

MODEL 6113B
VIDEO PATTERN GENERATOR

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MODEL 6113B

VIDEO PATTERN GENERATOR

1.0 GENERAL

The ITS Model 6113B, Video Pattern Generator is an 875 line video signal source designed for setup and performance test of Video Monitors, Video Recorders, and other video processing equipment. Three separate simultaneously operating video outputs are provided. Each output may be configured to provide either one of two patterns or a reference signal which produces a blank image on a display. Either pattern or the reference signal may be selected by front panel switches or remotely via a control port.

The 6113B is housed in a 1U, 19 inch rack mountable aluminum enclosure, 1.72 inch high and 8 inches deep. It is powered by 105-250VAC. The weight is approximately 5.25 lbs.

2.0 CHARACTERISTICS

2.1 VIDEO OUTPUTS

There are three video outputs. Two of the outputs consist of separate video and composite synchronization signals. The third output is full composite video. Any of three video signals may be selected to be output via each of the video outputs as selected by front panels controls or remotely via a discrete control port. The three selectable signals consist of two generated patterns (A & B) and a video black reference (REF).

Each of the three video outputs may be controlled independently and all operate simultaneously. All have output impedances of 75 ohms and are designed to provide specified signals when terminated by 75 ohms.

2.1.1 Pattern A (Fig. 1)

Pattern A consists of two, ten level gray scales, at the left and right of center. Additionally the pattern has four vertical "Focus" lines at the center, a border and a single horizontal line at the center. The displayed pattern shown is Figure 1 and the video timing is shown in Figures 3 and 4.

2.1.2 Pattern B (Fig. 2)

Pattern B is a ten level gray scale made up of horizontal bars and occupying a window centered in the video frame. The height of the window is 60 percent of the frame and the width is 30 percent of the frame. The gray scale range is black to full white with the brightest bar at the bottom.

2.1.3 Reference Video

The reference video is a black screen video signal. When selected a blank screen with no video artifacts is displayed.

2.2 REMOTE CONTROL

As an alternate to the front panel switches, the pattern selection for each video output may be performed remotely via the 6113B Remote Control port. The front panel mounted LOCAL/REMOTE Selector switch must be set to the REMOTE position to enable remote control. When set to REMOTE, all front panel pattern select switches are disabled. When in the Remote Mode, selection is made by the application of TTL or contact closures, making up a three bit binary code, to the REMOTE CONTROL connector. See table 1.

Note that only Pattern A or Reference may be selected for output on the Composite Video output. When in the Local mode however, all three signals are available for output on Composite Video.

Video Signal Output
Model 6113B

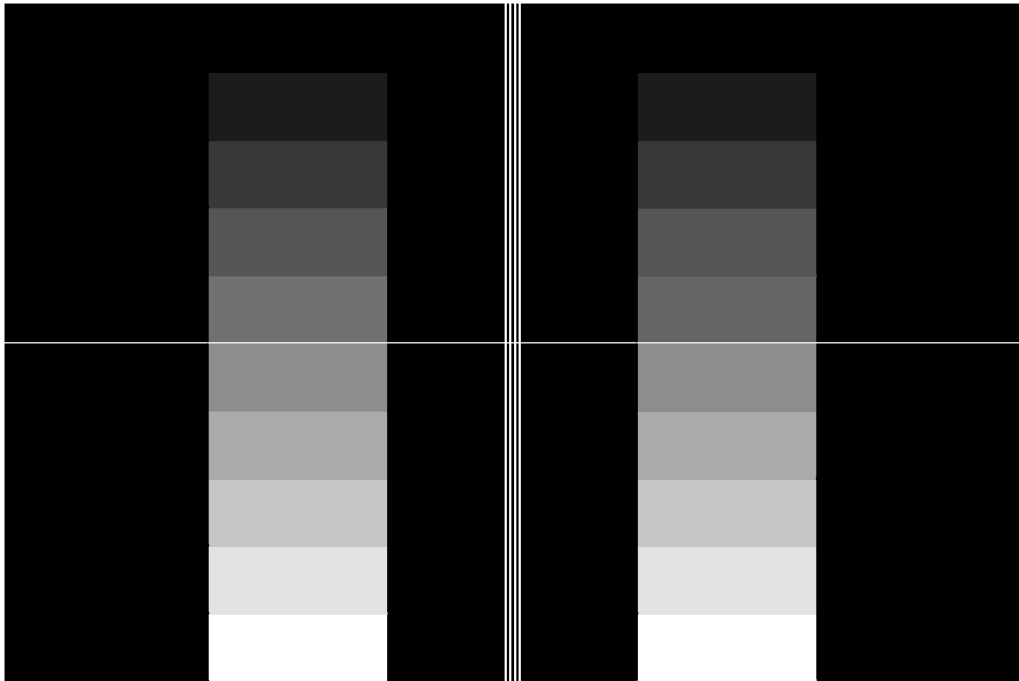


Fig 1

Pattern

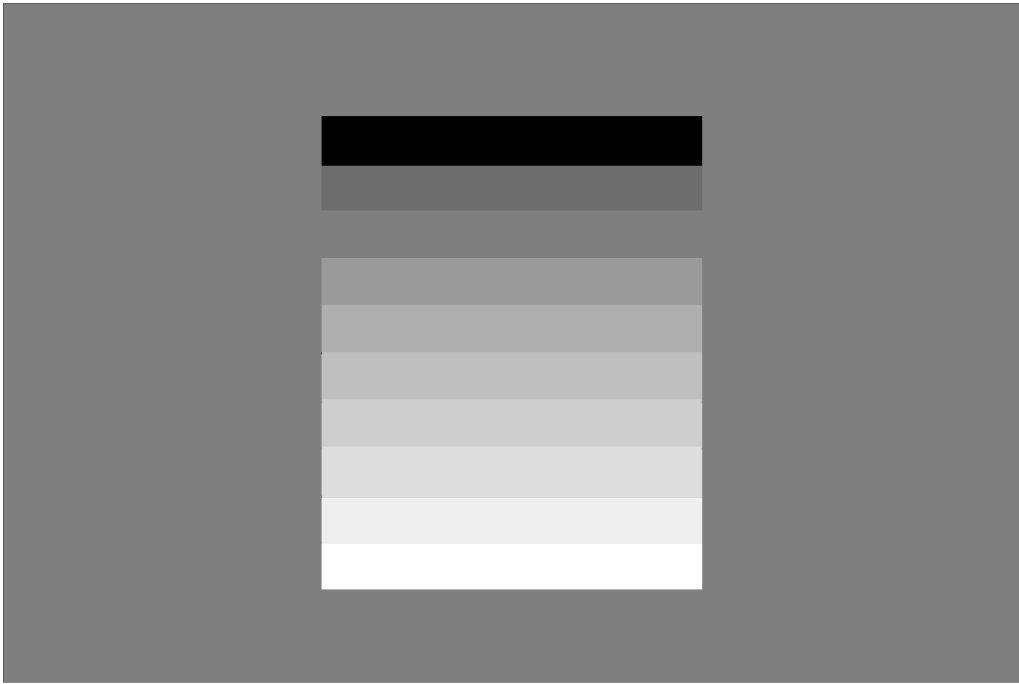
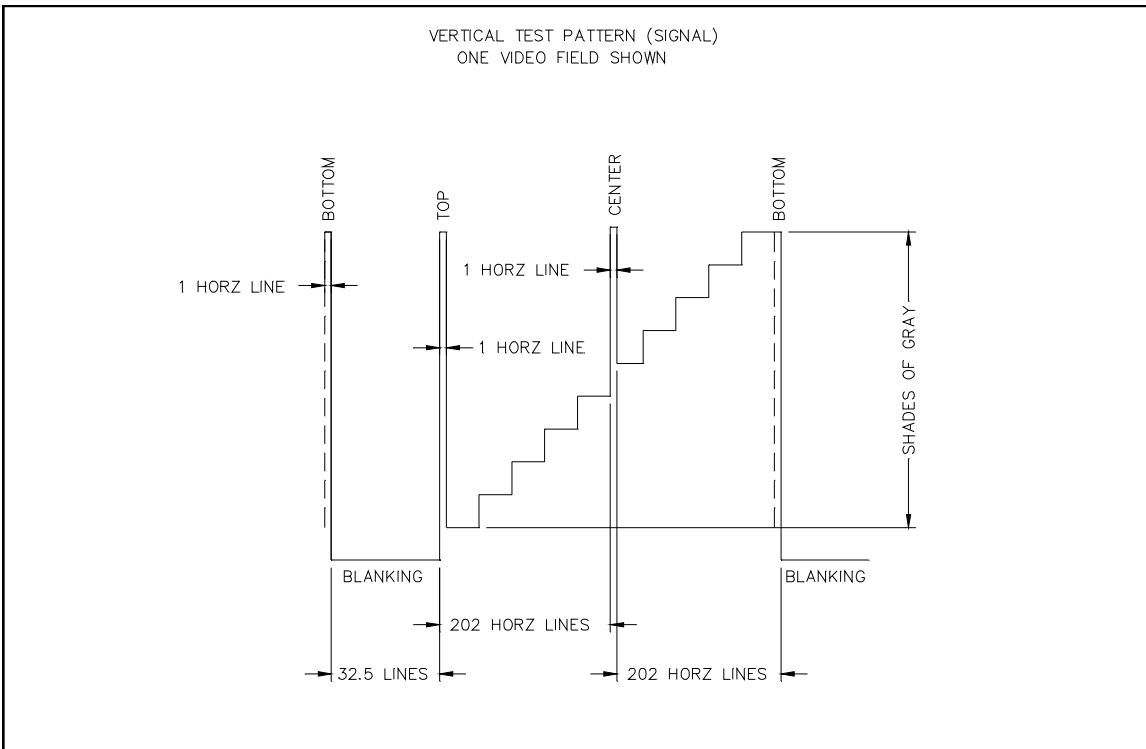
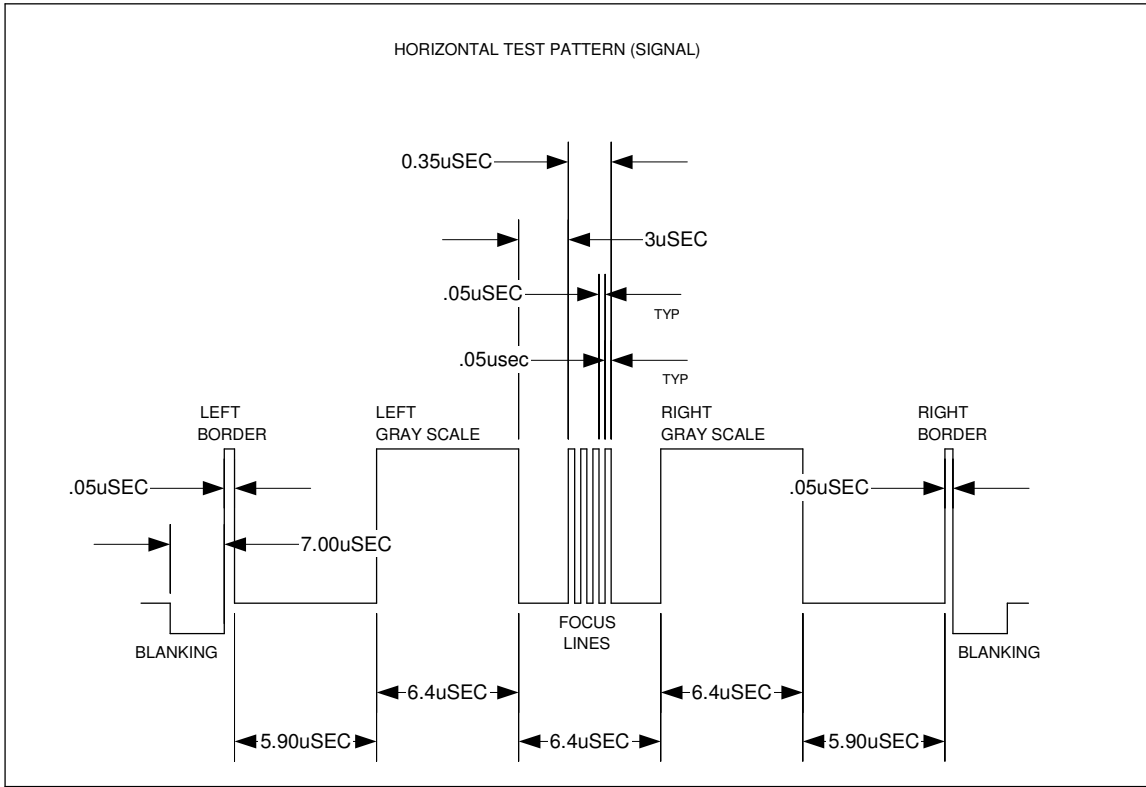


Fig. 2
Pattern B

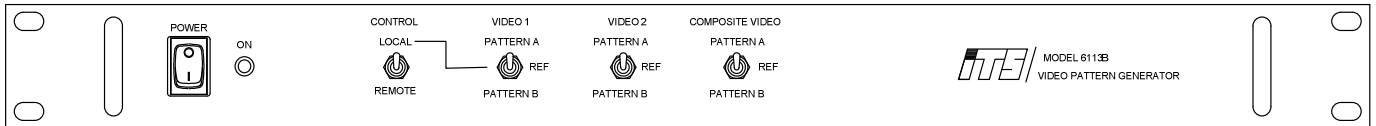


3.0 MECHANICAL CONFIGURATION (Fig. 5)

The 6113B is housed in a 1U, 19 inch rack mountable aluminum enclosure, 1.72 inch high and 8 inches deep. (See fig 1). All circuitry is on a single printed wiring board. All internal connections are via mating connectors, no edge connectors are used.

All connectors are on the rear panel and all controls and indicators are on the front panel.

**Model 6113B
Enclosure
Figure 5**



4.0 CONTROLS, INDICATORS AND CONNECTORS

- | | | |
|------|--------------------------------|--|
| 4.1 | Power ON/OFF | Rocker Switch -
Turns power to unit ON and OFF. LED indicator is illuminated when power is on. |
| 4.2 | Video 1, Video | BNC Connector -
Outputs selected non-composite video pattern. |
| 4.3 | Video 1, Sync | BNC Connector -
Outputs composite synchronization signal. |
| 4.4 | Video 2, Video | BNC Connector -
Outputs selected non-composite video pattern. |
| 4.5 | Video 2, Sync | BNC Connector -
Outputs composite synchronization signal. |
| 4.6 | Composite Video | BNC Connector -
Outputs selected composite video pattern. |
| 4.7 | Remote Control | DE9-S Connector -
Receives discrete control signals for selection of video patterns as shown Table 1 below. |
| 4.8 | Video 1, Pattern Select | Three Position Toggle Switch -
Selects Video 1 Pattern (A, B or Reference). |
| 4.9 | Video 2, Pattern Select | Three Position Toggle Switch -
Selects Video 2 Pattern (A, B or Reference). |
| 4.10 | Composite Video Pattern Select | Three Position Toggle Switch -
Selects Composite Video Pattern (A, B or Reference).. |
| 4.11 | Local/Remote Control Select | Two Position Toggle Switch -
Selects Local (panel switches) or Remote control. |
| 4.12 | Power In | Three pin connector with integral line filter - Receives detachable Line cord. |

Table 1
Remote Control Pattern Selection Codes

Binary Pattern Code			Video Pattern Generator Sources		
Pin 1	Pin 2	Pin 3	Video1	Video2	Composite Video
0	0	1	Pattern A	Pattern A	Pattern A
0	1	0	Pattern A	Pattern B	Pattern A
0	1	1	Pattern B	Pattern A	Pattern A
1	0	0	Pattern B	Pattern B	Pattern A
1	0	1	Reference.	Pattern A	Pattern A
1	1	0	Pattern B	Reference.	Pattern A
1	1	1	Reference.	Reference.	Reference.

Note: Pins 6 to 9 are signal ground.

5.0 SPECIFICATIONS

5.1 Video Characteristics

- 5.1.1 Composite Video 875 line composite video in accordance with EIA RS-343A. Interlaced 2:1, 4:3 Aspect ratio. 1 volt p-p, black negative. Output as specified when terminated in 75 ohm load.
- 5.1.2 Composite Sync. 875 line in accordance with EIA RS-343A. Specific timing is as follows:
- | | |
|--------------------|---|
| Horiz Freq: | 26246.7 Hz |
| Horiz Sync Period: | 38.100 microseconds |
| Horiz Front Porch: | 1.000 microseconds |
| Horiz Sync Pulse: | 2.750 microseconds |
| Horiz Back Porch: | 3.250 microseconds |
| Horiz Blanking: | 7.000 microseconds |
| Horiz Pixel: | 0.05 microsecond |
| Vert Freq: | 59.9925 Hz |
| Vert Sync Period: | 16.6688 microseconds |
| Vert Front Porch: | 3 Horizontal lines |
| Vert Sync Pulse: | 3 Horizontal lines |
| Vert Back Porch: | 26 Horizontal lines |
| Vert Pixel: | 1 Horizontal field line (two frame lines) |
- 5.1.3 Composite Sync Levels
- | | |
|---------------------|--|
| Voltage Range: | High = 4.0 ± 0.5 Volts. Low = $0.0V \pm .5V$. (Low true)
Output as specified when terminated in 75 ohm load. |
| Output Impedance: | 75 ohms |
| DC Reference level: | Signal Ground ± 0.1 Volts |
| Rise Time: | 114 nsec Maximum. |
- 5.1.4 Video levels, non-composite
- | | |
|-------------------|--|
| Amplitude: | 1.075 ± 0.1 Volts peak-peak. Output as specified when terminated in 75 ohm load. |
| Output Impedance: | 75 ohms |
| White level: | 1 Volt ± 0.1 Volts peak, referenced to Black level. |
| Black level: | .075 Volt ± 0.025 Volts, referenced to Blanking level. |
| Blanking level: | Signal Ground ± 0.1 Volts. |

5.0 SPECIFICATIONS (continued)

- 5.1.5 Pattern A: Two vertical ten level gray scales at left and at right of center, with black at top and white at bottom. Both gray scales are 128 pixels wide and occupy the full vertical frame. The left scale begins at horizontal pixel 119 and the right scale begins at pixel 375. The pattern includes a one pixel white border and a one pixel horizontal line at the center vertically. Also included are four focus lines occupying the full vertical frame and located at the center horizontally. The focus lines are one pixel wide and one pixel apart. The lines start at horizontal pixel 307. (See Figures 1, 3, and 4)
- 5.1.6 Pattern B: Ten level gray scale described in horizontal bars occupying a window in center of frame. Frame is 622 pixels by 811 lines. Window is 186 pixels wide and 490 lines high. Each horizontal gray scale bar is 49 lines high. Upper left corner of window is located at pixel number 218 and line number 160. (See Figure 2)
- 5.1.7 Reference Video 0 volts \pm 0.05 volts with respect to Blanking
- 5.2 Remote Control TTL levels or contact closure to ground. 10KOhm pull-ups or discrete inputs.
- 5.3 Power: 105-250 VAC \pm 10%, 50/60 Hz. 5 watts.
- 5.4 Environmental
Temperature 0°C to 50°C operating, -20 to 70°C storage
Humidity 0 to 90% non-condensing, operating
EMI Designed to meet FCC part 15 Class A standard.
- 5.5 Enclosure
Size: 1U 19-inch wide, 1.72 inch high, 8-inch deep.
Weight: 4 lbs.