



1 to 16 Channel (3G/HD/SD)-SDI Multiviewer with SDI and HDMI outputs



Contents

1.0 Status Tab	6
1.1 Custom Name	6
1.2 Firmware Version	6
1.3 Input Status	6
2.0 Control Tab	7
2.1 HDMI Output Type	7
2.2 3G-SDI Output Format	7
3.0 Multi-view	8
3.1 Output Select	8
3.2 Multi-Viewer Output Format	8
3.3 Multi-Viewer Number of Windows	9
3.4 Multi-View Layout	10
3.5 Multi-View Audio Source	10
3.6 Multi-Viewer Reference	10
3.7 Full Screen is scaled	10
3.8 On Screen Format Enable	10
3.9 On Screen Audio Source ID	10
3.9 Apply Tally to	10
3.10 Tally Transparency	11
4.0 Layouts	12
4.1.0 Layout Tab Operational Buttons	13
4.1.1 Mode Selection	14
4.1.2 Windows Selection	14
4.1.3 Layout Selection	14
4.1.4 Default Gap size	15
4.1.5 Preview display Window	15
4.1.6 Show Border and Show Aspect	15
4.1.7 Show Input Aspect	15
4.1.8 Default SD Output Aspect	16
4.2 Layout Aspects tab	17
4.3 Layout UMD Tab	
4.4 Layout Status Tab	19
4.5 Layout Tallies Tab	20
4.6 Layout Meters Tab (Audio Meters)	21
5.0 Routing Setup	22
6.0 Under Monitor Display (UMD)	23
7.0 Audio Meters	24

8.0 Graticules
9.0 Colours
Table 1.1 Colour table 28
Table 1.2 Colour table extended 28
10.0 GPI29
11.0 Setup
11.1 LCD off Time
11.2 Return to Status time31
11.3 Auto Save
11.4 Demo Cycle Type
11.5 Demo Cycle Time (seconds)32
12.0 Designing a custom layout
12.1 Custom Window Positioning
12.2 Custom UMD Positioning
Table 1.3 UMD Coordinates calculations
12.3 Custom Status Positioning37
12.4 Custom Tallies Positioning
Table 1.4 Tally Box Calculations
12.5 Custom Audio Meters Positioning

Thank you for purchasing the DMON-16S 16 Channel (3G/HD/SD)-SDI Multi-viewer with HDMI and SDI Outputs.

The DMON-16S is a truly portable converter, which incorporates our new easy to use LCD and button control system. This gives you easy access to all of the amazing features that have been unavailable without a computer until now. The days of having to play with complicated dip switches or having to carry around a computer to change a simple setting are gone.

The DMON-16S features the following:

- Low cost miniature (3G/HD/SD)-SDI 16 to 1 Multi-viewer or 16 to 1 input multiplexer
- Various multi-viewer layouts
- Selectable output format in Multi-viewer mode
- Low latency buffering for each input allowing non-synchronous inputs
- Linked (3G/HD/SD)-SDI and HDMI outputs
- 16 x (3G/HD/SD)-SDI inputs with auto detection (26 Formats supported in total)
- Each quadrant is independent of the others, allowing any 3G/HD/SD format of any frame rate to be displayed simultaneously
- Variable aspect ratios per quadrant
- Pass-Through mode allowing any of the 16 inputs to be selected for output
- In Pass-Through mode the selected input is passed through to both the (3G/HD/SD)-SDI and HDMI outputs
- This unit also includes:
 - 32 GPI
 - USB port for control and firmware updates
 - Heavy duty metal box
 - Metal Thread Locking DC Power Socket
 - Power Supply, HDMI Cable and USB Cable

Glossary

The following terms are used interchangeably throughout this manual.

GPI: General purpose Interface

LB: Letter box aspect ratio

PB: Pillar box aspect ratio

FL: Stretch image to fill window with image.

UMD: Under Monitor Display

TSL: Tally Serial Link

USB Control Panel

Welcome to the USB control panel manual, this manual is written to help users learn about all the important features available to them when using the USB control panel.

When first using the USB control panel the user is presented with 4 main items, these are:

-	DECIMATOR DESIGN USB Control Panel Version 2.	0.7 – 🗖 🗙
File	Options	
	Available Devices = 1 Scan DMON-16S (VPA00004) V Load Defaults Update Firmware 	DECIMATOR DESIGN www.decimator.com

Available devices, this shows the user the number of Decimator Design devices currently plugged in and detected by the computer. These devices can be of varying models and serials.

Scan, the Scan button is used whenever a Decimator Design device is connected to the computer. The user must press this button to do a scan of the currently connected decimator design devices.

When a device is detected its model number and serial number are displayed in the drop down box next to this button.

Load Defaults, this button allows the user to reset the devices to the default parameters defined in the program's memory.

Update Firmware, this button allows the user to update the firmware of the device to the latest firmware stored in the USB control panel. Please note that multiple devices can be updated simultaneously by going to options and selecting update all devices.

File Menu

The File Menu allows the user to save the settings of the device currently selected in the drop down box it can also program settings from a previous saved settings file.

Load Settings, the load settings option allows the user to load a previously saved settings file for the currently selected unit.

Save Settings, the save settings option allows the user to save all the current settings of the currently selected unit into a file that can be used later or loaded onto another device.

Load Layouts, the load layouts option allows the user to load a previously saved layouts file for the currently selected unit. All 2048 layouts will then be written to the DMON-16S memory.

Save Layouts, the save layouts option allows the user to save all the layouts of the currently selected unit to a file that can be used on other DMON-16S or recalled as a backup. When saving the layouts the unit will read all the layouts from the currently selected unit and save them into a layout file.

Options Menu

Update All Devices, this option allows the user to update all currently detected units to the latest firmware of the USB control panel.

Reset all devices to Defaults, this option resets all currently detected devices settings to default.

Verify after program, this option checks the firmware after programming to verify it programmed correctly.

Notes:

1. Defaults are highlighted in yellow.

DECIMATOR DESIGN USB Control Panel Version 2.0.7 File Options Available Devices = 1 Scan DMON-16S (VPA00004) Load Defaults Update Firmware Status Control Multi Visuu Laugutta Pautian UMDs Audia Maters Cratinulas Coloura (DL Sature)
File Options Available Devices = 1 Scan DMON-16S (VPA00004) Load Defaults Update Firmware Status Casteral Multi Vinu Laugusta Status Casteral
Available Devices = 1 Scan DMON-16S (VPA00004) Load Defaults Update Firmware Status Central Multi Vinu Laugust Status Central
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Load Defaults Update Firmware
Status Control Multi View Invente Pouring UMDs Audia Maters Creatinglas Colours CDI Satura
Status Control Multi-View Involute Polytice LIMDs Audio Maters Craticular Colours CDI Satur
Control Multi-View Layouts Roburng Owios Addio Meters Graticales Colours GPI Setup
Custom Name
Firmware Version 1.3
Input 1 Status Unlocked Input 9 Status Unlocked
Input 2 Status Unlocked Input 10 Status Unlocked
Input 3 Status Unlocked Input 11 Status Unlocked
Input 4 Status Unlocked Input 12 Status Unlocked
Input 5 Status Unlocked Input 13 Status Unlocked
Input 6 Status Unlocked Input 14 Status Unlocked
Input 7 Status Unlocked Input 15 Status Unlocked
Input 8 Status Unlocked Input 16 Status Unlocked
Read

The Status tab is the first tab the user sees once a unit is detected by the scan devices button. This tab shows the user the unit's Custom name, Firmware version and the SDI input signals that are detected by the DMON-16S.

1.1 Custom Name

This field allows the user to name the Unit with a custom name of their choosing. Once a Name is entered pressing enter will save the name to the DMON-16S and it will appear next to the unit's serial number. Pressing the Scan button after naming the unit will show the custom name.

File Opt	tions											
Availa Scan Load	able Devices DMON-1 d Defaults	= 1 16S (VPA0000 Update Fi	4 / Studio M rmware	/IV1)			*					
	1							www	.decim	ator.com		
Status	Control	Multi-View	Layouts	Routing	UMDs	Audio Meters	Graticules	Colours	GPI	Setup		
Fi	Custom Nar rmware Versi	me Studio M ion 1.3	V1				·		•		2	

Note: The maximum length of the custom name is 16 characters.

1.2 Firmware Version

This is the current version of the devices firmware.

1.3 Input Status

The input status shows the signal format detected on each input as long as it is one of the 26 supported formats/frame rates.

2.0	Contro	ol Tab											
-			D	ECIMAT	OR DESIG	N USB C	ontrol Panel V	ersion 2.0.7	7			×	
Fi	le Opt	ions											
Г	Availa	ble Device:	s = 1							15			
	Scan	DMON	-16S (VPA0000	4)				~				<u> </u>	
	Load	d Defaults	Update Fi	rmware					DESIGN				
									www.decimator.com				
	Status	Control	Multi-View	Layouts	Routing	UMDs	Audio Meters	Graticules	Colours	GPI	Setup	L	
			,										
		3	3G-SDI Output	Format 🦲	A	ОВ							

2.1 HDMI Output Type

The HDMI Output Type allows the user to change between the 7 supported HDMI output types as listed below.

1.)	DVI RGB444	←DVI-D RGB 4:4:4
2.)	HDMI RGB444 2C	← HDMI RGB 4:4:4 with 2-Channels of Audio
3.)	HDMI YCbCr444 2C	←HDMI YCbCr 4:4:4 with 2-Channels of Audic
4.)	HDMI YCbCr422 2C	←HDMI YCbCr 4:2:2 with 2-Channels of Audic
5.)	HDMI RGB444 8C	←HDMI RGB 4:4:4 with 8-Channels of Audio
6.)	HDMI YCbCr444 8C	←HDMI YCbCr 4:4:4 with 8-Channels of Audio
7.)	HDMI YCbCr422 8C	←HDMI YCbCr 4:2:2 with 8-Channels of Audic

2.2 3G-SDI Output Format

This option controls the 3G output level of the SDI output as some equipment will only work with level A or level B, this however doesn't apply to the HDMI output as that is always level A.

This setting will only work when the DMON-16S is outputting a format that is 3G 1920x1080p50/59/60.

For example if input 4 is 3G 1920x1080p59 level A and the DMON-16S is set to pass input 4 full screen and the Full Screen is Scaled option is turned off, but the level is set to level B via this setting then the output will be 3G 1920x1080p59 level B on the SDI output and level A via the HDMI output.



3.0 Multi-view											
🛎 DECIMA	TOR DESIG	N USB C	ontrol Panel V	ersion 2.0.7	7			×			
File Options											
Available Devices = 1					\sim	15					
Scan DMON-16S (VPA00004)	Scan DMON-16S (VPA00004)										
Load Defaults Update Firmware]				DES						
Status Control Multi-View Layout	itatus Control Multi-View Layouts Routing UMDs Audio Meters Graticules Co										
Output Select	Multi-Viewer			~	,						
Multi-Viewer Output Format	HD 1920x108	0i59.94		Ý	•						
Multi-Viewer Number of Windows	16 🗸				_						
Multi-Viewer Layout	1 - 100% no 8	Border		~	•						
Multi-Viewer Audio Source	Window 1		•								
Multi-Viewer Reference	Free-run		,								
Full Screen is Scaled	•										
On Screen Input Format Enable	Show only for	r 5 second	s after lock	Ŷ	,						
On Screen Audio Source ID	Show only for	r 5 second	s after lock	v	,						
Apply Tally to	Tally Boxes			Ŷ	,						
Tally Transparency	25%		~								

3.1 Output Select

The output select allows you to choose whether the DMON-16S outputs the Multi-Viewer on the SDI and HDMI outputs or whether you want to allow for full screen pass-through of one of the 16 inputs.

1. Multi-viewer	4. Input 3	7. Input 6	10. Input 9	13. Input 12	16. Input 15
2. Input 1	5. Input 4	8. Input 7	11. Input 10	14. Input 13	17. Input 16
3. Input 2	6. Input 5	9. Input 8	12. Input 11	15. Input 14	

3.2 Multi-Viewer Output Format

The Multi-Viewer output format drop down box allows you to select any of the following 26 supported formats frame rates as the output type for the HDMI and SDI outputs.

Note: HDMI and SDI outputs are not independent and will be the same output on each.

1. SD 720x487i59.94	11. HD 1920x1080p30	21. HD 1280x720p25
2. SD 720x576i50	12. HD 1920x1080p29.97	22. HD 1280x720p24
3. HD 1920x1080i60	13. HD 1920x1080p25	23. HD 1280x720p23.98
4. HD 1920x1080i59.94	14. HD 1920x1080p24	24. 3G 1920x1080p60
5. HD 1920x1080i50	15. HD 1920x1080p23.98	25. 3G 1920x1080p59.94
6. HD 1920x1080psf30	16. HD 1280x720p60	26. 3G 1920x1080p50
7. HD 1920x1080psf29.97	17. HD 1280x720p59.94	
8. HD 1920x1080psf25	18. HD 1280x720p50	
9. HD 1920x1080psf24	19. HD 1280x720p30	
10. HD 1920x1080psf23.98	20. HD 1280x720p29.97	

3.3 Multi-Viewer Number of Windows

This setting allows the user to display anywhere from 1 to 16 inputs on the Multi-Viewer layout. The diagram below shows default layout 1 for each of the 16 window selections via this setting.

	Full screen input 1 1 2 3 4 4 4 1LB 2 LB 3 LB				1 LB			2 LB		118			2 LB			
													3 LB			
F	ull scree	n input	1			2 Win	dows			3 Windows						
	1		2	2 LB 3 LB					11		2 LB					
;	3		4	4 L	в			5 LB		3 LB	4 LB	6 LB				
	4 Win	dows				5 Win	dows				6 Wir	dows				
1 LB	1 LB 2 LB 3 LB		11	в	2 LB	3 LB	4 LB		1		2	3				
										4	5		6			
4 LB	5 LB	6 LB	7 LB	5 L	5 LB 6 LB			8 LB		7		8	9			
	7 Win	dows				8 Win	dows				9 Wir	Idows				
	1		2		1 2			3		1 FL	2 FL	3 FL	3 FL 4 FL			
3	4	5	6	41	В	5 LB	6 LB	7 LB		5 FL	6 FL	7 FL	8 FL			
7	8	9	10	8 L	B	9 LB	10 LB	11 LB	9 FL		10 FL	11 FL	. 12 FL			
	10 Wi	ndows				11 Wir	ndows				12 Wi	ndows	S			
2		1	3		1			2		1		2	3			
4			5							4		5	6			
6	7	8	9		3	5	6	4		8 0			10 11			
10	11	12	13	9	1	0 11	12	13 14		12 13	3	7	14 15			
	13 Wi	ndows				14 Wir	ndows				15 Wi	ndows	5			
1	2	3	4													
5	6	7	8													
9	10	11	12													
13	14	15	16													
	16 Wi	ndows														

Please note abbreviations FL stand for fill, PB for pillar-box and LB for Letterbox aspects

3.4 Multi-View Layout

This setting allows the user to choose the layout to be displayed on the Multi-Viewer output. The number of available layouts per output resolution is 32, these can all be modified via the Layouts tab.

The layouts for each resolution (mode)/Windows are predefined with the first 8 being set up with varying border and gap sizes and layouts 31 and 32 are left to right and top to bottom respectively. The remaining layouts are the same as layout 1 in parameters.

3.5 Multi-View Audio Source

When the DMON-16S Output is set to Multi-Viewer, audio from inputs 1 to 16 can be passed to the output Multi-Viewer.

Only audio from any one of the input sources can be passed at any time.

3.6 Multi-Viewer Reference

Free-Run: When free-run is selected the DMON-16S will output a signal via the HDMI and SDI independent of whether any inputs are connected to the device.

Window 1: When window 1 is selected the DMON-16S will only output a signal via the HDMI and SDI when a signal is connected to input 1.

3.7 Full Screen is scaled

This feature is used when the DMON-16S Output select is set to one of the inputs. When selected, inputs 1 to 16 will be converted to the output format selected allowing for fast switching between inputs and displaying them full screen.

3.8 On Screen Format Enable

When an input is detected the DMON-16S will display the format detected in the top left of each window by default unless the location has been modified. The options applicable to this setting are:

1.) Show for 5 sec

2.) Show Always

3.) Off

3.9 On Screen Audio Source ID

The Audio Source Identification icon will appear when selecting which window the audio will be passed to the output when in multi-viewer mode. This option toggles whether the icon is shown to indicate the window source the audio is coming from. This icon appears in front of the Format Status. The options applicable to this setting are:

1.) Show for 5 sec

2.) Show Always

3.) Off

3.9 Apply Tally to

The Apply tally to parameter allows the selection of the 3 different types of tally indicators. When a tally is triggered it can be displayed as a small box on the bottom left (default position) of the inputs window or as border around the window. The Tally can also fill the outside of the safe action box.



Point 1 indicates the area that is covered when the tally trigger is set to border. This size was created by setting the border using the Multiview layout tool, generally the border will not appear unless one is created or if the image is shown as pillar/letter box and in that case the unfilled area will be filled by the tally.

Point 2 indicates the area that can be filled when the tally is set to outside safe action. In this picture the yellow transparency area would also be green if the tally option was set to outside safe action.

3.10 Tally Transparency

The Tally transparency feature changes the transparency of the tally box / border / Outside safe Action.

1.) 0% 2.) 25% 3.) 50%

4.0 Layouts

The Layouts tab is used for designing custom layouts for the various multi-viewer setups the user needs.

When creating a new layout the user must select the desired output resolution the multi-viewer will be displaying as well as the number of windows to be displayed on the screen. When these are chosen the user then selects the layout number to modify and begin creating their own unique setup. Note that all layouts are unique to the window number and output resolution, for example when in 1920 x 1080 mode there are 32 layouts for each window number. This means the DMON-16S has a total of 2048 unique layouts



In the Windows tab there are 6 columns shown for each window that is being displayed on the multiviewer. These are X, Y, Width, Height, Border X and Border Y.

The X and Y columns are the starting point of the top left corner of each window and by using the slide bar or entering a number the window can be moved to the desired location on the multi-viewer.

The Width and Height Columns allow the user to change the size of each of the windows from the starting point of the window, increasing or decreasing from the top left corner.

The border X and border y columns allow the user to set an internal border of where the image will be placed. The border area will then be used when triggering tallies and will fill the border area from the outside of the image to the border of its window when the tally is triggered.



4.1.0 Layout Tab Operational Buttons

<u>.</u>				C	DECIN	ΙΑΤΟ	OR D	ESIGN L	JSB (Contro	ol F	Panel V	ersio	n 2.0.7				×
File	Opti	ions																
_	Availa	ble D	evices = 1													79		
	Scan	D	MON-16S (VPA0000)4)									v .		Read		_
	Load Defaults Lindate Firmware													- 1	DIEC	=IM)		R
Load Defaults Update Fiffiware															DE	SIGN/	ator com	
Sta	tus	Con	ntrol Mul	ti-View	Layo	outs	Ro	uting U	MDs	Auc	dio	Meters	Grat	ticules	Colours	s GPI	Setup	
]												- · ·	_
м	ode	1920	x1080	Win	dows	16	~	Layout	1-	100% r	no B	Border	~	Rea	ad	Write	Defau	ılt
Wi	ndow	s	Aspects	UMDs	Statu	IS	Tallie	s Mete	rs		_							_
Ι.	Х	(Y	Widt	h	Heigł	ht	Border X	Borg	ler Y		1		2		3	4	
1	() V	0 ~	480	~	270	×	0 🗸		0 ~			_				· · ·	
2	480) V	0 ~	480	~	270	<u> </u>	0 🗸		0 🗸		5		6		7	8	
3	960) V	0 ~	480	<u> </u>	270	<u> </u>	0 ¥		0 🗸			_					
4	1440		0 4	480	<u> </u>	270	<u>×</u>	0 ¥		0 ¥		9		10		11	12	
5	40(270 ¥	480	-	270	-	0 🗸		0 4			_					
7	460) v	270 ¥	480	-	270	Ť	0 +		0 4		13		14		15	16	
8	1440		270 ¥	480	Ť	270	Ť.	0 4										
9) v	540 ¥	480	-	270	-	0 4		0 ¥		Shov	w Bor	der	✓	Show As	spect	
10	480) v	540 🗸	480	~	270	-	0 🗸		0 ¥		5	Show	Input As	pect 🖲	HD C) SD	
11	960) v	540 ¥	480	~	270	¥	0 4		0 ¥		Default	SD 0	utput Ar	nect (1.2	16.0	
12	144() v	540 ∨	480	× [270	~	0 🗸		0 ¥		Delault	30 0	utput As	pect 🛡	4:5 (/ 10:9	
13	() v	810 🗸	480	~	270	¥	0 🗸		0 🗸			Defa	ault Gap	Size <	2 >		
14	480) v	810 ¥	480	×	270	v	0 🗸		0 🗸								
15	960) v	810 ¥	480	~	270	×	0 🗸		0 🗸								
16	144(~ 0	810 ¥	480	× _	270	v	0 🗸		0 ~							Reset	All

Read, this button will read from the DMON-16S memory the parameters for the current layout selected and load these settings onto the current layout. This button is useful when altering a layout or the user wishes to undo the changes they made as long as the changes have not been written back to the device.

Write, this button will write the current layouts parameters into the DMON-16S memory. The write function is disabled if any of the windows from 2 to 16 overlap each other. This is also indicated by a red border around the windows causing overlapping conflicts.

Default, this button will change the current layout to the default parameters for that layout number. This does not change the parameters saved to the DMON-16S. This only affects the appearance in the USB control panel. To revert the layout to its default look the write button must be pressed after the default button.

Reset All, This button will load the default values for all layouts and write them to the DMON-16S memory, resetting any modified layouts.

Notes:

• Window 1 can be set to fill the entire screen, but all other windows will overlap it. This is best used for Picture in picture layouts.

4.1.1 Mode Selection

The Mode box in the DMON-16S layouts tab allows the selection of one of the 4 format sizes that the multi-view can be presented on, these are:

1920 x 1080 pixels

Applies to 3G 1920x1080p60/59.94/50

Applies to HD 1920x1080i60/59.94/50

Applies to HD 1920x1080psf30/29.97/25/24/23.98

Applies to HD 1920x1080p30/29/97/25/24/23.98

1280 x 720 pixels

Applies to HD 1280x720p60/59.94/50/30/29.97/25/24/23.98

720 x 480 pixels

Applies to SD 720x480i59.94

720 x 576 pixels

Applies to SD 720x576i50

These modes apply when the output of the DMON-16S is set to a format that matches the mode via the control tab.

4.1.2 Windows Selection

The Windows Selection box controls how many of the inputs you wish to be displayed in the multi-view layout ranging from one input displayed all the way to 16 inputs displayed.

Note: When designing a layout the multi-viewer number of windows display box in the control tab must match the number in the windows selection box in order to view this layout on the DMON-16S outputs.

4.1.3 Layout Selection

The layout Selection box allows the user to select 1 to 32 layouts, the first 8 layouts and layout 31 and 32 are already predefined by default. These are as follows:

- Layout 1: 100% no border
- Layout 2: 100% with border
- Layout 3: 90% no border
- Layout 4: 90% with border
- Layout 5: 100% no border + Gap
- Layout 6: 100% with border + Gap
- Layout 7: 90% no border + Gap
- Layout 8: 90% with border + Gap
- Layout 31: Top to Bottom In this Layout the inputs are displayed vertically on top of each other and set each input is set to fill the entire box.
- Layout 32: Left to Right In this Layout the inputs are displayed horizontally from left to right other and set each input is set to fill the entire box.

Note: Layouts 9 to 30 are the same layout settings as layout 1, but labelled as "custom".

4.1.4 Default Gap size

This option allows the user to set a gap between each window, the measurement for gap size is in pixels and the default is set to 2 pixels.

4.1.5 Preview display Window

On the right of the tab is a small window that shows a preview of the current layout of the multi-viewer that the user is creating. This display updates with each change.

Each window on the preview is labelled 1 to 16 (depending on window selection box) and will show FL, PB or LB next to the number indicating what the aspect display is set to. FL will fill the window with the input image, PB will show the image as a pillar-box inside the windows and LB will show the image as letterbox inside the window.

4.1.6 Show Border and Show Aspect

When the show border checkbox is selected the preview window will show the border of each window.

When the show Aspect checkbox is selected the preview window will display a box that indicates what the image will look like according to the aspect setting set for that window. The Aspect setting is found in the Aspects tab.



4.1.7 Show Input Aspect

This option allows the user to see how the inputs will appear on the multi-viewer when the input is either HD or SD.

1 LB	2 LB	3 LB	4 LB
5 LB	6 LB	7 LB	8 LB
9 LB	10 LB	11 LB	12 LB
Show Bor	der	✓ Show As	pect
Show	Input Aspect	● HD ○	SD

1	2	3	4
5	6	7	8
9	10	11	12
Show Bor	der	✓ Show As	pect
Show	Input Aspect	⊖ HD 💿	SD

4.1.8 Default SD Output Aspect

When the Mode is set to a SD Resolution ($720 \times 480/720 \times 576$ pixels) the SD Output aspect checkbox allows the user to simulate on the preview window the output of the multi-viewer as 4:3 or 16:9.

1 LB	2 LB	3 LB	4 LB
5 LB	6 LB	7 LB	8 LB
9 LB	10 LB	11 LB	12 LB

1 LB	2 LB	3 LB	4 LB
5 LB	6 LB	7 LB	8 LB
9 LB	10 LB	11 LB	12 LB

4:3 Aspect ratio output

16:9 Aspect ratio output

Note:

Default aspect display for a HD/3G input is 16:9.

Default aspect display for a SD input is 4:3.

•				C	DECIM/	AT	OR DE	SIGN	USB	Co	ontrol	Panel V	ersio	n 2.0.7	'		-	
le	Optio	ins																
-	Availab	le Device	es = 1												1			2
1	Scan	DMON	I-16S	(VPA0000)4)									~		1 Aug	1	
	Load	Defaults		Indata F	irmware	,								- 1	DE	CIN	yД	TOF
	LUGU	Delaults		opuater	innware	,									(D)	vw.deci	/ imato	or.com
Sta	tus	Control	Mu	lti-View	Layou	uts	Rout	ina	UMD	s	Audio	Meters	Grat	ticules	Colou	rs GF	N .	Setup
										-								
М	ode 1	920x108	0	✓ Win	dows	16	~	Layo	ut 1	- 10	0% no	Border	~	Re	ad	Write	2	Default
Wi	ndows	Aspe	cts	UMDs	Status		Tallies	Met	ters									
	HD In	Asnect	SDI	n Asnect														
1	16:9	V	4:3	V]							1		2		3		4
2	16:9	¥	4:3	¥]							-		6				
3	16:9	×	4:3	×]							2		0		<u> </u>		ð
4	16:9	~	4:3	×]									10		11		12
5	16:9	~	4:3	×	1							3						12
6	16:9	¥	4:3	¥	1							13		14		15		16
8	16:9		4:3		1													
9	16:9	V	4:3]							Show	w Bord	der	•	Show	Aspe	ect .
10	16:9	~	4:3	¥]							9	Show	Input As	spect 🤇) HD	O S	D
11 [16:9	~	4:3	Y]							Default	SD O	utput A<	pect (4:3	01	6:9
12 [16:9	×	4:3	×]							ocradit		u c				0.0
13	16:9	¥	4:3	¥	1								Defa	ault Gap	Size	¢ 2	>	
14	16:9	¥	4:3	¥]													
15 16	16:9	¥	4:3]													Denet Al
10	10:9	÷	4:5		1													Keset All

The Aspects tab allows the user to set the aspect ratio of any of the inputs and allows the user to set the aspect ratio of the input when the signal is SD or HD.

If the input is a HD signal the available options are:

FL; fill the entire window with the input image.

16:9; the Input image will be displayed as 16:9 in the window.

If the input is a SD signal the available options are:

FL; fill the entire window with the input image

16:9; the Input image will be displayed as 16:9 in the window.

4:3; the Input image will be displayed as 4:3 in the window.

4.3 La	ayout	UM	ID Tab													
<u></u>				[DECIN	AT	OR DE	SIGN U	ISB C	ontrol	Panel V	ersic	on 2.0.7	,		- 🗆 🗙
File	Optio	ons														
_	Availab	ole De	evices = 1											~	74	
L F	Scan		10N-165 ()	/PA000	04)								-			
	Scan				0-1)	_								DÉC	ZIĂ)	ATOR
	Load	Defa	ults U	pdate F	irmwai	e								DE	5IGN/	
-		_										-		www	v.decima	ator.com
St	atus	Cont	rol Mult	ti-View	Layo	outs	Rout	ing U	MDs	Audio	Meters	Gra	ticules	Colours	GPI	Setup
N	lode	1920×	(1080 V	Wir	ndows	16	~	Layout	1 - 10	00% no	Border	~	Re	ad	Write	Default
14					Charles	_	T-11:	Mater								
~~~	indows		spects	UMDs	Statu	s	Tames	Weter	5							
1	X		Υ 240 ¥	5IZE	•						1		2		3	4
2	592	~	240 ¥	16	~							-			_	
3	1072	×	240 ¥	16	~						5		6		7	8
4	1552	×	240 🗸	16	~									_		
5	112	Υ.	510 🗸	16	$\mathbf{v}$						9	_	10		11	12
6	592	×	510 🗸	16	~										45	
7	1072	×	510 ∀	16	~						13	_	14	_   _	15	10
8	1552	×	510 ¥	16	¥						Sho	w Bor	der	~	Show As	pect
9	112	<u> </u>	/80 ♥	16	¥							Show	loout Ar	nact 🔍		s D
11	1072		780 ¥	16	~							SHOW	input As	spect 🕘		30
12	1552	· ·	780 ¥	16	~						Default	SD O	utput As	spect 🔘	4:3 ()	16:9
13	112	¥	1050 ¥	16	~							Def	ault Gap	Size <	2 >	
14	592	¥	1050 ¥	16	~											
15	1072	¥	1050 🗸	16	¥											
16	1552	Υ.	1050 ¥	16	Υ.											Reset All

The UMD tab of the Layouts section allows the user to move the location of the UMDs for each window and also change the size of the text displayed.

The UMD size can be 8, 16 and 32 measured in pixel height by pixel length. As the UMD box is 16 characters long this means the UMD box is the following sizes when positioning them on the multiviewer.

Size 8: Height is 8 pixels high by 128 pixels long

Size 16: Height is 16 pixels high by 256 pixels long

Size 32: Height is 32 pixels high by 512 pixels long

.4 La	ayout	Sta	tus Tab													_
-				[	DECIN	IAT	OR DE	SIGN (	JSB C	ontrol I	Panel V	ersio	n 2.0.7	,		- 🗆 🗙
File	Optio	ons														
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	Scan	DN	/ON-165 (	VPA000	04)								v .		Erus (	
						_							- 1	DEC		<b>ATOR</b>
	Load	Defa	ults	Ipdate F	Irmwa	re								DES	5IGN/	
					Law									www	V.decima	itor.com
Sta	itus	Cont	rol Mul	ti-View	Layo	Juts	Kout	ing U	JMDs	Audio	Meters	Grat	licules	Colours	GPI	Setup
м	lode 1	1920>	(1080 🗸	Wir	ndows	16	~	Layout	1 - 1	00% no B	Border	~	Re	ad	Write	Default
					-	_			_							
Wi	indows	- A	spects	UMDs	Statu	IS	Tallies	Mete	rs			_	_		_	
	X		Y	Size	2						1		2		3	4
1	24	¥	13 ¥	16	¥							-			_	
3	984	v	13 ¥	16	· ·						5		6		7	8
4	1464	<b>v</b>	13 ¥	16	~							-	_	_	-	
5	24	¥	283 🗸	16	~						9		10		11	12
6	504	Υ.	283 🗸	16	~							_		_	_	
7	984	<b>Y</b>	283 ¥	16	*						13		14		15	16
8	1464	×	283 ¥	16	~						Shov	w Bord	der	<b>v</b>	Show As	pect
9	24	×	553 ∨	16	¥						,	-				
10	504	<u>×</u>	553 ¥	16	¥						3	now	input As	pect 🖲	ны ()	20
12	964 1464	Ý	553 V	16	~						Default	SD O	utput As	pect 💿	4:3 ()	16:9
13	24	v	823 ¥	16	~							Defa	ault Gap	Size <	2 >	
14	504	¥	823 ∀	16	~											
15	984	<b>v</b>	823 ¥	16	~											
16	1464	Υ.	823 ¥	16	¥											Reset All
L										1						

The Status tab of the Layouts section is used to position the status text that appears when an input format is detected. The default location is the top left of a window and it is 13 characters long and so when positioning the format box the user must account for the following box sizes.

Size 8: Height is 8 pixels by 104 pixels long

Size 16: Height is 16 pixels by 208 pixels long

Size 32: Height is 32 pixels by 416 pixels long

	ayout	Tall	ies lab													
				D	ECIM	TOR	DESI	GN U	SB C	ontrol	Panel V	/ersic	on 2.0.7	7		- U ×
File	Optio	ons														
	Availab	ole De	evices = 1 -											~	79	
Ē	Scan	DN	/ON-16S (V	/PA00004	4)								~		-	
		D (		a data Ek		1								DIEC	(IM)	<u>ator</u>
	Load	Defa	ults	pdate Fil	rmware									DE5	5IGN/	ator com
_ c.		~ .	1		Laway	te .	:			A 1-		6		www	.uecilia	Itor.com
St	atus	Cont	rol Mult	I-VIEW	Layou	6	Koutin	g   U	MDs	Audio	o Meters	Gra	ticules	Colours	GPI	Setup
M	lode	1920×	(1080 V	Wind	dows	6	∀ L	ayout	1 - 10	00% no	Border	~	Re	ad	Write	Default
					-	_	_		_							
W	/indows	;   A	spects l	JMDs	Status	Ta	lies	Meter	s					_		
	Х		Y	Size	_						1		2		3	4
1	24	×	240 ¥	16 \	×						_		_			
2	004		240 *	16 1	* 						5		6		7	8
	1464	Ť.	240 ¥	16 \	·							_	_			
5	24	~	510 ¥	16 \	· •						9		10		11	12
6	504	V	510 ¥	16 \	~							_				-
7	984	Υ.	510 🗸	16 \	¥						13		14		15	16
8	1464	¥	510 ¥	16 \	¥								-		Show Ar	l—
9	24	$\mathbf{v}$	780 🗸	16 \	×							W DOI	der	•	SHOW AS	peci
10	504	Υ.	780 🗸	16 \	¥							Show	Input As	spect 💿	HD ()	SD
11	984	×	780 🗸	16 \	×						Default	t SD O	utput As	spect 🖲	4:3 ()	16:9
12	1464	×	780 🗸	16 \	×							D-4		Circu de	2 2	1
13	24	×	1050 ¥	16 \	×							Der	auit Gap	size 🔨	2 /	
14	504	×	1050 V	16 1	×											
15	984		1050 ¥	16 1	×											D
	1404	¥	1050 ₹	10 1	•											Keset All

The Tallies tab of the Layout section is used to position the tally box that appears when the mode is set to tally box and is used when it is triggered from a TSL command or via the DSUB(GPI) connector.

The tally box is shaped as a rectangle box is split up into 4 boxes each of the size chosen by the user next to each other from left to right. If the size of the tally box is 16 then the size of the rectangle is 16 pixels high and 64 pixels long. Each box is a different colour going Green, Red, Blue and Yellow from left to right respectively.

Size 8: Height is 8 pixels by 32 pixels long

Size 16: Height is 16 pixels by 64 pixels long

Size 32: Height is 32 pixels by 128 pixels long

_		-						, 												-
					D	ECIN	1ATC	)r e	DESI	GN U	SB C	ontrol	l Pan	el Ve	ersio	n 2.0.7	1			
File	Opt	ions																		
	Availa	ble D	evices =	1														75		
	Scan	D	MON-16	S (VPA0	000	4)										~		-ul		
	Loop	l Dof	aulte	Undat	o Ei	innowa	ro									-	DISC			or,
	LUad	Den	auits	opua	CII	miwa												oleni v decim	atoro	om
S+	atus	Cor	trol M	lulti-Vie	a ar	Lave	outs	Ro	uting		/IDc	Audi	o Met	erc	Grati	cules	Colours	GPI	Set	un l
- 30	atus	001						110	Jurung	1 01	103	Audio	o met		Oraci	cuics	colours	UPI	Jen	ΥP
N	lode	1920	x1080	× 1	Nin	dows	16	~	L	ayout	1 - 1	00% no	Bord	ler	~	Re	ad	Write	0	Default
w	/indow	/5	Aspects	UMD	s	Statu	ıs 1	Fallie	-5	Meters	5									
-	Lef	- + X	Right )	(	v	Ra	ar Wic	lth	Hei	aht										
1	24	4 🗸	455		35	~	4	v	200	9.nc V				1		2		3		4
2	504	4 ¥	935 \		35	<b>~</b>	4	-	200	~				-				-		
3	984	4 🗸	1415 \	/	35	<b>~</b>	4	<b>~</b>	200	~				2		0		· ·		8
4	146	4 🗸	1895 \		35	×   _	4	<u> </u>	200	~				0		10		11		12
5	24	4 🗸	455 \	/ 3	05	<u> </u>	4	<u> </u>	200	~				<u> </u>				<u> </u>		12
6	504	4 🗸	935	/ 3	05	<u>×</u>  -	4	<u> </u>	200	¥				13		14		15		16
	984	4 🗸	1415	/ <u>3</u>	05	Ľ-	4	Ě.	200	¥								13 L		
0	1404	4 ¥	455 1	/ 5	75	- H	4	Ť	200	~				Show	/ Bord	er	-	Show As	spect	
10	504	4 🗸	935 \	5	75	-	4	-	200	~				s	how l	nput As	spect 🔘	HD ()	SD	
11	984	4 🗸	1415 \	/ 5	75	-	4	71	200	~				c					16.0	
12	146	4 🗸	1895 \	/ 5	75	<b>~</b>	4	<b>7</b> 1	200	~			De	tault :	SD OU	itput As	spect 🔳	4:3 ()	10:9	
13	24	4 ⊻	455 \	/ 8	45	<b>~</b>	4	<b>~</b> ]	200	~					Defa	ult Gap	Size 《	2 >		
14	504	4 🗸	935 \	/ 8	45	<u>~</u>	4	<u> </u>	200	~										
15	984	4 🗸	1415 \	<u> </u>	45	<u> </u>	4	<u> </u>	200	~										
16	146	4 🗸	1895 \	8	45	<b>×</b>	4	<u> </u>	200	~									R	eset All

The Meters tab in the Layouts section is used to position the audio meters for each window anywhere on the multi-viewer.

(DMON-16S) Each window has 8 audio meters which are divided up into 2 sets of 4 channels on each side and will always be linked to the same Y axis so not to separate them.

(DMON-6S/12S/MD-Quad) Each window has 16 audio meters which are divided up into 2 sets of 8 channels on each side and will always be linked to the same Y axis so not to separate them.

The Left X column allows the user to choose the starting position for the first 8 channels of the meters and are drawn from the top left corner of the box.

The Right X column allows the user to choose the starting position for the second 8 channels of the meters and are drawn from the top left corner of the box.

The Y Column allows the user to choose the starting position of both left and right audio meters starting from the top of the box. As the audio meters are connected in pairs on the Y scale, so when specifying the Y starting position both audio meters will move up or down.

To calculate the size of each of the 8 channel boxes the user must multiply the bar width by 8 for maximum channels displayed and this will give the width of the box in pixels and the height will be the size listed in the height column in pixels.

In the example above the boxes are 32 pixels wide and 200 pixels long.

5.0	Routir	ng Setup										
3	-		C	ECIMA	TOR DESIG	N USB C	ontrol Panel V	ersion 2.0.7	7			×
F	ile Opt	tions										
	Availa	able Device:	s = 1						$\sim$	79		
	Scan	DMON	-16S (VPA0000	)4)				~		-4		
	Loa	d Defaults	Lindate F	irmware	1				DEC			
	200		opulier	inninare					WWW.	decima	ator.com	
	Status	Control	Multi-View	Layout	s Routing	UMDs	Audio Meters	Graticules	Colours	GPI	Setup	
			Window 1	1 Source	1	~						
			Window 2	2 Source	2	~						
			Window 3	3 Source	3	~						
			Window 4	4 Source	4	~						
			Window 5	5 Source	5	~						
			Window 6	5 Source	6	~						
			Window 7	7 Source	7	~						
			Window 8	8 Source	8	~						
			Window 9	Source	9	~						
			Window 10	) Source	10	~						
			Window 11	1 Source	11	~						
			Window 12	2 Source	12	~						
			Window 13	3 Source	13	~						
			Window 14	4 Source	14	*						
			Window 1	Source	15	*						
			window It	source	10	*						
R	ead											

The Routing Tab allows for rearrangement of any of the input signals to any of the windows. This tab also allows the user to copy inputs to other windows without requiring external copies of the signal being connected to the SDI inputs.

Note: The Routing applies to all layout tabs, it does not change from layout to layout.

E.g. A user could feed the DMON-16S with 4 inputs into inputs 1, 3, 9 and 11 and have no cables connected to the remaining inputs. Using the Routing tab the user can set Input 3, 9 and 11 to windows 2, 3 and 4 and use the device as a 2/3/4-split multi-viewer without having to physically rearrange the input cables.

5.0 Unde	r Monitor Display (UMD)									
<del></del>	DECIMATOR	DESIG	N US	SB C	ontrol Panel V	ersion 2.0.7	7			×
File Opt	tions									
Availa	able Devices = 1						$\sim$	19		
Scan	DMON-16S (VPA00004)					~		~		
Loa	d Defaults Update Firmware						DEC			R
							www.o	lecima	tor.com	
Status	Control Multi-View Layouts R	outing	UN	۸Ds	Audio Meters	Graticules	Colours	GPI	Setup	
All On	All Off									
Enab	ble Text	TSL	Addı	ess						
1 🗹	UMD 1	<	0	>			UMD Justify	Cent	re	*
2 🗹	UMD 2	<	1	>						
3 🗹	UMD 3	<	2	>						
4 🗹	UMD 4	<	3	>						
5 🗸	UMD 5	<	4	>						
6 🗸	UMD 6	<	5	>						
7 🗹	UMD 7	<	6	>						
8 🗹	UMD 8	<	7	>						
9 🗸	UMD 9	<	8	>						
10 🗹		<	9	>						
11 🗹		<	10	>						
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14 🔽			12	~						
14			14	>						
16 🗸			14	>						
			15	-						

The UMD tab allows the user to enable the Under Monitor Display for each window on the DMON-16S as well as set the TSL address for each window and manually enter in the desired text for each UMD to display.

Enable: When the checkbox is checked the corresponding UMD will appear for that window.

Text: Any text entered here will be displayed on the window where the UMD is set to appear.

**TSL Address:** The TSL address can be set anywhere from 0 to 255 and is used when transmitting UMD text via the TSL protocol to the RS +/- Pins on the DSUB connector.

**UMD Justify:** UMD Justify will align the text to the left, right and centre within the 16 Character box. If there are 16 characters there will be no effect.

Left Justify	Right Justify	Centre Justify
UMD 1	UMD 1	UMD 1

Notes:

Each UMD has a maximum character limit of 16 characters.

UMD Justify will align the text to the left, right and centre within the 16 Character box. If there are 16 characters there will be no effect.

The Audio Meters tab allows the user to enable the display of the 8/16 channel audio meters per window and set the metering type required.

**Pairs on Left, Pairs on Right:** This setting allows the user to enable the Audio meters for each window of the DMON-16S.

The options are separated so that the left 4 (8 for DMON-6S/12S) audio channels are defaulted to appear on the left and the next 4 (8 for DMON-6S/12S) audio channels are displayed on the right of each window. Each checkbox represents 2 channels to display ("a pair") and when enabling these pairs they can only be displayed with the previous channels as well. For example when enabling checkbox 2 all 2 pairs/ 4 channels will be displayed.

The buttons marked 0, 1, 2, 3, 4 at the top of the tab allow the user to turn on the audio meters to every window in one click.

24	DECIMATO	R DESIG	N USB C	ontrol Pan	el Ve	ersion 2.0.7	,			×		
File Options												
Available Devices	5 = 1						$\sim$	19				
Scan DMON-	-16S (VPA00007)					~		44				
Load Defaults	Update Firmware									R		
							www.	decima	tor.com			
Status Control	Multi-View Layouts	Routing	UMDs	Audio Met	ters	Graticules	Colours	GPI	Setup			
Pairs on Left	Pairs on Right		С	ombination	Bar a	and Float		~	1			
0 1 2 0 1 2 1 0 0 0 0 Transparency 0%												
1												
2 O O O Show Bar Scale V												
3000				Bar Scale	AES/	ERO		×	1			
4000			E	Bar Ballistics	VU			×	1			
			Flo	oat Ballistics	IEC2			×				
7000	000		Refe	erence level	-20 d	BFS		×				
8000	000		Yellow S	tart (-dBFS)		10		~	]			
9 0 0 0	000		Green S	tart (-dBFS)		20		~	]			
10 🔿 🔿 🖲	$\circ \circ \bullet$								-			
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16 🖲 🔾 🔿	000											
Read												

(Applicable to DMON-16S) In this example Window 1 will show no Audio channels on the left and 4 channels on the right, Window 2 will show 2 Channels on the left and 4 channels on the right etc.

		Pair	s on	Left			Pairs	on l	Right	t
	0	1	2	3	4	0	1	2	3	4
1	$\bigcirc$	$\bigcirc$	$\bigcirc$	۲	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	۲
2	$\bigcirc$	$\bigcirc$	۲	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	۲
3	$\bigcirc$	۲	$\bigcirc$	۲						
4	$\bigcirc$	$\bigcirc$	$\bigcirc$	۲	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	۲
5	۲	$\bigcirc$	۲							
6	$\bigcirc$	$\bigcirc$	۲	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	۲
7	$\bigcirc$	$\bigcirc$	۲	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	۲
8	$\bigcirc$	$\bigcirc$	$\bigcirc$	۲	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	۲
9	۲	$\bigcirc$	۲							
10	$\bigcirc$	$\bigcirc$	$\bigcirc$	۲	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	۲
11	$\bigcirc$	$\bigcirc$	۲	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	۲
12	$\bigcirc$	$\bigcirc$	۲	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	$\bigcirc$	۲

(Applicable to DMON-6S/12S) In this example Window 1 will show 6 Audio channels on the left and 8 channels on the right, Window 2 will show 4 Channels on the left and 8 channels on the right etc.

**Combination:** The Combination setting allows the user to set whether the audio meters are displayed as a solid bar, as a marker that moves to the sound levels detected or both.

**Transparency:** The Transparency setting allows the user to set the opaqueness of the Audio meters when displayed over the window.

<mark>1) 0%</mark>

2) 25%

3) 50%

Show Bar Scale: This setting allows the user to enable or disable the display of the level numbers.

**Bar Scale:** 

#### 1.) <mark>AES/EBU</mark>

- 2.) VU
- 3.) Extended VU
- 4.) BBC PPM (IEC 2a)
- 5.) EBU PPM (IEC 2b)
- 6.) DIN PPM (IEC 1a)
- 7.) NORDIC (IEC 1b)

**Bar Ballistics**:

1)	1/11
<b>L</b> .	v 0

- 2.) IEC1
- 3.) IEC2

**Float Ballistics:** 

<mark>1.)</mark>	VU
2.)	IEC1
3.)	IEC2
Referen	ce Level:

<mark>1.) -20 dBFS</mark> 2.) -18 dBFS

3.) -15 dBFS

**Yellow Start (dBFS):** This setting allows the user to set where the yellow range of the audio meter begins. The yellow range extends from the end position of the Green meter to the start of the red position.

**Green Start (dBFS):** This setting allows the user to set where the green range of the audio meter begins. The green range extends to the yellow start dBFS point.

# 8.0 Graticules

The Graticules Tab allows the user to enable and position the Safe Action, Safe Title and centre cross Graticules.

The graticule generator tab allows the user to enable the Safe Action, Safe Title and centre cross for each window and set their positions manually or set them as 3 different aspect ratio sizes.

			D	ECIMATOR I	DESIGN	N USB C	ontro	ol Panel V	ersion 2	2.0.7		-	×
File	Options												
— A	vailable D	evices =	1								79		
S	can D	MON-16	S (VPA0000	4)					~				h
				·							zimy	<b>∆</b> ⊺	'OR
	Load Defa	aults	Update Fi	rmware						DE	SIGN/		
									<i>c</i>	ww	w.decima	tor.c	.om
Stat	us Con	trol M	lulti-View	Layouts Ro	outing	UMDs	Auc	dio Meters	Graticu	les Colours	5 GPI	Set	up
	All On	All On	All On	All		All		All					^
	All Off	All Off	All Off	Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9		Sa	fe A	ction
	S.Action	S.Title	C.Cross							X Start (%)	Y Start (	%)	X End
1				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	<b>v</b>	ç
2				Anamorphic	: 1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	<b>v</b>	5
3				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	<b>~</b>	ç
4				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	<b>v</b>	č
5				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	~	č
6				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	~	<u>c</u>
7				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	~	2
8				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	~	5
9				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	~	5
10				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	~	<u>c</u>
11				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	~	<u></u>
12				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	~	2
13				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	~	<u>c</u>
14				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	×	<u> </u>
15				Anamorphic	1	16:9 LB on	4:3	4:3 PB or	n 16:9	5 🗸	5	×	
<				Anomorphic		16:010 on	1.5	4-2 DD	16:0	5.0	5		>
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File Opt	ions								-		
Availa	able Devi	ces = 1									
Scan	DMC	N-16S (VPA00	0004)				~			5	
Load	d Default	s Update	Firmware							<u> </u>	
								www.de	cimator.com		
Status	Contro	Multi-Viev	v Layouts	Routing	UMDs Au	dio Meters	Graticules	Colours G	iPI Setup		
All										^	
4:3 PB or	n 16:9		Safe	Action			Sat	fe Title			
		X Start (%)	Y Start (%)	X End (%)	Y End (%)	X Start (%)	Y Start (%	) X End (%)	) Y End (%)		
4:3 PB or	n 16:9	5 🗸	5 🗸	95 🗸	95 🗸	10 🗸	10 🗸	90 🗸	y 90 ¥		
4:3 PB or	n 16:9	5 🗸	5 🗸	95 🗸	95 🗸	10 ¥	10 🗸	90 🗸	90 ∀		
4:3 PB or	n 16:9	5 🗸	5 🗸	95 🗸	95 ∨	10 🗸	10 🗸	90 🗸	y 90 ¥		
4:3 PB or	n 16:9	5 🗸	5 🗸	95 🗸	95 🗸	10 🗸	10 🗸	90 🗸	y 90 √		
4:3 PB or	n 16:9	5 🗸	5 🗸	95 🗸	95 🗸	10 🗸	10 🗸	90 🗸	· 90 ∨		
4:3 PB or	n 16:9	5 🗸	5 🗸	95 🗸	95 🗸	10 ¥	10 🗸	90 🗸	90 ₩		
4:3 PB or	n 16:9	5 🗸	5 🗸	95 ∀	95 🗸	10 🗸	10 🗸	90 ¥	90 ∀		
4:3 PB or	n 16:9	5 🗸	5 🗸	95 🗸	95 ∨	10 ¥	10 🗸	90 🗸	· 90 ¥		
4:3 PB or	n 16:9	5 🗸	5 🗸	95 🗸	95 ↔	10 ~	10 🗸	90 ~	· 90 ∨		
4:3 PB or	n 16:9	5 🗸	5 🗸	95 🗸	95 🗸	10 ¥	10 🗸	90 ¥	90 🗸	-	
4:3 PB or	n 16:9	5 🗸	5 🗸	95 🗸	95 🗸	10 ¥	10 V	90 1	90 🗸	-	
4:3 PB or	n 16:9	5 4	5 🗸	95 V	95 🗸	10 •	10 V	90 4	90 4		
4:3 PB or	n 16:9	5 4	5 🗸	95 🗸	95 🗸	10 •	10 V	90 1	90 4		
4:3 PB or	n 16:9	5 4	5 *	95 *	95 🗸	10 *	10 4	90 1	90 \$		
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4:5 PB 01 <	n 16:9		3 *	95 *	93 🕈	10 +	10 •	90 *	90 ♥	*	
<u> </u>			1							_	
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**Safe Action:** The Safe Action option displays a solid line box inside the window it is enabled on. The size of this box is controlled via the graticules tab as seen in the images above. The size of each box is specified by the percentage of the window to expand across.

Note: when using the outside Safe Action option in the colours tab, the area outside this line to the edge of the window is the area it is referring to.

**Safe Title:** The Safe Title option displays a hashed line box inside the window it is enabled on. The size of this box is controlled via the graticules tab as seen in the images above. The size of each box is specified by the percentage of the window to expand across.

**Centre Cross**: The centre cross option displays a cross in the centre of the window.

Note: The colours of each windows will all be the same colour as designated in the colours tab and cannot be changed separately.

9.	0 C	oloui	rs													
•	-			D	ECIMA	TOR DESIGI	N USB C	ontrol Panel V	ersion 2.0.7				×			
	File	Opt	ions													
		Availa	ble Device	s = 1							15					
		Scan	DMON	-16S (VPA0000	4)				~	DEC						
		Load	d Defaults	Update Fi	rmware					DESIGN						
			<b>C</b>	M 10: 3/		D. I	11110	A 15 A4 1	0.11	Colours	.decim	ator.com	1			
	St	atus	Control	Multi-View	Layout	s Kouting	UMDs	Audio Meters	Graticules	Colours	GPI	Setup				
				Background	l Colour	Black			~							
				Border	Colour	Black			~							
			UN	ID Foreground	Colour	Yellow (Trans	parent 259	%)	~							
			UN	ID Background	Colour	Black (Transparent 50%) 🗸 🗸										
		I	Format Stat	tus Foreground	Colour	White (Transparent 25%) V										
		F	ormat Stat	us Background	Colour	Black (Transparent 50%) 🗸 🗸										
			Outs	ide Safe Action	Colour	None 🗸										
				Safe Action	Colour	White (Transp	parent 25%	6)	~							
				Safe Title	Colour	White (Transp	parent 25%	6)	~							
				Centre Cross	Colour	White (Transp	parent 25%	6)	~							
	Read	ł														

The Colours tab allows the user to change the colours of the following features of the DMON-16S:

- Multi-Viewer Background colour: Refer to table 1.1, default colour is Black
- Window Border colour: Refer to table 1.1, default colour is Black
- UMD Foreground: Refer to table 1.2, default colour is Yellow (Transparent 25%)
- UMD Background: Refer to table 1.2, default colour is Black (Transparent 50%)
- Format Status Foreground: Refer to table 1.2, default colour is White (Transparent 25%)
- Format Status Background: Refer to table 1.2, default colour is Black (Transparent 50%)
- Outside Safe Action: Refer to table 1.2, default colour is White (Transparent 25%)
- Safe Action Box Border: Refer to table 1.2, default colour is White (Transparent 25%)
- Safe Title Box Border: Refer to table 1.2, default colour is White (Transparent 25%)
- Centre Cross: Refer to table 1.2, default colour is White (Transparent 25%)

Available colours:

1. Black	2. Blue	3. Green
4. Cyan	5. Red	6. Magenta
7. Yellow	8. White	
Table 1.1 Colour table		-
1 None	10 Black (Transparent 25%)	19 Blue (Transparent 0%)

1. None	10. Black (Transparent 25%)	19. Blue (Transparent 0%)
2. Black (Transparent 50%)	11. Blue (Transparent 25%)	20. Green (Transparent 0%)
3. Blue (Transparent 50%)	12. Green (Transparent 25%)	21. Cyan (Transparent 0%)
4. Green (Transparent 50%)	13. Cyan (Transparent 25%)	22. Red (Transparent 0%)
5. Cyan (Transparent 50%)	14. Red (Transparent 25%)	23. Magenta (Transparent 0%)
6. Red (Transparent 50%)	15. Magenta (Transparent 25%)	24. Yellow (Transparent 0%)
7. Magenta (Transparent 50%)	16. Yellow (Transparent 25%)	25. White (Transparent 0%)
8. Yellow (Transparent 50%)	17. White (Transparent 25%)	
9. White (Transparent 50%)	18. Black (Transparent 0%)	

Table 1.2 Colour table extended

#### 10.0 GPI

The GPI tab of the USB control panel for the DMON-16S displays the pin layout for the DSUB-37 pin connector on the back of the unit.

		D	ECIMATO	DR DESIG	N USB C	ontrol Panel V	ersion 2.0.7	,		- 🗆 🗙				
File Op	tions													
Avail	able Device	s = 1						$\sim$	15					
Scan	DMON	-16S (VPA0000	4)				~							
Loa	d Defaults	Update F	rmware							AIOR	2			
								www	decim	ator.com				
Status	Control	Multi-View	Layouts	Routing	UMDs	Audio Meters	Graticules	Colours	GPI	Setup				
		GPI Config	~											
PI	N 1 = Grou	ind		PIN 14 =	Window 7	Tally Red	PIN 27 =	Window 1	2 Tally	Green				
PI	N 2 = RS4	85+	PIN 28 =	Window 1	4 Tally	Green								
PI	N 3 = Wind	low 1 Tally Gre	en	PIN 16 =	Window 1	Window 11 Tally Red PIN 29 =				= Window 16 Tally Green				
PI	N 4 = Wind	low 3 Tally Gre	en	PIN 17 = Window 13 Tally Red PI			PIN 30 =	Window 2	Tally R	ed				
PI	N 5 = Wind	dow 5 Tally Gre	en	PIN 18 = Window 15 Tally Red P			PIN 31 =	Window 4	Tally R	ed				
PI	N 6 = Wind	dow 7 Tally Gre	en	PIN 19 = Ground PI			PIN 32 =	Window 6	Tally R	ed				
PI	N 7 = Wind	low 9 Tally Gre	en	PIN 20 = Ground			PIN 33 = Window 8 Tally Red			ed				
PI	N 8 = Wind	dow 11 Tally Gr	een	PIN 21 =	RS485-		PIN 34 =	Red						
PI	N 9 = Wind	low 13 Tally Gr	een	PIN 22 =	Window 2	Tally Green	PIN 35 =	Window 1	2 Tally	Red				
PIN	10 = Wind	dow 15 Tally Gr	een	PIN 23 =	Window 4	Tally Green	PIN 36 =	Window 1	4 Tally	Red				
PIN	11 = Wind	low 1 Tally Red	I	PIN 24 =	Window 6	Tally Green	PIN 37 =	Window 1	6 Tally	Red				
PIN	12 = Wind	low 3 Tally Red	I	PIN 25 =	Window 8	Tally Green								
PIN	13 = Wind	low 5 Tally Red	I	PIN 26 =	Window 1	0 Tally Green								
		E	nable the F	unction of	the GPI P	in by connecting	g it to Ground	1						

GPI Configuration 0.

This Configuration is used when the user wishes to link up the DSUB-37 connector to devices that control tally signals. A connection between the ground pin and the tally pin will keep the tally visible.

		D	ECIMATO	OR DESIG	N USB C	ontrol Panel V	ersion 2.0.7	,			×	
File Opt	ions											
Availa	able Device	s = 1						$\sim$	79			
Scan	DMON	-16S (VPA0000	4)				~		-ul			
loa	d Defaults	Undate Fi	irmware					DEC			2	
200		oponio i	innure					www	.decim	ator.com		
Status	Control	Multi-View	Layouts	Routing	UMDs	Audio Meters	Graticules	Colours	GPI	Setup		
		GPI Config	guration 1				~					
PI	PIN 1 = Ground PIN 14 = Window 7 Tally Red PIN 27 = Window 12 Tally Green											
PI	N 2 = RS4	85+		PIN 15 =	Window 9	Tally Red	PIN 28 =	Window 1	4 Tally	Green		
PI	N 3 = Wind	low 1 Tally Gre	en	PIN 16 =	Window 1	1 Tally Red	PIN 29 =	Window 1	16 Tally	Green		
PI	N 4 = Wind	low 3 Tally Gre	en	PIN 17 = Window 13 Tally Red PI			PIN 30 =	30 = Window 2 Tally Red				
PI	N 5 = Wind	low 5 Tally Gre	en	PIN 18 = Window 15 Tally Red PI			PIN 31 =	Window 4	Tally F	led		
PI	N 6 = Wind	low 7 Tally Gre	en	PIN 19 = Ground PI			PIN 32 =	Window 6	6 Tally F	led		
PI	N 7 = Wind	low 9 Tally Gre	en	PIN 20 = Ground			PIN 33 =	PIN 33 = Window 8 Tally Red				
PI	N 8 = Wind	low 11 Tally Gr	een	PIN 21 =	RS485-		PIN 34 = Window 10 Tally Red					
PI	N 9 = Wind	low 13 Tally Gr	een	PIN 22 =	Window 2	Tally Green	PIN 35 =	Window 1	2 Tally	Red		
PIN	10 = Wind	low 15 Tally Gr	een	PIN 23 =	Window 4	Tally Green	PIN 36 =	Window 1	4 Tally	Red		
PIN	11 = Wind	low 1 Tally Red	I	PIN 24 =	Window 6	Tally Green	PIN 37 =	Output Se	elect To	ggle		
PIN	12 = Wind	low 3 Tally Red	I	PIN 25 =	Window 8	Tally Green						
PIN	13 = Wind	low 5 Tally Red	I	PIN 26 =	Window 1	0 Tally Green						
		E	nable the F	unction of	the GPI P	in by connecting	g it to Ground	1				

GPI Configuration 1.

This Configuration is used when the user wishes to link up the DSUB-37 connector to devices that control tally signals. A connection between the ground pin and the tally pin will keep the tally visible. In this configuration pin 37 is a Multiview output toggle, Which sequences through all inputs.

GPI Configuration 2.

This Configuration is used when the user wishes to wire up the DSUB-37 connector to a device to use the DMON-16S as a switcher. When connecting the pins of the DSUB-37 up as a switcher the user needs only to have a simple button between the select pin and ground as all that is needed is a momentary connection and that will cause the output to change.

1.0 Setup								
🛥 DECIMA	TOR DESIG	N USB C	ontrol Panel V	ersion 2.0.7	,			×
File Options								
Available Devices = 1						15		
Scan DMON-16S (VPA00004)				~				<u> </u>
Load Defaults Update Firmware					DES			
					www	.decim	ator.com	1
Status Control Multi-View Layou	ts Routing	UMDs	Audio Meters	Graticules	Colours	GPI	Setup	L
LCD Off Time	NEVER			~				
Return to Status Time	NEVER			~				
Auto Save	•							
Demo Cycle Type	None			~				
Demo Cycle Time (seconds)	< 10 >							
L								

The Setup tab allows the user to control the LCD backlight timer, return to status timer and the demo cycle feature.

#### 11.1 LCD off Time

This setting allows the user to set the amount of time to pass before the LCD backlight is turned off.

1. 5 Seconds	2. 15 Seconds	3. 30 Seconds	4. 1 Minute
5. 5 Minutes	6. 15 Minutes	7. 30 Minutes	8. Never

#### 11.2 Return to Status time

This setting allows the user to set the amount of time before the menu on the LCD display defaults back to signal input status screen.

1. 5 Seconds	2. 15 Seconds	3. 30 Seconds	4. 1 Minute
5. 5 Minutes	6. 15 Minutes	7. 30 Minutes	8. Never

#### 11.3 Auto Save

The Auto save option allows the user to define whether after a setting is changed, if that setting is saved to memory or not. This setting helps users who set the DMON-16S up the way they want it and want to change settings but not have these saved to memory and have the DMON-16S return to the previously saved settings when powered down and back on again.

# 11.4 Demo Cycle Type

The Demo cycle feature is designed to let the user set a timer for the DMON-16S to automatically cycle through the different outputs.

E.g. If set to multi-viewer layouts the DMON-16S will show layout 1 then layout 2 etc. when reaching layout 32 it will return to layout 1 and the cycle will begin again.

# **Output Select**

When demo cycle is set to output select the DMON-16S will cycle through the output select options listed in 2.2, changing at the interval set by demo cycle time.

# **Multi-viewer Windows**

When demo cycle is set Multi-viewer Windows the DMON-16S will cycle through the 16 window sizes from displaying 1 window on the screen up to showing 16, changing at the interval set by demo cycle time.

# **Multi-viewer Layouts**

When demo cycle is set Multi-viewer Layouts the DMON-16S will cycle through the 32 custom layouts, changing at the interval set by demo cycle time.

# 11.5 Demo Cycle Time (seconds)

The Demo Cycle time allows the user to set the interval of time before the Demo Cycle type cycles to its next option. The interval time can be anywhere from 1 second to 256 seconds.

#### 12.0 Designing a custom layout

The section will detail how to design a custom layout step by step for the DMON-16S Multi-Viewer.

The first step in designing a custom layout is deciding on the basic layout of the multi-viewer. In this tutorial we assume the user wishes to create an 11 window multi-viewer layout where one image is half the screen and the other half contains the remaining 10 windows.

		1		
2	4	6	8	10
3	5	7	9	11

An example of a user defined 11 window multi-viewer

The next step is to go to the layouts tab in the USB control panel and choose the mode for the multiviewer in this case it will be 1920 by 1080 pixels.

We then choose how big the multi-viewer will be, in this case it is 11 windows.

The layout number to be chosen can be any of the available 32 layouts. To allow for use of the other available layouts we will choose layout 9-Custom; this layout has the same parameters as layout 8.

To make changing the layout easier we check the show border box and uncheck the show aspect box.

The preview window will now look like the image below.

Scan     DMON-12S (VLA00002)       Load Defaults     Update Firmware       www.decimator.com											
atu	is Co	ontro	a Layout	s Routing	u UMDs	Audio Mete	ers Graticu	les Colours	GPI Setu	p	
Мо	de [19	920x	1080 🔻	Window	/s 11 ▼	Layout	1 - 100% no	Border 🔻	Read	Write	Default
Wi	ndows	A	spects U	MDs Sta	tus Tallies	Meters					
	Х		Y	Width	Height	Border X	Border Y				-
1	0	•	0 🕶	640 🕶	360 🕶	0 🕶	0 🕶	1	· · · ·	²	5
2	640	•	0 🕶	640 🔻	360 🔻	0 🕶	0 🕶				
3	1280	•	0 🕶	640 🔻	360 🔻	0 -	0 🕶	4 LB	5 LB	6 LB	7 LB
4	0	•	360 🕶	480 -	360 🔻	0 -	0 🕶				
5	480	•	360 🔻	480 -	360 🔻	0 -	0 -	8 LB	818 918	10 LB	11 LB
6	960	•	360 🔻	480 -	360 -	0 -	0 -				
7	1440	•	360 🕶	480 -	360 -	0 -	0 -	Show Bo	rder	Show /	Aspect
8	0	•	720 🕶	480 -	360 -	0 -	0 -	Show	Input Aspect	HD (	SD SD
9	480	•	720 -	480 -	360 -	0 •	0 -	Default CD C		Q 4.2	16.0
10	960	•	720 -	480 -	360 -	0 -	0 -	Default SD C	utput Aspect	4:3	10:3
11	1440	•	720 🔻	480 -	360 🔻	0 🕶	0 -	De	fault Gap Size	∢ 2	•

#### 12.1 Custom Window Positioning

Since we know roughly where each window will go and we have the size of the multiview we wish to use we can now do a few calcualtions to determine the size of each box we wish to create.

Window 1: 1920 x (1080 / 2) =1920 width 540 height
Window 2: (1920 / 5) x (1080 / 4) =384 width 270 height
5 windows across and each window is a quarter of the height to create 2 rows of 5 windows, we repeat this size for the next 9 windows.
Window 3: 384 width 270 height
Window 4: 384 width 270 height
Window 5: 384 width 270 height
Window 6: 384 width 270 height
Window 7: 384 width 270 height
Window 8: 384 width 270 height
Window 9: 384 width 270 height
Window 9: 384 width 270 height
Window 10: 384 width 270 height
Window 11: 384 width 270 height

The layout tab should now look like the image below:

<u></u>	DECIMATOR DESIGN USB Control Panel Version 2.0.7								- 🗆 🗙
File Options									
Available D	Available Devices = 1								ISA.
Scan Di	MOIN-165 (V	PA00004)					· 1	DÉC	MATOR
Load Defa	ults Up	odate Firmv	vare					DES	IGN
								www.	decimator.com
Status Con	trol Multi	-View Li	ayouts Ro	uting U	MDs Au	idio Meters	Graticules	Colours	GPI Setup
Mode 1920:	x1080 ∨	Window	vs 11 ∨	Layout	9 - Custo	m	✓ Real	ad ۱	Write Default
Windows A	Aspects U	JMDs Sta	atus Tallie	s Meter	s				
x	Y	Width	Height	Border X	Border Y				212
1 0 🗸	0 ~	1920 ¥	540 ¥	0 ¥	0 🗸		· · · · · · · · · · · · · · · · · · ·	2 LB	3 LB
2 640 ∨	0 🗸	384 🗸	270 🗸	0 🗸	0 🗸				
3 1280 ∨	0 🗸	384 🗸	270 🗸	0 🗸	0 🗸	4 LB	5 LB	61	.B 7 LB
4 0 🗸	360 🗸	384 🗸	270 🗸	0 🗸	0 🗸				
5 480 🗸	360 🗸	384 🗸	270 🗸	0 🗸	0 🗸				
6 960 ∨	360 🗸	384 🗸	270 🗸	0 🗸	0 ~	8 LB	9 LB	10	LB 11 LB
7 1440 ∨	360 ♥	384 ∨	270 🗸	0 4	0 4				
8 0 ~	720 ∨	384 🗸	270 🗸	0 ~	0 ~	Sho	w Border	□ s	how Aspect
9 480 ∨	720 ♥	384 ¥	270 ¥	0 ¥	0 ¥				
10 960 V	720 ♥	384 ¥	2/0 ¥	0 ¥	0 ¥		Show Input As	pect 🖲 H	
11 1440 ♥	720 ♥	384 ♥	270 *	0 *	0*	Default	SD Output As	pect 🖲 4	:3 () 16:9
							Default Gap	Size <	2 >
									Reset All

Here the windows are correctly sized, but their x and y positions are wrong for what we are trying to design. We now need to calculate the new starting points for each window.

We start by going through the positions of each window. Window 2 position is below window and on the left of the multi-viewer and its position will be 540 pixels down and 0 pixels from the left of screen.

The starting point of window 2's height is also the same for window 4,6,8 and 10 so we enter it in the y position coloumn for these windows too.

Next we find the location of window 3, as it is below window 2 it will have the same x position and also window 2 is 270 pixels high so the Y position of window 3 is 540 + 270 = 810. This is also the Y starting point for windows 5, 7, 9 and 11.

At this point a few of the windows will appear red and be overlapping, whenever a window overlaps another window the write button will be disabled and the overlapping windows will become red.

To determine the x positions of windows 4,6,8 and 10 it is a matter of adding the width of the window 4 to the x position of window 2 to determine the position.

0 + 384 = 384 is the starting position for window 4. 384 + 384 = 768 for window 6. 768 + 384 = 1152 for window 8. 1152 + 384 = 1536 for window 10. These are also the X positions for windows 5,7,9 and 11 respectively.

<b>a.</b>	- DECIMATOR DESIGN USB Control Panel Version 2.0.7 - D									
File Options										
Available Devices = 1 Scan DMON-16S (VPA00004) Load Defaults Update Firmware										
Status Cor	ntrol Mult	i-View l	ayouts Re	outing L	JMDs	Audio Meter	s Graticules	Colours	GPI S	Setup
<b>Mode</b> 1920	0x1080 ✓	Windo	ws 11	Layout	9 - C	ustom	. ∨ R	ead	Write	Default
Windows	Aspects	UMDs St	tatus Talli	es Mete	rs					
X 1 0 \v 2 0 \v 3 0 \v	Y 0 ↓ 540 ↓ 810 ↓	Width 1920 ¥ 384 ¥ 384 ¥	Height 540 ∨ 270 ∨ 270 ∨	Border X 0 ¥ 0 ¥	Borde 0 0	er Y		1 PB		
4 384 ¥ 5 384 ¥	540 ∨ 810 ∨	384 ¥ 384 ¥	270 ∨ 270 ∨	0 ¥ 0 ¥	0	✓ ✓ ✓	LB 4 LB	6 LB	8 LB	10 LB
6 768 ∨ 7 768 ∨	540 ∨ 810 ∨	384 ∨ 384 ∨	270 ∨ 270 ∨	0 ¥ 0 ¥	0	✓ 3	LB 5 LB	7 LB	9 LB	11 LB
8 1152 ¥ 9 1152 ¥	540 ∨ 810 ∨	384 ¥	270 ¥	0 ~	0	¥	how Border		Show Aspe	ct
10 1536 ¥	540 ¥	384 ¥	270 ¥	0 4	0	*	Show Input A	Aspect 🔘	HD () SI	D
11 1536 ∨	810 ∨	384 ¥	270 ¥	0 ¥	0	✓ Defa	ult SD Output A	Aspect 🔘 4	4:3 () 1	5:9
							Default Ga	p Size <	2 >	Reset All

Now that all the windows are correctly positioned as per the above picture the user can now select how they want the sources aspect to be displayed in each window.

		1 PB		
2 LB	4 LB	6 LB	8 LB	10 LB
3 LB	5 LB	7 LB	9 LB	11 LB
Show E	Border	✓ S	Show Aspe	ct

In the picture above when the show aspect box is checked, each window will display a smaller window inside them indicating how the source will be displayed.

The picture above shows us that currently when the inputs are all HD window one will be displayed as a pillar-box and the remaining images will be letterbox. When a signal is detected it will be displayed as a

16:9 image on a 4:3 window and the background will be black around it as per the settings from the colour tab.

# 12.2 Custom UMD Positioning

Now that the windows are positioned its time to allign the UMDs to their new locations. In this example the UMDs will be positioned to the bottom middle of each window and all UMDs will be of size 16 except for window 1 which is larger and size 32 will be chosen for the text size.

To determine the locations for the UMDs we go by the Formulas:

X = Window's X starting point +  $\frac{\text{Window Width}}{2} - \frac{\text{Size x 16}}{2}$ 

Y = Window's Y starting point + Window Height – Size

	X Starting positon	Y Starting postion
Window 1	0 + (1920/2) - ((32 x 16)/2) = 704	0 + 540 - 32 = 508
Window 2	0 + (384/2) - ((16 x 16)/2) = 64	540 + 270 - 16 = 794
Window 3	0 + (384/2) - ((16 x 16)/2) = 64	810 + 270 - 16 = 1064
Window 4	384 + (384/2) - ((16 x 16)/2) = 448	540 + 270 - 16 = 794
Window 5	384 + (384/2) - ((16 x 16)/2) = 448	810 + 270 - 16 = 1064
Window 6	768 + (384/2) - ((16 x 16)/2) = 832	540 + 270 - 16 = 794
Window 7	768 + (384/2) - ((16 x 16)/2) = 832	810 + 270 - 16 = 1064
Window 8	1152 + (384/2) - ((16 x 16)/2) = 1216	540 + 270 - 16 = 794
Window 9	1152 + 384/2) - ((16 x 16)/2) = 1216	810 + 270 - 16 = 1064
Window 10	1536 + (384/2) - ((16 x 16)/2) = 1600	540 + 270 - 16 = 794
Window 11	1536 + (384/2) - ((16 x 16)/2) = 1600	810 + 270 - 16 = 1064

Table 1.3 UMD Coordinates calculations

After determining the values for the 11 windows our display window should look like the following picture.

🛥 D	ECIMATOR DESIGN USB	Control Panel V	ersion 2.0.7		- 🗆 🗙		
File Options							
Available Devices = 1           Scan         DMON-16S (VPA00004)           Load Defaults         Update Firmware							
Status Control Multi-View	Layouts Routing UMD	Audio Meters	Graticules	Colours	GPI Setup		
Mode 1920x1080 ∨ Wind	lows 11 V Layout 9	Custom	✓ Read	d W	rite Default		
Windows Aspects UMDs	Status Tallies Meters						
X Y Size 1 704 × 508 × 32 × 2 64 × 794 × 16 × 3 64 × 1064 × 16 ×	*			1 PB			
4 448 × 794 × 16 × 15 448 × 1064 × 16 ×		2 LB	4 LB	6 LB	8 LB 10 LB		
6 832 × 794 × 16 × 7 832 × 1064 × 16 ×	•	3 LB	5 LB	7 LB	9 LB 11 LB		
8 1216 × 794 × 16 × 9 1216 × 1064 × 16	•	✓ Sho	w Border	Sho	ow Aspect		
10     1600 ×     794 ×     16     16       11     1600 ×     1064 ×     16     16	× •	Default	Show Input Asp SD Output Asp	oect	) O SD		
			Default Gap S	Size < 2	Reset All		
Read							

# 12.3 Custom Status Positioning

The next step is to relocate the format input status. In this example we will move them to the top left of each window. As the drawing position of each window and box is drawn from the top left first we can use the same co ordinates from the windows tab.

<del></del>		D	ECIMAT	OR DESIG	N USB C	ontrol	Panel V	ersion 2.0.7	7	-	□ ×
File Options											
Available Devices = 1       Scan       DMON-16S (VPA00004)       Load Defaults       Update Firmware											
Status Con	trol Mul	ti-View	Layouts	Routing	UMDs	Audio	Meters	Graticules	Colours	GPI S	Setup
<b>Mode</b> 1920	x1080 v	Win	dows 11	✓ Lay	out 9 - C	ustom		∨ Re	ad	Write	Default
Windows	Aspects	UMDs	Status	Tallies M	eters						
X	γ	Size	_								
1 0 🗸	0 🗸	32	<b>~</b>						1 PB		
2 0 7	540 ¥	16	<b>Y</b>								
3 0 *	810 ♥ 540 ¥	16	¥								
5 384 V	810 ¥	16	* *				2 LB	4 LB	6 LB	8 LB	10 LB
6 768 🗸	540 ∨	16	~								
7 768 ⊻	810 🗸	16	×				3 LB	5 LB	7 LB	9 LB	11 LB
8 1152 ¥	540 ∨	16	¥				L Show	v Border		Show Aspe	
9 1152 ∀	810 ¥	16	<b>~</b>				I 31101	N DOIGEI		snow Aspe	ci i
10 1536 🗸	540 ∨	16	~				4	Show Input A	spect 🔘 l		D
11 1536 ∨	810 ∨	16	¥				Default	SD Output A	spect 🖲 4	4:3 🔾 1	6:9
								Default Gap	Size <	2 >	
											Reset All
						_					

#### 12.4 Custom Tallies Positioning

The next step is to relocate the box tallies for each window, in this example we will move them to the bottom right of each window. As window 1 is the largest we will increase the size of that tally box to 64 to compensate. The size box indicates the size of each of the 4 tally boxes and so when set at size 64 this means the total box size is 64 high and 256 pixels wide.

Each tally box is a rectangler and divided into 4 boxes for the 4 different colour tallies that can be displayed, which are green, red, blue and yellow respectively.



To determine the location of each tally box we take the bottom right corner location of each window and subtract the size of the tallybox to get the draw location of the tallybox.

	X Starting positon	Y Starting postion
Window 1	1920 - 256 = 1664	(1080/2) - 64 = 476
Window 2	384 - 64 = 320	540 + 270 - 16 = 794
Window 3	384 - 64 = 320	810 + 270 - 16 = 1064
Window 4	768 - 64 = 704	540 + 270 – 16 = 794
Window 5	768 - 64 = 704	810 + 270 - 16 = 1064
Window 6	1152 - 64 = 1088	540 + 270 - 16 = 794
Window 7	1152 - 64 = 1088	810 + 270 - 16 = 1064
Window 8	1536 - 64 = 1472	540 + 270 - 16 = 794
Window 9	1536 - 64 = 1472	810 + 270 - 16 = 1064
Window 10	1920 - 64 = 1856	540 + 270 - 16 = 794
Window 11	1920 - 64 = 1856	810 + 270 - 16 = 1064

#### Table 1.4 Tally Box Calculations

The Tallies window should now resemble the image below.



#### 12.5 Custom Audio Meters Positioning

The next step is to relocate the Audio meters for the DMON-16S, in this example we will position them to the left and right of each window. When positioning the audio meters we must take note that each window has 2 groups of 8 channels to display and to avoid misplacing the left and right in different windows, they are both locked to the same y axis co ordinates.

Each set of 8 channels is drawn from the top left corner for the first 8 channels and from the top right corner for the next 8 channels. With this information at hand we can then use the co ordinates of each window from the windows tab to use for the Left X cordinate and Y co ordinate for each window. To determine the Right X co ordinates we use the Left X co ordinates add the window width and subtract 1 pixel to determine the location.

Due to the size of the windows we can increase the sizes of the audio meters in this example window 1 audio meters are made 400 pixels high and slightly larger and window 2-11 audiometers are increased to 250 pixels high to fit inside each window.

DECIMATOR DESIGN USB Control Panel Version 2.0.7								
File Options								
Available Devices = 1 Scan DMON-16S (VPA00004)  Load Defaults Update Firmware Update Firmware Www.decimator.com								
Status Control Multi-View	Layouts Routing UMDs Aud	io Meters Graticules Colours GPI Setup						
Mode 1920x1080 v Wind	lows 11 v Layout 9 - Custom	✓ Read Write Default						
Windows Aspects UMDs	Status Tallies Meters							
Left X         Right X         Y           1         0         1919         70           2         0         380         540           3         0         380         810           4         384         764         540           5         384         764         810           6         768         1148         540           7         768         1148         810           8         1152         1532         540           9         1525         1532         810	Bar Width       Height         10 ×       400 ×         4 ×       250 ×         4 ×       250 ×         4 ×       250 ×         4 ×       250 ×         4 ×       250 ×         4 ×       250 ×         4 ×       250 ×         4 ×       250 ×         4 ×       250 ×         4 ×       250 ×         4 ×       250 ×         4 ×       250 ×	1 PB       2 LB     4 LB       6 LB     8 LB       10 LB       3 LB     5 LB       7 LB     9 LB       11 LB       Image: Show Border       Show Aspect						
10 1536 V 1916 V 540 V 11 1536 V 1916 V 810 V		Default SD Output Aspect  4:3  16:9 Default Gap Size  Reset All						

Now the Audio meters look like the preview window above but they still need one more adjustment as we need to take into account the format status text obstructing the audio meters. If the user plans to not show the format status text for longer then 5 seconds or not at all then the next step would be disregarded. For the purpose of this example we will have it appear always on.

As window 1 is not clashing it is ignored and windows 2-11 will be modified. Looking at the status tab we see the text is 16 pixels high so the Y position of each window must have 16 added on to each number, but first we check to see if moving each set of Audio meters down 16 pixels wont cause any conflicts with each other. Going by the formula window height – Audio meter height – 16 which is 270 - 250 - 16 = 4 we see that there is a gap of 4 pixels and there will be no clashs.

DECIMATOR DESIGN USB Control Panel Version 2.0.7							
File Options							
Available Devices = 1         Scan       DMON-16S (VPA00004)         Load Defaults       Update Firmware         Update Firmware       www.decimator.com							
Status Contr	ol Multi-View	Layouts R	outing UMDs	Audio Meters	Graticules	Colours	GPI Setup
Mode 1920x1080 v Windows 11 v Layout 9 - Custom v Read Write Default							
Windows As	spects UMDs	Status Tall	ies Meters				
Left X 1 0 ~ 2 0 ~ 3 0 ~ 4 384 ~ 5 384 ~ 6 768 ~ 7 768 ~ 8 1152 ~ 9 1152 ~ 10 1536 ~ 11 1536 ~	Right X         Y           1919 ×         70           380 ×         540           380 ×         810           764 ×         810           1148 ×         810           1532 ×         540           1916 ×         810	Bar Width       V     10 ×       V     4 ×       V     4 ×       V     4 ×       V     4 ×       V     4 ×       V     4 ×       V     4 ×       V     4 ×       V     4 ×       V     4 ×       V     4 ×       V     4 ×       V     4 ×       V     4 ×	Height         400       ~         250       ~         250       ~         250       ~         250       ~         250       ~         250       ~         250       ~         250       ~         250       ~         250       ~         250       ~         250       ~         250       ~         250       ~         250       ~	2 LB 3 LB ✓ Show Spefault	4 LB 5 LB v Border Show Input As SD Output As Default Gap	1 PB 6 LB 7 LB Sipect • H spect • 4: Size <	8 LB     10 LB       9 LB     11 LB       how Aspect       D     SD       :3     16:9       2
							Reset All

The final touch to the layout we change the background colour to red to make the windows stand out in the colours tab and we change the name of each UMD to window 1, window 2 etc in the UMDs tab.

Here we are satisfied with the Layout that was designed and so now we click the Write button and download the layout into the DMON-16S memory. All Layouts are saved to the DMON-16S, if at any time the user needs to change the layout they can connect the device to their computer; and using the control panel when they select the layout that they require, the UCP will load the parameters from the DMON-16S memory.

When the Layout has been written to memory and the user wishes to see this layout the user must go to the control panel and set the format to a resolution that is 1920 x 1080 and set Multi-viewer Number of Windows to 11 and set the layout to 9 in order for the DMON-16S to output this unique layout. The final image of the Multi-viewer should now resemble the image below.

