T-Drive[tm] SD100

for Small Displays

Baseline features

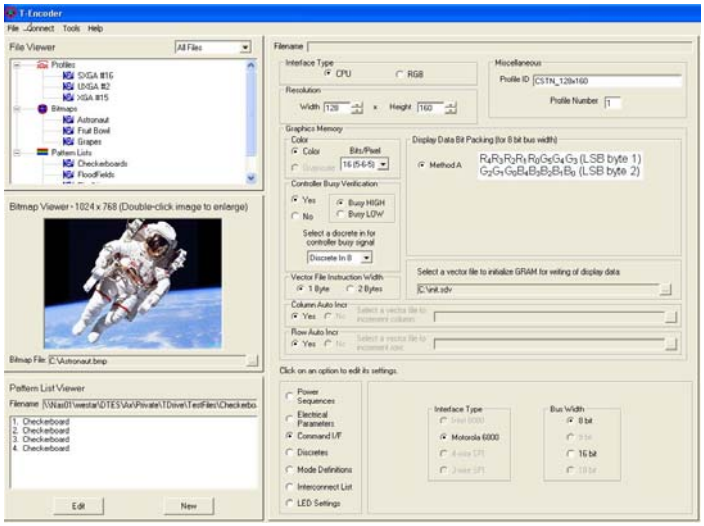
- Programmable RGB timing and configurable CPU Interface
- Programmable display voltage and LED Backlight current
- Programmable electrical levels for signaling
- Power sequencing includes power rails, LED Current, discretes, and signaling (CPU, RGB, serial)
- Real-time adjustments of test patterns
- Control of display specific features
- Factory default pattern list, user-defined pattern lists and auto pattern sequencing
- Image download and display (including .bmp and .jpg files)

Generated Test Patterns

- Full Screen Color
- 1 Pixel Horizontal and Vertical Line
- 2 Pixel Horizontal and Vertical Line
- 1 Pixel Checkerboard
- 2 Pixel Checkerboard
- Rectangle (Static and Moving)
- Border
- 4 Color Horizontal and Vertical Wedge
- Horizontal and Vertical Gray Scale
- Blink
- Movable Crosshair
- Response Time Animation

Optional features

- Windows DLL for remote control
- Other output cards to convert T-Drive[tm] SD100 to a standard T-Drive[tm] for larger format displays (see separate brochure)
- Additional storage for images
- Interconnect and profile setup for your displays



T- Drive[tm] SD100 provides everything you need to drive your small format display in a small footprint, benchtop format, including the video interface (RGB and CPU), power, discretes, constant-current LED sources, and SPI programming interface.

The display engineer sets up a profile that contains all the specifics to drive the small format display, including definition of a) the timing and/or CPU interface, b) power sequences, c) power requirements, and d) LED drive requirements. The profile may also include specific command sets to control your display's unique functions and allow for thorough testing of the display.

T- Drive[tm] SD100 generates an extensive array of test patterns. You may control the color, intensity, and, in some cases, the position of these test patterns via the simple interface provided on the handheld keypad. You may also create a unique pattern list for your repair or test function.

The accompanying software, T-Encoder[tm], helps you to manage the timing profiles and pattern lists stored in your T- Drive[tm] SD100. T-Encoder[tm]'s easy graphical user interface is used to build your timing/electrical module profiles and pattern lists. Then you simply download this information to T- Drive[tm] SD100 using the supplied USB cable.

Each T- Drive[tm] SD100 system includes:

- T- Drive[tm] SD100,
- SD100 output card,
- 256MB storage for images,
- Handheld keypad,
- USB cable, and
- CD containing T- Encoder[tm] software and User's Manual

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Rev C

Video Timing for RGB Interface (Note 1)		
Pixel clock frequency	up to 25 MHz	
Pixels per clock	1	
Bits per Pixel	up to 8 bits each RGB	
Horizontal (clocks per line)		
Total	up to 2047	
Active	8 to 1024	
Back Porch (HBP)		Equ 1, 2
Front Porch (HFP)		
Sync Pulse Width (HSPW)		
Vertical (lines per frame)		
Total	up to 2047	
Active	1 to 1024	
Back Porch (VBP)		Equ 3, 4
Front Porch (VFP)		
Sync Pulse Width (VSPW)		

Equations:

1. Horizontal Blanking (HB) = Total - Active
2. HFP = HB - HBP - HSPW
3. Vertical Blanking (VB) = Total - Active
4. VFP = VB - VBP - VSPW

CPU Interface Types and Timing (Note 1)	
Graphics Memory	
Resolution	up to 640x480
Color	Color or Mono
Gray scale depth	1 to 8
Column auto increment	on or off
row auto increment	on or off
Bit packing	Note 3
CPU Type	Intel, Motorola
Bus Width	8, 9, 16, 18

Power Generation	
P1 (VDD) , P2, P3	1.4 to 3.6 VDC
	up to 25 mA
Programming Resolution	1 mV
Programming Accuracy	10 mV

LED Interface	
Types	serial, common anode/cathode
LED current (6 channels)	0.0 to 35.0 mA
Compliance Voltage	up to 25 VDC
Programming Resolution	3 uA
Accuracy	100 uA at 15 mA

Other Interfaces	
SPI	3-wire or 4-wire
	8, 9, 16, 18, 24 bus width
Discrete Inputs/Outputs (Note 2)	4

Signal electrical Levels	
RGB I/F signals	follows VDD
CPU I/F signals	follows VDD
Serial Interface Signals	follows VDD
Discrete Outputs	follows VDD

Power Sequence Capability	
Enable / Disable	Voltages, Video, LED current
Set / Reset	Discretes
Switching Time	< 1 msec
Power Sequence Delay	100 usec increment
	100 usec to 1 sec range

Test Patterns (RGB and CPU)	
Full Screen Color	Static Rectangle
1 Pixel Horizontal Line	1 Pixel Vertical Line
2 Pixel Horizontal Line	2 Pixel Vertical Line
4 Color Horizontal Wedge	4 Color Vertical Wedge
Horizontal Gray Scale	Vertical Gray Scale
1 Pixel Checkerboard	2 Pixel Checkerboard
Border	Movable Crosshair
Test Patterns (RGB only)	
Response Time Animation, Moving Rectangle, Blink	

Other Features	
Trigger out signal for Blink pattern (TTL level)	
Vector File definition	
PWM frequency (Note 4)	up to 3 MHz

Capacities	
Pattern List Capacity	16 lists of up to 32 patterns
Profile Capacity	250
Bitmap Capacity	256MB: 40 images
(optional)	512MB: 80 images
Vector File Capacity	50 files of up to 256 bytes

Dimensions	
Height	5.75" (146.05 mm)
Length	12.75" (323.85 mm)
Depth	7.75" (196.85 mm)
Weight	6 lbs. (2.6 kg)

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

Note 1: Output of RGB and CPU signals are not simultaneous.

Note 2: Discretes are configurable by pairs.

Note 3: Various bit packing options are available.
Call WDT for more information.

Note 4: Duty cycle resolution in % = PWM freq / 24 MHz * 100

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