

Portable LCD/LED Panel Tester



SMART TESTER // MODEL Name : CF-L102

Where LCD/LED panels are assembled, e.g., TVs, monitors, and Notebook PC etc., may frequently encounter problems with these panels even if no problem was found in the manufacturing and final inspection stages of the panels. These problems could lead to waste of time, extra cost, additional inspections, decreasing productivity.

Smart Tester(Model CF-L102) provides reliable Panel Testing Services for its worldwide customers – Panel repair centers, Panel makers, Panel monitor&TV makers, Panel distributors etc.

Specially, Smart Tester could help you for testing “panels” promptly , which are positioned on WI (Warranty in), OOW (out of warranty),CID(customer induced defects), etc.

★ Smart Tester is directly connected to and checks LCD panels of final products.



Resolves Various Panel Matching Issues through RS-232 communications with PC control programs

***. KEY FEATURES**

- Can test LCD panels of up to 55 inches without additional power supply.[55,50,42,32,26,19,17,15,12.1,10-inch]
- 1/2/4/Channel out. Can control LVDS levels of up to 16 steps.
- Panel Ranges Supported : Max . 1920 * 1200
- Can support a wide range of interfaces, e.g., LVDS, eDP, DP, TTL(as option).
- Can Support e-DP Panel's testing.
- Simple & Auto Pattern (F1 ~ F10 Button)
- Controls all items including LCD sequence by customized and upgradable software that is installed in PCs.
(Allows stand-alone operation with pre-installed software)
- Can control backlight and speed spectrum.

***. General Specification**

	Output Socket		Description
1	Signal output	LVDS	<ul style="list-style-type: none"> • Single, Dual, Quad / 6bit~10bit • EDID SDA,SCL • Signal Level Control : 150mV ~ 1180mV (16 step)
		eDP	<ul style="list-style-type: none"> • 1LANE , 2LANE , 4LANE / 6bit ~ 8bit • AUX Channel
2	Backlight control output	LVDS	<ul style="list-style-type: none"> - Vbr-A : DC 0V ~3.3V - Vbr-B : DC 0V ~3.3V or PWM(0%~100%, 85Hz~500Hz) - BL on/off : DC 0V~5V - Status
		eDP	<ul style="list-style-type: none"> - BL on/off : DC 0V~5V - PWM(0%~100%, 170Hz~1000Hz)

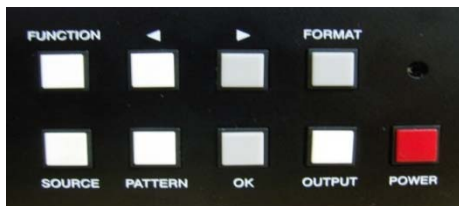
3	LCM VDD output	<ul style="list-style-type: none"> • Variable between 0V and 22V • Operating in LED VCC in eDP.
4	VCC output	<ul style="list-style-type: none"> • 2-port , 0 or 3.3V , LCM VDD in eDP.
5	24V output	<ul style="list-style-type: none"> • 24V 15A output • Built-in power supply available for up to 55-inch panels
6	12V output	<ul style="list-style-type: none"> • 12V 3A Output • 12V output for monitor LCM with an external inverter

***. LCD Panel Range**

LCD	Resolution
VGA	640 X 480
SVGA	800 X 600
XGA	1024 X 768
WXGA	1280 X 768
WXGA - Wide	1366 X 768
SXGA - Dual	1280 X 1024
SXGA - P	1440 X 1050
SXGA - Wide	1440 X 900
UXGA	1600 X 1024
UXGA - Dual	1600 X 1200
WUXGA -P(Full HD)	1920 X 1080
WUXGA	1920 X 1200

*. Smart Tester Description

1. Front Buttons



- ① Function (Select Preset Mode by Function Button)
- ② ◀ ▶ Button (Input Source Select)
- ③ FORMAT (Select or Cancel Internal Pattern Mode)
- ④ SOURCE (EDID Write)
- ⑤ Pattern (CF Card Pattern Select)
- ⑥ OK (Select or Cancel Internal Pattern Auto Play)
- ⑦ Output (EDID Write -> Input Signal Calibration)

2. SIDE VIEW



- ① Voltage Control & Display
VLCD PWR ; LVDS Panel
VLED PWR : eDP Panel
- ② 12V Fixed Output for External Inverter PWR
- ③ 24 V Fixed Output for LVDS Internal Inverter PWR
- ④ Sub Board & Signal Interface Slot

3. Rear View



- ① RS-232 terminal
- ② Input terminals
- ③ CF CARD terminal
- ④ Remote Control terminal
- ⑤ USB terminal
- ⑥ AC Input terminal

*. PC Management Software

- . Control Tab Captured Screen

The screenshot shows the 'Smart Tester V1.52c' software interface. It is divided into several sections:

- CONTROL | DISPLAY**: Includes 'Serial Port' (COM3) and 'Model Name' (HD_DP_LP140WH1_T) with 'LOAD FILE', 'SAVE FILE', 'READ ALL', and 'APPLY ALL' buttons.
- LCM Control**: Contains settings for 'FORMAT / VCC1' (VESA), 'OPTION1 / VCC2' (Enable), 'OPTION2 / VCC3' (Enable), 'OPC_EN' (Disable), 'BIT SEL' (8 Bits), 'VBR-B' (DC/PWM, TCON/INVERTER, TCON), and 'TI MODE' (TI Mode). It also has 'Output Signal' (LVDS), 'Port Selection' (1 port, 2 port, 4 port), 'Vertical Frequency' (60hz, 120hz), and 'LVDS Signal Level' (720mV).
- Panel Timing**: A table of timing parameters:

H - Frequency (KHz)	47.4	V - Frequency (Hz)	60.1
H - TOTAL	1526	V - TOTAL	790
H - ACTIVE	1366	V - ACTIVE	768
HS Back Porch	80	VS Back Porch	14
HSYNC Width	32	VSYNC Width	3
Display Clock (Mhz)	72.4		
- Spread Spectrum**: Includes 'ON / OFF' (ON), 'Spectrum Step' (27), and 'Spectrum Span' (649).
- Inverter Value**: Includes 'Backlight ON Level' (3.3V), 'VBR-A' (1.7V), 'VBR-B(DC)' (3.3V), 'Duty Max' (0.0s), 'VBR-B (PWM) Duty' (87.84%), and 'Frequency(hz)' (240).
- Function Preset Mode**: A grid of function keys (F1-F10) and 'RESTORE' and 'SAVE' buttons.
- Inverter On/Off Test**: Includes 'TRY', 'FAIL', 'TEST NO', 'OFF ->ON (ms)', 'ON ->OFF (ms)', and 'RESET' buttons.
- VLCD On/Off Test**: Includes 'Delay Time(ms)' and 'ON', 'OFF' buttons.
- Power Sequence**: A table for power sequence settings:

ON (ms)	ITEM	OFF (ms)	
300	VDD(LVDD/LED)	250	POWER ON
0	OPTION1 / VCC2	300	POWER OFF
0	OPTION2 / VCC3	300	
0	FORMAT / VCC1	230	
0	OPC_EN	220	
0	BIT SEL	210	
100	Signal	200	
0	24V	100	
400	BL_ON	0	APPLY
200	VBR - A	10	
200	VBR - B	10	SET DEFAULT

- Panel Timing Setting

Panel Timing			
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INPUT SIGNAL CALIBRATION		APPLY	SET DEFAULT

- Power Sequence Setting

Power Sequence				
ON (ms)	ITEM	OFF (ms)		
0	<input checked="" type="radio"/> VDD(LVDD/LED) <input type="radio"/>	100	POWER ON	
20	<input type="radio"/> OPTION1 / VCC2 <input type="radio"/>	80	POWER OFF	
25	<input type="radio"/> OPTION2 / VCC3 <input type="radio"/>	60		
30	<input type="radio"/> FORMAT / VCC1 <input type="radio"/>	50		
35	<input type="radio"/> OPC_LEN <input type="radio"/>	40		
40	<input type="radio"/> BIT SEL <input type="radio"/>	35		
50	<input type="radio"/> Signal <input type="radio"/>	30		
60	<input type="radio"/> 24V <input type="radio"/>	25	APPLY	
100	<input type="radio"/> BL_ON <input type="radio"/>	20		
70	<input type="radio"/> VBR - A <input type="radio"/>	0		
70	<input type="radio"/> VBR - B <input checked="" type="radio"/>	0	SET DEFAULT	

*. Smart Tester Composed List

Model	Component	
Smart Tester ~ Built in 400w power supply.	MAIN SYSTEM	
	LVDS Output Card	
	e-DP Output Card	
	e-DP Cable	
	Accessory	Serial Cable
		serial to USB Cable
		AC POWER CORD
		RGB CABLE
		INVERTER CABEL(14pin)
		INVERTER CABEL(12pin)
		LVDS CABLE(LGD TV HD_30pin)
		LVDS CABLE(LGD TV FHD_51pin)
		LVDS CABLE(LGD TV FHD120_41pin)
		Up grade Cable (USB Cable)
		CF CARD (4G)
		REMOCON
		Software
		MANUAL