Engineering Specification

Model No. : BF-S1900

19 inches Slim Type
Open Frame Monitor

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Revision History

Ver.	Date	Page	Change Description
1.0	Feb. 04. 2006	N.A	Initial Release
1.1	Mar. 09. 2006	Page7 & 8	Updated Keypad Layout & OSD Control Functions
		Page All	Changed Model Name

1. Description

This is analog RGB and digital RGB open frame monitor for 19" SXGA TFT LCD panel that is providing high quality screen image.

This monitor supports from CGA to UXGA input resolution with expanding to full screen image.

It affords convenience to the user in installing various applications such as gaming, amusement, industry and so on.

2. General Features

Wide input resolution range up to UXGA@60Hz
Enhanced Video Quality thru high performance up and down-scaling characteristic
Automatic Scanning & Image Adjustment
High speed response (Response Time = 8.0mS typically)
The most suitable GUI (Graphic User Interface)
Initial Auto Power On

3. Specification

- **Model Definition**

BF-S1900	Analog RGB
BF-S1900D	Analog RGB + Digital RGB

- **Panel**

Type No.			Samsung , LTM190EX-L01	
Size			19.0	inches
Active Display Area			376.62(H) x 301.056(V)	mm
Number of Pixels			1280(H) x 1024(V) SXGA	pixels
Pixel Pitch :			0.294(H) x 0.294(V)	mm
Color Depth			16.7 Millions	colors
Viewing Angle	Horizontal	θ L	75	degrees
(CR≥ 10)		θ R	75	degrees
	Vertical	ϕ H	75	degrees
		ϕ L	60	degrees
Contrast Ratio			Typ. 700 : 1	
Response Time	Rise Time (Tr)		Typ. 1.7	mSec
(CR≥10)	Fall Time (Tf)		Typ. 6.3	mSec
Average Brightness			Typ. 300	cd/m^2
Panel Dimension			396.0(W) x 324.0(H) x 17.0(D)	mm
CCFT			2 Dual CCFTs (4 Lamps)	

- **Scanning Frequency**

Horizontal	15.65 ~ 80.0	KHz
Vertical	50 ~ 75 (UXGA@60Hz)	Hz

- **Input Resolution**

Recommended Resolution	1280x1024@60Hz
Supported Input Resolution	CGA, EGA, 1600x1200@60Hz *: Analog RGB input only* 720x400@70 Hz 640x480@60/67/72/75 Hz 800x600@56/60/72/75 Hz 832x624@75 Hz 1024x768@60/70/75 Hz 1280x1024@60/75 Hz ** Custom Resolution Available*

- **Input Signal**

Video	Analog RGB (0.7V/1.0Vp-p, 75ohm)
Sync	H/V Separate (TTL), SOG

- **Input Signal Connector**

Analog RGB	15pin D-Sub
Digital RGB	DVI-D *(BF-S1900D only)*

- **Plug & Play** DDC2B *(VESA Standard)*
- **Power Supply Rating**

DC Input Voltage	Typ. DC 12V
Max. Power Dissipation	Less than 60Watts
AC Power Adaptor Rating	DC 12V / 5.0A output AC 90~265V@60/50Hz Universal Voltage

- **User Controls**

OSD Keypad	Power, Menu, Select,Up, Down (5Keys)
Remote Controller	- Optional - Power, Menu, Select, AUTO, Source, Up, Down, Several Hot Keys, etc.

- **Touch Panel** Optional
- **Regulation**

Safety & Ergonomics	CUL(UL+CSA) CB(TUV, EMKO)
EMC(EMI/EMS)	FCC, CE

4. Environmental and Reliability Specification

- **Operating Conditions**

Temperature	**0℃~ 50℃**
Humidity	10% ~ 80%, non-condensing
Altitude	Max. 3,000m

- **Transportation Conditions**

Temperature	**-20℃~ 60℃**
Humidity	10% ~ 90%, non-condensing
Altitude	Max. 15,000m

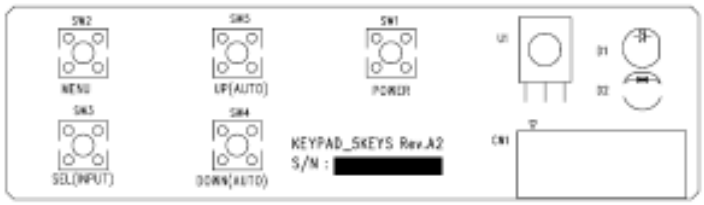
- **Storage Conditions**

Temperature	**-20℃~ 45℃**
Humidity	10% ~ 90%, non-condensing
Altitude	Max. 3,000m

- **Reliability Specifications**

MTBF	More than 50,000 hours at 90% confidence level, excluding LCD panel.
Reliability	General Specification of reliability test

5. Keypad Layout



Direct Keys	**POWER**	Power On and Off
	MENU	1. Enter into Main Menu or Exit to Out of Main Menu 2. Exit from Child Menu to Parent Menu
	SELECT	1. Navigates between each OSD Menu Item. 2. When No OSD Menu, Select the source input between Analog RGB and Digital RGB. *(BF-S1900D only)*
	UP	1. Enter from Parent Menu to Child Menu. 2. Excutes the OSD Menu Item or Increases the value of each OSD Menu Item. 3. Hot key for Brightness, when No OSD menu.
	DOWN	1. Decreases the value of selected OSD menu. 2. Hot key for Contrast, when No OSD menu.
Compound Keys	**UP+DOWN** ***(Auto Adjust)***	1. Excutes 'Auto Adjust' to optimize the picture if pressed during more than 1 second on No OSD menu. *(Analog RGB input only)*
	MENU+SELECT ***(OSD Lock)***	1. Locked all keys(except 'Power' Key) to inhibit the OSD control, if pressed during more than 2 seconds when No OSD menu. 2. Unlocked when pressed once again. *(Toggled)*

6. OSD Main Menu & Control Functions

Top Menu	Sub Menu	Control Description
PICTURE	**Brightness**	Adjust the brightness of the display.
	Back Light	Adjust the brightness by the back light.
	Contrast	Adjust the contrast of the display.
	Auto Adjust	Adjust to optimize the picture automatically.
	Manual Adjust	Adjust to optimize the control items such as Hor. & Ver. Position, Pixel Phase and Hor. Frequency (Pixel numbers for Hor. scanning period) on child menu manually. (Used for the unsupported input mode.)
	Image Size	Select the image size between Full Screen and Aspect Ratio
	Source	Displayed the information for current input mode. (Not available selection)
IMAGE	**Sharpness Filter**	Adjust the sharpness level for the upscaled or downscaled input mode. (#1 : Sharpest → #5 : Smoothest)
	Color Temp.	Select the preset of the color temperatures such as 6500˚K, 9300˚K or User. User's color can be changed by a customer. (User Default is bypassed.)
	Red	Adjust the RED color temperature for User.
	Green	Adjust the GREEN color temperature for User.
	Blue	Adjust the BLUE color temperature for User.
	Gamma	Select the Gamma correction parameter.
SETUP	**OSD Settings**	Select the setting related with the OSD menu such as Language, Background, Position and Timeout. 1. Language : English, German, French, Spanish, Italian 2. Background : Transparency, Opaque 3. Position : 9 positions such as Top/Middle/Bottom & Left/Center/Right. 4. Timeout : Take Time until OSD Menu Off after doing OSD control.
	Reset to Defaults	Reset to initialize to the factory default setting value.
	Input Scan	Select the scanning method of input source. (MANUAL/AUTO/DEFAULT) 1. MANUAL : Not scan and Wait the current input source until detected. 2. AUTO : Scan each input source automatically. 3. DEFAULT : Scan the input by lost the H/V sync. (Similar with AUTO)
	DPMS	Enable or Disable the DPMS follow the VESA standard. (ENABLE / DISABLE)
	Blank Color	Select the blanking color for when blanked the screen as Input Source Change or Input Mode Change. (BLACK / BLUE / GREEN / RED)
	OSD Lock	Locked all keys(except 'Power Key') to inhibit the OSD control, if pressed during more than 2 seconds when No OSD menu.

7. Cable Pin Configuration

Analog RGB Cable (15 Pin D-SUB Connector)

1	Red	9	+5V
2	Green (SOG in)	10	Ground - Sync
3	Blue	11	No Connection
4	Ground	12	DDC Serial Data
5	Ground	13	Horizontal or Composite Sync
6	Ground - Red	14	Vertical Sync
7	Ground - Green	15	DDC Serial Clock
8	Ground - Blue		

Digital RGB Cable (DVI-D Connector) *: BF-S1900D only*

1	TMDS Data 2-	14	+5V Power
2	TMDS Data 2+	15	Ground (for +5V)
3	TMDS Data 2/4 Shield	16	Hot Plug Detection
4	TMDS Data 4-	17	TMDS Data 0-
5	TMDS Data 4+	18	TMDS Data 0+
6	DDC Serial Clock	19	TMDS Data 0/5 Shield
7	DDC Serial Data	20	TMDS Data 5-
8	No Connect	21	TMDS Data 5+
9	TMDS Data 1-	22	TMDS Clock Shield
10	TMDS Data 1+	23	TMDS Colck+
11	TMDS Data 1/3 Shield	24	TMDS Clock-
12	TMDS Data 3-	C5	Ground
13	TMDS Data 3+		

8. Standard Display Mode

No	Mode	Resolution	Horizontal		Vertical		Pixel clock
			Frequency	Polarity	Frequency	Polarity	
1	VGA	640 X 350	31.78 KHz	P	70.0 Hz	N	25.175 MHz
2		720 x 400	31.47 KHz	N	70.0 Hz	P	28.324 MHz
3		640 x 480	31.47 KHz	N	60.0 Hz	N	25.175 MHz
4		640 x 480	35.00 KHz	N	66.7 Hz	N	30.240 MHz
5		640 x 480	37.86 KHz	N	72.8 Hz	N	31.500 MHz
6		640 x 480	37.50 KHZ	N	75.0 Hz	N	31.500 MHz
7	SVGA	800 X 600	35.16 KHz	N / P	56.3 Hz	N / P	36.000 MHz
8		800 X 600	37.88 KHz	P	60.3 Hz	P	40.000 MHz
9		800 X 600	48.08 KHz	P	72.2 Hz	P	50.000 MHz
10		800 X 600	46.87 KHz	P	75.0 Hz	P	49.500 MHz
11		832 X 624	49.73 KHz	N	74.6 HZ	N	57.284 MHz
12	XGA	1024 X 768	48.36 KHz	N	60.0 Hz	N	65.000 MHz
13		1024 X 768	56.49 KHz	N	70.1 Hz	N	75.000 MHz
14		1024 X 768	60.02 KHz	P	75.0 Hz	P	78.750 MHz
15	SXGA	1280 X 1024	63.97 KHz	P	60.0 Hz	P	108.050 MHz
16		1280 X 1024	79.98 KHz	P	75.0 Hz	P	135.000 MHz
17	etc.	1152 X 864	54.35 KHz	P	60.1 Hz	P	80.000 MHz
18		1152 X 864	67.50 KHz	P	75.0 Hz	P	108.000 MHz
**** The other custom input resolution is available in contact with engineering staff.***							

9. Image

10. Contact Details

- HQ & SALES

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