Tektronix Logic Analyzers

TLA7000 Series Mainframes

Features & Benefits

- Modular Mainframes Provide Flexibility and Expandability
- Utilize TLA Logic Analyzer or Pattern Generator Modules
- Supports Up to 6,528 Logic Analyzer Channels, 48 Independent Buses
- All Measurement Modules are Fully Interchangeable Between Portable and Benchtop Mainframes
- Integrated View (iView) Capability Provides up to 15 GHz, 40 GS/s and 64 Mb Analog Acquisition with a Stand-alone Tektronix TDS Digital Storage Oscilloscope
- Microsoft Windows XP Professional PC Platform Provides Familiar User Interface With Network Connectivity
- View Data in Waveform, Listing, Source Code, Histogram (Performance Analysis) Displays to Perform Cross-domain Analysis
- Remotely Control and Monitor the TLA Over the Network Using Either Hosted Mode or Via Built-in Windows XP Remote Desktop
- Remote Control Using Microsoft .NET and COM/DCOM Technology
- Supports Advanced Data Analysis
- Broad Processor and Bus Support

Applications

- Hardware Debug and Verification
- Processor/Bus Debug and Verification
- Embedded Software Integration, Debug and Verification

Breakthrough Solutions for Real-time Digital Systems Analysis

Tektronix provides breakthrough digital systems analysis tools that enable digital hardware and software designers to capture and analyze the source of elusive problems that threaten product development schedules. The TLA7000 Series provides the speed you need to capture the source of those elusive problems, plus the flexibility you want with large displays and fast system data throughput, while protecting your investment with compatibility with all TLA modules.

The TLA7012 Portable and TLA7016 Benchtop mainframes are modular mainframes that accept TLA logic analyzer and pattern generator modules. The TLA7012 and TLA7016 can be configured as either master or expansion mainframes to provide solutions for large numbers of buses and high channel count requirements.

The TLA7012 Portable Mainframe and TLA7016 Benchtop Mainframe with TLA7PC1 Benchtop Controller are built on a Microsoft Windows XP Professional PC platform that offers a familiar work environment for the TLA application software.

The TLA7012 Portable and TLA7016 Benchtop Mainframe with TLA7PC1 Benchtop Controller are available with multiple display capability for extended desktop viewing, in addition to an internal DVD-RW, hard drive and multiple USB2.0 ports for expansion. A replaceable hard drive is standard on both mainframes, ideal for security or enabling individual team members to store personal setups and data. Trigger in/out connections provide an interface to other external instrumentation, such as TDS oscilloscopes, for correlating measurement results.

Characteristics

General (TLA7012, TLA7016)

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Expansion Capability – The TLA7000 Series Mainframes can be used as either master or expansion mainframes (TL708EX 8-port Instrument Hub and Expander is required for 3 to 8 mainframes connected together using TekLink™ cable).</td>
<td></td>
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<tr>
<td>TLA7012: Up to eight TLA7012 mainframes can be used providing support for up to 16 TLA modules.</td>
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<tr>
<td>TLA7016: Up to eight TLA7016 mainframes can be used providing support for up to 48 TLA modules.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Mainframe</th>
<th>LA Max channels per module</th>
<th>PG</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLA7012</td>
<td>136 ch.</td>
<td>64 ch.</td>
</tr>
<tr>
<td>TLA7016</td>
<td>6,528</td>
<td>3,072</td>
</tr>
</tbody>
</table>

For configurations beyond eight TLA7012/7016 mainframes, please contact your local Tektronix representative.
Tektronix Logic Analyzers

TLA7012 Series Mainframes

**TLA7012 PC Characteristics**
- Processor – 2 GHz Intel Pentium M-760.
- Chipset – Intel 915GM.
- Memory – 1 GB DDR PC 533 MHz (SDRAM), expandable to 2 GB DDR memory.
- Sound – Line In and Mic Out connectors.
- Removable Hard Drive – 3.5 in., 80 GB Serial ATA, 7200 RPM.
- Optical Drive – second removable hard drive assembly only – user removable 3.5 in., 80 GB Serial ATA, 7200 RPM.
- Removable Hard Drive – 3.5 in., 80 GB Serial ATA, 7200 RPM.
- Processor – Multi-Lingual User Interface Pack.
- Microsoft Windows XP Professional and Operating System.
- Touchscreen – knobs for horizontal and vertical scaling and scrolling.
- General-purpose knob with dedicated hot-keys and used simultaneously at 1024x768 resolution.
- Both the front-panel and one external display can be simultaneously used at 1024x768 resolution.
- Front-panel – General-purpose knob with dedicated hot-keys and knobs for horizontal and vertical scaling and scrolling.
- Touchscreen – Available with Option 18.

**TLA7012 Dual Panel Controls**
- Front-Panel Display – Size: 15 in. (38.1 cm) diagonal.
- Type: Active-matrix color TFT LCD with backlight.
- Resolution: 1024x768.
- Simultaneous Display Capability – Both the front-panel and one external display can be used simultaneously at 1024x768 resolution.
- Front-panel – General-purpose knob with dedicated hot-keys and knobs for horizontal and vertical scaling and scrolling.

**TLA77PC1 Benchtop Controller Characteristics**
- Processor – 3 GHz Intel Pentium 4.
- Chipset – Intel 965G.
- Memory – 1 GB dual channel DDR, PC 800 MHz (DIMM), expandable to 4 GB DDR memory.
- Sound – Line In and Mic Out connectors.
- Removable Hard Drive – 3.5 in., 80 GB Serial ATA, 7200 RPM. Supports second Serial ATA Removable Hard Drive (includes second removable hard drive assembly only – user supplies second hard drive).
- Optical Drive – Internal 4.7 GB DVD±R/RW.
- External Display Port Type – One (1) analog DB-15 connector.
- Display Cards, available from third-parties, for a total of four displays.

**Integrated View (View™) Capability**
- TLA Mainframe Configuration Requirements – TLA12/7016 Series mainframes, TLA714/722/715/727 Series mainframes, TLA50x, and TLA66X.
- TDS2CMAX Communications Extension Module is required for View capability on any TDS3000B series.
- TDS562 and TDS565 Interface Module is required for View capability on any TDS5000 series.
- TDS5000 series Interface Module is required for View capability on any TDS5000B series.

**External Oscilloscope Wizard**
- Integrated View (iView™) module's trigger mechanism (TTL-compatible output, back-terminated into 50 Ω).
- External Signal Output – Can be used to drive external circuitry from a module's trigger mechanism (TTL-compatible output, back-terminated into 50 Ω).
- External oscilloscope cable. The iView cable does not fully connect to the oscilloscope cable.
- External Signal Input – Can be used to add up to three additional optional PCI Video Display cards, available from third-parties, for a total of four displays.
- Power consumption: 200 W maximum.
- Input current: 2 A maximum at 100 VAC.
- Voltage range/frequency: 100 to 240 VAC at 45 to 66 Hz.

**Symbolic Support**
- Number of Symbols/Ranges – Unlimited (limited only by amount of virtual memory available on TLA).
- Object File Formats Supported – IEEE 686, OMIF 51, OMIF 96, OMIF 166, OMIF 296, OMIF 386, COFF, Elf/Dwarf 1 and 2, Elf/Elf32, TIF.

**External Instrumentation Interfaces**
- System Trigger Output – Asserted whenever a system trigger occurs (TTL-compatible output, back-terminated into 50 Ω).
- System Trigger Input – Forces a system trigger (triggers all modules) when asserted (adjustable threshold between 0.5 V and 1.5 V, edge-sensitive, falling-edge latched).
- External Signal Output – Can be used to provide an external signal to arm or trigger any or all modules (adjustable threshold between 0.5 V and 1.5 V, level-sensitive).

**Power**
- TLA7012 – Voltage range/frequency: 90 to 250 VAC at 45 to 66 Hz; 100 to 132 VAC at 360 to 440 Hz.
- Input current: 7 A maximum at 90 VAC (70 A surge).
- Power consumption: 750 W maximum.
- TLA7016 – Voltage range/frequency: 90 to 250 VAC at 45 to 66 Hz; 100 to 132 VAC at 360 to 440 Hz.
- Input current: 16.5 A maximum at 90 VAC (70 A surge).
- Power consumption: 1,450 W maximum.
- TLA7PC1 – Voltage range/frequency: 100 to 240 VAC at 50 to 60 Hz.
- Input current: 3 A maximum at 100 VAC.
- Power consumption: 300 W maximum.
- TL708EX – Voltage range/frequency: 100 to 240 VAC at 50 to 60 Hz.
- Input current: 2 A maximum at 100 VAC.
- Power consumption: 200 W maximum.
Physical Characteristics

### TLA7012 Portable

<table>
<thead>
<tr>
<th>Dimensions mm in.</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>295 11.6</td>
<td>451 17.75</td>
<td>460 18.1</td>
</tr>
<tr>
<td>Weight kg lb.</td>
<td>14 30</td>
<td>27 9</td>
<td></td>
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| TLA7016 Benchtop
<table>
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<tr>
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<tbody>
<tr>
<td>Dimensions mm in.</td>
<td>Height</td>
<td>Width</td>
<td>Depth</td>
</tr>
<tr>
<td></td>
<td>350 13.7</td>
<td>425 16.7</td>
<td>673 26.5</td>
</tr>
<tr>
<td>Weight kg lb.</td>
<td>25 55</td>
<td>57.1 115</td>
<td></td>
</tr>
</tbody>
</table>

### TLA7PC1 Benchtop Controller

<table>
<thead>
<tr>
<th>Dimensions mm in.</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>89 3.5</td>
<td>432 17</td>
<td>483 19</td>
</tr>
<tr>
<td>Weight kg lb.</td>
<td>9 19</td>
<td>15 33</td>
<td></td>
</tr>
</tbody>
</table>

### TL708EX 8-Port Instrument Hub and Expander

<table>
<thead>
<tr>
<th>Dimensions mm in.</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50 2</td>
<td>445 17.5</td>
<td>305 12</td>
</tr>
<tr>
<td>Weight kg lb.</td>
<td>3 6</td>
<td>5 11</td>
<td></td>
</tr>
</tbody>
</table>

Environmental Temperature –
Operating: +5 °C to +45 °C.
Nonoperating: –20 °C to +60 °C.

Humidity –
Operating: ≤80% relative humidity (29 °C maximum wet bulb temperature).
Nonoperating: 8% to 80% (29 °C maximum wet bulb temperature).

Altitude –
Operating: –1,000 ft. to 10,000 ft. (–305 meters to 3,050 meters).

Safety –
UL3111-1, CSA1010.1, EN61010-1, IEC61010-1.

Ordering Information

### TLA7012

Portrayal Logic Analyzer Mainframe, holds two TLA modules.

**Includes:**

Please specify power cord, language and service options when ordering.

**Opt. 18 –** 
- Add touchscreen (TLA7012 only).

### TLA7016

Benchtop Logic Analyzer Mainframe, holds six TLA modules.

**Includes:**

Please specify power cord, language and service options when ordering.

**Opt. 1C –**
- Add iView external oscilloscope interface kit (012-1614-xo).

**Opt. 1K –**
- Add LACART logic analyzer cart.

### TL708EX

TekLink 8-port Instrument Hub and Expander (used for connecting 3-to-8 TLA7012 or TLA7016 mainframes).

**Includes:**
- Instruction sheet (071-1765-xo, English only). Please specify power cord and service options when ordering.

Power Cord Options

**Opt. A0 –** North America power.
- TLA7012/TLA7PC1/TL708EX: 161-0104-00; TLA7016: 161-0213-00 (15A), 161-0218-00 (20A).


**Opt. A2 –** United Kingdom power.

**Opt. A3 –** Australia power.


**Opt. A5 –** Switzerland power.
- TLA7012/TLA7PC1/TL708EX: 161-0107-00; TLA7016: 161-0212-00 (15A).

- TLA7012/TLA7PC1/TL708EX: 161-0105-00; TLA7016: 161-0218-00 (15A).

**Opt. A10 –** China power.
- TLA7012/TLA7PC1/TL708EX: 161-0306-00; TLA7016: 161-0320-00 (15A).

**Opt. A99 –** No power cord or AC adapter.
Tektronix Logic Analyzers

TLA7000 Series Mainframes

Language Options

Service Options
Opt. C5 – Calibration Service 5 Years.
Opt. S1 – On-site Service 1 Year.
Opt. S3 – On-site Service 3 Years (with R or C Option).

TLA7012/TLA7016 Factory Configuration
Opt. 88 – Install modules in mainframe at factory (excludes merging of Logic Analyzer modules).

TLA7012/7016 Optional Accessories
TLA Logic Analyzer Cart – LACART, K4000.
TLA7012 Additional Removable Hard Drive Assembly (no SW) – Order 650-4815-xx.
TLA7012PC1 Additional Removable Hard Drive Assembly (no SW) – Order 650-4834-xx.
TLA7012 Rackmount Kit – Order 020-2664-xx.
TLA7012 Wheeled Transport Case – Order 016-1322-xx.
TLA7016 Rackmount Kit – Order 020-2369-xx.
TLA7016 Wheeled Transport Case – Order 016-1851-xx.

Gigabit LAN (GbE) Switch

Flat-panel Display
21 in. 1600x1200 Flat-panel Display with U.S. Standard (120 V, 60 Hz) Power Cord – Order 020-2665-xx.

Power Cords for Gigabit LAN (GbE) Switch and Flat-panel Display
Power Cord, IEC320 C13, China, Straight – Order 161-0094-00.

TLA700 Series Mainframe Upgrades
You can add new capabilities to your existing TLA7012/7016 mainframe. Please refer to the TLA Family Upgrade Guide for further details.

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