Tektronix

TSG 601
Serial Component Generator
SDA 601
Serial Digital Analyzer

and indicating the presence and status of SMPTE RP165 and other ancillary (ANC) data signals. The results may be displayed on the built-in LCD screen, on a picture monitor, or transferred directly to a printer or PC for further analysis. The SDA 601 may be operated in a watch mode, reporting errors as they occur.

The SDA 601 also provides a suite of individual checks, including strength of the incoming data signal, data and video format type, and position and validity of data timing signals.

Both the TSG 601 and SDA 601 comply with industry standards for serial component television data transmission. They may be used as a set for data path testing or individually to check performance and compliance of digital source and receiving equipment.

TSG 601 specific features:

The TSG 601 generator provides 16 user-selected test signals:

- 75% and 100% color bars
- Pluge, BBC versions 1 and 2
- 5 step and valid modulated staircase
- Limit and shallow ramps
- Convergence and active picture markers
- PLL SDI checkfield
- Equalizer SDI checkfield
- SDI checkfield matrix
- Valid modulated pulse and bar
- 60% line sweep with markers at .5, 1, 3, 4, and 5 MHz
- 500 kHz reduced amplitude bowtie
- CE Marking

A comprehensive serial component test set:

The TSG 601 Serial Component Generator and the SDA 601 Serial Digital Analyzer form a comprehensive test set for serial component television system installation and maintenance. Each convenient, handheld instrument complements the other for stress testing the television system data path.

The TSG 601 Serial Component Generator provides Serial Digital Interface (SDI) check field test signals that stress receiver clock recovery and phase lock loop circuitry. Data signal launch amplitude may be varied over the SMPTE specification range to check equalizer performance, and a built in 50 meter cable

simulator may be used to quickly check available signal strength margin.

In addition to a full complement of system test signals, the TSG 601 includes signals to test DAC performance and the accuracy of subsequent encoding into the PAL or NTSC domain.

Embedded AES/EBU audio may be added to the TSG 601 output. Any of four audio groups may be embedded into the 270 Mb/s data stream, and two or four channels of the group enabled. Separate frequency and amplitude may be assigned to each channel.

The SDA 601 Serial Digital Analyzer provides analysis of the incoming digital television signal with the push of a button, quickly identifying data errors

Variable output amplitude. The TSG 601 serial output amplitude (launch amplitude) may be varied over the SMPTE ± 10% specification.

ANC Data. Full-field CRC and active picture CRC may be added to the TSG 601 blanking time between the timing reference portions (EAV and SAV) of the serial output signal.

Return loss alarm. The TSG 601 serial digital output line is monitored with a return loss detector circuit. This circuit displays an alarm indicator in the event of improper termination (short, open, or >2:1 mismatch).

Passive cable simulator. A cable simulator circuit, equivalent to approximately 50 meters of Belden 8281 cable, is included as a BNC loop-through connector in the TSG 601 for quick head-room evaluation.

Character ID. Up to eight messages, each containing two 16 character lines, may be stored for later recall. One message may be inserted into the TSG 601 video test signal, and up to four may be cycled into the test signal in a continuous loop (displaying each message for 1 to 9 seconds). The position of the message may be adjusted to anywhere within the safe-title area.

User presets. Up to four complete front panel configurations, including menu selections, text messages, and cycle information may be stored in the TSG 601 for later recall.

SDA 601 specific features:

Video format analysis. The SDA 601 will detect and report digital signal parameters, including line/field rate, clock rate, and active picture resolution (eight or ten bits).

Data format analysis. The SDA 601 will detect and report several types of input data errors, including line/field length (includes EAV/SAV placement errors), illegal vertical interval switch, EAV/SAV format (sequencing, checksum, etc.), illegal data values, ANC packet format, unpacked ANC data, and missing data bits (bits remaining high or low).

Transport layer analysis. The SDA 601 will detect and report on several transport layer error types, including full-field (FF) and active-picture (AP) EDH (SMPTE RP165) errors, EDH flags (prior error detected), FF and AP CRC changes, and incoming signal strength.

Video content analysis. The SDA 601 verifies that the amplitudes of the Y, B-Y, and R-Y signals are within the headroom specifications and provides information about the blanking intervals.

Picture monitor output. The SDA 601 picture monitor output is used to highlight errors and indicate the presence of ANC data.

User presets. Complete SDA 601 front panel configurations may be stored for later recall.

Other capabilities:

Features common to both the TSG 601 and SDA 601.

DC powered. Both the TSG 601 and SDA 601 may be operated from the provided AC adapter, from eight AA size batteries or from an optional accessory 9.6 V NiCad battery pack. Battery recharging capability, utilizing the AC adapter, is provided for the NiCad battery pack only.

Handheld operation. The TSG 601 and SDA 601 are handheld instruments focused toward installation and maintenance of serial component television systems. Together, they provide a means of evaluating system performance under both stressful and normal operating conditions.

Ordering information:

TSG 601
Serial Component Generator

SDA 601
Serial Digital Analyzer

Included accessories:

AC Adapter.

Carrying pouch.

Desk stand.

Instruction card.

Operator's manual.

Options:

Option 01 — Rechargeable NiCad Battery Pack.

Option A1 — Universal Euro 220 V AC Adapter.

Option A2 — United Kingdom 240 V AC Adapter.

Option A3 — Australian 240 V AC Adapter.

ISO 9001
KEMA CERT. NR. 10001.04

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