



**MediaManager Version 3.5**

**User Manual**

System Requirements (with preview)

Windows 2000/XP  
IBM compatible CPU Pentium 4 / Athlon 64 3.0GHz or faster,  
SSE2 support  
Min. 1 GB RAM, ATI Radeon X1650 videocard or better, non-  
shared memory  
DirectX 9 Pixel Shader/Vertex Shader 2.0  
500MB free hard disc space, hard disc with min. 7200RPM  
Network adapter 100/1000Mbit

System Requirements (without preview)

Windows 2000/XP  
IBM compatible CPU Pentium 4 / 2GHz or faster, 512MB RAM  
Videocard supporting DirectX 9  
500MB free hard disc space  
Network adapter 100/1000Mbit

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## 1. Realtime Media Playback & Control

Pandoras Box MediaServer provides the essential tools for projection design, real-time motion graphics and live visual effects.

Pandoras Box is a real time compositing program. It translates DirectX commands into an intuitive user interface.

It is designed to edit 2D and 3D content of any kind. Its main goal is to make production of real time motion graphics as easy as drag and drop and allow you to combine various control protocols.

With an industry standard animation editor, non linear animations and a wide variety of control methods, Pandoras Box offers seamless integration of 3D, video, images and sounds with complete flexibility and interactivity.

Go beyond the limits of traditional projection to explore the new possibilities of interactive live image creation with a realtime system at your hands.

Realtime Media Control is the resulting technology term for a demand of customers, asking for flexible projection systems for years. With nowadays computer technology it is finally possible to offer realtime image processing for onsite production and end-users.

The history of this technology begins with the 3D animation and the film industry where high standards rule for image processing and editing. Times have changed since large arrays of computers had to be fed for generating one image. We are now at the beginning of a new age of screen- and projection design.

The Pandoras Box MediaServer series are professional solutions for digital video and lighting. With an advanced 3D feature set it can be learned fast and easy to have a quick integration into existing show setups.

Multiple layers enable you to crossfade and combine various images and movies to a fully customized design and look.

Additional features may be obtained to upgrade and grow with the system. Please check regularly our website [www.coolux.de](http://www.coolux.de).



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Koeln, June 9th, 2005  
coolux GmbH



### 3. Warranty

Limited Warranty. The Pandoras Box MediaServer is covered by a one year warranty on all hardware parts and technical support limited warranty. It is the owner's responsibility to furnish invoices for verification of purchase date and dealer or distributor. If purchase date cannot be provided, date of manufacture will be used to determine the warranty period.

Returning an item under warranty for repair.

It is necessary to obtain a Return Material Authorization (RMA) number from your dealer or distributor before any units are returned for repair. The manufacturer will make the final determination as to whether or not the unit is covered by warranty.

Any product or part returned to coolux must be packaged in a suitable manner to ensure the protection of such product or part. The package should be marked clearly to indicate that the package contains a returned product or parts as well as indicating the RMA number.

Please make sure to accompany all returned products or parts with a written explanation of the problem or malfunction.

Freight Damage Claims are invalid for products or parts shipped in non-factory boxes and packaging materials.

Freight. All shipping will be paid by the purchaser. Items under warranty shall have return shipping paid by the manufacturer only in the US and Germany.

Any shipment does not include express delivery such as air freight.

If you install any other hardware than the one that is shipped with Pandoras Box MediaServer your warranty will end immediately.

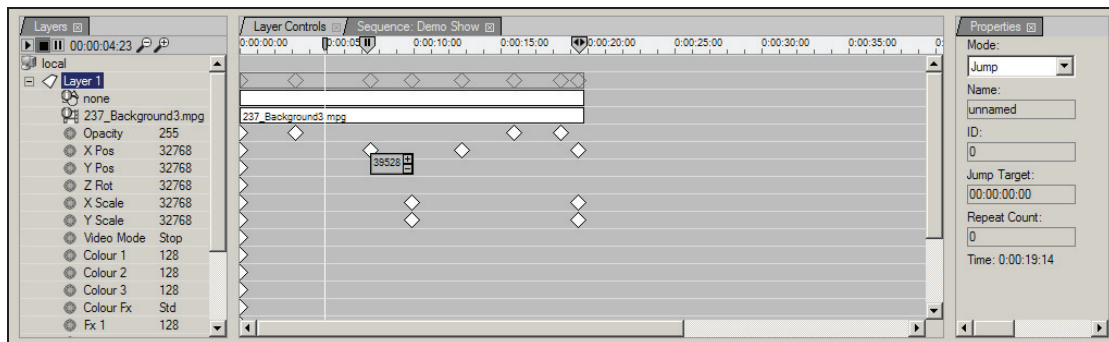
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Any changes made by the purchaser to the operating system by installing Windows updates or any 3<sup>rd</sup> party software, as well as if the product is misused or damaged in any way or for unauthorized repairs or parts will void the warranty.

## 4. Timeline Control

Pandoras Box MediaManager allows you to control any MediaServer, MediaPlayer, DMX or serial device with a nonlinear editing timeline control module.






### Playback & Key Animation



The timeline is designed to access all parameters directly and to create individual keys. The header of the sequence tab holds the time bar and lets you add markers and playback cues as well as jump points.

To create a new timeline, simply right-click on the sequences folder in the project tab. Only one timeline is available in standalone mode.

Once the timeline is created, you will have access to it in the sequence tab by selecting it in the project bin.

If the created sequence is selected, you will have transport controls for play , pause  and stop  on top of the layer control tree.

When the sequence is selected, pressing the spacebar will toggle between play and pause.

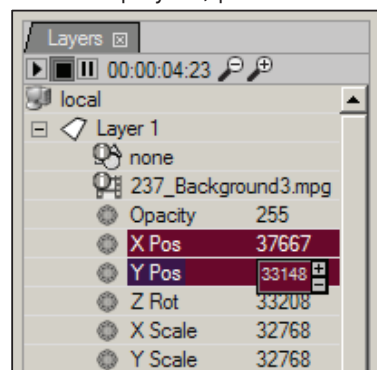
You will find the zoom in  and out  buttons above the device tree as well as the current time in the timecode display.

For direct zoom use the keyboard shortcuts “+” and “-” or hold “Shift” and left click and drag the zoom range on the timebar of the sequence in the editor.

To get to a specific time you may double click on the timecode display and enter the desired time for the time cursor to jump to.

Two formats are allowed to enter time in any timecode entry field:

1. “00:10:05:14” - equals to zero hours, ten minutes, five seconds and fourteen frames
2. “100514” - you can skip the “:” for faster time entry to enter the same time as in the example above





## **Framerate Setup**

You also may want to set a specific framerate for each timeline sequence. To do this, select the sequence from the project bin and change the framerate in the property tab of the sequence.



## Creating & Editing Keys

In order to create a sequence, animate parameters and play them back, you may want to store your values in a timed sequence.

Pandoras Box offers two methods to create keys within a timeline:

- direct timeline editing and
- the store and device tree editing process:

### Direct timeline editing

You can edit directly within the timeline by right-clicking in the desired track, creating a new key and changing the value at that frame in time.

After you have created a key like that, you can change the value by right-clicking the key or by selecting it with a left click and change its values in the property tab.

For changing the position of a key in time you may either select and drag the key to its target timeframe or select a key and change its current timeframe in its properties by entering the exact timecode.

In order to see the exact editing results of your parameter changes within the timeline you may set the time cursor to the same timeframe as the key you are editing.

You may either drag the time cursor to the location or type the exact timecode in the main timecode display, next to the transport controls of the timeline.

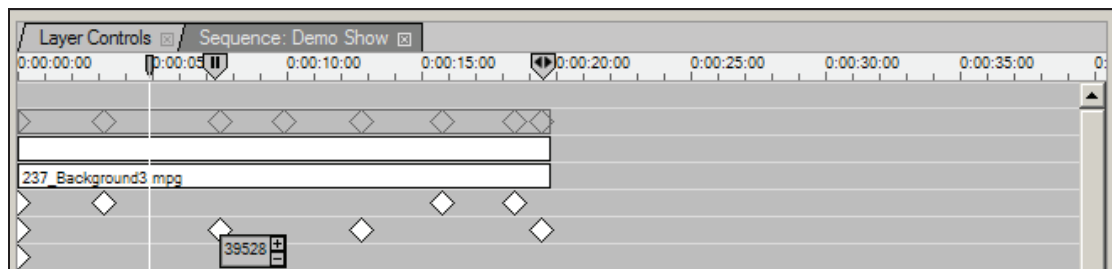
Using CTRL and ARROW < and > keys is the keyboard shortcut to jump between all existing keys in the timeline.

### Store & Device tree editing

The concept of using the device tree editing method lets you use the device tree to store any changes you made here at a specific location in the timeline later on.

Once a parameter value is changed, it is highlighted in red to let you know that it has become an active value that can be stored into any timeline at any point in time.

Once you have set all parameters that you want to store in the timeline, set the nowpointer of the sequence to the desired point of time where you want to generate events based on the active values.



To generate these new keys in the timeline, you will then have to right-click on the time-bar and choose "Store active".



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All active values will be set as keys in the timeline and be displayed as diamonds.

If you need to edit a specific value you can use the right click menu either on a device parent node or the individual parameter itself.

You can, at any level of the tree, choose to activate, de-activate or reset all devices in the tree.

The reset will turn all values back to their default value.

**Please note:**

**The activation state of a parameter has higher priority than the timeline playback value. If you want to reset all parameters to have full timecontrol back again, you may also access the 'all activate', 'de-activate' or 'reset' parameters for all devices from the context menu of the timebar. Be aware that all changes will then be reset to the values of the timeline playback.**



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## Select, Copy, Paste and Move Keys

Use the mouse to select multiple keys and move them in the sequence.

You can either select them by dragging a rectangle that captures all covered keys or by holding shift and selecting one after another.

**HINT: When moving individual keys or multiple keys at once, the first and last keys of the selection will snap to the timecursor. This can be very useful to align sequences of keys to specific timeframes in the sequence.**

You can select the keys by opening the parameter tracks from the device tree or select all keys of a device from its summary.

Ctrl+C can be used to copy keys to a new time, based on the nowpointer in the sequence by pressing Ctrl+V.

Another way of doing a quick copy is to first select all keys that have to be copied and then hold CTRL and left click and drag the keys to the target timeframe. Once you release the left mouse button, a copy of the keys will be created at the target timeframe.

To copy keys from one layer to another, use the Ctrl+Shift+V to paste the values at the nowpoint.

### Cues, Markers & Loops

Designing the playback behavior as well as making notes with markers is quite easily solved with cues in the time-bar or the sequence tab. Simply right-click at the desired point in time to add a cue.

The cue has several properties you can edit in the property tab.

**Mode:** play, pause or jump

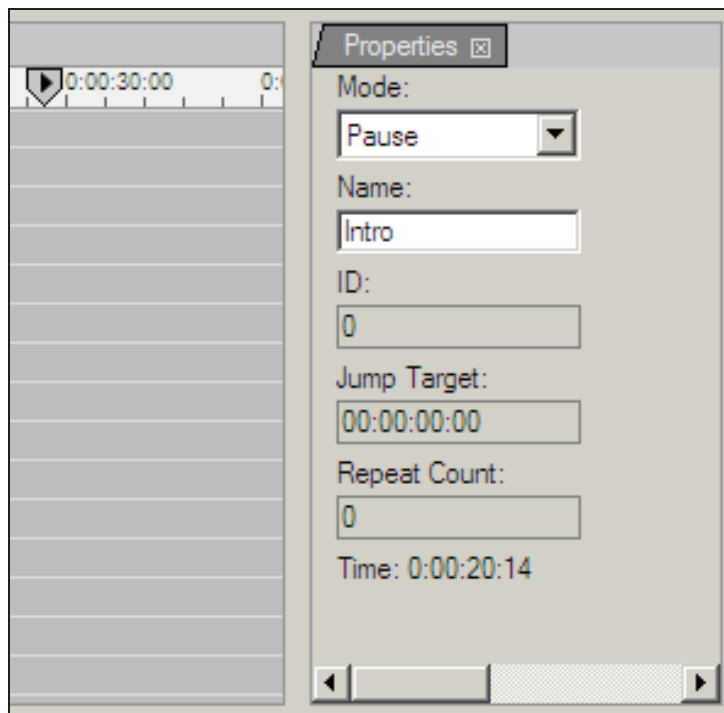
**Name:** Enter a custom name for each cue that will be visible on mouse over in the time-bar

**ID:** Set this to any number between 1-255 to remote control cues via DMX

**Jump Target:** Set a target timecode which the nowpointer should jump to when cue is passed.

**Repeat Count:** Set to zero if the loop should be endless or a specific amount to exit the loop.

**Time:** Displays the location of the cue in the timeline. To change the time, double click and enter the new time here.





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## Selections & Groups

If you need to control a single layer on multiple machines or to add the same values to multiple layer at once, the device tree control tab allows you to select multiple devices at the same time by clicking and holding the CTRL key.

All selected device icons will turn white, showing that they are selection members.

To release the current selection press ESC.

**Please note: When multiple devices are selected, all changes of parameter values will apply to all members of the selection.**

## Creating & Editing Groups

Once a single or multiple device is selected you can store this specific selection as a group in the group bin of the project tab.

To create a group please select the desired devices, then right click on the group bin in the project folder and choose 'create group'.

**HINT: When working in device tree editing, you may also use the right click menu on groups to determine if the members of the group should be activated, de-activated or reset.**



## Device Control

The timeline sequencer also allows external control of any serial or DMX device within any timeline.

In order to control any serial or DMX device you will have to drag the device type from the type tab to the device tree. Simply browse through the types tab and drag and drop the desired device type onto the device tree. Once a new device is dragged into the tree a new unnamed node will be created.

### DMX Devices

For DMX devices you may patch them by clicking on the patch tab and then selecting the node that you want to patch.

The DMX output patch is based on ArtNet Subnet and Universe ID.

You will need an optional DMX Link breakout box to output to DMX.

Please make sure that all DMX ports are set up, according to your patch in your project file.

#### **Please note:**

**Until a key has been stored in a timeline, the DMX data will not be sent constantly. Only changes to DMX values will be sent over ArtNet. Resetting a DMX node will send all values at once.**

### Custom DMX Device Creation

A custom DMX library file can be created as a text file with Wordpad. The file needs an extension called ".clib" and needs to be stored in the installation folder of the Master under:

"data\types\DMX Fixtures"

Please find here an example of a DMX .clib file for a Martin MAC500:

```
<?xml encoding="yes" ?>
<descripDevice type="fixtureDmx" artNetIndexScope="16">
  <descripModule type="param8bit" name="STROBE" default="34" artNetIndexOff="0" />
  <descripModule type="param8bit" name="DIM" default="0" artNetIndexOff="1" />
  <descripModule type="param8bit" name="COLOR1" default="0" artNetIndexOff="2" />
  <descripModule type="param8bit" name="COLOR2" default="0" artNetIndexOff="3" />
  <descripModule type="param8bit" name="GOBO1" default="0" artNetIndexOff="4" />
  <descripModule type="param8bit" name="GOBO1 ROT" default="0" artNetIndexOff="5" />
  <descripModule type="param8bit" name="GOBO2" default="0" artNetIndexOff="6" />
  <descripModule type="param8bit" name="FOCUS" default="50" artNetIndexOff="7" />
  <descripModule type="param8bit" name="IRIS" default="0" artNetIndexOff="8" />
  <descripModule type="param8bit" name="PRISMA1" default="0" artNetIndexOff="9" />
  <descripModule type="param16bit" name="PAN" default="32768" artNetIndexOff="10" />
  <descripModule type="param16bit" name="TILT" default="32768" artNetIndexOff="12" />
  <descripModule type="param8bit" name="SPEED1" default="0" artNetIndexOff="14" />
  <descripModule type="param8bit" name="SPEED2" default="0" artNetIndexOff="15" />
</descripDevice>
```

As you can see the first line gives the general Device description and the overall DMX channel count "artNetIndexScope=". The following lines describe each DMX Channel of the Fixture by a zero based offset of the DMX channel count at the end of each line by "artNetIndexOff=". # You may also choose the type of parameters "param8bit" or "param16bit" as well as setting the descriptive name and reset and default value.



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## Serial Devices

In order to control external serial devices over RS 232 or RS 422 you will need to add a serial device to the device tree

The serial control will give you access and control to most routing switchers, projectors, shutters or other device parameters that are remote controllable via the common RS 232 and 422 serial protocols.

Any serial ASCII or hex string can be stored and copied to any point in the timeline and be recalled at any time the timecursor hits the stored serial key.

Once you set the first key you can assign the IP address and port ID in the keys properties as well as the ASCII or hex command for that key.

You will need a serial link device to receive and output serial commands. See further instructions in the serial link manual for port setting baudrates and parity settings.

Please find below the .clib code for the basic Serial Link device

```
<?xml encoding="yes" ?>  
<descripDevice type="fixtureSerial" artNetIndexScope="1">  
  <descripModule type="paramSerial" name="Com" default="0" artNetIndexOff="0" />  
</descripDevice>
```

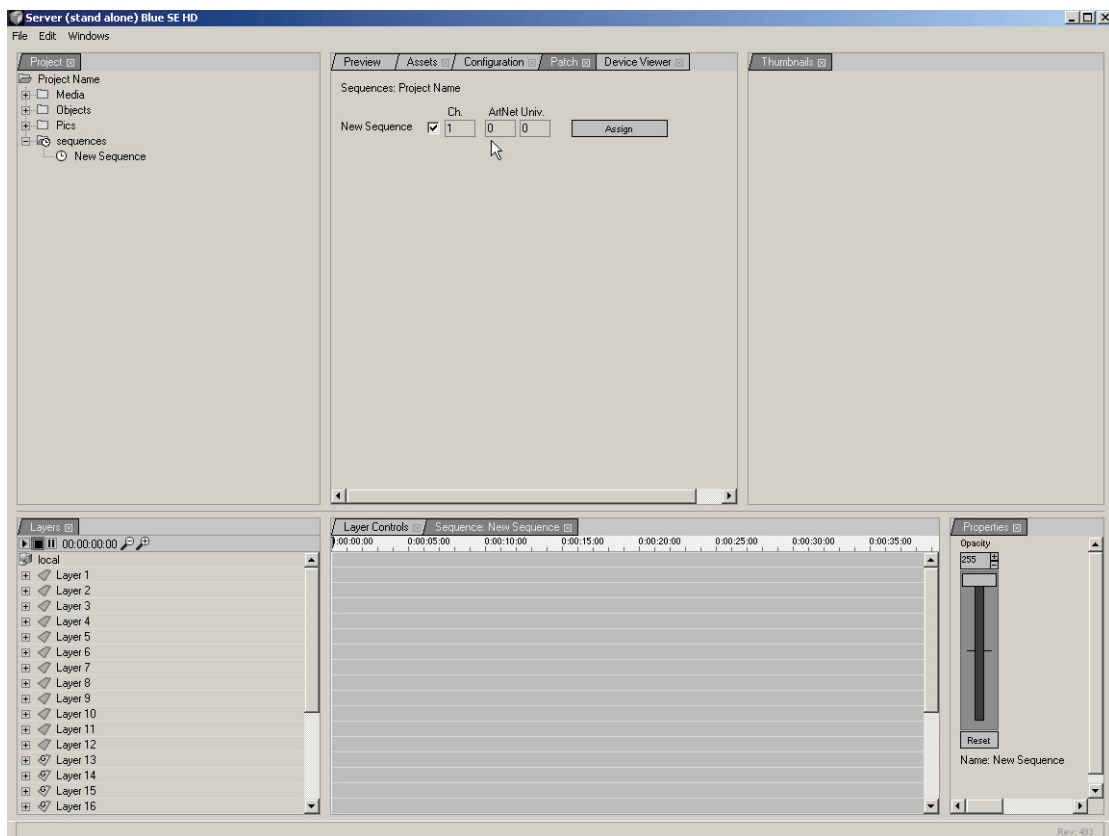
## External Timeline DMX Remote Control

Once you have set up and programmed your sequence, you may use a DMX controller for remote playback control of the timeline.

The timeline can be controlled in its intensity, transport controls, cues and frames.

The timeline can be patched individually in the user interface by selecting the timeline and opening the patch window. Here you may set a DMX start address for the timeline fixture. ArtNet as well as DMX via USB are available as external inputs.

To enable ArtNet or DMX via USB, click on the desired protocol input option in the configuration tab.







## External Timeline Serial Remote Control

Once you have set up and programmed your sequence, you may use a serial link device to control the playback control of the timeline via RS232 or RS422.

Once the serial connection is set up, the following commands are valid:

(Play)

Sets the sequence state to play

(Pause)

Sets the sequence state to pause

(Stop)

Stops and rewinds the sequence

(CueID)

ID = enter number based on cue ID to jump to that cue directly

Example:

(Cue13), sets the timeline nowpointer to the time of cue 13

## External Device Control over IP

The MediaManger offers an easy way to trigger or send commands over IP to a remote computer.

First of all the target computer needs to be in the same network IP address range as the manager and the application has to establish and maintain a TCP/IP connection that listens to port 23.

The packet data is formatted as follows:

FFh 00h 00h nn <data>

nn defines the virtual com port 00h, 01h, 02h or 03h that can be set in the serial device in MediaManager, for IP direct IP communication without a Serial Link interface you may ignore these virtual port values.

In MediaManager you have to assign only a serial device to the project. In the properties of the device you can define the IP address of the target computer, the data to be sent as well as the virtual port (which is normally only used by the serial link device).

## 5. Remote Network Synchronization & Control

To link multiple Pandoras Box Playback-Systems via network, the system needs to be set up in a Master/Client configuration.

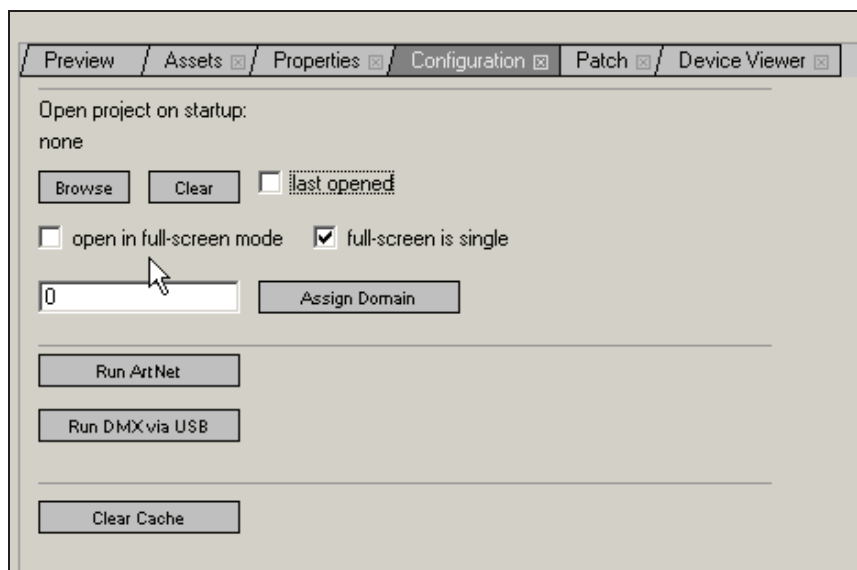
You can run one Pandoras Box MediaServer as a Master and start on all other machines, that you want to link together, the Pandoras Box Client.

There will be only one single project that you create on the Master that will hold all information about the resource media files used on the network.

It is important to know that each Master and Slave needs to have a dedicated IP address in the 2.xxx.xxx.xxx range with a subnetmask 255.0.0.0.

Any Master Client setup relies on a unique domain ID which is the network session that all units share via Ethernet. In case that you don't have any connectivity please check first if all clients as well as the master have the same domain ID.

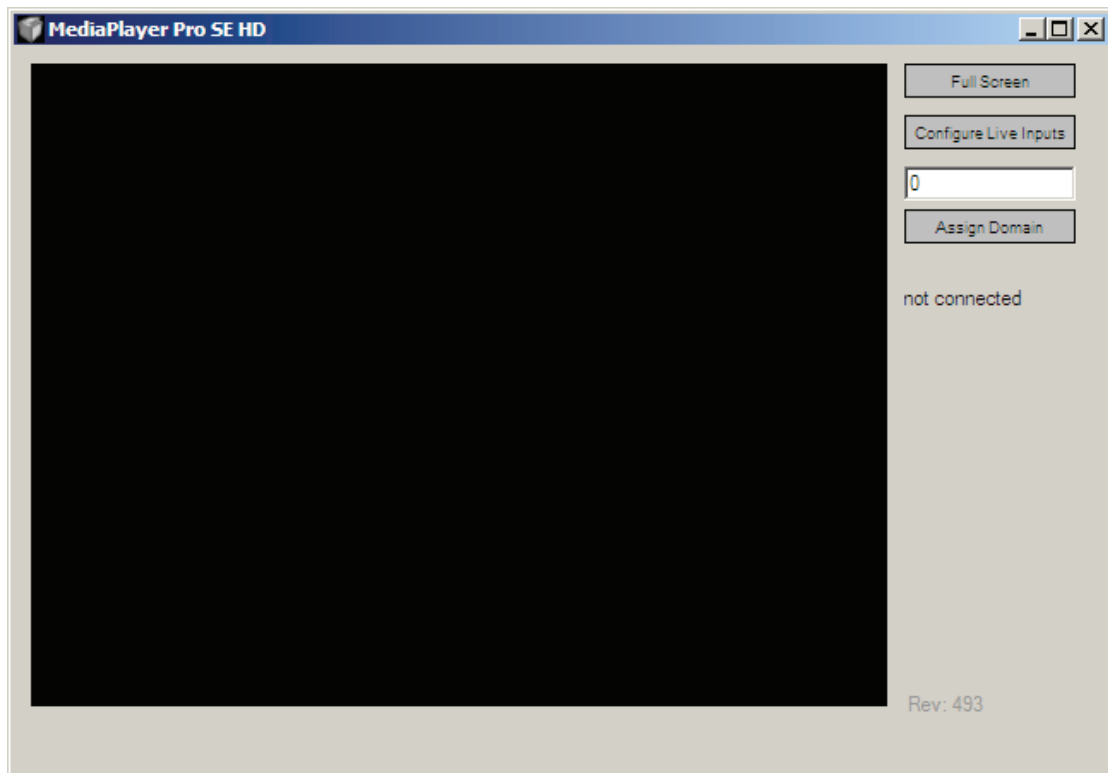
The domain can be set in the configuration tab in the Master.



When the systems are setup in Master/Client Mode, all control parameters are automatically sent via MediaNet. MediaNet takes care of the clock-synchronization of all machines within the project and sends all incoming control-data like DMX or Artnet in sync to the Clients.

**Please note:** When working in Master/Client Mode, all connected units must be of the same software revision. Please check the Rev. No. in the bottom right corner of the Master and the main window of the Client. All videos must be encoded as Mpeg2 elementary video only!

Once you start the Pandoras Box Client you will see the domain entry on the main screen.



A client does not necessarily need to be another server. Any other Pandoras Box Playback System can be connected as a Client to a Master-System.

After the domain set up, you should see all the Clients in the asset browser of the Master and the clients should display their Masters IP instead of “not connected”

To assign a Client to the Master-Project, take the units by clicking on the root node in the asset browser and dragging it into the device tree tab.

Now the Client is in the project and files can be transferred across the network.

To share all file resources, you simply use the ‘spread’ or ‘spread all’ resources button in the property tab of the files and folders.

**Please note: When re-starting the project on the Master with unconnected Clients, they will show up with a red“!”. Once the Clients are started, they will automatically reconnect to the master and load their files.**

If you want to assign a client that is not connected to the network yet you can also choose the Pandoras Box Client type from the Device Types tab and drag it into the project from there.

Once the unit will be present on the network make sure that you set the correct IP adress in the clients properties in order to be connected to the master.



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## Remote Preview

To preview any connected or unconnected Client on the Master, please make sure that you have a local node loaded in your device tree and that all resources are spread to the local node as well.

Once this is done, any of the clients (no matter if online or not) can be previewed in the preview window of the main tab.

If you have no client connected and you want to add new clients to the system, you can do this be either dragging them from the asset browser into the device tree or choosing a Pandoras Box Client from the types tab.

**Please note: In version 3.5 only MediaServers have full preview support, MediaPlayers are previewed without effects.**



## 6. Sequence Library (Standalone version only)

<b>Cha.</b>	<b>Feature</b>	<b>Description</b>	<b>Value Dec.</b>	<b>Default Value Dec.</b>
1	Level	Level Control 0-100%	0-255	255
2	Transport Control	Pause	0	0
		Play	128	
		Stop	255	
3	Cue	No Cue	0	0
		Selects Cue by ID	1-255	
4	Frame	Sets Nowpointer to Frame Position	0-65535	0
5	Frame Fine	No File selected – nothing is rendered		