

## **Engineering Specification**

**Type 18.1 SXGA Monochrome TFT/LCD Module  
Model Name:ITSX88E**

**Document Control Number : OEM I-88E-04**

**Note:Specification is subject to change without notice. Consequently it is better to contact to International Display Technology before proceeding with the design of your product incorporating this module.**

**Sales Support  
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**ii Record of Revision**

Date	Document Revision	Page	Summary
June 13,2001	OEM88E-01	All	First Edition for customer. Based on Internal Spec. as of June 1,2001.
October 23,2001	OEM I-88E-02	5,8 5 7 8  19 21 24,25 27,28	Update by establishment of the New Company as "International Display Technology". Based on Internal Spec. EC H30912 as of October 22,2001. To update White Luminance. To update Weight, Optical Rise Time + Fall Time and Power Consumption. To update value of Shock Test Criteria. To update Viewing Angle, Response Time and White Balance. To update the Lamp Current versus Luminance Curve. To add Note for Timing Characteristics. To update Power Consumption. To update Reference Drawings.
January 28,2002	OEM I-88E-03	5,8	To update White Luminance.
February 25,2002	OEM I-88E-04	4 5 5,8 27	Based on Internal Spec. EC H30923. To add one of item for Handling Precautions. To update Power Consumption. To update Contrast Ratio. To add Note for Mechanical Characteristics.

## 1.0 Handling Precautions

- Damage to the panel or the panel electronics may result from any deviation from the recommended power on/off sequencing. The panel should not be hot plugged. Refer to the Power On/Off Sequence section in this Specification.
- Handle the panel with care. The LCD panel and CCFL (Cold Cathode Fluorescent Lamp)s are made of glass and may crack or break if dropped or subjected to excessive force.
- The CCFLs contain a small amount of Mercury so should not be disposed of to landfill. Dispose of as required by local ordinances or regulations.
- The LCD module contains small amounts of material having no flammability grade. The exemption conditions of the flammability requirements (4.7.3.4, IEC60950 3rd.Ed. or UL60950 3rd.Ed.) should be applied.
- The panel may be damaged by the application of twisting or bending forces to the module assembly. Care should be taken in the design of the monitor housing and the assembly procedure to prevent stress damage to the panel especially the lamp cable and the lamp connector..
- Use standard earthing/grounding procedures to prevent damage to the CMOS LSI while handling the module.
- Use earthing/grounding procedures, an ionic shower, or similar to prevent static damage while removing the protective front sheet.
- The front polarizer can be easily damaged. Take care not to scratch the front surface with any hard or abrasive material. Dust, finger marks, grease etc. can be removed with a soft damp cloth (a small amount of mild detergent can be used on the damp cloth). Do not apply water or detergent directly to the front surface as this may cause staining or damage the electronic components.
- Never use any solvent on the front polarizer or module as this may cause permanent damage.
- Do not open or modify the module assembly.
- Continuous operation of the panel with the same screen content may result in some image sticking. Over 10 hours operation with the same content is not recommended.
- Wipe off water drop immediately. Long contact with water may cause discoloration or spots.
- When the panel surface is soiled, wipe it with absorbent cotton or other soft cloth.
- Please do not use middle 3(three) screw holes on the upper(long) side and middle 3(three) screw holes on the lower(long) side for panel fixing. These screw holes are for manufacturing purpose only.

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## 2.0 General Description

This specification applies to the Type 18.1 Monochrome TFT/LCD Module 'ITSX88E'.

This module is designed for a LCD monitor style display unit. This module includes inverter card.

The screen format and electrical interface are intended to support the VESA SXGA (1280(H) x 1024(V) at 60Hz) screen.

Supported gray scale is 8-bit per 1(one) sub-pixel.

All input signals are LVDS(Low Voltage Differential Signaling) interface compatible.

## 2.1 Characteristics

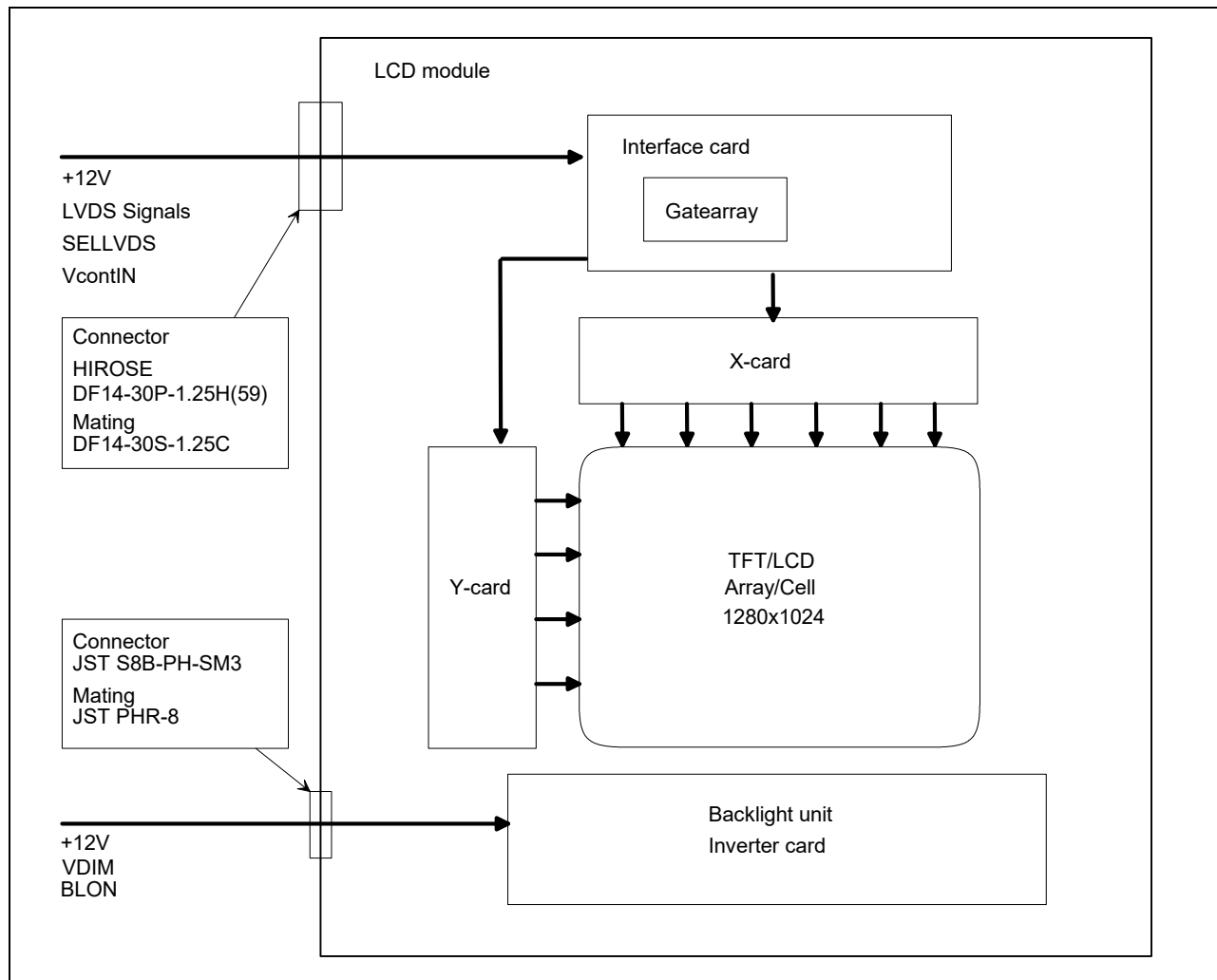
The following items are characteristics summary on the table under 25 degree C condition:

CHARACTERISTICS ITEMS	SPECIFICATIONS
Screen Diagonal [mm]	460
Pixels H x V	1280(x3) x 1024
Active Area [mm]	359.0(H) x 287.2(V)
Pixel Pitch [mm]	0.2805(per one triad) x 0.2805
Pixel Arrangement	Sub-pixel Vertical Stripe
Weight [grams]	2,900 typ.
Physical Size [mm]	389.0(W) typ. x 317.2(H) typ. x 35.0 (D) max.
Display Mode	Normally Black
Supported Grayscale	8-bit per 1(one) sub-pixel
White Luminance [cd/m <sup>2</sup> ]	700 Typ.
Contrast Ratio	550 : 1 Typ.
Optical Rise Time/Fall Time [msec]	Rise Time + Fall Time : 40 Typ (total)
Input Voltage [V]	+12 +/- 5%
Power Consumption [W]	38.8 typ., 46.6 max.
Electrical Interface	LVDS Dual (Even/Odd A/B/C Data(8bit), 3sync signals, Clock)
Temperature Range [degree C] Operating Storage (Shipping)	0 to +50 -20 to +60

**Note : Luminance : Rise / Fall Time:Respective 10% -> 90%, 90%->10%**

## 2.2 Functional Block Diagram

The following diagram shows the functional block of this Type 18.1 Monochrome TFT/LCD Module.



### 3.0 Absolute Maximum Ratings

Absolute maximum ratings of the module is as follows :

Item	Symbol	Min	Max	Unit	Conditions
Logic/LCD Drive Voltage	Vin	-0.3	+13.2	V	
Backlight Voltage	VBL	-0.3	+13.2	V	
Select LVDS data order	SELLVDS	-0.3	+3.3	V	
Brightness control	VDIM	-0.3	+5.3	V	
Backlight on signal	BLON	-0.3	+5.3	V	
Operating Temperature	TOP	0	+50	deg.C	Note 1
Operating Humidity	HOP	8	80	%RH	Note 1
Storage Temperature	TST	-20	+60	deg.C	Note 1
Storage Humidity	HST	5	95	%RH	Note 1
Vibration			1.5 10-200	G Hz	Note 2
Shock			50 11	G ms	Note 2 Half sine wave

**Note 1 : Maximum Wet-Bulb should be 39 degree C and No condensation.**

**Note 2 : Vibration Specification**

- Sign Vibration:10-200-10Hz, 1.5G, 0.29 Oct/min, 30 min, X, Y, A Axis, Each One Time.

**Shock Specification**

- Half sine wave:50G 11msec. -X+/-, -Y+/-, -Z+/- (Total 6 directions), Each two times Shock.

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