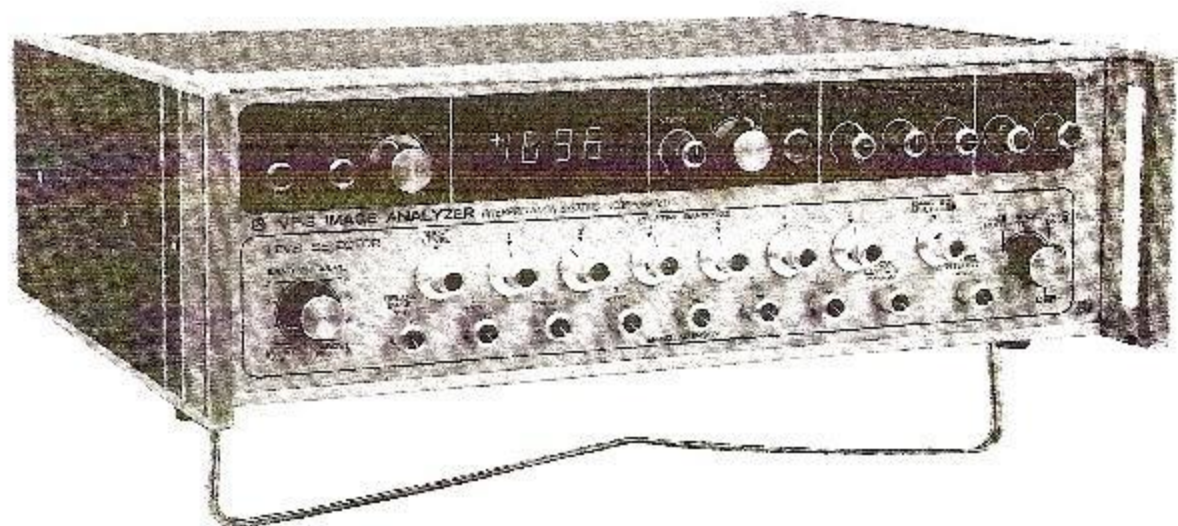


VP-8

IMAGE ANALYZER

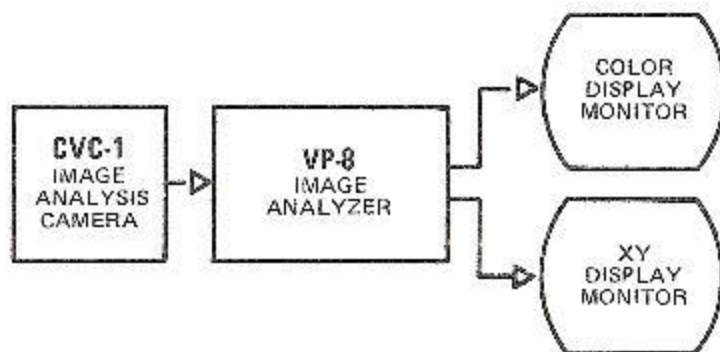


The VP-8 Image Analyzer is the key element in ISI's single channel image enhancement and analysis systems. This versatile instrument operates on a video image input and converts the image data to new display formats for improved visual image interpretation and classification. In addition, the unit allows many quantitative measurements to be taken from the image data.

Applications for the VP-8 exist wherever image analysis is needed. Visible spectrum photography, radar imagery, special and industrial x-ray photography, and infrared thermography can all be analyzed using off-line or real time closed circuit systems.

The capabilities of the VP-8 are varied and include isodensity contouring, image density measurement, signal level monitoring, 3D display, color and monochrome presentation, and computer compatibility. A more detailed description of capabilities is contained in the specifications list which follows.

A typical image analysis system using the VP-8 is shown below. The input device in this system is a CCTV camera, although other video sources, such as video disc files, scan converters, and high speed video refresh memory could be used. Output display devices include color and monochrome monitors and large screen X-Y displays.



INTERPRETATION SYSTEMS INCORPORATED

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August 1977

LEVEL SLICE

OUTPUT DISPLAY CODING: Allows the classification of image data into brightness bands separated by iso-intensity contour lines. Bands are displayed as unique colors or gray levels depending upon output monitor selection. Color sequence is preset at ISI.

NUMBER OF BANDS: 8

BAND SIZE CONTROLS: Provide independent adjustment of the boundaries of all bands, permitting complete flexibility in selecting linear, logarithmic, or other band size relationships.

BAND SIZE MULTIPLIER: Expands or compresses all bands simultaneously. 100:1 range.

BAND INTENSITY CONTROLS: The displayed brightness of each band can be independently varied from zero to full output, allowing only selected bands to be displayed.

VIDEO INTENSITY: Allows the superposition of unprocessed image data and level sliced data on the display.

TEST: Displays a series of test bars on the monitor, the width of which are proportional to the relative band size settings.

ISOMETRIC PROJECTION

OUTPUT DISPLAY CODING: Provides a pseudo three dimensional presentation where the X-Y coordinates of the input image are displayed in isometric projection, and brightness information is shown as apparent 3-D relief (*vertical deflection on the display*).

ROTATION CONTROL: Provides $\pm 180^\circ$ rotation of the presentation.

TILT CONTROL: Provides inclination of the presentation from 0 to 90 degrees.

RELIEF CONTROL: Varies the apparent 3-D relief. Inverting control allows positive or negative relief presentation.

MAGNIFICATION CONTROL: Provides a 5X electronic expansion of the presentation.

CURSOR

CROSSHAIRS: Horizontal and vertical crosshairs can be positioned to any point on the image with independent controls.

SCAN LINE PROFILE

OUTPUT DISPLAY CODING: Displays a profile of the brightness information along any horizontal scan line.

SCAN LINE SELECTOR CONTROL: Selected scan line is determined by location of the horizontal crosshair.

DIGITAL METERING CIRCUIT

OUTPUT DISPLAY CODING: Presents the following types of information on a built-in 3-1/2 digit panel meter.

LEVEL: Indicates the brightness value at each level slice band boundary, as set by the Band Size Controls.

AREA: Indicates the relative area of the image displayed in each level sliced band. A calibration control scales readings to conform to actual image parameters.

X-COORDINATE: Indicates the X coordinate at the point of crosshair intersection. A coordinate calibration control also allows coordinate scaling.

Y-COORDINATE: Indicates the Y coordinate at the point of crosshair intersection.

POINT: Indicates the brightness of the image at the point of crosshair intersection. A calibration control allows scaling of this output.

SCAN FORMATS

STANDARD 60 Hz SYSTEMS: 525 lines per frame, 30 frames per second, 2:1 interlace.

STANDARD 50 Hz SYSTEMS: 625 lines per frame, 25 frames per second, 2:1 interlace.

OTHER SYSTEMS:

- Field Rate: Available from 45 to 65 fields per second.
- Interlace: 1:1 available.
- Lines Per Frame: Available from 200 to 1000 lines.

INPUTS

POWER: 117/230 VAC 50/60/400 Hz, 100 VA.

VIDEO: EIA standard or 0.7 volts nominal, 75 ohm or 1000 ohm, DC coupled or DC restored, BNC.

SYNC (ANY OF THE FOLLOWING):

- Video Composite
- External Composite: Positive or negative, 0.35 to 25 volts, BNC.
- External Separate: Positive or negative, 0.35 to 25 volts, BNC.
- T²L Composite: Sync levels T²L compatible, digital connector input.

OUTPUTS

COLOR MONITOR OUTPUTS: Red, green and blue, 0 to +1 volt into 75 ohm, BNC. (*These outputs are suitable for RGB input television monitors.*)

XYZ DISPLAY MONITOR OUTPUTS:

- Horizontal: ± 1 volt at 50 ohm or ± 5 volts at 1K ohm, BNC.
- Vertical: ± 1 volt at 50 ohm or ± 5 volts at 1K ohm, BNC.
- Intensity: ± 1 volt at 50 ohm, BNC.

MONOCHROME MONITOR OUTPUT: 0 to +1 volt into 75 ohm, BNC.

SYNC: T²L composite through digital connector.

PERFORMANCE

BANDWIDTH: 8 MHz

LEVEL SLICE RISE TIME: 40 nsec.

MECHANICAL

DIMENSIONS: 17" wide x 5.25" high x 15" deep. Standard 19" rack mounting possible.

WEIGHT: 20 lbs.



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