

Encoder Notes for Use With Omneon Spectrum™ Media Servers

This document provides quick reference information and links to additional data on a range of third-party encoders that can be used with the Omneon Spectrum media server. The information in this document is current as of the October 2005. Features and functionality of the products listed here may change over time and this document may not always reflect those changes. The information in this document has no effect on product warranties, license agreements, suitability clauses or any other legal text pertaining to Omneon products or services.

Encoder	Encoding Standards	Video Processing	Audio Processing	Additional Info
Harmonic MV 450	<ul style="list-style-type: none"> 480p at 59.94 fps 1080i at 25, 29.97, or 30 fps 720p at 59.94 or 60 fps 	<ul style="list-style-type: none"> MPEG-2 4:2:0@HL 3 - 45 Mbps MPEG-2 4:2:2@HL 10 - 45 Mbps 	<ul style="list-style-type: none"> MPEG Layer II encoding at 56 - 384 kbps AC-3 encoding at 56 - 448 kbps AC-3 and Dolby E Pass-through 1 AES input 	<p>This encoder does not support PCM audio as per SMPTE-302M.</p> <p>The performance of Dolby-E as per SMPTE-302M has not been tested.</p> <p>The only audio that can be guaranteed with this encoder is Dolby AC-3.</p>
Mitsubishi MH-2700E	<ul style="list-style-type: none"> NTSC 1080i at 29.97 or 30 fps 	<ul style="list-style-type: none"> MPEG-2 4:2:0@ML 4 - 15 Mbps MPEG-2 4:2:2@ML 4 - 50 Mbps MPEG-2 4:2:0@HL 15 - 80 Mbps MPEG-2 4:2:2@HL 15 - 135 Mbps 	<ul style="list-style-type: none"> MPEG Layer II encoding at 256 - 384 kbps AAC encoding at 144 - 640 kbps 16 and 20-bit PCM 4 AES inputs 4 embedded inputs Up to 4 stereo audio pairs on a single PID or on two PIDs. 	
NTT HE3100	<ul style="list-style-type: none"> NTSC 1080i at 25, 29.97 or 30 fps 720p at 50, 59.94, or 60 fps 	<ul style="list-style-type: none"> MPEG-2 4:2:0@ML 4 - 15 Mbps MPEG-2 4:2:2@ML 4 - 50 Mbps MPEG-2 4:2:0@HL 15 - 80 Mbps MPEG-2 4:2:2@HL 15 - 160 Mbps 	<ul style="list-style-type: none"> MPEG Layer II encoding at 256 - 384 kbps AAC encoding at 144 - 640 kbps 16 and 20-bit PCM 4 AES inputs 4 embedded inputs Up to 4 stereo audio pairs on a single PID or on two PIDs. 	Streams may not play smoothly on the MIP 4001, because the encoder exceeds the average video bit rate specified. This can be worked around by allocating more bandwidth.
Snell & Wilcox SD and HD MPEG-2 Encoder with PH.C and Compression Pre-Processor	<ul style="list-style-type: none"> NTSC PAL 1080i at 25 or 29.97 fps 720p at 50 or 59.94 fps 	<ul style="list-style-type: none"> MPEG-2 4:2:0@ML 1 - 15 Mbps MPEG-2 4:2:2@ML 1 - 50 Mbps MPEG-2 4:2:0@HL 5 - 175 Mbps MPEG-2 4:2:2@HL 5 - 175 Mbps 	<ul style="list-style-type: none"> Precompressed MPEG Layer I & II, AC-3, and Dolby E 16, 20, and 24-bit PCM 4 AES inputs 4 embedded inputs Up to 4 stereo audio pairs on a single PID or separate PIDs. 	<p>Latest firmware: 5.1.17 RC 4</p> <p>The following parameters should be configured as follows:</p> <ul style="list-style-type: none"> Video Input Page <ul style="list-style-type: none"> Set Film Mode to Always off Set Genlock to Input MPEG Coding Page <ul style="list-style-type: none"> Set Coding Mode Hrz Res to Full Enable Enforce 728ms max buffer delay to enable valid vbv_delay Enable Enforce 1 second max buffer delay (ISO 13818-1) Disable Video stream requires SMPTE 308M Compliant Decoder Set VBV Buffer Size Value to Auto Select I-frame only or Long GOP IBBP GOP Type Set GOP Length less than or equal to 18 Close Every GOP Turn CleanCut Off Bit Rates Page <ul style="list-style-type: none"> Set Video Mode to Constant Bitrate Set Video Timestamp Offset to Auto VBI and User Data Page Enable Timecode (SMPTE 328M) <p>Encoder must be reset after configuration by powercycling or clicking the Unit Reset button on the System Page.</p> <p>If encoder is not functioning, follow these steps.</p> <ul style="list-style-type: none"> Open unit from the front and reseal all boards and daughter boards. Reset configuration to factory default by clicking the Factory Settings button on the System Page. Reconfigure the encoder and reset. <p>Snell & Wilcox is currently working to correct audio/video timing for 720p.</p>

Encoder	Encoding Standards	Video Processing	Audio Processing	Additional Info
Tandberg e5780/e5782	<ul style="list-style-type: none"> • NTSC • PAL • 480p at 59.94 or 60 fps • 576p 50 fps • 1080i at 25, 29.97, or 30 fps • 1080psf at 23.94 or 24 fps • 720p at 50,59.94 or 60 fps 	<ul style="list-style-type: none"> • MPEG-2 4:2:0@ML 1.5 - 15 Mbps (SD mode) • MPEG-2 4:2:2@ML 2 - 50 Mbps (SD mode) • MPEG-2 4:2:0@HL 2 - 50 Mbps (480p and 576p) • MPEG-2 4:2:0@HL 6 - 90 Mbps (1080i) • MPEG-2 4:2:0@HL 6 - 65 Mbps (720p) • MPEG-2 4:2:2@HL 6 - 90 Mbps (1080i) • MPEG-2 4:2:2@HL 6 - 65 Mbps (720p) 	<ul style="list-style-type: none"> • MPEG Layer II encoding at 32 - 384 kbps • AC-3 encoding at 56 - 640 kbps • AC-3 and 20-bit Dolby E Pass-through • 20-bit PCM (16/24 bit with the Advanced Audio Module) • 2 AES inputs (4 with the Advanced Audio Module) • 2 embedded audio inputs (4 with the Advanced Audio Module) • 2 stereo audio pairs on separate PIDs using the standard Audio Module. • Up to 4 stereo audio pairs on a single PID using the Advanced Audio Module. 	<ul style="list-style-type: none"> • SMPTE 328m Timecode <p>The following parameters should be configured as follows:</p> <ul style="list-style-type: none"> • Setup/System/Service Info Page <ul style="list-style-type: none"> – Enable Dolby AC-3 Descriptor ATSC only (this is not required for releases beyond 4.6) • Setup/Video/Video Encoder Page <ul style="list-style-type: none"> – Set Hor. Resolution to 1280 for 720p or 1920 for 1080i. – Set GOP Structure to I-Frame or IBBP – Set GOP Length to 12. – Turn Long GOPs off – Turn Adaptive GOP off – Turn 3:2 Pulldown off – Turn Scene Cut Detection off – Set PES Header to per Picture • Setup/Video/VBI Page <ul style="list-style-type: none"> – Set Timecode in User Data to on • Setup/Audio Menu/Audio X <ul style="list-style-type: none"> – For PCM and Dolby E, set Audio Alignment to Aligned to PES Header • Setup/Audio Menu/Advanced Audio A <ul style="list-style-type: none"> – Set Auto Lip Sync to On • Setup/Mux Page <ul style="list-style-type: none"> – Set Clock to Video • Encoder must be reset after configuration by powercycling.
Tiernan HE4000	<ul style="list-style-type: none"> • NTSC • PAL • 480p at 59.94 or 60 fps • 1080i at 25 or 29.97 fps • 720p at 50 or 59.94 fps 	<ul style="list-style-type: none"> • MPEG-2 4:2:0@ML 1 - 15 Mbps • MPEG-2 4:2:2@ML 2.5 - 50 Mbps • MPEG-2 4:2:0@HL up to 80 Mbps • MPEG-2 4:2:2@HL up to 160 Mbps 	<ul style="list-style-type: none"> • MPEG Layer I & II encoding • AC-3 encoding • AC-3 and 20-bit Dolby E Pass-through • 20-bit PCM • 4 AES inputs • 4 embedded inputs • Up to 4 stereo audio pairs on separate PIDs. 	<p>Encoder must be reset after configuration by powercycling.</p> <p>The released encoder's support for PCM and Dolby E audio is not compatible with the MIP 4010. There is a beta version with PCM and Dolby E audio that is compatible with the MIP 4010. When using the beta version, harris_mode must be enabled for the Dolby E audio channels through the terminal interface by connecting a serial cable from the encoder's "remote" connector to a PC's serial port, connecting with a hyperterminal at 38400 8-N-1, and typing the following commands at the prompt for Dolby E on channel A:</p> <pre>ae.a harris_mode on cm save</pre>
Tiernan THE15A	<ul style="list-style-type: none"> • 480p at 50, 59.94, or 60 fps • 1080i at 25, 29.97, or 30 fps • 720p at 59.94 or 60 fps 	<ul style="list-style-type: none"> • MPEG-2 4:2:0@HL 10 - 54 Mbps • Option MPEG-2 4:2:2@HL 10 - 108 Mbps 	<ul style="list-style-type: none"> • MPEG Layer II encoding at 64 - 384 kbps • AC-3 and Dolby E Pass-through • 16, 20, and 24-bit PCM • 4 AES inputs • Embedded audio input for MPEG Layer II audio only • Up to 4 stereo audio pairs on separate PIDs. 	<p>Encoder must be reset after configuration by selecting Config->Control->Reset.</p> <p>PCM and Dolby E is not compatible with the MIP 4010 in 720p mode, because the SMPTE 302m packets contain two frames of audio instead of one.</p> <p>The encoder's status and fault LEDs must be monitored to verify encoding status. The fault LED must be off and the status LED must be on to encode good streams. If the status LED is off and/or the fault LED is on, check the Status/Current menu to find out why.</p>



www.omneon.com

US Headquarters:

965 Stewart Drive
Sunnyvale, CA 94085
ph +1 866.861.5690
ph +1 408.585.5000
fx +1 408.585.5099

Europe:

5 Lindenwood
Chineham, Basingstoke
RG24 8QY United Kingdom
ph +44 1256.347.400
fx +44 1256.347.410

Japan:

Ginza San-Chome Bldg. 8F
3-14-1 Ginza, Chuo-ku
Tokyo 104-0061 Japan
ph +81 03.5565.6735
fx +81 03.5565.6736

Asia/Pacific:

20 Loyang Crescent
Singapore 508984
ph +65 6548.0500
fx +65 6548.0504

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