

S310

Digital Video Analyser



**The Only Patented, All-In-One Analyser
Designed To Take The Frustrations Out
Of Testing Digital Video Signals - From
SMPTE To CCIR.**

S310 Digital Video Analyser Features:

- ✓ Tests composite and component serial or parallel digital video signals in both 525 and 625 line standards
- ✓ All tests are performed to international standards with easy to read pass or fail indicators located on the front panel
- ✓ Direct readout LCD display and analog outputs provide detailed analysis of all key signal parameters, including: clock jitter, DC bias, TRS errors, reserve code errors, presence of non-recommended luminance or chroma levels, and much more
- ✓ A comprehensive CCIR 601 pattern generator, Genlockable, with 34 different test patterns, two serial outputs, one parallel output, and our exclusive signal error introduction system
- ✓ Contains user selectable alarm thresholds that can provide instant warning of out-of-limit signal parameters
- ✓ Optional software interface provides for remote control of the unit, automated testing, and exclusive data error logging capabilities

S310 Specifications

MEASUREMENT SPECIFICATIONS

Serial Signals

Amplitude - INPUT SIGNAL MAXIMUM LIMITS: ± 10 V. MEASUREMENT RANGE: ± 1.5 V. RIPPLE MEASUREMENT RANGE (V_{rp}): < 1.5 V. V_{rp} FREQUENCY RANGE: 0 to 10 kHz. MEASUREMENT RESOLUTION: 12 mV. TEST OUTPUT FOR MEASUREMENTS: V_{pp} and V_{rp} identical value to voltage measured at 75 Ohms.

Jitter - PARALLEL SIGNAL JITTER RANGE: ± 7.5 ns. SERIAL SIGNAL JITTER RANGE: ± 1.5 ns. SERIAL SIGNAL JITTER RESOLUTION: 40 pS +10 pS with 10 m of cable. PARALLEL SIGNAL JITTER BANDWIDTH: 1.4 kHz. PARALLEL TEST OUTPUT JITTER: 100 mV/ns at 75 Ohms. SERIAL TEST OUTPUT JITTER: 300 mV/ns at 75 Ohms. MISCELLANEOUS - MON OUTPUT: 720 mV at 75 Ohms, DC component not transmitted. CLOCK OUTPUT: Parallel signal clock 400 mVpp at 75 Ohms, DC component not transmitted.

Measurements Common To Serial And Parallel Signals - PREAMBLE ERROR DETECTION: The analyser has a "hard" preamble detector, which allows detection of a preamble error on the 4 least significant bits. TEST OUTPUT LEVELS FOR DISPLAY OF RESERVED CODES AND TRS ERRORS: 700 mV at 75 Ohms.

Major Alarm Threshold

SERIAL SIGNAL: Signal absence or TRS word error frequency of more than 10 errors in 500 ms. PARALLEL SIGNAL: When clock/data phase measurement shows clock phase to be outside the range of ± 11 nS. SECONDARY ALARM THRESHOLD: When one parameter falls outside specifications. SERIAL LINK: Adjustable from 2,400 to 19,200 Baud; delivered set at 9,600 Baud. OTHER PARAMETERS: 8 bits, 1 start bit, no parity.

Parallel Signals

Amplitude - INPUT SIGNAL MAXIMUM LIMITS: 0 V to -5.2 V. CLOCK SIGNAL MEASUREMENT RANGE: -1.29 V ± 1.29 V. VAV DATA MEASUREMENT RANGE: -1.29 V ± 1.29 V. MEASUREMENT RESOLUTION: 11mV. MEASUREMENT PRECISION: ± 25 mV. TEST OUTPUT FOR V_{PP} AND V_{RP} MEASUREMENTS: V_{pp} value identical to the measured signal. VAV: Displayed value is measured value +1.79V.

Clock/Data Phase - PRECISION: ± 1.5 ns. TEST OUTPUT LEVEL: 700 mV at 75 Ohms.

TEST PATTERN GENERATOR SPECIFICATIONS

Outputs - 1 parallel digital output to CCIR Rec. 656, 2 270 Mb/s serial digital outputs at 75 Ohms.

Calibrated errors on parallel signal - Level errors can be introduced in the clock signal and on the two most significant bits. PEAK-TO-PEAK LEVEL ERROR: V_{pp} minimum = 0.25 V, ± 0.1 V, V_{pp} nominal = 1.1 V, ± 0.1 V. AVERAGE LEVEL ERROR: V_{av} min = 1.60 ± 0.05 V, V_{av} nom = 1.29 ± 0.05 V, V_{av} max = -0.95 ± 0.05 V. RIPPLE VOLTAGE ERROR: $1V \pm 10\%$ at 122 Hz or 7812 Hz. CLOCK/DATA PHASE ERROR: -12 ns to +16 ns in steps of 4 ns, ± 2 ns precision for each step.

Errors common to parallel and serial signals - Ability to introduce reserved codes as well as errors in TRS word and preambles. JITTER ERROR: 4 ± 1 ns at 122 Hz or 976 Hz.

Patterns - PATTERNS AVAILABLE: 34. OF WHICH: CCIR - 14 patterns, user configurable - 2 patterns, others - 18 patterns. ACCESSIBLE VIA FRONT-PANEL CONTROLS: 16 patterns. ACCESSIBLE VIA SOFTWARE/SERVICE MODULE: 34 patterns. PATTERN 1: 75% colour bars. PATTERN 2: 100% colour bars. PATTERN 3: multi-burst. PATTERN 4: green (270 Mb/s serial test). PATTERN 5: magenta (270 Mb/s serial test). PATTERN 6: grey. PATTERN 7: black and white alternating at 0.1 Hz. PATTERN 8: end-of-lines pulses. PATTERN 9: black/white ramp. PATTERN 10: yellow/grey ramp. PATTERN 11: grey/ blue ramp. PATTERN 12: cyan/grey ramp. PATTERN 13: grey/red amp. PATTERN 14: Cb, Y, Cr, Y ramps. PATTERN 15: programmable pattern. PATTERN 16: programmable pattern. PATTERN 17: white end-of-line porches. PATTERN 18: blue end-of-line porches. PATTERN 19: red end-of-line porches. PATTERN 20: yellow end-of-line porches. PATTERN 21: cyan line end-of-line porches. PATTERN 22-34: grey.

GENERAL SPECIFICATIONS

CONSTRUCTION: 2U 19" rack mounting unit. DEPTH: 328 mm (13"). WEIGHT: Basic unit - 5 kg (11 lbs), with all options - 6.2 kg (13.64 lbs). AMBIENT TEMPERATURE RANGE: +5°C to +45°C.

ELECTRICAL SPECIFICATIONS

POWER SUPPLY: 105-130 V AC, 50-60 Hz (220 V Opt). MAXIMUM CONSUMPTION: 50 watts (all optional modules included). FUSE: 1.6 A (time-delay fuse).