Test & Measurement

- sales
- rentals
- calibration
- repair
- disposal

Complimentary Reference Material

This PDF has been made available as a complimentary service for you to assist in evaluating this model for your testing requirements.

TMG offers a wide range of test equipment solutions, from renting short to long term, buying refurbished and purchasing new. Financing options, such as Financial Rental, and Leasing are also available on application.

TMG will assist if you are unsure whether this model will suit your requirements.

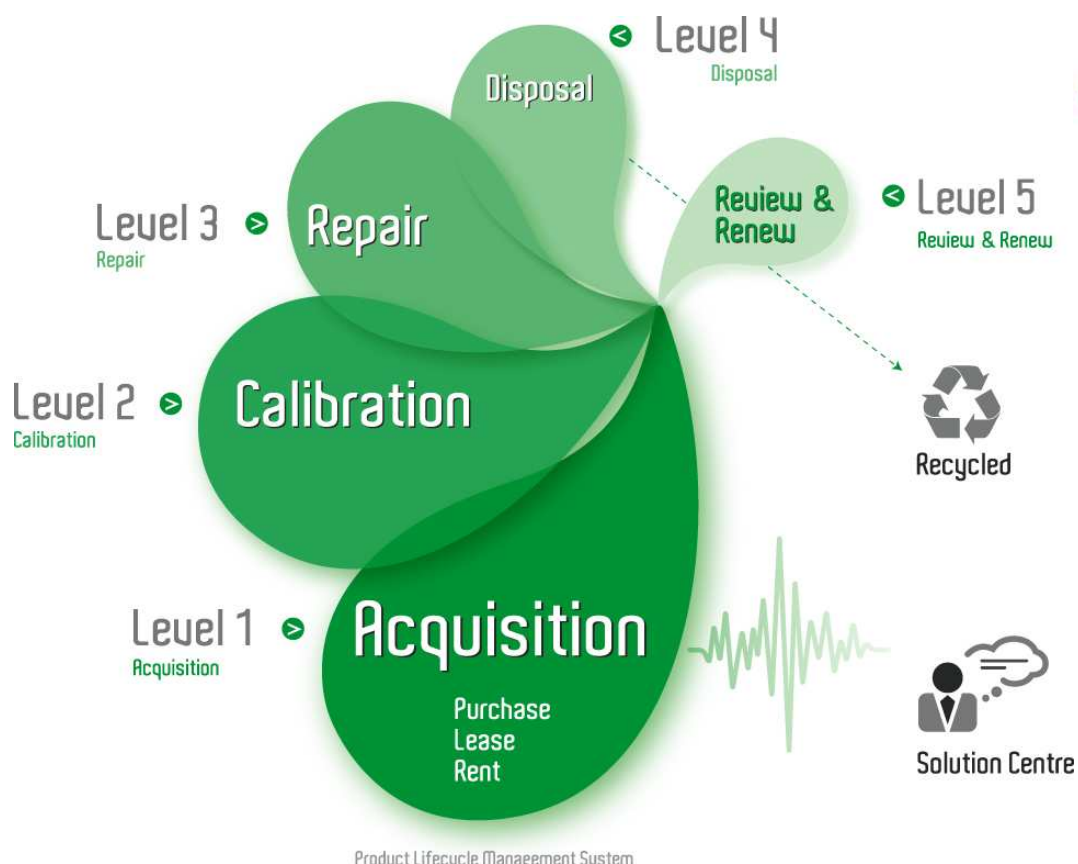Call TMG if you need to organise repair and/or calibrate your unit.

If you click on the "Click-to-Call" logo below, you can all us for FREE!

TMG Corporate Website   **TMG Products Website**

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Level 4
Disposal

Disposal

Review & Renew

Level 5
Review & Renew

Level 3
Repair

Repair

Recycled

Level 2
Calibration

Calibration

Level 1
Acquisition

Acquisition

Purchase
Lease
Rent

Solution Centre

Product Lifecycle Management System

Form 080/01

Tektronix Logic Analyzers

▶ TLA7Dx/Ex Digital Storage Oscilloscope Modules

▶ **Features & Benefits**

2/4 Channel Digitizing Oscilloscope Modules with 15 Kb Memory Depth

Up to 1 GHz Bandwidth Provides High-fidelity Signal Quality Measurements of Digital Signals

Up to 5 GS/s Sample Rate Provides High Resolution Analog Views of Digital Signals

Advanced Digital Oscilloscope Triggering Helps Find Elusive Analog Anomalies in Digital Signals

▶ **Applications**

Digital Hardware Verification and Debug

Monitor & Measure Digital Hardware Performance

Breakthrough Solutions for Real-time Digital Systems Analysis

The TLA700 Series offers a range of digitizing oscilloscope modules that provide the acquisition capabilities of the world's best digitizing oscilloscopes, tightly integrated with the TLA700 logic analyzers. The 2 and 4 channel digitizing oscilloscope modules available in the TLA700 Series offer sample rates of up to 5 GS/s and bandwidths of up to 1 GHz, with 15 Kb memory depth per channel at all times.

The digitizing oscilloscope modules offer precise time correlation and flexible cross-triggering with other installed modules. This enables you to see the quality of critical signals time-correlated with the digital signals represented by the logic analyzer modules.

These modules offer the triggering you expect from a Tektronix digital oscilloscope: Pulse Width, Runt, Glitch, Slew Rate, Logic Pattern, Setup-and-Hold Violation, Edge and Timeout.

Tektronix

Enabling Innovation

Tektronix Logic Analyzers

▶ TLA7Dx/Ex Digital Storage Oscilloscope Modules

▶ Characteristics

General

Number of Channels per Module –
TLA7D2, TLA7E2: 4 channels.
TLA7D1, TLA7E1: 2 channels.

Sample Rate –
TLA7E1, TLA7E2: 5 GS/s on all channels.
TLA7D1, TLA7D2: 2.5 GS/s on all channels.

Bandwidth (at probe tips) –
TLA7E1, TLA7E2:
    100 mV to 10 V range: 1 GHz.
    50 mV to 99.8 mV range: 900 MHz.
    20 mV to 49.8 mV range: 600 MHz.
All others:
    500 MHz.
    TLA7D1, TLA7D2: 500 MHz on all channels
    in all ranges.

Memory Depth – 15,000 samples per channel
in all modes.

Number of Mainframe Slots Required – 2.

Vertical System

Input Sensitivity Range – 10 mV to 100 V full scale.

Vertical Resolution – 8-Bit (256 levels).

DC Gain Accuracy – $\pm$1.5% of full scale range.

Analog Bandwidth Selections – 20 MHz,
250 MHz, and Full.

Input Coupling – AC, DC or GND.

Input Impedance Selections – 1 MΩ in parallel
with 10 pF, or 50 Ω.

AC Coupled Lower Frequency Limit –
$\leq$10 Hz when AC 1 MΩ coupled, $\leq$200 kHz
when AC 50 Ω coupled.

Maximum Input Voltage at Probe Connector –
300 V$_{RMS}$, but no greater than $\pm$420 V$_p$ (1 MΩ
or ground input coupling).

Probe Input Characteristics

Probe Input Interface – TEKPROBE™ probe interface.

Input Loading – Less than 1 pF in parallel with
1 MΩ with either P6243 or P6245.

Usable Input Voltage Range at Probe Tip –
P6243 Probe: $\pm$8 V. P6245 Probe: $\pm$18 V.

Acquisition System

Sample Rate Range – 200 ps to 200 ms in 1,
2.5, 5 sequence.

Timebase Accuracy – $\pm$100 ppm over any
interval $\geq$1 ms.

Record Length Range – 512 to 15,000 samples
per channel in all modes.
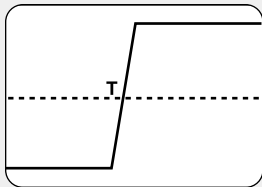
Acquisition Modes – Single-shot, repetitive.

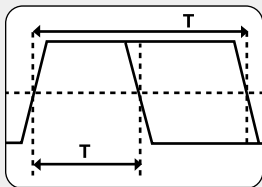### Trigger System

Trigger Modes – Normal, auto.

Trigger Position – Anywhere in the acquired record
(pre-fill can be set anywhere from 0% to 100%).

Trigger Types – Edge, pulse width, timeout, glitch,
runt, slew rate, logic pattern, setup-and-hold violation.
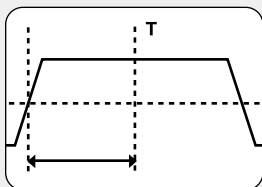
Setup-and-hold Trigger – Triggers on violations of
both setup time and hold time between clock and
data which are on separate input channels; setup
time settable from –100 ns to +100 ns in 200 ps
increments; hold time settable from –1 ns to
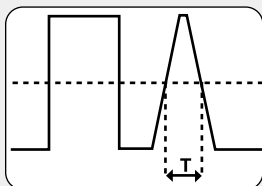+102 ns; minimum settable window of setup time +
hold time is 2 ns.

Trigger Actions – Trigger, trigger all, set signal,
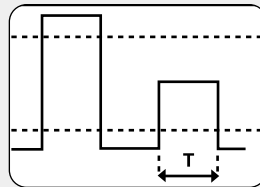arm, immediate, wait for system trigger.

Edge Trigger – Conventional level driven trigger,
positive or negative slope, on any channel or exter-
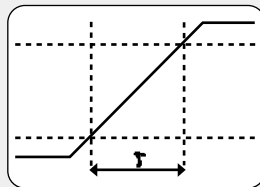nal trigger input. Coupling Selections: DC, AC, noise
reject, HF reject, LF reject.

Pulse Width Trigger – Triggers on width of positive
or negative pulse, either within or not within selec-
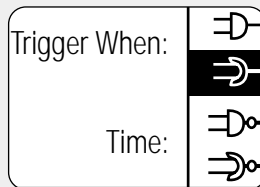table time limits; settable from 2 ns to 1 s.

Timeout Trigger – Triggers when a pulse fails to
complete when specified; settable from 2 ns to 1 s.

Glitch Trigger – Triggers on (or rejects) glitches of
positive, negative, or either polarity; settable from
2 ns to 1 s. Minimum glitch width: 2.0 ns, with
200 ps resolution (2 ns to 10 ns settings).

Runt Pulse Trigger – Triggers on a pulse that
crosses one threshold but fails to cross a second
threshold before crossing the first again; settable
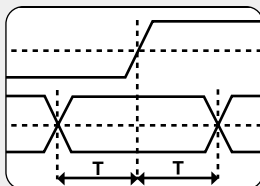from 2 ns to 1 s.

Trigger When:

Time:

Slew Rate Trigger – Triggers on pulse edge
rates that are either faster or slower than a set rate,
edges can be rising, falling, or either; settable from
2 ns to 1 s.

Logic Pattern Trigger – Triggers when a logical
combination (AND, OR) of all the input channels
(Hi, Lo, Don't Care) stays true or false for a specified
period of time; settable from 2 ns to 1 s.

Physical Characteristics

Dimensions	mm	in.
Height	262	10.3
Width	61	2.4
Depth	381	15
Weight	**kg**	**lb.**
Net	2.7	5.8
Shipping	5.8	12.8

P6243 Probe Cable Length – 1.3 m (51 in.).

P6245 Probe Cable Length – 1.3 m (51 in.).
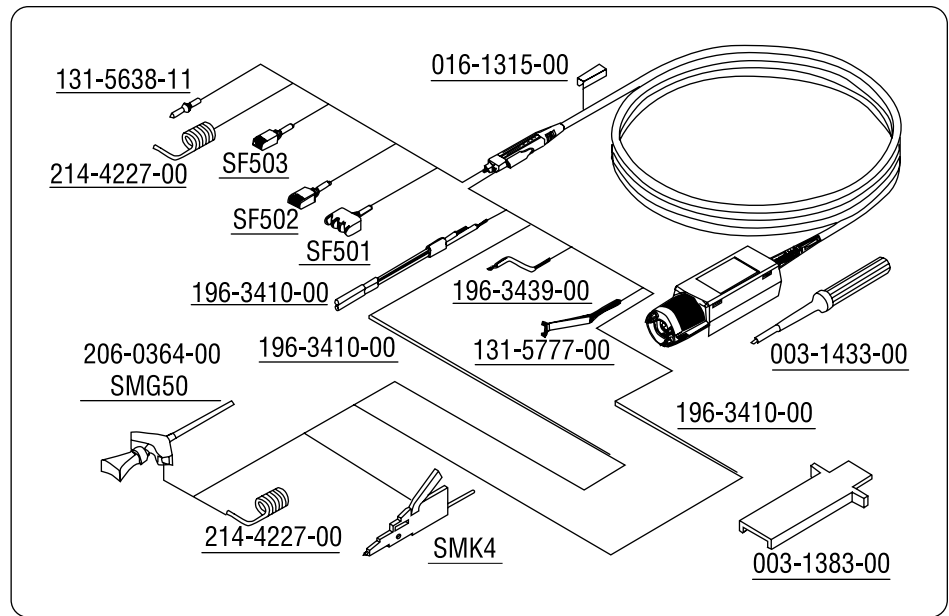
▶ Ordering Information

Digitizing Oscilloscope Modules

Includes: Probes, user manual, certificate of calibration, and one-year warranty (return to Tektronix).

TLA7D1 – 2-Channel DSO module, 500 MHz bandwidth, 2.5 GS/s sample rate, 15 K depth (includes two P6243 1.0 GHz active FET probes, probe calibration adapter and manual).

TLA7D2 – 4-Channel DSO module, 500 MHz bandwidth, 2.5 GS/s sample rate, 15 K depth (includes four P6243 1.0 GHz active FET probes, probe calibration adapter and manual).

TLA7E1 – 2-Channel DSO module, 1 GHz bandwidth, 5 GS/s sample rate, 15 K depth (includes two P6245 1.5 GHz active FET probes, probe calibration adapter and manual).

▶ *DSO Module Accessories.*

TLA7E2 – 4-Channel DSO module, 1 GHz bandwidth, 5 GS/s sample rate, 15 K depth (includes four P6245 1.5 GHz active FET probes, probe calibration adapter and manual).

P6243 – 1.0 GHz Active FET Probe and accessories, length 1.5 m.

P6245 – 1.5 GHz Active FET Probe and accessories, length 1.5 m.

▶ TLA Family Service Options

	TLA6XX	TLA715/721	TLA7XM	TLA7AXX	TLA7NX/PX/QX	TLA7PG2	TLA7DX/EX
Opt. IN		X	X	X	X	X	X
Opt. R3	X	X	X	X	X	X	X
Opt. R5	X	X	X	X	X	X	X
Opt. S1		X	X				
Opt. S3		X	X				
Opt. C3	X	X		X	X	X	X
Opt. C5	X	X		X	X	X	X
Opt. D1	X	X		X	X	X	X
Opt. D3	X	X		X	X	X	X
Opt. D5	X	X		X	X	X	X

TLA Family Service Options

Opt. IN – Product installation service (on-site configuration and user familiarization; excluding network integration).

Opt. R3 – Extends depot repair warranty service period to three years.

Opt. R5 – Extends depot repair warranty service period to five years.

Opt. S1 – Uplifts standard one-year warranty service of mainframe and installed modules to on-site service.

Opt. S3 – Uplifts Opt. C3 and/or R3 of mainframe and installed modules to on-site service (must be ordered with Opt. C3 and/or R3).

Opt. C3 – Three years of calibration service (includes initial calibration and two annual calibrations).

Opt. C5 – Five years of calibration service (includes initial calibration and four annual calibrations).

Add calibration test data report.

Opt. D1 – Add calibration test data report.

Opt. D3 – Provides test data for each calibration (must be ordered with Opt. C3).

Opt. D5 – Provides test data for each calibration (must be ordered with Opt. C5).

Tektronix Logic Analyzers

▶ TLA7Dx/Ex Digital Storage Oscilloscope Modules

TLA700 Series DSO Module Upgrades

You can install a TLA7Dx/Ex digitizing oscilloscope module into an existing TLA714/715/720/721/7XM mainframe. Please refer to the TLA Family Upgrade Guide for further details.

▶ **TLA700 Series DSO Module Upgrades**

Part Number	Description
003-1383-00	Compensation box and cover removal tool
003-1433-00	Adjustment tool
016-1315-00	2 each – 5 colors of cable markers
131-5638-10	10 each – solderable probe tips
131-5777-00	100 mil square pin ground adapter
196-3410-00 N/A N/A	Ground lead set includes: 2 each – 1 in., 3 in., 6 in. ground leads w/ square pin receptacle; 2 each – Y lead adapters
196-3439-00	1 in. ground lead
206-0364-00	SMT KlipChip™, 1 each
214-4227-00	Right angle square pin adapter
SF501	SureFoot® probe tip adapter, pkg. of 12, yellow, 50 mil pitch
SF502	SureFoot probe tip adapter, pkg. of 12, blue, 25 mil/0.65 mm pitch
SF503	SureFoot probe tip adapter, pkg. of 12, red, 0.5 mm pitch
SMG50	SMT KlipChip grabber tip, 20 each
SMK4	Micro KlipChip adapter, 4 each
070-9408-00	P6243 Instruction Manual
070-8995-01	P6245 Instruction Manual

For the most up-to-date product information visit our web site at www.tektronix.com

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