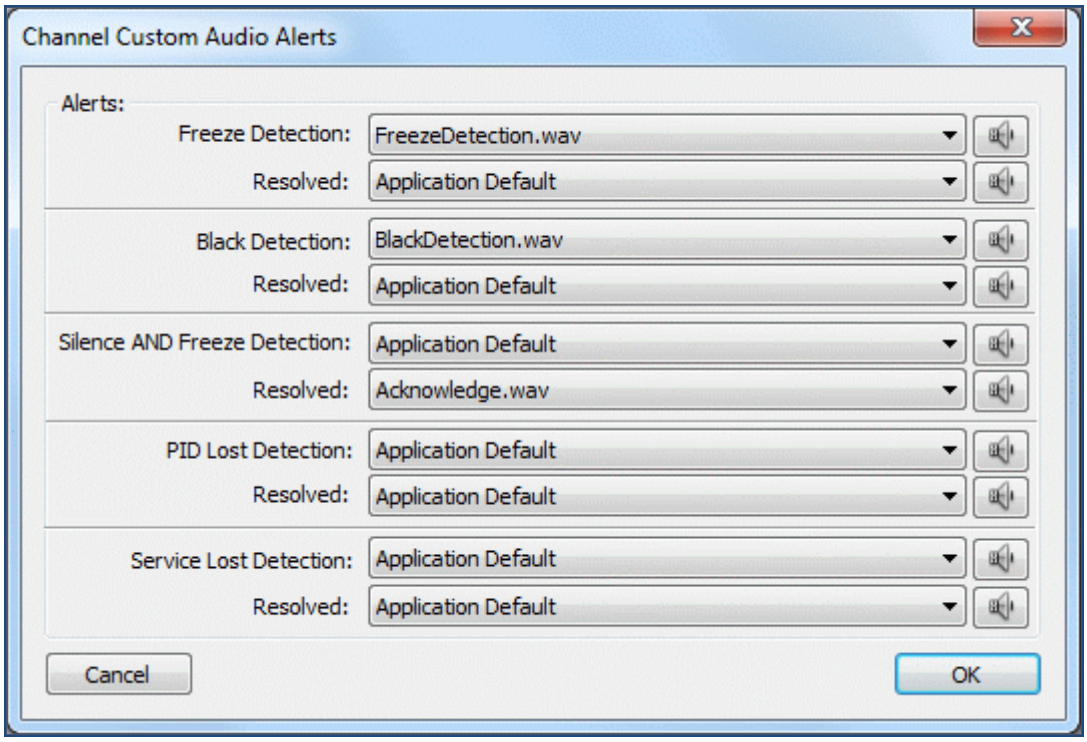
For each Channel the settings can be overruled for:

- Freeze Detection
- Black Detection
- Freeze/Silence Detection
- PID Lost Detection
- Service Lost Detection
- Encryption Detection
- Aspect Ratio Detection
- EIT Now Detection
- ETR290 Detection
- Pre-Scale Mode
- Acknowledge Mode

Also multiple Services can be selected at once. Therefore, first a not used channel position in the Wall has to be selected.

Custom Audio Alert

Default for each Channel the Preference Application settings are used as described in chapter 2.8 “General Preferences – Audio Preferences”.



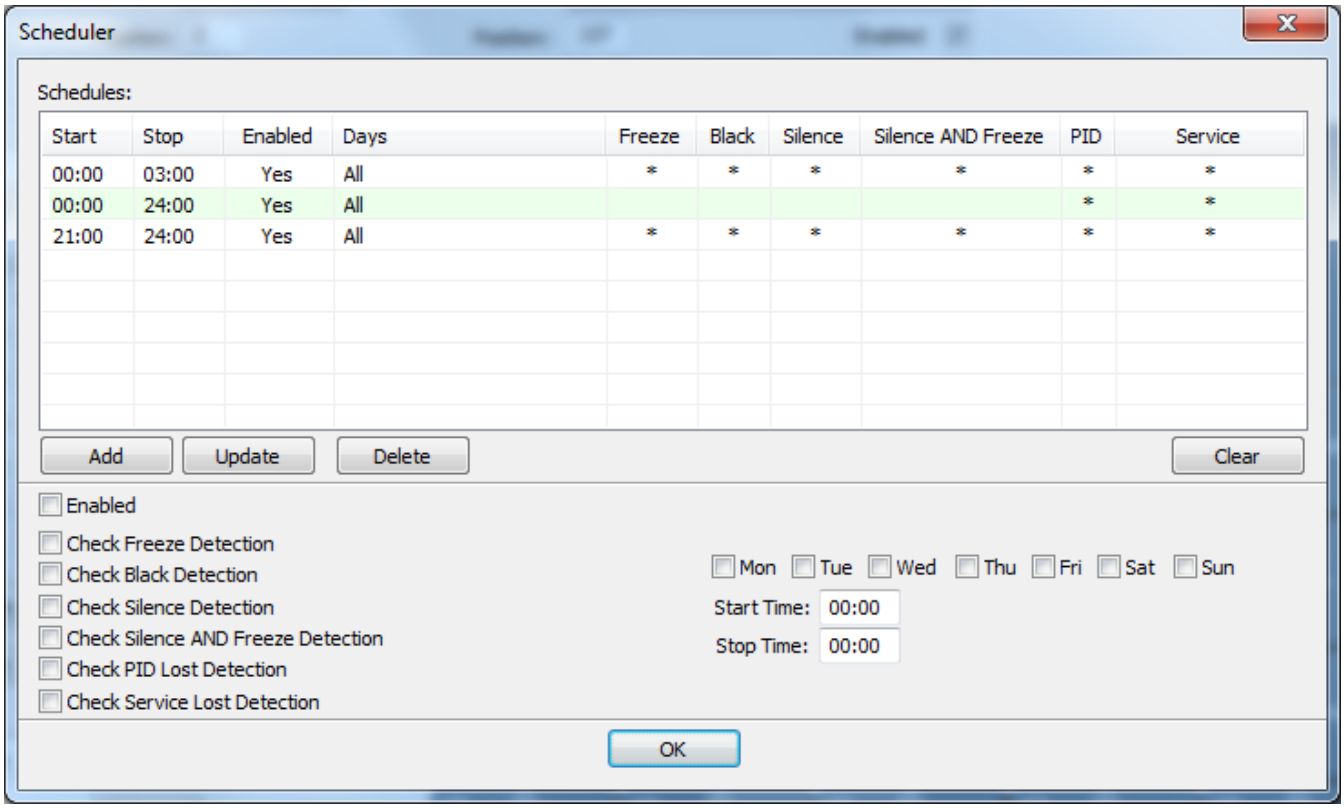
For each Channel, specific audio signaling can be used for:

- Freeze Detection
- Black Detection
- Silence/Freeze Detection
- PID Lost Detection
- Service Lost Detection

The  button gives the possibility to test and hear the selected audio track.

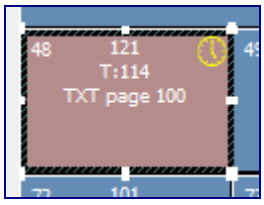
Measurement Scheduling

Multiple measurement schedules can be configured for a channel.



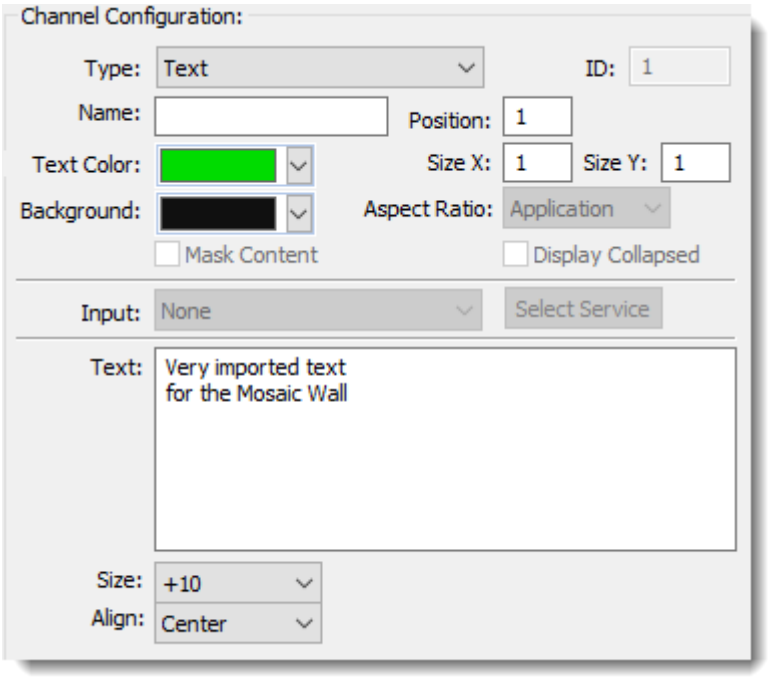
If a test is not used in the 'Configure Wall' setup, it will be shown grey in the Schedules overview list.

A little clock image on the right upper corner of a channel, indicates the use of Measurement Scheduling for this channel.



5.3.8 Text

A Text Object can be added to the wall by selecting the Text type.



Type
Select Text

Name
The Channel name, which will be displayed with the service.

Color
The color which is used to highlight the Channel name.

Background
The channel name background color.

Position
The position number of the channel.

Size
The horizontal size of the channel, which can also be changed by using the handles at the border of the channel.

Size Y
The vertical size of the channel, which can also be changed by using the handles at the border of the channel.

Text
The text string which should be shown

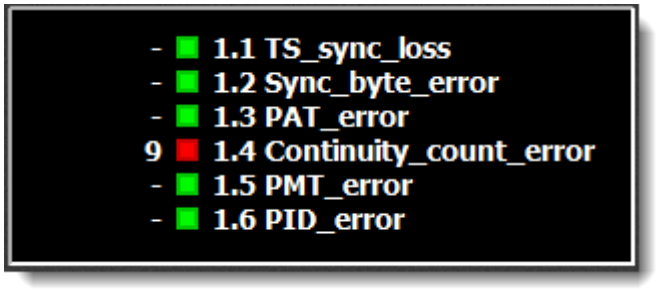
Size
The Text size can be chosen:

- Normal
- +1
- +2
- ..
- +12

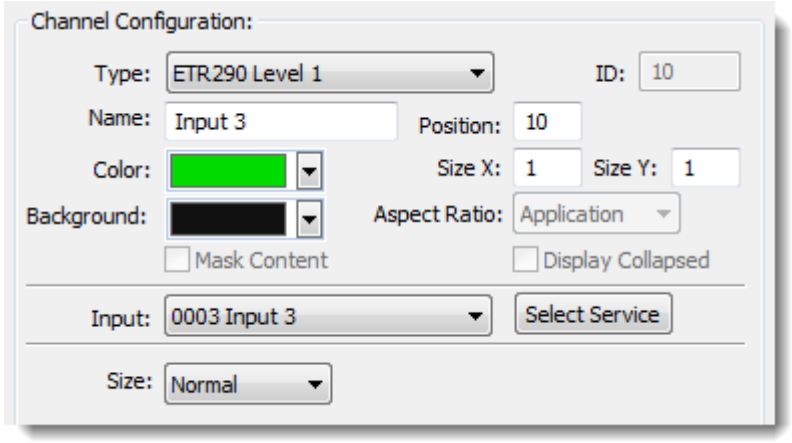
Align
The alignment of the Text:

- Left
- Right
- Center

5.3.9 ETR290 Level 1



An 'ETR290 Level 1' Object can be added to the wall by selecting the 'ETR290 Level 1' type.



Type
Select 'ETR290 Level 1'

Name
The UMD name, which will be displayed under the 'ETR290 Level 1' object.

Color
The color which is used to highlight the UMD name.

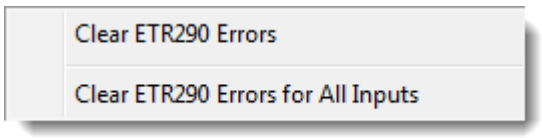
Background
The UMD name background color.

Input
Pull down list of all available Transport Stream inputs.
When instead of an input selection 'None' is selected, all inputs are measured.

Size
The Text size can be chosen:

- Normal
- +1
- +2
- ..
- +12

Using the right mouse button, the ETR290 log can be cleared.



ETR290 measurements are off-course only valid for original TS-inputs, not for OTT inputs.

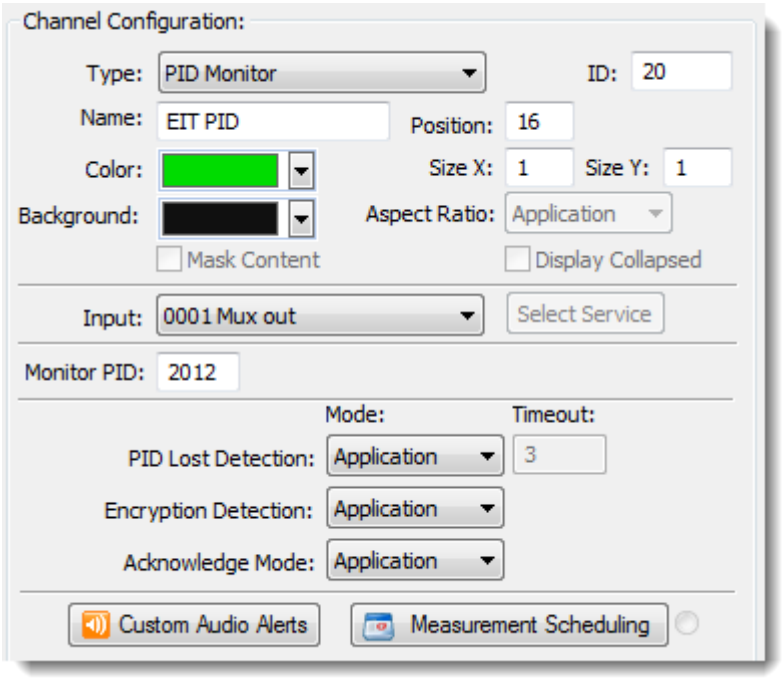
HLS is using a Transport-Stream layer, but often not ETR290 compliant. For example, in HLS inputs the Continuity Counter (CC) for PAT/PMT tables mostly start with 0 (zere) for each new chunk.
Therefore it is advised not to use ETR290 measurements for any OTT inputs

5.3.10 PID Monitor

A 'PID Monitor' Object can be added to the wall by selecting the 'PID Monitor' type.

The PID Monitor function will check if a PID available.
This can be handy for eq. checking if the EIT and/or ECM PIDs are working okay.

The used time-out for PID monitoring can be set in Preferences (PID Lost Detection Timeout).



Type
Select 'PID Monitor'

Name
The UMD name, which will be displayed under the 'ETR290 Level 1' object.

Color
The color which is used to highlight the UMD name.

Background
The UMD name background color.

Position
The position number of the channel.

Size X
The horizontal size of the channel, which can also be changed by using the handles at the border of the channel.

Size Y
The vertical size of the channel, which can also be changed by using the handles at the border of the channel.

Input
Pull down list of all available Transport Stream inputs.
When instead of an input selection 'None' is selected, all inputs are measured.

Monitor PID
PID which should be monitored.

For each PID monitored the settings can be overruled for:

- PID Lost Detection
- Encryption Detection
- Acknowledge Mode

5.3.11 Penalty Box

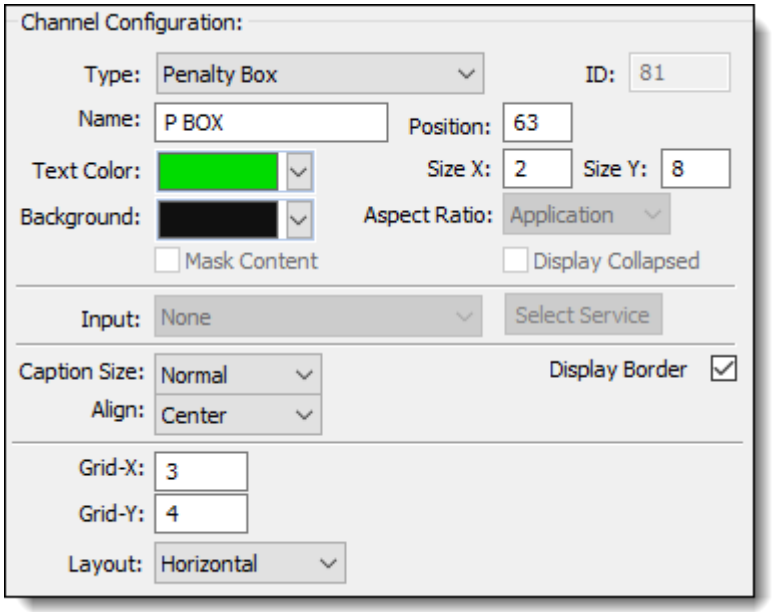
A Penalty Box object can be added to the wall by selecting the 'Penalty Box' type.

Therefor each DVBMosaic which will generate errors will have to enable the Penalty Box function in their General Preferences (Please see also 2.10.8).

The Penalty Box will show:

- All the latest error messages, from this DVBMosaic engine
- If enabled, also the latest error messages from other DVBMosaic engines.

In the Wall configuration the 'Penalty Box' chart object can be customized:



Type
Select ‘Penalty Box’

Name
The UMD name, which will be displayed above the ‘Penalty Box’ object.

Position
The position number of the channel.

Size X
The horizontal size of the channel, which can also be changed by using the handles at the border of the channel.

Size Y
The vertical size of the channel, which can also be changed by using the handles at the border of the channel.

Text Color
The color which is used to highlight the Penalty Box name.

Background
The Penalty Box background color.

Caption Size
The Text size can be chosen:

- Normal
- +1
- +2
- ..
- +12

Align
The alignment of the Text:

- Left
- Right
- Center

Display Border
If enabled, shows a white border around the Penalty Box.

Grid-X
The number of shown errors vertically.

Grid-Y
The number of shown errors horizontal.

Layout
Selection how the errors are added to the Penalty Box list:

- Horizontal
- Vertical

5.3.12 Chart

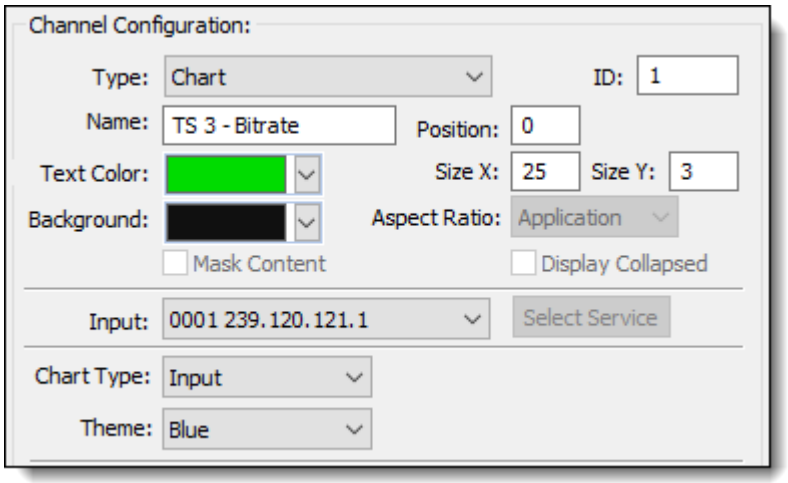
A Bitrate or Spectrum Chart object can be added to the wall by selecting the ‘Chart’ type.

Charts are available for:

- Input Bitrate
- Service Bitrate
- PID Bitrate
- Spectrum

Input Bitrate

In the Wall configuration the ‘Input Bitrate’ chart object can be customized:



Type
Select ‘Chart’

Name
The UMD name, which will be displayed above the ‘Chart’ object.

Position
The position number of the channel.

Size X
The horizontal size of the channel, which can also be changed by using the handles at the border of the channel.

Size Y
The vertical size of the channel, which can also be changed by using the handles at the border of the channel.

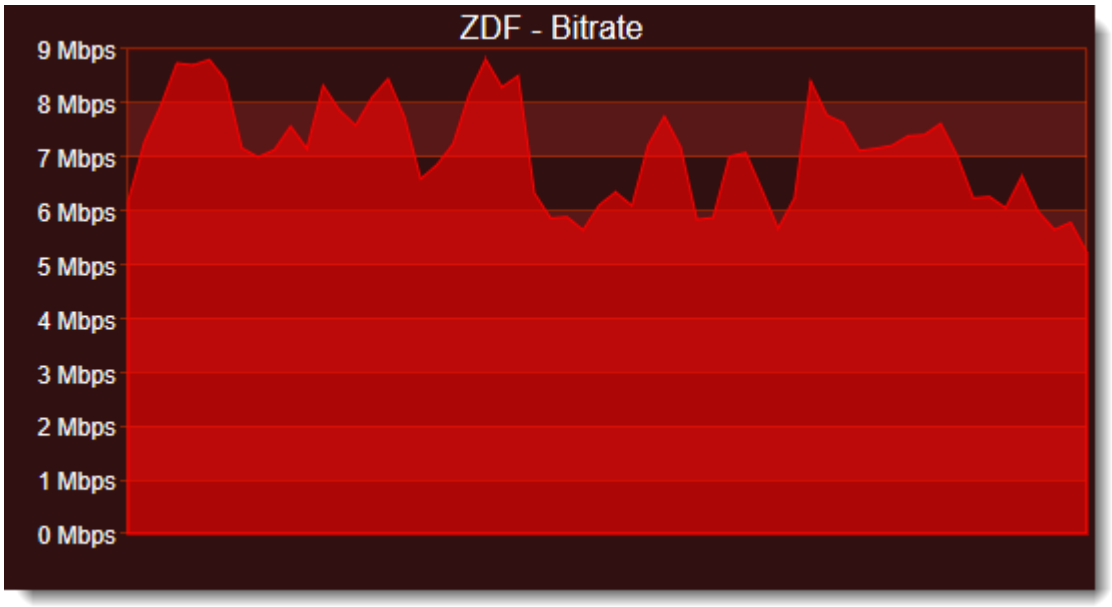
Input
Pull down list of all available Transport Stream inputs.

Chart Type
Select ‘Input’

Theme
Selection of the color which is used for the chart:

- Red
- Green
- Blue
- Gray

Service Bitrate



In the Wall configuration the 'Service Bitrate' chart object can be customized:

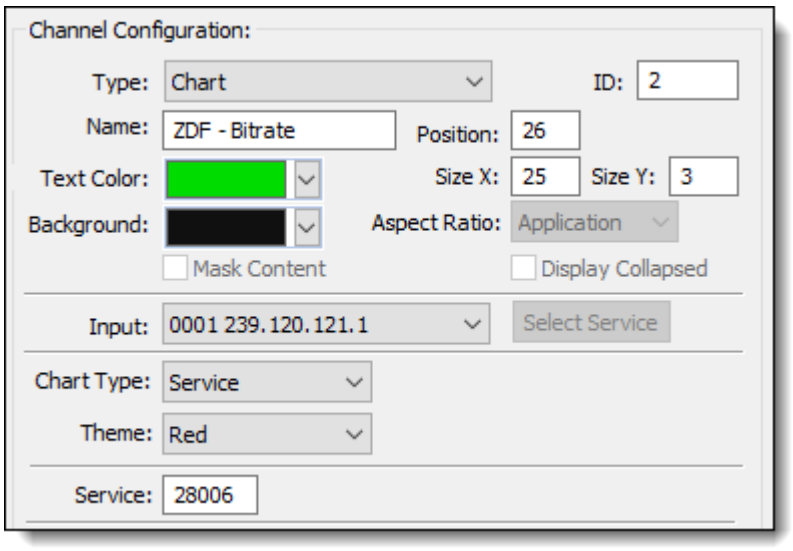
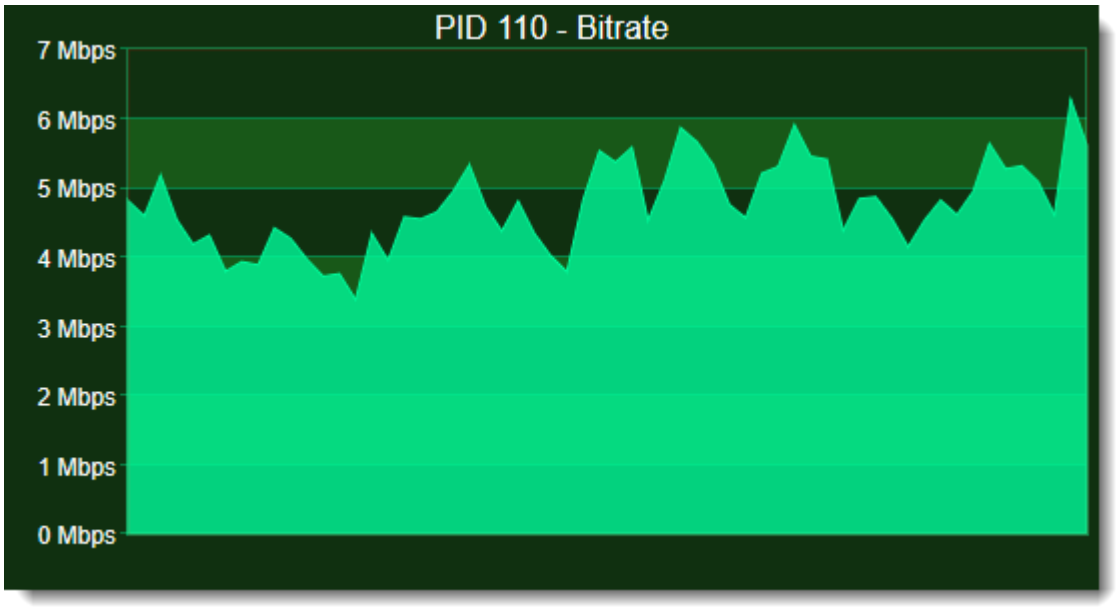


Chart Type
Select 'Service'

Service
The Service ID, for which the service bitrate should be measured.

PID Bitrate



In the Wall configuration the 'PID Bitrate' chart object can be customized:

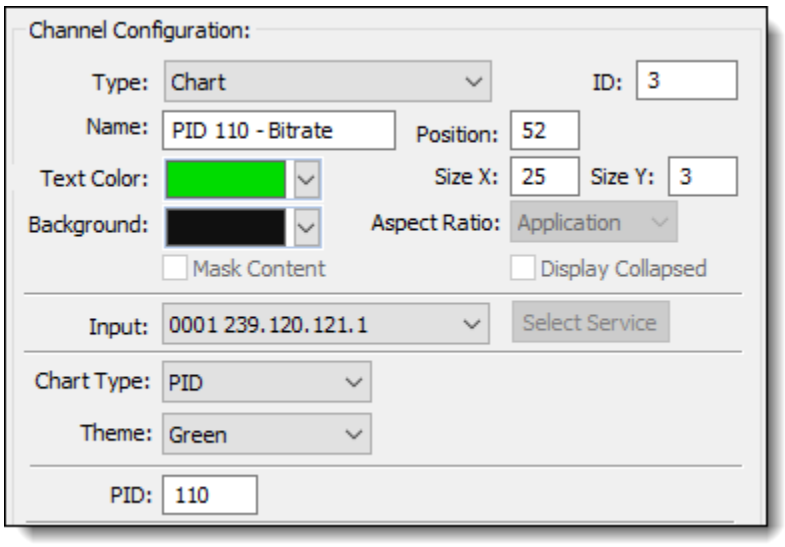
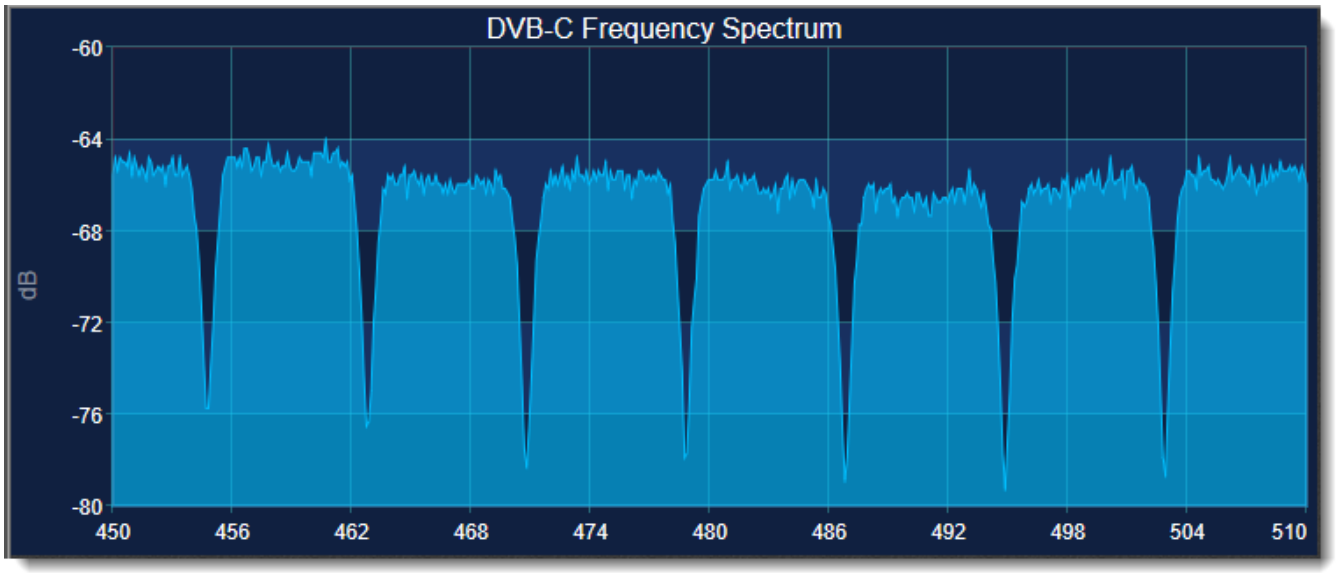


Chart Type
Select 'Service'

PID
The PID, for which the bitrate should be measured.

Spectrum



For real-time Frequency Spectrum measurements, a very cheap Spectrum measurement probe can be connected via USB.

There are 2 different Spectrum measurement probes available:

35MHZ – 4.4 GHz
https://bit.ly/2NSpWeV

138MHZ – 4.4 GHz
https://bit.ly/2wIsxAr

If you are using DVB-S, you need to be behind a loop-though of a tuner, and it is best to use a DC-Block filter on the Input of the probe.
You need to subtract the LNB LOF from the frequency

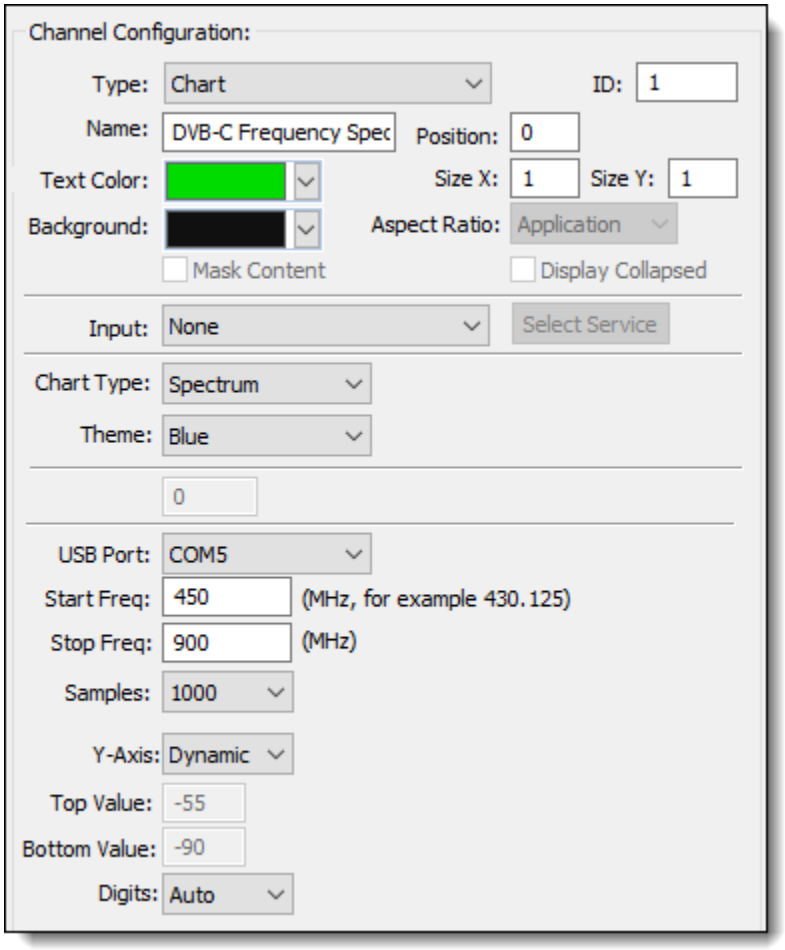
In the Wall configuration the 'Spectrum' chart object can be customized:

Chart Type
Select 'Chart'

USB Port
The COM port on which the probe communicates

Start Freq
The start frequency

Stop Freq
The Stop frequency

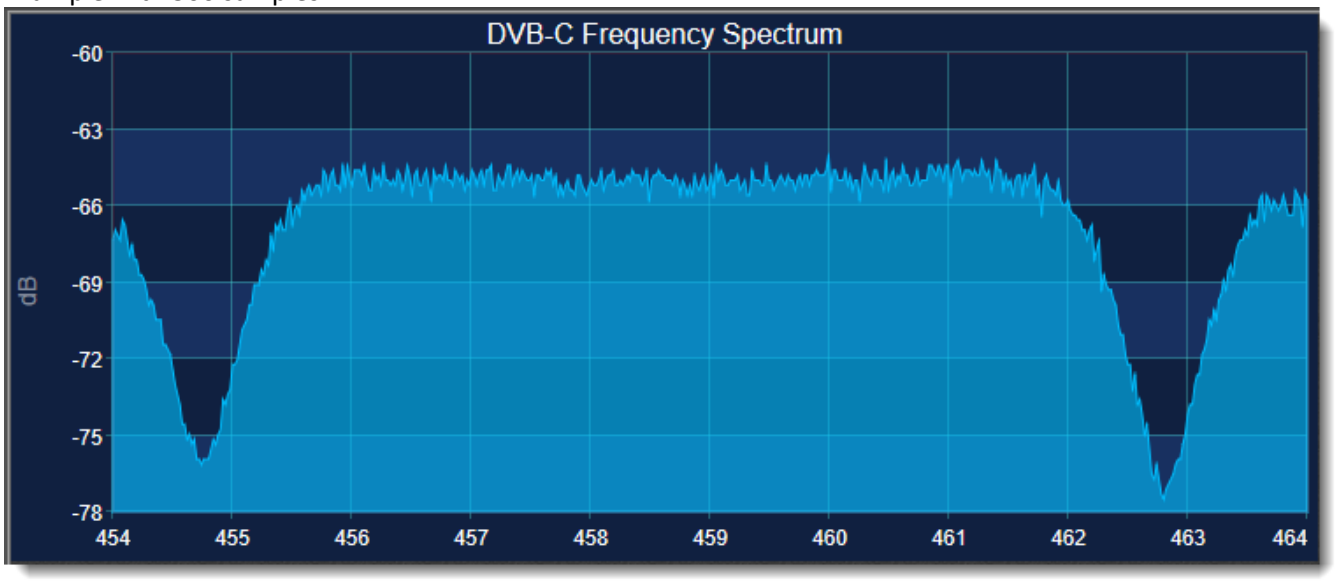


Samples

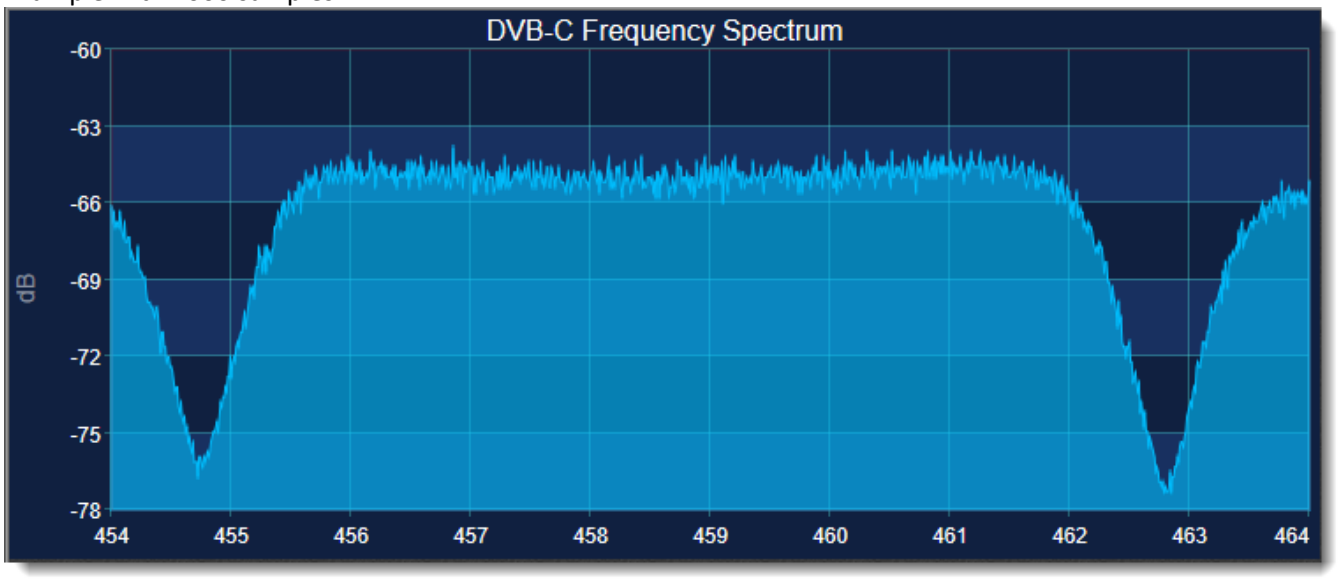
The number of samples which are used for the spectrum measurements can be chosen:

- 100
- 200
- 250
- 500
- 1000

Example with 500 samples:



Example with 1000 samples:



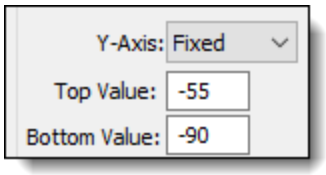
Y-Axis

The Y-axis can be:

- Dynamic
- Fixed

When using 'Dynamic' the axis are chosen automatically and rounded to nice values.

When using 'Fixed' also the Top and Bottom Value can be chosen.

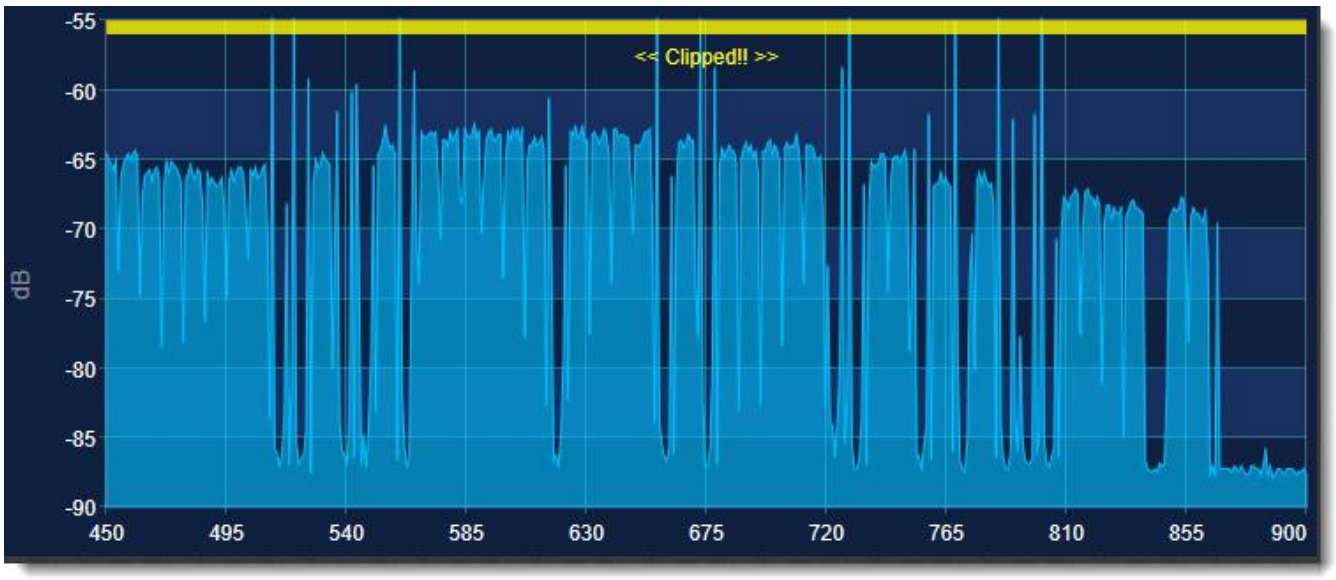


Digits

The number of digits (decimals) on the X-axis can be chosen:

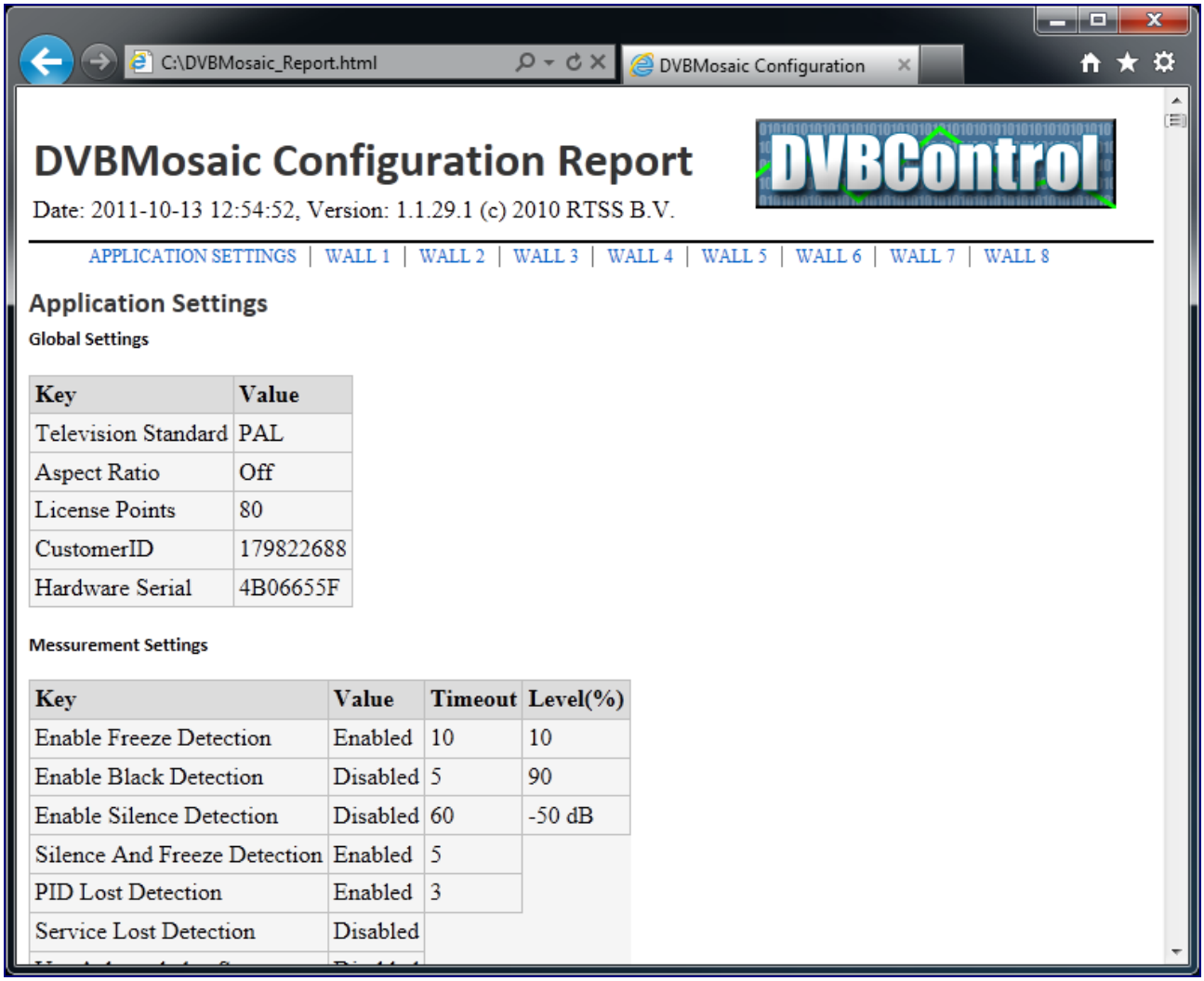
- Auto
- 1
- 2
- 3

When Fixed Y-Axis is chosen and the measured values are out-of-range, a yellow line wile indicate Clipping.



5.4 Configuration Details

A detailed overview of all configuration details used in DVBMosaic.



5.5 Config directory

In the directory named ‘config’ different configuration files are saved:

- Inputs.xml
- Wall_1 .xml .. Wal_10.xml

Inputs.xml

All Input settings are saved and can be changed manually.

Wall_1.xml .. Wall_10.xml

All 8 Wall settings are saved and can be changed manually.

If the Wall settings are manually changed while the DVBMosaic application is running, an updated Wall.xml settings can be reloaded using the Reload Wall Configuration button (see paragraph 2.1)

5.6 Service focusing

Toggling the TAB key will overlay the mouse when using Full Screen mode.
Selecting a service with the mouse will focus this service and generate:

- The green focus border around the service
- Corresponding preview audio can be listened to via the computer speakers.
- If enabled, the corresponding input Transportstream will be streamed via multicast for analyzing purposes.
- The selected service name is shown at the status bar.

When a service has multiple audio components, a specific audio component can be focused by clicking on the specific audio bars.

When configured, focus can be chosen by using the left or right mouse button. The corresponding audio hardware device will be used for audio listening.

Double click on a service will show the video full screen, instead of showing multiple videos.

In Round Robin mode, cycling will stop when a service is shown full screen.

5.7 Changing Wall

Changing Wall’s can be done using:

- the Ctrl-key in combination with the number keys 1..9.
  Wall 10 is selected by the combination of <Ctrl> + 0
- The web interface

Appendices

- Hotkeys & Shortcuts
- Installation
- License
- Troubleshooting
- Input adapters
- Legal Notes
- Contact

A Hotkeys & Shortcuts

A.1 Introduction

This appendix gives some overview information on hotkeys and keyboard shortcuts and lists all the hotkeys available.

What is a Hotkey?

A hotkey, also called a keyboard shortcut, shortcut key, or keystroke combination, is a key or set of keys that perform a defined function in a software application or computer operating system.
Reducing application tasks and processes to a hotkey often saves the user time and makes software usage easier for those with disabilities.

Windows Sticky Keys

When a keyboard shortcut includes the Shift, Ctrl, Alt keys, or the Windows key, the Windows Sticky Keys feature lets you press that key and it remains active until another key is pressed.

This is especially useful for those who might have a difficult time holding down two or more keys at one time.

For example, the keyboard shortcut for Copy is to press and hold the Ctrl key and then press the C key.
When Sticky Keys is turned on, press the Ctrl key, and then press the C key.

To **Turn On** Windows Sticky Keys:
1. Press the keyboard's Shift key five times. You will hear a beep.
2. A dialog box appears with instructions on how to set up the Sticky Keys feature.

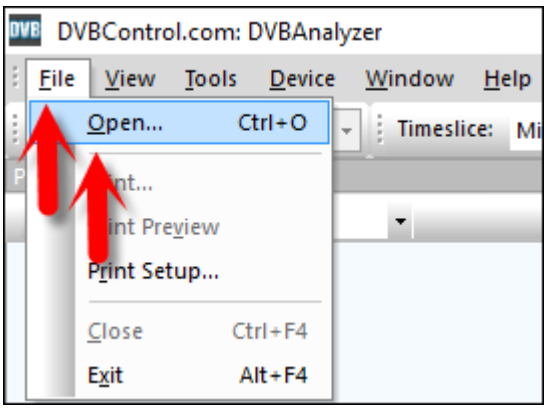
To **Turn Off** Windows Sticky Keys:
Press both of the keyboard's Shift keys simultaneously.

Windows Application Mnemonics/Accelerators

A mnemonic or accelerator is an underlined character found in an application's title bar, menu item, text of a button, and more.

To activate the mnemonic command:
1. Press Alt and the first letter of the menu command.
   For example, press Alt+F to open the File menu.
   The accelerator letters appear.

2. While still holding the Alt key,
   Press the underlined letter on the keyboard.



A.2 Home

File menu	Hot key	Principal functions
Exit	Alt + F4	This option exits DVBMosaic

Tools menu	Hot key	Principal functions
Fullscreen	F5	Toggle the Mosaic in Fullscreen/Edit mode
Preferences	Ctrl + P	Open Preferences edit window
Wall Configuration	Ctrl + W	Open the Wall Configuration window
Configuration Report	Ctrl + R	Open the Configuration Report

Inputs menu	Hot key	Principal functions/sub-options
Start Mosaic	F3	Start all Inputs
Stop Mosaic	F4	Stop all Inputs

Acknowledge menu	Hot key	Principal functions
Acknowledge	Esc	Acknowledges new messages

A.3 Help

Help menu	Hot key	Principal functions
Manual	F1	Open the DVBMosaic Manual
License Manager	F2	Open the License Manager

A.4 Wall Changing

Display Mode	Hot key	Principal functions
Run Wall 1	Ctrl + 1	Run Wall 1
Run Wall 2	Ctrl + 2	Run Wall 2
Run Wall 3	Ctrl + 3	Run Wall 3
Run Wall 4	Ctrl + 4	Run Wall 4
Run Wall 5	Ctrl + 5	Run Wall 5
Run Wall 6	Ctrl + 6	Run Wall 6
Run Wall 7	Ctrl + 7	Run Wall 7
Run Wall 8	Ctrl + 8	Run Wall 8
Run Wall 9	Ctrl + 9	Run Wall 9
Run Wall 10	Ctrl + 0	Run Wall 10
Run Wall 11	Ctrl + Shift + 1	Run Wall 11
Run Wall 12	Ctrl + Shift + 2	Run Wall 12
Run Wall 13	Ctrl + Shift + 3	Run Wall 13
Run Wall 14	Ctrl + Shift + 4	Run Wall 14

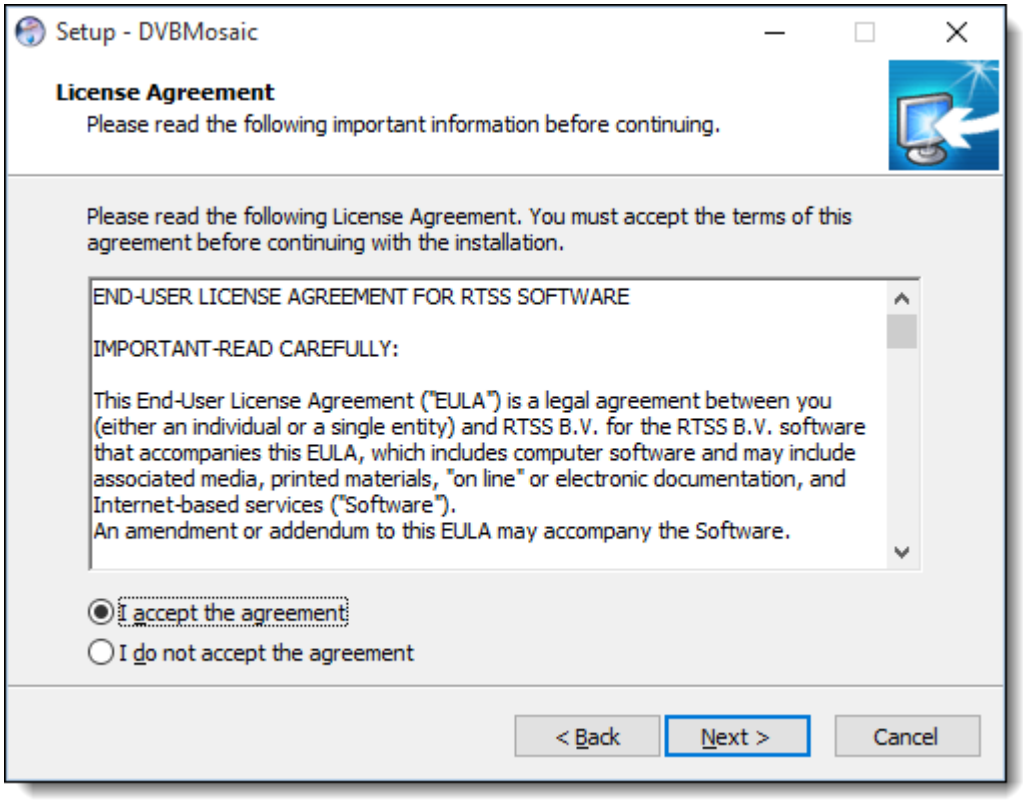
A.5 Wall Editor

Right mouse menu	Hot key	Principal functions
Copy	Ctrl + C	Copy the selected channel
Paste	Ctrl + P	Paste the selected channel
Delete	<Delete>	Delete the selected channel

B Installation

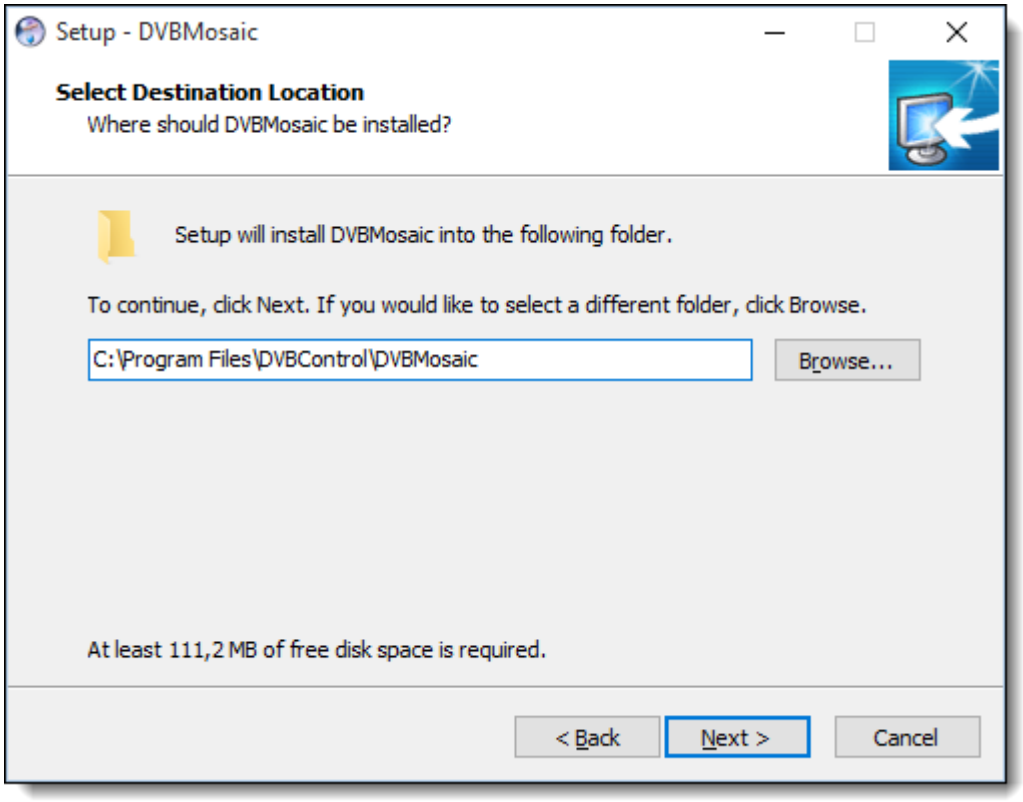
For installation of DVBMosaic the 64-bit or 32-bit installer application should be used.

License agreement

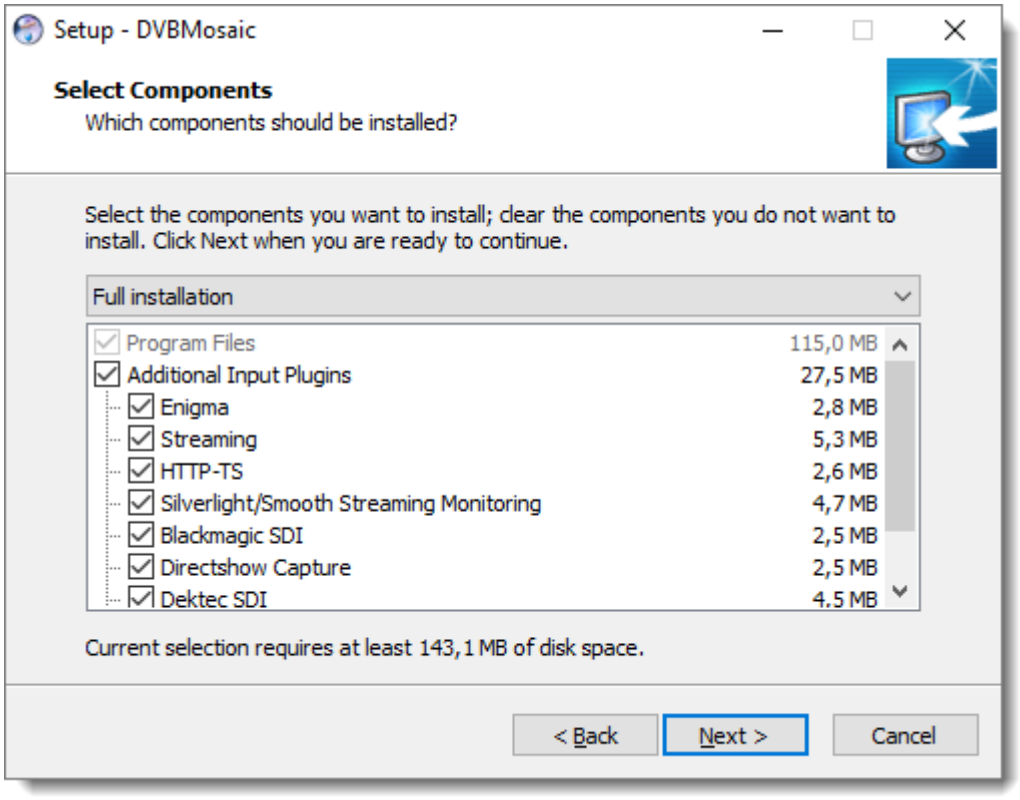


Installation can only be proceeded, when the EULA is accepted.

Select Destination Location



Select Components



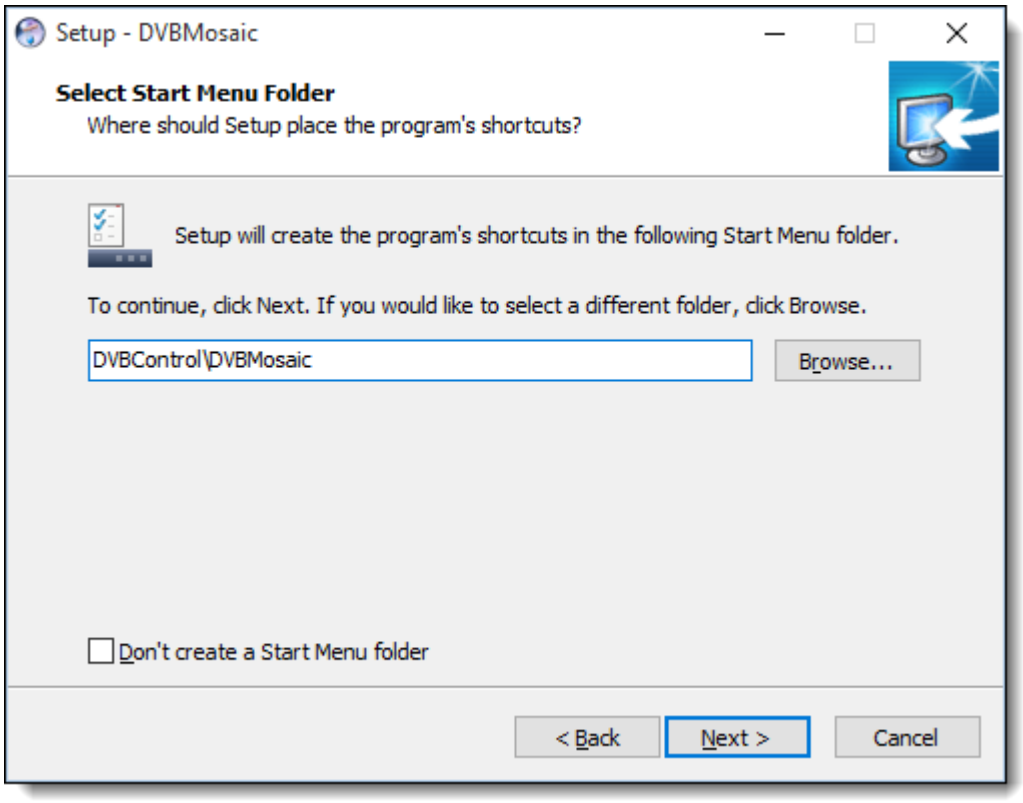
There are 3 levels of installation possible:

- Compact installation
- Full installation
- Custom installation

Plugins are available for:

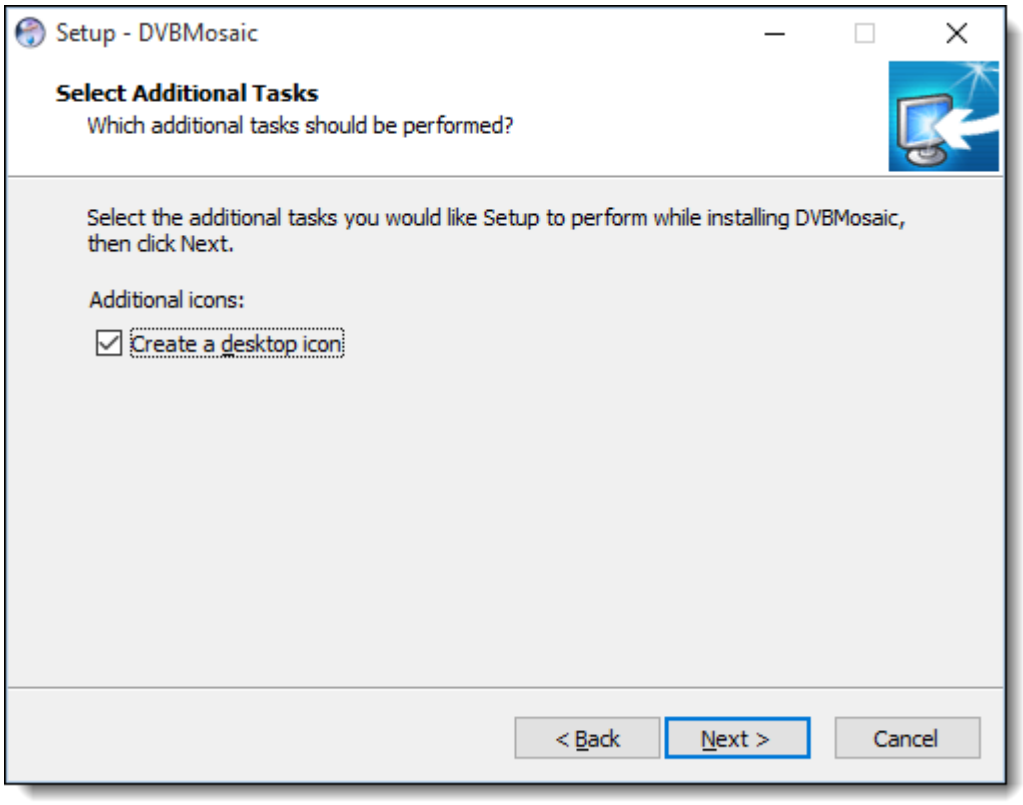
- Enigma
- Streaming: RTP, RTSP, RTMP, HTTP-Live (Cupertino HLS)
- HTTP-TS: TS over HTTP
- Silverlight/Smooth Streaming Monitoring
- Blackmagic SDI
- Directshow Caputure

Select Start Menu Folder

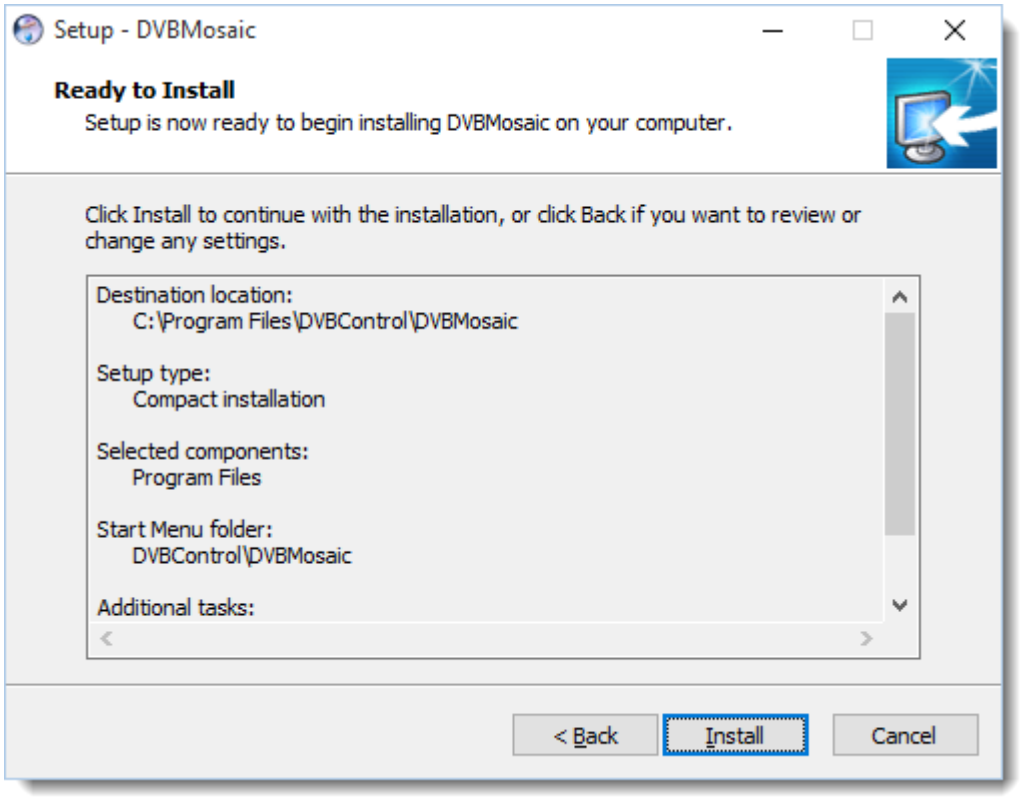


Option, to create a Start Menu Folder

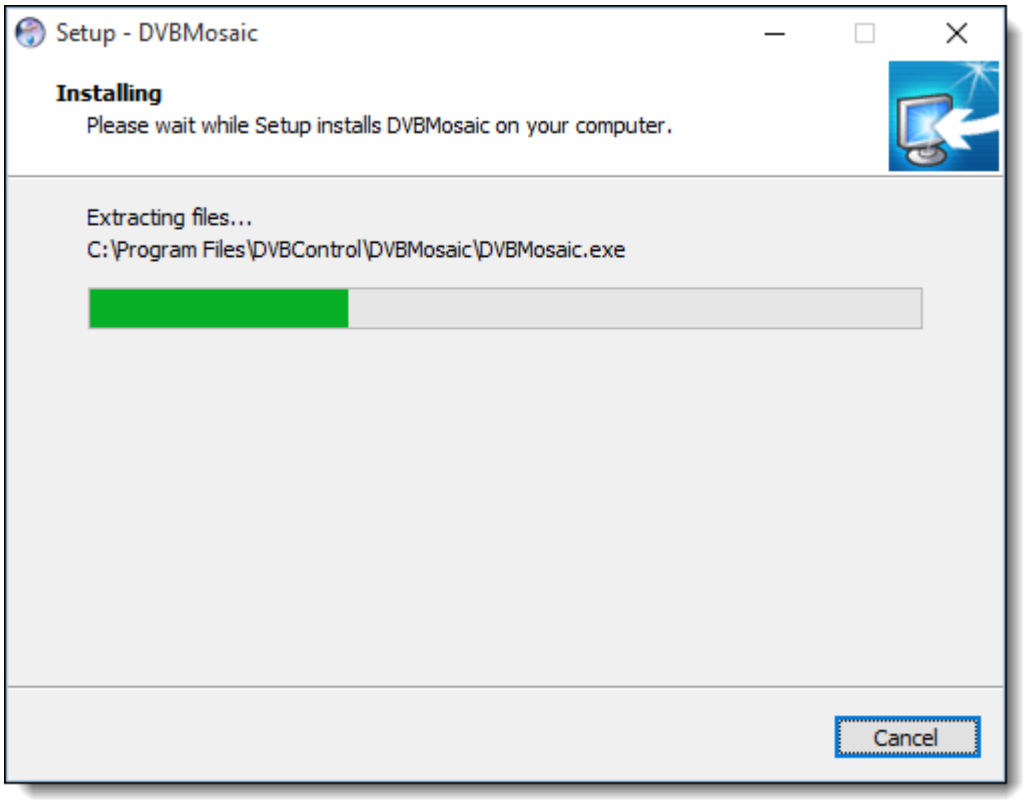
Select Additional Tasks



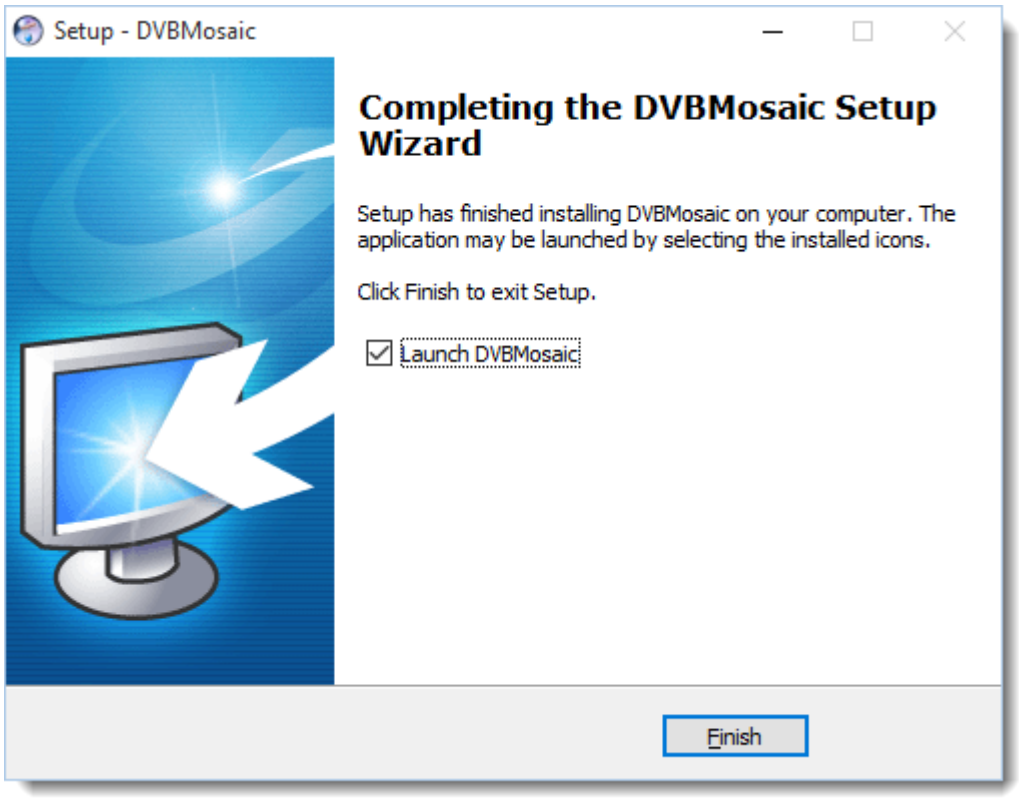
Ready to Install



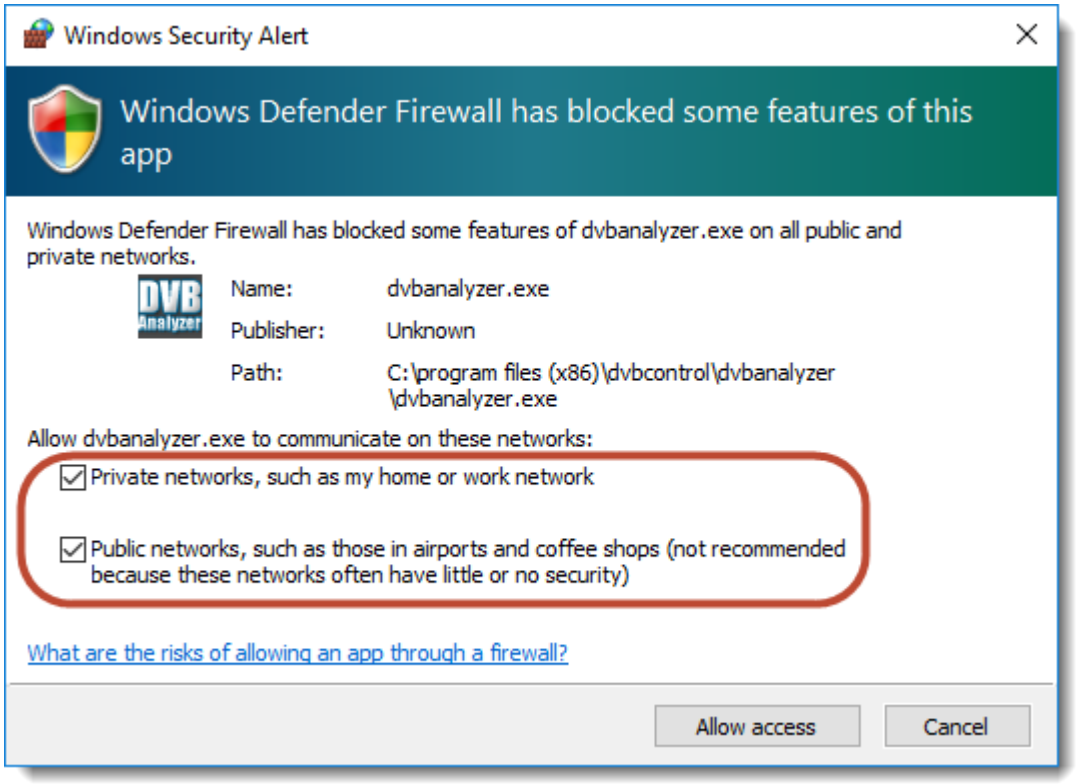
Installing



Finished Installing



UDP / Multicast source



C License

C.1 License details

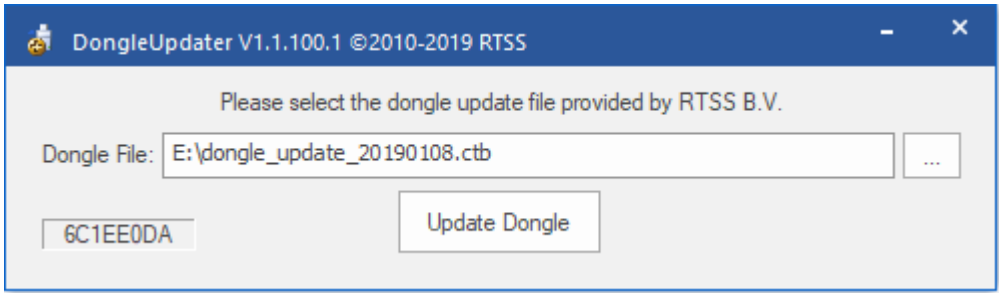
The License Manager will give information about:

- Name of the user
- Purchase Date
- Expiration Date (when the application stops running)
- Update Expiration (until which date new versions can be installed)
- Dongle Hardware Serial
- Available license options

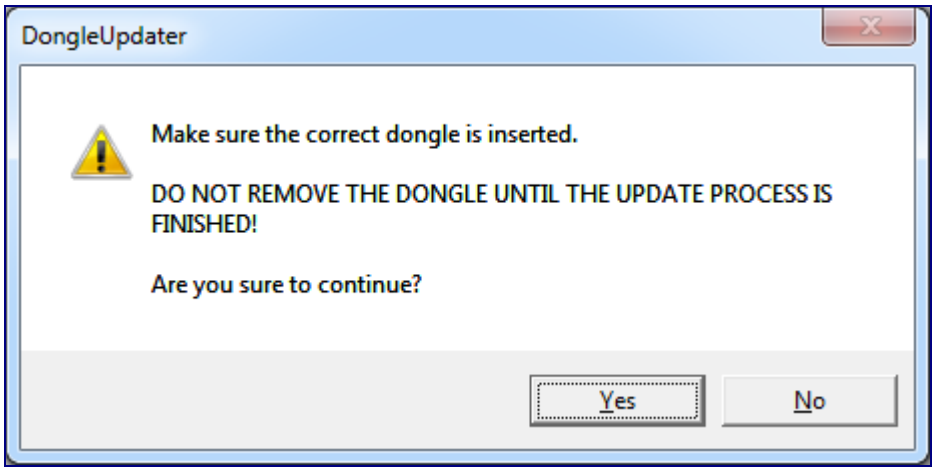
C.2 Dongle Updater

Remotely a license update can be realised. Via the DongleUpdater application the new license file can be selected.

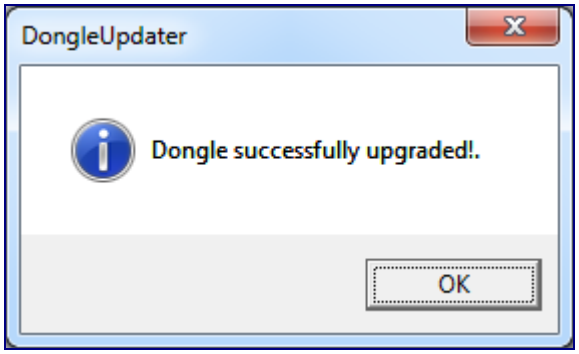
The DongleUpdater application can be found on this weblink:
http://www.dvbcontrol.com/download/DongleUpdater.zip



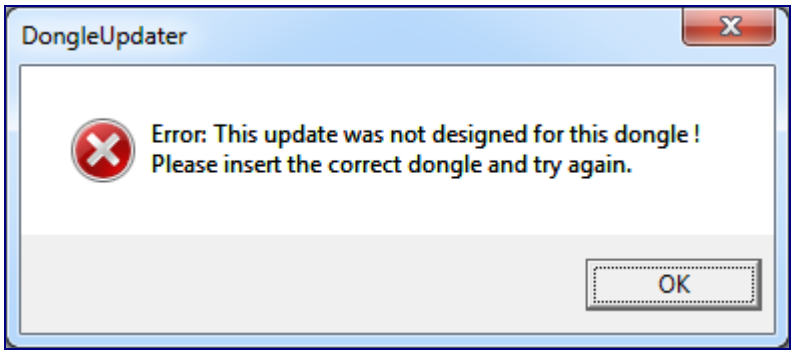
After pressing “Update Dongle” instructions are given.



A successful dongle upgrade will give the following pop-up window:



A faulty dongle upgrade will give the following pop-up window:



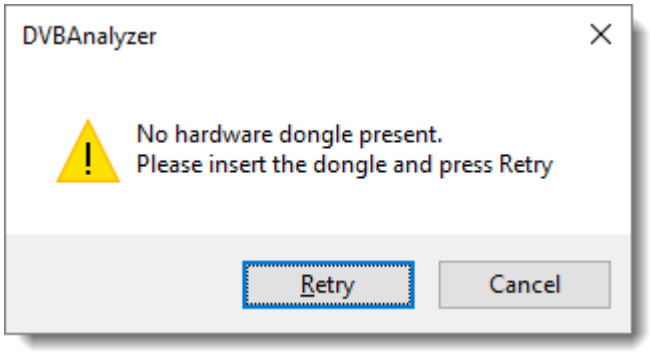
D Troubleshooting

D.1 License

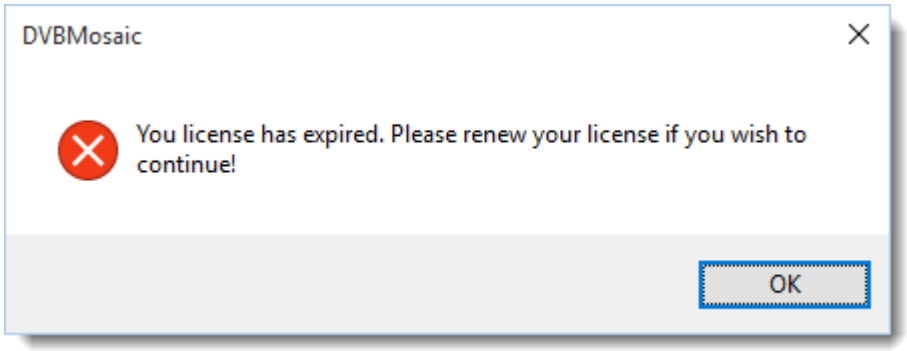
Each application will only operate having a valid correct license/dongle.

DVBMosaic will only run, if a dongle with a valid DVBMosaic license in the machine.

No Dongle Present

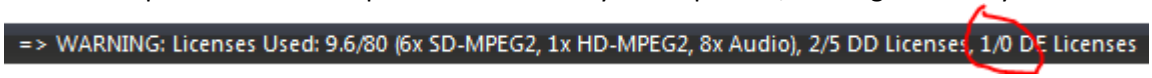


No Valid licens



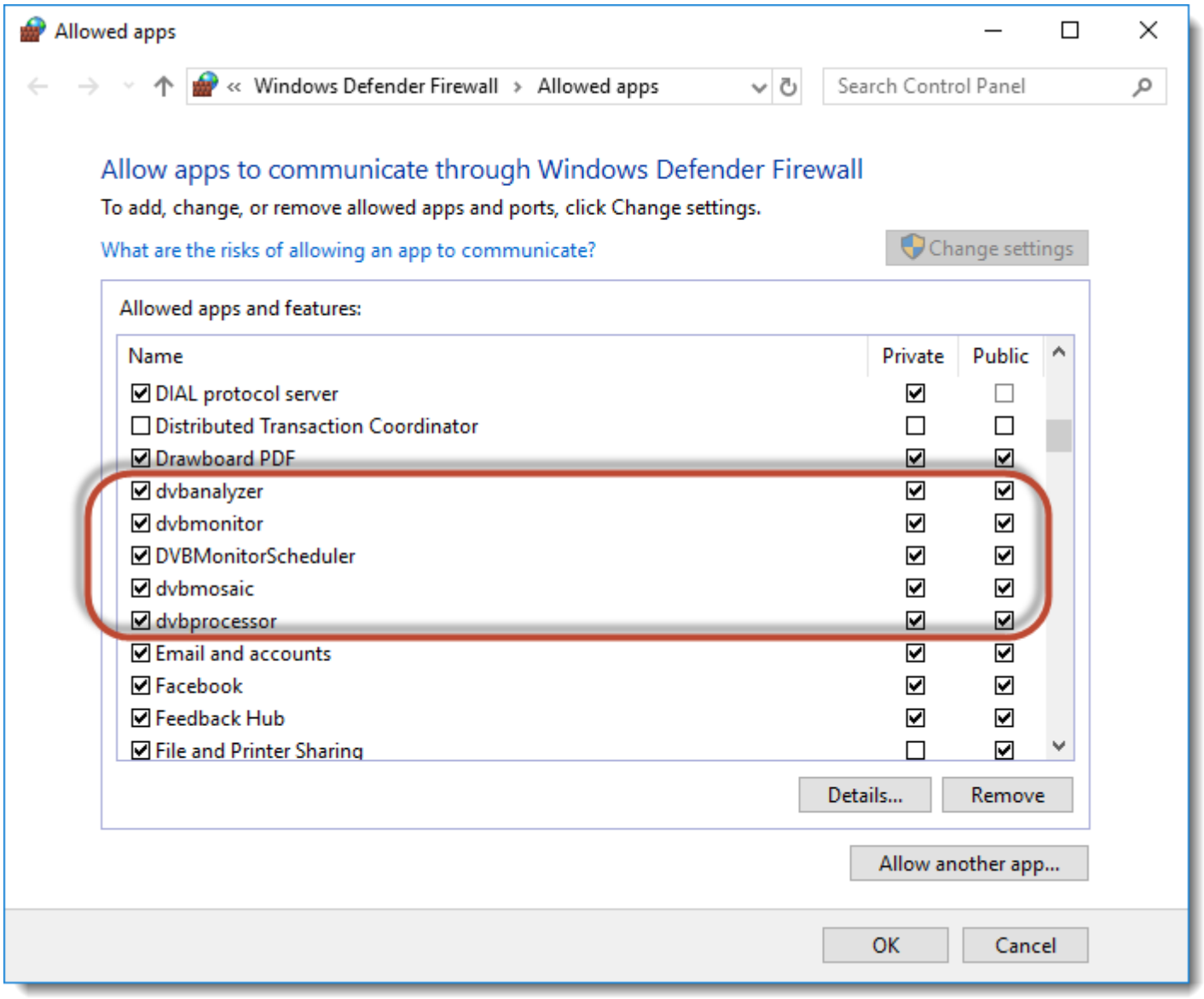
License Shortage

When not enough licenses are available in the dongle, a WARNING text will be shown.
In the example below the setup is done for 1 Dolby-E component, although no Dolby-E licenses are available.



D.2 Windows Firewall

When using a UDP/Multicast source and no signals are received, please check the Windows Firewall rules for DVBMosaic. Both for the private and public network for DVBMosaic should be enabled.



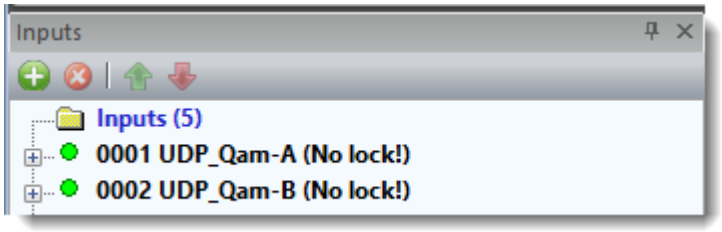
D.3 Administrator rights

Please be aware that DVBMosaic needs administrator access rights to communicate with the hardware dongle.

D.4 Input problems

No Lock

When an input is not good enough we will display ‘NO lock’ for this input.



This means:

- The locking in DVBMosaic is disabled (main preferences page)
- There are to many errors in the input stream to lock (faulty input, or problems with the network adapter)

Dektec not working/visible after upgrade

If, after an upgrade, the Dektec adapters are not visible anymore, this means that you need to upgrade the Dektec drivers to the latest version.
Drivers can be downloaded from the Dektec website

D.5 No smooth video or audio bars

When video or audio bars are not running smooth, this indicates that the video/audio services have a large delay between the Program clock (PCR) and the Presentation clock (PTS).
Because of this, DVBMosaic needs to buffer more video and therefore the 'Internal Video Buffers' have to be increased to solve this problem.
This is also a bad situation for end-customers, as this means the time between changing to this channel, and the first decoded video/audio frame could take a long time.

D.6 Windows Server

Please note, when using windows server, you need to install the 'Desktop Experience' feature.
The 'desktop experience' feature, is something you have to install via the Microsoft Windows Server Administrator tool.

D.7 Auto Start

To automatically login to Windows, press the key’s ‘Windows + R’ and type ‘control userpasswords2’

- Uncheck ‘Users must enter a user name and password for this computer’
- Press ‘OK’
- You will be asked to enter the password

To automatically start an application on Windows 7 or higher (including Windows Server), you need to perform the following tasks:

Add a new task:

- Control Panel -> System and Security -> Administrative Tools ->Task Scheduler
- Create Basic Task
- Enter a Name (DVBMonitor/DVBMosaic/DVBMonitorScheduler/…)
- Press ‘Next’
- As ‘Trigger’ select ‘When the computer starts’
- Press ‘Next’
- Select ‘Start a program’
- Select the program with the ‘Browse’ button
- As ‘Start In’ specify ‘5’ seconds
- Press ‘Next’
- Select ‘Open the Properties dialog for this task when I click Finish’
- Press ‘Finish’
- Go to the tab ‘General’ and select the option ‘Run whether user is logged on or not’
- Go to the tab ‘Settings’ and make sure that the checkbox is DISABLED for ‘Stop the task if it runs longer than’
- Press ‘OK’.
- It could be that it will ask the users password

E Input adapters

E.1 Overview

DVBControl applications

- DVBAnalyzer
- DVBMonitor
- DVBMosaic

can use different kind of inputs:

Source	Description
File	Transport Stream File
UDP/Multicast	Input via UDP/Multicast packets
Streaming	RTP, RTSP, RTMP, HTTP Live (Cupertino), MPEG-DASH
HTTP-TS	TS over HTTP
DVB-ASI	Input via ASI input board
DVB-S	Input via Satellite receiver board
DVB-C	Input via Cable receiver board
DVB-T	Input via Terrestrial receiver board
SD/HD SDI	SD/HD SDI input via an SD/HD SDI receiver board
Analog	Analog input via an analogue receiver board

E.2 Network card

UDP and UDP Multicast sources are received via the network connection.

We recommend to use the Intel Pro/1000 PT Server Adapter network card.

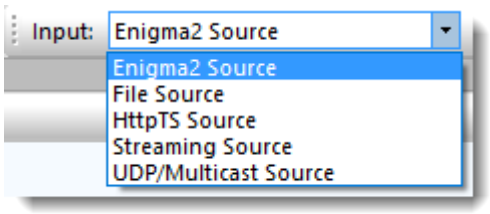
E.3 Overview

For usage of ASI, DVB-S, DVB-S2, DVB-C and DVB-T front-ends we support the following input adapters:

Manufacturer	Description	URL
Blackmagic	SD/HD SDI, HDMI, Analog	www.blackmagic-design.com
Dektec	ASI/IP/DVB-C/T/S/S2	www.Dektec.com
Deltacast	ASI (PCI)	www.Deltacast.com
Digital Devices	DVB-C, DVB-S, DVB-S2, DVB-T	www.DigitalDevices.de
DVEO	ASI (PCI/PIC-E)	www.DVEO.com
Lumantek	ASI	www.Lumantek.com
Stream Labs	ASI, SD/HD SDI, Analog	www.Stream-Labs.com
TBS	DVB-S, DVB-C, DVB-T, ISDB-T, ATSC (USB2.0/PCI/PCI-E)	www.TBSdtv.com
Technisat	DVB-S, DVB-C, DVB-T (PCI) DVB-S2	www.Technisat.com
Technotrend	DVB-S (CI/USB2.0), DVB-S2 (CI/USB2.0), DVB-C (CI/USB2.0), DVB-T (CI/USB2.0)	www.Technotrend.eu
Digital Devices TBS DVBCsky Hauppauge	Microsoft BDA DVB-C/T/S/S2	www.digitaldevices.de www.TBSdtv.com www.dvbsky.net www.hauppauge.com

E.4 Input Selector

The Input Selector enables selection of the source.



The requested input type can be selected via a pull-down menu.

Sources can be:

- BDA
- Dektec
- File
- Enigma
- HttpTS
- Streaming
- UDP/Multicast

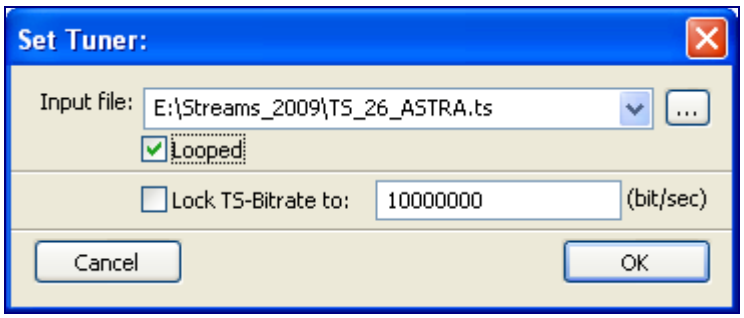
BDA (Broadcast Driver Architecture) is a Microsoft standard, which is supported by multiple manufacturers (e.q. TBS, Technisat, Technotrend).

E.5 File Input

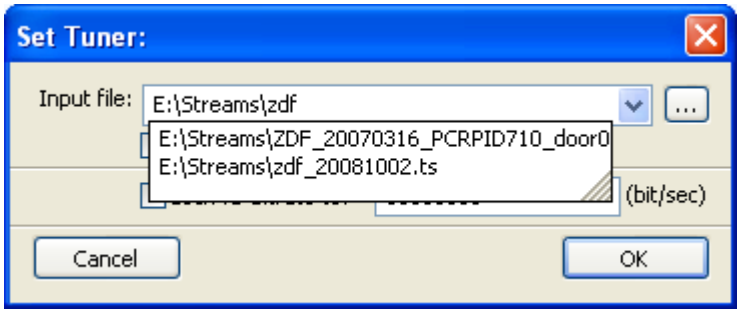
After selecting “File Source” in the Input Selector, the Set Tuner window appears. Besides being able to select a Transport Stream file, it is also possible to play the Transport Stream in a continuous loop.

When the TS- Bitrate cannot be calculated from PCR timestamps, a NIT Delivery Descriptor or the MIP packages, a maximum TS-Bitrate can be given.

Set Tuner - File



Selecting a file can be done via browsing the directories, or start typing the path in the “Input file” box. Suggestions about possible directories/files are presented directly.



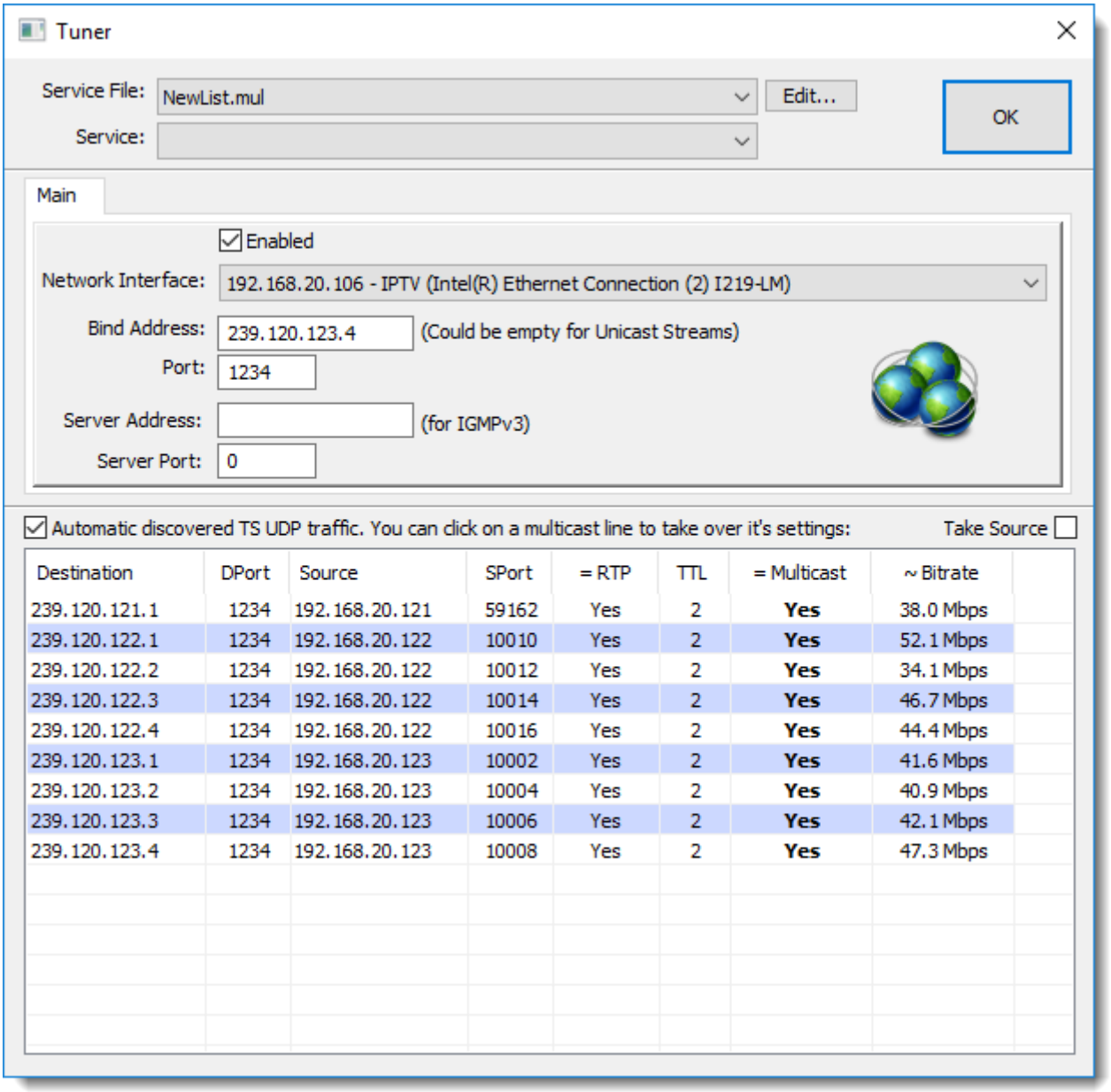
Tuning parameters

Parameter	Description
Input File	Transport Stream (TS) Filename
Looped	Option to continuous loop the Transport Stream file
Lock TS-Bitrate to	Option to lock TS-Bitrate

E.6 UDP/Multicast Input

After selecting “UDP/Multicast Source” in the Input Selector, the Set Tuner window appears.

Set Tuner – UDP/Multicast



Destination	DPort	Source	SPort	= RTP	TTL	= Multicast	~ Bitrate
239.120.121.1	1234	192.168.20.121	59162	Yes	2	**Yes**	38.0 Mbps
239.120.122.1	1234	192.168.20.122	10010	Yes	2	**Yes**	52.1 Mbps
239.120.122.2	1234	192.168.20.122	10012	Yes	2	**Yes**	34.1 Mbps
239.120.122.3	1234	192.168.20.122	10014	Yes	2	**Yes**	46.7 Mbps
239.120.122.4	1234	192.168.20.122	10016	Yes	2	**Yes**	44.4 Mbps
239.120.123.1	1234	192.168.20.123	10002	Yes	2	**Yes**	41.6 Mbps
239.120.123.2	1234	192.168.20.123	10004	Yes	2	**Yes**	40.9 Mbps
239.120.123.3	1234	192.168.20.123	10006	Yes	2	**Yes**	42.1 Mbps
239.120.123.4	1234	192.168.20.123	10008	Yes	2	**Yes**	47.3 Mbps

There are three ways to set the tuner parameters.

- Service File input
- Manual input
- Manual input via selecting from automatic discovered UPD traffic

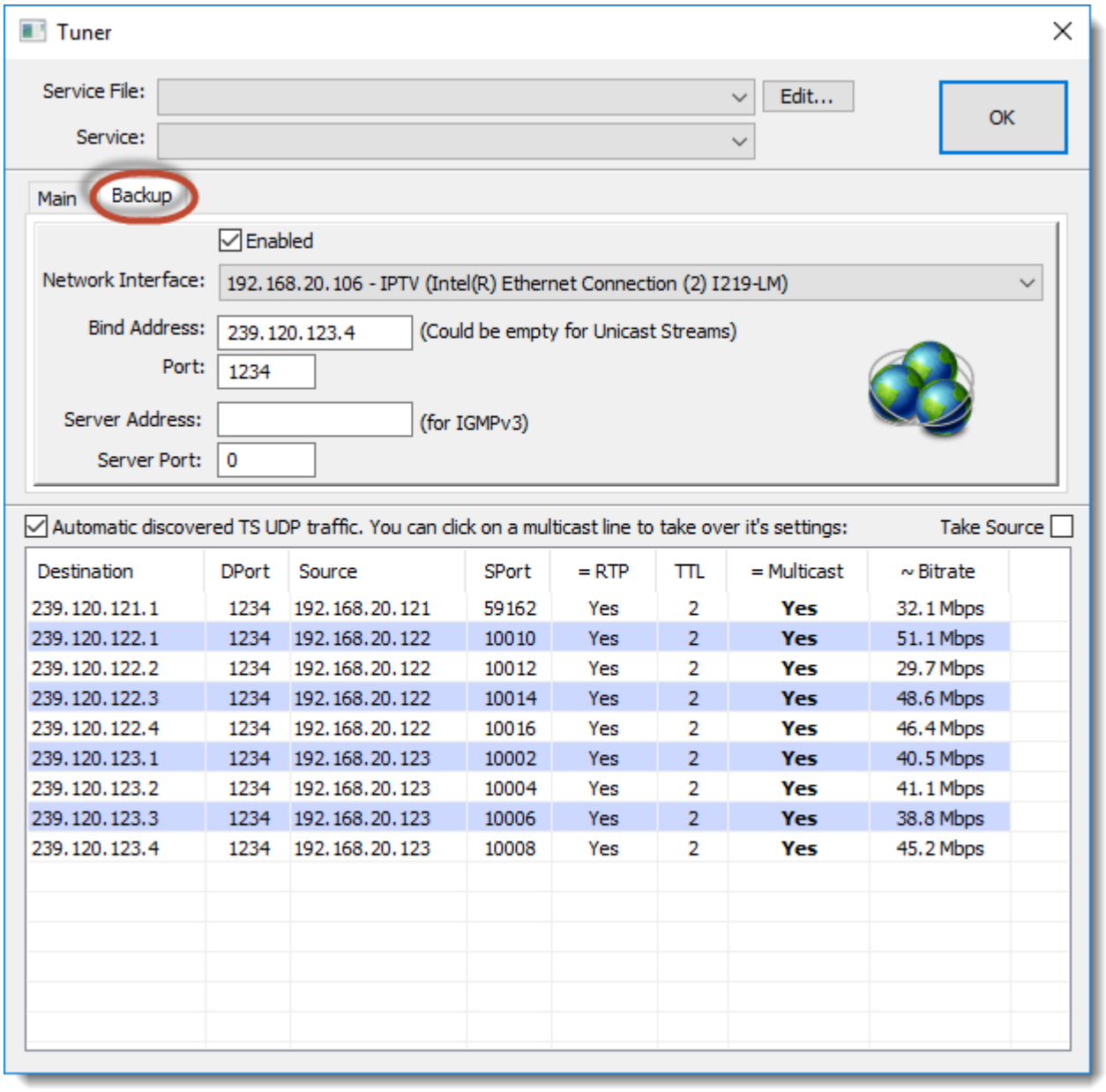
Tuning parameters

Parameter	Description
Network Interface	Selection of UDP Multicast interface
Bind address	UDP Multicast Bind address (Could be empty for Unicast Streams)
Port	UDP Multicast port number
Server address	UDP Server address (for IGMPv3)
Server port	UDP Server port number (for IGMPv3)

Multicast Backup

For DVBMosaic and DVBMonitor, a multicast backup input can be configured.

When the Main input is Lost, the tuner will use the Backup input.

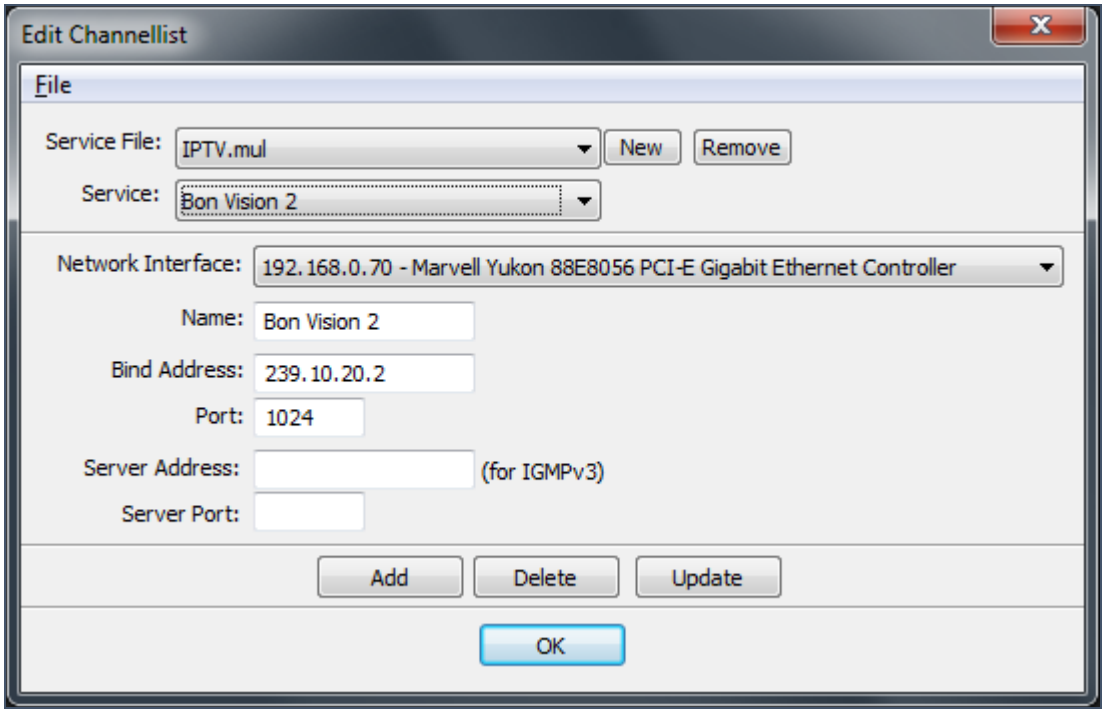


To be able to use the Multicast Backup feature, you need to set in Windows Register, the TotalBackups key (REG_DWORD) with value 2.

Regedit path: Computer\HKEY_CURRENT_USER\Software\DVBControl\DVBAnalyzer\Sources\UDPMulticast
Default Value: 1 (No backup)

Service File

A Service File can be made instead of manually typing the tuner parameters.
In the Set Tuner window click Edit.



The Edit ChannelLists Window enables the creation of a new Service File.
By selecting New, a new Service File can be created.
Multiple Channel Name/Port entries can be added to the Service File.

The Saved Service File gets the extension .mul and should be placed in:
"C:\Program Files\Common Files\DVBControl\Devices\Input\ChannelLists" or on 64bit systems:
"C:\Program Files (x86)\Common Files\DVBControl\Devices\Input\ChannelLists"

Users can also edit the Service File, using the syntax:
[Multicast]
IP_number<TAB>Port_number<TAB>Channel_name_1
IP_number<TAB>Port_number<TAB>Channel_name_2
….

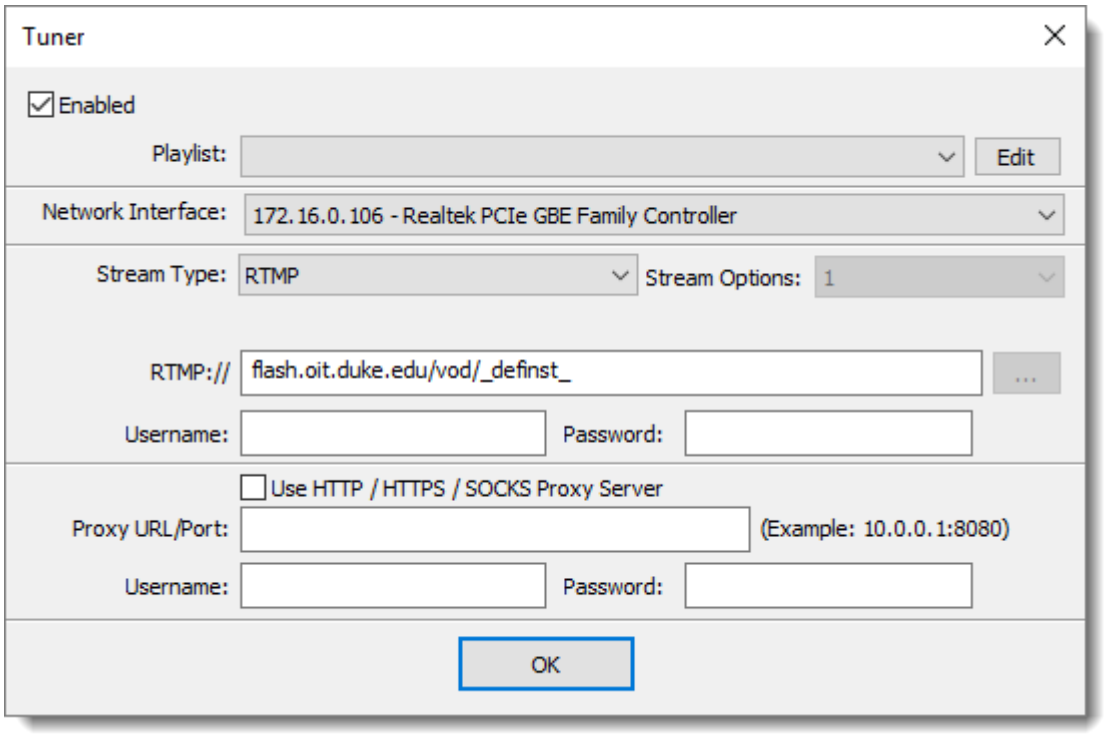
Where:

IP_number	= UDP Multicast IP number
Port_number	= UDP Multicast port number
Service_name	= Service name

Importing a M3U/VLC Service list file is possible via File → Import M3U/VLC Service list

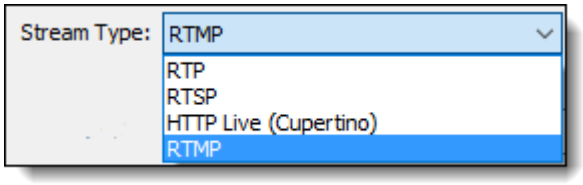
E.7 Streaming Input

After selecting “Streaming Source” in the Input Selector, the Set Tuner window appears.



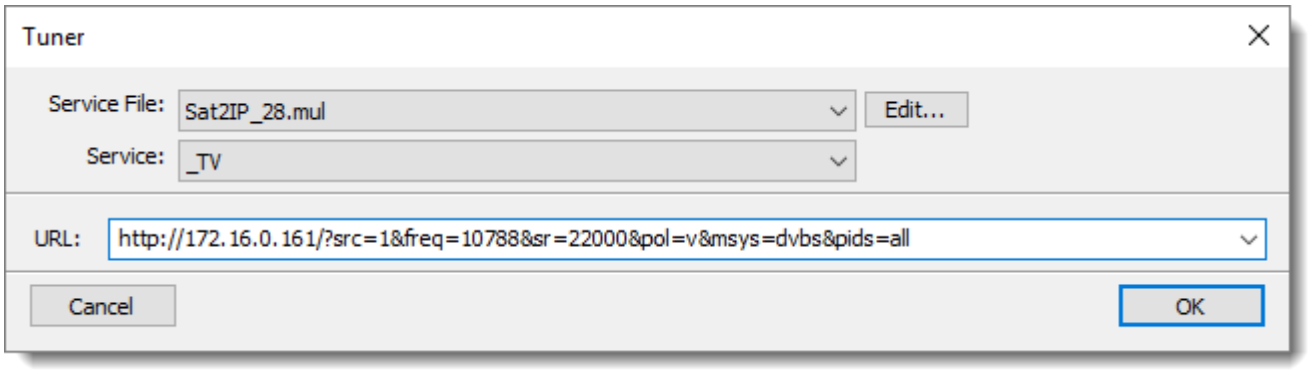
The Stream Type can be:

- RTP
- RTSP
- RTMP
- HTTP Live (Cupertino HLS)



E.8 HTTP-TS Input

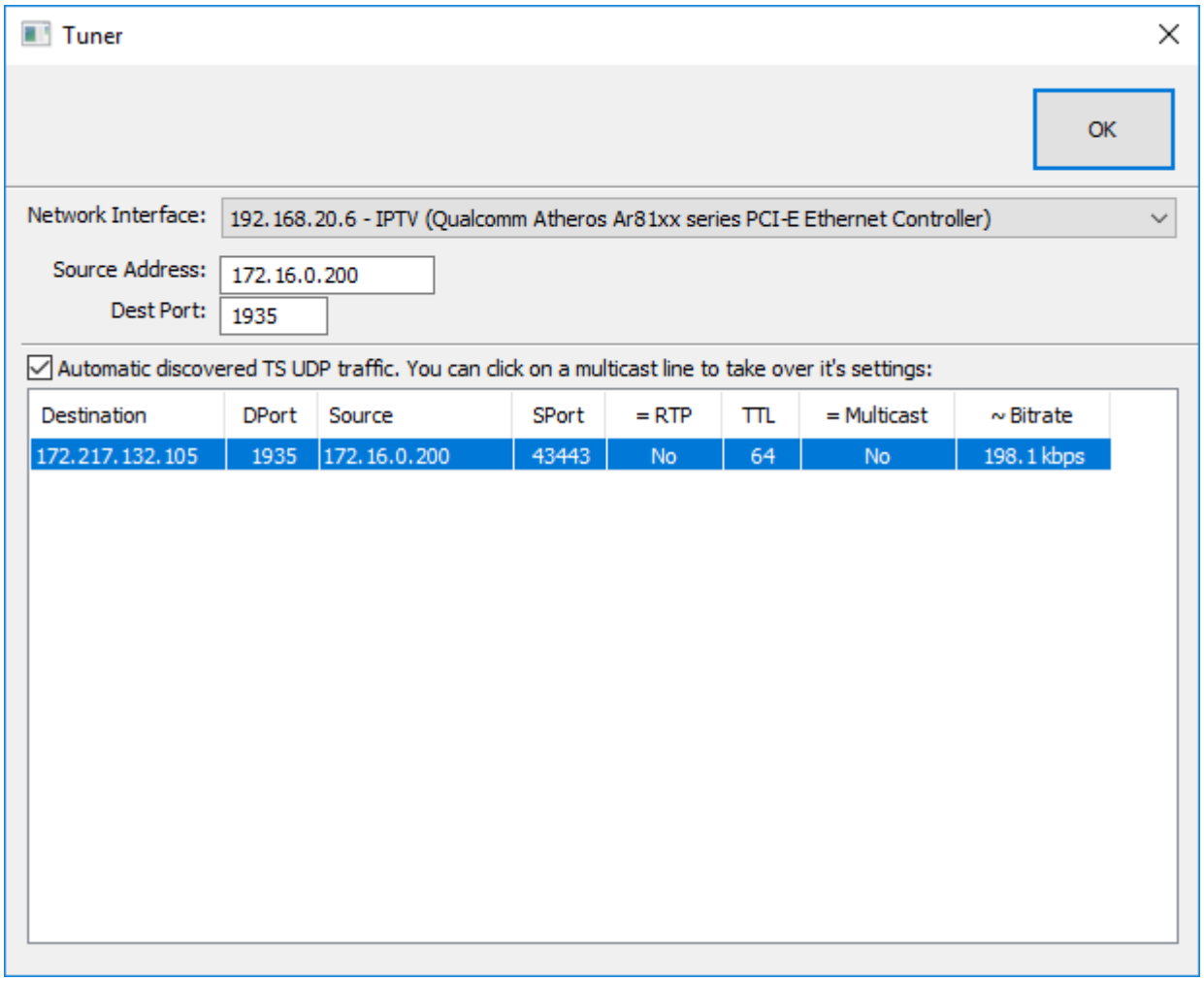
After selecting “Http-TS Source” in the Input Selector, the Set Tuner window appears.



HTTP-TS is a TS over HTTP source.

E.9 RTMP Tap

After selecting “RTMP Tap Monitoring” in the Input Selector, the Set Tuner window appears:

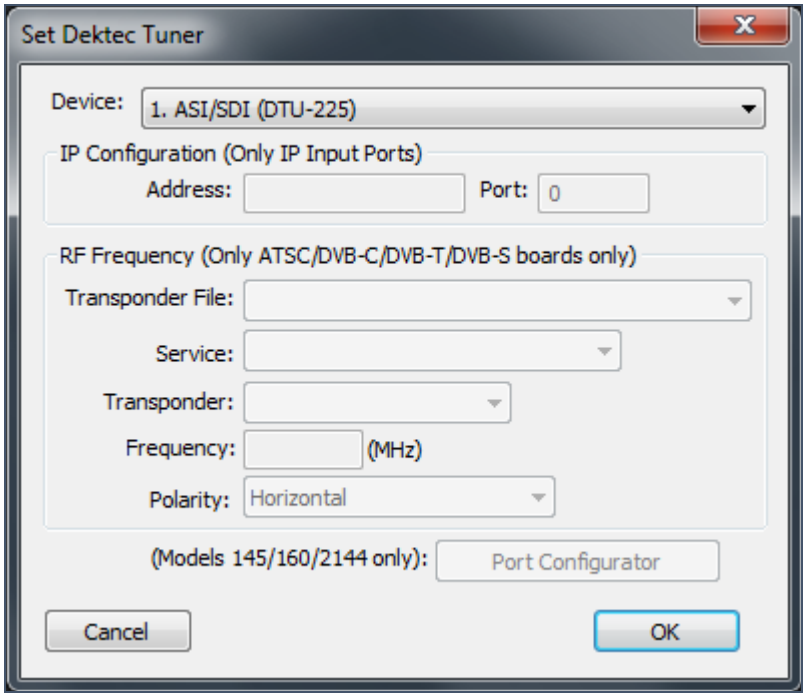


RTMP Tap sources need to be used in combination with a hardware tab device (Like NTap).
You need to install the WinPCap drivers for this to work!

E.10 DVB-ASI Input

After selecting the appropriate input source in the Input Selector, the Set Tuner window appears. Drivers, which are already installed, can be chosen via the pull-down menu.

Set Tuner - Dektec

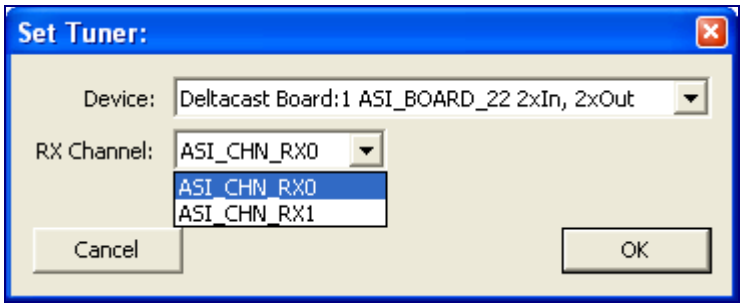


Tuning parameters

Parameter	Description
Device	Select the ASI input device

For the DTA 145/160 devices, Port Configuration is available.

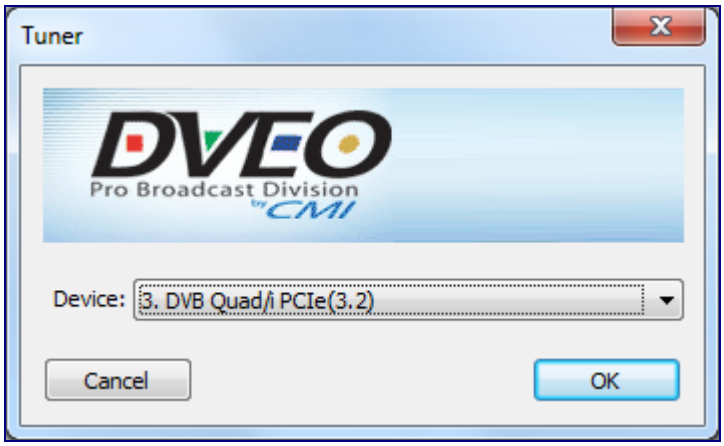
Set Tuner - Deltacast



Tuning parameters

Parameter	Description
Device	Select the ASI input device
RX Channel	Select the preferred input (multi-inputs)

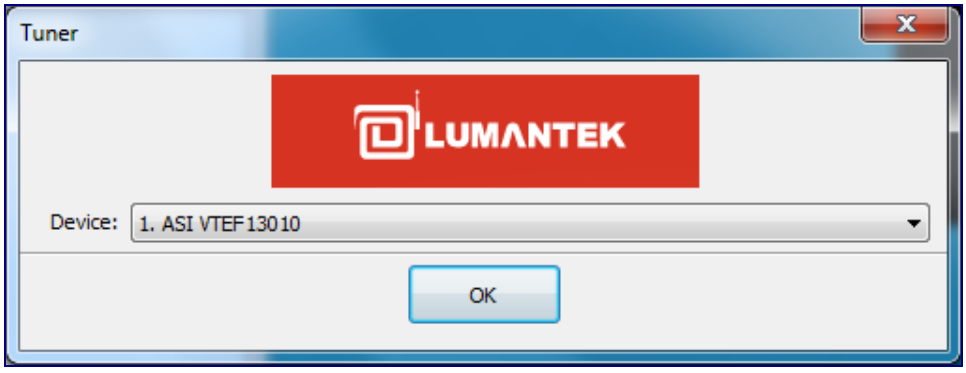
Set Tuner - DVEO



Tuning parameters

Parameter	Description
Device	Select the ASI input device

Set Tuner - Lumantek



Tuning parameters

Parameter	Description
Device	Select the ASI input device

Set Tuner - StreamLabs

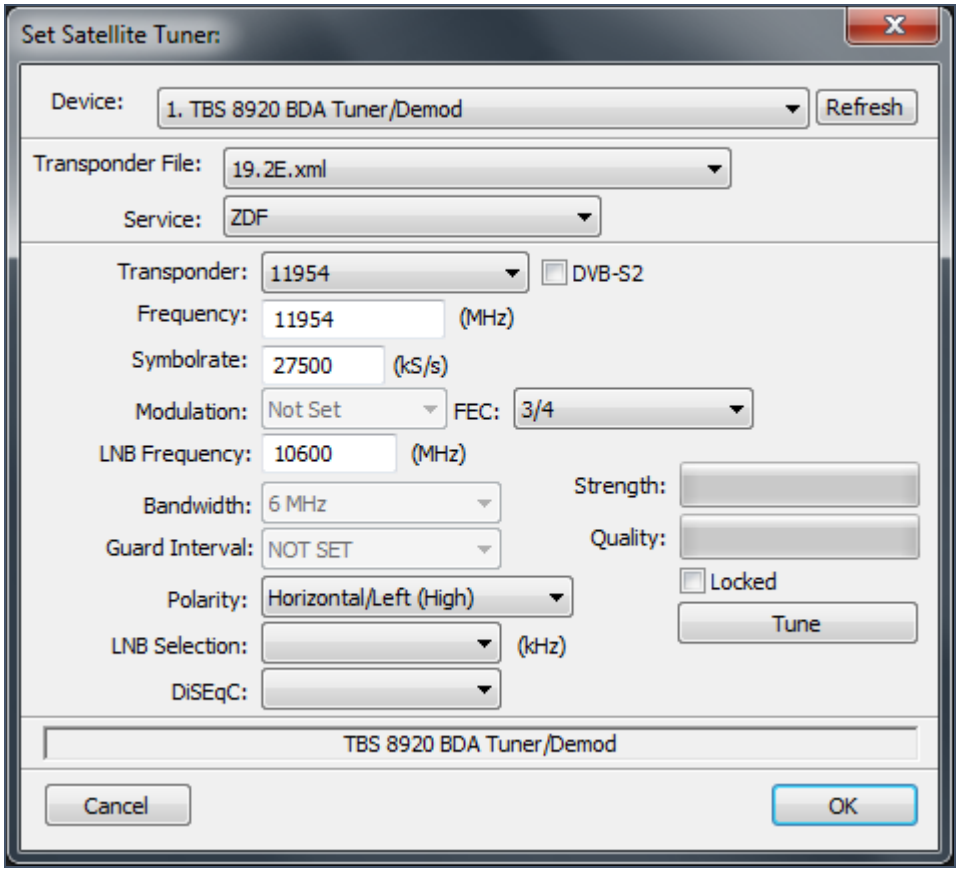
Tuning parameters

Parameter	Description
Device	Select the ASI input device

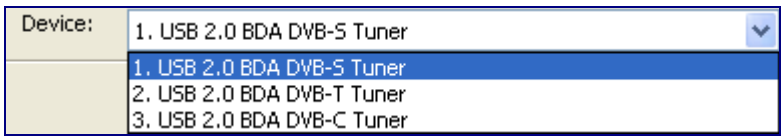
E.11 DVB-S Input

Set Tuner - BDS

After selecting “BDA Source” in the Input Selector, the Set Satellite Tuner window appears if a Satellite device is installed.



When multiple BDA driver adapters are installed, they can be selected via de Device pull-down menu.



Set Tuner - Satellite

There are two ways to set the tuner parameters.

- Manual input
- Transponder File input

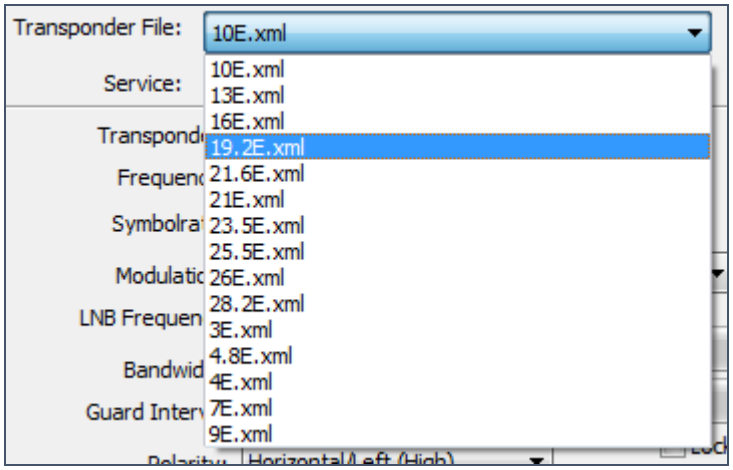
Tuning parameters

Parameter	Description
Frequency	10700 - 12750 MHz
Symbol Rate	2000 - 45000 kS/s
FEC	1/2, 2/3, 3/4, 5/6, 7,8, Auto sense
LNB frequency (MHz)	Universal LNB's mostly use 10600
Polarity	Horizontal/Left (High), Vertical/Right (Low)
LNB selection	None, 22/33/44 kHz
DiSEqC	None, Simple A, Simple B, Pos A - Opt A, Pos B - Opt B

When pressing the Tune button, the Signal Strength en Quality is given.
If a DVB signal is received it gets locked.

Transponder File

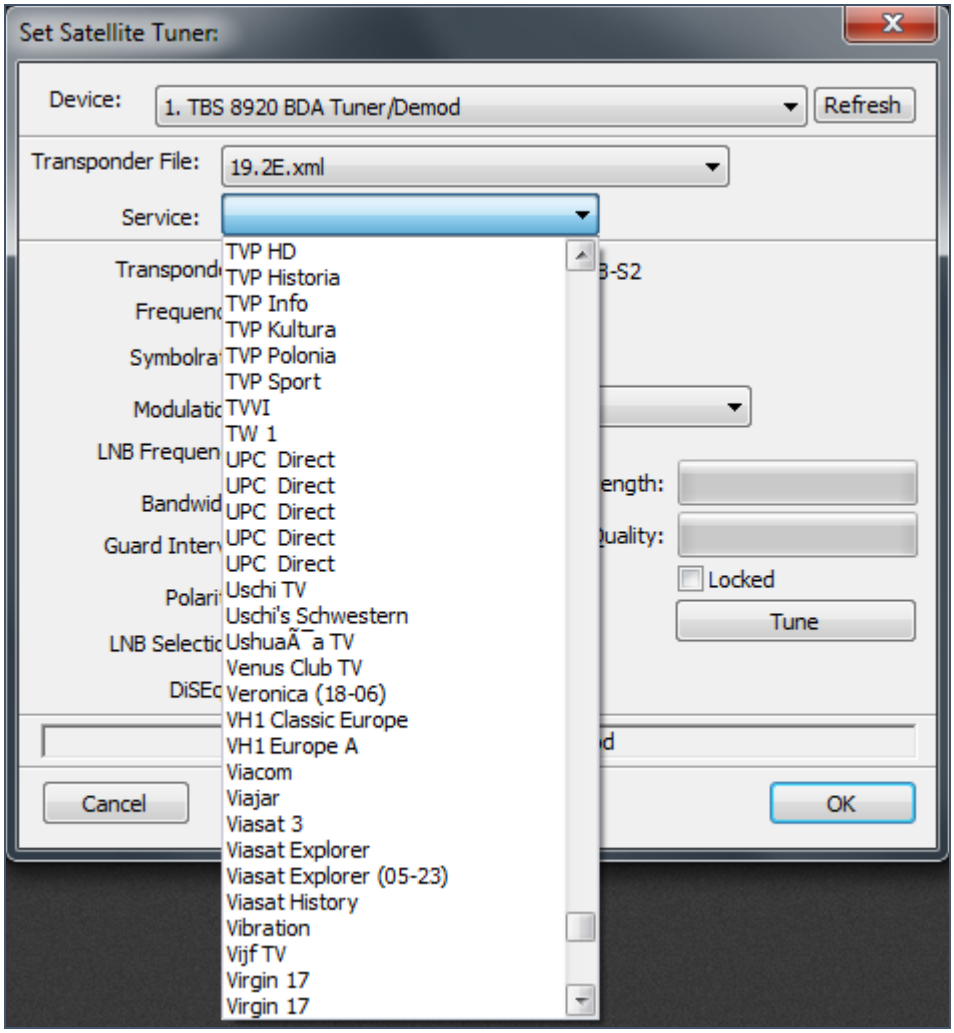
A Transponder File can be used, instead of manually typing tuner parameters.
In the “C:\Program Files\Common Files\DVBControl\Devices\Input\ChannelLists” directory, there are already Transponder Files available, which can be edited.



Users can edit the Transponder File, using the syntax:

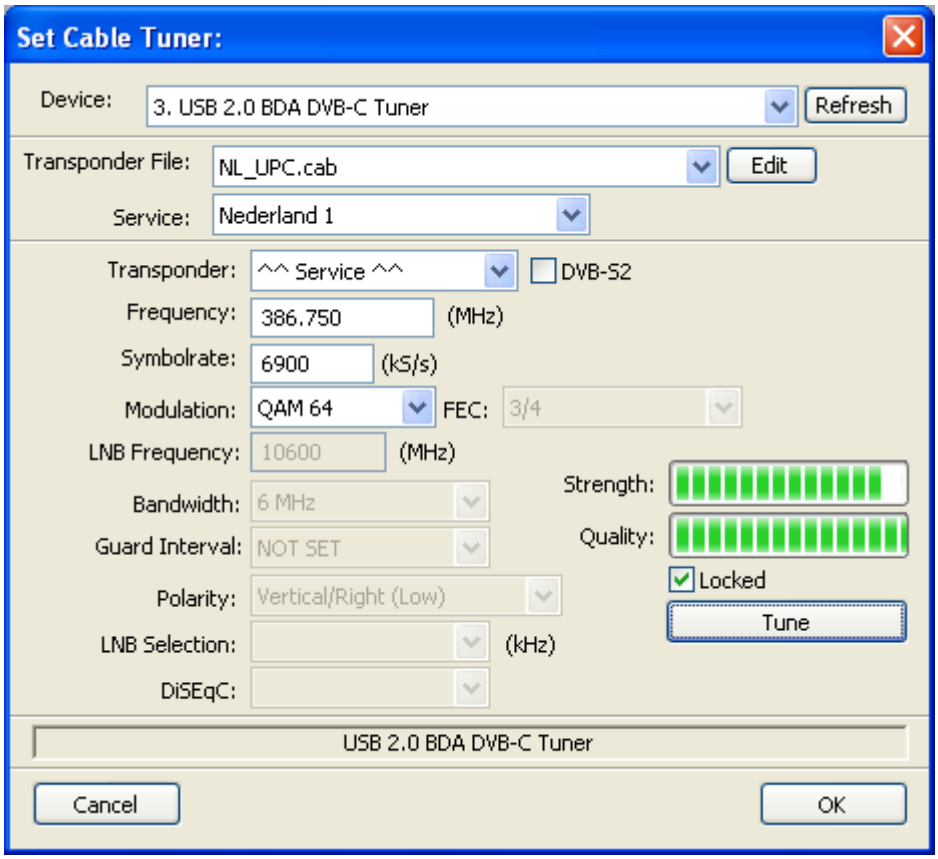
```
<?xml version="1.0"?>
<SatChannelList>
  <ChannelList>
    <SatChannel>
      <Frequency>10876</Frequency>
      <SatID>30</SatID>
      <TransponderID />
      <Position>V</Position>
      <SR>22000</SR>
      <FEC>5/6</FEC>
      <SID>30605</SID>
      <Name>National Geographic Channel Europe</Name>
    </SatChannel>
  </ChannelList>
</SatChannelList>
```

The Services list then can be used to quickly get all tuning parameters.



E.12 DVB-C Input

After selecting “BDA Source” in the Input Selector, the Set Cable Tuner window appears if a Cable device is installed.



Set Tuner - Cable

There are two ways to set the tuner parameters.

- Manual input
- Transponder File input

Tuning parameters

Parameter	Description
Frequency	50 - 860 MHz
Symbol Rate	1 - 7 MS/s
Modulation	QAM4, QAM16, QAM32, QAM64, QAM128, QAM256

Transponder File

A Transponder File can be made instead of manually typing the tuner parameters.
After tuning (manually) to a Transponder, the Transponder File can be created via “Tools > Make Transponder File”. The Services and Transponder information in the Transponder File is created by interpretation of the Service and Transponder descriptions in the tuned Transponder. The Saved Transponder File should have the extension .cab and should be placed in the
C:\Program Files\Common Files\DVBControl\Devices\Input\ChannelLists directory.

Users can edit the Transponder File, using the syntax:

[Cable]
TS_ID<TAB>Freq<TAB> QAM<TAB>SR<TAB>Service_name_x1<TAB>Service_name_x2 ..
TS_ID<TAB>Freq<TAB> QAM<TAB>SR<TAB>Service_name_y1<TAB>Service_name_y2 ..

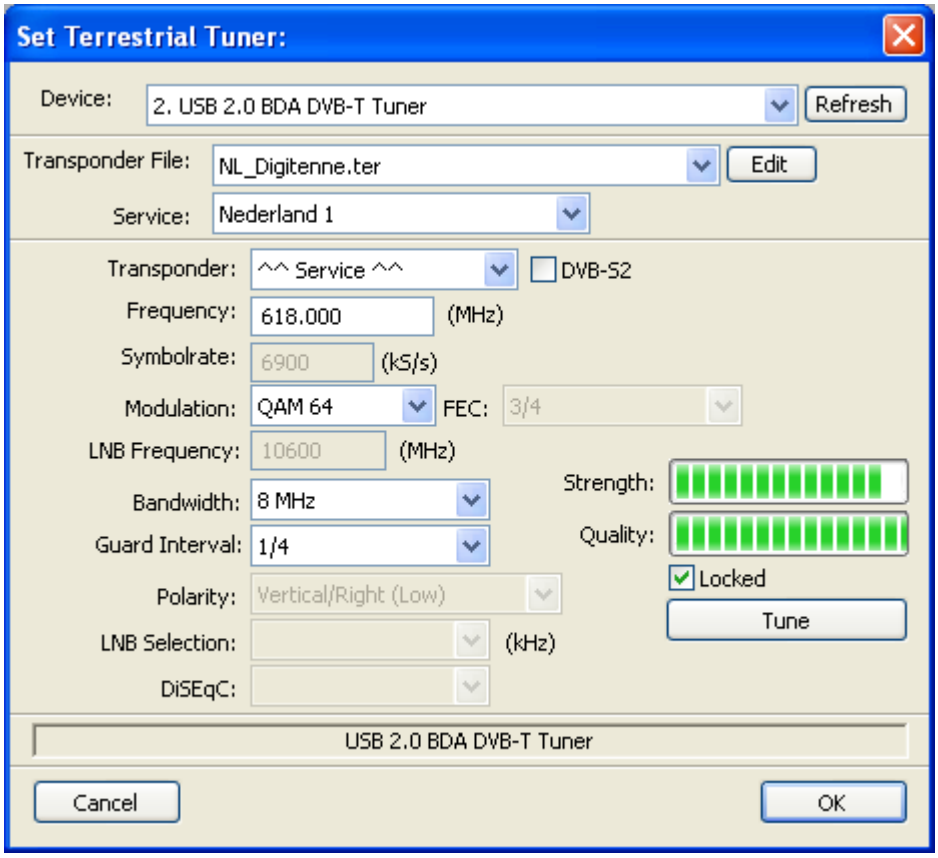
Where:

TS_ID	= Transponder_id
Freq	= Frequency (kHz)
QAM	= QAM16:1, QAM32:2, QAM64:3, QAM128:4, QAM256:5
SR	= Symbol Rate (kS/s)
Service_name_x	= Service name (can be extended by <TAB>)

E.13 DVB-T Input

After Selecting the Technosat or AirStar DVB-T board the Set Tuner window will look like this:

Set Tuner - Terrestrial



There are two ways to set the tuner parameters.

- Manual input
- Transponder File input

Tuning parameters

Parameter	Description
Frequency	171 - 230 MHz, 474 - 858 MHz
Bandwidth	7, 8 MHz
Guard Interval	1/4, 1/8, 1/16, 1/32. Auto sense

Transponder File

A Transponder File can be made instead of manually typing the tuner parameters.
After tuning (manually) to a Transponder, the Transponder File can be created via “Tools > Make Transponder File”. The Services and Transponder information in the Transponder File is created by interpretation of the Service and Transponder descriptions in the tuned Transponder. The Saved Transponder File should have the extension .ter and should be placed in the
C:\Program Files\Common Files\DVBControl\Devices\Input\ChannelLists directory.

Users can edit the Transponder File, using the syntax:

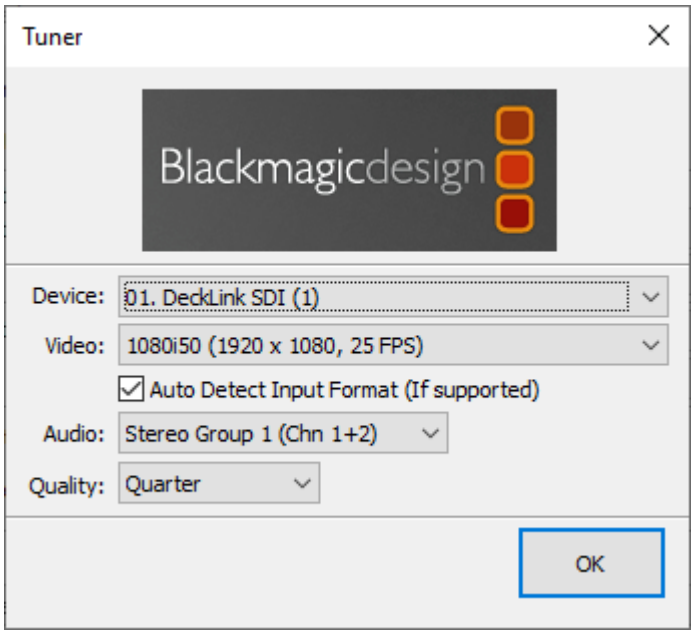
[Terrestrial]
TS_ID<TAB>Freq<TAB>BW<TAB>GI<TAB> Service_name_x1<TAB>Service_name_x2 ..
TS_ID<TAB>Freq<TAB>BW<TAB>GI<TAB> Service_name_y1<TAB>Service_name_y2 ..

Where:

TS_ID	= Transponder_id
Freq	= Frequency (kHz)
BW	= Bandwidth, 8MHz:0, 7MHz:1, 6MHz:2
GI	= Guard Interval, 1/32:0, 1/16:1, 1/8:2, 1/4:3
Service_name_x	= Service name (can be extended by <TAB>)

E.14 SDI Input

xxxxxx



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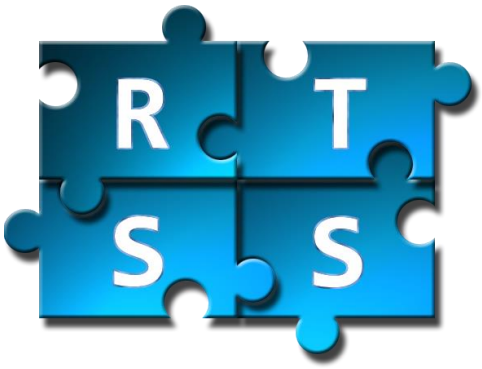
G Contact



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