MD-CROSS V2

HDMI / (3G/HD/SD)-SDI CROSS CONVERTER
with Scaling and Frame Rate Conversion

OPERATING MANUAL

Introduction

Thank you for purchasing the MD-CROSS HDMI / (3G/HD/SD)-SDI Cross Converter.

The MD-CROSS 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 MD-CROSS features the following four modes:
1. HDMI to SDI while simultaneously converting SDI to HDMI
2. HDMI to HDMI while simultaneously converting SDI to SDI
3. HDMI to SDI and HDMI
4. SDI to SDI and HDMI

The MD-CROSS includes the same Down Up Cross Converter from our multi-award winning MD-DUCC, allowing either the HDMI or SDI input to be scaled and/or frame rate converted to the required standard.

The MD-CROSS includes the Professional 3G/HD/SD Test Pattern Generator featuring:
- 26 Selectable Output Formats
- 54 Test Patterns including Luma and Chroma Zone-plates
- Audio Test Tone Generator

This unit also includes:
- Support for both 3G level A and B on the input and output
- Horizontal and/or Vertical image flipping via the scaler
- 2 x (3G/HD/SD)-SDI Active Loop-Through or Additional Output
- Full 16-Channel Audio Metering Overlays
- Adjustable Safe Title and Safe Action Overlays and static Centre Cross
- Text Overlays
- USB port for control and firmware updates
- New Metal Thread Locking DC Power Socket
- Power Supply, HDMI Cable and USB Cable

Flow Chart
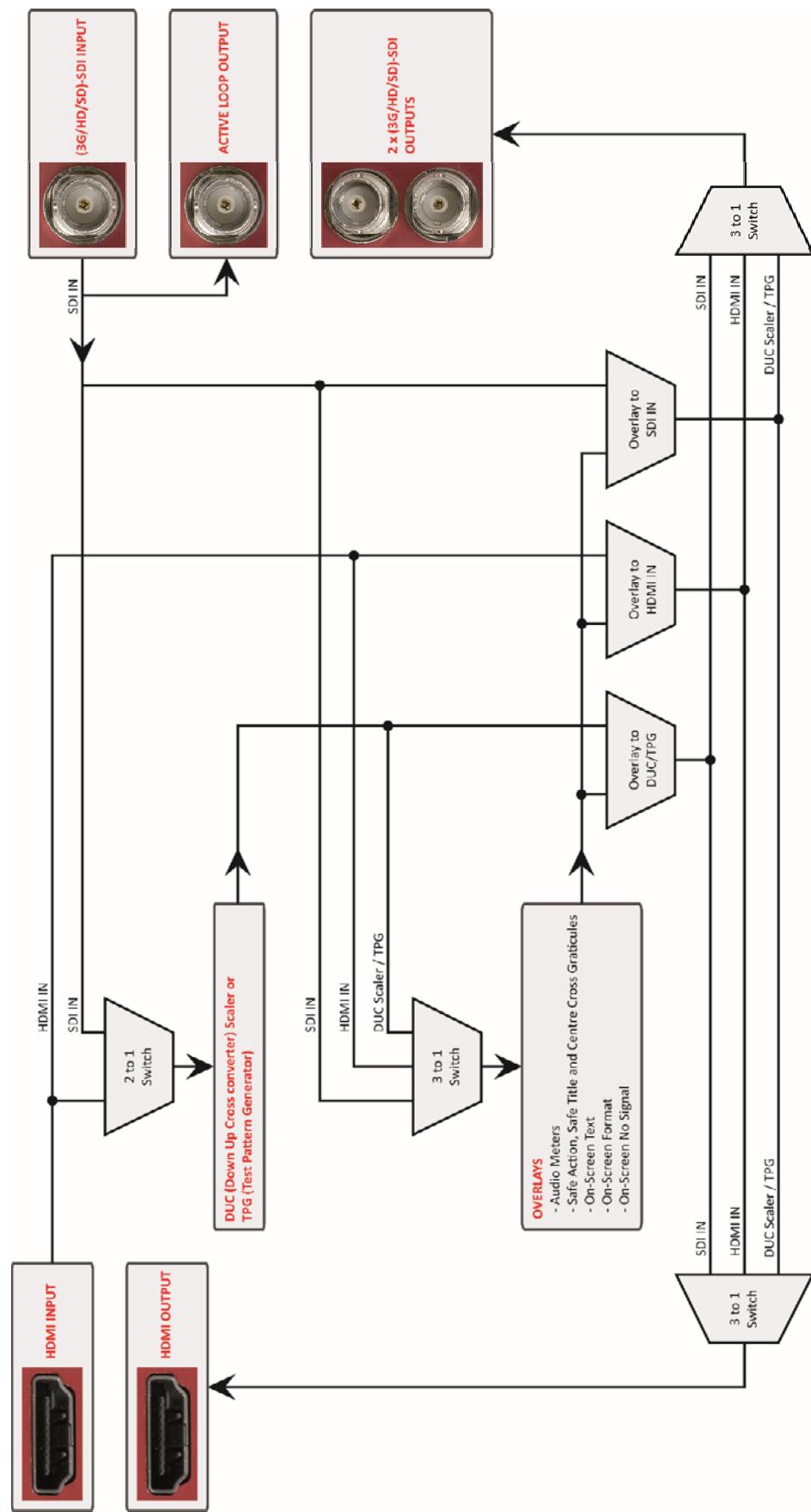
Main Menus

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. Scaling/TPG
4. Audio
5. Audio Meters
6. Graticules
7. Text Overlays
8. 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 unit.
5.) Scaler and DUC (Down Up Cross conversion) are used interchangeably in the MENUs.

Input Status: (Has no SUB-MENUs)

```
Input Status      ←Main Menu
S:3G 1080p59.94   ←Current SDI input format
H:ED 480p59.94    ←Current HDMI input format
D:HD 1080i59.94   ←Current Scaling output format
```

The input shows the current SDI and HDMI input status as well as the DUC output format status.

Control: (Has SUB-MENUs)

```
Control           ←Main Menu
SDI OUT SOURCE    ←Sub Menu
SDI IN            ←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 / SDI OUT SOURCE (Parameter)
This is the current source for the SDI output.
When the sub menu is highlighted, press ENTER to toggle through the following sources:

1.) SDI IN
2.) HDMI IN
3.) Scaler/TPG   ←Output from Scaler

2. Control / HDMI OUT SOURCE (Parameter)
This is the current source for the HDMI output.
When the sub menu is highlighted, press ENTER to toggle through the following sources:

1.) SDI IN
2.) HDMI IN
3.) Scaler/TPG   ←Output from Scaler

3. Control / HDMI OUT TYPE (Parameter)

This is the current HDMI output type.

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

4. Control / DUC/TPG Source (Parameter)

This is the current source for both the Scaler and test pattern generator.

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

1.) SDI IN   2.) HDMI IN

5. Control / DUC/TPG REF (Parameter)

This is the current reference for both the Scaler and test pattern generator.

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

1.) SOURCE
2.) FREE-RUN ←Free run without a reference

6. Control / APPLY OVERLAY TO (Parameter)

This is the video source that the overlays are applied to.

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

1.) SDI IN
2.) HDMI IN
3.) Scaler/TPG ←Output from Scaler
4.) None

7. Control / LCD OFF TIME (Parameter)

This is 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:

1.) 5 seconds   5.) 5 minutes
2.) 15 seconds   6.) 10 minutes
3.) 30 seconds   7.) 30 minutes
4.) 1 minute   8.) Never

8. Control / BACK2STATUS TIME (Parameter)

This is 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   5.) 5 minutes
2.) 15 seconds   6.) 10 minutes
3.) 30 seconds   7.) 30 minutes
4.) 1 minute   8.) Never

9. Control / 3G Output is B (Parameter)

This determines if the 3G-SDI output level is B instead of A.

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

1.) No   2.) Yes

10. Control / Output 1 is loop (Parameter)

This determines if output 1 is an active loop copy of input 1 or the same as output 2.

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

1.) No   2.) Yes

Scaling/TPG: (Has SUB-MENUs)

```
Scaling/TPG          ←Main Menu
Test Pattern On      ←Sub Menu
No                   ←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 13 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. Scaling/TPG / Test Pattern On (Parameter)
This indicates if the test pattern generator is on or off.
When the sub menu is highlighted, press ENTER to toggle through the following selections:
   1.) No   2.) Yes

2. Scaling/TPG / Pattern (Has SUB-MENU with parameter)
This is the current test pattern.
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 54 test patterns listed below and the BACK button to leave this SUB-MENU.

1. SMPTE HD Bars	19. Convergence	37. Y Moving Down Y ZP
2. Bars 100/0/100/0	20. Tartan Bars	38. Y Moving Up XY ZP
3. Bars 100/0/75/0	21. 1 Field in 8 White	39. Y Moving Down XY ZP
4. Bars 75/0/75/0	22. White 100%	40. Y Static C ZP
5. Bars 100% & Red	23. White 75%	41. Y Moving In C ZP
6. SMPTE EG 1 Bars	24. Black	42. Y Moving Out C ZP
7. Path Equalizer & PLL	25. Red	43. C Static X ZP/L
8. Square on 4:3 Mon.	26. Yellow	44. C Static X ZP/H
9. Square on 16:9 Mon.	27. Green	45. C Static Y ZP
10. 5 Step Y Staircase	28. Blue	46. C Moving Left X ZP
11. 5 Step C Staircase	29. Magenta	47. C Moving Right X ZP
12. Y Sweep	30. Cyan	48. C Moving Up Y ZP
13. C Sweep	31. Y Static X ZP/L	49. C Moving Down Y ZP
14. Y Multiburst	32. Y Static X ZP/H	50. C Moving Up XY ZP
15. C Multiburst	33. Y Static Y ZP	51. C Moving Down XY ZP
16. Y Ramp	34. Y Moving Left X ZP	52. C Static C ZP
17. C Ramp	35. Y Moving Right X ZP	53. C Moving In C ZP
18. Pluge	36. Y Moving Up Y ZP	54. C Moving Out C ZP

3. Scaling/TPG / Output Format (Has SUB-MENU with parameter)
This is the current output format for the Scaler and Test Pattern Generator.
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 28 video formats listed below and the BACK button to leave this SUB-MENU.

1. SD 720x487i59.94	11. HD 1920x1080psf24	21. HD 1280x720p30
2. SD 720x576i50	12. HD 1920x1080psf23.98	22. HD 1280x720p29.97
3. ED 720x487p59.94	13. HD 1920x1080p30	23. HD 1280x720p25
4. ED 720x576p50	14. HD 1920x1080p29.97	24. HD 1280x720p24
5. HD 1920x1080i60	15. HD 1920x1080p25	25. HD 1280x720p23.98
6. HD 1920x1080i59.94	16. HD 1920x1080p24	26. 3G 1920x1080p60
7. HD 1920x1080i50	17. HD 1920x1080p23.98	27. 3G 1920x1080p59.94
8. HD 1920x1080psf30	18. HD 1280x720p60	28. 3G 1920x1080p50
9. HD 1920x1080psf29.97	19. HD 1280x720p59.94	
10. HD 1920x1080psf25	20. HD 1280x720p50	

4. Scaling/TPG / SD2SD ASPECT (Has SUB-MENU with parameter)

This is the aspect ratio conversion used when the Scaler is converting SD to SD.

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 31 aspect ratio conversions listed below and the BACK button to leave this SUB-MENU.

1. ANAMORPHIC (IN and OUT have same aspect)	17. IN=14:9 with 4:3 PB,OUT=16:9 with 4:3 ZM
2. IN=16:9 FS,OUT=14:9 with 16:9 LB	18. IN=14:9 with 4:3 PB,OUT=14:9 with 4:3 ZM
3. IN=16:9 FS,OUT=4:3 with 16:9 LB	19. IN=14:9 with 16:9 LB,OUT=4:3 with 16:9 LB
4. IN=16:9 FS,OUT=14:9 with 16:9 CC	20. IN=14:9 with 16:9 LB,OUT=14:9 with 16:9 CC
5. IN=16:9 FS,OUT=4:3 with 16:9 CC	21. IN=14:9 with 16:9 LB,OUT=4:3 with 16:9 CC
6. IN=16:9 with 14:9 PB,OUT=4:3 with 14:9 LB	22. IN=4:3 FS,OUT=16:9 with 4:3 PB
7. IN=16:9 with 14:9 PB,OUT=4:3 with 14:9 CC	23. IN=4:3 FS,OUT=14:9 with 4:3 PB
8. IN=16:9 with 14:9 PB,OUT=16:9 with 14:9 ZM	24. IN=4:3 FS,OUT=16:9 with 4:3 ZM
9. IN=16:9 with 4:3 PB,OUT=14:9 with 4:3 PB	25. IN=4:3 FS,OUT=14:9 with 4:3 ZM
10. IN=16:9 with 4:3 PB,OUT=16:9 with 4:3 ZM	26. IN=4:3 with 16:9 LB,OUT=14:9 with 16:9 LB
11. IN=16:9 with 4:3 PB,OUT=14:9 with 4:3 ZM	27. IN=4:3 with 16:9 LB,OUT=14:9 with 16:9 CC
12. IN=14:9 FS,OUT=16:9 with 14:9 PB	28. IN=4:3 with 16:9 LB,OUT=4:3 with 16:9 CC
13. IN=14:9 FS,OUT=4:3 with 14:9 LB	29. IN=4:3 with 14:9 LB,OUT=16:9 with 14:9 PB
14. IN=14:9 FS,OUT=4:3 with 14:9 CC	30. IN=4:3 with 14:9 LB,OUT=4:3 with 14:9 CC
15. IN=14:9 FS,OUT=16:9 with 14:9 ZM	31. IN=4:3 with 14:9 LB,OUT=16:9 with 14:9 ZM
16. IN=14:9 with 4:3 PB,OUT=16:9 with 4:3 PB	

5. Scaling/TPG / SD2HD ASPECT (Has SUB-MENU with parameter)

This is the aspect ratio conversion used when the Scaler is converting SD to HD.

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 11 aspect ratio conversions listed below and the BACK button to leave this SUB-MENU.

1. ANAMORPHIC (IN and OUT have same aspect)	7. IN=14:9 with 4:3 PB,OUT=16:9 with 4:3 ZM
2. IN=16:9 with 14:9 PB,OUT=16:9 with 14:9 ZM	8. IN=4:3 FS,OUT=16:9 with 4:3 PB
3. IN=16:9 with 4:3 PB,OUT=16:9 with 4:3 ZM	9. IN=4:3 FS,OUT=16:9 with 4:3 ZM
4. IN=14:9 FS,OUT=16:9 with 14:9 PB	10. IN=4:3 with 14:9 LB,OUT=16:9 with 14:9 PB
5. IN=14:9 FS,OUT=16:9 with 14:9 ZM	11. IN=4:3 with 14:9 LB,OUT=16:9 with 14:9 ZM
6. IN=14:9 with 4:3 PB,OUT=16:9 with 4:3 PB	

6. Scaling/TPG / HD2SD ASPECT (Has SUB-MENU with parameter)

This is the aspect ratio conversion used when the Scaler is converting HD to SD.

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 11 aspect ratio conversions listed below and the BACK button to leave this SUB-MENU.

1. ANAMORPHIC (IN and OUT have same aspect)	7. IN=16:9 with 14:9 PB,OUT=4:3 with 14:9 CC
2. IN=16:9 FS,OUT=14:9 with 16:9 LB	8. IN=16:9 with 14:9 PB,OUT=16:9 with 14:9 ZM
3. IN=16:9 FS,OUT=4:3 with 16:9 LB	9. IN=16:9 with 4:3 PB,OUT=14:9 with 4:3 PB
4. IN=16:9 FS,OUT=14:9 with 16:9 CC	10. IN=16:9 with 4:3 PB,OUT=16:9 with 4:3 ZM
5. IN=16:9 FS,OUT=4:3 with 16:9 CC	11. IN=16:9 with 4:3 PB,OUT=14:9 with 4:3 ZM
6. IN=16:9 with 14:9 PB,OUT=4:3 with 14:9 LB	

7. Scaling/TPG / HD2HD ASPECT (Has SUB-MENU with parameter)

This is the aspect ratio conversion used when the Scaler is converting HD to HD.

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 3 aspect ratio conversions listed below and the BACK button to leave this SUB-MENU.

    1.)   ANAMORPHIC (IN and OUT have same aspect)

    2.)   IN=16:9 with 14:9 PB,OUT=16:9 with 14:9 ZM

    3.)   IN=16:9 with 4:3 PB,OUT=16:9 with 4:3 ZM

8. Scaling/TPG / 1080i=1080psf (Parameter)

This indicates if 1080i is recognised as 1080psf instead of 1080i. As 1080i and 1080psf have the same format structure.

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

1.) No   ←1080i input = 1080i
2.) Yes   ←1080i input = 1080psf

9. Scaling/TPG / Horz Filter (Parameter)

This indicates the level of the horizontal anti-aliasing filter prior to the Scaler.

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

1.) Auto   4.) Medium
2.) None   5.) High
3.) Low

10. Scaling/TPG / SDI Out Test Aud (Parameter)

This selects the test tone generator on the SDI output.

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

1.) Off
2.) 1kHz Tone
3.) 1kHz Tone / 500Hz Tone / 1kHz Broken Tone / 500Hz Broken Tone
4.) Left = 1kHz Tone, Right = 1kHz Broken Tone

11. Scaling/TPG / HDMI Out Test Au (Parameter)

This selects the test tone generator on the HDMI output.

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

1.) Off
2.) 1kHz Tone
3.) 1kHz Tone / 500Hz Tone / 1kHz Broken Tone / 500Hz Broken Tone
4.) Left = 1kHz Tone, Right = 1kHz Broken Tone

12. Scaling / Horizontal Flip (Parameter)

This flips the image horizontally.

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

3.) No   4.) Yes

13. Scaling / Vertical Flip (Parameter)

This flips the image vertically.

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

1.) No   2.) Yes

Audio: (Has SUB-MENUs)

```
Audio              ←Main Menu
SDI Out Pair 1     ←Sub Menu
Group 1 Pair 1     ←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 12 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.

The following sub menus are available:

1.) SDI Out Pair 1	5.) SDI Out Pair 5	9.) HDMI Out Pair 1
2.) SDI Out Pair 2	6.) SDI Out Pair 6	10.) HDMI Out Pair 2
3.) SDI Out Pair 3	7.) SDI Out Pair 7	11.) HDMI Out Pair 3
4.) SDI Out Pair 4	8.) SDI Out Pair 8	12.) HDMI Out Pair 4

Each sub menu selects the audio pair source for the SDI and HDMI outputs.

Press ENTER to toggle to through the following selections for each sub menu:
1.) Group 1 Pair 1   (default for SDI Out Pair 1 and HDMI Out Pair 1)
2.) Group 1 Pair 2   (default for SDI Out Pair 2 and HDMI Out Pair 2)
3.) Group 2 Pair 1   (default for SDI Out Pair 3 and HDMI Out Pair 3)
4.) Group 2 Pair 2   (default for SDI Out Pair 4 and HDMI Out Pair 4)
5.) Group 3 Pair 1   (default for SDI Out Pair 5)
6.) Group 3 Pair 2   (default for SDI Out Pair 6)
7.) Group 4 Pair 1   (default for SDI Out Pair 7)
8.) Group 4 Pair 2   (default for SDI Out Pair 8)
9.) Off

Audio Meters: (Has SUB-MENUs)
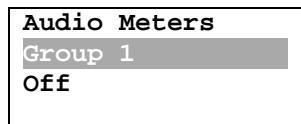
```
Audio Meters        ←Main Menu
Group 1             ←Sub Menu
Off                 ←Parameter Window
```

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. Audio Meter / Group 1 (Parameter)
This enables the audio meters overlay for group 1.
When the sub menu is highlighted, press ENTER to toggle through the following selections:
3.) Off   4.) On

2. Audio Meter / Group 2 (Parameter)
This enables the audio meters overlay for group 2.
When the sub menu is highlighted, press ENTER to toggle through the following selections:
5.) Off   6.) On

3. Audio Meter / Group 3 (Parameter)
This enables the audio meters overlay for group 3.
When the sub menu is highlighted, press ENTER to toggle through the following selections:
7.) Off   8.) On

4. Audio Meter / Group 4 (Parameter)
This enables the audio meters overlay for group 4.
When the sub menu is highlighted, press ENTER to toggle through the following selections:
9.) Off   10.) On

5. Audio Meter / Style (Parameter)
This is the audio meter style.
When the sub menu is highlighted, press ENTER to toggle through the following selections:
1.) Vertical Bars
2.) Horizontal Bars

6. Audio Meter / Combination (Parameter)
This is the combination of either bar or float meters.
When the sub menu is highlighted, press ENTER to toggle through the following selections:
1.) None   3.) Float Only
2.) Bar Only   4.) Bar and Float

7. **Audio Meter / Transparency (Parameter)**
This is the transparency level of the audio meter overlays.
When the sub menu is highlighted, press ENTER to toggle through the following selections:
    1.) 0%   2.) 25%   3.) 50%

8. **Audio Meter / Show Scale (Parameter)**
This indicates if the scale is shown on the audio meter overlays.
When the sub menu is highlighted, press ENTER to toggle through the following selections:
    1.) Off   2.) On

9. **Audio Meter / Bar Scale (Parameter)**
This is the current scale shown on the audio meter overlays.
When the sub menu is highlighted, press ENTER to toggle through the following selections:

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

10. **Audio Meter / Bar Ballistics (Parameter)**
This is the current ballistics applied to the bar audio meter.
When the sub menu is highlighted, press ENTER to toggle through the following selections:
    1.) VU
    2.) IEC1
    3.) IEC2

11. **Audio Meter / Float Ballistics (Parameter)**
This is the current ballistics applied to the float audio meter.
When the sub menu is highlighted, press ENTER to toggle through the following selections:
    1.) VU
    2.) IEC1
    3.) IEC2

12. **Audio Meter / Ref Level (Parameter)**
This is the current audio reference level for the audio meter overlays.
When the sub menu is highlighted, press ENTER to toggle through the following selections:
    1.) -20 dBFS
    2.) -18 dBFS
    3.) -15 dBFS

13. **Audio Meter / Yellow Start (Has SUB-MENU with parameter)**
This is the starting level for the yellow range on the audio meter. The default value is -10dBFS.
When the sub menu is highlighted, press the ENTER button to enter this sub-menu.
Press the < and > buttons to increase and decrease the level respectively from 0 to -100dBFS.
Press the BACK button to leave this SUB-MENU.

14. **Audio Meter / Green Start (Has SUB-MENU with parameter)**
This is the starting level for the green range on the audio meter. The default value is -20dBFS.
When the sub menu is highlighted, press the ENTER button to enter this sub-menu.
Press the < and > buttons to increase and decrease the level respectively from 0 to -100dBFS.
Press the BACK button to leave this SUB-MENU.

15. **Audio Meter / Bar Thickness (Has SUB-MENU with parameter)**
This is the thickness of the audio meter. The default value is 6.
When the sub menu is highlighted, press the ENTER button to enter this sub-menu.
Press the < and > buttons to decrease and increase the thickness respectively from 2 to 24.
Press the BACK button to leave this SUB-MENU.

16. Audio Meter / Margin (Has SUB-MENU with parameter)

This is the distance the audio meters are from the side of the screen. The distance is shown in percentage of the screen resolution. The default value is <mark>5%</mark>.

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

Press the < and > buttons to decrease and increase the thickness respectively from 0% to 25%.

Press the BACK button to leave this SUB-MENU.

Graticules: (Has SUB-MENUs)

```
Graticules          ←Main Menu
Safe Action         ←Sub Menu
Off                 ←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 18 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. Graticules / Safe Action (Parameter)

This enables the safe action graticule overlay.

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

    3.) <mark>Off</mark>   4.) On

2. Graticules / Safe Title (Parameter)

This enables the safe title graticule overlay.

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

    1.) <mark>Off</mark>   2.) On

3. Graticules / Centre Cross (Parameter)

This enables the centre cross graticule overlay.

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

    1.) <mark>Off</mark>   2.) On

4. Graticules / Anamorphic (Action)

When the sub menu is highlighted, press ENTER to sets the graticule aspect to anamorphic.

5. Graticules / 16:9 LB on 4:3 (Action)

When the sub menu is highlighted, press ENTER to sets the graticule aspect to 16:9 Letter-box on a 4:3 Raster

6. Graticules / 4:3 PB on 16:9 (Action)

When the sub menu is highlighted, press ENTER to sets the graticule aspect to 4:3 Pillar-box on a 16:9 Raster

7. Graticules / SA Color (Has SUB-MENU with parameter)

This is the colour of the safe action graticule overlay.

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

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%)	<mark>17. White (Transparent 25%)</mark>	
9. White (Transparent 50%)	18. Black (Transparent 0%)	

8. Graticules / ST Color (Has SUB-MENU with parameter)

This is the colour of the safe title graticule overlay.

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

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%)	

9. Graticules / CC Color (Has SUB-MENU with parameter)

This is the colour of the centre cross graticule overlay.

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

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%)	

10. Graticules / Outside SA Color (Has SUB-MENU with parameter)

This is the colour of the area outside the safe action area.

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

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%)	

11. Graticules / SA Horz Start (Has SUB-MENU with parameter)

This is the horizontal start position of the safe action graticule overlay. The default value is 5%.

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

Press the < and > buttons to decrease and increase the position respectively from 0% to 100%.

Press the BACK button to leave this SUB-MENU.

12. Graticules / SA Horz End (Has SUB-MENU with parameter)

This is the horizontal end position of the safe action graticule overlay. The default value is 95%.

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

Press the < and > buttons to decrease and increase the position respectively from 0% to 100%.

Press the BACK button to leave this SUB-MENU.

13. Graticules / SA Vert Start (Has SUB-MENU with parameter)

This is the vertical start position of the safe action graticule overlay. The default value is 5%.

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

Press the < and > buttons to decrease and increase the position respectively from 0% to 100%.

Press the BACK button to leave this SUB-MENU.

14. Graticules / SA Vert End (Has SUB-MENU with parameter)

This is the vertical starting position of the safe action graticule overlay. The default value is <mark>95%.</mark>
When the sub menu is highlighted, press the ENTER button to enter this sub-menu.
Press the < and > buttons to decrease and increase the position respectively from 0% to 100%.
Press the BACK button to leave this SUB-MENU.

15. Graticules / ST Horz Start (Has SUB-MENU with parameter)

This is the horizontal start position of the safe title graticule overlay. The default value is <mark>10%.</mark>
When the sub menu is highlighted, press the ENTER button to enter this sub-menu.
Press the < and > buttons to decrease and increase the position respectively from 0% to 100%.
Press the BACK button to leave this SUB-MENU.

16. Graticules / ST Horz End (Has SUB-MENU with parameter)

This is the horizontal end position of the safe title graticule overlay. The default value is <mark>90%.</mark>
When the sub menu is highlighted, press the ENTER button to enter this sub-menu.
Press the < and > buttons to decrease and increase the position respectively from 0% to 100%.
Press the BACK button to leave this SUB-MENU.

17. Graticules / ST Vert Start (Has SUB-MENU with parameter)

This is the vertical start position of the safe title graticule overlay. The default value is <mark>10%.</mark>
When the sub menu is highlighted, press the ENTER button to enter this sub-menu.
Press the < and > buttons to decrease and increase the position respectively from 0% to 100%.
Press the BACK button to leave this SUB-MENU.

18. Graticules / ST Vert End (Has SUB-MENU with parameter)

This is the vertical starting position of the safe title graticule overlay. The default value is <mark>90%.</mark>
When the sub menu is highlighted, press the ENTER button to enter this sub-menu.
Press the < and > buttons to decrease and increase the position respectively from 0% to 100%.
Press the BACK button to leave this SUB-MENU.

Text Overlays: (Has SUB-MENUs)

```
Text Overlays          ←Main Menu
Enable                 ←Sub Menu
Off                    ←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 9 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. Text Overlays / Enable (Parameter)

This enables the on-screen text (UMD).
When the sub menu is highlighted, press ENTER to toggle through the following selections:
    1.) <mark>Off</mark>   2.) On

2. <u>Text Overlays</u> / <u>Foreground</u> (Has SUB-MENU with parameter)

This is the foreground colour of the on-screen text.

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

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%)	

3. <u>Text Overlays</u> / <u>Background</u> (Has SUB-MENU with parameter)

This is the background colour of the on-screen text.

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. <u>Text Overlays</u> / <u>Text</u> (Parameter)

This is the on-screen text to display. The default text is DECIMATOR DESIGN.

When selected in the sub menu, the Characters are displayed in the Parameter Window.

When the sub menu is highlighted, press ENTER to enter this sub-menu. The first character will be highlighted.

Move the cursor right by pressing the ENTER BUTTON. The cursor will go back to the start of the line when it reaches the end.

Use the < or > BUTTON to change the highlighted character.

A centre dot indicates an end of line character.

Press the BACK button to leave this SUB-MENU.

5. <u>Text Overlays</u> / <u>Input Format</u> (Parameter)

This enables the input format status overlay.

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

1.) Off
2.) Show for 20 sec
3.) Show Always

6. <u>Text Overlays</u> / <u>In Format ForeGD</u> (Has SUB-MENU with parameter)

This is the foreground colour of the input format status overlay.

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

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%)	

7. Text Overlays / In Format BackGD (Has SUB-MENU with parameter)
This is the background colour of the input format status overlay.
When the sub menu is highlighted, press ENTER to toggle through the following selections:

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%)	

8. Text Overlays / No Signal ForeGD (Has SUB-MENU with parameter)
This is the foreground colour of the no signal status overlay.
When the sub menu is highlighted, press ENTER to toggle through the following selections:

1. Black	3. Green	5. Red	7. Yellow
2. Blue	4. Cyan	6. Magenta	8. White

9. Text Overlays / No Signal BackGD (Has SUB-MENU with parameter)
This is the background colour of the no signal status overlay.
When the sub menu is highlighted, press ENTER to toggle through the following selections:

1. Black	3. Green	5. Red	7. Yellow
2. Blue	4. Cyan	6. Magenta	8. White

Setup: (Has SUB-MENUs)
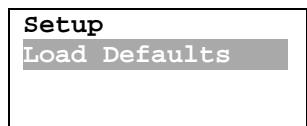
```
Setup              ←Main Menu
Load Defaults      ←Sub Menu
                   ←Parameter Window
```

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 4 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. 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 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:

1.) 5 seconds
2.) 15 seconds
3.) 30 seconds
4.) 1 minute
5.) 5 minutes
6.) 10 minutes
7.) 30 minutes
8.) Never

3. <u>SETUP</u> / <u>BACK2STATUS TIME</u> (Parameter)
This is 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.) 10 minutes
7.) 30 minutes
8.) Never

4. <u>SETUP</u> / <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.) Yes
2.) No

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.