

Engineering Specification

Model No. **EFL-4002W**

40inches wide LCD Monitor

- **LG-Philips TFT LCD Panel**
- **High performance up-Scaling characteristic**
- **Automatic Scanning**
- **Wide Viewing Angle, High Speed Response**
- **Enhanced Video Quality**
- **Power Supply with enhanced Design Margin**
- **Test Pattern for Burn-in & Self Check**
- **Option**
 - **3 Input (RGB, AV, SVHS)**
 - **DVI Input**
 - **Stereo Audio Amplifier**

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1. GENERAL DESCRIPTION

1-1. Overview

Innodisplay open frame LCD Monitor EFL-3702W is a high performance TFT LCD monitor providing high quality image from the analog RGB / DVI / CVBS / S-VHS input. This monitor supports wide range signal input from VGA to SXGA resolution at vertical refresh rate of 60Hz. It includes integrated signal processing unit, named LSP (LCD Signal Processor), which had all electronic function for user application. It is designed for industrial use with up scaling performance adequate for low-resolution application and enhanced design margin for reliability. It also gives versatile optional features like, DVI input, Video input, Stereo Audio amplifier, Boot up custom logo and custom designed frame.

1-2. Quick reference table of Characteristics

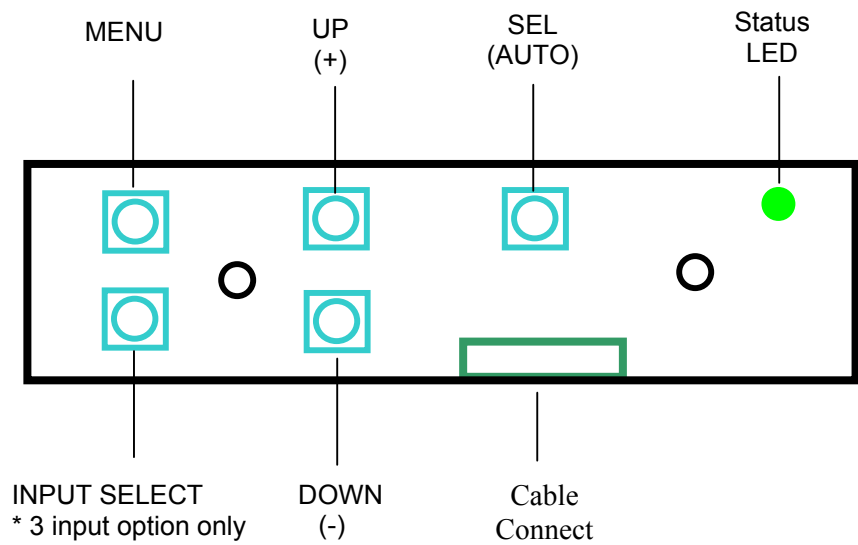
Panel	Size	40" Diagonal
	Active Display Area	871.68 x 523.00 mm
	Type No.	Samsung, LTA400W1
	Number of Pixels	1280 (H) x 768 (V)
	Pixel Arrangement	RGB Vertical Stripe
	Pixel Pitch	0.681mm x 0.681mm
	Color Depth	16.7M True Color
	Surface Treatments	Hard Coating (3H), Anti-glare treatment of the front polarizer
	Viewing Angle (CR≥10)	Horizontal : ⊖ L 85 degrees ⊖ R 85 degrees Vertical : ⊕ H 85 degrees ⊕ L 85 degrees
	Contrast Ratio	Typ. 600 : 1
	Response Time	Rise time(tr) : 15ms(Typ.) Fall time(tf) : 8ms(Typ.)
	Average Brightness	Typ. 450 cd/m ²
	Frame Rate	Typ. 60Hz
	Panel Dimension	(WHD) 933.0 x 576.0 x 55.0 mm
	CCFT	20 Lamps
Scanning Frequency	Horizontal	47.5 ~ 49.5KHz
	Vertical	60Hz

Resolution	Prime	1280x768 @60 Hz
	Standard	720x400 @70 Hz 640x480 @60 Hz 800x600 @56/60 Hz 1024x768 @60 Hz 1280x768 @60 Hz
Input Signal	RGB (Video / Sync)	RGB Analog (0.7Vp-p, 75ohms) / H/V Separate(TTL)
	CVBS	Composite Video 1Vp-p, 75ohms
Sync	Type	Separate H/V sync, Composite, SOG(Sync-On-Green)
	Level	TTL level (V high \geq 2.0V, V low \leq 0.8V)
	Polarity	Positive or Negative
Input Signal Interface	RGB	15pin D-Sub
	Video	RCA Jack - 1 ea.
	S-Video	SVHS Jack - 1 ea.
Compatible Color System		NTSC / PAL / SECAM
Power	AC Input	AC 90 ~ 265V @60/50Hz, Universal Power
	max. power dissipation	180 Watts
	Power Supply	Built in Power Supply (SMPS)
Regulation(Safety , Ergonomics, EMC)		CUL(UL+CSA), CE, FCC
Environmental Conditions	Operating	Temperature : 0 to 50°C / Humidity : 8 to 80%
	Storage	Temperature : -20 to 60°C / Humidity : 5 to 90%
White Color Temperature		9300°K : CIE x=0.281 \pm 0.015 / y=0.311 \pm 0.015 6500°K : CIE x=0.313 \pm 0.015 / y=0.329 \pm 0.015
Demonstrated MTBF		More than 20,000 hours
<i>Audio (Optional)</i>	Mono / Stereo	Stereo
	Input Audio Jack	3.5mm mini jack
	Audio Output	Nominal 1.3 Wrms at 8 ohms <i>* No external power for audio operation is needed</i>
	Speaker Connector	Molex 5240 : 2p(Left), 3p(Right) ; <i>* Speaker side : Molex 5102</i>
	S/N Ratio	Over than 80dB
	THD	Under 10% (THD : Total Harmonic Distortion)

<p><i>Audio</i> <i>(Optional)</i></p>	<p>Frequency Response</p>	
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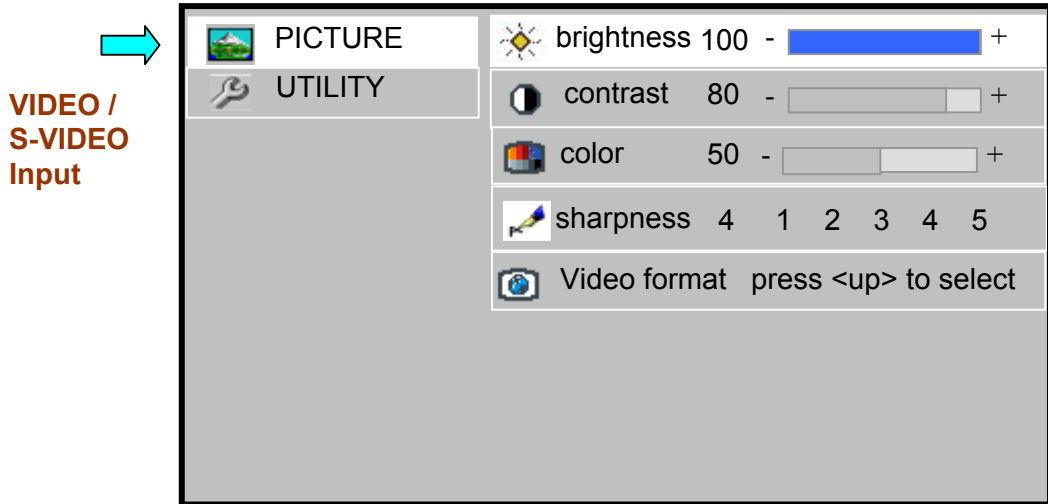
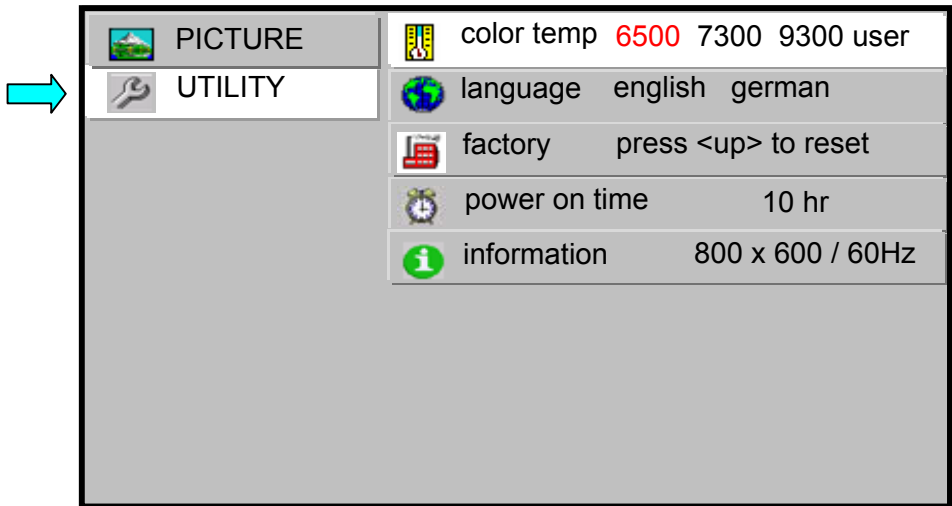
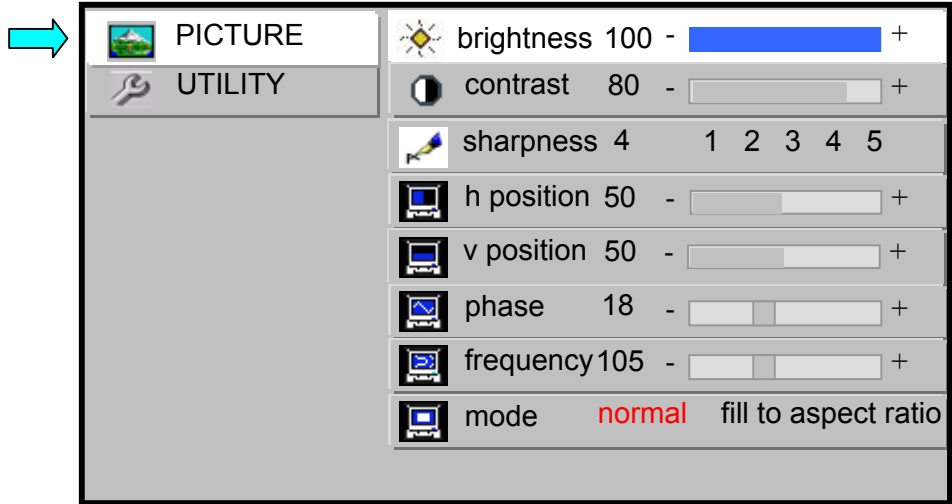
2. USER CONTROL & OSD

2-1. Key Control Board



SWITCH NAME	SWITCH FUNCTIONS
MENU	<ul style="list-style-type: none"> ▪ Activate / Deactivate the OSD Menu Window. ▪ Move cursor to Main Menu from sub-menu.
SEL (AUTO)	<ul style="list-style-type: none"> ▪ Move cursor in the Sub-Menu(Brightness ↔ Mode) ▪ Auto Tracking (Pressing “SEL” key for 2 seconds)
UP(+)	<ul style="list-style-type: none"> ▪ Move cursor at Main Menu(Picture / Utility) ▪ Increase the value of the selected function
DOWN(-)	<ul style="list-style-type: none"> ▪ Move cursor at Main Menu(Picture / Utility) ▪ Decrease the value of the selected function.
INPUT SELECT	<ul style="list-style-type: none"> ▪ Select the input signal(RGB → Video → S-Video → RGB...) ▪ When power off / on, the last memoried input mode will be displayed. ▪ Apply for 3 input model.

2-2. OSD Menu Screen



2-3. OSD Control Functions

CONTROL	FUNCTION
Auto Tracking	Automatic screen adjustment process. If there is any noise on the screen or screen shift, just press “SEL” button for more than two(2) seconds. Since this monitor is equipped with “Auto Tracking” function, it will automatically configure the monitor setting.
Brightness	Adjust the brightness level of the Display
Contrast	Adjust the contrast level of the Display.
Sharpness	Adjust the sharpness level of the Display
H position	Adjust the position of the display horizontally.
V position	Adjust the position of the display vertically.
Phase	Adjust the clock phase of the display.
Frequency	Adjust the clock frequency of the display
Mode	Select the video aspect ratio. It depends on the input video format.
COLOR TEMP	Choose different preset color temperatures (6500/7300/9300) or set your own customized color parameters.
Red /Green / Blue GAIN	Adjust the Red/ Green / Blue Gain
Language	Select the OSD language
Factory recall	Recall the factory setting value.
Power On time	Displayed the total power on time.
Information	Displayed the resolution of input signal
Color	Set the color(saturation) level
Tint(Hue)	Set the hue level. Only for the “NTSC” system
Video Format	Select the corresponding input video system. “Auto” setting means monitor automatically recognize the input video system. – Default setting AUTO, NTSC M, NTSC 4.43, PAL M, PAL BGDHI, PAL N SECAM
Self Test Pattern	To enter auto burn-in mode, press “Up” key first and then “Sel” key simultaneously for 3 seconds. On this mode, Red – Green – Blue – White – Black test pattern will be displayed. Press Menu key for returning normal display mode.

* Brightness and Contrast value can be set individually for each input mode.

* Color Temperature can be set individually for RGB and Video(S-Video).

3. CONNECTOR PIN DESCRIPTIONS

3-1. 15 Pin D-SUB Connector

Shape and pin number	Pin	Description	Pin	Description
	1	Red	9	No Connection
	2	Green	10	Ground - Sync
	3	Blue	11	No Connection
	4	Ground	12	No Connection
	5	Ground	13	Horizontal Sync
	6	Ground - Red	14	Vertical Sync
	7	Ground - Green	15	No Connection
	8	Ground - Blue		

3-2. Audio Connector

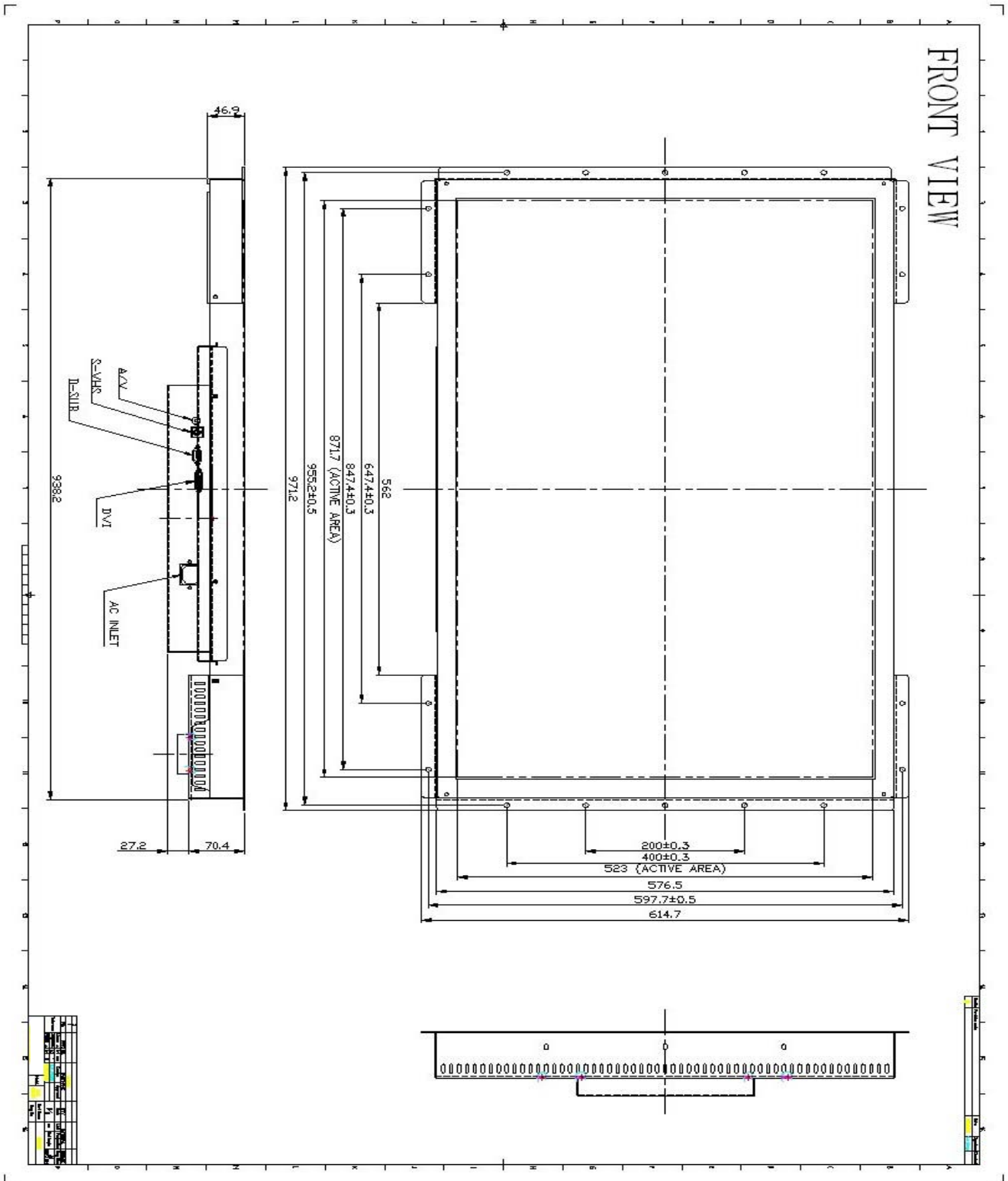
<p>Speaker Out Connector - Molex : 5240 - 2p(Left), 3p(Right)</p>	<p>Stereo Audio Input (3.5mm mini Jack)</p> <p>Speaker Connector (2M) - Optional</p>
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4. STANDARD DISPLAY MODE

No.	Mode	Resolution	Horizontal		Vertical		Pixel clock
			Frequency	Polarity	Frequency	Polarity	
1	VGA	720 x 400	31.47 KHz	N	70.0 Hz	P	28.322 MHz
2		640 x 480	31.47 KHz	N	60.0 Hz	N	25.175 MHz
3	SVGA	800 X 600	35.16 KHz	N / P	56.3 Hz	N / P	36.000 MHz
4		800 X 600	37.88 KHz	P	60.3 Hz	P	40.000 MHz
5	XGA	1024 X 768	48.36 KHz	N	60.0 Hz	N	65.000 MHz
6		1280 X 768	47.71KHz	N	60.0 Hz	P	65.000 MHz

5. MECHANICAL STRUCTURE

- FRONT VIEW



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- BACK VIEW

