DMON-16SL

1 to 16 Channel (3G/HD/SD)-SDI Multi-Viewer with HDMI Output

Operating Manual for Firmware Version 1.2

Introduction

Thank you for purchasing the DMON-16SL 16 Channel (3G/HD/SD)-SDI Multi-Viewer with HDMI and SDI outputs. The DMON-16SL is a truly portable converter, which incorporates our new easy to use LCD and button control system. This gives you easy access to most 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-16SL features the following:
- Low cost miniature (3G/HD/SD)-SDI 1 to 16 channel Multi-Viewer
- Custom Layouts with various standard layouts
- 16 Character UMD overlay per window with individual enables, custom positioning and size
- Audio ID overlay
- Load and restore Custom Layouts
- Fast switching between inputs using Full-Screen scaling
- Selectable output format in both Full-Screen and Multi-Viewer mode
- Low latency buffering for each input allowing non-synchronous inputs
- HDMI output
- 16 x (3G/HD/SD)-SDI inputs with auto detection (26 Formats supported in total)
- Each window is independent of the others, allowing any 3G/HD/SD format of any frame rate to be displayed simultaneously
- Supports both 3G level A and B on the inputs
- 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 the HDMI output
- The DMON-16SL is a truly portable converter that incorporates our new easy to use LCD and button control system. This gives you easy access to most of the amazing features without using complicated LED/button control, dip switches or having to carry around a computer to change a simple setting.
- This unit also includes:
    - USB port for control and firmware updates
    - Heavy duty metal box
    - Metal Thread Locking DC Power Socket
    - Power Supply, HDMI Cable and USB Cable

Main Menus

Upon power up the unit will start in the Main Menu pointing to Input Status.
The Main Menus are:
1. Input Status
2. Control
3. Routing
4. Colours
5. Setup

Press the < and > buttons to move left or right through the menus.
To enter into a menu press the ENTER button.

Notes:
1. Defaults are highlighted in yellow.
2. When an option is changed, a highlighted S will appear in the top right of the LCD screen and will disappear when the options are saved after 10 seconds. Avoid powering down the unit during this time.
3. You can always return to the Main Menu by pressing the BACK button twice.
4. As you move through the menus changing parameters, they will be instantly applied to the output signal.

Input Status: (Has 4 states)

When pressing enter in the Input Status menu, will cycle between the status for input 1-4, 5-8 and 9-12.

(Default)

1:3GA 1080p59.94	←Current format on SDI Input 1
2:HD 720p50	←Current format on SDI Input 2
3:SD 480i59.94	←Current format on SDI Input 3
4:HD 1080i59.94	←Current format on SDI Input 4

(After pressing ENTER once)

5:3GA 1080p60	←Current format on SDI Input 5
6:3GB 1080p50	←Current format on SDI Input 6
7:3GA 1080p60	←Current format on SDI Input 7
8:3GB 1080p59.94	←Current format on SDI Input 8

(After pressing ENTER twice)

9:HD 1080p24	←Current format on SDI Input 9
10:HD 720p50	←Current format on SDI Input 10
11:SD 480i59.94	←Current format on SDI Input 11
12:HD 1080i59.94	←Current format on SDI Input 12

(After pressing ENTER three times)

13:SD 576i50	←Current format on SDI Input 13
14:HD 720p24	←Current format on SDI Input 14
15:SD 480i59.94	←Current format on SDI Input 15
163GB 1080p59.94	←Current format on SDI Input 16

Control: (Has SUB-MENUs)

`Control`	←Main Menu
`HDMI Output Type`	←Sub Menu
`HDMI RGB444 2C`	←Parameter Window

When highlighted in the Main Menu, press the ENTER button to enter this sub-menu.
Press the < and > buttons to move left or right respectively through the 10 menus below and press the BACK button to go back to the Main Menu when finished.
The current value for each Sub Menu is shown in the Parameter Window.

1. Control / HDMI Output Type (Parameter)
This is the current HDMI output type for output 1.
When the sub menu is highlighted, press ENTER to toggle through the following types:

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 Audio
4.)	HDMI YCbCr422 2C	←HDMI YCbCr 4:2:2 with 2-Channels of Audio
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 Audio

2. Control / Output Select (Parameter)

This is the current source for the HDMI and SDI outputs.

When the sub menu is highlighted, press the ENTER button to enter this sub-menu.

Press the < and > buttons to move left or right through the following sources:

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

3. Control / MV Output Format (Parameter)

This is the current output format for the Multi-Viewer.

When the sub menu is highlighted, press the ENTER button to enter this sub-menu.

Press the < and > buttons to move left or right through the 26 video formats listed below and the BACK button to leave this SUB-MENU.

1. SD 720x487i59.94	8. HD 1920x1080p50	15. HD 1280x720p59.94
2. SD 720x576i50	9. HD 1920x1080p30	16. HD 1280x720p50
3. HD 1920x1080i60	10. HD 1920x1080p29.97	17. HD 1280x720p30
4. HD 1920x1080i59.94	11. HD 1920x1080p25	18. HD 1280x720p29.97
5. HD 1920x1080i50	12. HD 1920x1080p24	19. HD 1280x720p25
6. HD 1920x1080p60	13. HD 1920x1080p23.98	
7. HD 1920x1080p59.94	14. HD 1280x720p60	

4. Control / MV Windows (Parameter)

This is the current number of windows shown on the multi-view output.

When the sub menu is highlighted, press the ENTER button to enter this sub-menu.

Press the < and > buttons to move left or right through the number of windows displayed from 1 to 16.

Default Windows displayed is 16 windows.

5. <u>**Control**</u> **/** <u>**MV Layout**</u> **(Parameter)**

This is the current layout of the multi-viewer, there are 32 layouts selectable per format and multi-viewer window number. 10 of these are predefined layouts. When the sub menu is highlighted, press the ENTER button to enter this sub-menu.

Press the < and > buttons to move left or right through the following layouts:

1.) 100%
2.) 100% with Border
3.) 90%
4.) 90% with Border
5.) 100% with Gap
6.) 100% with Border + Gap
7.) 90% with Gap
8.) 90% with Border + Gap
9 to 30) Custom
31.) Top to Bottom
32.) Left to Right

Notes:

For every 'Format' and 'Number of Windows' there are 32 layouts.

E.g. for a 1920x1080i60 format showing 16 windows there are 32 layouts tied to this output, if the number of windows is changed to 15 there are also 32 separate layouts attached to this setting.

Full Screen Pass through will also use the selected layout for 1 window.

6. <u>**Control**</u> **/** <u>**MV Audio Source**</u> **(Parameter)**

This selects which window the audio is extracted from for the Multi-Viewer output.

When the sub menu is highlighted, press the ENTER button to enter this sub-menu.

Press the < and > buttons to move left or right through the following sources:

1.) Window 1
2.) Window 2
3.) Window 3
4.) Window 4
5.) Window 5
6.) Window 6
7.) Window 7
8.) Window 8
9.) Window 9
10.) Window 10
11.) Window 11
12.) Window 12
13.) Window 13
14.) Window 14
15.) Window 15
16.) Window 16

7. <u>**Control**</u> **/** <u>**MV Reference**</u> **(Parameter)**

This is reference for the Multi-Viewer.

When the sub menu is highlighted, press ENTER to toggle through the following sources:

1.) Window 1
2.) Free-Run

8. Control / Pass Scaled (Parameter)

When the Output Select is changed to window 1 to 16, this parameter determines whether the output is scaled or passed through unchanged from the selected window. When the output is scaled, the selected layout for window 1 is used. When the sub menu is highlighted, press ENTER to toggle through the following selections:

1.) Yes
2.) No

9. Control / Format Status (Parameter)

When an input is detected the DMON-16SL will display the format detected in the top left of each window by default unless the location has been modified via the USB Control Panel. When the sub menu is highlighted, press ENTER to toggle through the following selections:

1.) Show for 5 sec
2.) Show Always
3.) Off

10. Control / Audio Source ID (Parameter)

The Audio Source Identification icon will appear when selecting which window the audio will be passed from 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. When the sub menu is highlighted, press ENTER to toggle through the following selections:

1.) Show for 5 sec
2.) Show Always
3.) Off

Routing: (Has SUB-MENUs)

```
Routing
Window 1 Source
Input 1
```
←Main Menu
←Sub Menu
←Parameter Window

When highlighted in the Main Menu, press the ENTER button to enter this sub-menu.
Press the < and > buttons to move left or right respectively through the 16 menus below and press the BACK button to go back to the Main Menu when finished.
The current value for each Sub Menu is shown in the Parameter Window.

1. Routing / Window 1 Source (Parameter)

This is the input source for Window 1.
When the sub menu is highlighted, press the ENTER button to enter this sub-menu.
Press the < and > buttons to move left or right through the following sources:

1.) Input 1 (default for Window 1)	9.) Input 9 (default for Window 9)
2.) Input 2 (default for Window 2)	10.) Input 10 (default for Window 10)
3.) Input 3 (default for Window 3)	11.) Input 11 (default for Window 11)
4.) Input 4 (default for Window 4)	12.) Input 12 (default for Window 12)
5.) Input 5 (default for Window 5)	13.) Input 13 (default for Window 13)
6.) Input 6 (default for Window 6)	14.) Input 14 (default for Window 14)
7.) Input 7 (default for Window 7)	15.) Input 15 (default for Window 15)
8.) Input 8 (default for Window 8)	16.) Input 16 (default for Window 16)

Please note that Windows 2 to 16 sources are the same as above.

Colours: (Has SUB-MENUs)

```
Colours          ←Main Menu
Background Color  ←Sub Menu
Black            ←Parameter Window
```

When highlighted in the Main Menu, press the ENTER button to enter this sub-menu.
Press the < and > buttons to move left or right respectively through the 6 menus below and press the BACK button to go back to the Main Menu when finished.
The current value for each Sub Menu is shown in the Parameter Window.

1. Colours / Background Colour (Parameter)
This is background colour for the Multi-Viewer.
When the sub menu is highlighted, press the ENTER button to enter this sub-menu.
Press the < and > buttons to move left or right through the following colours:
1.) Black
2.) Blue
3.) Green
4.) Cyan
5.) Red
6.) Magenta
7.) Yellow
8.) White

2. Colours / Border Colour (Parameter)
This is border colour for the Multi-Viewer.
When the sub menu is highlighted, press the ENTER button to enter this sub-menu.
Press the < and > buttons to move left or right through the following colours:
1.) Black
2.) Blue
3.) Green
4.) Cyan
5.) Red
6.) Magenta
7.) Yellow
8.) White

3. Colours / UMD Foreground (Parameter)
This is the UMD colour and transparency setting for the text.
When the sub menu is highlighted, press the ENTER button to enter this sub-menu.
Press the < and > buttons to move left or right through the following colours:

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%)	

4. Colours / UMD Background (Parameter)

This is the UMD colour and transparency setting for the background of the UMDs.

When the sub menu is highlighted, press the ENTER button to enter this sub-menu.

Press the < and > buttons to move left or right through the following colours:

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%)	

5. Colours / Format ForeGrnd (Parameter)

This is the Status Format text colour and transparency setting.

When the sub menu is highlighted, press the ENTER button to enter this sub-menu.

Press the < and > buttons to move left or right through the following colours:

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%)	

6. Colours / Format BackGrnd (Parameter)

This is the Status Format text background colour and transparency setting.

When the sub menu is highlighted, press the ENTER button to enter this sub-menu.

Press the < and > buttons to move left or right through the following colours:

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%)	

UMDs: (Has SUB-MENUs)

```
UMDs          ←Main Menu
All On        ←Sub Menu
              ←Parameter Window
```

When highlighted in the Main Menu, press the ENTER button to enter this sub-menu.

Press the < and > buttons to move left or right respectively through the 3 menus below and press the BACK button to go back to the Main Menu when finished.

The current value for each Sub Menu is shown in the Parameter Window, unless it is an action Sub Menu.

1. UMDs / All On (Action)
Pressing ENTER when this submenu is selected will turn all UMD overlays on.

2. UMDs / All Off (Action)
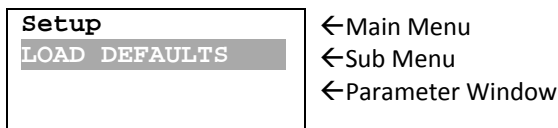Pressing ENTER when this submenu is selected will turn all UMD overlays off.

3. UMDs / UMD Justify (Parameter)
This parameter determines whether the text is centred, left or right justified.
When the sub menu is highlighted, press ENTER to toggle through the following options:
    1.) Centre
    2.) Left
    3.) Right

Setup: (Has SUB-MENUs)

```
Setup
LOAD DEFAULTS
```
←Main Menu
←Sub Menu
←Parameter Window

When highlighted in the Main Menu, press the ENTER button to enter this sub-menu.
Press the < and > buttons to move left or right respectively through the 6 menus below and press the BACK button to go back to the Main Menu when finished.
The current value for each Sub Menu is shown in the Parameter Window, unless it is an action Sub Menu.

1. SETUP / LOAD DEFAULTS (Action)
When highlighted in the Menu Window, press the ENTER button to load the default settings. The device will be reset to the Main Menu Input Status.

2. SETUP / LCD OFF TIME (Parameter)
This is the time taken for the LCD light to turn off after the last button press.
When the sub menu is highlighted, press ENTER to toggle through the following times:
    4.) 5 seconds
    5.) 15 seconds
    6.) 30 seconds
    7.) 1 minute
    8.) 5 minutes
    9.) 10 minutes
    10.) 30 minutes
    11.) Never

3. SETUP / BACK2STATUS TIME (Parameter)
This is the time before the main menu is returned to Input Status after the last button press.
When the sub menu is highlighted, press ENTER to toggle through the following times:
    1.) 5 seconds
    2.) 15 seconds
    3.) 30 seconds
    4.) 1 minute
    5.) 5 minutes
    6.) 30 minutes
    7.) Never

4. **SETUP /** <u>AUTO SAVE</u> **(Parameter)**

This parameter will determine if any changes will be saved to memory when changes are made.

When the sub menu is highlighted, press ENTER to toggle through the following selections:

    1.) <mark>Yes</mark>

    2.) No

5. **SETUP /** <u>Demo Cycle</u> **(Parameter)**

The Demo cycle setting is used for cycling through multiple layouts, windows or inputs on a time delay. When the sub menu is highlighted, press the ENTER button to enter this sub-menu.

Press the < and > buttons to move left or right through the following cycle types:

    1.) <mark>None</mark>

    2.) Output Select

    3.) MV Windows

    4.) MV Layouts

Note: The parameter will only be updated when leaving this sub-menu.

6. **SETUP /** <u>Demo Cycle Time</u> **(Parameter)**

The Demo Cycle Time determines the amount of time to elapse before cycling to the next item. When the sub menu is highlighted, press the ENTER button to enter this sub-menu.

Press the < and > buttons to move left or right through the time until the unit moves to the next item in the cycle.

Default time is 10 Seconds, Maximum time is 256 Seconds

Note: The parameter will only be updated when leaving this sub-menu.

SERVICE WARRANTY

Decimator Design warrants that this product will be free from defects in materials and workmanship for a period of 36 months from the date of purchase. If this product proves to be defective within this warranty period, Decimator Design, at its discretion, will either repair the defective product without charge for parts and labour, or will provide a replacement product in exchange for the defective product.

In order to service under this warranty, you the Customer, must notify Decimator Design of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. The Customer shall be responsible for packaging and shipping the defective product to a designated service centre nominated by Decimator Design, with shipping charges prepaid. Decimator Design shall pay for the return of the product to the Customer if the shipment is to a location within the country in which the Decimator Design service centre is located. The Customer shall be responsible for paying all shipping charges, insurance, duties, taxes, and any other charges for products returned to any other location.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. Decimator Design shall not be obligated to furnish service under this warranty a) to repair damage resulting from attempts by personnel other than Decimator Design representatives to install, repair or service the product, b) to repair damage resulting from improper use or connection to incompatible equipment, c) to repair any damage or malfunction caused by the use of non-Decimator Design parts or supplies, or d) to service a product that has been modified or integrated with other products when the effect of such a modification or integration increases the time of difficulty of servicing the product.