Mi-16 Series
User Manual v2.2

APANTAC LLC, 7470 SW BRIDGEPORT ROAD, PORTLAND, OR 97224
INFO@APANTAC.COM, TEL: +1 503 968 3000, FAX: +1 503 389 7921

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WARRANTY STATEMENT

Apantac LLC (herein after referred to as "Apantac") warrants to the original purchaser of the products manufactured by Apantac (the "Product,") will be free from defects in material and workmanship for a period of three (3) year from the date of shipment of the Product to the purchaser.
If the Product proves to be defective during the three (3) year warranty period, the purchaser's exclusive remedy and Apantac's sole obligation under this warranty is expressly limited, at Apantac's sole option, to:

(a) repair the defective Product without charge for parts and labor or,
(b) provide a replacement in exchange for the defective Product or,
(c) if after a reasonable time, is unable to correct the defect or provide a replacement Product in good working order, then the purchaser shall be entitled to recover damages subject to the limitation of liability set forth below.

Limitation of Liability

Apantac's liability under this warranty shall not exceed the purchase price paid for the defective product. In no event shall Apantac be liable for any incidental, special or consequential damages, including without limitation, loss of profits for any breach of this warranty.

If Apantac replaces the defective Product with a replacement Product as provided under the terms of this Warranty, in no event will the term of the warranty on the replacement Product exceed the number of months remaining on the warranty covering the defective Product.

Equipment manufactured by other suppliers and supplied by Apantac carries the respective

manufacturer's warranty. Apantac assumes no warranty responsibility either expressed or implied for equipment manufactured by others and supplied by Apantac.

This hardware warranty shall not apply to any defect, failure or damage:

a) Caused by improper use of the Product or inadequate maintenance and care of the Product;

b) Resulting from attempts by those other than Apantac representatives to install, repair, or service the Product;

c) Caused by installation of the Product in a hostile operating environment or connection of the Product to incompatible equipment;

Table of Contents

1.0 What's In The Box

QTY	Product	Description
1		Mi-16/Mi-16+/Mi-16# multiviewer
2		Rack Ears
4		RJ50 to DB9 adapter cable for GPI
4		DB9 Breakout Terminal Block
1		RJ45 to DB9 adapter cable for RS232 interface
16		Terminators for passive loop outs
1		Analog audio breakout cable
1		North American Power Cord. Note: Countries outside of North America the power cord excluded
1		Optional Redundant Power Supply.

2.0 Key Features

There are 3 models in the Mi-16 family

- Mi-16 – 16x1 multiivewer, one source per window, no copy or duplicating sources
- Mi-16+ - 8x2 multiviewer, one source per window, no copy or duplicating sources
- Mi-16# - 16x2 multiviewer, sources can be copy and duplicated from any input to any output

General features for all Mi-16 series

- Low latency – single frame processing delay
- Accepts 16 auto-detect 3G/HD/SD-SDI inputs
- 16 passive input loop through
- Windows can be sized and moved freely
- Decode up to 16 embedded audio channels per SDI input, up to a total of 128 meters
- Ethernet for configuration and extenernal control
- Dynamic UMD/labes & Tallies (TSL)
- 20 standalone labels
- 4 customizable logos
- 32 GPIs for tallies, count up/down triggers or alarms
- Digital and Analog clocks can be sync'd with LTC or NTP
- Borders can be turn on or off
- Safe area markers
- Visual alarm tags for video/audio alarm detection
- Audio monitoring output – stereo, AES, embedded SDI and HDMI
- Optional redundant power supply
- 3 year warranty

Mi-16 specific features

- 2 simultaneous and indentical HDMI and SDI outputs
- Each source can only be assigned to a window once

Mi-16+ specific features

- 2 independent outputs, 8 windows on each output
- 2 analog and 2 digital clocks
- Each source can only be assigned to a single window

Mi-16# specific features

- 2 independent outputs
- 2 analog and 2 digital clocks
- Each source can be freely assigned to any window
- Each source can be copied up to 16 times as long as they are the same size
- Each source can be copied to a different size window, but only up to 16 times
- Once a source is copied to a different size, the total number of sources will be decrease by one.

2.1 Specifications

Mi-16 SPECIFICATIONS			
Inputs	16 3G/HD/SD-SDI	**Video Outputs**	2 identical DVI/HDMI, SDI
Loop outs	16 passive loop outs	**Audio Outputs**	AES and Analog audio monitor outputs
Connectors	BNC IEC 61169-8 Annex A	**Output Resolution**	1920 x 1080p 50/60Hz
Total Windows	16	**On Screen Display**	Borders, labels, tally UMD, OMD, IMD, dynaimic UMD
Serial Digital	SMPTE 424M, 292M, 259M	**General Purpose IO**	Up to 32 inputs with RJ50 - DB9 connectors
Equalization	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	**Serial Port**	Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
Return Loss	> 15db up to 1.485 Gbps > 10db up to 3G	**IP**	100 Base-Tx, TSL, AXP Connector: RJ45
Embedded Audio	SMPTE-272M-A	**Electrical**	50W, 90-250V 50/60 Hz
Alarms	No audio, audio high/low, no video, video black, video frozen, WSS, AFD	**EMI/RFI**	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
Power	90-250 AC / 12 DC	**Size**	1 RU, 25 cm (10")

Mi-16+ SPECIFICATIONS			
Inputs	16 3G/HD/SD-SDI	**Video Outputs**	2 independent DVI/HDMI, SDI outputs
Loop outs	16 passive loop outs	**Audio Outputs**	AES and Analog audio monitor outputs
Connectors	BNC IEC 61169-8 Annex A	**Output Resolution**	1920 x 1080p 50/60Hz
Total Windows	16	**On Screen Display**	Borders, labels, tally UMD, OMD, IMD, dynaimic UMD
Serial Digital	SMPTE 424M, 292M, 259M	**General Purpose IO**	Up to 32 inputs with RJ50 - DB9 connectors
Equalization	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	**Serial Port**	Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
Return Loss	> 15db up to 1.485 Gbps > 10db up to 3G	**IP**	100 Base-Tx, TSL, AXP Connector: RJ45
Embedded Audio	SMPTE-272M-A	**Electrical**	50W, 90-250V 50/60 Hz
Alarms	No audio, audio high/low, no video, video black, video frozen, WSS, AFD	**EMI/RFI**	Complies with FCC Part 15 Class A, CE, EU EMC, C-tick
Power	90-250 AC / 12 DC	**Size**	1 RU, 25 cm (10")

Mi-16# SPECIFICATIONS			
Inputs	16 3G/HD/SD-SDI	**Video Outputs**	2 independent DVI/HDMI, SDI outputs
Loop outs	16 passive loop outs	**Audio Outputs**	AES and Analog audio monitor outputs
Connectors	BNC IEC 61169-8 Annex A	**Output Resolution**	1920 x 1080p 50/60Hz
Total Windows	32+	**On Screen Display**	Borders, labels, tally UMD, OMD, IMD, dynaimic UMD
Serial Digital	SMPTE 424M, 292M, 259M	**General Purpose IO**	Up to 32 inputs with RJ50 - DB9 connectors
Equalization	120m at 2.97 Gbps, 140m at 1.48 Gbps, 400m at 270 Mbps with Belden 1694A	**Serial Port**	Connector: RJ45, Baud Rate up to 115200 Format, TSL, TSI, AXP
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Power	90-250 AC / 12 DC	**Size**	1 RU, 25 cm (10")

2.2 Rear Views

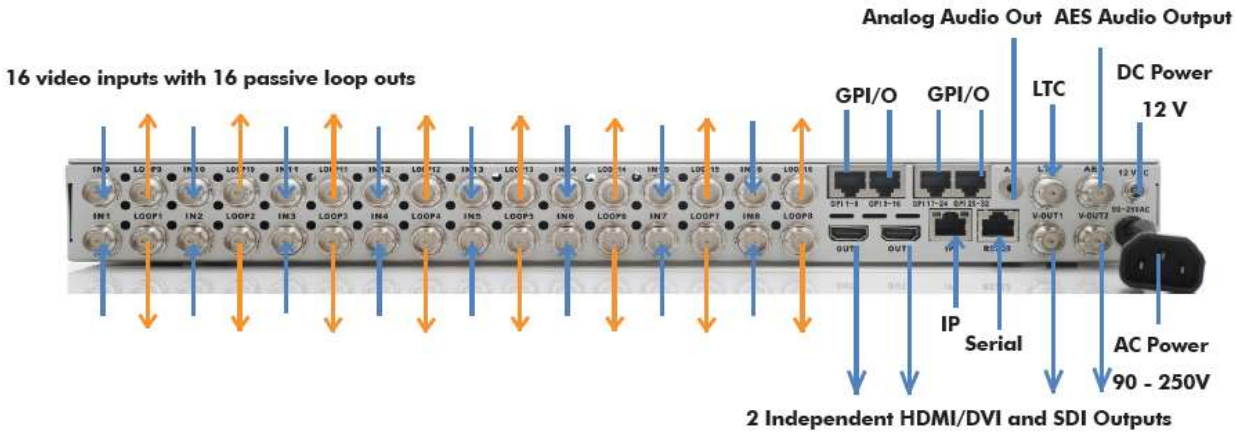


Figure 2-1 Mi-16x rear view

3.0 Hardware boot up

There is no on/off on the Mi-16, this is due to the UL safety regulation imposed on 1 rack unit products. To power on the Mi-16, insert power cord directly to the AC power receptacle, the Mi-16 will boot in approximately 10 seconds. When the HDMI output is connect to the screen, the following information will display on the lower third of the display for about 5 seconds (see Fig. 1), then followed by the Apantac logo, then the very last screen layout prior to powering off the unit.

Figure 1: FPGA/FW versions and IP address of the unit will be displayed for about 5 seconds

4.0 Software

This section will help you get the Mi-16 setup as quickly as possible.
Before you can successfully run the JDirector, you must first copy it from the provided CD or download it from the Apantac website (www.apantac.com) and place it in an appropriate location on your HDD. The JDirector software can be run from either a MAC or a Windows PC.

If you are using a MAC, click on he APP_ApantacJDirector icon

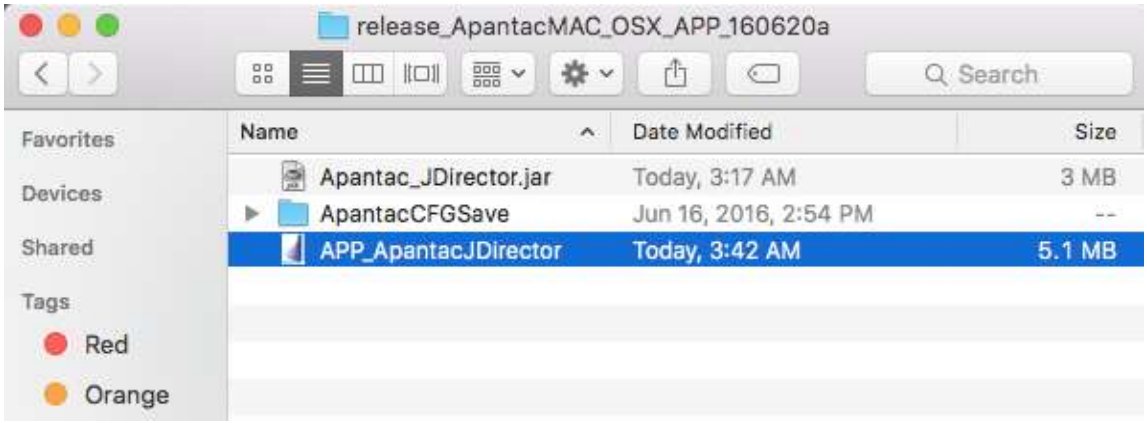


Figure 2: Double-Click on APP_ApantacJDirector to launch the JDirector

If you are using a Windows PC, click on the ApantacGUIRUN.BAT to launch

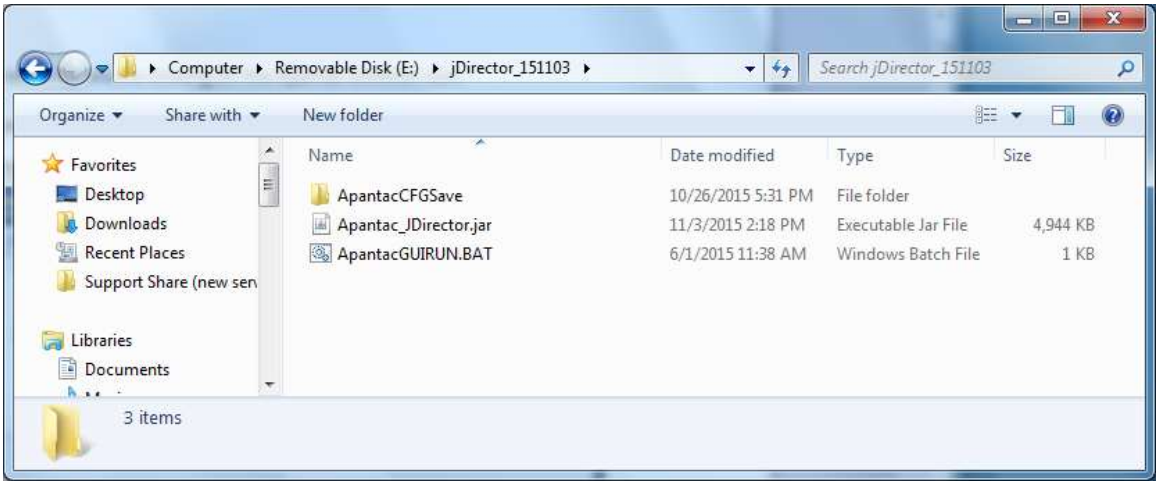


Figure 3: Double-click on the ApantacGUIRUN.BAT to launch the JDirector

After the JDirector launches you will see this screen

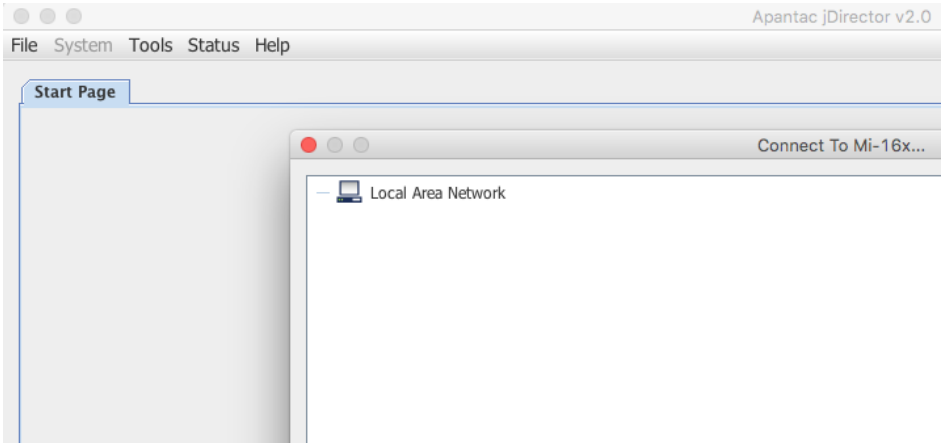


Figure 4: JDirector Initialization screen

To connect to the multiviewer your PC must be connected to the same subnet as the multiviewer. The IP address(es) is displayed briefly on the monitor attached to the corresponding output at boot up.

Figure 5: IP address of the unit will be displayed for about 5 seconds on boot up.

The **default IP** address is **192.168.0.100**

To connect to the Mi-16 multiviewer

- Right click on Local Area Network
- Click on Mi-16x IP Address Manager

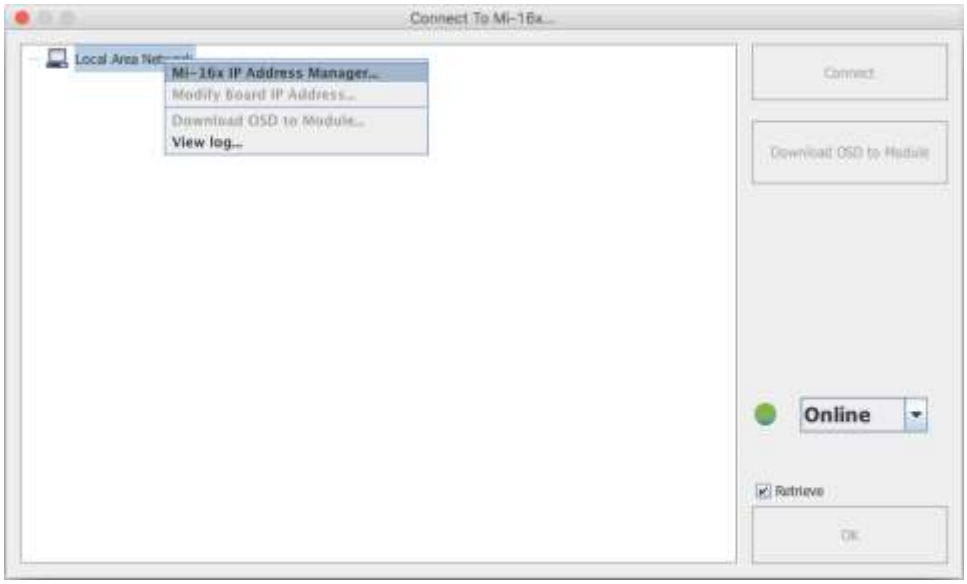


Figure 6: **Local Area Network -> Mi-16x IP Address Manager**

- Press the ADD Mi-16x button

Figure 7**: Add Mi-16 module**

There are 3 different models in the Mi-16 series, Mi-16, Mi-16+ and Mi-16#

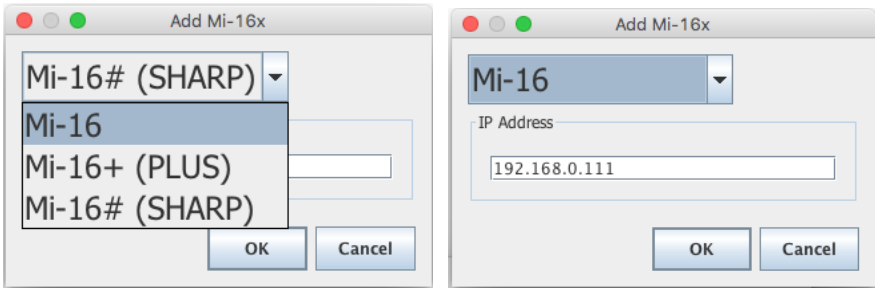


Figure 8**: Select your Mi-16 model, then enter the IP address**

Note: Even if you select incorrect Mi-16 model, the JDirector will automatically detect the proper version of hardware you have.

Figure 9: **Add Mi-16 module**

After you have completed the above steps, click "OK" to continue, then the JDirector will take to the overview mode of the user interface.

If you have already connected to this Mi-16 once before, you may see this dialog when you connect to it again, click on <OK> to continue.

Figure 10: **Connect to a Mi-16 that has been previously connected**

Figure 11: **Connect to a Mi-16+ that has been previously connected**

Figure 12: **Connect to a Mi-16# that has been previously connected**

4.1 Changing the Mi-16 IP Address

When at the "Connect to the Mi-16x.." window when first opening the jDirector software you should see the current IP address if you have added a unit with the above instructions or have previousely connected to the Mi-16.

- Right click on the Network line and select Modifiy Board IP Adress.
- Enter in the desired IP address and confirm change.
- Reboot the Mi-16 unit to make the change active.

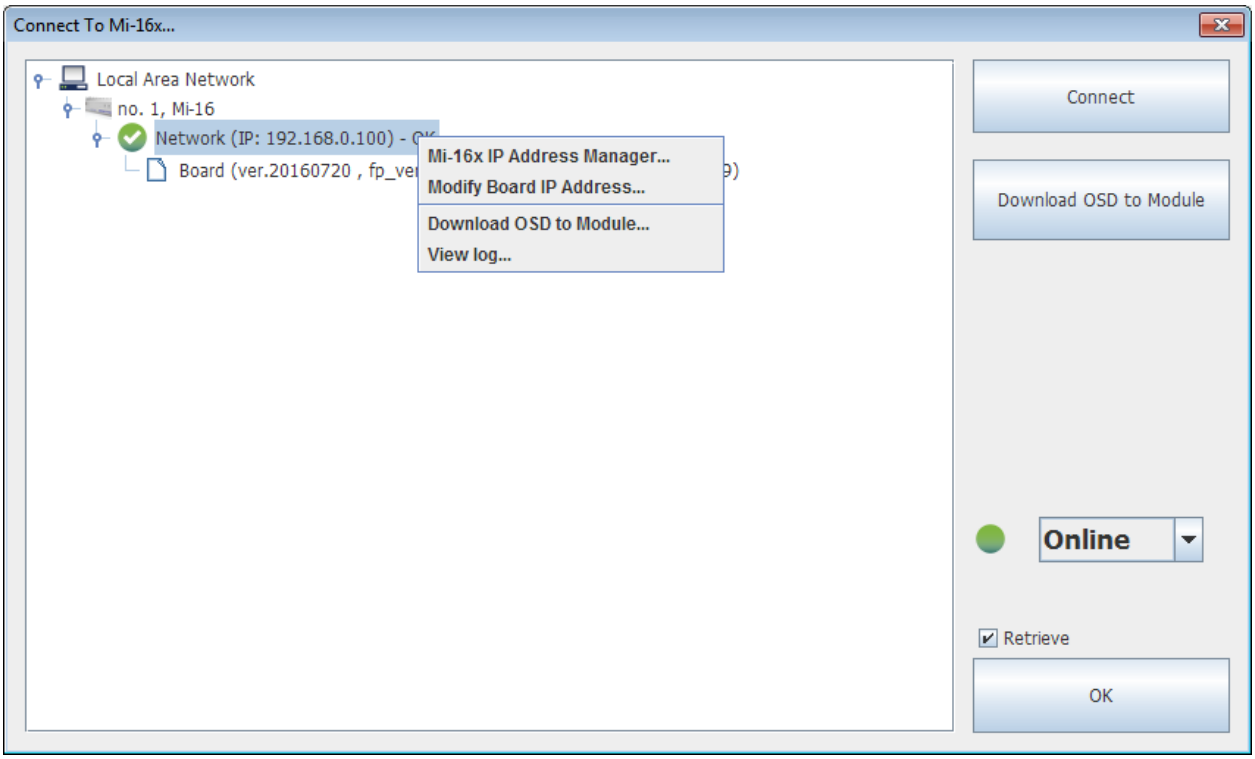


Figure 13: **Mi-16 change IP Address contextual menu.**

4.2 Configuring of the Mi-16 series

Mi-16

The Mi-16 is the most basic model of the Mi-16 family. There are 16 inputs and 1 output. Each source can be only assigned to a single window. Once the JDirector is connected to the Mi-16, the following editor layout will appear:

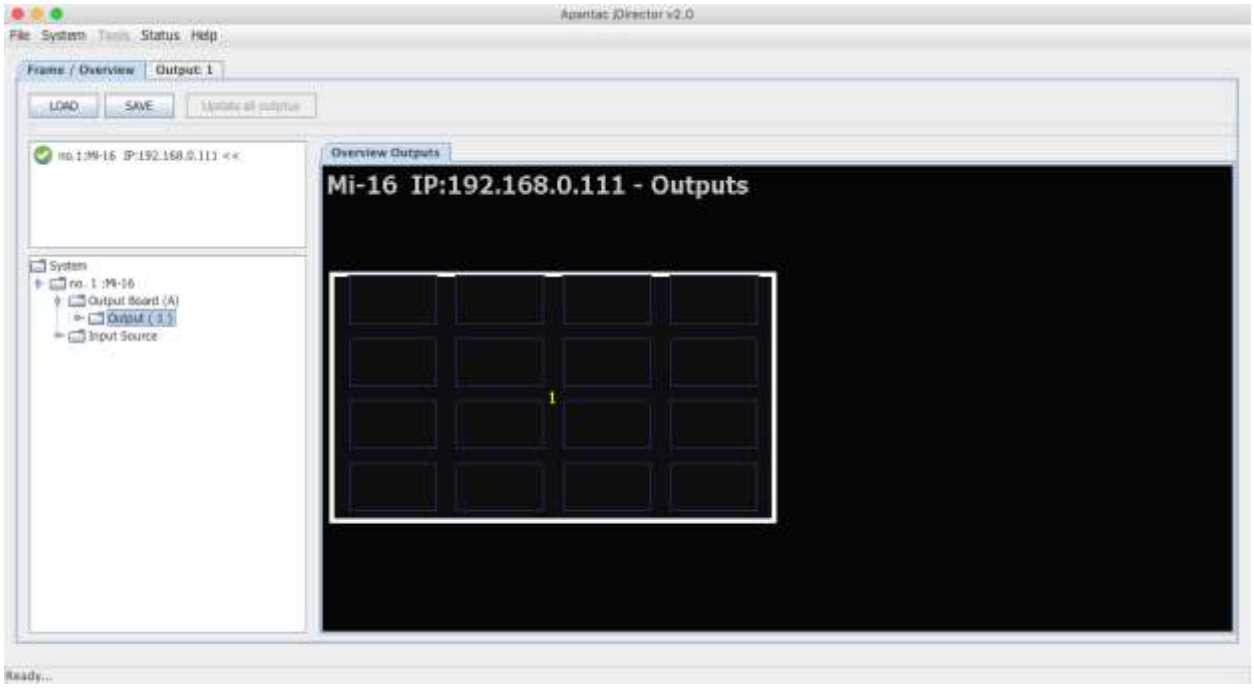


Figure 14: **Mi-16 Overview Mode**

Double click on the white outline of the output will take you to JDirector's editing mode.

Mi-16+

The Mi-16+ is the medium model of the Mi-16 family. There are 16 inputs and 2 outputs with 8 windows on each output. Each source can be only assigned to a single window. Once the JDirector is connected to the Mi-16+, the following editor layout will appear:

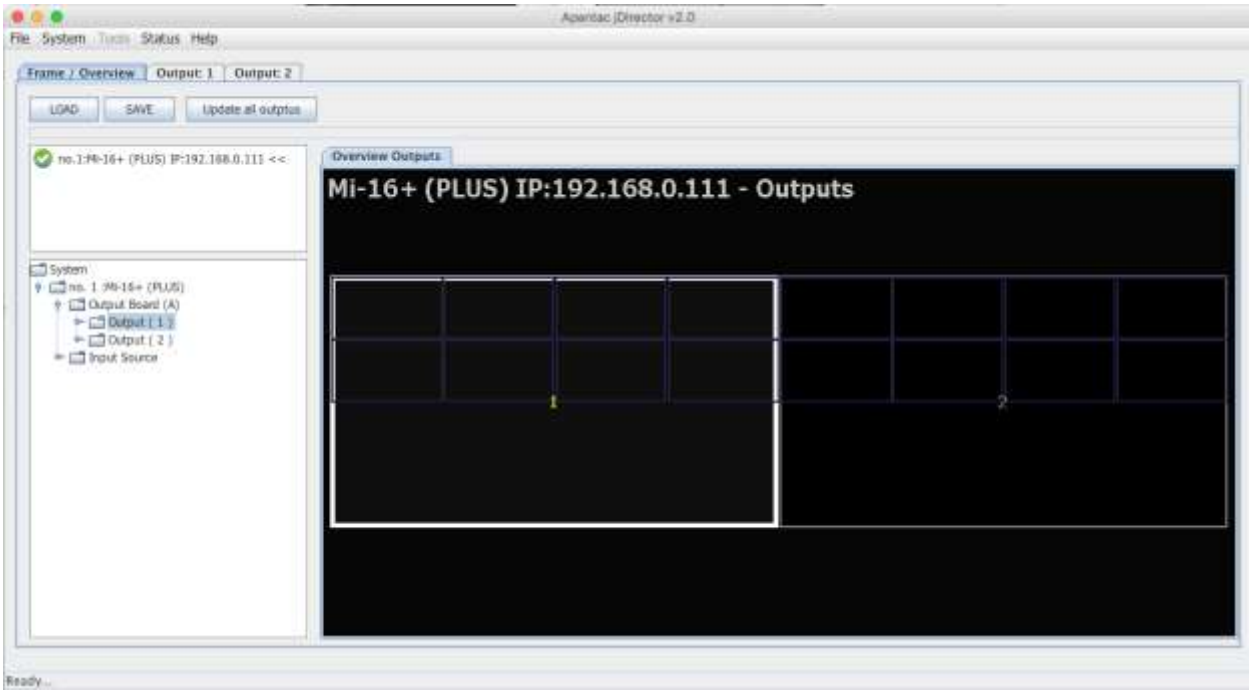


Figure 15: **Mi-16+ Overview Mode**

Double click on the white outline of the output will take you to JDirector's editing mode.

Mi-16#

The Mi-16# is the most adavanced model of the Mi-16 family. There are 16 inputs and 2 output, each output can have up to 16 windows. Each source can be copied to multiple windows of the same size or different sizes. Once the JDirector is connected to the Mi-16#, the following editor layout will appear:

Note: In the Mi-16#, there are 16 windows resources, when a source is copied to a same size window, it will not consume any additional window resources, however, when a source is copied to a different size window than its original size, it will consume one additional window resource. For example, if source one is copied to a different size window, then there are only 14 window resources left instead of 15.

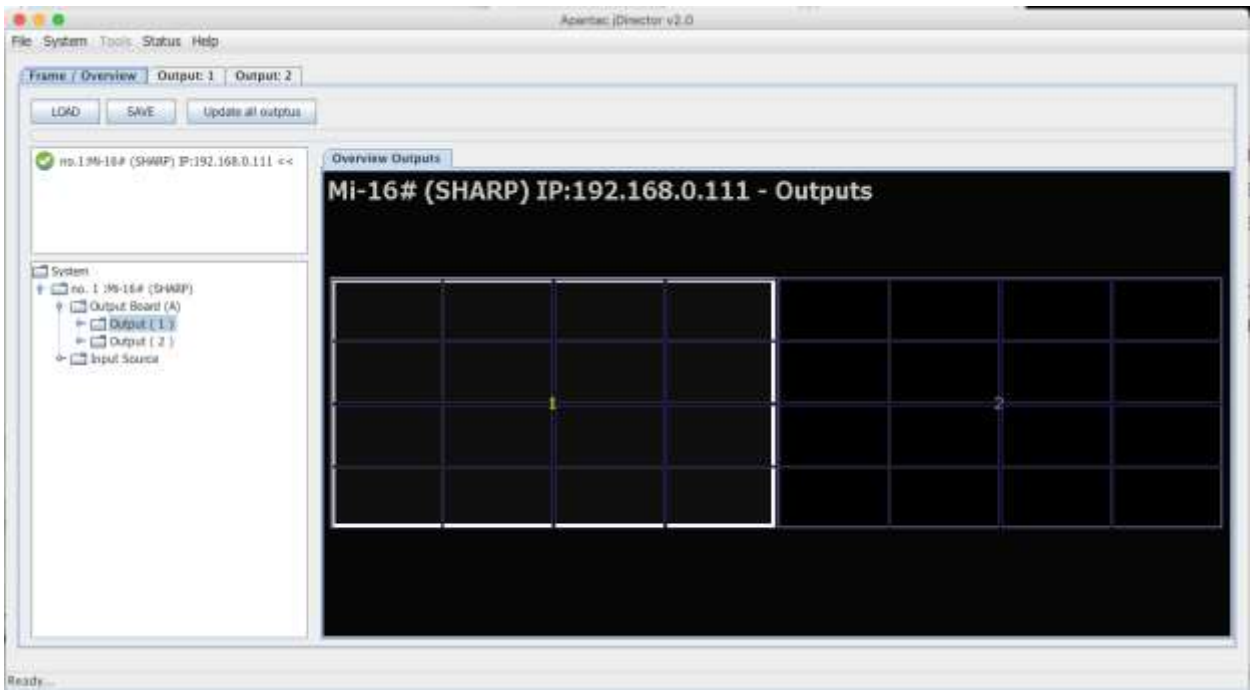


Figure 16: Mi-16# Overview Mode

You can either double click on the white outline of the outputs or click on the <Output:1> or <Output:2> tabs to take you to JDirector's editing mode for each outputs.

5.0 Common features and configurations

5.1 Editing mode

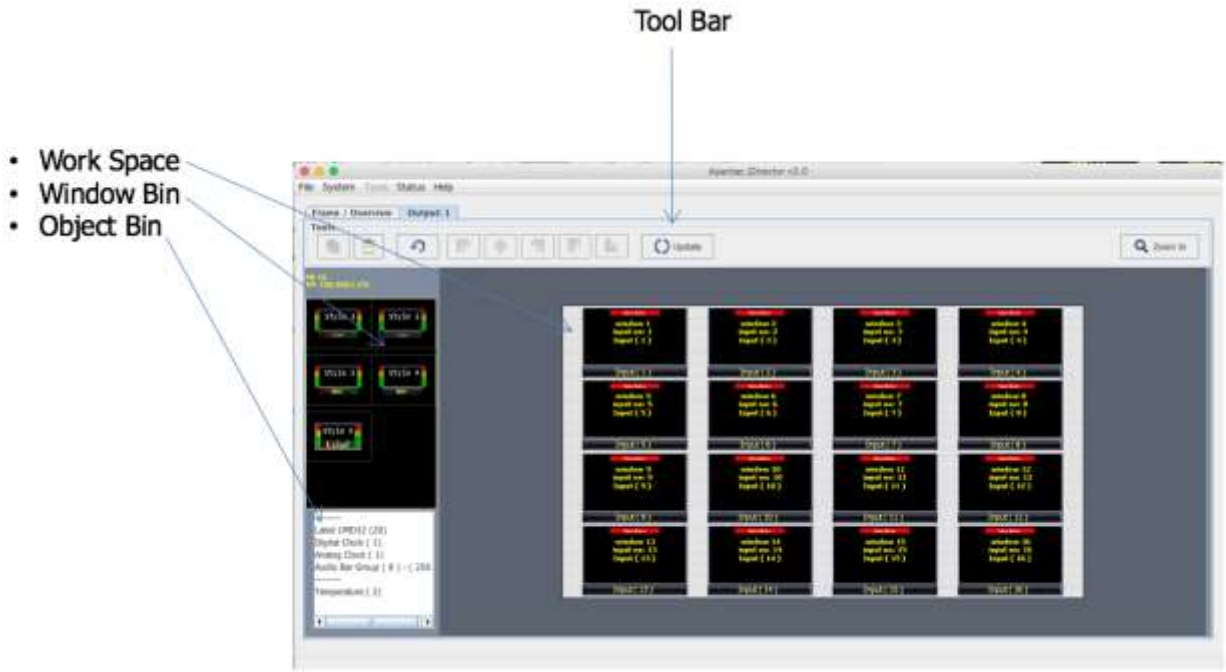


Figure 17: Mi-16 editing mode

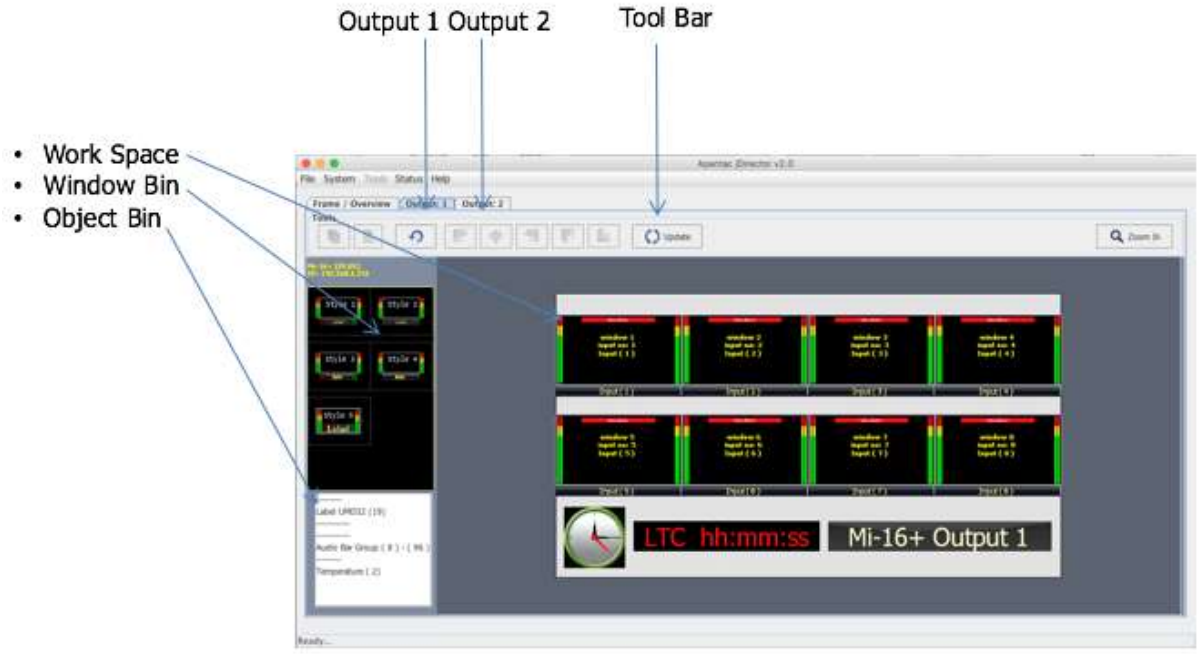


Figure 18: Mi-16+ and Mi-16# editing mode

The JDirector editor consists of four major work areas,

1. Tool Bar, is where all the tool short cuts reside
2. Work Space, is the space to edit the on screen layout and look
3. Window Bin, where all the windows templates reside
4. Object Bin, where all the objects such as standalone labels, digital clocks, analog clocks and temperature alarm
5. 

button on the tool bar will update the laytout on the PC to the Mi-16 output.

5.2 System level settings

5.2.1 Set output timing

The Mi-16 series comes with the default output setting of 1080P 60Hz, it can easily be changed to 1080P 50Hz by doing the following,

On the Top Level Menu, click on System -> Output Manager to set the output timing.

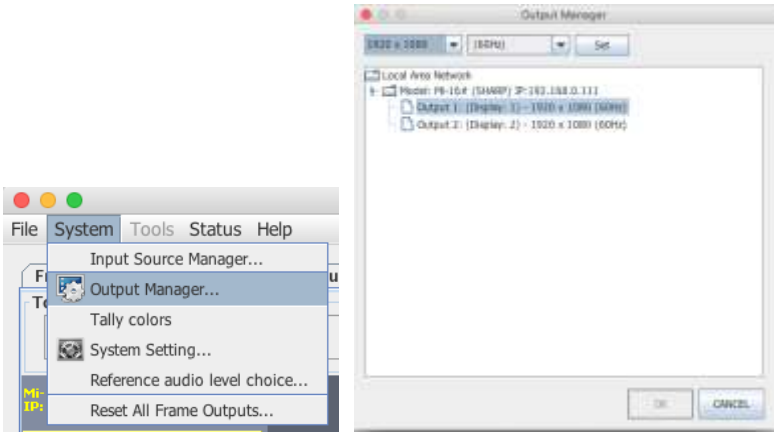


Figure 19: **Output Manager**

5.2.2 Sources, Names, Tally and Other Setups

Every Mi-16's source attributes can be configured in a single place. Since the Mi-16# allows copying of the sources, these attributes can follow the sources every time it is assigned to a new window.

These attributes are as follows,

Names

- The default names are Input (1) to Input (16), each name can have up to 32 characters
- The names can be static or dynamic. When the names are set to dynamic, the UMD of the window will become blank and waiting for the name assignment to come from an external tally management system such as TSL or TSI.

TSL

In order for the names to be dynamic, the TSL address is assigned to each source. The default assignment is 0 ~ 16

Tally Mode

The Tally can be either trigger via GPI or an external tally management system such as TSL or TSI.

Tally attributes

Whether the tally trigger is GPI or TSL, the tally indicators can be assigned to on screen elements such as LEDs, borders, UMD text and UMD text colors.

To start configuring the Input Source table

On the top menu, go to System -> Input Source Manager, the Input Source Manager dialog will pop up.

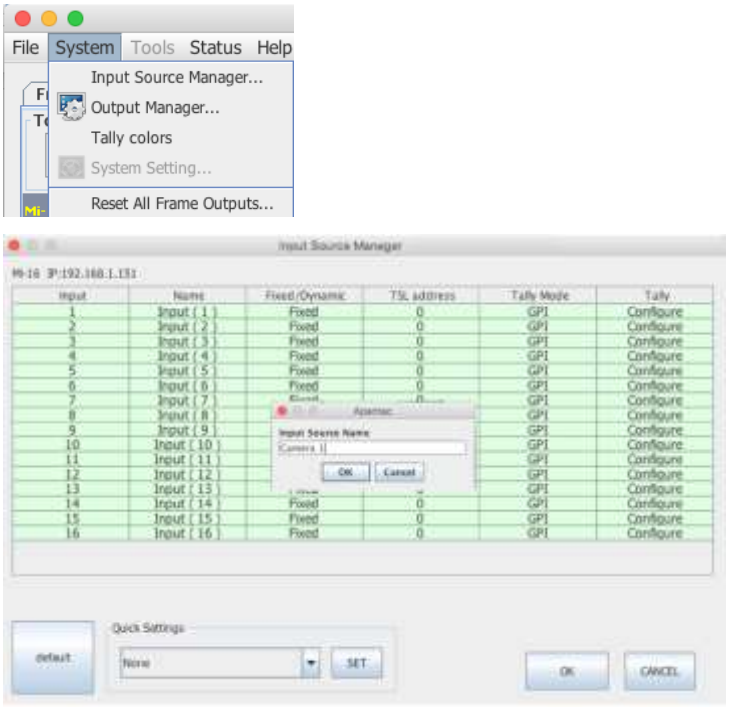


Figure 20: Input source manager

Name the source

Click on any of the Name field and start assigning names. Click <OK>, then it will automatically jump to the next name until you hit <Cancel>

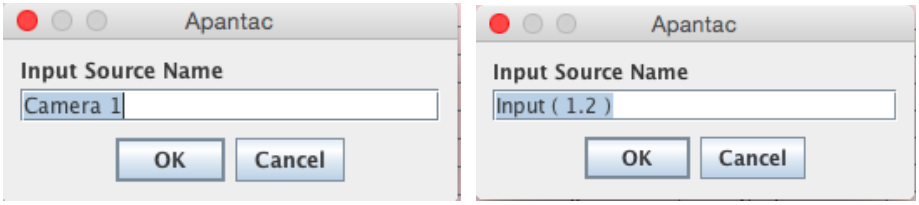


Figure 21: Enter source names

Continue to name all the sources.

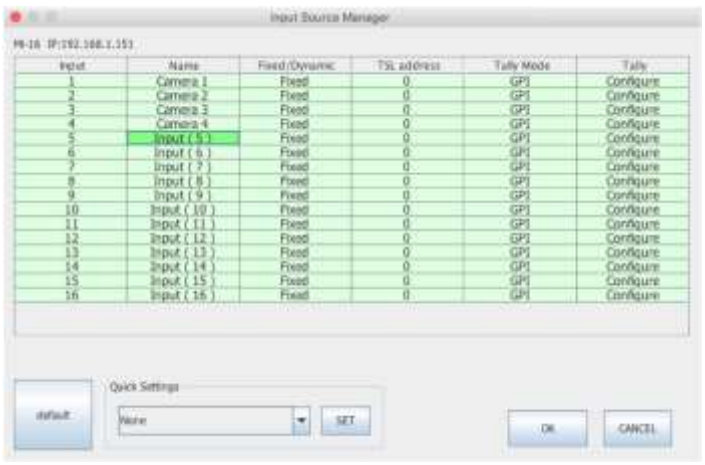
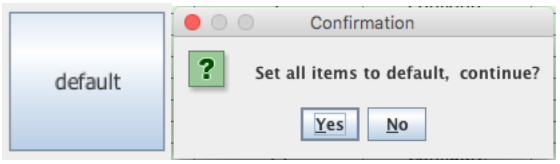
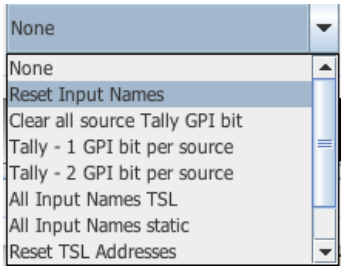
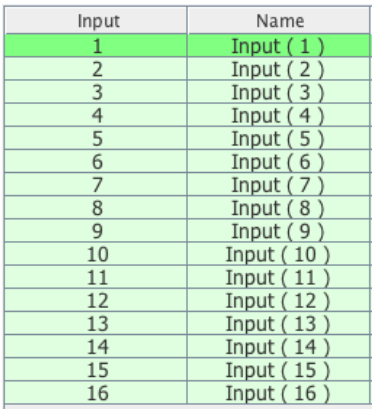
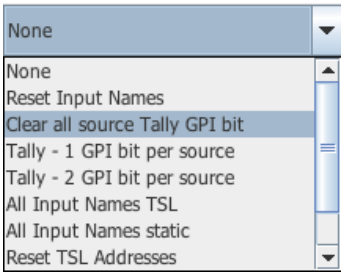
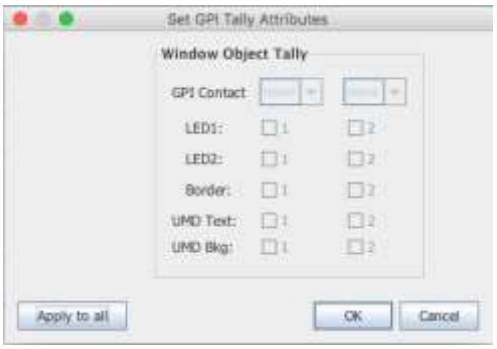


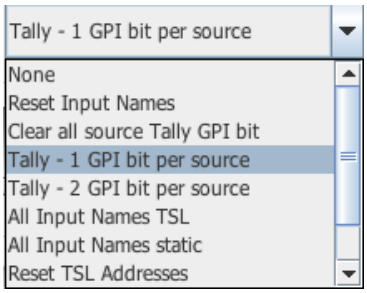
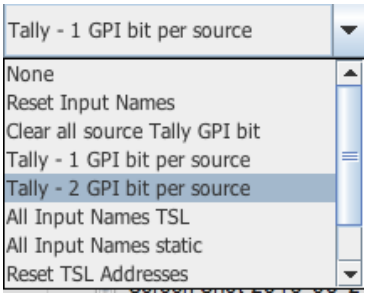
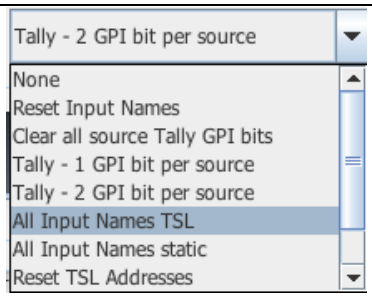
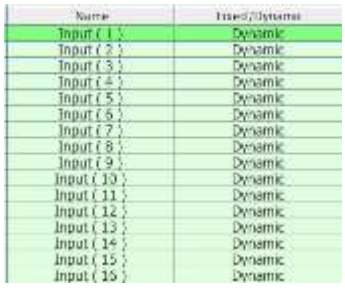
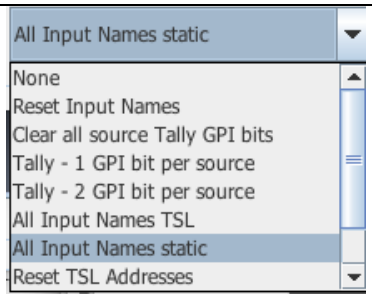
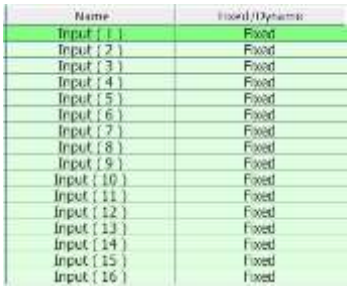
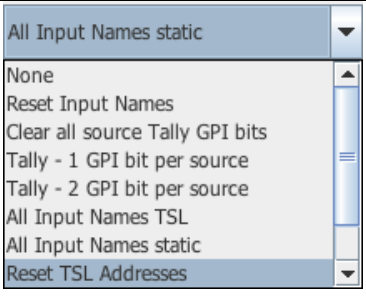
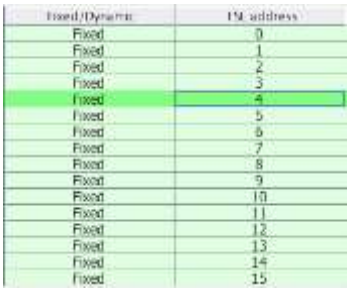
Figure 22: Input source manager with updated names

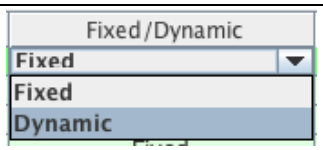
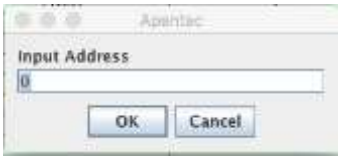
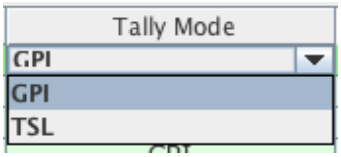
Quick Settings

There are several quick settings that will speed up the setup process

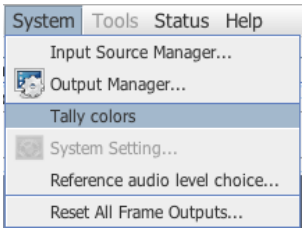
Figure 23: Enter source names

Set all attributes to default	 **Figure 24**: Enter source names
Rest Input Names <SET> – will set all the input names back to Input (1), Input (2) and so on	 **Figure 25**: Enter source names  **Figure 26**: Enter source names
Clear all source Tally GPI bit <SET> – will clear all GPI tally settings	 **Figure 27**: Enter source names  **Figure 28**: Enter source names

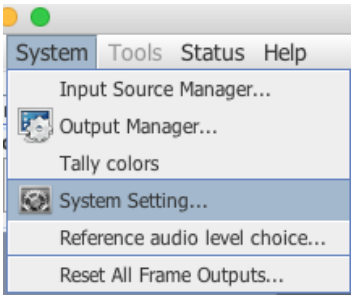
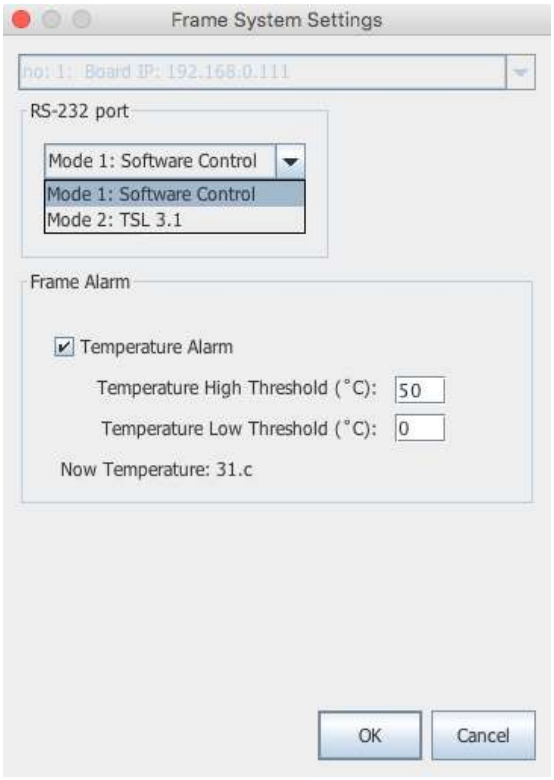
Tally – 1 GPI bit per source <SET> - will sequentially assign one GPI tally per source	  **Figure 29**: Enter source names
Tally – 2 GPI bit per source <SET> - will sequentially assign two GPI tally per source	  **Figure 30**: Enter source names **Figure 31**: Enter source names
All Input Names TSL <SET> will change all Fixed/Dyanmic Names from "Fixed" to "Dynamic"	  **Figure 32**: Enter source names **Figure 33**: Enter source names
All Input Names static <SET> will change all Fixed/Dyanmic Names from "Dynamic" to "Fixed"	  **Figure 34**: Enter source names **Figure 35**: Enter source names
Reset TSL Addresses <SET> will set all TSL address back to default 0 ~ 15	  **Figure 36**: Enter source names **Figure 37**: Enter source names

Settings	
Change Name from Fixed to Dynamic and vise versa	 **Figure 38**: Enter source names
Change TSL addressesk. Double Click on the TSL address Cell and change it to the desired number between 0 to 127	 **Figure 39**: Enter source names
Change the Tally Mode between GPI to Tally	 **Figure 40**: Enter source names
Set GPI Tally attributes. Set Tally mode to GPI, double click on Tally -> Configure	 **Figure 41**: Enter source names
Set TSL Tally attributes. Set Tally mode to TSL, double click on Tally -> Configure	 **Figure 42**: Enter source names

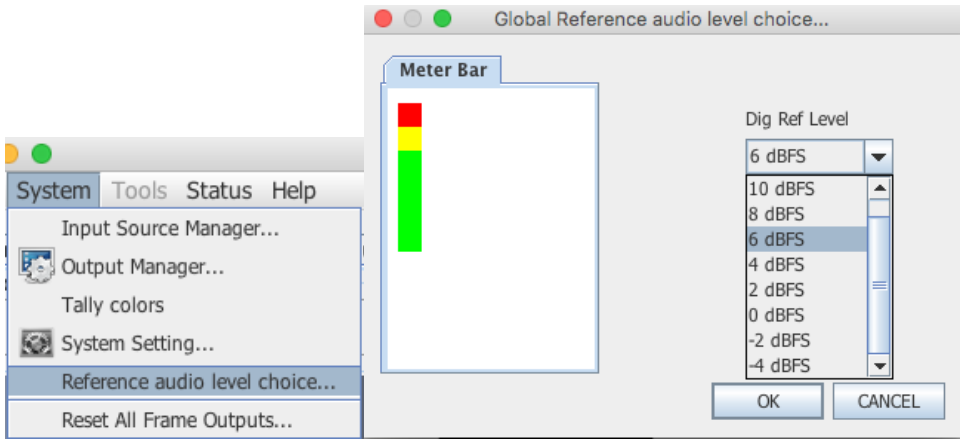
5.2.3 Set Tally colors

Set Tally Colors. System -> Set Tally colors	

5.2.4 System Settings

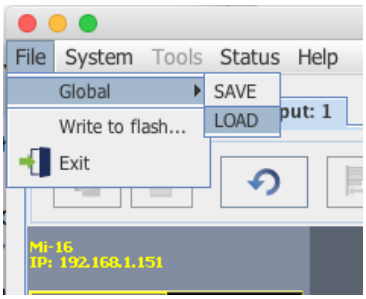
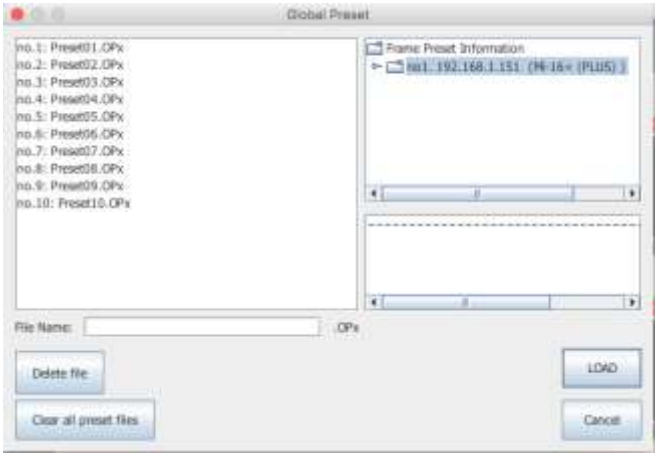
Set system settings. System -> System Settings	
RS-232 Communication mode can be set for software control or TSL. Temperature alarm setting as well as current temperature will also be shown in this dialog.	

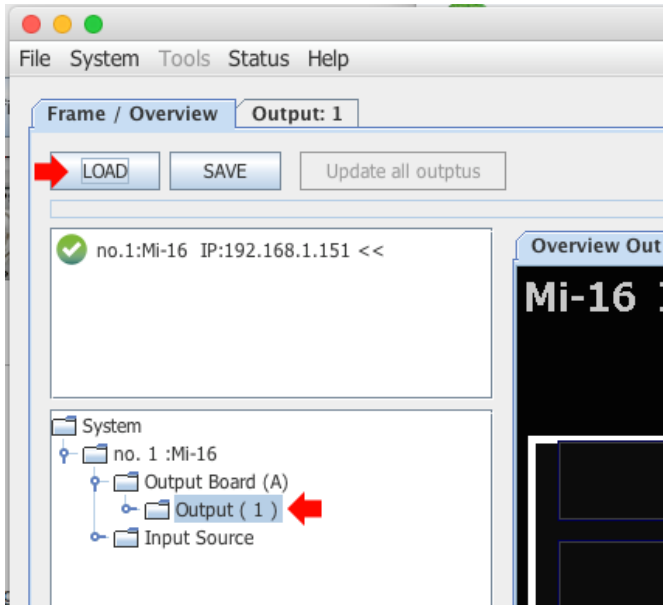
5.2.5 Audio reference settings

Reference audio setting can be set	

5.2.6 Load presets

The Mi-16 series can have up to 30 presets. Each Mi-16x comes with 10 preloaded presets. Please see Appendix A for all the preset layouts.

Load Presets by File -> Glogal -> LOAD	 Figure 43: File -> Global -> LOAD
Highlight the preset you want to load, then click on <LOAD>	

You can also load preset from the overview mode. Highlight the preset you want to load then clock on <LOAD>	

6.0 Editing

6.1 To delete a window

There are two methods to remove a window.

1. Highlight the window you would like to delete
    a. Press the <delete> key

Figure 44: Click on the window you want to delete to highlight it, then press the <delete> key on the keyboard.

b. Or right click on the window and select <Close>

Figure 45: Right click on the window you want to delete to highlight it, then select <Close> to close the window

Figure 46: The end result

How to delete multiple windows

1. Press and hold the <CTRL> Key
2. Highlight the windows you would like to delete
    a. Press the <delete> key

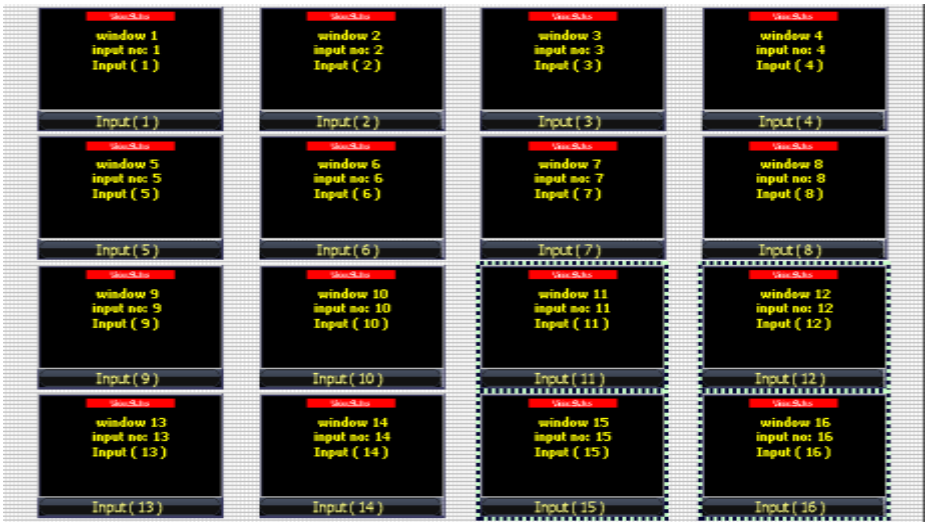


Figure 47: Hold down the CTRL key and click on multiple windows, then press the <delete> key on the keyboard

    b. Or right click on the window and select <Close>

Figure 48: Hold down the CTRL key and click on multiple windows, then right click on a highlighted window, then select <Close>

Figure 49: The end result

6.2 Mi-16 series window styles

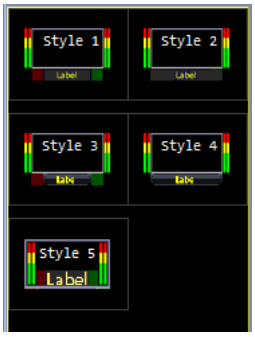
- The Mi-16 series comes with 5 basic window styles. These styles are located in the "Window Bin" area of the JDirector editor.
- Each window style consists of 4 window templates
- Each window has 4 predefined sizes – 1/4, 1/9, 1/16, 1/25
- 

Figure 50: Highlight the preset you want to load. Click on <LOAD>

Style 1 templates – windows with 2 tally LEDs

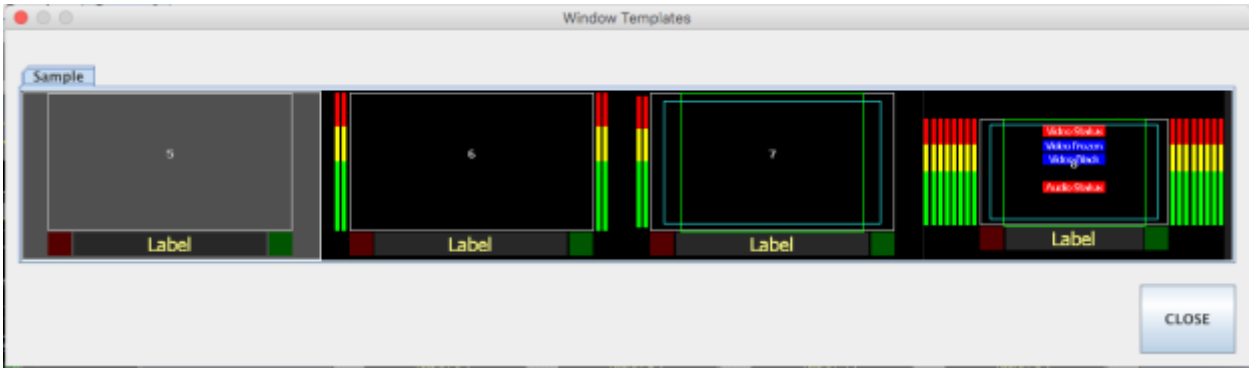


Figure 51: Highlight the preset you want to load. Click on <LOAD>

Style 2 templates – windows with no tally LEDs

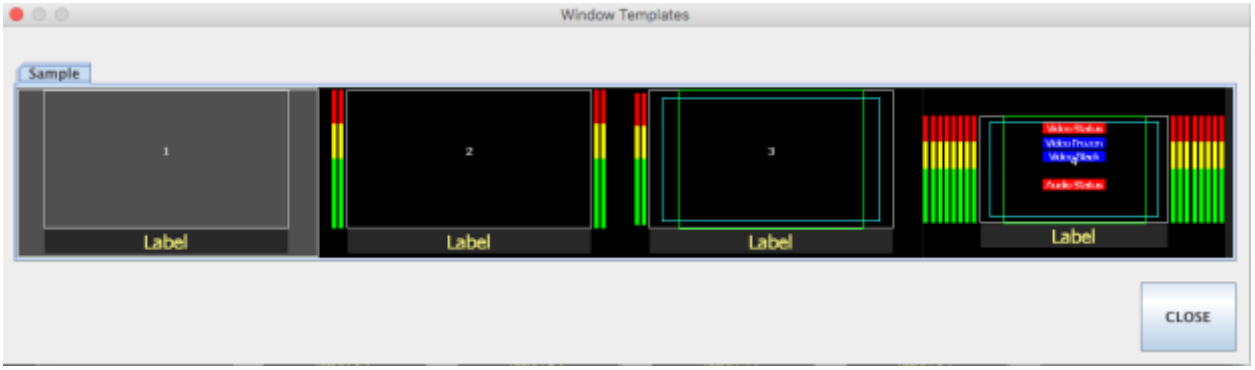


Figure 52: Highlight the preset you want to load. Click on <LOAD>

Style 3 templates – windows with skin labels and 2 tally LEDs

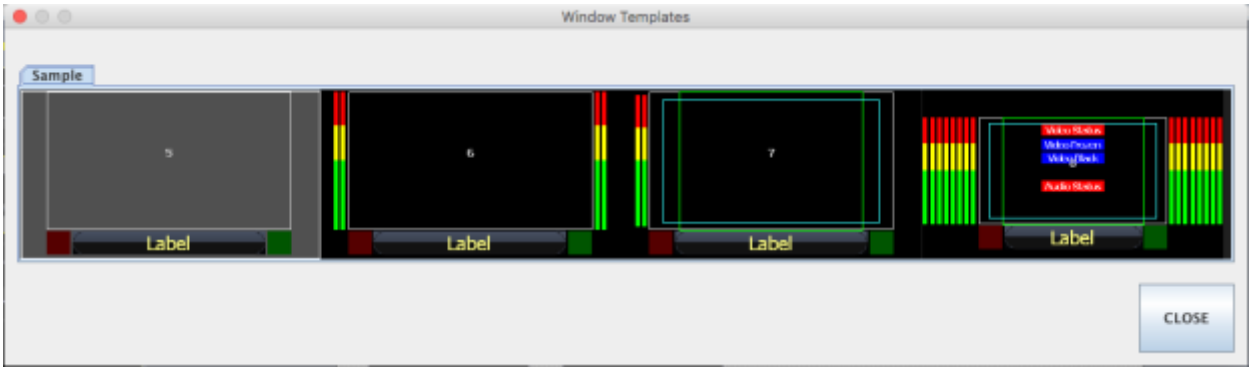


Figure 53: Highlight the preset you want to load. Click on <LOAD>

Style 4 templates – windows with skin labels and no tally LEDs

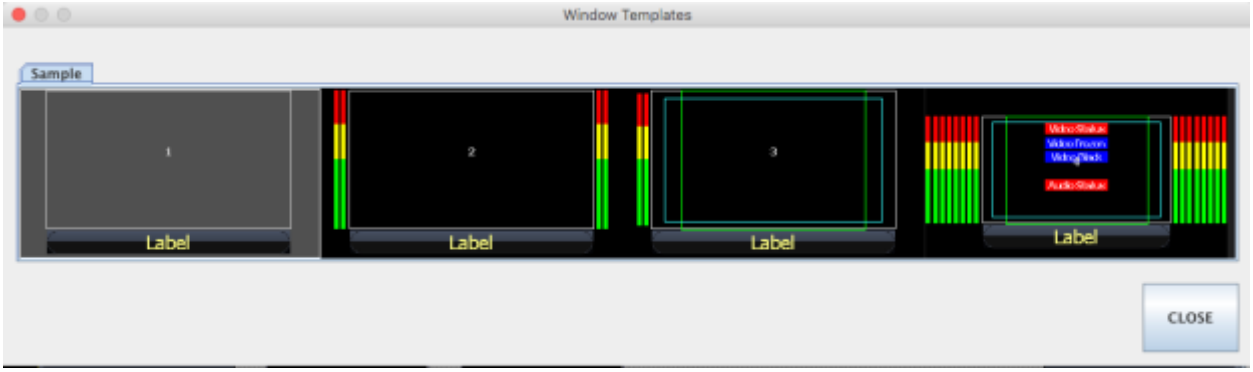


Figure 54: Highlight the preset you want to load. Click on <LOAD>

Style 5 templates – windows with labels and tally LEDs over the video

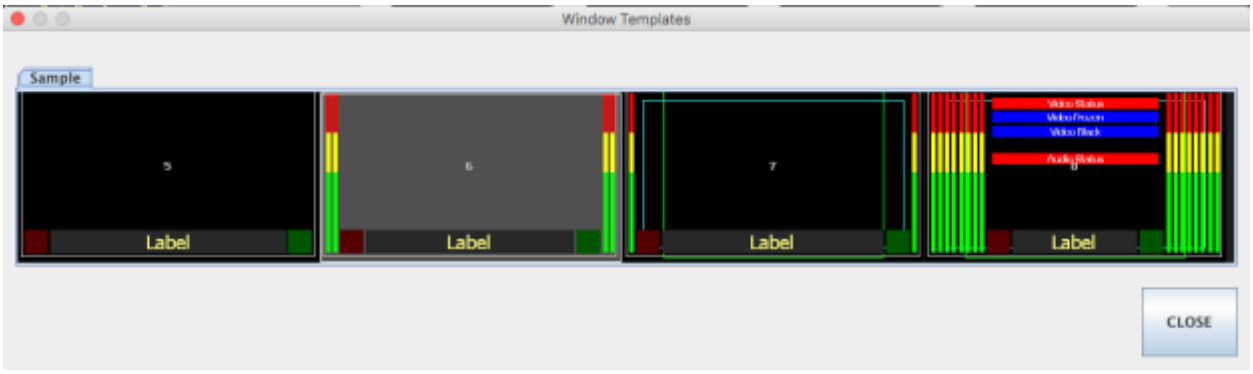


Figure 55: Highlight the preset you want to load. Click on <LOAD>

6.3 How to insert a window

Figure 56: Highlight the preset you want to load. Click on <LOAD>

6.4 Customize Window Elements

In addition to window templates, each window elements can still be customized by right clicking on the window

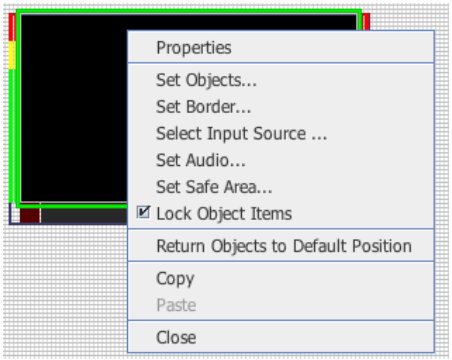


Figure 57: Right click on a window

Set Window Objects Tally LEDs: On/off Borders: On/off, width and skin OMD/UMD: On/off Alarm tags: Video format, Video frozen

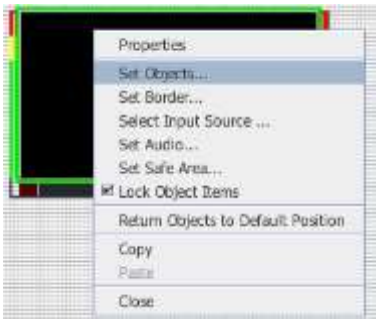


Figure 58: Select <Set Object> Figure 59: Check the objects to turn on/off

Figure 60: Alarm tags turned on

Set Borders:

- Size 0 to 7 pixels
- Size 0 = border off
- Colors

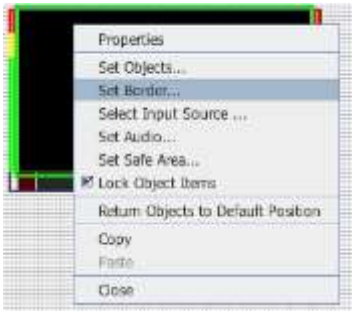


Figure 61: Select <Set Border> Figure 62: Set Window border

Figure 63: Alarm tags turned

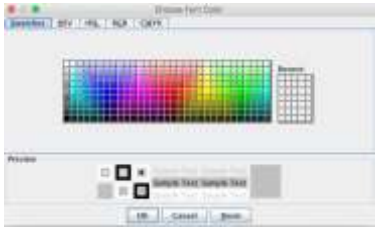


Figure 64: Alarm tags turned on

Set Border Skins:

There are 6 predefined skins, if you would like to make your own skins, please contact Apantac tech support for futher assistance

Figure 65: Choose Skin Border

Figure 66: Skin 1

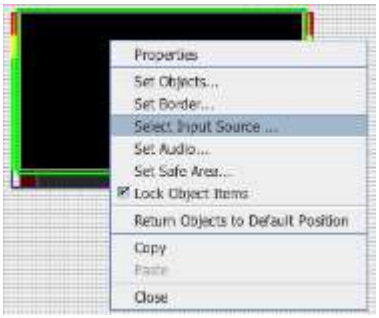
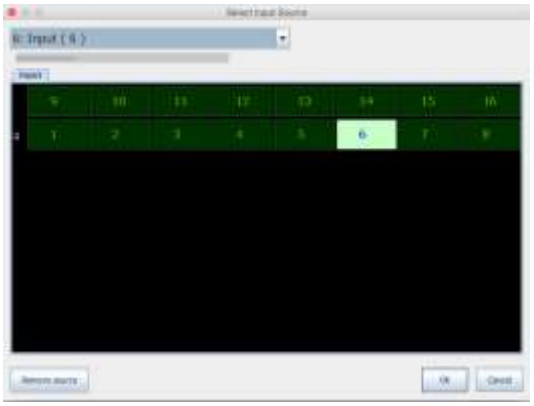
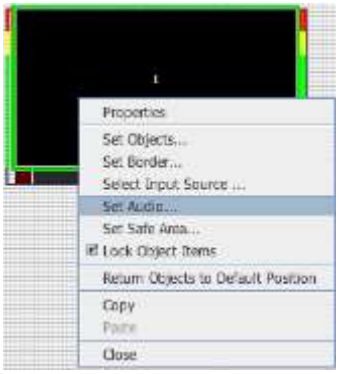
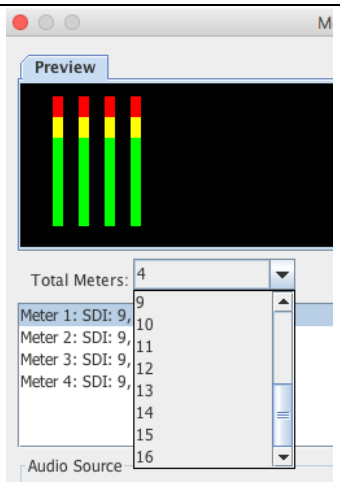
Figure 67: Skin 2

Figure 68: Skin 3

Figure 69: Skin 4

Figure 70: Skin 5

Figure 71: Skin 6

Select Input Source. Note: Only Mi-16# allows you to freely assign sources to a window. Mi-16 and Mi-16+ the sources are preassigned and cannot be copied	  Figure 72: Select Input source Figure 73: The available sources
Adding / removing audio meters to windows by right clicking on a window and select <Set Audio>	 Figure 74: Select Audio
Once a source is assigned to a window, you can now make audio assignments to the meters. You can assign up to 16 channels of audio to a single window	 Figure 75: Alarm tags turn  Figure 76: Alarm tags turn

Set Safe Area
Each window can have up to 2 safe areas. To set and enable the safe area, right click on a window and selec <Set Safe Area>

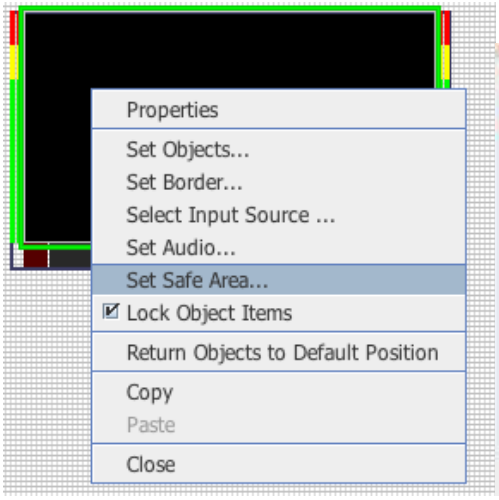


Figure 77: Enable first safe area

Figure 78: Enable first safe area

There are two tabs, "Safe Area 1" and "Safe Area 2". Check the "Enable" box on "Safe Area 1", then use the Percentage slider to move the safe area to 5% on each side.

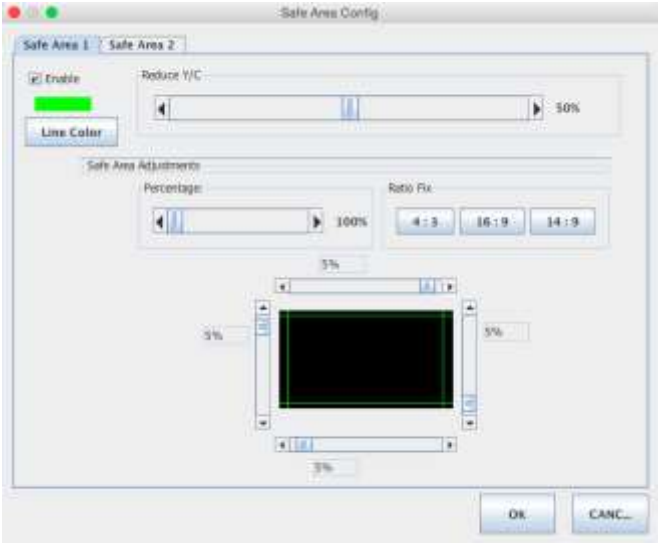
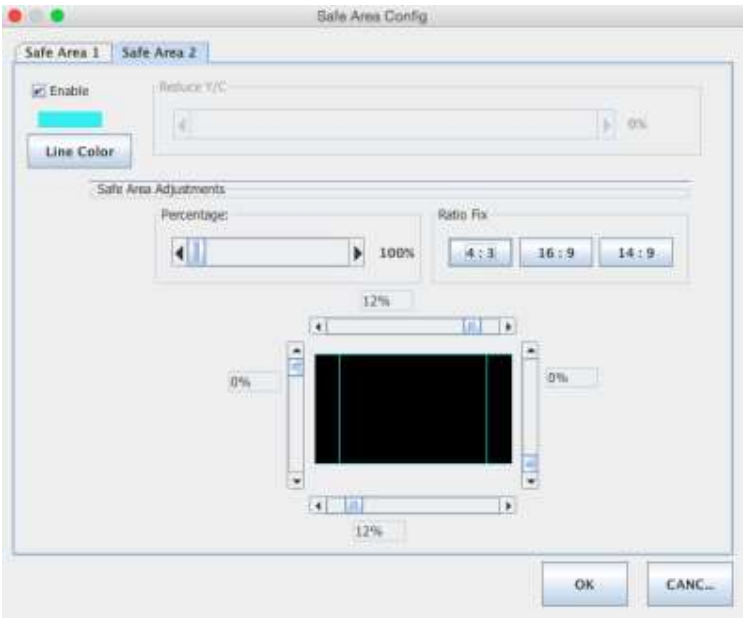
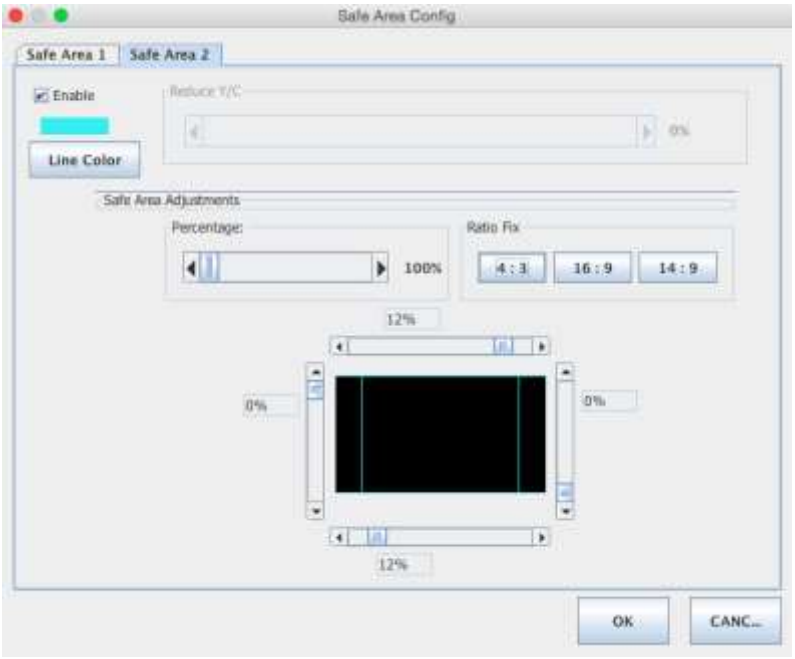
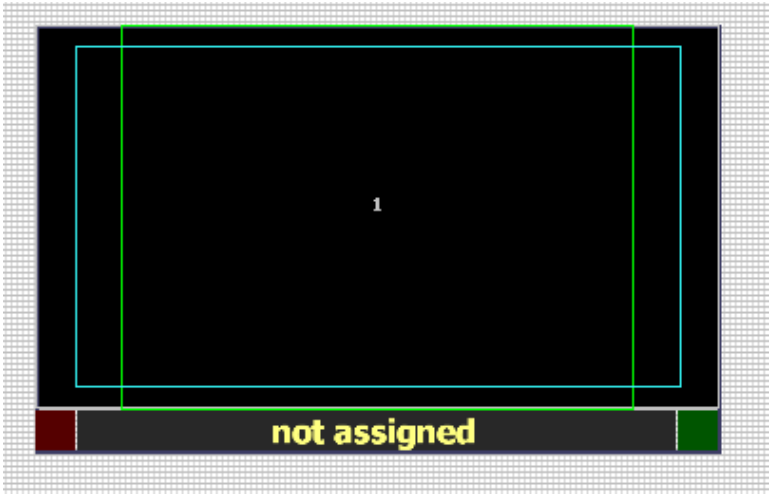
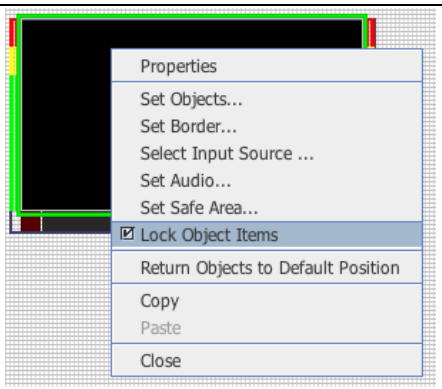
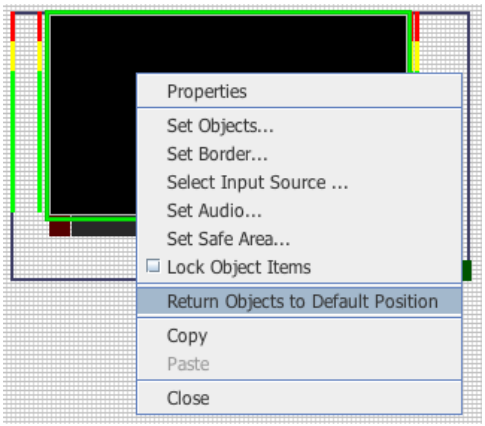
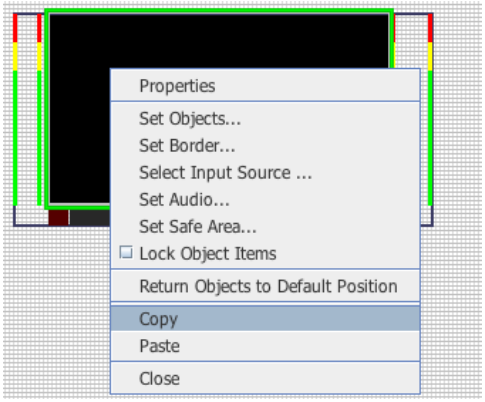
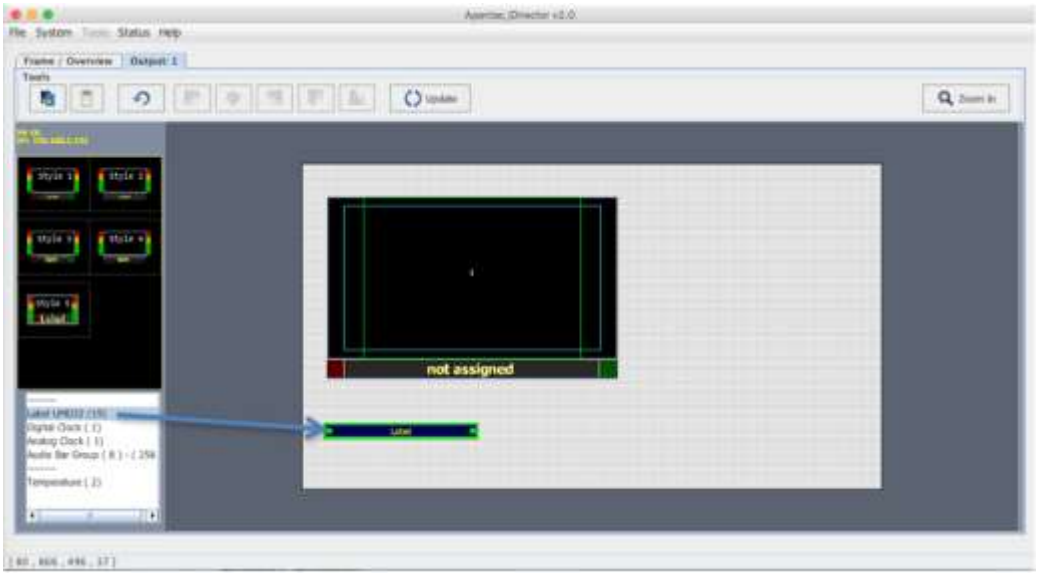
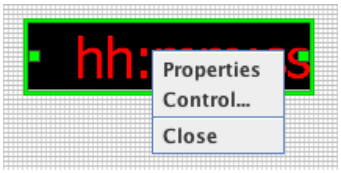
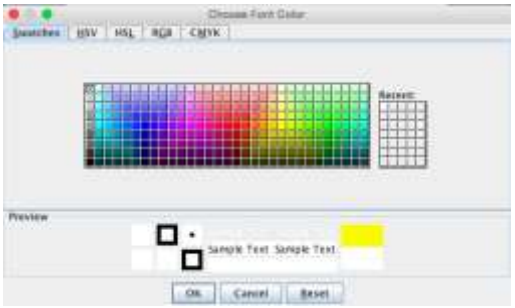
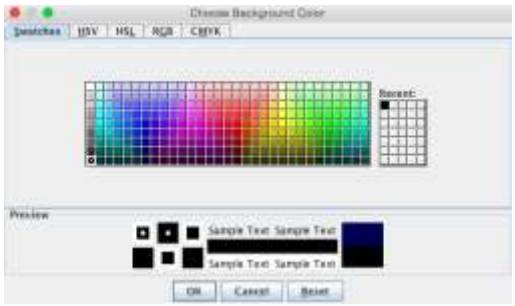
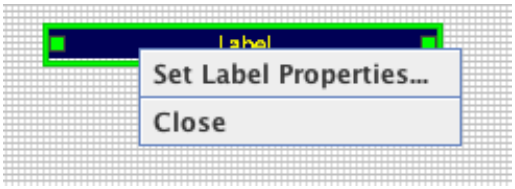
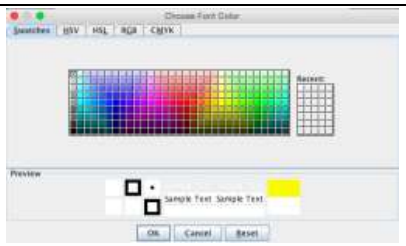
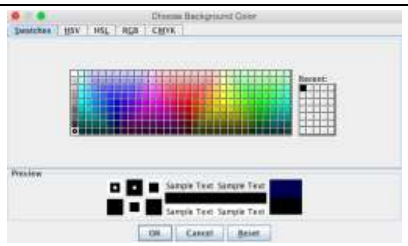


Figure 79: Set percentage

Click on "Safe Area 2" tab. Check the "Enable" box, then, select Ratio Fix <4:3>, the click OK to exit	 **Figure 80**: Enable second safe area and enable 4x3 safe area
Click on "Safe Area 2" tab. Check the "Enable" box, then, select Ratio Fix <4:3>, the click OK to exit	 **Figure 81**: Enable second safe area and enable 4x3 safe area

You can now see the the safe areas enabled on the window	 **Figure 82**: After safe area was turned on
Unlocking objects – the objects in the windows cannot be moved until it is unlocked	
Return objects to default position – returns all objects to the position prior to their move	
Copy/Paste – Windows can be copied and pasted	

Setup standalone label	 **Figure 83**: Insert text
Insert Digital Clock. Drag "Digital Clock" into the work space	 **Figure 84**: Drag the digital clock onto the workspace
Right click on the label to bring up the properties dialog. Uncheck "Enable DATE", "Enable YEAR", remove "Clock from the Name field and select the time zone	 **Figure 85**: Edit digital clock properties  **Figure 86**: The digital clock

Set font color to White, click <OK> and set background color to black, then click <OK>	  **Figure 87**: Edit font color **Figure 88**: Edit background color
Right click on the label to bring up the properties dialog. Select Font 4 for the largest size font.	  **Figure 89**: Set label properties **Figure 90**: Set label properties
Set font color to White, click <OK> and set background color to black, then click <OK>	  **Figure 91**: Set font color **Figure 92**: Set background color

Set Label Font Type. Set Label Mode: Follow Source or Static. When set to <Follow Source>, the label name will follow the name assigned in the Input Source Manager. When set to <Static>, the label name can be renamed to names such as "Program" and "Preview"

Figure 93: Insert text

Figure 94: Insert text

To insert digital clock by draggin the <Digital Clock> to the work space

Figure 95: Insert text

Right Click on the digital clock in the the work space, this configuration dialog will appear

Figure 96: Insert text

The font size of the clock can be set in 4 different sizes.

The digital clock can be named in the Name box.

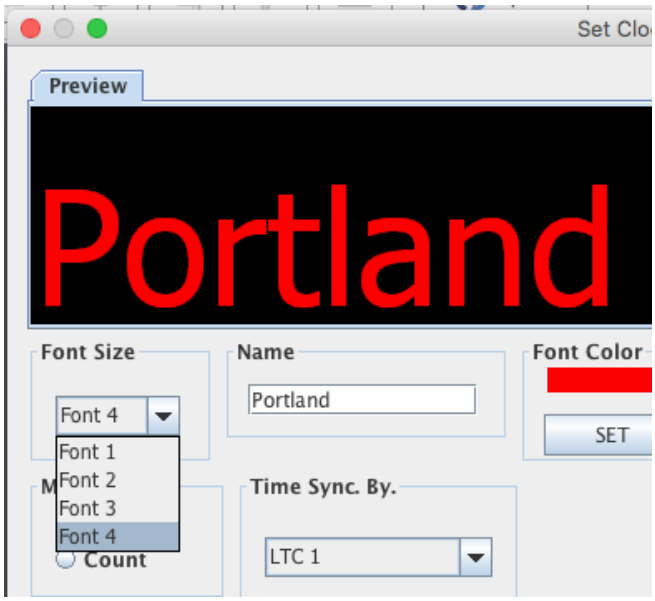


Figure 97: Insert text

The digital clock properties can be set as the following,

1. Clock or a counter
2. can be sync'd to Internal, LTC or NTP
3. Daylight savings on/off
4. Time zone, if the clock is set to Internal
5. When the clock is set to Internal, it can be sync'd to the PC's clock by clicking on <Sync. PC GMT Time>

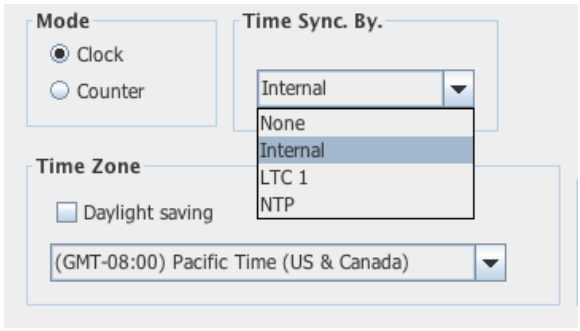


Figure 98: Insert text

Figure 99: Insert text

The font color and background color of the clock can be set by click on <SET> under the attributes

Set font color to White, click <OK> and set background color to black, then click <OK>

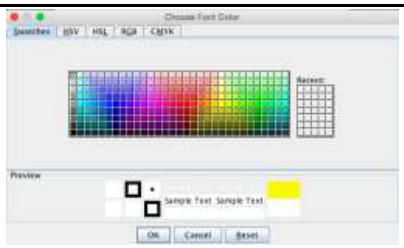


Figure 100: Set font color

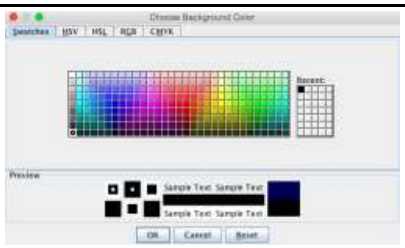


Figure 101: Set background color

Several clock display options can be set

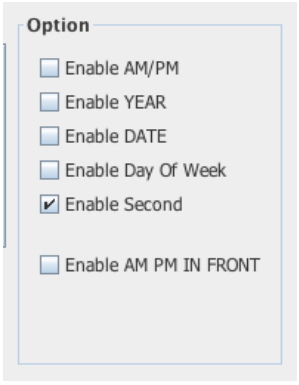


Figure 102: Set font color

To insert an analog clock by dragging the <Analog Clock> to the work space

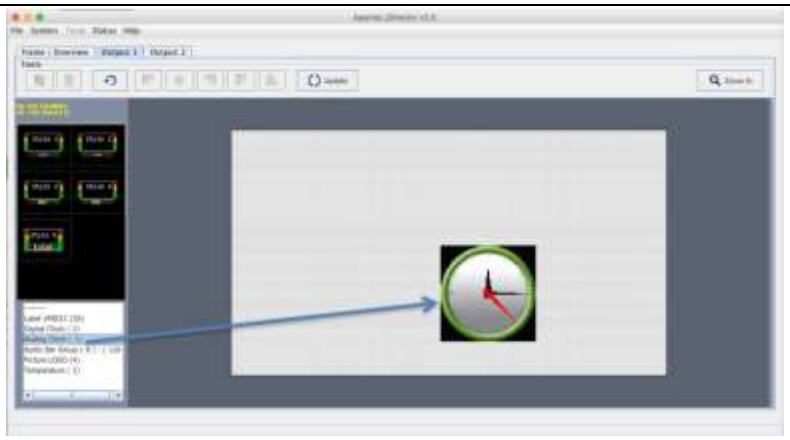


Figure 103: Set font color

To set the properties on the analog clock. Right click on the clock and select <Properties>

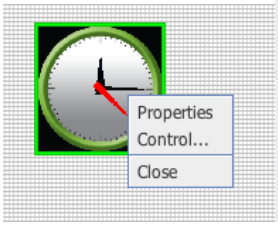


Figure 104: Set font color

Figure 105: Set font color

The analog clock properties can be set as the following,

1. Can be sync'd to Internal, LTC or NTP
2. Daylight savings on/off
3. Time zone, if the clock is set to Internal

When the clock is set to Internal, it can be sync'd to the PC's clock by clicking on <Sync. PC GMT Time>

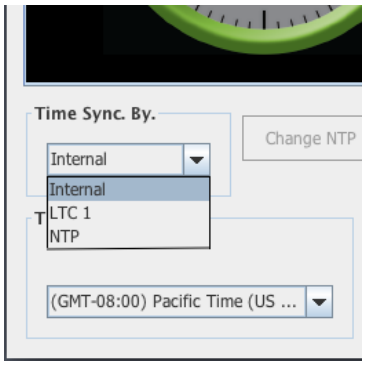


Figure 106: Set font color

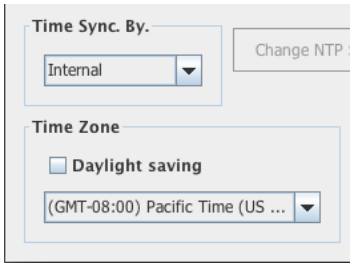


Figure 107: Set font color

Figure 108: Insert text

Clock faces

There are 3 different type of clock faces (skins) you can choose from. The clock hands and color can also be configured

Figure 109: Insert text

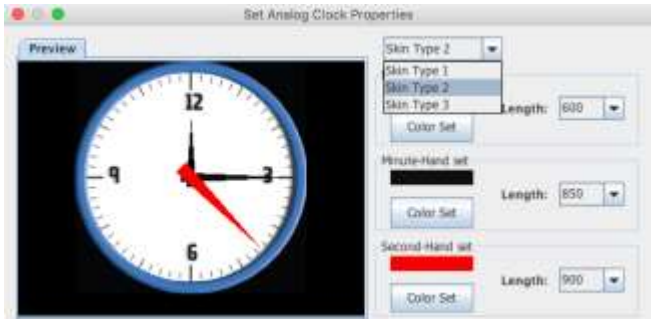
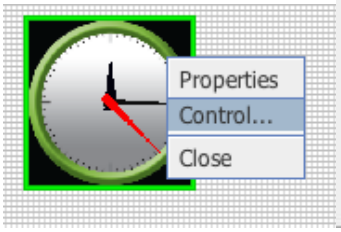
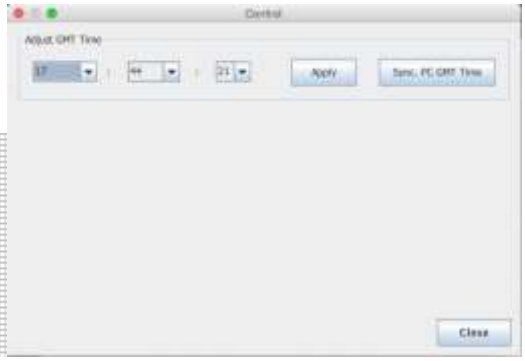
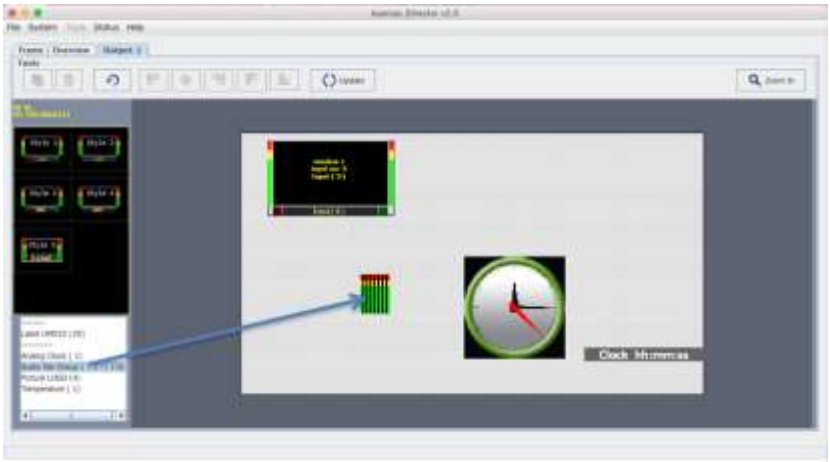
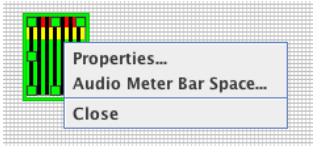


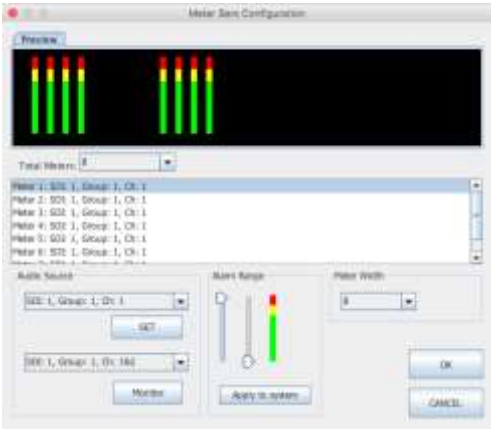
Figure 110: Insert text

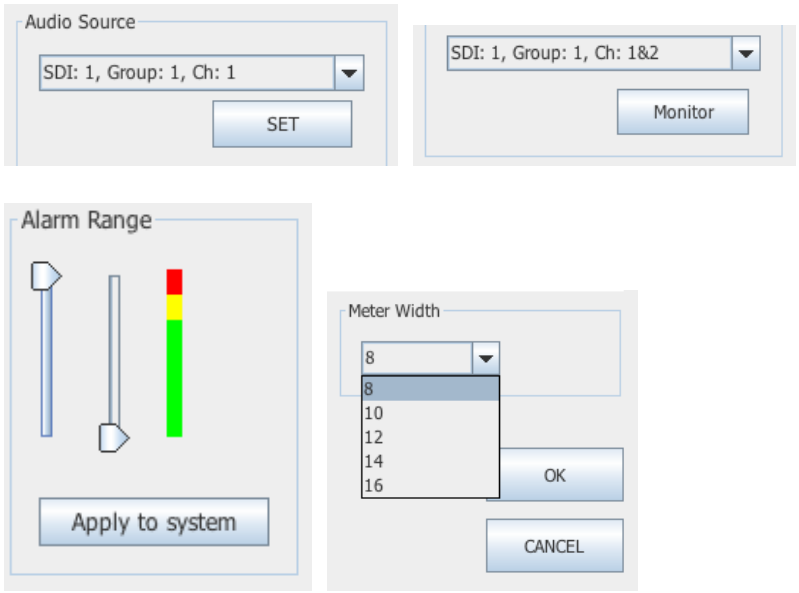
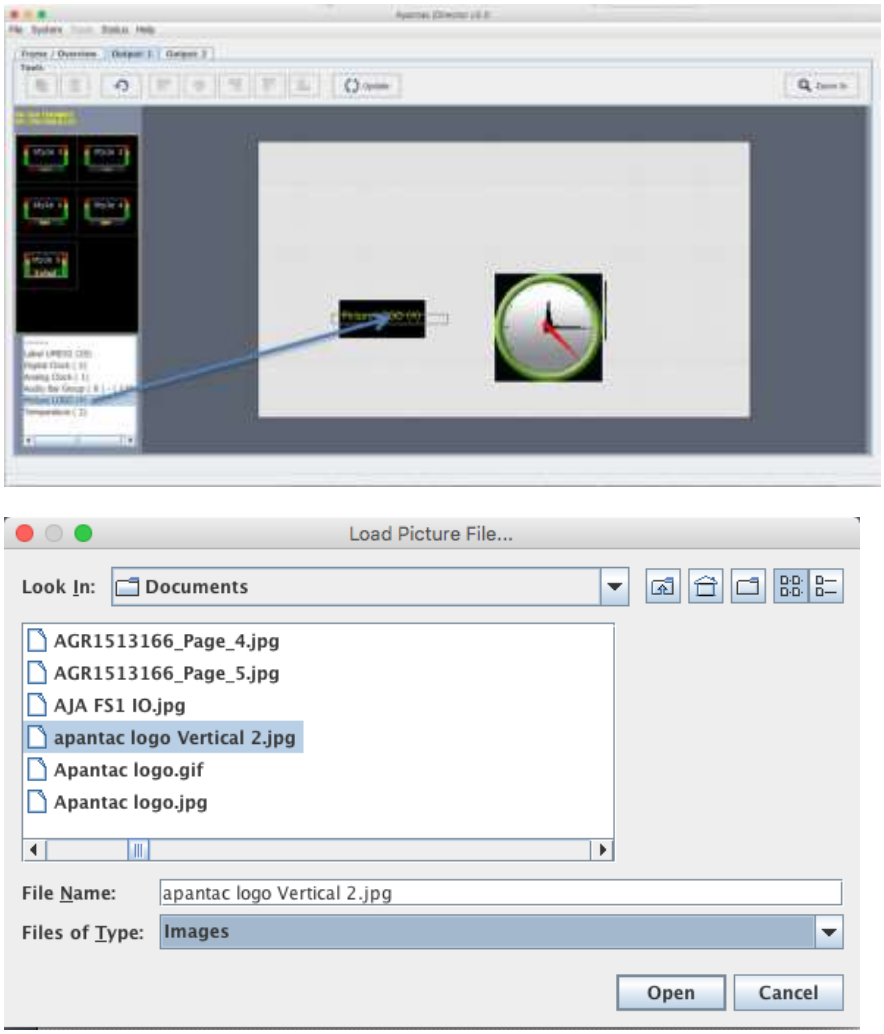
<table>
<tr><td></td><td> 

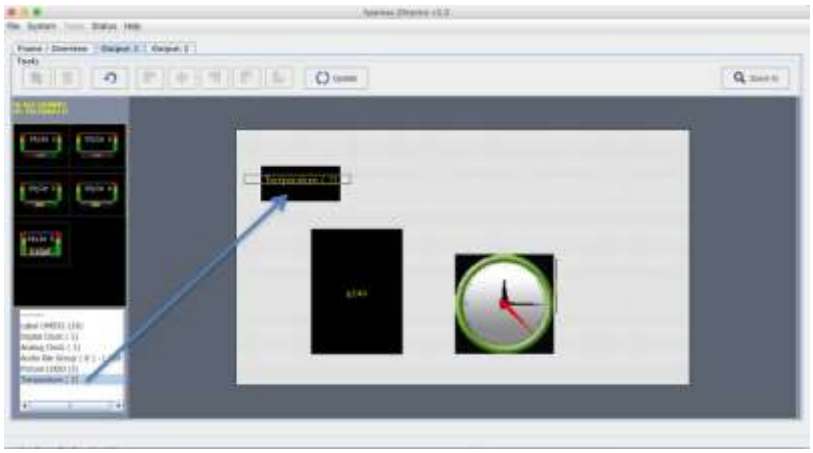
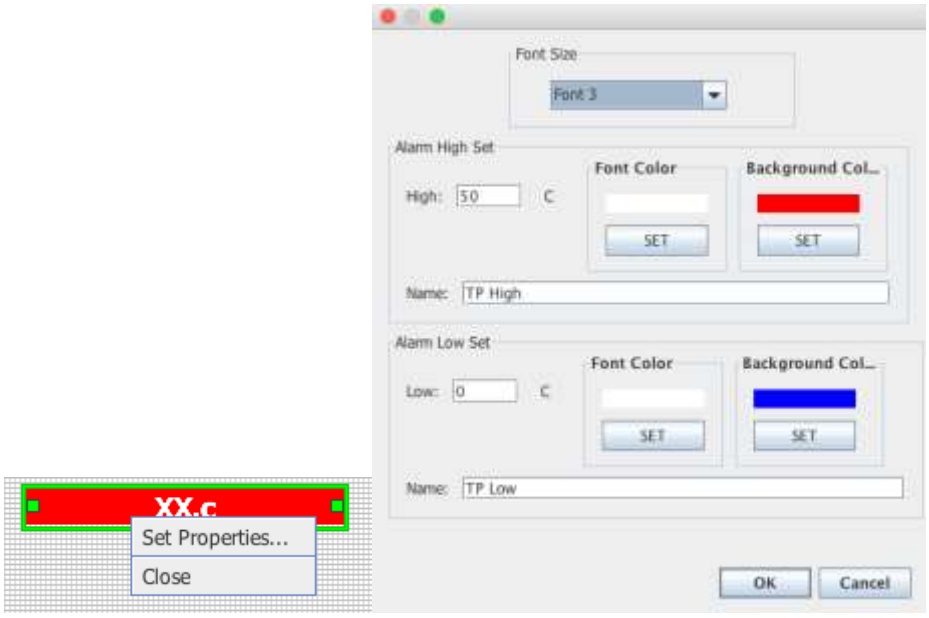
Figure 111: Insert textAd</td></tr>
<tr><td>To adjust the GMT time. Right click on the clock and select <Control></td><td> 


</td></tr>
<tr><td>Adding standalone audio meters by dragging the <Audio Bar Group> to the work space.
Right click on the meters to set the properties</td><td> 



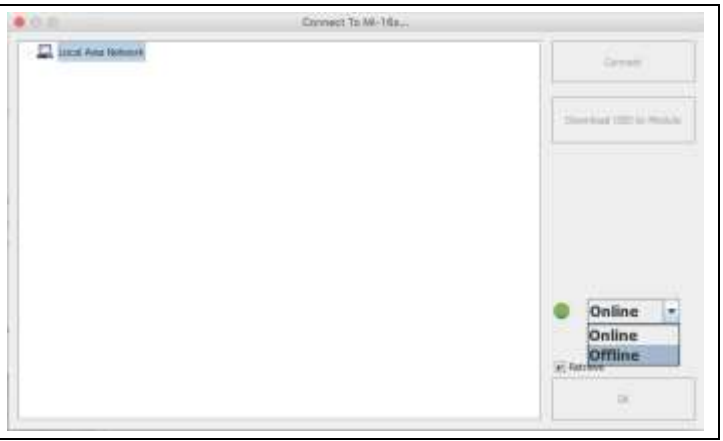

</td></tr>
</table>

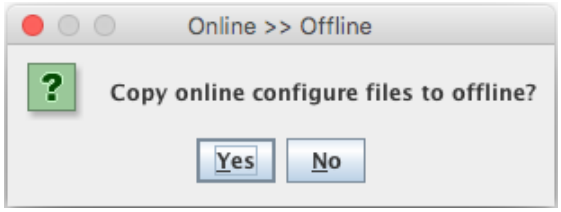
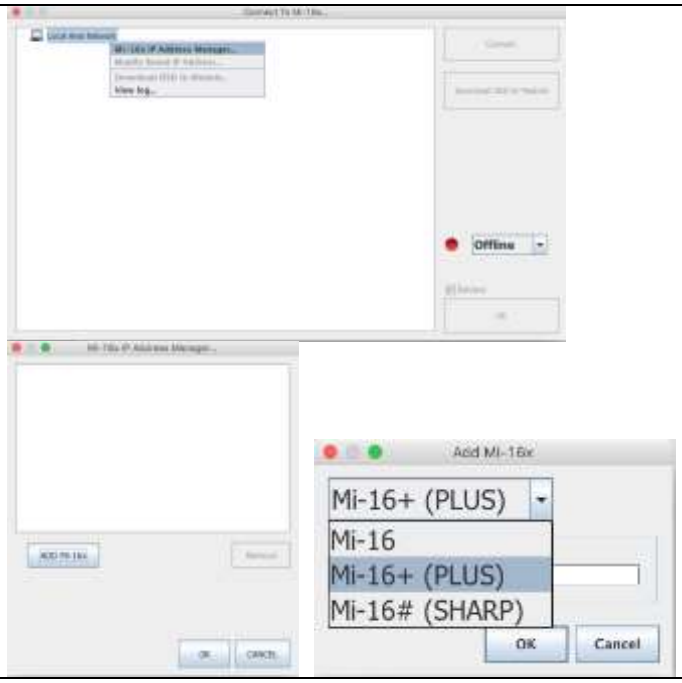
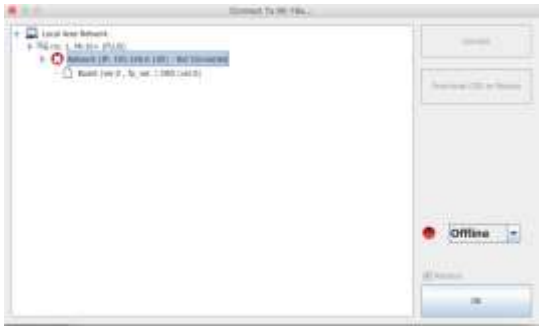
Audio sources can be assigned to each of the meters. Any pair of the audio meters can also be sent to the audio monitoring output by clicking on <Monitor> Audio alarm range and audio meter width can also be set here	
Adding a logo to the layout by dragging the Picture LOGO to the work space. Let go of the mouse, the a dialog box will open for you to choose the logo file	

Insert a temperature warning by dragging <Temperature> to the workspace.	
Set Temperature alarm property by right clicking on the temperature alarm	

7.0 Offline Mode

The JDirector software can also work in offline mode.

Start with a fresh copy of JDirector and select offline mode	

It will prompt you to copy your online folder to the offline folder. If you would like to continue to make edits to your online layout, then click <Yes>, otherwise, click <No>	
Add a Mi-16 to the editor. You can choose from the list.	
Once you enter the offline mode, you can start editing as if you were online.	

Appendix

Mi-16 presets

The Mi-16 can store up to 30 presets. It comes with 10 pre configured layouts as below,

Figure 112: Preset1 – 16 windows (Preset1.OPx)

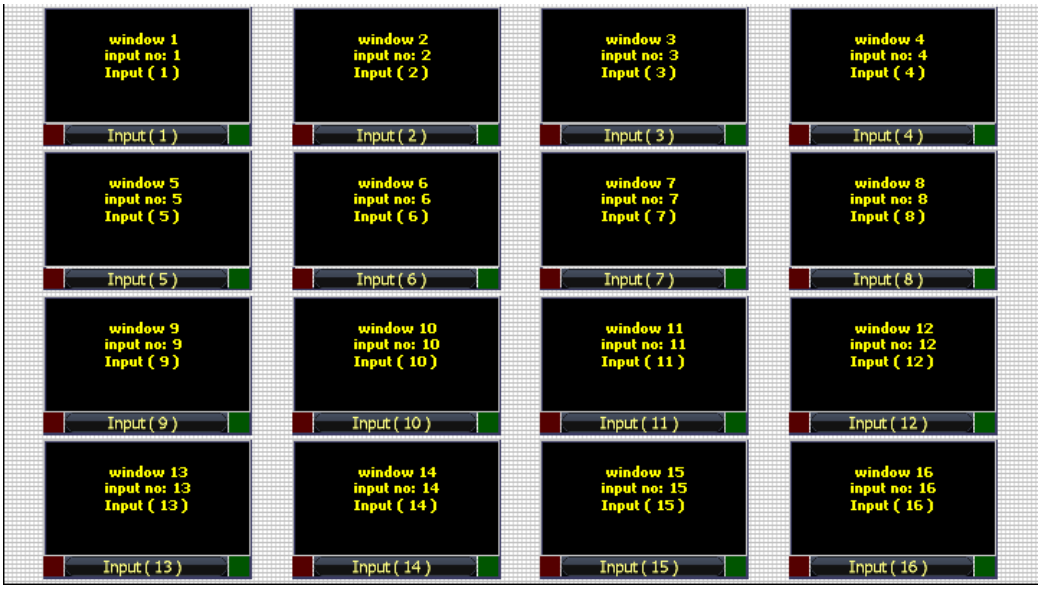


Figure 113: Preset2 – 16 windows with 2 Tally LEDs (Preset2.OPx)

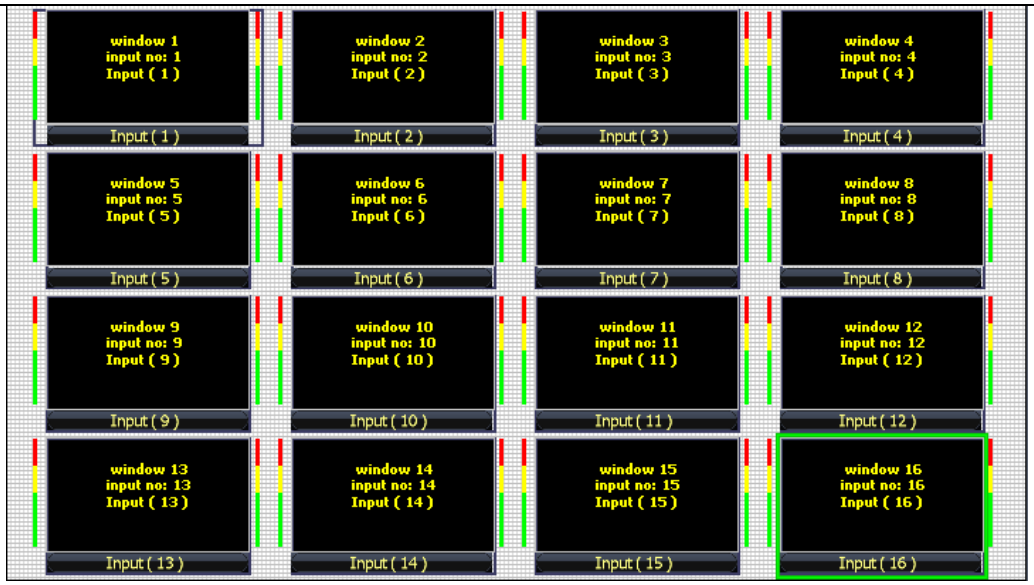


Figure 114: Preset3 – 16 windows with 2 audio meters each (Preset3.OPx)

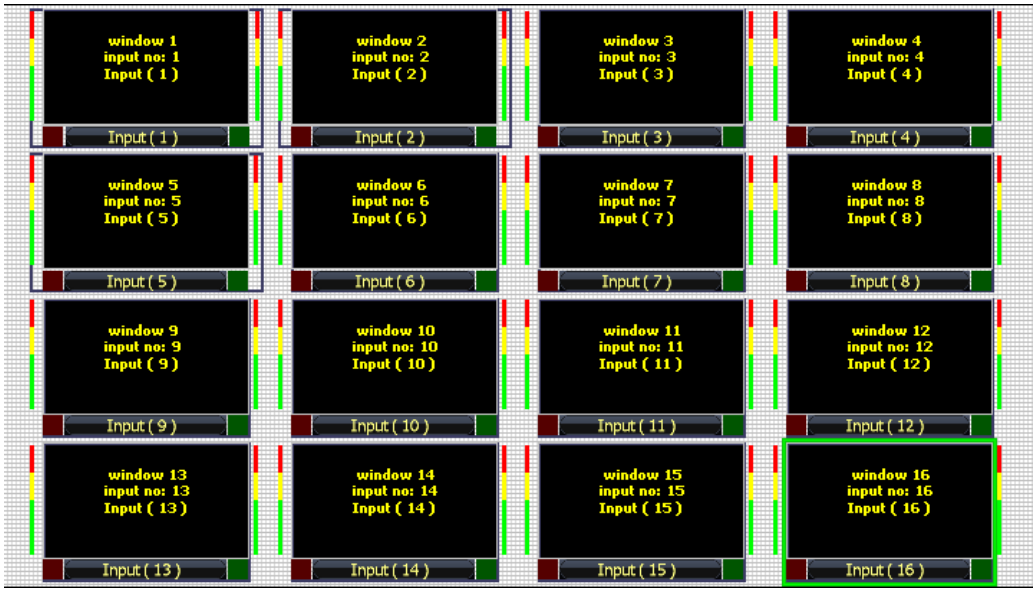


Figure 115: Preset4 – 16 windows with 2 Tally LEDs and 2 Audio Meters (Preset4.OPx)

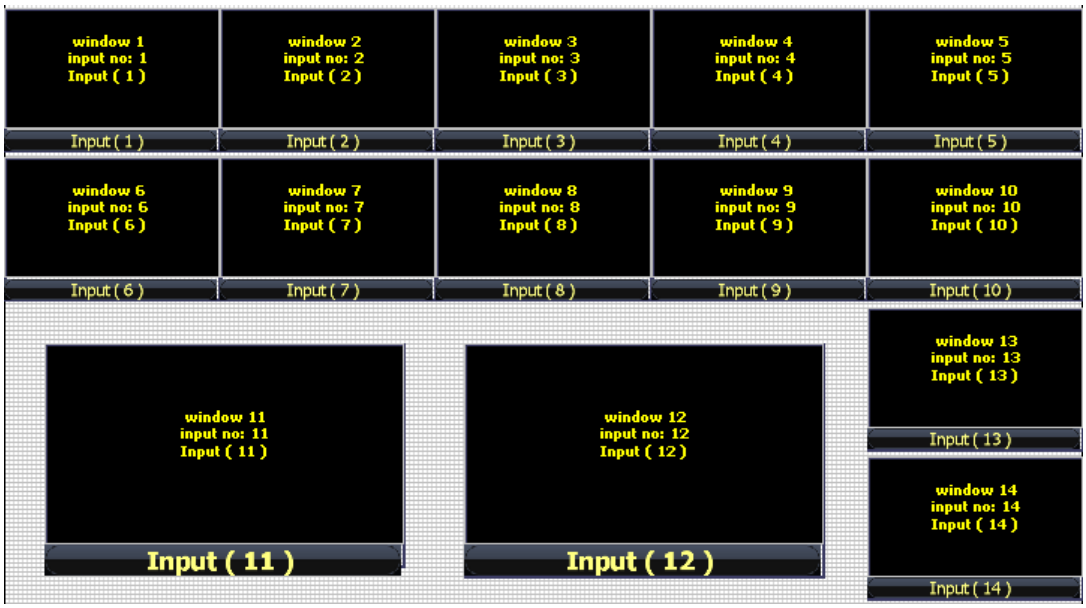


Figure 116: Preset5 – 14 windows (Preset5.OPx)

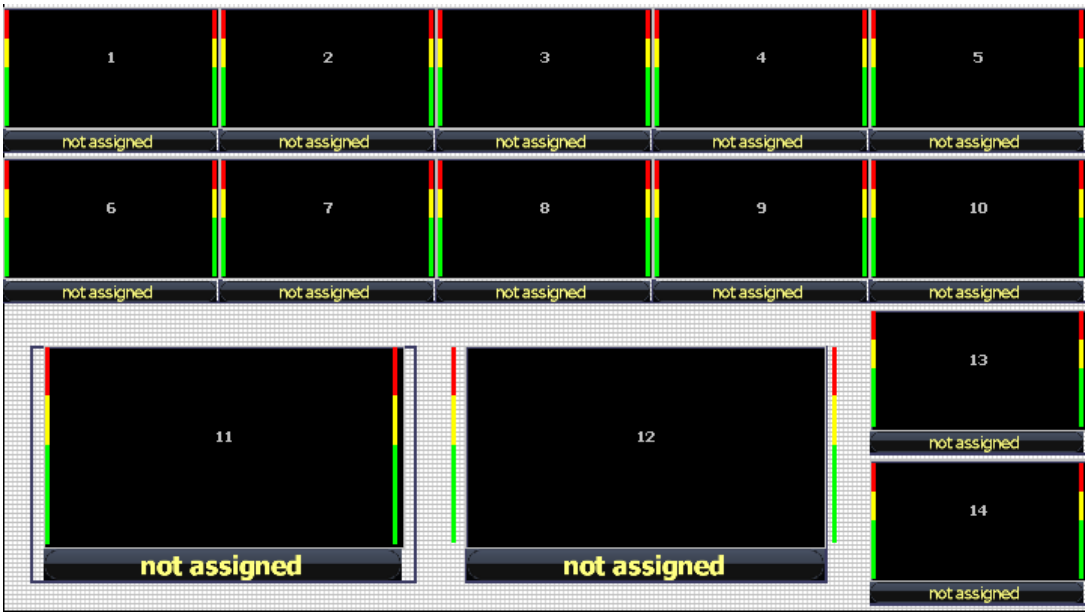


Figure 117: Preset6 – 14 windows with 2 audio meters (Preset6.OPx)

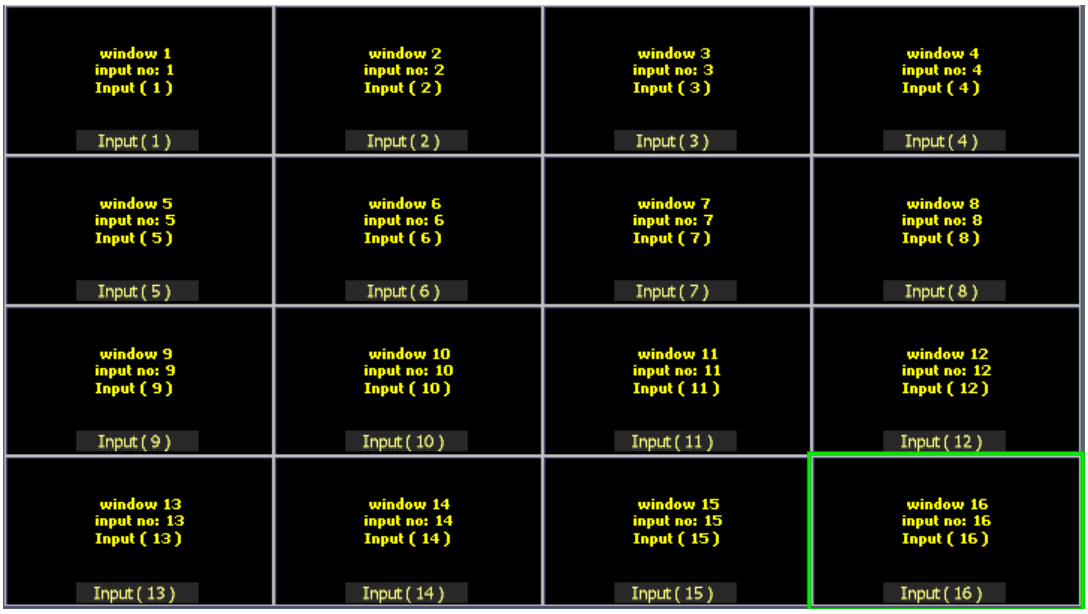


Figure 118: Preset7 – 16 windows with labels inside the windows (Preset7.OPx)

Figure 119: Preset8 – 11 windows (Preset8.OPx)

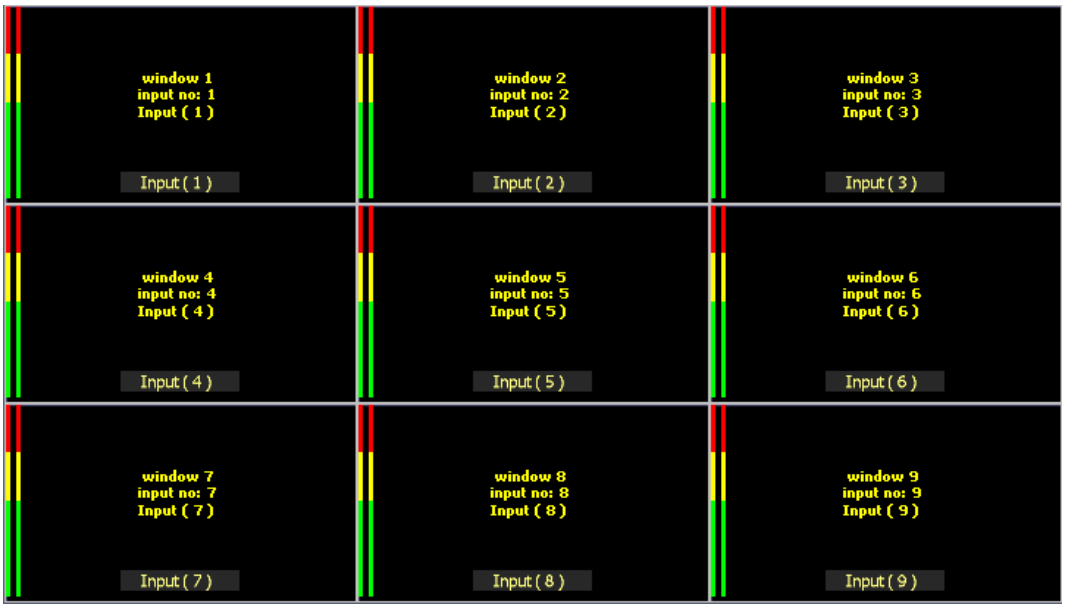


Figure 120: Preset9 – 9 windows with 2 audio meters and labels inside (Preset9.OPx)

Mi-16+ presets

The Mi-16+ can store up to 30 presets. It comes with 10 pre configured layouts as below,

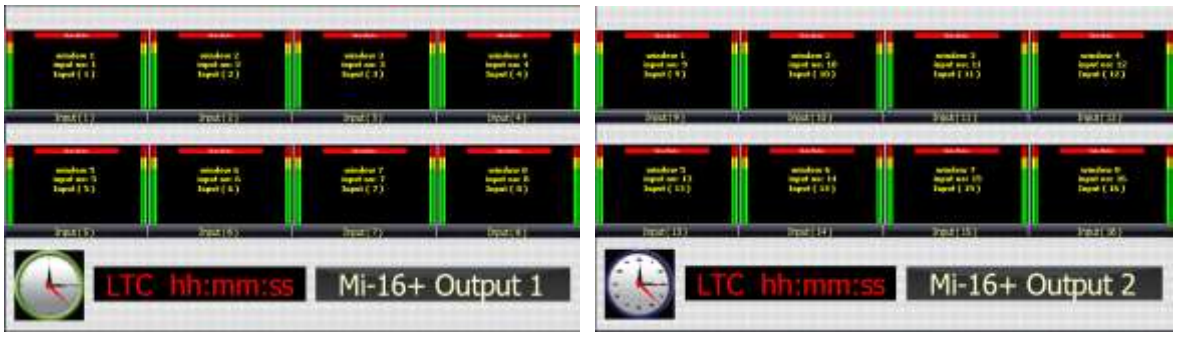


Figure 121: Preset1 – 8 windows on each output with Analog, digital clocks and Standalone Labels (Preset1.OPx)

Figure 122: Preset2 – 8 windows on each output, labels inside the windows (Preset2.OPx)

Figure 123: Preset3 – 7 windows on each ouputs (Preset3.OPx)

Figure 124: Preset4 – (Preset4.OPx)

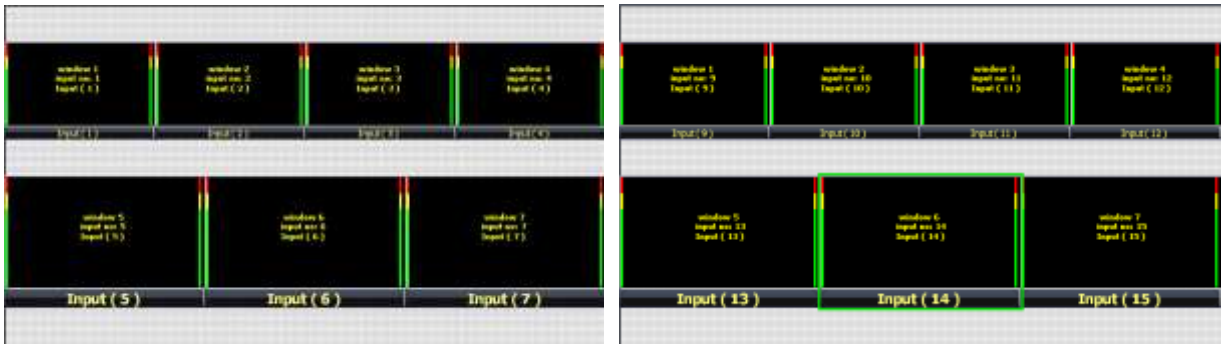


Figure 125: Preset5 – 15 windows (Preset5.OPx)

Figure 126: Preset6 – 16 windows (Preset6.OPx)

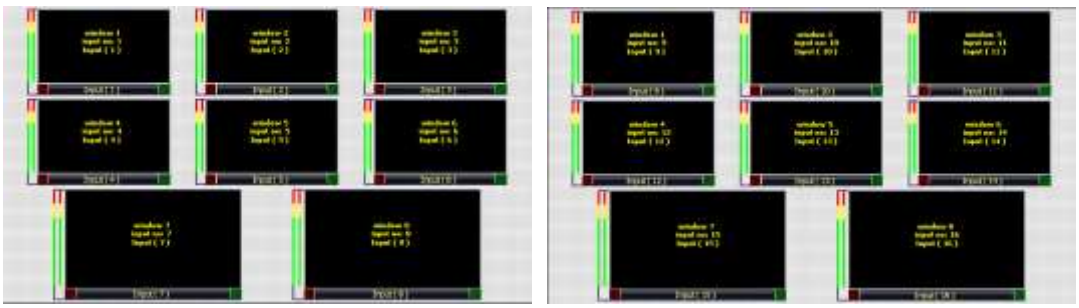


Figure 127: Preset7 – 16 windows with audio meters and tally LEDs (Preset7.OPx)

Figure 128: Preset8 – 12 windows with 2 audio meters (Preset8.OPx)

Figure 129: Preset9 – 9 windows with 2 audio meters and labels inside (Preset9.OPx)

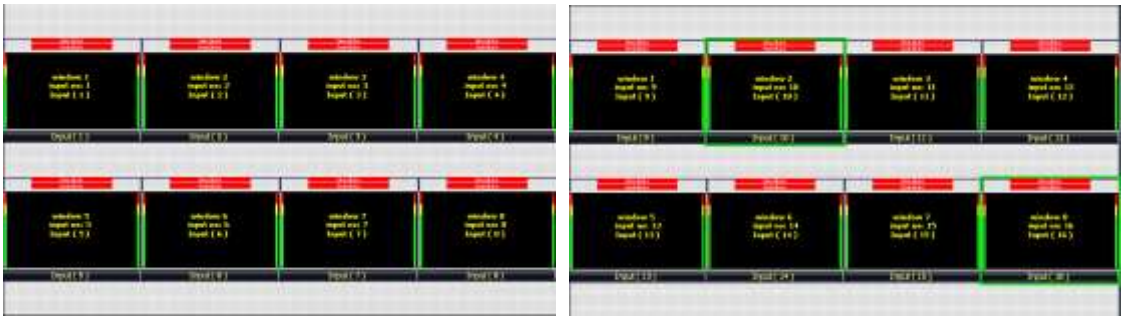


Figure 130: Preset10 – 16 windows with 2 audio meters (Preset10.OPx)

Mi-16# presets

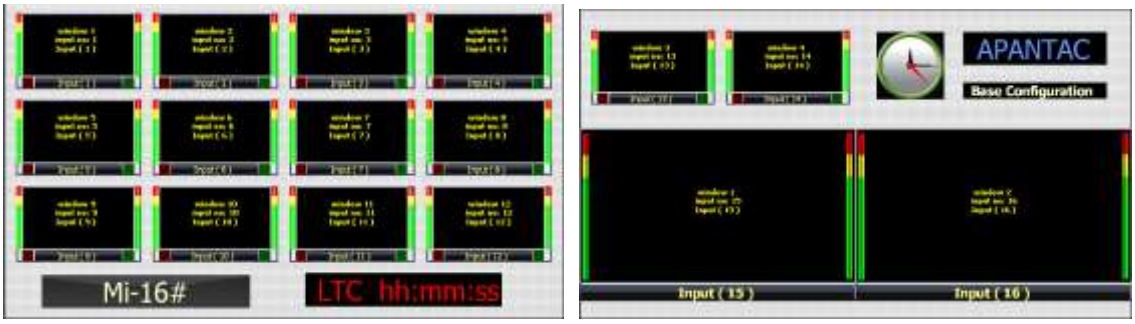


Figure 131: Preset1 – (Preset01.OPX)

Figure 132: Preset2 – (Preset02.OPX)

Figure 133: Preset3 – (Preset3.OPX)

Figure 134: Preset4 – (Preset4.OPX)

Figure 135: Preset5 – (Preset5.OPX)

Figure 136: Preset6 – (Preset6.OPX)

Figure 137: Preset7 – (Preset7.OPX)

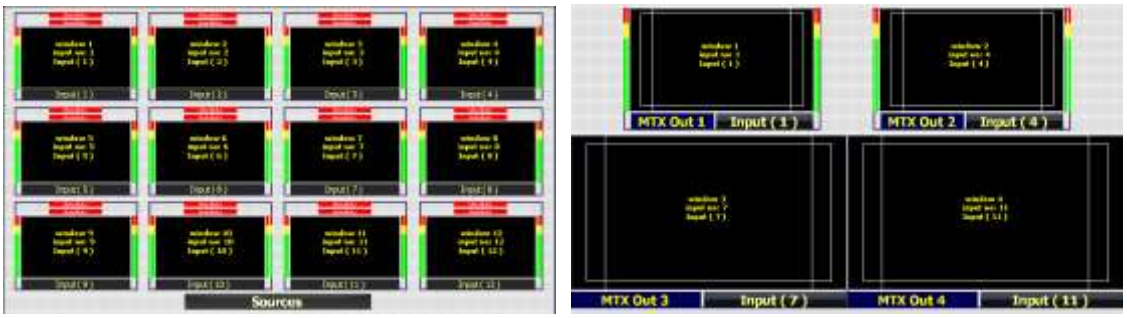


Figure 138: Preset8 – (Preset8.OPX)

Figure 139: Preset9 – (Preset9.OPX)

Figure 140: Preset10 – (Preset10.OPX)

Cable Pinouts