



EH24xx Series

Input Modules for Encoder Chassis System

These modules are designed to be installed into Drake's EH24 | EH244 | EH244IP or MEQ1000 style chassis which provides the control and output interface to these units. This configuration of encoder module and host chassis provides the ultimate in bandwidth management and economy by allowing multiple HD and SD streams to be multiplexed together dependent upon the limitations of the bandwidth of the chosen output: QAM and/or ASI.

HDE24 High Definition Encoder Module

The Drake HDE24 high-definition encoder module generates an MPEG2 or MPEG4 (H.264) video stream, with Dolby® AC3 or MPEG1 layer 2 audio. The HDE24 high-definition encoder accepts non-encrypted HDMI or component video inputs and can inject closed-captioning data from a synchronized composite video source (typically provided by the same decoder that produces the HD video stream). Composite analog audio inputs provide the audio source when component video inputs are used. Typically HDMI has embedded audio but if the HDMI is derived from a source converter that does not provide audio, such as DVI-to-HDMI, then the analog composite inputs may be used.



Video Inputs

HDMI	HDMI input (does not support HDCP/Copy protection)
Component	1x HD Component (YCrCb) video input
Composite	1x 1V p-p +/- 3dB, 480i only
Closed Caption Input Format	1x 1V p-p +/- 3dB 480i composite video input (used for Closed Captioning data extraction during HD encoding)

Audio Inputs

RCA type L + R	1x 1Vrms nominal, 3.5Vrms max supports +/- 15dB gain adjustment
HDMI embedded audio	Supports stereo PCM digital audio from HDMI

Video Options

Input Video Modes Supported	480i (640x480/720x480 @30fps) 480p (640x480/720x480 @60fps) 720p (1280x720 @60fps) 1080i (1920x1080 @30fps) Supports auto-scan for input resolution
Encoder format	MPEG2 or MPEG4 H.264
Video Adjustments	Brightness, Contrast, Hue, Saturation, Sharpness
MPEG4 profile support	Simple, Advanced Simple, High
Bitrate	Up to 19Mbps (depends on input format)

Audio Options

Encoder format	Dolby® Digital AC3 or MPEG1 Layer 2
Output bitrate	320kbps

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SDE24 Standard Definition Encoder Module

The SDE24 module can encode up to two input sources, source 1 and source 2 in real-time. The module may be configured to encode source 1 in either MPEG2 or MPEG4 (H.264) transport streams. Source 2 may be encoded in MPEG2 only. Thus each Encoder Module can output one MPEG2 stream, two MPEG2 streams, one MPEG4 stream, or one MPEG2 and one MPEG4 stream. Each SDE24 module provides two sets of input connectors for NTSC composite with stereo audio. Audio is encoded using Dolby AC-3 encoding.

Analog Interface

Composite Video Inputs:	2 composite inputs, one for each program
Composite Video Input Level:	1 Volt p-p +/- 3 dB
Audio Inputs, for 2 programs:	RCA type for L and R audio channels, 2 sets
Audio Input Level:	1 V rms or 2 V rms max, user selectable
User adjustable audio gain:	+/- 15 dB

MPEG Encoder

Encoder Formats – Input 1:	MPEG2 or MPEG4 H.264, selectable
Encode Format – Input 2:	MPEG2 only
Encoding Bitrate:	Constant Bitrate 1 Mbps to 8 Mbps
Encoding Resolution:	720x480 (Standard Definition)
Video Adjustments:	Brightness, Contrast, Saturation & Hue
Audio Encoding format:	Dolby AC-3
Output:	The output of each SDE24 module is connected internally to the EH24 or MEQ1000 Encoder Host bus
Latency SD, 480i,	MPEG2: Typically 50 mS MPEG4: Typically 100 mS



Note: Each encoder module has two sets of inputs marked 1 and 2. Number 1 input from all installed modules will appear as odd-numbered encoders in the EH24 menu. Likewise, number 2 SDE24 inputs will correspond to even-numbered encoders in the EH24 menu. The number 2 inputs/even numbered encoders cannot be set to encode MPEG4/H.264.

SDI24A High Definition Encoder Module

The Drake SDI24A high-definition or standard-definition encoder module generates an MPEG2 or MPEG4 (H.264) video stream derived from an SDI or HD SDI source, with Dolby® AC3 or MPEG1 layer 2 audio. The SDI24A encoder accepts broadcast type SDI or HD SDI video with embedded audio. The SDI24A is also provisioned with a set of RCA L&R inputs for adding audio from an analog source.

Video Inputs	SDI/HD SDI BNC type input connection Closed Caption support (embedded only)
Audio Inputs	SDI/HD SDI Embedded audio RCA type L + R 1x 1Vrms nominal, 3.5Vrms max supports +/-15dB gain adjustment
Video Options	Input Video Modes 480i (640x480/720x480 @30fps) Supported 480p (640x480/720x480 @60fps) 720p (1280x720 @60fps) 1080i (1920x1080 @30fps) Supports auto-scan for input resolution
Encoder Format	MPEG2 or MPEG4 H.264
Video Adjustments	Brightness Contrast Hue Saturation Sharpness
MPEG4 Profile Support	Simple Advanced Simple High
Bitrate	to 19Mbps (depends on input format)
Audio Options	Encoder format Dolby® Digital AC3 or MPEG1 Layer 2
Output Bitrate	320kbps

Manufactured under license from Dolby Laboratories.





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SDE24EAS Emergency Alert SD Encoder Module

Most EAS or "All Call" systems have been analog based. The transition to digital TV distribution provides new methods of implementation. Drake has developed a specialized SDE24EAS encoder module to digitize legacy analog EAS receivers for digital distribution. The EAS receiver activates the EH24 encoder host EAS or "All Call" mode by providing a contact closure. Once EAS is activated the EH24 will replace all PIDS with the encoded EAS message from the SDE24 EAS encoder so that all programs contain the message.

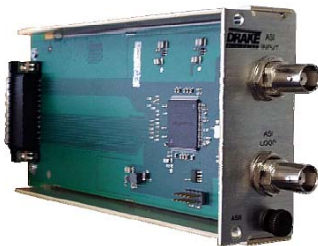


Analog Interface

Composite Video Inputs:	1 composite input.
Composite Video Input Level:	1 Volt p-p +/- 3 dB.
Audio Inputs:	RCA type for L and R audio channels.
Audio Input Level:	1 V rms or 2 V rms max, user selectable.
User adjustable audio gain:	+/- 15 dB.

MPEG Encoder

Encoder Formats:	MPEG2.
Encoding Bitrate:	Constant Bitrate 1 Mbps to 8 Mbps.
Encoding Resolution:	720x480 (Standard Definition).
Video Adjustments:	Brightness, Contrast, Saturation & Hue.
Audio Encoding format:	Dolby AC-3.
Output:	The output of each SDE24 module is connected internally to the EH24 or EH244 Encoder Host bus.
Latency SD, 480i, MPEG2:	Typically 50 mS.



ASI Input Clock:
270 MHz
ASI Input Data Rate:
Maximum of 80 Mbps
ASI Output Rate:
Identical to the ASI input stream

ASII ASI Input Module

The ASII provides one DVB-ASI SPTS or MPTS input for the EH24 / EH244 / EH244IP / MEQ1000 chassis. Using the ASII module, programs may be input to the chassis where they will be program-filtered, retimed, and multiplexed with programs from the other input module, which can be a Drake SDE24 Dual Standard Definition MPEG Encoder Module, a HDE24 High Definition MPEG Encoder Module, a SDI24A SDI/HD-SDI Input Module, a DTD1000 Digital ATSC 8-VSB/QAM RF Tuner and Demodulator Module, or a second ASII Module. The ASII module can accept data rates up to 80 Mbps.

