



MD-HX

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

OPERATING MANUAL



Designed and Manufactured in Sydney, Australia



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Introduction

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

The MD-HX 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-HX 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

It supports VESA formats via the HDMI input.

It also supports 2K formats on the SDI and HDMI inputs and outputs.

The 2K Motion Adaptive Scaling Engine, can be driven by either the HDMI or SDI input to be scaled and/or frame rate converted to the required standard. The scaler also supports horizontal and/or vertical flipping.

Either HDMI or SDI outputs can be simultaneously sourced from either the HDMI or SDI input or the 2K Motion Adaptive Scaling Engine.

The MD-HX includes the Professional 3G/HD/SD Test Pattern Generator featuring:

- 41 Selectable Output Formats
- 58 Test Patterns including Luma and Chroma Zone-plates
- Audio Test Tone Generator

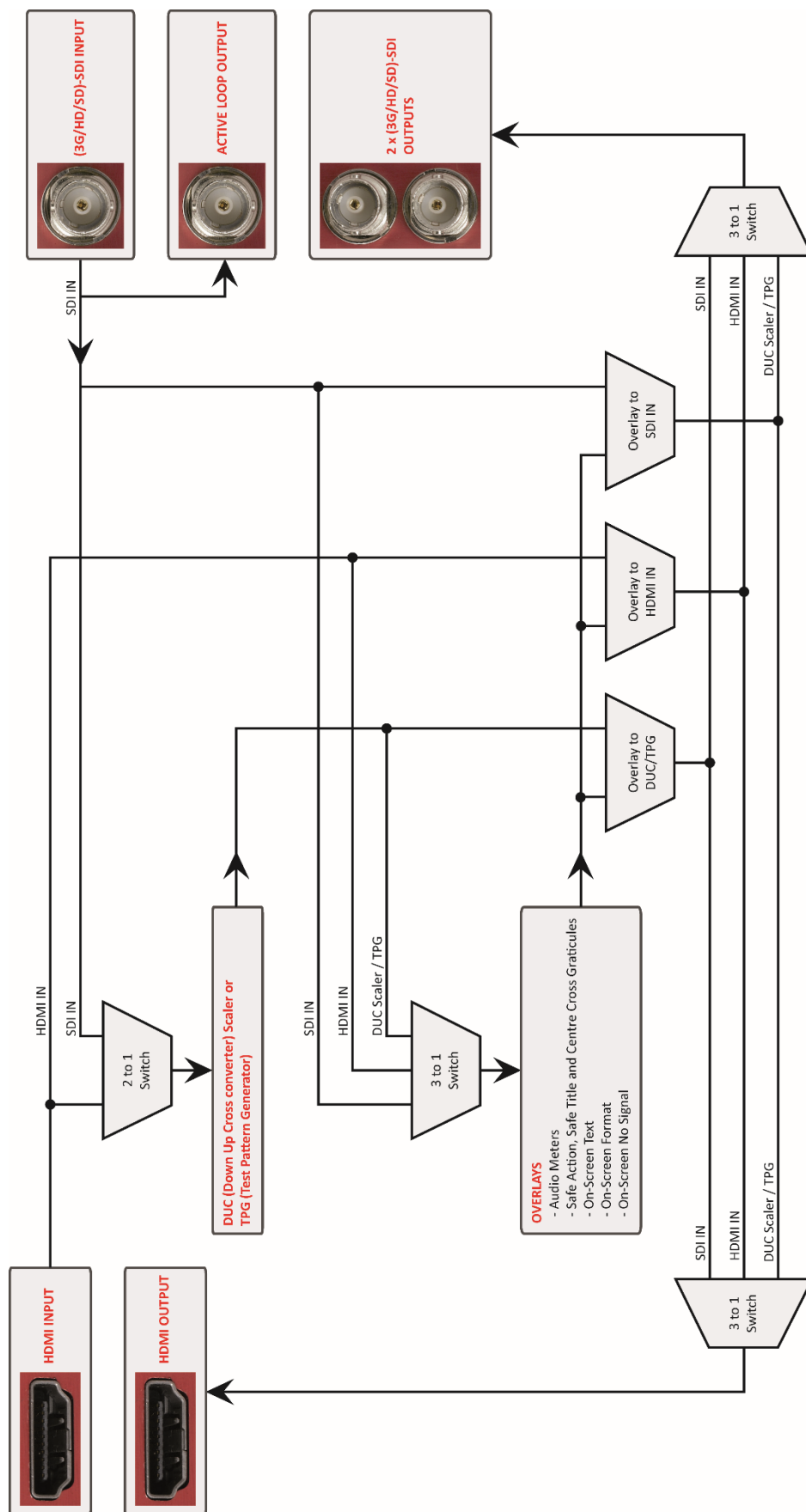
It also includes Overlays for:

- Up to 16-Channel Audio Metering
- Adjustable Safe Title and Safe Action Overlays and static Centre Cross
- UMD Text
- Format Status

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
- Audio Pair Rearrangement
- Robust Aluminium Case
- USB port for control and firmware updates
- Metal Thread Locking DC Power Socket
- Power Supply, HDMI Cable and USB Cable

Flow Chart



Main Menus

Upon power up, the unit starts in the Main Menu with Input Status selected.

The Main Menus are:

1. Input Status
2. Control
3. Scaling
4. Aspect
5. Audio
6. Audio Meters
7. Graticules
8. Text Overlays
9. 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 values, they will be instantly applied to the output signal.
- 5.) Scaler and DUC (Down Up Cross conversion) are used interchangeably in the MENUS.

Input Status Menu (Has no SUB-MENUS)

Input Status	←Main Menu
S:3GB 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 Menu (Has SUB-MENUS)

Control	←Main Menu
SDI OUT SOURCE	←Sub Menu
SDI IN	←Value 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 Value Window.

1. Control → SDI OUT SOURCE

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 ←Output from Scaler

2. Control → HDMI OUT SOURCE

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 ← Output from Scaler

3. Control → HDMI OUT TYPE

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

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

This is the current reference for the Scaler and Test Pattern Generator.

Free-run allows the scaler to continue outputting even when no input is present.

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

- 1.) SOURCE
- 2.) FREE-RUN ← Free run without a reference
- 3.) SDI IN
- 4.) HDMI IN

6. Control → APPLY OVERLAY TO

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 → No Signal BackGD (Has SUB-MENU)

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

8. Control → 3G Output is B

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

9. Control → Output 1 is loop

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 Menu (Has SUB-MENUs)

Scaling/TPG	←Main Menu
Test Pattern On	←Sub Menu
No	←Value 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 Value Window.

1. Scaling/TPG → Test Pattern On

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)

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 58 test patterns listed below and the BACK button to leave this SUB-MENU.

1. SMPTE HD Bars	21. White 75%	41. Y Move Dn Y ZP
2. Bars 100/0/100/0	22. Black	42. Y Move Up XY ZP
3. Bars 100/0/75/0	23. Red 100%	43. Y Move Dn XY ZP
4. Bars 75/0/75/0	24. Red 75%	44. Y Static C ZP
5. Bars 100% & Red	25. Yellow 100%	45. Y Move In C ZP
6. SMPTE EG 1 Bars	26. Yellow 75%	46. Y Move Out C ZP
7. Path EQ & PLL	27. Green 100%	47. C Static X ZP/L
8. EQ	28. Green 75%	48. C Static X ZP/H
9. PLL	29. Blue 100%	49. C Static Y ZP
10. Square on 4:3	30. Blue 75%	50. C Move Lt X ZP
11. Square on 16:9	31. Magenta 100%	51. C Move Rt X ZP
12. 5 Step Y Staircase	32. Magenta 75%	52. C Move Up Y ZP
13. 5 Step UV Staircase	33. Cyan 100%	53. C Move Dn Y ZP
14. Y Ramp	34. Cyan 75%	54. C Move Up XY ZP
15. UV Ramp	35. Y Static X ZP/L	55. C Move Dn XY ZP
16. Pluge	36. Y Static X ZP/H	56. C Static C ZP
17. Convergence	37. Y Static Y ZP	57. C Move In C ZP
18. Tartan Bars	38. Y Move Lt X ZP	58. C Move Out C ZP
19. 1/8 Fields White	39. Y Move Rt X ZP	
20. White 100%	40. Y Move Up Y ZP	

3. Scaling/TPG → Output Format (Has SUB-MENU)

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 41 video formats listed below and the BACK button to leave this SUB-MENU.

1. SD 480i59.94	15. HD 1080i50	29. HD 2Ks24
2. SD 576i50	16. HD 1080s30	30. HD 2Ks23.98
3. ED 480p59.94	17. HD 1080s29.97	31. HD 2Kp30
4. ED 576p50	18. HD 1080s25	32. HD 2Kp29.97
5. HD 720p60	19. HD 1080s24	33. HD 2Kp25
6. HD 720p59.94	20. HD 1080s23.98	34. HD 2Kp24
7. HD 720p50	21. HD 1080p30	35. HD 2Kp23.98
8. HD 720p30	22. HD 1080p29.97	36. 3G 1080p60
9. HD 720p29.97	23. HD 1080p25	37. 3G 1080p59.94
10. HD 720p25	24. HD 1080p24	38. 3G 1080p50
11. HD 720p24	25. HD 1080p23.98	39. 3G 2Kp60
12. HD 720p23.98	26. HD 2Ks30	40. 3G 2Kp59.94
13. HD 1080i60	27. HD 2Ks29.97	41. 3G 2Kp50
14. HD 1080i59.94	28. HD 2Ks25	

4. Scaling/TPG → 1080i=1080psf

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

5. Scaling/TPG → Horz Filter

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
- 2.) None
- 3.) Low
- 4.) Medium
- 5.) High

6. Scaling/TPG → Motion Det Level

The Motion Detection Level is the amount of difference required between pixels in different frames to indicate motion.

A higher value is good for low moving video and a lower value is better for high motion video.

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

Press the < and > buttons to increase or decrease the unit in the cycle.

Default value is 0032, Maximum limit is 1023.

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

7. Scaling/TPG → SDI Out Test Aud(io)

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

8. Scaling/TPG → HDMI Out Test Au(dio)

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

9. Scaling/TPG → Horizontal Flip

This flips the image horizontally.

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

- 1.) No
- 3.) Yes

10. Scaling/TPG → Vertical Flip

This flips the image vertically.

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

- 1.) No
- 2.) Yes

Aspect Menu (Has SUB-MENUs)

Aspect	←Main Menu
SD IN ASPECT	←Sub Menu
4 : 3	←Value 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 Value Window.

1. Aspect → SD IN ASPECT

This option sets the aspect ratio of Standard definition input signals.

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

- 1.) 4:3
- 2.) 14:9
- 3.) 16:9

2. Aspect → SD OUT ASPECT

This option sets the aspect ratio of Standard definition output signals.

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

- 1.) 4:3
- 2.) 14:9
- 3.) 16:9

3. Aspect → IN IMAGE ASPECT (Has SUB-MENU)

This option sets the input image aspect ratio, by default it will be the same as the input.

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

1. Input	11. 192:145 (1.324)	21. 133:75 (1.773)
2. 4:3 (1.333)	12. 296:221 (1.339)	22. 71:40 (1.775)
3. 14:9 (1.556)	13. 960:617 (1.556)	23. 932:525 (1.775)
4. 16:9 (1.778)	14. 467:300 (1.557)	24. 341:192 (1.776)
5. 256:135 (1.896)	15. 51:32 (1.594)	25. 683:384 (1.779)
6. 64:87 (0.736)	16. 307:192 (1.599)	26. 9:5 (1.8)
7. 3:4 (0.75)	17. 8:5 (1.6)	27. 64:35 (1.829)
8. 1:1 (1)	18. 5:3 (1.667)	28. 72:35 (2.057)
9. 5:4 (1.25)	19. 53:30 (1.767)	
10. 32:25 (1.28)	20. 85:48 (1.771)	

4. Aspect → OUT IMAGE ASPECT

This option sets the output image aspect ratio.

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

- 1.) AN or LB or PB
- 2.) AN or CC
- 3.) AN or LC or TC
- 4.) AN or RC or BC
- 5.) 16:9
- 6.) Stretch

NOTE: AN = Anamorphic
PB = Pillar Box
LB = Letter Box

CC = Centre Cut
LC = Left Cut
RC = Right Cut

TC = Top Cut
BC = Bottom Cut

Audio Menu (Has SUB-MENUs)

Audio	←Main Menu
SDI Out Pair 1	←Sub Menu
Group 1 Pair 1	←Value 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 Value Window.

The following sub menus are available:

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

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

Press the ENTER button, to toggle 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 Menu (Has SUB-MENUs)

Audio Meters	←Main Menu
Group 1	←Sub Menu
Off	←Value 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 Value Window.

1. Audio Meters → Group 1

This enables the audio meters overlay for group 1.

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

- 1.) Off
- 2.) On

2. Audio Meters → Group 2

This enables the audio meters overlay for group 2.

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

- 1.) Off
- 2.) On

3. Audio Meters → Group 3

This enables the audio meters overlay for group 3.

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

- 1.) Off
- 2.) On

4. Audio Meters → Group 4

This enables the audio meters overlay for group 4.

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

- 1.) Off
- 2.) On

5. Audio Meters → Style

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 Meters → Combination

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
- 2.) Bar Only
- 3.) Float Only
- 4.) Bar and Float

7. Audio Meters → Transparency

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 Meters → Show Scale

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 Meters → Bar Scale

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 Meters → Bar Ballistics

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 Meters → Float Ballistics

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 Meters → Ref Level

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 Meters → Yellow Start (Has SUB-MENU)

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 Meters → Green Start (Has SUB-MENU)

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 Meters → Bar Thickness (Has SUB-MENU)

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 Meters → Margin (Has SUB-MENU)

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 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 thickness respectively from 0% to 25%.

Press the BACK button to leave this SUB-MENU.

Graticules Menu (Has SUB-MENUs)

Graticules	←Main Menu
Safe Action	←Sub Menu
Off	←Value 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 Value Window.

1. Graticules → Safe Action

This enables the safe action graticule overlay.

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

3.) **Off**

4.) On

2. Graticules → Safe Title

This enables the safe title graticule overlay.

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

1.) **Off**

2.) On

3. Graticules → Centre Cross

This enables the centre cross graticule overlay.

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

1.) **Off**

2.) On

4. Graticules → Anamorphic (Action)

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

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

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

7. Graticules → SA Color (Has SUB-MENU)

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%)	17. White (Transparent 25%)	
9. White (Transparent 50%)	18. Black (Transparent 0%)	

8. Graticules → ST Color (Has SUB-MENU)

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)

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)

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)

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)

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)

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)

This is the vertical starting 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.

15. Graticules → ST Horz Start (Has SUB-MENU)

This is the horizontal start position of the safe title graticule overlay. The default value is 10%.
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)

This is the horizontal end position of the safe title graticule overlay. The default value is 90%.
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)

This is the vertical start position of the safe title graticule overlay. The default value is 10%.
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)

This is the vertical starting position of the safe title graticule overlay. The default value is 90%.
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 Menu (Has SUB-MENUs)

Text Overlays ← Main Menu
Enable ← Sub Menu
Off ← Value 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 Value Window.

1. Text Overlays → Enable

This enables the on-screen text (UMD).

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

- 1.) Off 2.) On

2. Text Overlays → Foreground (Has SUB-MENU)

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. Text Overlays → Background (Has SUB-MENU)

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. Text Overlays → Text

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 Value 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. Text Overlays → Input Format

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. Text Overlays → In Format ForeGD (Has SUB-MENU)

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)

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)

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)

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 Menu (Has SUB-MENU)



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 Value Window.

1. SETUP → LOAD DEFAULTS

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

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. SETUP → BACK2STATUS TIME

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. SETUP → AUTO SAVE

When changes are made, this option determines whether they are saved to memory.

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

- 1.) Yes
- 2.) No

Setting up Format Conversion

To set up the scaler module of the MD-HX use the following steps:

Navigate to the control menu using the arrow buttons, press enter to go into it and the SDI OUTPUT SOURCE should now be highlighted. Press the enter button to cycle from SDI IN to the Scaler. If you wish to output the scaler on HDMI, press the right arrow once to reach the HDMI OUTPUT SOURCE and repeat the same step.

Control
SDI OUTPUT SOURCE
SDI IN

To now change the format you are converting to, press the back button once and then right arrow to reach the Scaling menu. Press enter to go into it and the first option is the Output Format. By pressing enter and using the arrow buttons you can navigate to the format you wish to convert to. The output will instantly update to whichever format you have picked, provided a signal is present or free run is set.

Scaling
Output Format
3G 1080p59.94

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 or difficulty of servicing the product.