

# TG39A Series

TELEVISION INSTRUMENTS

MULTI TEST SIGNAL GENERATOR



## General

This TG39A series of Multi Test Signal Generators is designed to support the testing requirements of eight television systems to add a new function to the TG19C series. Over 100 kinds of test signals can be generated with the video signal section, and an SCART connector output has been added as standard equipment to the output ports of the TG19C series. In the RF signal generation section, the output level can be varied in 0.5 dB steps, and SAW filters for each TV system have been built in to improve signal accuracy. A lineup of 4 models has been prepared ranging from a model exclusively for video signals to a Teletext-compliant model, to provide the optimum support for the development, design, production and testing of devices such as TVs, DVD recorders and TV tuners for any country in the world.

## Specifications

### ● Selection guide

| Model name       | TG39AV | TG39AA | TG39AB | TG39AC |
|------------------|--------|--------|--------|--------|
| Output signal    |        |        |        |        |
| Video signal     | A      | A      | A      | A      |
| RF signal        | N/A    | A      | A      | A      |
| Sound MPX signal | N/A    | N/A    | A      | A      |
| Teletext         | N/A    | N/A    | N/A    | A      |

A : Available

N/A : Not available

## Features

- Support the testing requirements of eight television systems - NTSC, NTSC-50, NTSC-4.43 MHz, PAL, PAL-60, PAL-M, PAL-N, SECAM.
- Equipped with SCART connector output (for European systems).
- A WSS (Wide Screen Signalling) signal can be superimposed. The information in the 14 bits can be set individually.
- The Monoscope pattern signal has the 4:3 and 16:9 aspect ratios.
- Equipped with a Combination function. This allows signal output by combining multiple patterns.
- As for sound signals, the built-in oscillator can modulate a 400 Hz, 1 kHz or 3 kHz sine wave signal (TG39AA/AB/AC).
- Since the vision carrier and sound carrier have an inverting function, this equipment can be used for the French LOW channel (TG39AA/AB/AC).
- The channel characters of RF signal can be superimposed (TG39AA/AB/AC).
- One audio signal input is equipped. So, the TG39A series can be connected with an external audio signal generator, ShibaSoku's TA35C or AS953B (TG39AA/AB/AC).
- Since input and output of sound IF signals is possible, signals from ShibaSoku's 2-carrier system and NICAM system (TA03D/TA05C) can be superimposed on the RF signal from this equipment (TG39AA/AB/AC).
- Sound MPX functions corresponding to various nations can be equipped (TG39AB/AC).
- The TG39A Series Multi Test Signal Generators also includes models equipped with the Teletext and Closed Caption functions (TG39AC).
- The memory function can store up to 256 signal combinations, and the auto switching mode can automatically switch between memorized signals at intervals of between 1 second and 3,600 seconds.
- The RS232C remote interface is equipped standard. As an option, GP-IB Unit can be built-in.

● Specifications

| Output signal                   | Specifications   |
|---------------------------------|--|
| VBS output signal               | Front: 1 output, Rear: 2 outputs   |
| VBS output signal level         | Front :1 Vp-p (0 to 150% variable) 75 Ω , Rear:1 Vp-p 75 Ω   |
| GBR/Y Cb Cr output signal       | Rear: 1 output each (switchable)   |
| GBR/Y Cb Cr output signal level | NTSC (STD, 4.43): 1 Vp-p (0.714+0.286 Vp-p)<br>PAL (STD, 60, M, N), NTSC-50: 1 Vp-p (0.7+0.3 Vp-p) |
| S-VHS output signal             | Rear 1 output  |
| S-VHS output signal level       | NTSC (STD, 4.43): 1 Vp-p (0.714+0.286 Vp-p)  |
| Y+S signal                      | PAL (STD, 60, M, N), NTSC-50, SECAM: 1 Vp-p (0.7+0.3 Vp-p)   |
| S-VHS output signal level       | NTSC (STD, 4.43): 0.681 Vp-p (cyan signal)   |
| C signal                        | PAL (STD, 60, M, N), NTSC-50: 0.664 Vp-p (cyan signal)   |
| HS, VS, C.SYNC output signal    | Rear: 1 output each 1.5 Vp-p or higher (75 Ω terminated)   |
| RF output signal frequency      | 30 to 950 MHz (in steps of 50 kHz)   |
| RF output signal level          | 29 to 109 dB μ /75 Ω (in steps of 0.5 dB)  |
| RF output signal characteristic | Spurious -40 dB or lower, DG/DP: 3%/3 degrees  |
| RF output signal P/S ratio      | -30 to 0 dB (in steps of 0.5 dB)   |
| Video modulation                | 0 to 100% (in steps of 0.5%)   |
| Audio modulation                | 0 to 100 kHz (in steps of 0.5 kHz)   |

● Sound MPX signal

Two-carrier system

| TV SYSTEM                      | NTSC-M       | PAL-B, G      | SECAM-D, K<br>PAL-D, K |
|--------------------------------|--------------|---------------|------------------------|
| Country                        | KOREA        | GERMAN        | CZE                    |
| First sound carrier frequency  | 4.5 MHz      | 5.5 MHz       | 6.5 MHz                |
| Second sound carrier frequency | 4.724213 MHz | 5.7421875 MHz | 6.2578125 MHz          |
| First sound carrier level      | -13 dB       | -13 dB        | -13 dB                 |
| Second sound carrier level     | -20 dB       | -20 dB        | -20 dB                 |

NICAM system

| TV SYSTEM                  | PAL-B, G / D, K<br>SECAM-L                   | PAL-I     |
|----------------------------|--|-----------|
| Country                    | SCANDINAVIA<br>CHINA<br>FRANCE               | U.K.      |
| Sound carrier frequency    | 5.85 MHz                                     | 6.552 MHz |
| First sound carrier level  | -13 dB (SCA, CHN)<br>-10 dB (FRA)            | -10 dB    |
| Second sound carrier level | -20 dB (SCA)<br>-25 dB (CHN)<br>-27 dB (FRA) | -20 dB    |

BTSC/FM-FM system

| TV SYSTEM               | NTSC-M  | PAL-M   | NTSC-M  |
|-------------------------|---------|---------|---------|
| Country                 | USA     | BRAZIL  | JAPAN   |
| Sound carrier frequency | 4.5 MHz | 4.5 MHz | 4.5 MHz |
| Sound carrier level     | -10 dB  | -10 dB  | -6 dB   |

Specifications

● Teletext, Closed caption (TG39AC)

|                      | FLOF/TOP             | VBI       | CC                       |
|----------------------|----------------------|-----------|--------------------------|
| TV system            | PAL-B, G, D, H, I    | NTSC-M    | NTSC-M                   |
| Superimposition line | 20H, 21H, 333H, 334H | 16H, 279H | 21H, 284H (XDS is added) |
| Number of pictures   | 21 pages each        | 9 pages   | —                        |
| PDC                  | 4 patterns           | —         | —                        |
| VPS                  | 4 patterns           | —         | —                        |

● Standard video signals

| Signal select | Aspect ratio | Types of signals | W/B | COMBI | Remarks                           |
|---------------|--------------|------------------|-----|-------|-----------------------------------|
| CIRCLE        | 4:3/16:9     | 1                | A   | N/A   | All patterns can be superimposed. |
| MARKER        | 4:3/16:9     | 1                | A   | N/A   | All patterns can be superimposed. |
| DOT           | 4:3/16:9     | 1                | A   | N/A   | All patterns can be superimposed. |
| CROSS         | 4:3/16:9     | 1                | A   | N/A   | All patterns can be superimposed. |
| COLORBAR      | 4:3          | 8                | N/A | A     |                                   |
| CHECKER       | 4:3/16:9     | 4                | N/A | A     |                                   |
| RESOLUTION    | 4:3          | 4                | N/A | A     |                                   |
| WHITE         | 4:3          | 12               | N/A | A     |                                   |
| PURITY        | 4:3          | 9                | N/A | A     |                                   |
| STAIR         | 4:3          | 12               | N/A | A     |                                   |
| RAMP          | 4:3          | 2                | N/A | A     |                                   |
| CROSS         | 4:3/16:9     | 10               | N/A | A     |                                   |
| PATTERN       | 4:3          | 15               | N/A | N/A   |                                   |
| HLINE         | 4:3          | 6                | N/A | N/A   |                                   |
| WINDOW        | 4:3          | 16               | N/A | N/A   |                                   |
| MONOSCOPE     | 4:3/16:9     | 2                | N/A | N/A   |                                   |
| COMBINATION   | 4:3/16:9     | 1                | N/A | N/A   |                                   |

W/B : White/Black inversion

COMBI : Signal where COMBINATION pattern is possible

A : Available

N/A : Not available

● Option

| Model name | Items or Content   |
|------------|--|
| TG39AA001  | GP-IB unit   |
| TG39AA010  | Special pattern (composite color pattern)                  |
| TG39AA011  | Natural picture (Dining table)                             |
| TG39AA012  | Natural picture (Stationery)                               |
| TG39AA013  | Natural picture (Toys)                                     |
| TG39AA014  | Natural picture (Presidential residence)                   |
| TG39AA015  | Natural picture (Lobster and fruits)                       |
| TG39AA016  | Natural picture (Chestnuts)                                |
| TG39AA017  | Natural picture (New year' s gift)                         |
| TG39AA018  | CZP (525 systems: 4.2 MHz max/625 systems: 4.8 MHz max)    |
| TG39AA019  | VSWEEP (525 systems: 4.2 MHz max/625 systems: 4.8 MHz max) |
| TG39AA020  | Natural picture (Skin color chart)                         |
| TG39AA021  | RETMA pattern  |
| TG39AA022  | Multi pattern (composite color pattern)                    |

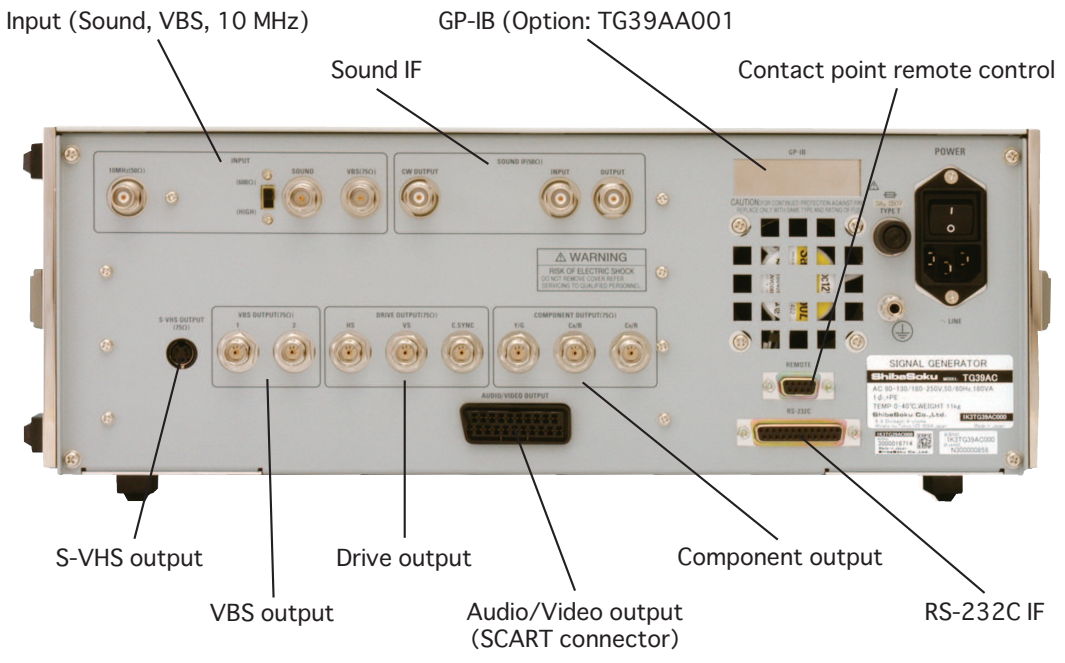
[NOTE] Factory installation required.

Specifications

● General specifications

|                             |                                     |
|-----------------------------|-------------------------------------|
| Memory backup time          | longer than 1,000 hours             |
| Operating temperature range | 0 to 40 degrees C                   |
| Relative humidity           | 25% to 90% RH (no dew condensation) |
| Power supply                | AC 90 to 130/180 to 250 V, 50/60 Hz |
| Power consumption           |                                     |
| TG39AV                      | Max. 100 VA                         |
| TG39AA                      | Max. 160 VA                         |
| TG39AB                      | Max. 180 VA                         |
| TG39AC                      | Max. 180 VA                         |
| Dimensions                  | 426(W)×149(H)×360(D) mm             |
| Weight                      |                                     |
| TG39AV                      | Approx. 10 kg                       |
| TG39AA                      | Approx. 11 kg                       |
| TG39AB                      | Approx. 11 kg                       |
| TG39AC                      | Approx. 11 kg                       |
| Accessories                 |                                     |
| AC power cable              | 1                                   |
| 3P-2P conversion connector  | 1                                   |
| Instruction manual          | 1                                   |

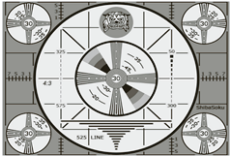
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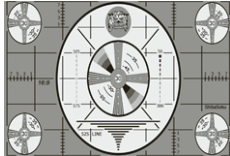


Specifications

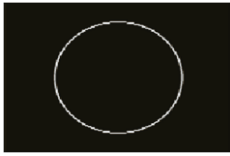
● Examples of video signals



Monoscope Pattern 4:3



Monoscope Pattern 16:9



Circle 4:3



Circle 16:9



Full Colorbar



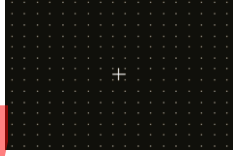
8 Colorbar



Horizontal Colorbar

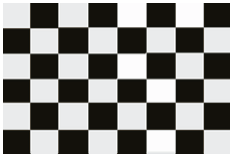


Marker



Dot

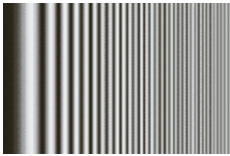
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Checker2



Multi Burst



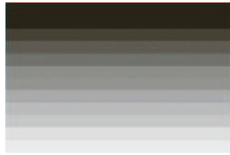
Hsweep



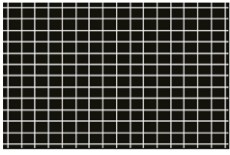
3Line Zebra



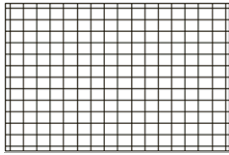
Stair5



Vstair10



Cross Hatch



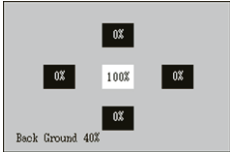
Cross Hatch BK



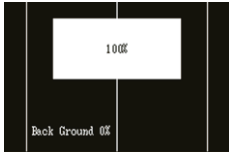
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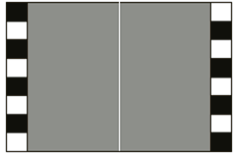
Pluge



Window Pattern



Line&Window



Line Window



Special Pattern  
TG39AA010



Dining Table  
TG39AA011



Stationery  
TG39AA012



Toys  
TG39AA013



Presidential Residence  
TG39AA014



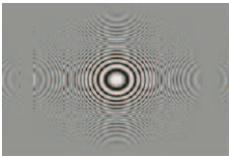
Lobster and Fruits  
TG39AA015



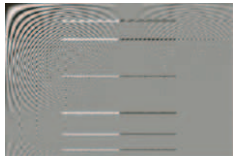
Chestnuts  
TG39AA016



New Year's Gift  
TG39AA017



CZP  
TG39AA018



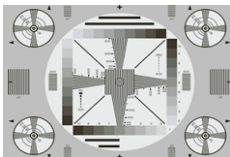
Vsweep  
TG39AA019



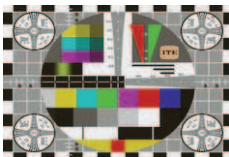
Skin Color Chart



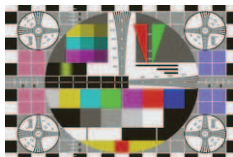
Retma Pattern (NTSC)  
TG39AA021



Retma Pattern (PAL)  
TG39AA021



Multi Pattern (NTSC)  
TG39AA022



Multi Pattern (PAL)  
TG39AA022