



# EH24/SDE24

MPEG ENCODER/ QAM MODULATOR



The Drake Digital™ EH24 platform is a 19" rack-mountable 2RU chassis that accepts up to six real-time Drake Digital™ SDE24 MPEG2/MPEG4 video encoder modules. The Drake Digital™ SDE24 MPEG encoders contain two video encoders each, enabling the Drake Digital™ EH24 to accept 12 different video input sources/channels to be multiplexed after encoding (when populated with six SDE24 modules). The EH24 accepts any number of SDE24 modules (1-6) adding two video programs per module..

The Drake Digital™ EH24 Contains a multiplexer that can multiplex from two to twelve programs, encoded in user-selectable MPEG2 or MPEG4 data-compression by the Drake Digital™ SDE24 module, into a multiple program transport stream (MPTS). This MPTS is then output via an ASI output port on the rear panel of the EH24 and the stream is also directed to an internal QAM modulator. After QAM modulation, the QAM modulated IF signal is internally up-converted to any desired RF output frequency specified by CATV or off-air frequency plans, in the 54 to 1002 MHz spectrum.

The Drake Digital™ SDE24 is a MPEG Encoder. It has 2 inputs, both of which can be either a composite video or a S-video input. These analog inputs are encoded to a digital transport stream using either MPEG2 or MPEG4 encoding. User-selectable parameters include: encoding bitrate, brightness level, contrast, and a few others. The Drake Digital™ EH24 provides the front panel to do the setup of the SDE24s, and then takes the MPEG-encoded transport stream outputs of the SDE24's and multiplexes them together to either a QAM or an ASI output.

The unit is powered by a built-in nominal 120 VAC/47-63 Hz supply.

## SPECIFICATIONS



### EH24 CHASSIS

#### Program Filtering and Grooming

Encoded programs may be disabled or sent to one or both output ports – ASI or QAM, user selectable. The output timing is restamped and null packets are managed as required.

#### Multiplexer

Built in multiplexer circuitry combines the outputs of all enabled encoders in an EH24 into multi-program transport streams, one to the QAM output and one to the ASI output..

#### MPEG Program Numbers

MPEG program numbers in the output transport stream will be assigned sequentially, corresponding to the encoder number. The leftmost encoder input, as viewed from the rear panel, will be # 1.

#### ASI Output

Any or all of the enabled encoders may be directed to the ASI output by means of the user selectable program filter.

#### QAM Modulator

Any or all of the enabled encoder outputs may be directed to the QAM Modulator by means of the user selectable program filter.

#### Output Symbol Rate Modes/FEC

1 to 7 MSps  
ITU-A: 16, 32, 64, 128, 256, 512, 1024 QAM  
ITU-B (DigiCipher): 64, 256, 1024 QAM  
Less than 1 degree.  
Greater than 38 dB with blind EQ

#### UpConverter RF OUT

Output Frequency Range	54 to 1002 MHz
Channel Plans	CATV STD, HRC, IRC, BROADCAST
Frequency Stability	$\pm 5$ ppm
Output Level	45 dBmV to 61 dBmV, adjustable $\pm 1$ dB
Output Level Accuracy	
Output Impedance	75 Ohms, RL 14 dB or better, 54 –1002 MHz
Spurious outputs	- 60 dBc from 40 to 1000 MHz
Broadband Noise	Less than -12 dBmV (6 MHz <u>BW@<math>\pm</math> 12 MHz</u> )
Phase Noise:	-101 dBc @ 10 kHz offset

#### GENERAL

##### AC Power

90 to 132 VAC / 47 – 63 Hz, 70 W maximum

##### Operating Temperature

0 deg to + 50 deg C



## SPECIFICATIONS

### SDE24 Dual Program Encoder Module

#### Analog Interface

Composite Video Inputs  
Composite Video Input Level  
S Video Inputs  
Composite or S Video select  
Audio Inputs, for 2 programs  
Audio Input Level

2 composite inputs, one for each program  
1 Volt p-p ± 3 dB  
2 S Video connectors, one for each program  
User selectable for each program input  
RCA type for L and R audio channels, 2 sets  
1 V rms or 2 V rms max, user selectable  
User adjustable audio gain: ± 15dB

#### MPEG Encoder

Encode Formats – # 1 input  
Encode Format – # 2 input

MPEG2 or MPEG4 H.264, selectable  
MPEG2 only

Note: Each encoder module has two sets of inputs marked 1 and 2. Number 1 inputs 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.

Encoding Bitrate  
Video Adjustments

Constant Bitrate: 1 Mbps to 8 Mbps  
Brightness, Contrast, Saturation, Hue

#### Output

The output of each SDE24 module is connected internally to the multiplexers that are included in the EH24 chassis.