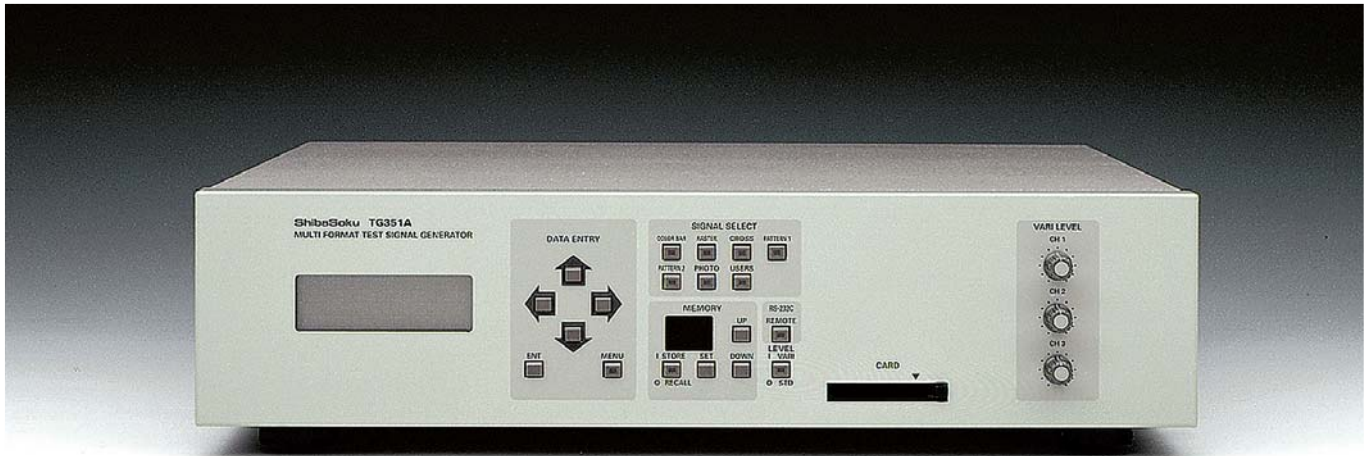


# TG351A

## TELEVISION INSTRUMENTS

### MULTI FORMAT TEST SIGNAL GENERATOR



#### General

The TG351A is a test signal generator used in testing HDTV, NTSC, PAL, 525P and 625P TV monitor systems, and VGA, SVGA, XGA, and SXGA multi-scan monitor systems. Using a Compact Flash (CF) card as the storage medium, this unit outputs over 20 types of test signals as standard. Besides analog output switching between Y/P<sub>B</sub>/P<sub>R</sub> and G/B/R, switching between Y, C, and VBS output is possible in NTSC and PAL systems. D1 serial output is provided as standard for digital output in NTSC and PAL.

#### Features

- Horizontal, vertical, and diagonal scrolling function enables unit to be used as a pseudo-moving picture generator.
- Settings in effect when power is turned off are stored to the CF card and reactivated when power is turned on again (except when high-resolution chart or natural picture is selected).
- Using the supplied editing software, image data created with ShibaSoku's TG35AX, TG35BX or TG35CX digital test signal generator can be converted and stored onto the CF card for use with the TG351A.

#### Specifications

##### ● Video signal outputs

- Type of signals 3 formats: Y/P<sub>B</sub>/P<sub>R</sub>, G/B/R, Y/C/VBS (selectable; NTSC, PAL only)
- Connector type BNC, 75 Ω, unbalanced (1 each)
- Video outputs level
 

HDTV	G/B/R, Y/P <sub>B</sub> /P <sub>R</sub>	700 mVp-p ± 5%
NTSC	Y/VBS	714 mVp-p ± 5%
	G/B/R, P <sub>B</sub> /P <sub>R</sub>	700 mVp-p ± 5%
PAL/525P/625P/VBS, G/B/R, Y/P <sub>B</sub> /P <sub>R</sub>		700 mVp-p ± 5%
VGA/SVGA/XGA/SXGA		
	G/B/R	700 mVp-p ± 5%

##### • Outputs level variable range

Max. 150% for Y/P<sub>B</sub>/P<sub>R</sub>, G/B/R, or Y/VBS outputs.

Note: For all systems, within ± 15 mVp-p when reference value is less than 300 mVp-p.

##### ● Sync signal outputs

Simultaneous ON/OFF of sync signal for Y/P<sub>B</sub>/P<sub>R</sub>, G/B/R, or Y/VBS outputs is possible.

##### • Sync/BB signal outputs level

- |                                                                                 |                  |
|---------------------------------------------------------------------------------|------------------|
| HDTV                                                                            | ± 300 mVp-p ± 5% |
| NTSC (BB output during Y/C/VBS output)                                          |                  |
| Sync                                                                            | 286 mVp-p ± 5%   |
| Burst                                                                           | 286 mVp-p ± 5%   |
| PAL (BB output during Y/C/VBS output)                                           |                  |
| Sync                                                                            | 300 mVp-p ± 5%   |
| Burst                                                                           | 300 mVp-p ± 5%   |
| NTSC/PAL/525P/625P (during G/B/R or Y/P <sub>B</sub> /P <sub>R</sub> selection) |                  |
| Sync                                                                            | 300 mVp-p ± 5%   |

##### • Connector type BNC, 75 Ω, unbalanced, (1 each)

Note: BB output occurs only when Y/C/VBS signal output is selected in NTSC or PAL; No signal output occurs for SYNC/BB output in VGA, SVGA, XGA, or SXGA.

##### ● HD, VD signals

- Outputs level ≥ 2 Vp-p
- Connector type BNC, 75 Ω, unbalanced, (1 each)

##### ● Memory of Image & sync

- Image memory size H 4096 x V 2048 x 10 bits x 3 channels (Method of use varies depending on sync format.)
- Image memory configuration Selectable Y/P<sub>B</sub>/P<sub>R</sub> or G/B/R.
- Image memory size H 4096 x V 16 x 8 bits
- Sampling frequency Image memory ; Max. 160 MHz  
Sync memory ; Max. 80 MHz

##### ● Settings storage Up to 99 front panel settings can be stored in memory.

##### ● External interface RS-232C

##### ● D5 output

525I, 525P, 750P, 1125I, 1125P

• Recognized signal lines

Recognized voltage	Line 1 Scanning lines (Effective lines)	Line 2 I/P	Line 3 Aspect ratio
5V	1125(1080)	59.94P,60P	16:9
2.2V	750(720)	—	4:3 letter box
0V	525(480)	59.94I,60I	4:3

Note: Recognized voltage is 2.2V for all systems outside the D terminal standards for PAL, VGA, etc., except in PAL where Line 1 = 0V, Line 2 = 2.2V, Line 3 = 0V.

- Connector type 14 pins (receptacle)
- VGA terminals(DISPLAY OUTPUT)
- Number of outputs 1
- Signal outputs level
  - Max. 700 mVp-p
- Outputs HD, VD ≥ 2 Vp-p
- Connector type D-sub mini 15 pins (socket)
- Serial digital outputs
- NTSC/PAL D1 outputs
  - Standards conformance SMPTE 259M
  - Data format 10 bits, 4:2:2 component
  - Data rate 270 Mbps
  - Connector type BNC
  - Number of outputs 1
- HD-SDI outputs (option)
  - Standards conformance SMPTE 292M
  - Data rate 1.485 Gbps (F=1)  
1.485/1.001 Gbps (F=1.001)
  - Connector type BNC
  - Number of outputs 3
- Embedded audio outputs
  - Standards conformance SMPTE 299M
  - Quantization bits 20
  - Number of hannels 8
  - Sampling frequency 48 kHz
  - Output frequencies 1, 3 kHz, 400 Hz, MUTE (selectable)
  - Level -20, -18 dBFS (selectable)
  - Audio multiplexing ON/OFF (selectable)

●TMD5, LVDS outputs (option)

- TMD5 systems
  - Standards conformance JEIDA, digital monitor interface standards Ver. 1.0
  - Clock frequency 25 to 125 MHz
  - Data format R/G/B, 8 bits per signal
  - Output level 500 mV differential output (300 to 650 mV adjustable)
  - Connector type 29 pins
  - Number of outputs 1
  - Signals not yet supported DDC, USB, CTRL
- LVDS systems
  - Standards conformance JEIDA, digital monitor interface standards Ver. 1.0
  - Clock frequency 20 to 65 MHz
  - Output level 350 mV differential output
  - Connector type MDR 26 pins
  - Number of outputs 1
  - Signals not yet supported DDC, USB, CTRL
- Test signals
  - Below are the basic types of signals. Some signals do not output for some systems.
  - Color Bar (4 types) Raster
  - Crosshatch (5 types) Stair Step (2 types)
  - Ramp (3 types) H Sweep
  - Multiburst Pathological
  - SQR Contrast
  - Pluge 2T Pulse
  - Resolution chart
- Optional natural pictures
  - Shibasoku original natural pictures
    - Dining table Stationery
    - White house Toys
    - Omar shrimp and fruits Chestnuts
    - New year's gift
- High-resdution chart
  - CZP, V Sweep
- General specifications
  - Power supply AC 90 to 130, 180 to 250 V 50/60 Hz
  - Power consumption Max. 200 VA
  - Operating temperature range 5°C to 40°C
  - Relative humidity 25% to 90%RH (non-dewung)
  - Dimensions 426 (W) x 88 (H) x 360 (D) mm
  - Weight Approx. 6 kg (main unit only)
  - Accessories
    - CF card (256MB) x 1
    - Editing software (MO disk) x 1
    - Power cord x 1
    - 3P-2P adapter x 1
    - User's manual x 1



TG351A.2.03