

# T-Drive™ Model II

## The next generation in TFT testers

Westar's T-Drive™ Model II is ready to meet the needs of next generation TFT panels; with 10 bit color output, quad LVDS, DisplayPort, high pixel clock frequency, programmable power, and more.

Based on Westar's flagship TFT tester, T-Drive™, T-Drive™ Model II includes enhanced patterns with adjustments for color, intensity, and, where applicable, position and size. Custom patterns in the form of bitmaps may be downloaded and stored in T-Drive™ Model II for display on your TFT.

The tester's companion software, T-Link™, helps you to manage the files stored on your T-Drive™. T-Link™ includes an easy to use editor to create a timing/electrical panel profile and pattern list. The interface between T-Drive™ and T-Link™ is via USB 2.0.

Each T-Drive™ Model II system includes:

- ❖ T-Drive™ Model II,
- ❖ Dual LVDS and TMDS/Analog output cards, leaving two spare slots,
- ❖ Storage for 48 custom patterns,
- ❖ Handheld keypad,
- ❖ USB cable, and
- ❖ CD containing T-Link™ software and User's Manual



### Baseline features

- ❖ Programmable raster timing and programmable power for TFT module and accompanying inverter, encapsulated in user-defined module profiles
- ❖ LVDS output up to WQXGA (2560x1600), 10 bit color depth
- ❖ TMDS and analog video output up to UXGA (1600x1200), 8 bit color depth
- ❖ EDID read/write/compare
- ❖ Power sequencing
- ❖ Real-time adjustments of test patterns
- ❖ Custom pattern download and display
- ❖ Power consumption measurements
- ❖ Inverter control
- ❖ Factory default pattern list, user-defined pattern lists and auto pattern sequencing

### Generated Test Patterns

- ❖ Full Screen Color
- ❖ Horizontal and Vertical Line
- ❖ Static and Moving Rectangle
- ❖ Checkerboard
- ❖ Border
- ❖ 4 Color Horizontal and Vertical Wedge
- ❖ Horizontal and Vertical Gray Scale
- ❖ Color Bar
- ❖ Tunnel
- ❖ Movable Crosshair
- ❖ Response Time Animation
- ❖ Flicker

### Optional features

- ❖ Quad LVDS output card
- ❖ DisplayPort output card
- ❖ Digital parallel (TTL) output cards
- ❖ Negative power supply
- ❖ Windows DLL for remote control

### Applications

- ❖ TFT repair
- ❖ Automated optical test
- ❖ R&D
- ❖ QA/QC

Display Technologies

**WESTAR**

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Rev E

**Video Timing***Horizontal (clocks per line)*

Total	up to 8190
Active	8 to 8182
Back Porch (HBP)	1 clk increment
Front Porch (HFP)	1 clk increment
Sync Pulse Width (HSPW)	1 clk increment

*Vertical (lines per frame)*

Total	up to 8191
Active	1 to 8190
Back Porch (VBP)	1 line increment
Front Porch (VFP)	1 line increment
Sync Pulse Width (VSPW)	1 line increment

**Video Output****Dual LVDS**

Bits per Pixel	10 bits each RGB
Pixels per Clock	1 or 2
Clock Frequency	8 to 135 MHz

**Effectively up to 270M pixels/sec for 2 pixels/clk****Quad LVDS (optional)**

Bits per Pixel	10 bits each RGB
Pixels per Clock	1 or 2 or 4
Clock Frequency	8 to 135 MHz

**Effectively up to 270M pixels/sec for 2 or 4 pixels/clk****DisplayPort (optional)**

Bits per Pixel	10 bits each RGB
Lanes	1, 2, or 4
Rate	1.6 or 2.7 GB/sec
Clock Frequency	20 to 270 MHz

**TMDS**

Bits per Pixel	8 bits each RGB
Pixels per Clock	1
Clock Frequency	25 to 165 MHz

**Analog**

Bits per Pixel	8 bits each RGB
Pixels per Clock	1
Clock Frequency	1 to 165 MHz

**TTL (optional)**

Bits per Pixel	8 bits each RGB
Pixels per Clock	1 or 2
Clock Frequency	1 to 85 MHz

**Effectively up to 170M pixels/sec for 2 pixels/clk****Test Patterns**

Full Screen Color	Movable Crosshair
Pixel Horizontal Line	Pixel Vertical Line
4 Color Horizontal Wedge	4 Color Vertical Wedge
Horizontal Gray Scale	Vertical Gray Scale
Static Rectangle	Moving Rectangle
Checkerboard	Border
Response Time Animation	Color Bars
Tunnel	Flicker

**Input Power**

Voltage	88 to 132/176 to 264 VAC
	240 Watts (max)
Auto Select	
Frequency	47 to 63 Hz

**Power Generation/Switching/Sequencing***Internally Generated*

Power supplies 1 and 3	2.5 to 24 VDC
	up to 3.0 Amp
Accuracy*	greater of 150mV and +/- 3%
Power supply 2	9 to 24 VDC
	up to 6.0 Amp
Accuracy*	greater of 150mV and +/- 3%
Power supply 4 (optional)	-24 to -2.5 VDC
	up to 0.5 Amp
Accuracy*	greater of 150mV and +/- 3%
Total deliverable power	up to 150 Watts

**All supplies are internally protected**

Switching Time	< 1 msec (Typical)
Power Sequence Delay	1 to 10000 msec range
	1 msec increment

<b>Measurement Accuracy</b>	+/-60mV, +/-60mA
<b>Measurement Precision</b>	0.01V, 0.01A

**Inverter Control**

Resistive	
Voltage	
I2C (Digital)	

**Storage Capacity**

<b>Pattern List</b>	16 lists of up to 32 patterns
<b>Timing Profile</b>	500
<b>Bitmap</b>	48 images up to WQXGA

**Discretes**

In	8
Out	8
Electrical Level	3.3 or 5 VDC TTL
Configurable by pairs	

**Additional Features**

Movable crosshair overlay for all patterns
Moving bitmap
Trigger out signal for all patterns (TTL level) - Remote I/F only
Blinking rectangle overlay for all patterns - Remote I/F only
EDID read/write/compare (EDID standard version 1.4)

**Dimensions**

Height	5.75" (146.05 mm)
Length	12.75" (323.85 mm)
Depth	9.23" (234.32 mm)
Weight	7.5 lbs. (3.4 kg)

\*Accuracy specified @ 0A. Use the following equation to determine actual voltage out.

Voltage at output connector = Programmed voltage - (0.02 \* current draw in amps)

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