

## FEATURES

- 12 Channel GPS Receiver.
- Active GPS antenna.
- Inserts GPS Synchronized time message (DDD:HH:MM:SS.sss)
- RS-232C Serial Port.
- Detachable Keyboard
- Inserts movable crosshair.
- Inserts fixed Boresight crosshair.
- Inserts programmable field of view box.
- Inserts alphanumeric data received via the RS-232 serial port.
- Inserts up to four programmable event messages
- Outputs Time and Latitude & Longitude via serial port.
- Operates with NTSC, S-Video, RS170, or PAL/CCIR
- Non-volatile Memory.
- Operates on 100 to 240VAC, 50/60 Hz power.



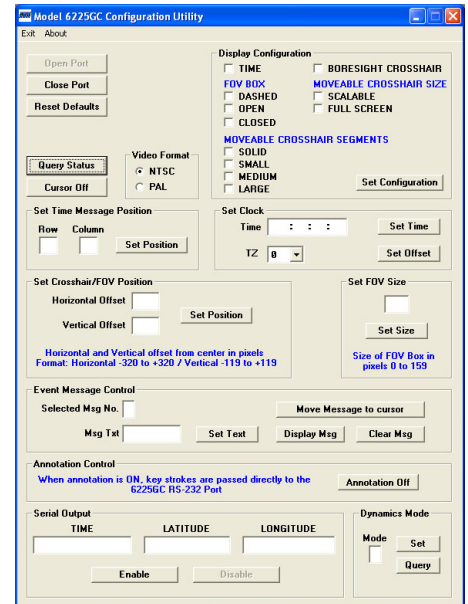
## DESCRIPTION

The Model 6225GCR Video Graphics/Time Inserter provides for the insertion of a GPS synchronized time message, a movable crosshair a boresight crosshair and a field-of-view box into an applied RS-170, NTSC, S-Video or PAL video signal. Additionally the unit provides for the insertion of user generated alphanumeric annotation. Full control of the format of the display is accomplished by commands via a serial RS-232 port or the included detachable keyboard. An internal clock is controlled by the GPS receiver. Once the time is established, a loss of GPS lock will cause the 6225GCR to automatically switch to the internal clock that will increment the time display until the GPS signal is re-acquired. The default format is UTC time. It is also possible to program a time offset to convert from UTC to local time. This offset is entered via the keyboard or RS-232 port. All configuration and programmed values are stored in non-volatile memory and remain until overwritten.

In the absence of a GPS signal the 6225GCR clock may be set by the user via the keyboard or RS-232 port. An asterisk will be displayed to the left of the time message to alert the operator that the time is not derived from GPS. A subsequent GPS satellite lock will override the user-entered time.

A variety of crosshair and Field of View box configurations are selected, sized and positioned using the keyboard or via the serial port. A windows based GUI Configuration Utility is provided which provides full control and programming of the 6225GCR when using the serial port.

The 6225GCR is housed in a 1.72" high x 19" wide x 9 inches deep (1U) rack-mountable aluminum enclosure and is powered by 100 to 240VAC. An active magnetic mount GPS antenna and serial cable are included.



# Model 6225GCR Video Graphics / Time Inserter

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## SPECIFICATIONS

|                                  |  |
|----------------------------------|--|
| <b>Video In A</b>                | Standard 525/60 composite video 2:1 interlace, black negative per EIA RS-170 or NTSC. 75-ohm input impedance. 1.0 volt peak-to-peak, Optionally 625/50 CCIR/PAL, when selected.  |
| <b>Video In B</b>                | Standard Component S-Video (YC)  |
| <b>Video Out A/B</b>             | Identical to video input except with graphics and annotation added and DC restored, 75-ohm impedance (output as specified when terminated by 75-ohms).   |
| <b>Video Amplifier Bandwidth</b> | >20MHz $\pm$ 1 db  |
| <b>Timing Accuracy</b>           |  |
| When Locked to GPS:              | 1 x 10 <sup>-9</sup> @ 1 second<br>1 x 10 <sup>-10</sup> @ 100 second<br>3 x 10 <sup>-12</sup> @ 1 day<br>(Dynamics mode set to 'Fixed')   |
| When powered (no GPS)            | <2.5 x 10 <sup>-6</sup> without discipline<br><0.3 x 10 <sup>-6</sup> ; <30 ms per day<br>(After 24 hours of GPS locked disciplining)  |
| <b>GPS Performance</b>           |  |
| Channels:                        | 12 Parallel channels, tracks all satellites in view  |
| Time-to-first-fix                | <25 seconds typical (warm start), <120 seconds typical (cold start)  |
| UTC Time Mark                    | Synchronized with Global Reference Standard  |
| Reacquisition:                   | 2 seconds typical  |
| Dynamics Mode:                   | Five settings: Fixed, Walking, Land Vehicle, Marine, Airborne. Timing accuracy varies from <25nsec (Fixed) to <100nsec (Airborne)  |
| Datum:                           | WGS 84   |
| <b>GPS Antenna</b>               | Active Patch Magnetic Mount Antenna, 5 VDC power provided via antenna cable. Gain: 26 db $\pm$ 2 db. Noise figure: 1.5 db Max. Antenna interface is short circuit protected.   |
| <b>Serial Interface</b>          | EIA RS-232C, Asynchronous, 8 data bits, 1 start bit, 1 stop bit, no parity, no flow control. The baud rate may be selected via internal DIP switch: 2400, 4800, 9600 or 19.2K baud. Factory default is 9600 Baud   |
| <b>Keyboard</b>                  | PS2 IBM PC style   |
| <b>Display Configuration</b>     | Full screen and user scalable movable crosshair, three configurations; User scalable FOV box, two configurations; fixed boresight crosshair; Four 8 character programmable event messages; Up to 35 lines of 32 alphanumeric characters, user insertable.  |
| <b>Alphanumeric Characters</b>   | Up to 30 lines of 32 Characters when applied video is 525 line. Individual characters are described on a 5X7 pixel matrix. Each pixel is two scanlines high and an equivalent measure in width. Character field is 256 x 240 pixels. Up to 35 lines of characters may be inserted on a 256 x 280 character field in PAL video. |
| <b>Event Messages</b>            | Four messages of up to eight characters each. Individually positioned and triggered  |
| <b>Package and Environment</b>   |  |
| Size:                            | 1.72" high x 19" wide x 9 inches deep (1U) rack-mountable aluminum enclosure.  |
| Weight:                          | 2 lb   |
| Temperature:                     | -10°C to 60°C ambient  |
| Humidity:                        | 95% non-condensing   |
| <b>Power Input</b>               | 100 to 240VAC 50/60 Hz   |