Eon Instrumentation, Inc. Since 1961

MODEL 6055C-6GHD
HD-SDI VIDEO INSERTION GENERATOR

FEATURES

- *Accepts SD, HD and 3G SDI video sources per SMPTE 259M/292M/424M*
- *Auto-detects and formats insertion for 480i, 720p and 1080i/p for24,25, 30, 50 and 60 field/frame rates at their NTSC equivalents.*
- *Six independent video channels.*
- *Synchronizes time to internal GPS or applied IRIG B.*
- *Inserts up to 3920 characters of alphanumeric data into each video channel.*
- *Inserts a MISB compliant Microsecond Timestamp collected in less than 10µsec of frame sync into each field/frame the SDI VANC on line 9.*
- *Inserts movable crosshair.*
- *Inserts fixed boresight crosshair.*
- *Insert up to two event/alarm marks into each video channel.*
- *Select 1 of 8 colors individually for characters, crosshair and boresight crosshair.*
- *GPS Synchronized IRIG B122 and IRIG B002 Generator.*
- *Detachable keyboard.*
- *Remotely controlled via Ethernet Port and RS-232C Serial Port.*
- *Non-volatile Memory saves key settings and certain insertion parameters*

DESCRIPTION

The Model 6055C-6GHD is a six channel video inserter designed to receive and retransmit (reclocked and buffered) HD-SDI video compliant with SMPTE 259M, 292M and 424M. The product samples GPS or IRIG B time to within 10µsec of each EAV (equivalent to analog vertical sync) event and can overlay the captured time value at user programmable resolutions of 1 second to 100µsec in decade increments. It also can write a MISB compliant Microsecond Timestamp of this same sampled time on line 9 of the VANC data. Each channel independently auto-detects and decodes the imaging format permitting most SDI 480i, 720p or 1080i/p 24/1.001, 24, 25, 30/1.001, 30, 50, 60/1.001 or 60 fps to be connected without operator intervention. The time message and up to 3,920 ASCII characters may be inserted into the active video image, with the color and location selected by the user. The 6055C-6GHD may overlay a fixed boresite crosshair (3 sizes) or a movable crosshair (3 sizes). The movable crosshair is positionable in 1 pixel increments in X or Y, relative to the center pixel of the prevailing video format. The time reference is derived either from the internal GPS receiver or an external IRIG B time code. If the GPS or IRIG lock is lost the unit will automatically continue to run on an internal clock. The 6055C-6GHD includes a GPS Synchronized IRIG B122 and IRIG B002 Time Code Generator. The system may also be set to read a previously written MISB compliant Microsecond Timestamp and overlay the value onto the video of the same frame it is read.

All functions and controls are available from the supplied keyboard, or remotely via the Ethernet or RS-232 ports.

The 6055C-6GHD is housed in a rack mountable aluminum enclosure, 19" wide x 3.5" high x 15" deep and is powered by 100 to 240VAC 50/60 Hz.

MODEL 6055C-6GHD HD-SDI VIDEO INSERTION GENERATOR

SPECIFICATIONS

Video In	Six independent SD/HD/3G SDI digital video channels. Formats supported and auto-detected:	
	SD 480i at 29.97 Hz, 576i at 25 Hz	
	HD 720p at 60, 59.94, 50, 30, 27.97, 25, 24 and 23.98 Hz	
	1080i at 30, 29.97, 25, 24 and 23.94 Hz	
	1080p at 60*, 59.94*, 50*, 30, 29.97, 25, 24 and 23.98 Hz *=3G bit rate	
Video Out	Identical to video input except with graphics and overlay text added by the user. SDI stream is reclocked and buffered and will drive up to 100 meters of Belden 1694 coax or equivalent as specified by SMPTE.	
Inserted Time Resolution	1 µsecond (VANC packet resolution), overlay resolution 1 sec, 100 ms, 10 ms, 1 ms and 100µsec.	
Timing Accuracy	When Locked to GPS: (Dynamics mode set to 'Fixed')	When NOT locked to GPS but after 24 hours of GPS locked disciplining.
	1×10^{-9} @ 1 second	$<2.5 \times 10^{-6}$ without discipline
	1×10^{-10} @ 100 second	$<0.3 \times 10^{-6}$; <30 ms per day
	3×10^{-12} @ 1 day	
GPS Performance	Channels:	12 Parallel channels, tracks all satellites in view
	Time-to-first-fix	<25 seconds typical (warm start), <180 seconds typical (cold start)
	UTC Time Mark	Synchronized with Global Reference Standard <=25 nanoseconds
	Reacquisition:	2 seconds typical
	Dynamics Mode:	Two settings: Fixed and In Motion, Walking, Land Vehicle, Marine, Airborne. Timing accuracy varies from <25nsec (Fixed) to <100nsec (In Motion)
	Datum:	WGS 84
GPS Antenna	Active Patch Magnetic Mount Antenna, 5 VDC power provided via antenna cable. Gain: 26 db ± 2 db. Noise figure: 1.5 db Max. Antenna interface is short circuit protected. (supplied)	
IRIG B Input	IRIG B standard serial time code (IRIG Standard 200-98). Input level 500mv peak-to-peak to 5 volts peak-to-peak with modulation ratio from 2:1 to 3:1.	
IRIG B Output	IRIG B122 Serial Time Code in accordance with IRIG Standard 200-98. Fully Isolated (Transformer Coupled). Output level is user adjustable to a maximum of 5V p-p into a 50-ohm load. Modulation ratio 3:1. IRIG B002 DCLS TTL output is also provided	
Event Inputs	Twelve discrete TTL inputs, low true. Control display of two fixed EVENT/ALARM messages on each of six video channels	
Meta-Data Encoding	Microsecond Timestamp in accordance with Motion Imagery Standards Board (MISB) standard 605.3 to 1µsec resolution. Write and read independently each channel	
Ethernet Port	Standard TCP/IP protocol, 10/100 Mbit/sec, user settable IP, MAC, Gateway and port	
Serial Interface	EIA RS-232C, Asynchronous, 8 data bits, 1 start bit, 1 stop bit, no parity, no flow control. Selectable baud rates are 4800, 9600, 19.2K (factory default) 38.4K or 110K baud.	
Alphanumeric Characters	From 24 to 49 lines of characters depending on video input format. Number of characters per line is 40, 72 or 80 depending on the input aspect ratio (4:3 or 16:9) and as selected by the operator. Individual characters are described on a 7X9 pixel matrix. Characters. Color and size are set via keyboard or remotely via communication ports. Eight selectable colors (Black, white, red, green, blue, yellow, cyan and magenta).	
Crosshair	Fixed (center of video) in three sizes (full screen x/y, ½ screen x/y and ¼ screen x/y) in one of eight colors (independent from text) Movable in three sizes ((full screen x/y, ½ screen x/y and ¼ screen x/y),) in one of eight colors (independent from text or fixed crosshair) and positionable in 1 pixel increments x and y from the center pixel of the prevailing video format.	
Keyboard	PS-2 compatible (supplied)	
Package and Environment	Size:	Standard 1U, 19 inch rack, 1.75 inch panel, 8 inches deep.
	Weight	5 lbs
	Temperature:	-20°C to 55°ambient
	Humidity:	85% non-condensing
Power Input	100 to 240VAC 50/60 Hz	

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