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Sentinel High-Resolution Video Recorder



This brochure is also available in Portable Document Format: PDF

Principles of Operation

In the past, high fidelity recording of the fine detail of a high resolution screen for mission-critical applications has been a tough task. Now, however, the Sentinel video recorder system offers a new approach to recording high resolution images on economical media - an absolutely standard video cassette.

Sentinel solves the problem of faithfully maintaining the fine detail by using Primagraphics' unique pixel rate conversion technique which maintains the original screen resolution by slowing the replayed image content update rate. For many applications - for example, in command and control systems - where the content of the screen image is only changing slowly, this produces first class results with the replayed image being indistinguishable from the original. To achieve this goal, Sentinel offers a variable `trade-off' between the clarity of the detail on the replay screen and the associated replay update rate. This allows you to choose the best combination of screen resolution and content update rate for your particular requirement. The system takes the image straight from the input to the display too, ensuring that the system records just what the operator sees.

A Sentinel system consists of three components:

- Capture unit
- Standard video recorder
- Replay unit

The Capture and Replay units are described below. The Video recorder is a standard high quality S-VHS unit purchased separately.

Sentinel - The Capture Unit

The Capture unit is the heart of the Sentinel package - connecting directly to the RGB analogue port of the high resolution monitor. The unit will accept signals from monitors displaying up to 1600 x 1280 pixel resolution and will lock to the incoming video using the built-in auto-sync facility. Facilities are provided for connecting two video sources, either, or both, of which may be selected for recording.

The Sentinel Capture unit includes a very high speed digitiser and frame store, which captures a complete video frame into the frame store, typically every 250msec. The frame is then converted into PAL/NTSC format, and output at standard video rate on to a conventional cassette recorder with each pixel in the original image being represented by one or more pixels in the output frame. This process effectively provides pixel rate conversion between the input and recorded video, and allows an appropriate choice of image fidelity and update interval to be made.

The Sentinel Capture unit is available in three different forms of packaging. Firstly, it is offered as a standard VME format board suitable for plugging into the backplane of rack systems. Connectors are provided on the board for two video inputs, a serial control line and the S-video output. The unit is also available in an elegant, stand-alone desk top enclosure. The package incorporates a power supply and the board connectors for input and output are available at the rear of the enclosure. A simplified 19 inch rack mountable version of this enclosure provides the final packaging option.

The Sentinel capture unit will auto-sense the incoming video signal and make an appropriate selection of recording parameters. Alternatively, the unit can be set up using the supplied Windows software by connecting a PC to the unit through a simple serial connection.

Sentinel - The Replay Unit

On playback, the recorded video is passed directly to the Sentinel Replay Unit which captures the PAL/NTSC format signal. Using encoded information in this signal, the original image is reconstituted and then presented on the Sentinel display controller as a high resolution frame which can be displayed on a

standard display monitor. The operation of the Replay unit is controlled through a simple menu interface displayed on the screen of the output monitor.

The Sentinel Replay unit is available in the same three forms of packaging as the Capture Unit.

Specification

Capture Unit

Video Input:	Resolution: From 640x480 to 1600x1200 (for higher resolutions consult factory) Line Rate: From 15kHz to 130kHz Signal type: RGB non-interlaced Sync:Sync on Green, Composite, Separate H and V Channels: 2 Sampling frequency: 20MHz to 200MHz
Video Output:	Signal type: S-Video (Y/C) Format: PAL or NTSC
Connectors:	Video inputs 1 and 2: 15 way D type Video Loop output 1 and 2: 15 way D tpye S-Video output: 4 way mini-DIN RS 232 Control Interface: 8 way mini-DIN

Replay Unit

Video Input:	Signal type: S-Video (Y/C) Format: PAL or NTSC Sampling Frequency: Up to 15MHz
Video Output:	Formats: Wide range of medium to high resolution non-interlaced RGB formats Resolution: Up to 1600x1200 Pixel Rate: Up to 190MHz Image Update Rate: Variable, typically 3-4Hz

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