

## FEATURES

- *Accepts SD, HD and 3G SDI video sources per SMPTE 259M/292M/424M*
- *Auto-detects and formats insertion for 480i/p, 720p and 1080i/p for both NTSC and PAL field/frame rates*
- *Synchronizes time to internal GPS, applied IRIG B or as read from SDI meta-data.*
- *Inserts a time stamp synchronized to within 10usec of frame sync into each field/frame of video and the SDI VANC ancillary packet.*
- *Inserts movable crosshair.*
- *Inserts fixed boresight crosshair.*
- *Inserts up to 3920 characters of alphanumeric data.*
- *Select 1 of 16 colors individually for characters, crosshair and boresight crosshair.*
- *Detachable keyboard.*
- *Remotely controlled via Ethernet Port and RS-232C Serial Port.*
- *Non-volatile Memory saves key settings and certain insertion data.*



## DESCRIPTION

The Model 6980G-HD is a video inserter designed to insert GPS or IRIG B time, sampled precisely at vertical sync time, into serial digital interface (SDI) video. Time stamping is accurate to within 10 microseconds of the occurrence of a frame or field sync. The unit auto-detects and decodes the imaging format permitting most SDI 480i/p, 720p or 1080i/p NTSC or PAL source to be connected without the need to change system settings. The time message may be inserted into the active video image, with the color (1 of 16) and location selected by the user. When selected, the time is also inserted into the SDI meta-data (vertical ancillary packets). The time reference is derived from either the internal GPS receiver, external IRIG B time code source or as read from previously encoded meta-data VANC packets. If the GPS or IRIG lock is lost the unit will automatically continue to run on an internal clock.

Remote control of the 6980G-HD may be performed via either the Ethernet or RS-232 ports. Commands applied to these ports allow the operator to configure the output video display, enter alphanumeric data, position the movable crosshair and read the unit status and time data. A detachable keyboard provides for local control of the unit.

The 6980G-HD is housed in a 1U, 19 inch rack mountable aluminum enclosure, 1.72" high and 9" deep (including connectors) and is powered by 100 to 240VAC 50/60 Hz.

# MODEL 6980G-HD

## HD-SDI VIDEO INSERTION GENERATOR

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### SPECIFICATIONS

<b>Video In</b>	Standard SD/HD/3G SDI digital video. Formats supported and auto-detected:	
	SD	480i at 29.97 Hz 576i at 25 Hz 480p at 59.94 Hz 576p at 60 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)
<b>Video Out</b>	Identical to video input except with graphics and annotation added	
<b>Inserted Time Resolution</b>	0.1 msec	
<b>Timing Accuracy</b>	When Locked to GPS: (Dynamics mode set to 'Fixed')	When NOT locked to GPS but after 24 hours of GPS locked disciplining.
	1 x 10 <sup>-9</sup> @ 1 second	<2.5 x 10 <sup>-6</sup> without discipline
	1 x 10 <sup>-10</sup> @ 100 second	<0.3 x 10 <sup>-6</sup> ; <30 ms per day
	3 x 10 <sup>-12</sup> @ 1 day	
<b>GPS Performance</b>	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
	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
<b>GPS Antenna</b>	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.	
<b>IRIG B Input</b>	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 6:1,	
<b>Meta-Data Encoding</b>	Time stamps are recorded in the vertical ancillary packets (VANC) of the SDI stream IAW NATO STANAG 4609	
<b>Ethernet Port</b>	Standard TCP/IP protocol, 10/100/1000 Mbit/sec, user settable IP, MAC, Gateway and port	
<b>Serial Interface</b>	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) or 38.4K baud.	
<b>Alphanumeric Characters</b>	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	
<b>Keyboard</b>	PS-2 compatible	
<b>Package and Environment</b>	Size:	Standard 1U, 19 inch rack, 1.75 inch panel, 8 inches deep.
	Weight	5 lbs
	Temperature:	-20°C to 60°ambient
	Humidity:	85% non-condensing
<b>Power Input</b>	100 to 240VAC 50/60 Hz 12 watts	



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