General Specification

FS-L3201D

RoHS
Compliant

PROPRIETARY NOTE

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7.1 Packing

1. Overview

1.1 Scope

FS-L3201D product has been specifically designed to use the professional applications. This system has been integrated ADC/TMDS Rx/Video decoder and SDI as well.

Features include high-quality, motion-adaptive deinterlacing up to 1080p with enhanced low-angle processing, improved low-motion detection, advanced 3D noise reduction, and excellent 3D comb filter performance for PAL and NTSC.

1.2 Revision History

Date	Paragraph	Change Description
08.03.20	1.0	Preliminary release.
08.03.12	1.1	Add GPIO port.
08.05.06	1.2	Add OSD manual.
08.10.01	1.3	Panel changed.
09.08.14	1.4	Wall mount 100x100 added.
10.10.25	1.5	OSD function changed.

2. General Features

2.1 General Description

Item		Description
Model		FS-L3201D
LCD Panel	Description	LC320WUN-SAA1/SAB1 (LG Display)
	Resolution	1920 x 1080 pixel
Scalar		PW338C-30L
SDI Processor	Deserializer	GS1559-CBE2 (GENNUM)
	Cable Equalizer	GS1574ACNE3 (GENNUM)
	Cable Driver	GS1578ACNE3 (GENNUM)
	VCO	GO1525-CTAE3 (GENNUM)
Input Signal		1 x DVI 1 x Optical DVI 1 x D-SUB 1 x BNC (SDI) 1 x BNC (CVBS) 2 x BNC (SVHS Y/C) 5 x BNC (Component Y/G, Pb/B, Pr/R, H/CS,VS Input)
GPIO port		3 Function – Primary / Secondary screen swap – PIP / PBP1 / PBP2 Select – Record indicator
Output Signal		1 x DVI 1 x BNC (SDI)
Power Supply		AC/DC Adaptor (AC 100~240V, DC 24V 7.5A)
Control Key		Power, Menu, PIP, Up, Down, Plus, Minus, Input
Unit Dimension		795(W) x 485(H) x 100(D) (mm) , 15.8Kg - Without stand 31.299(W) x 19.094(H) x 3.937(D) (inch) , 34.8 lbs - Without stand

3. Product Specification

3.1 Electrical Specifications

3.1.1 Panel

Item	Description	Unit
Description	LC320WUN-SAA1/SAB1 (LG Display)	-
Size	32” Diagonal	Inch
Active area	698.40 X 392.85	mm
Pixel Pitch	0.363(W) x 0.363(H)	mm
Surface Treatment	Hard coating(3H), Glare (Low Reflection treatment of the front polarizer)	
Number of Pixels	1920 x 1080	pixel
Pixel Arrangement	RGB Vertical stripe	-
Number of Colors	1.06 billion	colors
Contrast Ratio	1300 : 1	Typical
Viewing Angle (CR>10)	View Angle Free (R/L 178, U/D 178)	Typical
Response Time (CR≥ 10)	Rise time (Tr) : 6 Fall time (Tf) : 6	ms , Typical
Surface Luminance	500 (Center)	cd/ m2
Display mode	Transmissive mode, normally black	
Panel Dimension	760.0(H) x 450.0(V) x 48.0(D)	mm, Typical
Weight	6150g	g , Typical

3.1.2 Power supply

Item		Specification			
		Min	Typ	Max	Unit
Model No		JMW1180KA2400F01			
Description		AC/DC Adapter			
Input	Rated Voltage	100		240	Vac, Normal
	Voltage Range	90		264	Vac
	Rated Line Frequency	50		60	Hz
	Line Frequency Range	47		63	Hz
	Current	3.00A max at 90Vac input			
	Protection	Dual internal primary current fuse: 250Vac / 5.0A Inrush limiting : 50A PEAK @ 90~264Vac, 50~60Hz			
	Configuration	Inlet type : IEC320-C14,C8			
Output	Voltage /Current	+24Vdc at 7.5A			
	Line regulation	+24Vdc +/-1%			
	Load regulation	+24Vdc +/-5%			
	Ripple and Noise	240mV p-p Max @ 90-264Vac, 50~60Hz : at 20MHz Bandwidth and full load.			
	Transient Response	0.5ms for 50% Load change Typ			
	Hold-up time	20msec min. Over entire input range			
	Protection	Over-current Protection : 8.125A~9.9A Short Circuit Protection Optional Over Voltage Crowbar			
Operating Temperature		0		40	℃
Storage Temperature		-30		85	℃
Humidity		5		95	%
Altitude		0		10,000	feet

3.1.3 Power management

This system saves energy by switching your monitor into a low power mode when is has hot been used for a certain period of time. Power Management system operates with a video card installed in your computer. You use a software utility installed on your computer to set up this feature.

State	Normal Operation	DPMS Standby	DPMS suspend	POWER Off
Horizontal Sync	Active	Inactive	Active	Inactive
Vertical Sync	Active	Active	Inactive	Inactive
Video	Active	Blanked	Blanked	Blanked
Power Indicator	Off	Green Flashing (1 sec. Interval)	Green Flashing (1 sec. Interval)	Green
Power Consumption	Under 150W	Less than 20W	Less than 20W	Less then 20W

NOTE : This monitor automatically returns to normal operation when horizontal and vertical sync return. This occurs when you move the computer's mouse or press a key on the keyboard.

3.1.4 Input Signal

Input Signal		Type	Description
VGA	Video	Type	Analog RGB
		Connector	DSUB-15
		Level	0.7Vp-p ±5%
		Polarity	Positive
		Impedance	75 ohm ±5%
		Horizontal frequency	30 ~ 93KHz
		Vertical frequency	50 ~ 85Hz
		Applicable maximum pixel frequency	170MHz
		Maximum resolution	1920x1080 / 60Hz (148MHz Timing, NON-CRT)
	Sync	Type	Separate H/V sync, Composite H/V sync, Sync On Green Automatic synchronization without external switch
		Level	TTL Level (V high ≥2.0V, V low ≤0.8V)
		Polarity	Positive or Negative
		Range	Automatic synchronization for applicable resolution modes which follows industrial standard within frequency range of 30 to 93KHz in horizontal and 50 to 85Hz in vertical
		Terminal resistance	more than 2KΩ
DVI		Type	Digital RGB
		Signal Format	TMDS single link
		Connector	DVI-D
Optical DVI		Type	Digital RGB
		Signal Format	Fiber Optic Transmission
CVBS		Type	C-Video
		Color system	NTSC, PAL
		Signal Format	Composite Video Signal
SVHS Y/C		Type	S-Video
		Color system	NTSC, PAL
		Signal Format	Y/C Separated Video Signal
SDI		SMPTE-274M	1080i (60 / 59.94 / 50)
			1080p (30 / 29.97 / 25 / 24 / 24sF / 23.98 / 23.98sF)
		SMPTE-296M	720p (60 / 59.94 / 50)
		SMPTE-260M	1035i (60 / 59.94)
		SMPTE-125M	480i (59.94)
		ITU-R BT.656	576i (50)

3.1.5 Output Signal

Output Signal	Type	Description
DVI	Type	Digital RGB
	Signal Format	TMDS single link
	Connector	DVI-D
SDI	SMPTE-274M	1080i (60 / 59.94 / 50)
		1080p (30 / 29.97 / 25 / 24 / 24sF / 23.98 / 23.98sF)
	SMPTE-296M	720p (60 / 59.94 / 50)
	SMPTE-260M	1035i (60 / 59.94)
	SMPTE-125M	480i (59.94)
	ITU-R BT.656	576i (50)

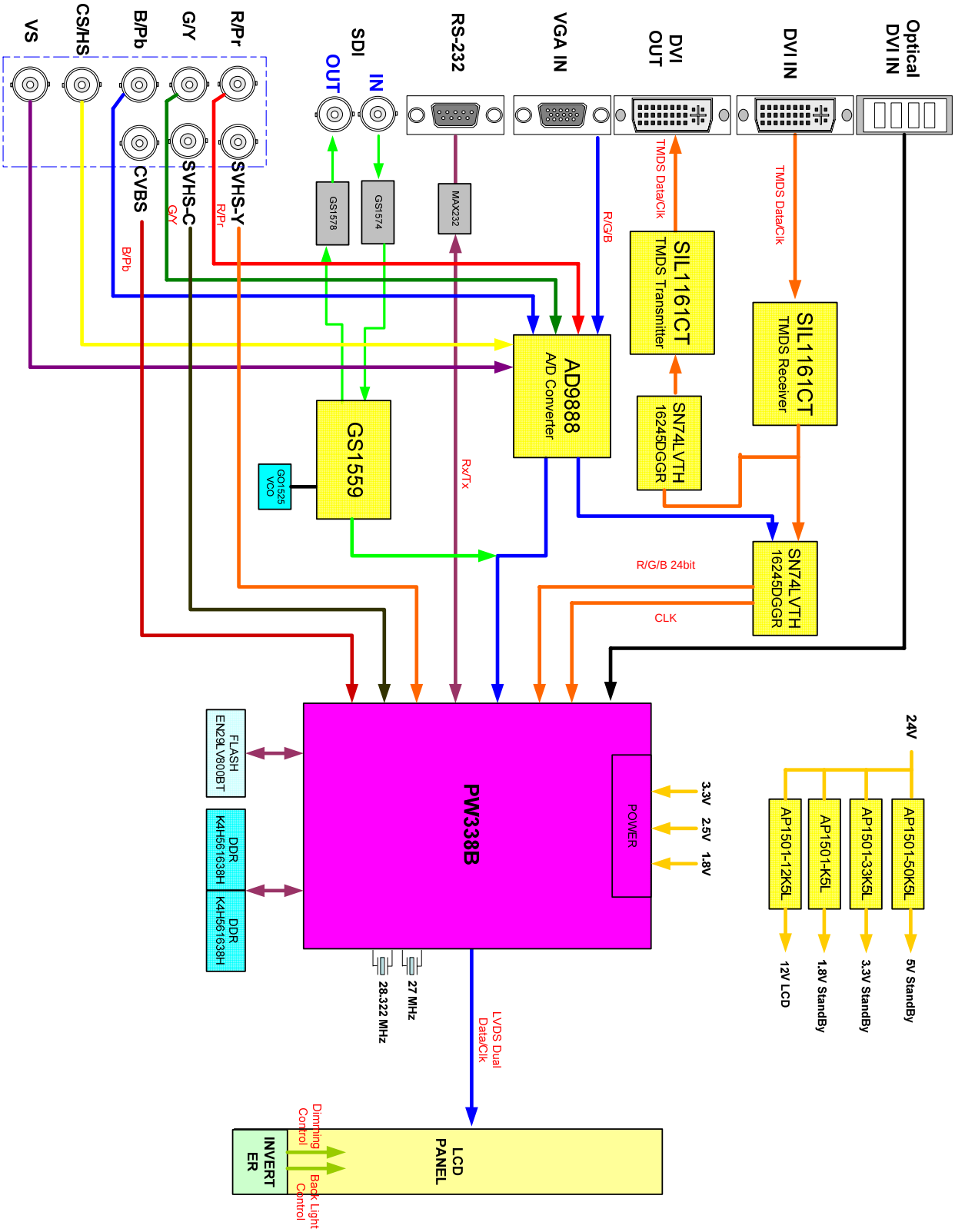
3.1.6 Input Signal Timing

Resolution	Horizontal frequency (KHz)	Vertical frequency (Hz)	Pixel clock (MHz)
640 x 350 @60Hz	31.469	59.941	25.175
640 x 350 @70Hz	31.469	70.087	25.175
640 x 350 @85Hz	37.86	85.080	31.500
640 x 400 @60Hz	31.469	59.941	25.175
640 x 400 @70Hz	31.469	70.087	25.175
640 x 400 @85Hz	37.86	85.080	31.500
640 x 480 @60Hz	31.469	59.940	25.175
640 x 480 @72Hz	37.861	72.809	31.500
640 x 480 @75Hz	37.500	75.000	31.500
640 x 480 @85Hz	43.269	85.008	36.000
720 x 400 @85Hz	37.927	85.038	35.500
800 x 600 @56Hz	35.156	56.250	36.000
800 x 600 @60Hz	37.879	60.317	40.000
800 x 600 @72Hz	48.077	72.188	50.000
800 x 600 @75Hz	46.875	75.000	49.500
800 x 600 @85Hz	53.674	85.061	56.250
1024 x 768 @43Hz	35.522	86.958	44.900

Resolution	Horizontal frequency (KHz)	Vertical frequency (Hz)	Pixel clock (MHz)
1024 x 768 @60Hz	48.363	60.004	65.000
1024 x 768 @70Hz	56.476	70.069	75.000
1024 x 768 @75Hz	60.023	75.029	78.750
1024 x 768 @85Hz	68.677	84.997	94.500
1152 x 864 @60Hz	54.348	60.053	80.000
1152 x 864 @70Hz	63.955	70.016	94.200
1152 x 864 @75Hz	67.500	75.000	108.000
1280 x 960 @60Hz	60.000	60.000	108.000
1280 x 960 @85Hz	85.938	85.002	148.500
1280 x 1024 @60Hz	63.974	60.013	108.500
1280 x 1024 @75Hz	79.976	75.025	135.000
1280 x 1024 @85Hz	91.146	85.024	157.500
1600 x 1200 @60Hz (**)	74.077	59.981	130.375
1600 x 1200 @60Hz	75.000	60.000	162.000
1920 x 1080 @60Hz	67.500	60.000	148.500

(**) Preferred Timing for 1600 x 1200 @60Hz input

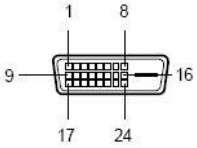
3.2 Entire System Block Diagram



3.3 Signal connector PIN assignments

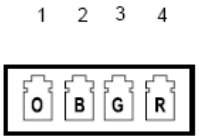
DVI In,Out (24Pin DVI-D)

Pin No.	Assignment	Pin No.	Assignment
1	T.M.D.S. Data2-	13	No Connection
2	T.M.D.S. Data2+	14	+5V Power
3	T.M.D.S. Data2 Shield	15	Ground
4	No Connection	16	Hot Plug Detect
5	No Connection	17	T.M.D.S. Data0-
6	DDC Clock	18	T.M.D.S. Data0+
7	DDC Data	19	T.M.D.S. Data0 Shield
8	No Connection	20	No Connection
9	T.M.D.S. Data1-	21	No Connection
10	T.M.D.S. Data1+	22	T.M.D.S. Clock Shield
11	T.M.D.S. Data1 Shield	23	T.M.D.S. Clock+
12	No Connection	24	T.M.D.S. Clock-



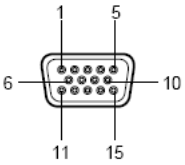
OPTICAL

Pin No.	Assignment
1	OPICAL Clock
2	OPICAL Blue
3	OPICAL Green
4	OPICAL Red



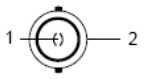
VGA (15Pin D-Sub)

Pin No.	Assignment	Pin No.	Assignment
1	Red	9	No Connection
2	Green	10	Ground-Sync
3	Blue	11	Ground
4	Ground	12	DDC Data
5	DDC 5V Standby	13	H.Sync
	Cable Connection check	14	V.Sync
6	Ground-Red	15	DDC Clock
7	Ground-Green		
8	Ground-Blue		



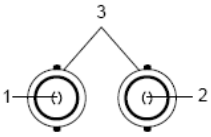
C-Video (BNC)

Pin No.	Assignment
1	Composite
2	Ground



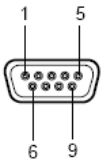
S-Video (BNC)

Pin No.	Assignment
1	S-VIDEO/Y (Luma)
2	S-VIDEO/C (Chroma)
3	Ground



RS232C (D-SUB 9Pin)

Pin No.	Assignment
1	No Connection
2	TXD
3	RXD
4	No Connection
5	Ground
6	No Connection
7	No Connection
8	No Connection
9	No Connection

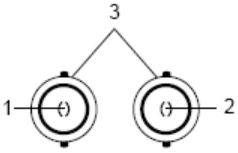


GPIO

Pin No.	Assignment
1	P,S Swap
2	PIP,PBP,PB2 Select
3	Record Indicator
4	Gnd

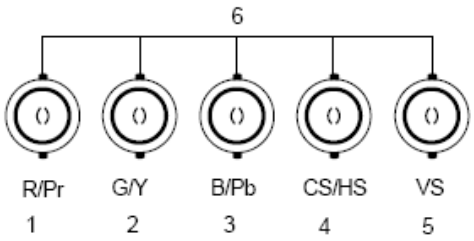
SDI (BNC)

Pin No.	Assignment
1	SDI IN
2	SDI OUT
3	Ground



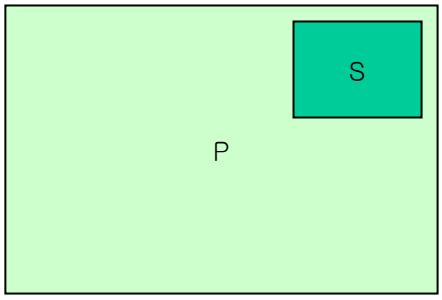
RGBHV/RGBS/YPbPr (BNC)

Pin No.	Assignment	
	RGBS	Y Pb Pr
1	Red	Pr
2	Green	Y
3	Blue	Pb
4	H-Sync / C-Sync	No Connection
5	V-Sync	No Connection
6	Ground	

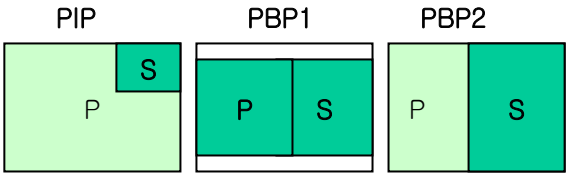


3.4 GPIO specification

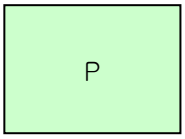
1 P,S Swap
Pressing the swap button
Swaps the primary and
Secondary images.



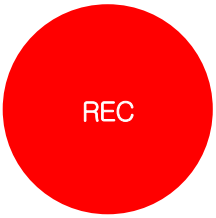
2 PIP,PBP1,PBP2 Select
The selection of secondary Image
position button is pressed.



SINGLE

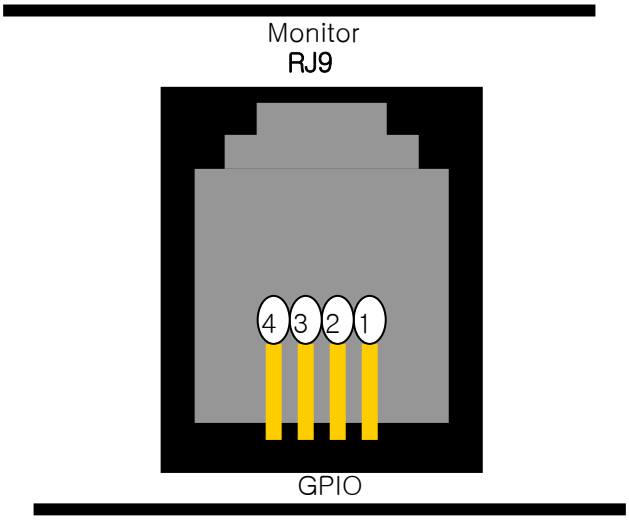


3 Record Indicator
The record indicator is
Displayed while a contact
closure to the ground pin
Is present, the indicator is
Removed when the contacts
Are opened.
The record indicator is
Displayed in the monitor's
Top left corner.



4 GND
Common ground

* GPIO mating connector : RJH 4pin
(telephone handset connector)



3.5 Environmental specification

Item		Description
Operating Conditions	**Temperature**	0℃~ 40℃
	Humidity	5% ~ 85%, non-condensing
Transportation Conditions	**Temperature**	-20℃~ 60℃
	Humidity	5% ~ 95%, non-condensing
Storage Conditions	**Temperature**	-20℃~ 60℃
	Humidity	10% ~ 85%, non-condensing

3.6 Reliability specification

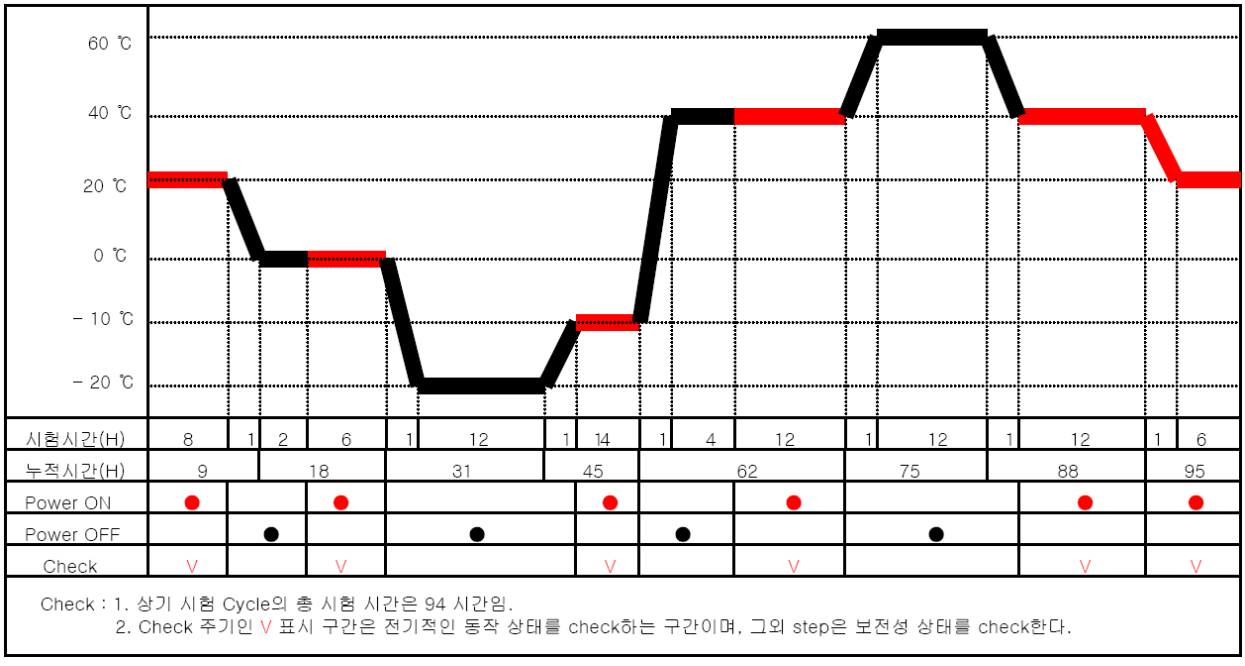
MTBF : more than 30,000 hours at 90% confidence level, excluding LCD panel.

Reliability items :

3.6.1 Stress / Time acceleration Test

Condition		Test Results
Temp (℃)	Time (hr)	
40 ± 2	72	No Damage

3.6.2 Temperature Cycle Test



Condition		Test Results
Temp (℃)	Time (hr)	
-20~40 ± 2	95	No Damage

4. Regulatory

4.1 EMC & Safety Agency Approvals

UL Safety Compliance:
This LCD monitor is investigated to UL60601-1, 1st Edition, 2006-04-26 (Medical Electrical Equipment, Part 1:General Requirements for Safety)CAN/CSA-C22.2 No. 601.1-M90, 2005 (Medical Electrical Equipment - Part 1:General Requirements for Safety)

CE-LVD Compliance:
This LCD monitor is investigated to EN 60601-1: 1990 + A1:1993 + A2:1995+ A13:1996 : IEC60601-1:1988 + A1:1991 + A2:1995 + corrigendum 1995,mod.

CE-EMC Compliance:
This LCD monitor is investigated to EN 60601-1-2: 2001 + EN2001-1-2+ A1: 2006(IEC60601-1-2:2001 + A1:2004)

CB Compliance:
This LCD monitor is investigated to EN 60601-1: 1990 + A1:1993 + A2:1995

FCC Compliance:
This LCD monitor is investigated to FCC Part 15

CE-MDD Compliance:
This LCD monitor is investigated to Class I according to Rule 12 of Annex IX, MDD 93/42/EEC

5. OSD specification

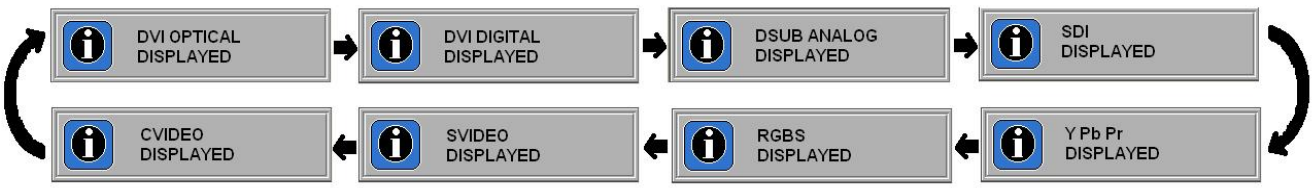
FS-L3201D gives various and very easy graphic user interface. User can easily access to the function that user wants. 8 button keypad, located in right corner on the front of monitor, allows the user to make adjustments to various display parameters using on screen menus easily.
Be sure that your system power and LED is turned on be operating key board.

5.1 OSD User functions/ Messages

5.1.1 OSD indicator

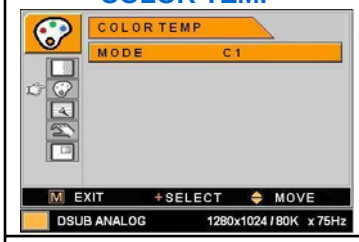
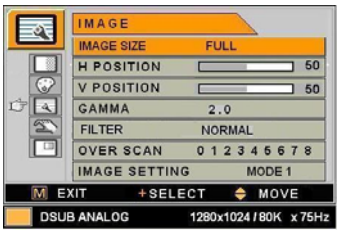
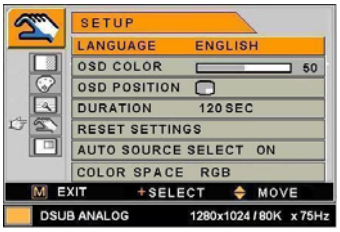
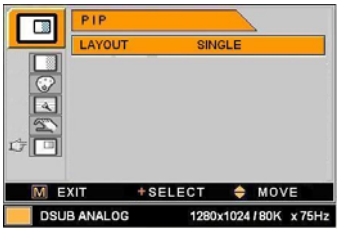
Key Name	Description
Power	Soft power Turns ON/OFF the monitor.
Menu	- With OSD deactivated, Activated to OSD menu. - With OSD activated, Exit from main menu or sub menu.
PIP	Enable PIP (Picture in Picture) function. - Select PIP,PBP1,PBP2
UP (▲)	- With OSD deactivated, Hot key of the brightness control and increases the brightness. - With OSD activated, move the OSD cursor upward.
Down (▼)	- With OSD deactivated, Hot key of the brightness control and decreases the brightness. - With OSD activated, move the OSD cursor downward.
Plus (+)	- With OSD deactivated, Hot key of the contrast control and increases the contrast. - With OSD activated, enter sub menu and increases the adjustment of the selected function.
Minus (-)	- With OSD deactivated, Hot key of the contrast control and decreases the contrast. - With OSD activated, decreases the adjustment of the selected function.
Input	Change the display signal source. -Select DVI OPTICAL / DVI DIGITAL / DSUB ANALOG / SDI / YPbPr RGBS / SVIDEO / CVIDEO -With OSD deactivated, Hot key of the auto adjustment control when it pressed over 1 second at DSUB ANALOG source.

5.1.2 INPUT source select

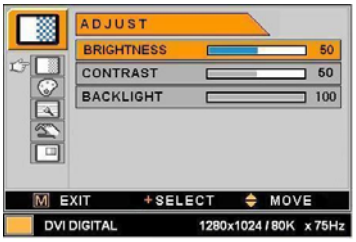
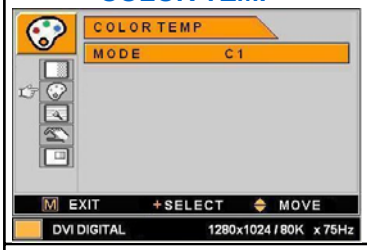
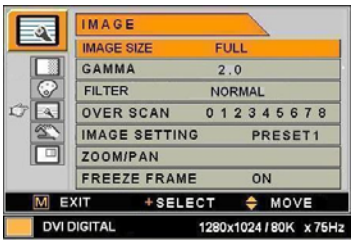
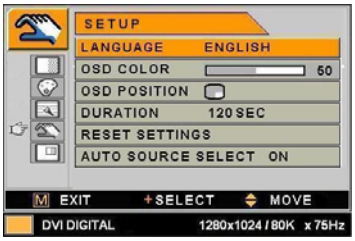
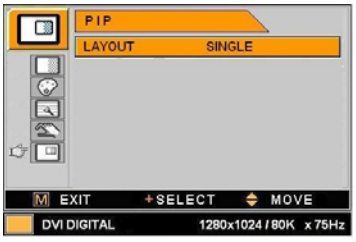


5.2 OSD representation

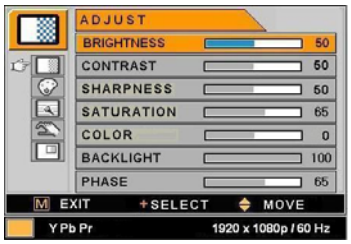
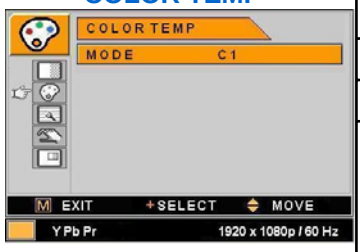
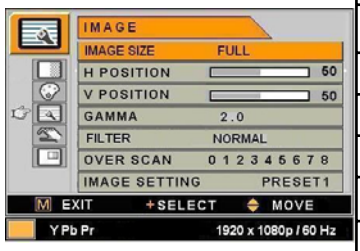
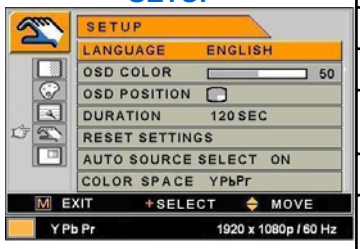
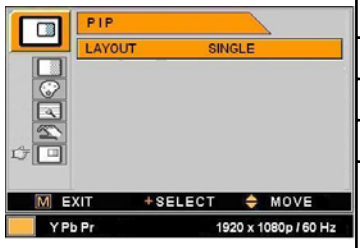
5.2.1 DSUB ANALOG / RGBS input source

Menus	Sub-menus	Function Descriptions
ADJUST 	BRIGHTNESS	Increases or decreases the brightness. (Range : 0~100)
	CONTRAST	Increases or decreases the contrast. (Range : 0~100)
	CLOCK	Increases or decreases the sampling frequency. (Range : 0~100)
	PHASE	Increases or decreases the Phase level. (Range : 0~100)
	BACKLIGHT	Adjusts backlight dimming level. (Range : 0~100)
	AUTO ADJUST	Fits to the most appropriate screen on the D-SUB Analog / RGBs signal.
COLOR TEMP 	MODE	Changes the color temperature mode. (C1(Reddish,6500K), C2(Bluish,9300K), USER(7200K))
	RED	Red balance. (Only works with USER mode) (Range : 0~100)
	GREEN	Green balance. (Only works with USER mode) (Range : 0~100)
	BLUE	Blue balance. (Only works with USER mode) (Range : 0~100)
IMAGE 	IMAGE SIZE	Changes the image size. (Full, Fill aspect, 1:1, Normal)
	H POSITION	Adjusts the horizontal position of the displayed source image. (Range : 0~100)
	V POSITION	Adjusts the vertical position of the displayed source image. (Range : 0~100)
	GAMMA	Adjusts GAMMA value. (VIDEO,BYPASS,1.8,2.0,2.2,2.4,2.6,PACS)
	FILTER	Sets the sharpness of image. (Softest, Soft, Normal, Sharp, Sharpest)
	OVER SCAN	Adjusts the displayed size.(0~8)
	IMAGE SETTING	Changes the image setting. (Preset 1,2 / User 1,2,3)
	ZOOM / PAN	Enlarges the image, moves images left and right.
	FREEZE FRAME	Keeps still the image.
SETUP 	LANGUAGE	Changes the OSD language. (8 language)
	OSD COLOR	Adjusts the OSD back ground from white opaque to translucent.
	OSD POSITION	Changes the OSD position. (9 positions)
	DURATION	Adjusts the length of time the OSD Menu is present on the screen. (5, 10, 20, 30, 60, 90, 120, 180, 240 seconds)
	RESET SETTINGS	Changes all the OSD values make to factory default.
	AUTO SOURCE SELECT	Disables or enable auto source select. (ON: Searches through all possible input source until an active video source is found. OFF: Video input is manually selected.)
	COLOR SPACE	Changes the input source between RGBs and YPbPr. (It appears RGBs source only)
PIP 	LAYOUT	Changes the layout. (Single, PIP, PBP1, PBP2)
	SOURCE	Changes the secondary source.
	SIZE	Changes the PIP size (Small, Large)
	POSITION	Changes the secondary source.
	SWAP	Swaps the position of the Primary and Secondary images.

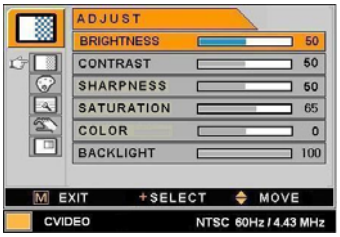
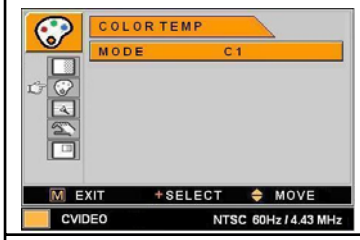
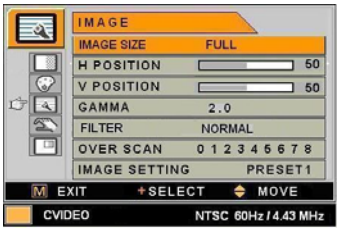
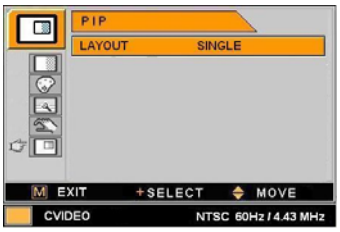
5.2.2 DVI OPTICAL / DVI DIGITAL input source

Menus	Sub-menus	Function Descriptions
ADJUST 	BRIGHTNESS	Increases or decreases the brightness. (Range : 0~100)
	CONTRAST	Increases or decreases the contrast. (Range : 0~100)
	BACKLIGHT	Adjusts backlight dimming level. (Range : 0~100)
COLOR TEMP 	MODE	Changes the color temperature mode. (C1(Redish,6500K), C2(Bluish,9300K), USER(7200K))
	RED	Red balance. (Only works with USER mode) (Range : 0~100)
	GREEN	Green balance. (Only works with USER mode) (Range : 0~100)
	BLUE	Blue balance. (Only works with USER mode) (Range : 0~100)
IMAGE 	IMAGE SIZE	Changes the image size. (Full, Fill aspect, 1:1**, Normal), **Only on DVI Optical
	GAMMA	Adjusts GAMMA value. (VIDEO,BYPASS,1.8,2.0,2.2,2.4,2.6,PACS)
	FILTER	Sets the sharpness of image. (Softest, Soft, Normal, Sharp, Sharpest)
	OVER SCAN	Adjusts the displayed size.(0~8)
	IMAGE SETTING	Changes the image setting. (Preset 1,2 / User 1,2,3)
	ZOOM / PAN	Enlarges the image, move image left and right.
	FREEZE FRAME	Keeps the image still.
SETUP 	LANGUAGE	Changes the OSD language. (8 language)
	OSD COLOR	Adjusts the OSD back ground from white opaque to half translucent.
	OSD POSITION	Changes the OSD position. (9 positions)
	DURATION	Adjusts time until the OSD Menu will disappear after adjusting the menu. (5, 10, 20, 30, 60, 90, 120, 180, 240 seconds)
	RESET SETTINGS	Changes the all OSD value to factory outgoing status.
	AUTO SOURCE SELECT	Disable of enable auto source select. (ON: Searches through all possible input source until an active video source is found. OFF: Video input is manually selected.)
PIP 	LAYOUT	Changes the layout. (Single, PIP, PBP1, PBP2)
	SOURCE	Changes the secondary source.
	SIZE	Changes the PIP size (Small, Large)
	POSITION	Changes the secondary source.
	SWAP	Swaps the position of the Primary and Secondary images.

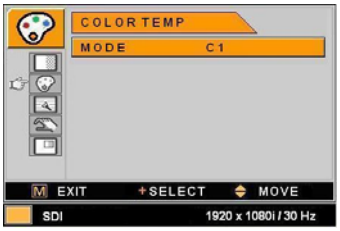
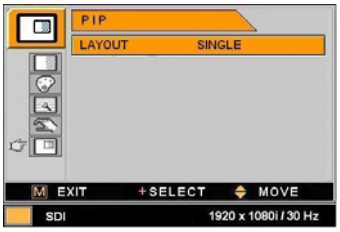
5.2.3 YPbPr input source

Menus	Sub-menus	Function Descriptions
ADJUST 	BRIGHTNESS	Increase or decrease the brightness (Range : 0~100)
	CONTRAST	Increase or decrease the contrast (Range : 0~100)
	SHARPNESS	Adjusts the sharpness of video image (Range : 0~100)
	SATURATION	Changes the tone of color (Range : 0~100)
	COLOR	Changes the richness of color (Range : Green 0~50, Red 0~50)
	BACKLIGHT	Adjust backlight dimming level (Range : 0~100)
	CLOCK	Increase or decrease the sampling frequency (Range : 0~100)
	PHASE	Increase or decrease the Phase level (Range : 0~100)
COLOR TEMP 	MODE	Changes the color temperature mode. (C1(Redish,6500K), C2(Bluish,9300K), USER(7200K))
	RED	Red balance. (Only works with USER mode) (Range : 0~100)
	GREEN	Green balance. (Only works with USER mode) (Range : 0~100)
	BLUE	Blue balance. (Only works with USER mode) (Range : 0~100)
IMAGE 	IMAGE SIZE	Changes the image size (Full, Fill aspect, 1:1, Normal, Anamorphic)
	H POSITION	Adjusts the horizontal position of the displayed source image. (Range : 0~100)
	V POSITION	Adjusts the vertical position of the displayed source image. (Range : 0~100)
	GAMMA	Adjusts GAMMA value (VIDEO,BYPASS,1.8,2.0,2.2,2.4,2.6,PACS)
	FILTER	Sets the sharpness of image (Softest, Soft, Normal, Sharp, Sharpest)
	OVER SCAN	Adjusts the displayed size.(0~8)
	IMAGE SETTING	Changes the image setting. (Preset 1,2 / User 1,2,3)
	ZOOM / PAN	Enlarges the image, move image left and right.
	FREEZE FRAME	Keeps the image still.
SETUP 	LANGUAGE	Changes the OSD language (8 language)
	OSD COLOR	Adjusts the OSD back ground from white opaque to half translucent.
	OSD POSITION	Changes the OSD position (9 positions)
	DURATION	Adjusts time until the OSD Menu will disappear after adjusting the menu. (5, 10, 20, 30, 60, 90, 120, 180, 240 seconds)
	RESET SETTINGS	Changes the all OSD value to factory outgoing status.
	AUTO SOURCE SELECT	Disable of enable auto source select. (ON: Searches through all possible input source until an active video source is found. OFF: Video input is manually selected.)
	COLOR SPACE	Changes the input source between RGBs and YPbPr.
	LAYOUT	Changes the layout. (Single, PIP, PBP1, PBP2)
	SOURCE	Changes the secondary source.
	SIZE	Changes the PIP size (Small, Large)
	POSITION	Changes the secondary source.
	SWAP	Swaps the position of the Primary and Secondary images.

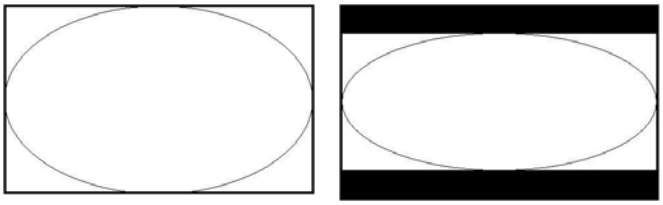
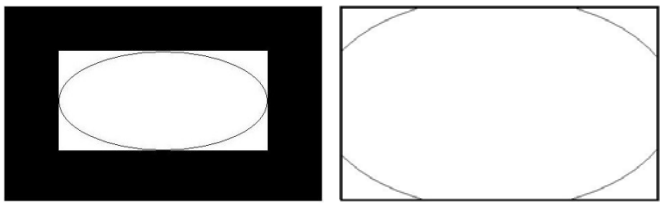
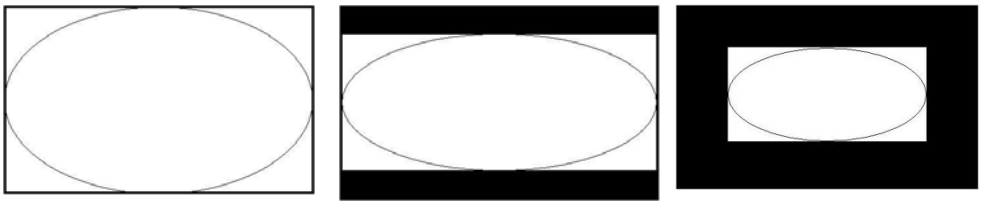
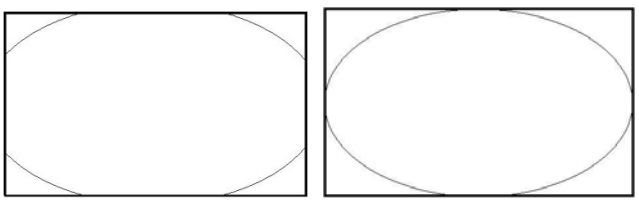
5.2.4 SVIDEO / CVIDEO input source

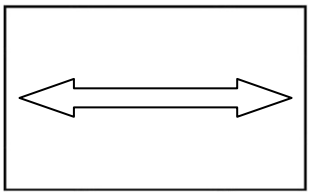
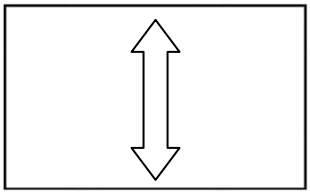
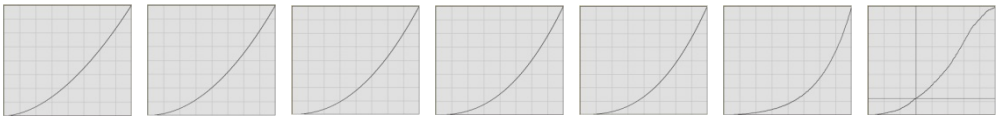
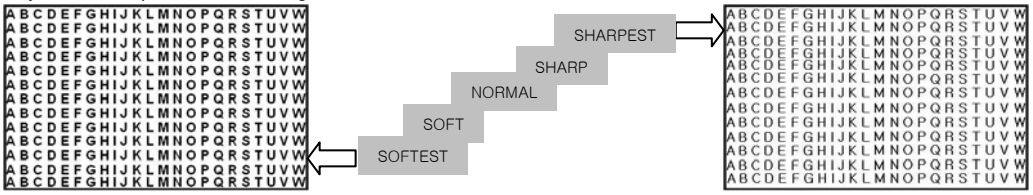
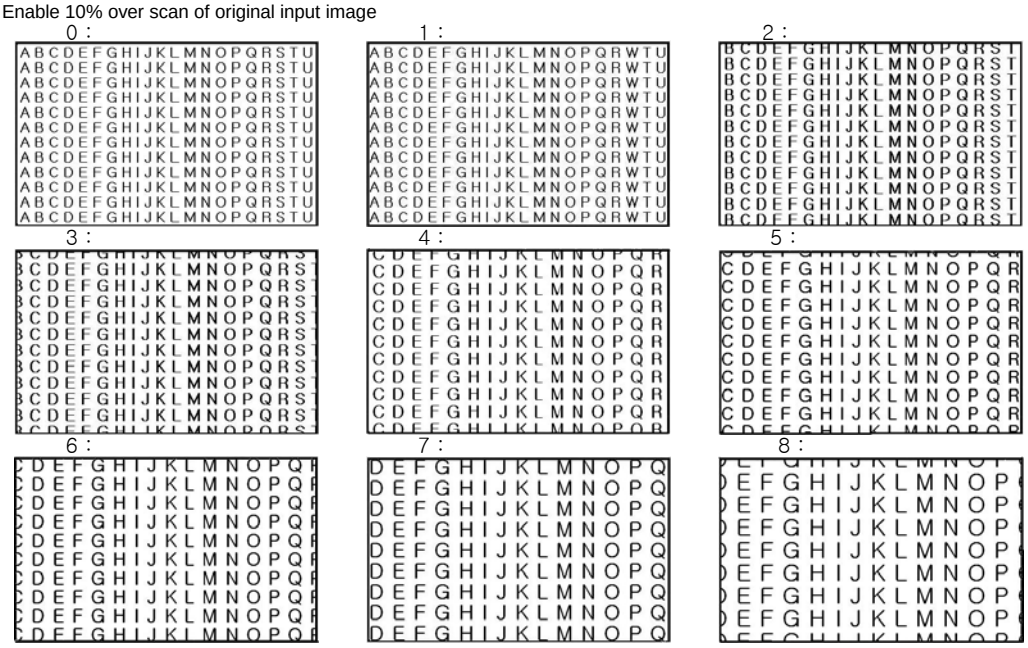
Menus	Sub-menus	Function Descriptions
ADJUST 	BRIGHTNESS	Increase or decrease the brightness (Range : 0~100)
	CONTRAST	Increase or decrease the contrast (Range : 0~100)
	SHARPNESS	Adjusts the sharpness of video image (Range : 0~100)
	SATURATION	Changes the tone of color (Range : 0~100)
	COLOR	Changes the richness of color (Range : Green 0~50, Red 0~50)
	BACKLIGHT	Adjust backlight dimming level (Range : 0~100)
COLOR TEMP 	MODE	Changes the color temperature mode. (C1(Redish,6500K), C2(Bluish,9300K), USER(7200K))
	RED	Red balance. (Only works with USER mode) (Range : 0~100)
	GREEN	Green balance. (Only works with USER mode) (Range : 0~100)
	BLUE	Blue balance. (Only works with USER mode) (Range : 0~100)
IMAGE 	IMAGE SIZE	Change the image size (Full, Fill aspect, 1:1, Normal, Anamorphic)
	H POSITION	Adjust the horizontal position of the displayed source image. (Range : 0~100)
	V POSITION	Adjust the vertical position of the displayed source image. (Range : 0~100)
	GAMMA	Adjust GAMMA value (VIDEO,BYPASS,1.8,2.0,2.2,2.4,2.6,PACS)
	FILTER	Set the sharpness of image (Softest, Soft, Normal, Sharp, Sharpest)
	OVER SCAN	Adjust the displayed size.(0~8)
	IMAGE SETTING	Change the image setting. (Preset 1,2 / User 1,2,3)
	ZOOM / PAN	Enlarges the image, move image left and right.
	FREEZE FRAME	Keeps the image still.
SETUP 	LANGUAGE	Change the OSD language (8 language)
	OSD COLOR	Adjust the OSD back ground from white opaque to half translucent.
	OSD POSITION	Change the OSD position (9 positions)
	DURATION	Adjust time until the OSD Menu will disappear after adjusting the menu. (5, 10, 20, 30, 60, 90, 120, 180, 240 seconds)
	RESET SETTINGS	Changes the all OSD value to factory outgoing status.
	AUTO SOURCE SELECT	Disable of enable auto source select. (ON: Searches through all possible input source until an active video source is found. OFF: Video input is manually selected.)
PIP 	LAYOUT	Changes the layout. (Single, PIP, PBP1, PBP2)
	SOURCE	Changes the secondary source.
	SIZE	Changes the PIP size (Small, Large)
	POSITION	Changes the secondary source.
	SWAP	Swaps the position of the Primary and Secondary images.

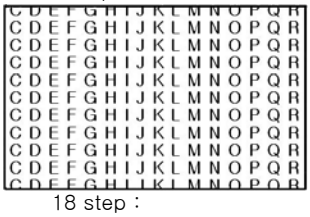
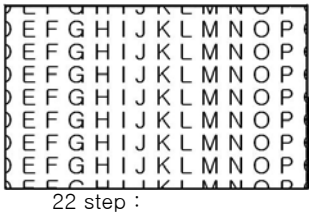
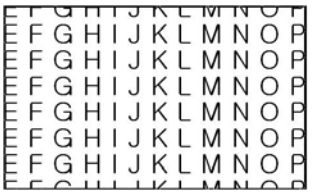
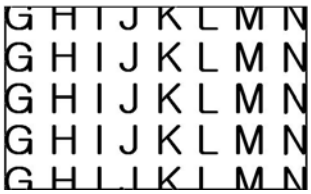
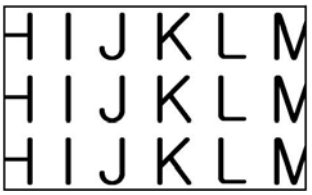
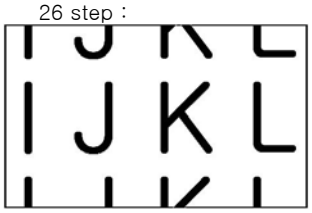
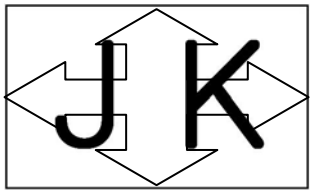
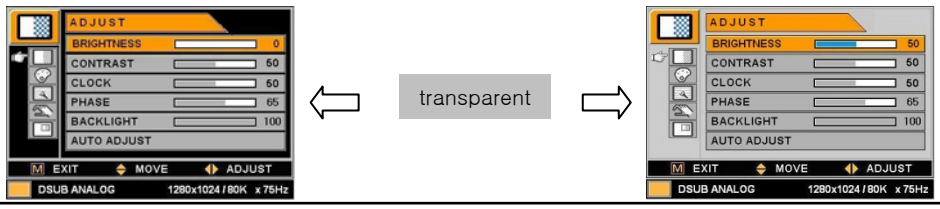
5.2.5 SDI input source

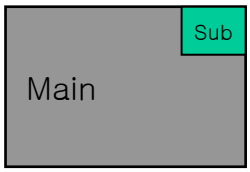
Menus	Sub-menus	Function Descriptions
ADJUST 	BRIGHTNESS	Increases or decreases the brightness. (Range : 0~100)
	CONTRAST	Increases or decreases the contrast. (Range : 0~100)
	SATURATION	Changes the tone of color. (Range : 0~100)
	COLOR	Changes the richness of color. (Range : Green 0~50, Red 0~50)
	BACKLIGHT	Adjust backlight dimming level. (Range : 0~100)
COLOR TEMP 	MODE	Changes the color temperature mode. (C1(Redish,6500K), C2(Bluish,9300K), USER(7200K))
	RED	Red balance. (Only works with USER mode) (Range : 0~100)
	GREEN	Green balance. (Only works with USER mode) (Range : 0~100)
	BLUE	Blue balance. (Only works with USER mode) (Range : 0~100)
IMAGE 	IMAGE SIZE	Changes the image size (Full, Fill aspect, 1:1, Normal, Anamorphic)
	GAMMA	Adjusts GAMMA value (VIDEO,BYPASS,1.8,2.0,2.2,2.4,2.6,PACS)
	FILTER	Sets the sharpness of image (Softest, Soft, Normal, Sharp, Sharpest)
	OVER SCAN	Adjusts the displayed size.(0~8)
	IMAGE SETTING	Changes the image setting. (Preset 1,2 / User 1,2,3)
	ZOOM / PAN	Enlarges the image, move image left and right.
	FREEZE FRAME	Keeps the image still.
SETUP 	LANGUAGE	Changes the OSD language (8 language)
	OSD COLOR	Adjusts the OSD back ground from white opaque to half translucent.
	OSD POSITION	Changes the OSD position (9 positions)
	DURATION	Adjusts time until the OSD Menu will disappear after adjusting the menu. (5, 10, 20, 30, 60, 90, 120, 180, 240 seconds)
	RESET SETTINGS	Changes the all OSD value to factory outgoing status.
	AUTO SOURCE SELECT	Disable of enable auto source select. (ON: Searches through all possible input source until an active video source is found. OFF: Video input is manually selected.)
PIP 	LAYOUT	Changes the layout. (Single, PIP, PBP1, PBP2)
	SOURCE	Changes the secondary source.
	SIZE	Changes the PIP size (Small, Large)
	POSITION	Changes the secondary source.
	SWAP	Swaps the position of the Primary and Secondary images.

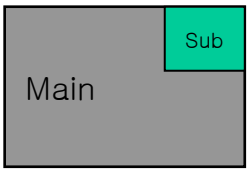
5.3 OSD System overview

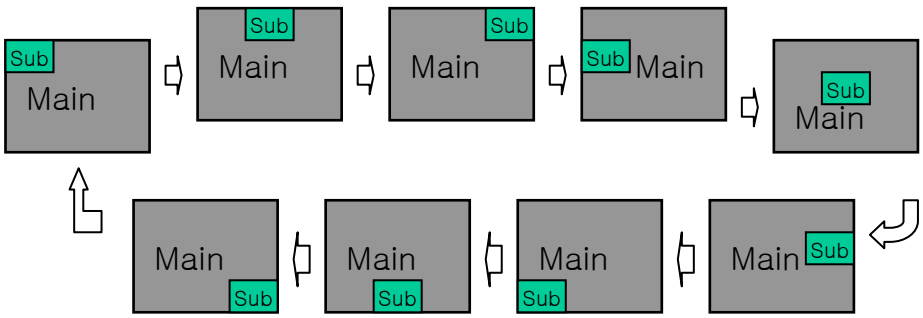
Menus	Function Descriptions
BRIGHTNESS	Press the BRIGHTNESS button to display the ADJUST menu or UP,DOWN hot key. Setting the brightness too high or too low will decrease the amount of visible grayscales.
CONTRAST	Press the CONTRAST button to display the ADJUST menu or +,- hot key. Setting the Contrast too high or too low will causes loss of some grayscales.
CLOCK	Do not adjust freely. It will adjust fine state automatically after auto adjustment. When frequency value is wrong, the horizontal image have a wrong size or noise.
PHASE	Do not adjust freely. It will adjust fine state automatically after auto adjustment. When phase value is wrong, the image have a noise.
BACKLIGHT	Adjust backlight dimming level. Setting the backlight too low will causes dark image and too high will decrease the backlight lifetime.
AUTO ADJUST	Fit to the most appropriate screen on the D-SUB Analog signal
SHARPNESS	Adjusts the sharpness of video image
SATURATION	Changes the tone of color
COLOR	Changes the richness of color (Range : Green 0~50, Red 0~50)
COLOR TEMP C1	Default 6500K color setting
COLOR TEMP C2	Default 9300K color setting
COLOR TEMP USER	Default 7200K color setting, but it's changeable value by user
IMAGE SIZE	***DSUB / DVI OPTICAL / DVI DIGITAL input source** FULL / FILL ASPECT  1:1 / NORMAL  CAUTION : FILL ASPECT,NORMAL Size are depend on input size ratio ***YPbPr / RGBS / SDI / CVIDEO / SVIDEO input source** FULL / FILL ASPECT / 1:1  NORMAL / ANAMORPHIC  CAUTION : FILL ASPECT,NORMAL, ANAMORPHIC Size are depend on input size ratio

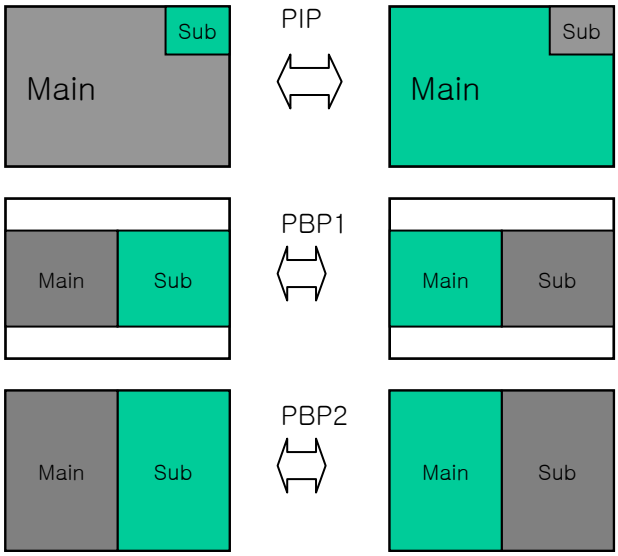
Menus	Function Descriptions
H POSITION	Adjusts the horizontal position of the image. It will be return to the default state when executing AUTO ADJUST or RESET SETTINGS 
V POSITION	Adjusts the horizontal position of the image. It will be return to the default state when executing AUTO ADJUST or RESET SETTINGS 
GAMMA	Adjusts the gamma curve of video image. 1.8 2.0 2.2 2.4 2.6 PACS VIDEO  < NOTICE > BYPASS is depend on panel gamma value, please refer to the panel specification
FILTER	Adjusts the sharpness of video image. 
OVER SCAN	Enable 10% over scan of original input image 

Menus	Function Descriptions
IMAGE SETTING	Save the 5 user's setting about BRIGHTNESS,CONTRAST,COLOR TEMP,FILTER value separately. (MODE1,MODE2,MODE3,MODE4,MODE5)
ZOOM / PAN	Controls the zoom in/out of the image. 0 step : 4 step :  9 step :  13 step :  18 step :  22 step :  26 step :  30 step : Controls the PAN in/out of the image.  NOTICE : Maximum ZOOM size is ten times as large as original size
FREEZE FRAME	Freeze the main image. Do not support secondary image freeze at PIP mode
LANGUAGE	Change the OSD language (8 language) ENGLISH / GERMAN / FRENCH / SPAINISH / ITALIAN / JAPANESE / CHINESE / KOREAN
OSD COLOR	Adjust the color of OSD 
OSD POSITION	Adjust the position of OSD

<table>
<tr><th>Menus</th><th>Function Descriptions</th></tr>
<tr><td>OSD DURATION</td><td>Adjust the time until the OSD Menu will disappear after adjusting the menu</td></tr>
<tr><td>RESET SETTINGS</td><td>Reset the unit to factory outgoing status.</td></tr>
<tr><td>AUTO SOURCE SELECT</td><td>When AUTO SOURCE SELECT is on, the monitor automatically search input source except PIP sub Source.</td></tr>
<tr><td>USER NAME ENTRY</td><td>Put user’s name or etc into set.</td></tr>
<tr><td>PIP LAY OUT</td><td>Change sub window layout (SINGLE,PIP,PBP1,PBP2)
PIP : Main/Sub window doesn’t change aspect ratio.
PBP1 : Main/Sub window doesn’t change aspect ratio.
PBP2 : Main/Sub window H/V display 1:1 size.</td></tr>
<tr><td>PIP SOURCE</td><td>Select PIP source input. You can change other sub windows through OSD pip menu. Below chart is PIP matching table with main and sub window.
<table>
<tr><th></th><th></th><th colspan="8">Sub window</th></tr>
<tr><th></th><th>Input source</th><th>DVI OPTICAL</th><th>DVI DIGITAL</th><th>DSUB ANALOG</th><th>SDI</th><th>YPbPr</th><th>RGBS</th><th>CVIDEO</th><th>SVIDEO</th></tr>
<tr><td rowspan="8">Main window</td><td>DVI OPTICAL</td><td>X</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td><td>O</td></tr>
<tr><td>DVI DIGITAL</td><td>O</td><td>X</td><td>X</td><td>O</td><td>X</td><td>X</td><td>O</td><td>O</td></tr>
<tr><td>DSUB ANALOG</td><td>O</td><td>X</td><td>X</td><td>O¹</td><td>X</td><td>X</td><td>O</td><td>O</td></tr>
<tr><td>SDI</td><td>O</td><td>O</td><td>O¹</td><td>X</td><td>O¹</td><td>O¹</td><td>X</td><td>X</td></tr>
<tr><td>YPbPr</td><td>O</td><td>X</td><td>X</td><td>O¹</td><td>X</td><td>X</td><td>O</td><td>O</td></tr>
<tr><td>RGBS</td><td>O</td><td>X</td><td>X</td><td>O¹</td><td>X</td><td>X</td><td>O</td><td>O</td></tr>
<tr><td>CVIDEO</td><td>O</td><td>O</td><td>O</td><td>X</td><td>O</td><td>O</td><td>X</td><td>X</td></tr>
<tr><td>SVIDEO</td><td>O</td><td>O</td><td>O</td><td>X</td><td>O</td><td>O</td><td>X</td><td>X</td></tr>
</table>
O¹ : Support up to UXGA,60Hz (162MHz)</td></tr>
<tr><td>PIP SIZE</td><td>Change PIP mode sub window size.
SMALL
 

25 % / Panel size
LARGE
 

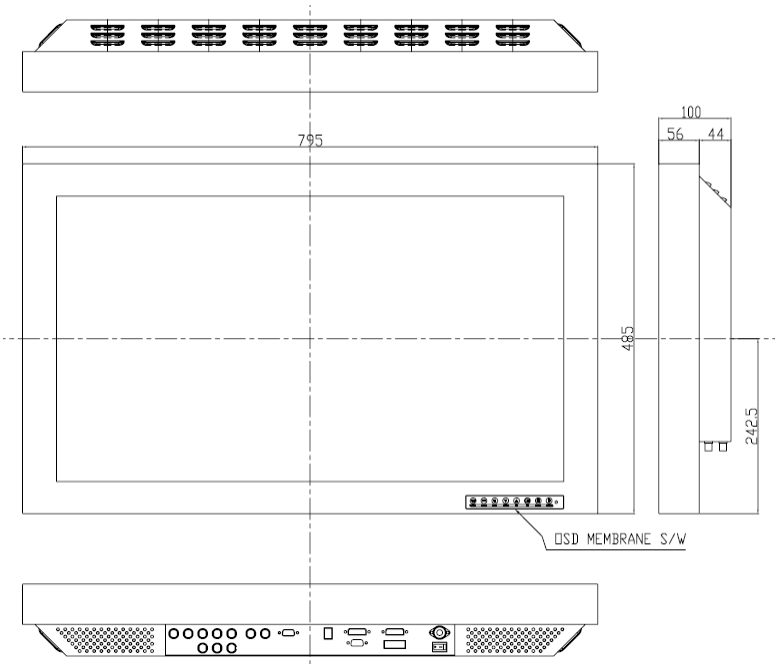
33 % / Panel size
* CAUTION : Do not change input Source aspect ratio and the pip image size is changeable depend on input timing.</td></tr>
<tr><td>PIP POSITION</td><td>Change PIP mode sub window position.
 
</td></tr>
</table>

Menus	Function Descriptions
SWAP	Change main window and sub window position on PIP,PBP1,PBP2. 

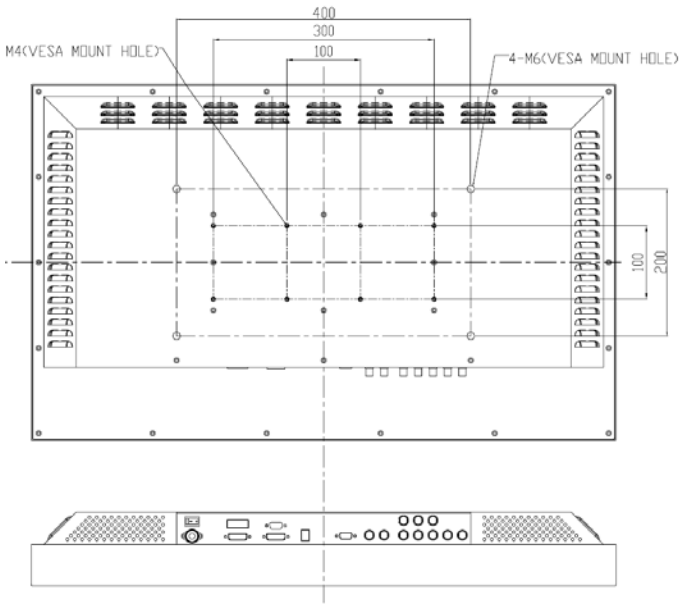
6. Mechanical Specifications

6.1 Product dimension

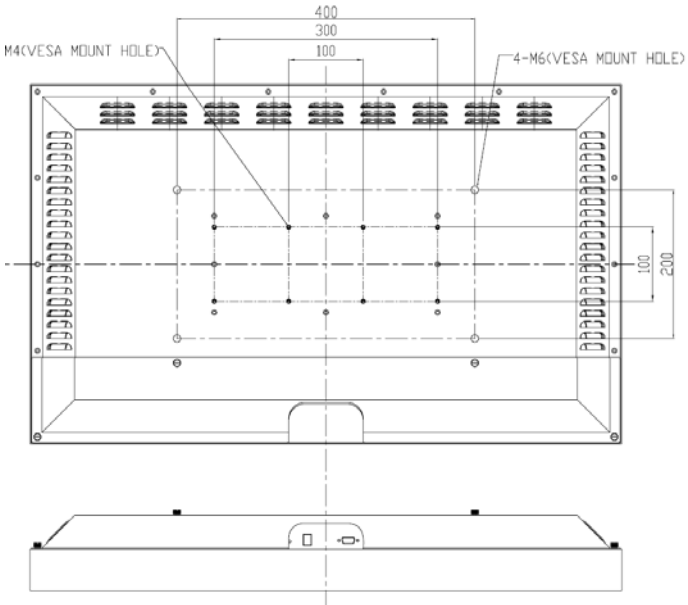
Front view



Rear view (Without I/O Cover)

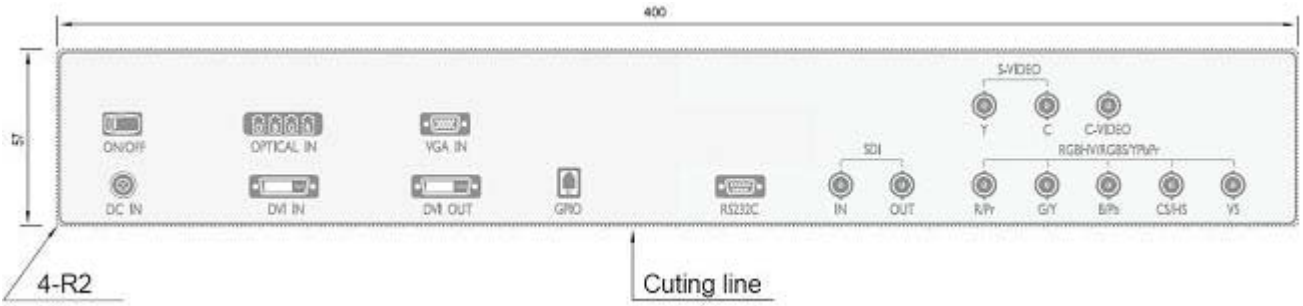


Rear view (Installed I/O Cover)



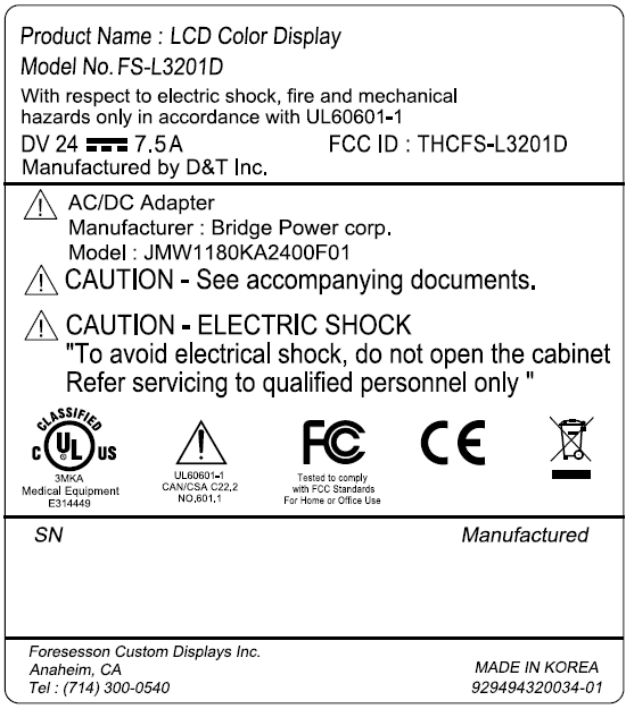
6.2 Label dimension

6.2.1 Function label



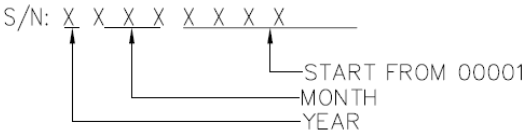
6.2.2 Product label

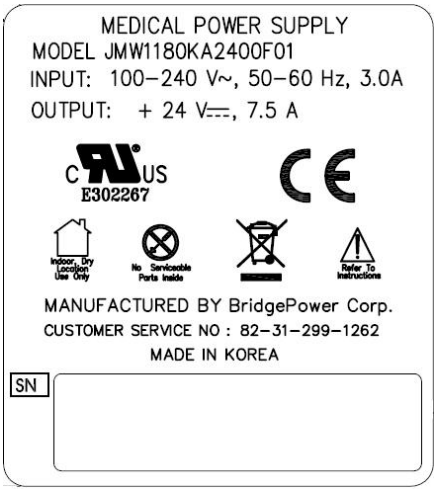
Brand Logo	FORESEESON	
Model NO.	FS-L3201D	
Rating Label (This may vary based on the Customer's request, and the changed contents of the Rating Label shall not be specified in this specification.)	Location	Right center
	Thickness	50 demicron
	Size	83mm x 94mm
	Material	Silver polyester film
	Base Color	Silver



6.2.3 AC ADAPTOR Label

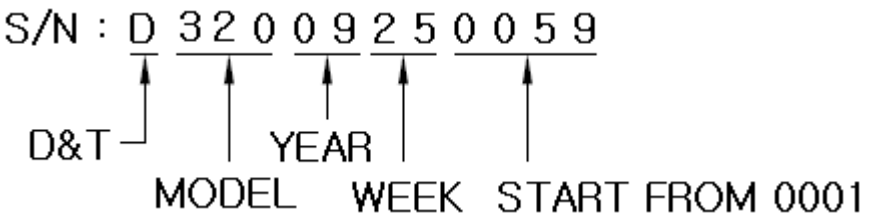
Location	The center of rear-cover
Tilt	Label shall not be tilted more than 1mm
Size	97.5 x 59.5 (mm)
Material	Polyester film 125u
Base Color	Black





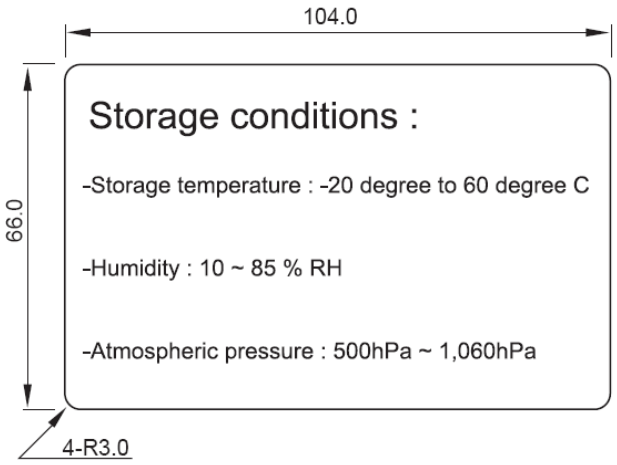
6.2.4 BOX label

Location	Top at both side of box
Size	90mm X 90mm
Material	Paper
Base Color	Background - White Text - Black



6.2.5 Storage mark (label)

Location	Bottom at both side of box
Size	104mm X 66mm
Material	Paper
Base Color	Background - White Text - Black



6.3 Filter dimension

6.3.1 General specification

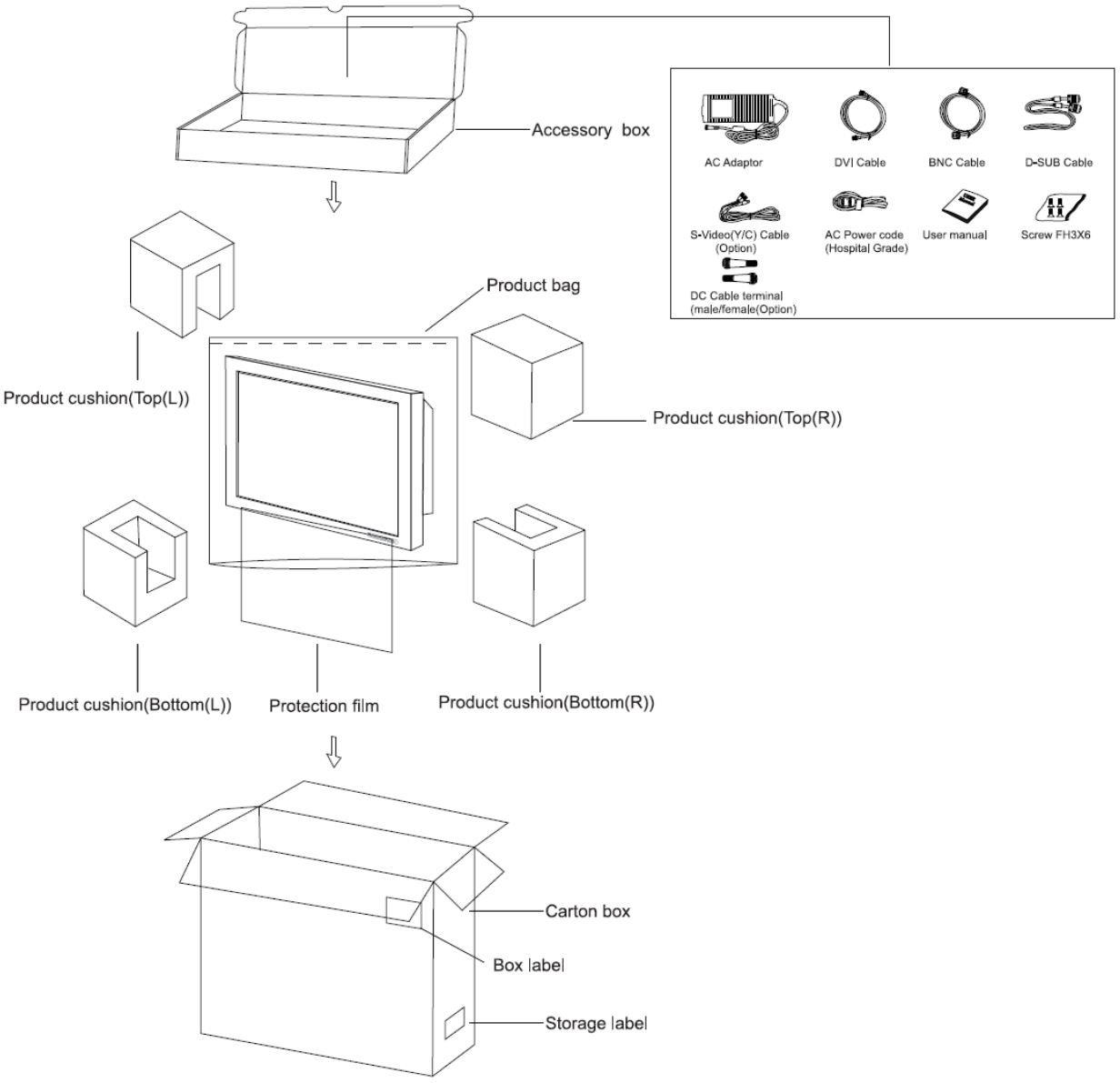
Item	Description	Unit
Size	(764 +0/-1mm) x (454 +0/-1mm) x (3±0.3mm)	**mm**
Material	Temp Glass	
Average reflectance	Less than 1.3% (450 ~600nm)	nm
Coating	Double side Anti-Reflection coating	
Transmittance	95% (at 545nm of the wavelength) (The average transmittance in the range of 450 ~ 600nm should be 95%)	%
Reflection color	Between Blue-Violet & Red-Violet	
Appearance	No harmful defect such as void, groove, and contamination	
Surface	No contamination, No discoloration, No alien substance	
Processing	No crack in the valid surface	
Others	No harmfulness in handling	
Flatness	Less than 0.25mm	**mm**
parallel	Less than 0.38mm	**mm**

7. Packing

7.1 Packing

7.1.1 Dimension (individual)

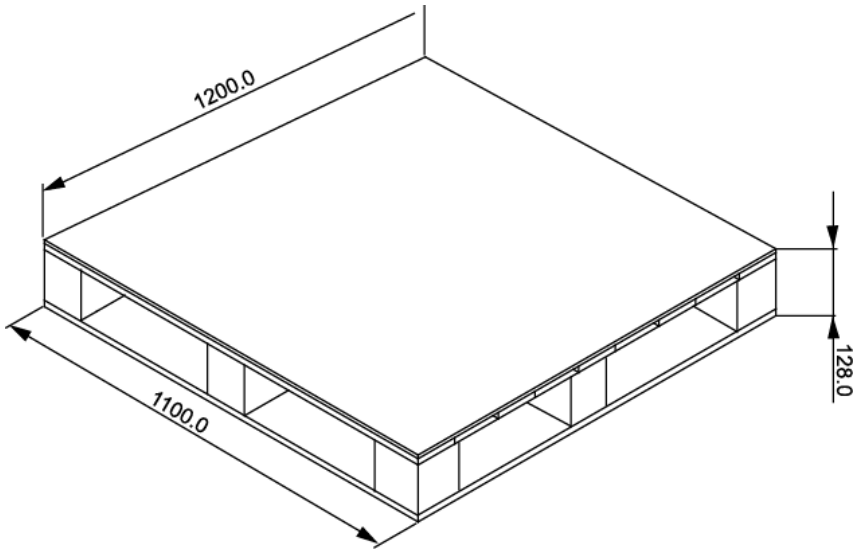
Set (Unpacking, Monitor only)	795(W) x 485(H) x 100(D) (mm)	15.8 Kg
Package (1set, individual packing)	930 (W) x 240 (H) x 650 (D) mm	22 Kg
Package (1set, inner box packing)	533(W) X 78(D) X 208(H) mm	4 Kg

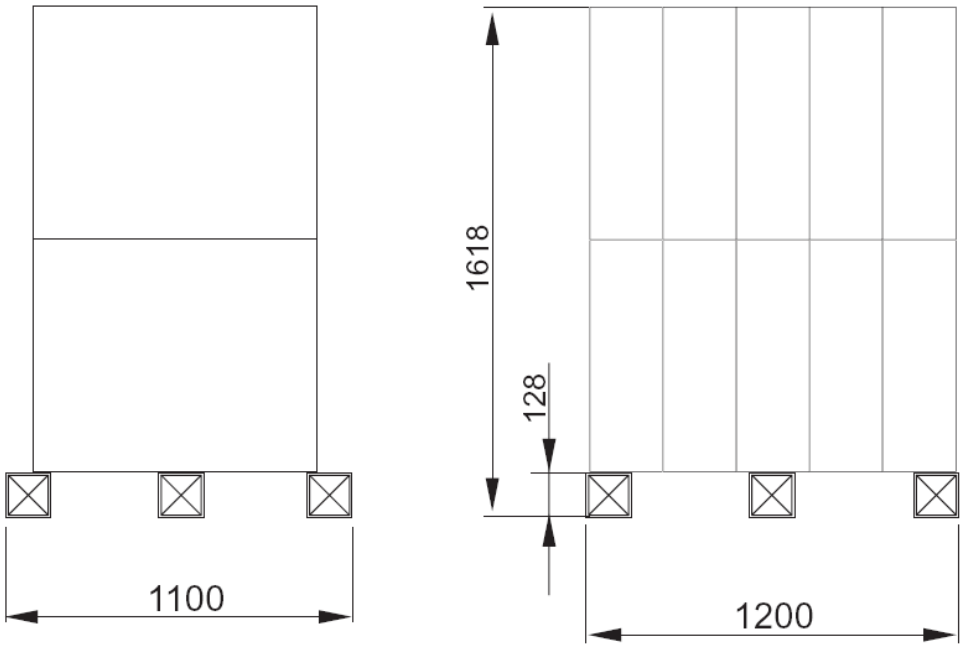


7.1.2 Composition of Pallet

7.1.2 Composition of Pallet

Package (1 pallet, Box)	1100(W) x 1200(H) x 1618(D) (mm)	235Kg



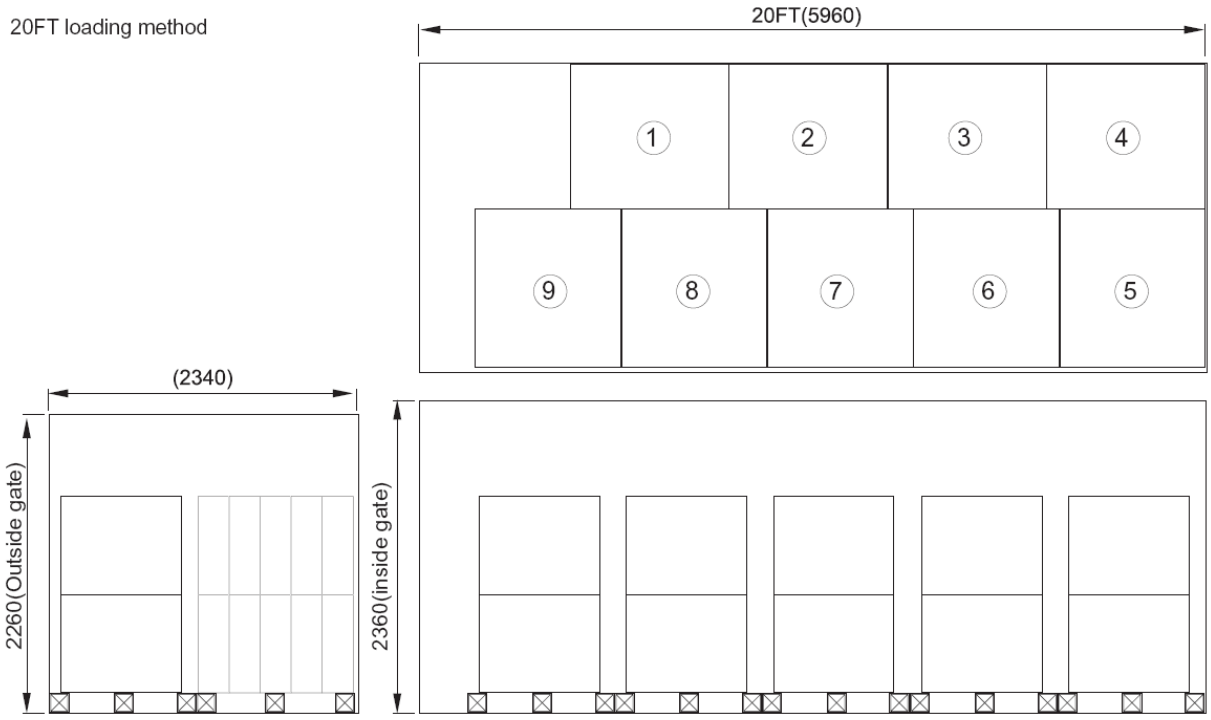


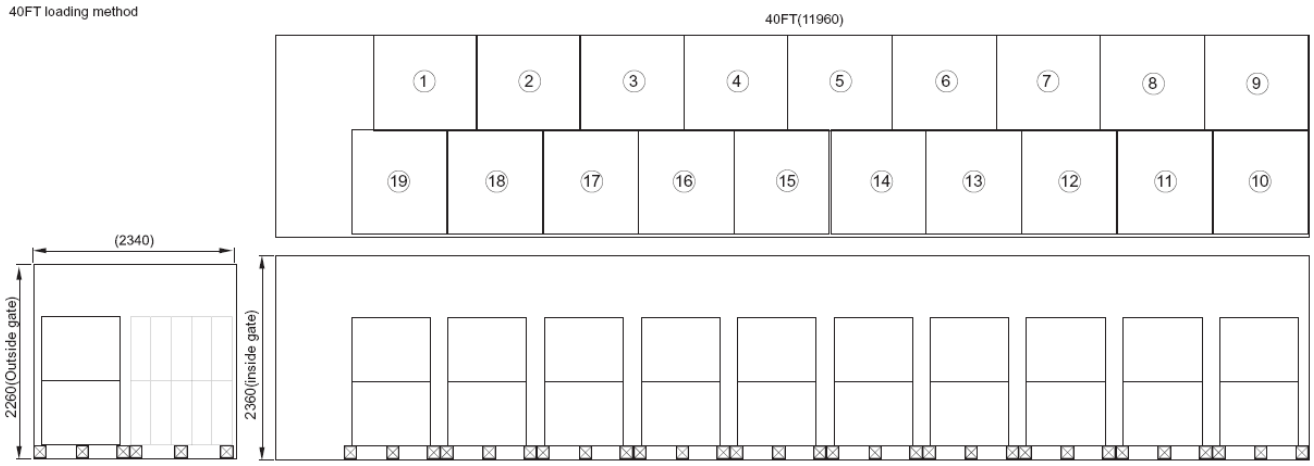
1PALLET : 10Set
20FT : 10Set X 9Pallet =90Set
40FT : 10Set X 19Pallet =190 Set

Carton box out size : 910(W) X 235(D) X 745(H)

7.1.3 20FT Multi Method

Package (20FT Container, 9 pallet)	2115 Kg



7.1.4 40FT Multi Method

Package (40FT Container, 19 pallet)	4465 Kg