



FLAT DISPLAY TECHNOLOGY



This product is RoHS compliant

§ SPECIFICATION APPROVAL SHEET §

Fdt Tech Module No: **LOF101GF7P-80R**

Description: **10.1" Digital TFT-LCD Module**

SPEC No.: **SAS-1906001**

Version: **1.2**

Issue Date: **March 17, 2021**

※ This approval sheet contains 20 pages including the cover and appendix.

Customer:	Approved By:
Date: / / 21	

Approved By: _____

Checked By: _____

Designed By: _____



1. General Description

1.1 Features

- 10.1" (1280x800) Digital TFT LCD
- Aspect Ratio: 16:10
- Input Signal VGA / HDMI 1.3a
- Maximum Support Resolution 1920x1080
- Headphone Driver, 46mW@32Ω
- 10 Points Projected Capacitive Touch
- 5 Key Buttons Controls
- 9 Language OSD Menu
- LED Backlight
- Single Operation Voltage +12V

1.2 Applications

- Industrial
- Medical Environment
- Instrument Display
- Kiosk
- Security
- Signage
- Office Electronics
- Home Application
- Educate Application



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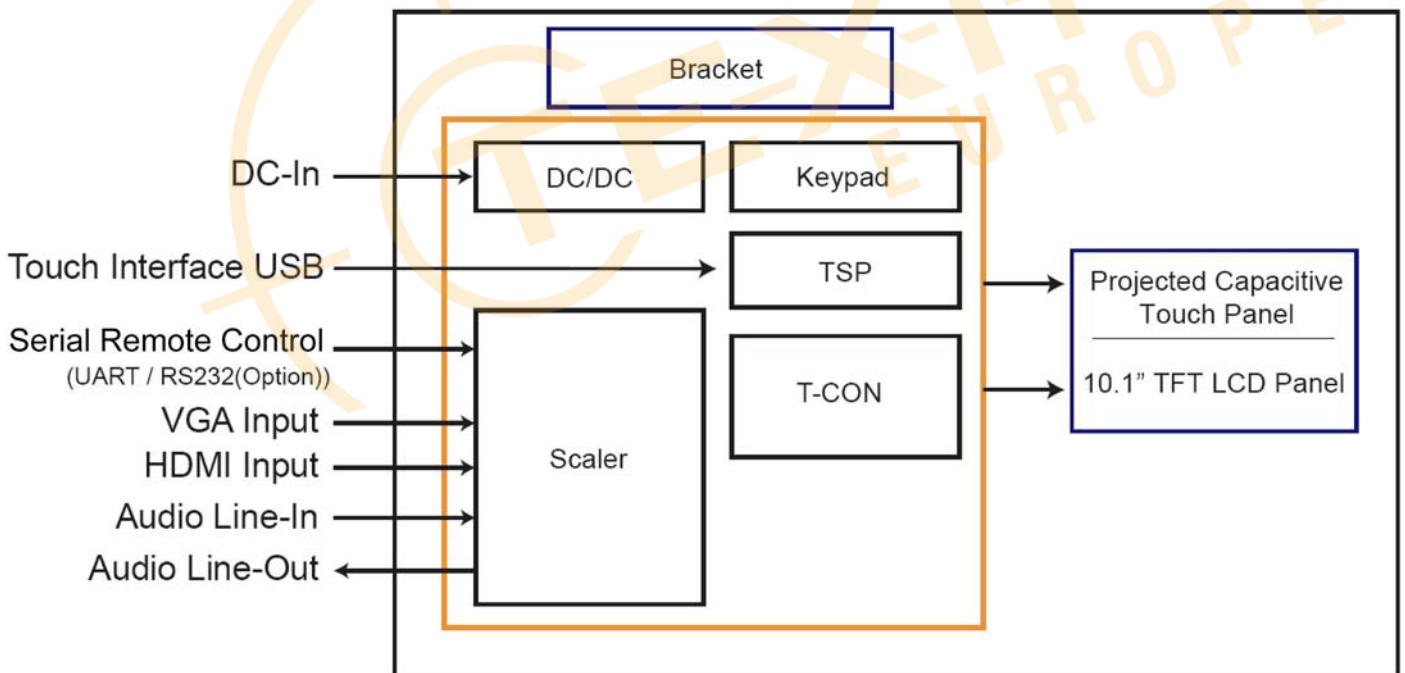
3. Specifications

LCD	
Panel Size	10.1"
Resolution (Pixels)	1280x800
Color	16.7M
Luminance	255 cd/m ²
Contrast Ratio	800
View Angle	85(L) / 85(R) / 85(T) / 85(B)
LED Life Time (Min.)	20K hours
Power Requirement	
Power Input (DC Jack 2.1 ϕ)	+12 V _{DC}
Power Consumption	6.12 W
Touch Screen	
PCAP Type	USB Interface (10 Points)
Resistive Type Support OS	Windows / Linux / DOS / Mac / QNX
Projected Capacitive Touch Support OS	Windows / Linux

Input Signal		
VGA	D-Sub15	
HDMI	1.3a	
Audio		
Headphone Driver (Line In & out)	46mW@32 Ω Phone Jack ϕ 3.5	
Mechanical		
Construction	Aluminum Front Bezel with Completely Covered Glass and SECC steel chassis	
Mounting Type	Panel / VESA 75 x 75 Mount	
Environment		
Temperature Range	Operating	0 ~ +50 $^{\circ}$ C
	Storage	-20 ~ +60 $^{\circ}$ C
High Temperature & High Humidity (Non-condensing)	Operating	+40 $^{\circ}$ C / 90%

4. Block Diagram

LOF101GF7P-80R





5. Order Information

5.1 Unit

Item	LOF101GF7P-80R	Unit	Remark
VGA	⊙		
HDMI	⊙		
Touch Panel Type	Projected Capacitive Touch		
Touch Screen Interface	USB		
Headphone Driver (Line In & out)	⊙		
5 Keys	⊙		
Dimensions	250.26 x 168.90 x 26.7	mm	
Weight	786	g	±10%
Condition	Standard		

Note: 1. The assembling of panel and bracket is aimed for delivery, packaging and experiment. If the demand of shockproof and long-term fix, pls. have it into consideration of mechanism design.

5.2 Customized

Function	Item
Serial Remote Control	RS232 (DB9)
External Key	5 keys

Note: Special order condition will apply to non-standard items and pls. contact salespersons in FDT.

6. Accessories (Option)

Before you begin installing the Open Frame, please make sure that the following materials have been shipped:



A. LASTD12033-FDR



B. LAACD18000-FDR



C. LACABLE068-FDR



D. LAVGA18000-FDR



E. LAUSB18000-FDR



F. LACABLE070-FDR



G. LAVCD00002-FDR

- A. AC to DC Adapter (L:1500mm, 100-240V_{AC} 50-60Hz to +12V_{DC} @ 3.3A, ϕ 2.1)
- B. Power Cord (L:1800mm, Plug Type B for USA)
- C. HDMI Cable (L:1800mm)
- D. VGA Cable (L:1800mm)
- E. USB Cable (L:1800mm)
- F. AUDIO Cable (L:1800mm)
- G. Touch Screen Driver CD Disk / User Manual

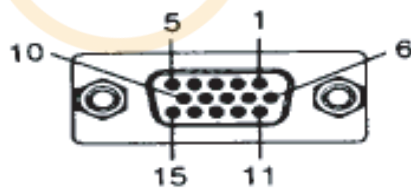
7. Pin Description

7.1 DC-In : Pin Assignment of Power Input (DC-Jack Inside Diameter:2.1 φ Outside Diameter:5.5 φ Side Entry Type)

Pin No.	Symbol	I/O	Description	Remark
1	DC-In	I	+12Vdc Input Voltage	
2	GND	-	Power Ground	

7.2 VGA : Pin Assignment of Analog RGB Input (D-Sub 15Pin)

Pin No.	Symbol	I/O	Description	Remark
1	RI+	I	Analog Red Signal	
2	GI+	I	Analog Green Signal	
3	BI+	I	Analog Blue Signal	
4	GND	-	Ground	
5	VGA-Det	I	VGA Detect	
6	AGND	-	Analog Ground	
7	AGND	-	Analog Ground	
8	AGND	-	Analog Ground	
9	VGA5V	-	VGA +5Vdc Input	
10	GND	-	Ground	
11	GND	-	Ground	
12	VGA_SDA	-	DDC2 Data	
13	HS_IN	I	TTL Horizontal sync.	
14	VS_IN	I	TTL Vertical sync.	
15	VGA_SCL	-	DDC2 Clock	

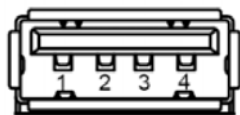


7.3 HDMI : Pin Assignment of HDMI-A Type Input (HDMI 1.3a -19Pin Female)

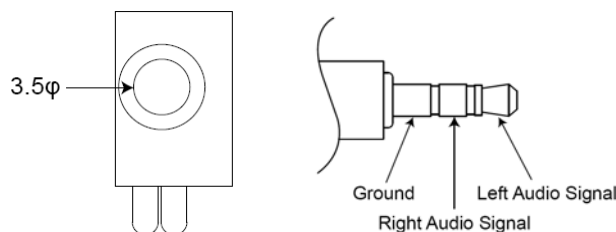
Pin No.	Symbol	I/O	Description	Remark
1	DATA2+	I	Positive HDMI Input for B Link Data Channel 2	
2	DET_HDMI	-	HDMI Detect	
3	DATA2-	I	Negative HDMI Input for B Link Data Channel 2	
4	DATA1+	I	Positive HDMI Input for B Link Data Channel 1	
5	GND	-	Ground	
6	DATA1-	I	Negative HDMI Input for B Link Data Channel 1	
7	DATA0+	I	Positive HDMI Input for B Link Data Channel 0	
8	GND	-	Ground	
9	DATA0-	I	Negative HDMI Input for B Link Data Channel 0	
10	DCLK+	I	Positive HDMI Input for B Link Clock Channel	
11	GND	-	Ground	
12	DCLK-	I	Negative HDMI Input for B Link Clock Channel	
13	NC	-	No Connection	
14	NC	-	No Connection	
15	HDMI_SCL	I	DDC2 Clock	
16	HDMI_SDA	I	DDC2 Data	
17	GND	I	DDC/CEC Ground	
18	HDMI5V	I	HDMI +5Vdc Input	
19	HDMI_HPD	I	Hot Plug Detect	

7.4 USB : Pin Assignment of Touch USB (USB A Type - Female 2.0mm, Side Entry Type)(Option)

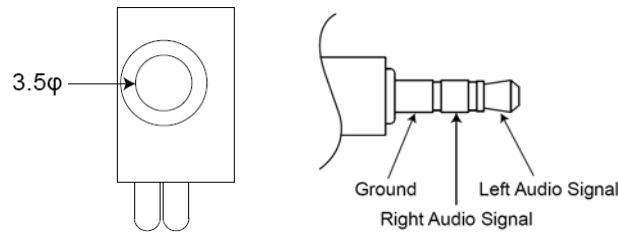
Pin No.	Symbol	I/O	Description	Remark
1	VBUS	-	USB VCC	
2	D-	-	DATA (-)	
3	D+	-	DATA (+)	
4	DGND	-	Digital Ground	



7.5 Line-Out : Pin Assignment of Headphone Line-Out (Outside Diameter:3.5 φ Side Entry Type)



7.6 Line-In : Pin Assignment of Headphone Line-In (Outside Diameter:3.5 φ Side Entry Type)



8. Absolute Maximum Ratings

8.1 Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Remark
Input Voltage	V _{in}	+9	+15	V	
Analog RGB Input Signal	Analog RGB in	0.5	2.0	V _{p-p}	
Digital Input Signal	TTL	0.3	3.6	V	
HDMI Input Signal		-	165	MHz	
Operating Temp.		0	+50	°C	
Storage Temp.		-20	+60	°C	
High Temperature & High Humidity (Non-condensing)		-	+40 / 90	°C / %	

9. Recommended Operating Conditions

9.1 Electrical Characteristics

Parameter	Symbol	I/O	Min	Typ	Max	Unit	Note
Input Voltage	DC-in	I	+10.2	+12	+13.8	V	
Total Current	I-in	I	-	510	-	mA	+12V
Power Consumption		I	-	6.12	-	W	±15% @Without Headphone
Output Voltage	VDD	O	3.2	3.3	3.4	V	
Analog RGB Input Signal	Analog RGB in	RGB	I	0.7	-	V _{p-p}	@75Ω
HDMI Input Signal			-	-	165	MHz	

9.2 Support Display Mode Characteristics

Dots per inch	Standard	H	Unit	Polarity	V	Unit	Polarity	Note
640 × 480	VGA	31.5	KHz	Negative	59.9	Hz	Negative	
800 × 600	VESA	37.9	KHz	Positive	60.3	Hz	Positive	
1024 × 768	VESA	48.4	KHz	Negative	60	Hz	Negative	
1280 × 800	VESA	49.7	KHz	Negative	59.8	Hz	Positive	
1280 × 1024	VESA	64	KHz	Positive	60	Hz	Positive	
1600 × 1200	VESA	75	KHz	Positive	60	Hz	Positive	
1920 × 1080	VESA	67.5	KHz	Positive	60	Hz	Positive	

Note: Polarity & standard only for VGA mode



10. Projected Capacitive Touch Panel Characteristics

10.1 Electrical Performance

Item	Specifications
Report rare (Points/sec) (*Note: Report rare will vary by channel number, cover thickness and other parameters)	> 100 Hz
Response time	Average < 25 ms

10.2 Optical Performance

Parameter	Specifications
Transparency	≥ 86%
Haze	≤ 2%

10.3 Mechanical Performance

Parameter	Specifications
Input Method	Multi Finger
Touch Function	10 Points
Interface	USB 2.0 compliant full speed with LPM L1 supported
Surface Hardness	7H
Cover Spec.	T=1.1mm Black Printing



10.4 Touch Panel Operation System Support

Driver Vender : EETI (eGalax_eMPIA Technology Inc.)

OS	Version	Interface
Windows	Windows 7, 8, 8.1, 10	USB/RS232
	Windows Embedded 7, 8	
	Windows Embedded POSReady 2009 , POSReady 7	
	Embedded Standard 7	
	Embedded Enterprise 7	
	Embedded 8 Standard	
	Embedded 8.1 Pro/ Embedded 8.1 Industry	
	Windows , XP, 2000	
Windows XP Embedded		
Windows CE	Windows Embedded Compact 2013, 7	USB/RS232
	Windows CE 6.0	
	Windows CE.Net (4.x / 5.0)	
Linux	Kernel 2.6.24 Upward and 3.x.x / 4.x.x / 5.x.x (X86 / ARM / MIPS)	USB
	Kernel 2.6.23 Downward (X86)	
	Kernel 2.4.x (x86)	
Android	Android Version 2.3.x upwards (X86 / ARM / MIPS)	USB
Mac OS	Mac OS X 10.5.3 Leopard (Power PC)	USB
	Mac OS X 10.7.4 Earlier (32Bit / 64Bit) (Intel CPU)	
	Mac OS X 10.7.5 (32Bit / 64Bit) (Intel CPU)	
	Mac OS X 10.8.x Mountain Lion (Intel CPU)	
	Mac OS X 10.9.x Mavericks (Intel CPU)	
	Mac OS X 10.10.x Yosemite (Intel CPU)	
	Mac OS X 10.11 El Capitan (Intel CPU)	
	Mac OS 10.12 Sierra (Intel CPU)	
	Mac OS 10.13 High Sierra (Intel CPU)	
	Mac OS 10.14 Mojave (Intel CPU)	
	Mac OS 10.15 Catalina (Intel CPU)	
QNX	QNX Neutrino RTOS V6.5/6.4	USB/RS232
	QNX Neutrino RTOS V6.3	

Note: 1. Please refer to the FDT website for the driver installation and support operating system.

FDT website: <http://www.fdt.com.tw>

2. How to use Touch Driver, please refer to Readme of Touch Screen Driver CD Disk (LAVCD00002-FDR).

3. Please refer to the FDT website for the latest driver version and support operating system.

11. Installing the Monitor

11.1 Power cable connection:

Connect the power cord to the AC outlet, and connect the power to the monitor through the AC/DC adapter.

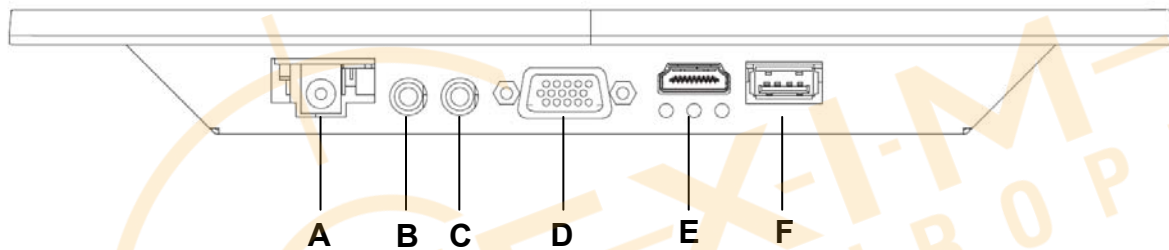
11.2 VGA signal cable connection:

Plug one end of the 15-pin signal cable to the VGA connector at the rear of the PC system and the other end to the Open Frame monitor.

Secure the connectors with the screws on the cable connector at both ends.

11.3 Switch on the power:

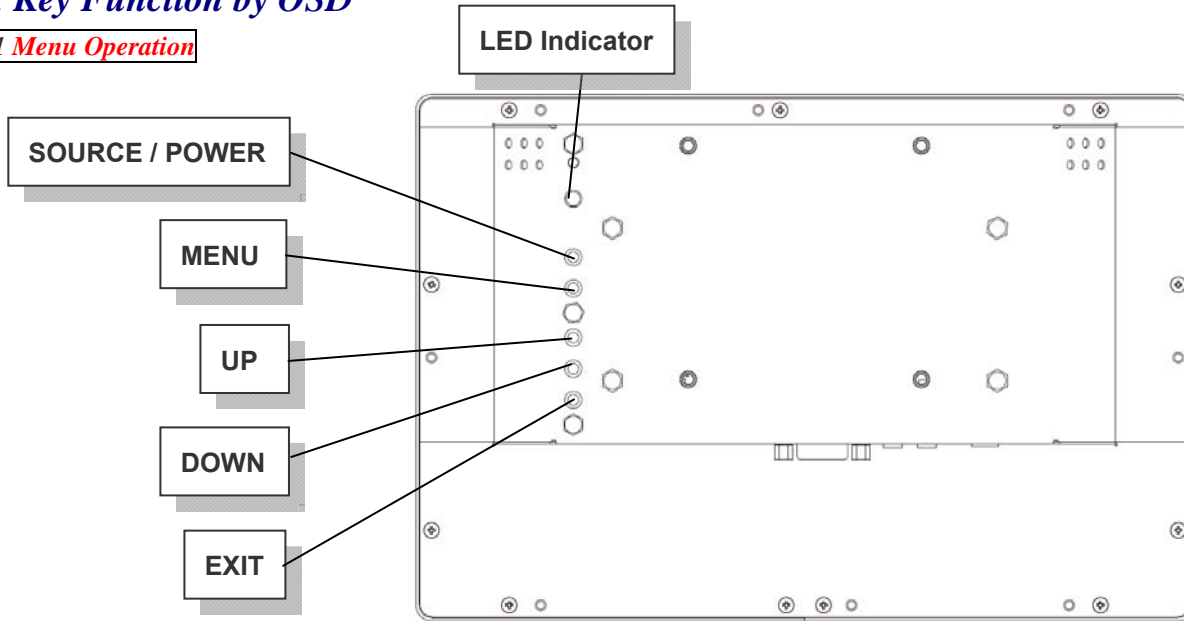
Switch on the power switch on the rear cover of the Open Frame Monitor.



- A. DC-In (+12V_{DC} The DC jack core is positive)
- B. Line-Out : Phone Jack ϕ 3.5
- C. Line-In : Phone Jack ϕ 3.5
- D. VGA D-sub 15 (Female)
- E. HDMI
- F. USB (For Touch Controller)

12. Key Function by OSD

12.1 Menu Operation

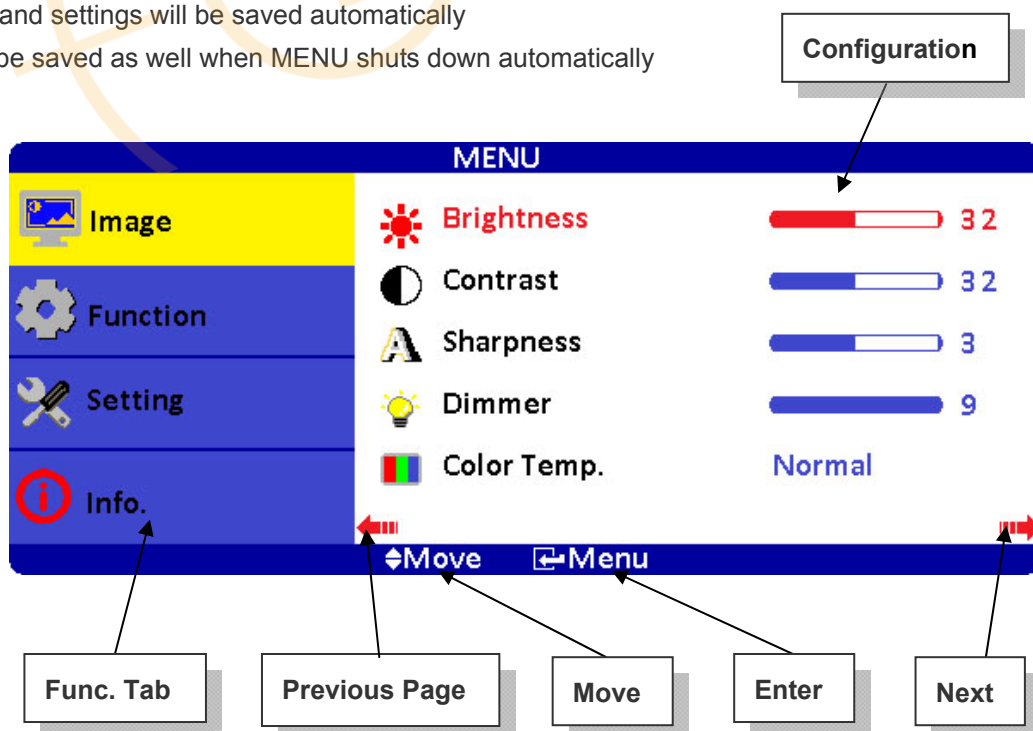


OSD ICON Instructions :

1. POWER : Power On/Off (※Press for 3 secs to turn off)
2. MENU / ENTER : (After turning on MENU, only ENTER is available)
3. UP : Move Upward / Increase Value / Option Switch
4. DOWN : Move Downward / Decrease Value / Option Switch
5. EXIT : Return to Previous Page
6. LED Indicator
 - Waiting : Flickering Green
 - Power ON : Green
 - Power OFF : Red

Save OSD Setting:

1. EXIT MENU and settings will be saved automatically
2. Settings will be saved as well when MENU shuts down automatically



Overview of the Menu :



Image

Indicator	Meaning	Default	Adjustable range	Remark
	Brightness	32	0~63	Adjust-Bar
	Contrast	32	0~63	Adjust-Bar
	Sharpness	3	1~5	Adjust-Bar
	Dimmer	15	0~15	Adjust-Bar
	Color Temp.	Normal	Normal / Warm / Cool	
	H-Position	0	-25~+25	VGA only
	V-Position	0	-25~+25	VGA only
	Clock	0	-25~+25	VGA only
	Phase	32	0~63	VGA only
	Auto	By different resolution		VGA only
	Exit			



Function

ICON	Meaning	Function	Default	Status	Description	Remark
	Show Status	Information of input source	On	On	Show input source	
				Off	Hide input source	
	Blue Screen	Select blue/ black screen when no input signal is detected.	On	On	Show blue screen when no input.	
				Off	Show black screen when no input.	
	Auto Power On	Modules turns on automatically without power key input.	On	On	Auto	
				Off	Manual	
				Auto Save	Power off , the last state	
	Detect Source	Auto detect input source.	On	On	Auto-detect signal source	
				Off	Manual switch signal source	
	Auto Power Saving	Modules go standby when no input source is detected.	Off	6s / 15s / 30s	Go standby by settings when no input	LED indicator: Flickering Green
				Off	Show no signal when no input	LED indicator: Green



	Auto Sleep	Modules go off when set timing is out.	Off	15M / 30M / 60M	Go off by time setting	LED indicator: Red Press Power Key back to life.
				Off	Turn off sleep mode	
	Exit					

Note : After configuration is set, RESET won't restore to default setting.



Setting

Indicator	Meaning	Default	Adjustable range	Remark
	Source	VGA	VGA / HDMI	
	Volume	32	0~63	
	Mute	Off	On / Off	On : Mute · Off : Sound
	Mirror	Off	On / Off	Left-Right Reversal
	Flip	Off	On / Off	Upside Down
	Language	English	English / 中文 / 日本語 / 한국의 / Française / Deutsch / Italiano / Española / Português	
	Reset			Restore to default
	Exit			



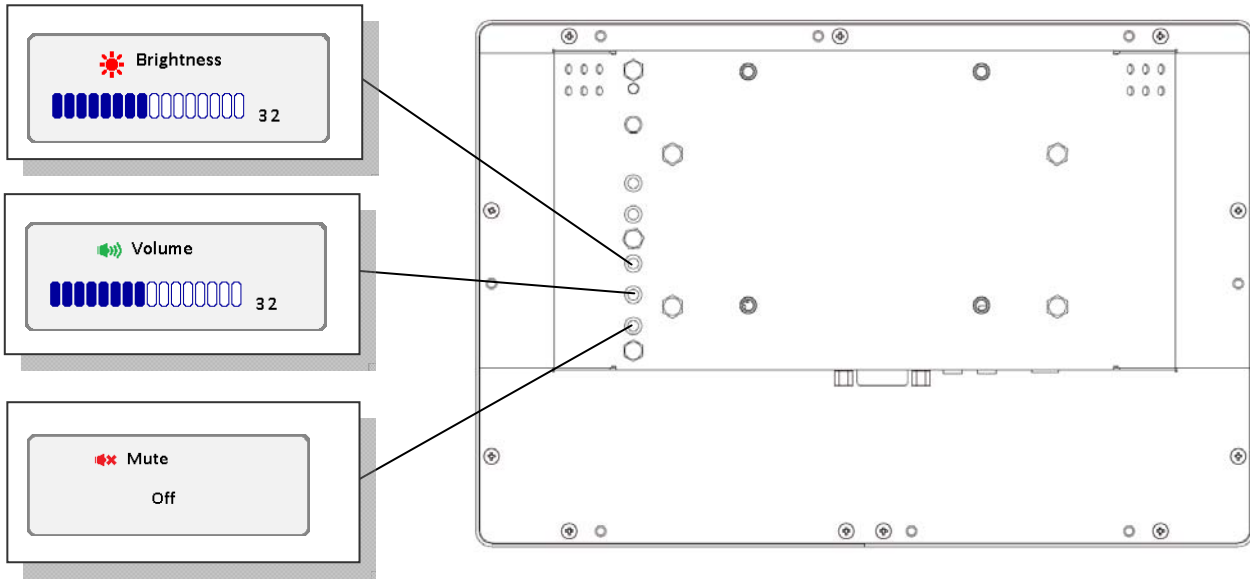
Info.

MENU

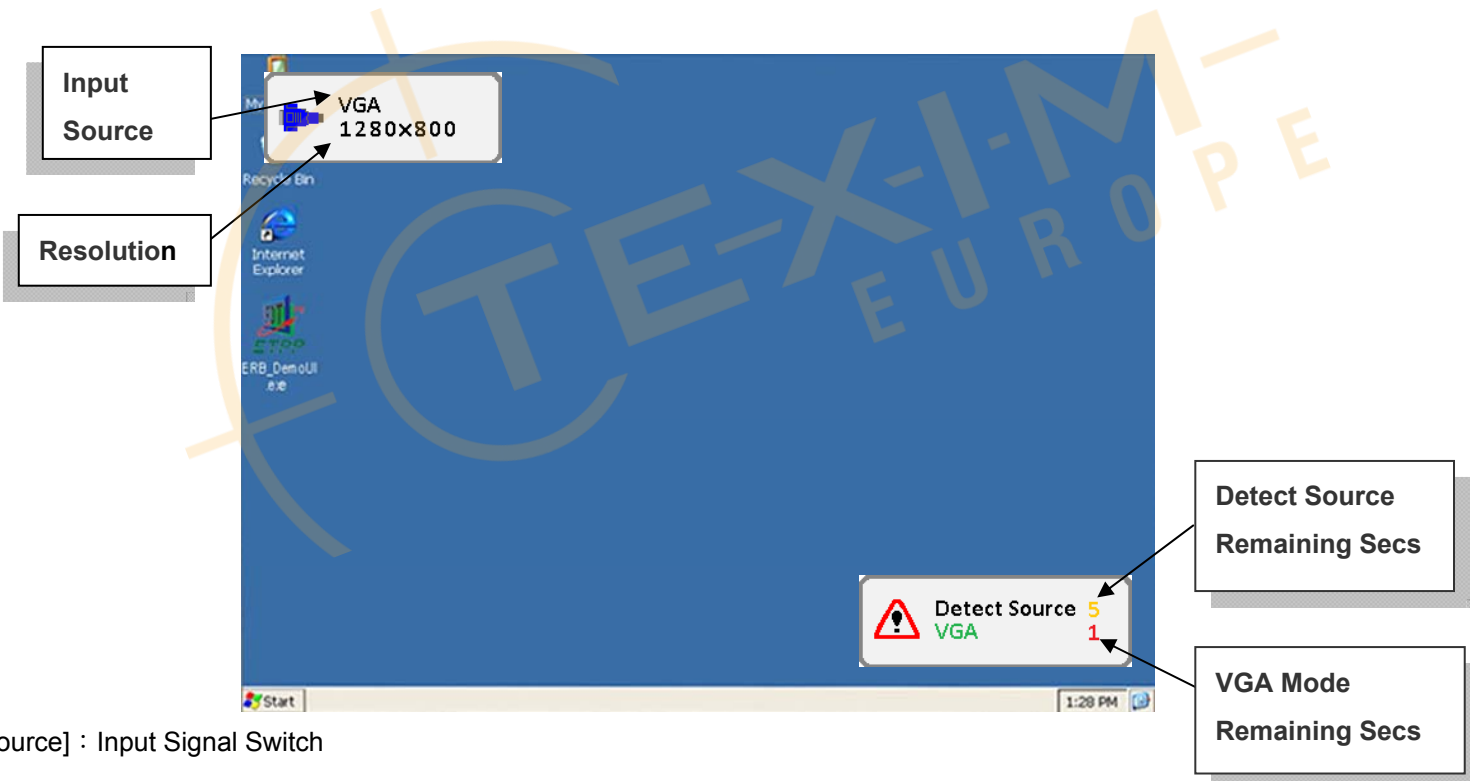
Image	Source : VGA
Function	Resolution : 1280x800
Setting	H-Position : 49.2KHz V-Position : 59.7Hz
Information	Program Ver : 1.00 Command Ver : 1.00

↕Move ↩Exit / Menu

Hot Key When OSD Menu is Off :



Information of Input Source and Functionality :



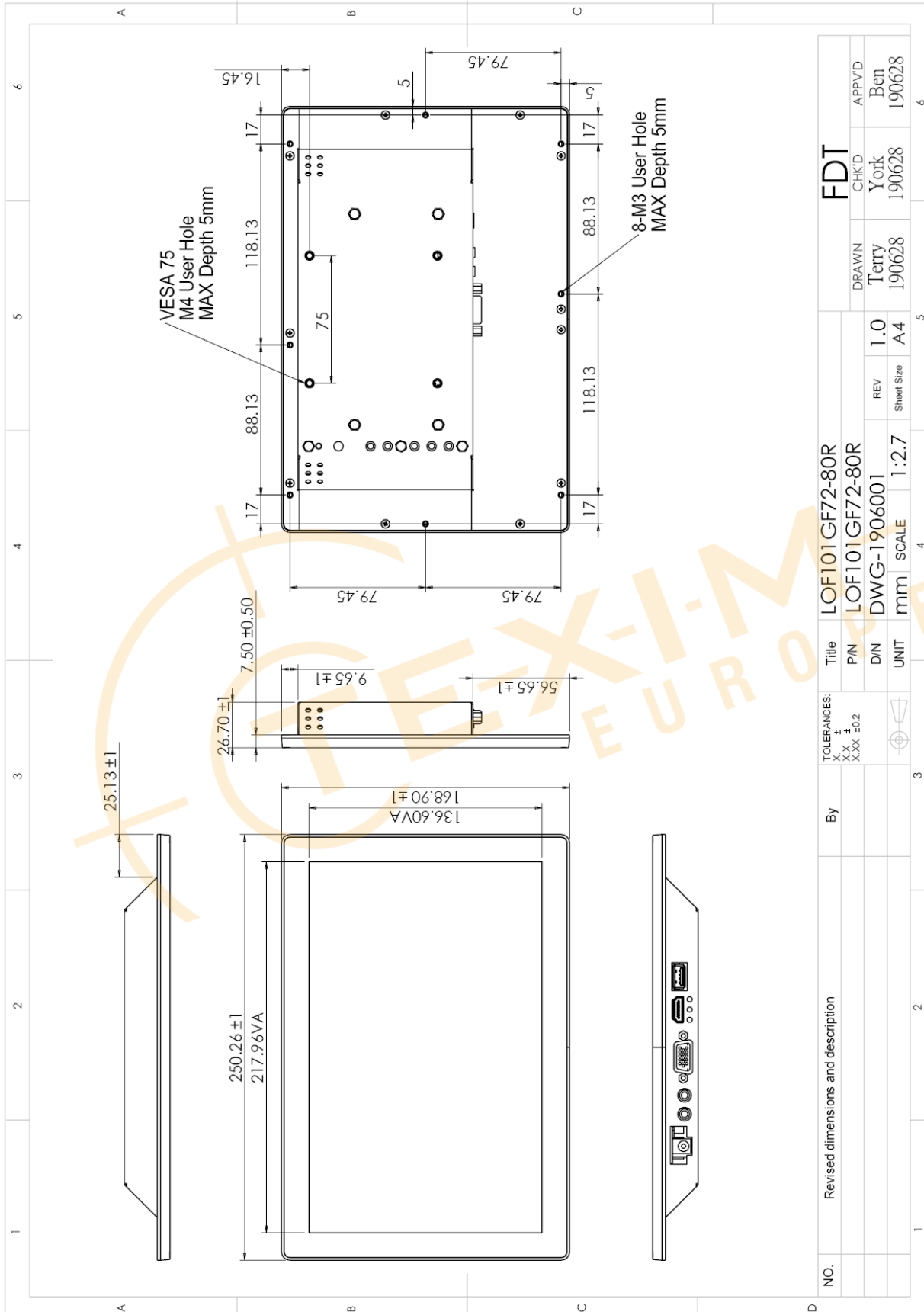
[Source] : Input Signal Switch

Overview of Input Signals :

Indicator	Interface
	VGA
	HDMI

13. Dimension Information

13.1 Unit (LOF101GF7P-80R)



NO.	Revised dimensions and description	By	Title	LOF101 GF72-80R	FDT		
			P/N	LOF101GF72-80R	DRAWN	CHK'D	APP'VD
			D/N	DWG-1906001	Terry	York	Ben
			UNIT	mm	REV	190628	190628
			SCALE	1:2.7	Sheet Size	A4	
			TOLERANCES:	X.X ±			
				X.X ±			
				X.XX ±0.2			



14. Appendix

14.1 TFT-LCD Mechanical Specifications

Parameter	Specifications	Unit
Screen Size	10.1 (diagonal)	Inch
Display Format	1280 x (R.G.B) x 800	Dot
Active Area	216.96 (H)× 135.6(V)	mm
Pixel Pitch	0.1695(H) x 0.1695(V)	mm
Pixel Arrangement	RGB stripe	

14.2 TFT-LCD Optical Characteristics

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Remark
Viewing Angle	Horizontal	Left	CR ≥ 10	75	85	---	deg
		Right		75	85	---	deg
	Vertical	Top		75	85	---	deg
		Bottom		75	85	---	deg
Contrast Ratio	CR	At optimized Viewing angle	600	800	---	---	
Luminance without PCAP	L		250	300	---	cd/m ²	
LED Life Time		25°C	20000	---	---	hours	Note

Note: The "LED Life Time" is defined as the module brightness decrease to 50% original.



15. Revision History

15.1 Record of Revision

NO	Date	Description	Page	Note
0.4	November 12, 2018	· Modify 11.4 Touch Panel Operation System Support	10	
0.5	July 4, 2019	· Modify 9.2 Support Display Mode Characteristics	9	
		· Update 10. Projected Capacitive Touch Panel Characteristics	10-11	
		· Update 13. Dimension Information	17	
0.6	August 23, 2019	· Modify 3. Specifications	4	
1.0	February 12, 2020	· Add color value	4	
		· Modify 8.1 Input Voltage value	9	
		· Modify 9.1 Input Voltage value	9	
		· Modify 9.2 Support Display Mode Characteristics	9	
		· Modify 12. Key Function by OSD	14	
1.1	April 10, 2020	· Correct error description of LED life time from 50K to 20K in chapter 3	4	
1.2	March 17, 2021	· Update 10.4 Touch Panel Operation System Support	11	



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