

PRODUCT SPECIFICATION

Date:12.01.2017

VESTEL**IFM65UG612****65" OPS-COMPLIANT****16/7 – 400 NITS – ULTRA HD****INTERACTIVE FLAT PANEL DISPLAY**

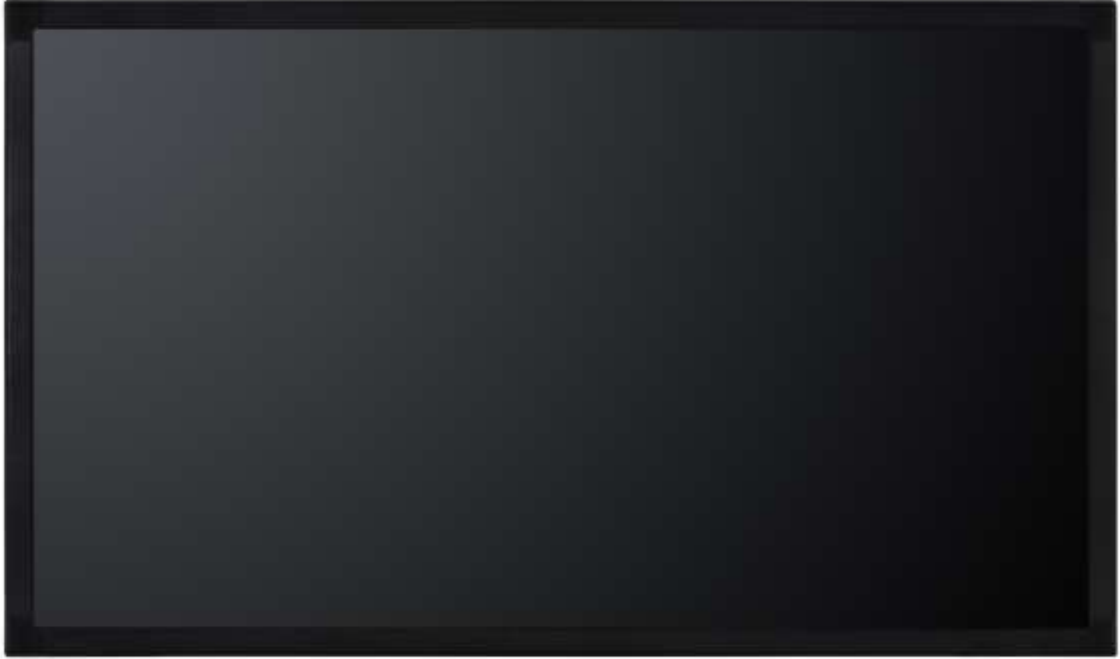
SPECIFICATIONS

	IFM65UG612
Panel	
<i>Mainboard Model</i>	System-On-Chip Model: 18MB120DS
<i>H-Freq</i>	67.5 KHz
<i>Max. Pixel Freq.</i>	74.25 MHz
<i>V-Freq</i>	60 Hz
<i>Size</i>	65"
<i>Backlight Type</i>	DLED
<i>Panel Technology</i>	IPS
<i>Panel Type</i>	16/7 Panel
<i>Front Type</i>	Ultra Narrow Bezel
<i>Orientation</i>	Horizontal
<i>Resolution</i>	3840 x 2160 (16:9) - UHD
<i>Active Area</i>	1429 mm (H) x 804 mm (V)
<i>Brightness (Typ.)</i>	400 cd/m2
<i>Contrast Ratio (Typ.)</i>	1200
<i>Panel life time (Min. / Typ.)</i>	30000 / 50000 Hr
<i>Viewing Angle</i>	178°
<i>Response Time</i>	9 ms
<i>Color Value</i>	8 Bit, 16.7 M Colors
<i>Areas of Usage</i>	Indoor
Monitor Connectivity	
<i>RGB Input</i>	Dsub 15 PIN VGA CON., YPbPr
<i>RGB Output</i>	N/A
<i>VIDEO Input</i>	2xHDMI2.0, DP1.2a, DVI, 1xUSB3.0, 1xUSB2.0
<i>VIDEO Output</i>	DP1.2a
<i>AUDIO Input</i>	LINE IN JACK
<i>AUDIO Output</i>	LINE OUT JACK
<i>External Control</i>	RS232(DSUB 9P), RJ12, Ethernet
<i>External Sensor</i>	N/A
Mechanical Features	
<i>Size</i>	1507mm (L) x 882mm (H) x 120mm (D)
<i>Shipping Size</i>	1670mm (L) x 1073mm (H) x 266mm (D)
<i>Weight</i>	25.5 KG
<i>Shipping Weight</i>	30.5 KG
<i>Vesa Mounting Size</i>	400 mm(H)x 400 mm(V) M6
<i>Bezel Width(Bottom-Side-Top)</i>	38 mm / 38 mm / 38 mm
Working Conditions	
<i>Temperature Conditions</i>	+40°C / 0°C
<i>Humidity</i>	90%
Features	
<i>Main Features</i>	Open Content Management Support, Scheduler, USB-Autoplay, Auto-Launch, HDMI-CEC, HDMI-Hotplug, Auto-switch on Failover, Panel Lock

<i>Mechanical Features</i>	IR Touch, Joystick, IR Extender Support, Rocker Switch, Detachable power cable, Carrying slots, Detachable logo positioning, Internal usb cover, Cable Holder
<i>Optional Features</i>	OPS Compliance
<i>Speaker</i>	2 x 8 W
Power	
<i>Power Supply</i>	110 VAC - 240 VAC
<i>Power Consumption(Off)</i>	≤0.5W
<i>Power Consumption(Active-StandBy)</i>	14 W
<i>Power Consumption(On)</i>	74 W
Accessory	
<i>Standard</i>	QSG, Warranty Card, IB, Power Cord, Remote Control, RC Battery, Mounting Kit, Extension Brackets, IR Extender Cable
Certification	
Safety Approval	<input checked="" type="checkbox"/>
CB	<input checked="" type="checkbox"/>
S-MARK	<input checked="" type="checkbox"/>
EMC Approval	<input checked="" type="checkbox"/>
CE	<input checked="" type="checkbox"/>
Reliability Approval	<input checked="" type="checkbox"/>
Touch Screen (Overlay Design)	
<i>Type of Touch Technology</i>	Infrared (IR) Technology
<i>Supported Point</i>	10 Points
<i>Sensitivity</i>	Any touch with finger, gloved hand or pointer
<i>Connectivity</i>	HID, TUIO, Flash
<i>Supported OS and applications</i>	Windows®7, Windows®8, Windows®10, Vista, XP, Mac® OS, Linux, Android
<i>Orientation</i>	Portrait and landscape support
<i>Calibration</i>	No need
<i>Accuracy</i>	%90 <
<i>Reporting Rate</i>	Up to 450 fps
<i>Glass type</i>	Anti Glared (AG), Tempered
<i>Frame rate</i>	up to 450 fps
<i>Communication</i>	USB 2.0
<i>Power supply Mode</i>	USB
<i>Supply voltage</i>	DC 5V +/- 5%
<i>Average current</i>	<400mA
<i>Response time</i>	<10ms
<i>Touch Accuracy</i>	+/-2mm (over 90% area)
<i>Object sizes for touch</i>	5mm
<i>Touch Durability</i>	Unlimited
<i>HID compatibility</i>	Yes USB

VIEW

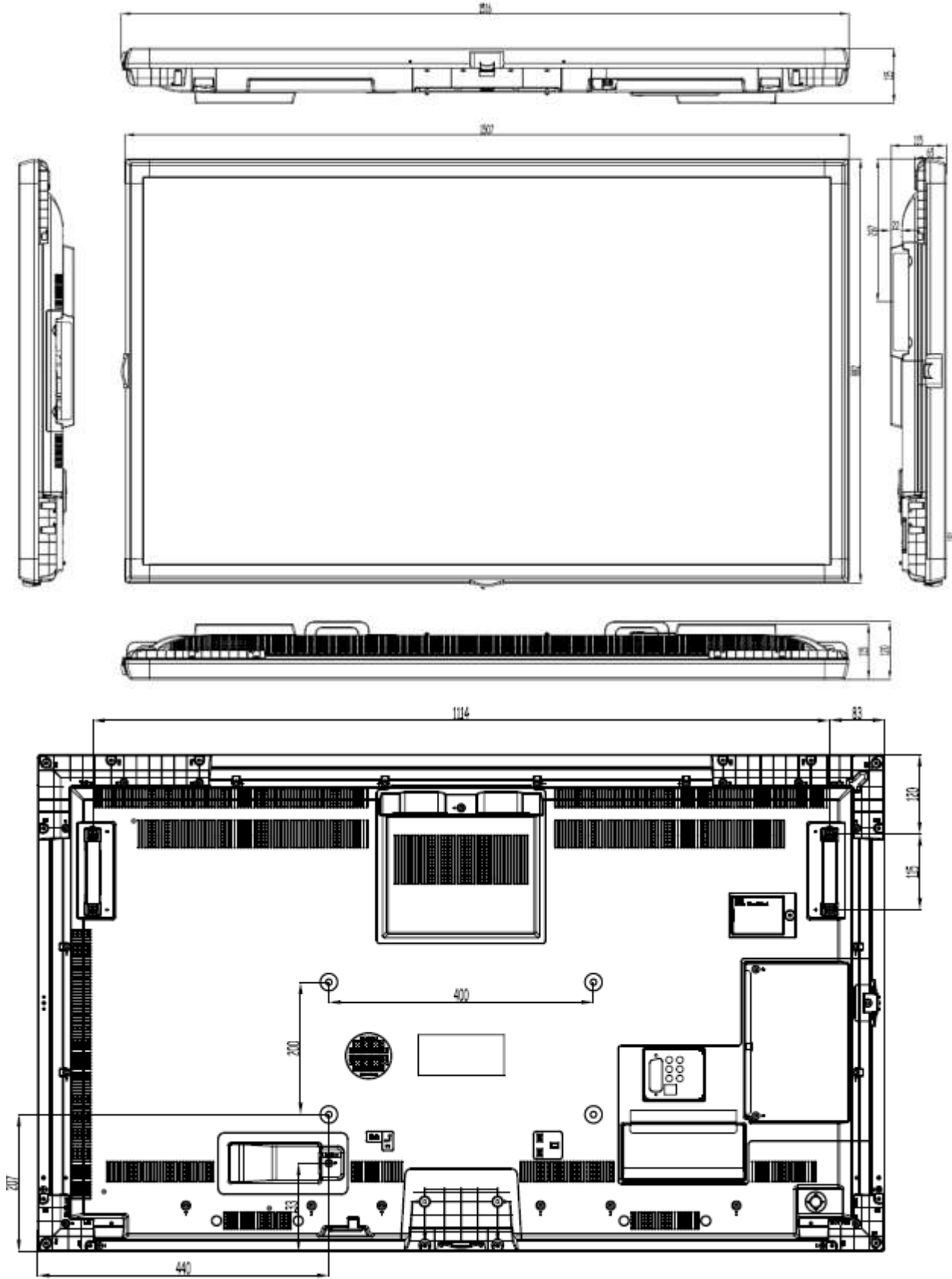




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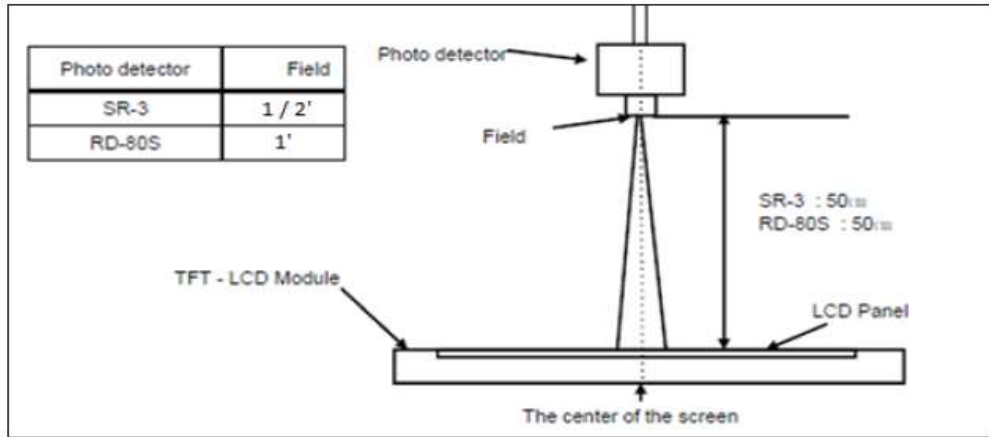
DESIGN



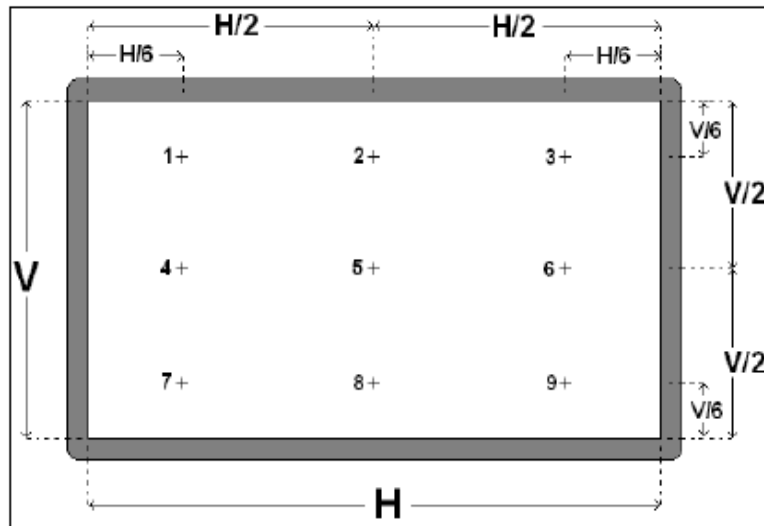
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TESTING STANDARDS

The measurement should be executed in a stable, windless and dark room 60min after lighting the back light at the given temperature for stabilization of the back light. This should be measured in the center of screen. Environment condition: $T_a = 25 \pm 2 \text{ }^\circ\text{C}$.



Definition of Test Points:



Note (1) Definition of Contrast Ratio (C/R):

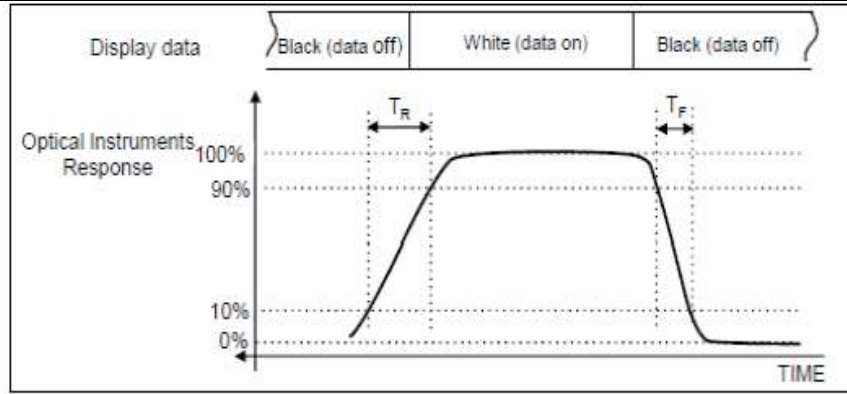
Ratio of gray max (Gmax) & gray min (Gmin) at the center point (5) the panel

$$\frac{C}{R} = \frac{G_{max}}{G_{min}}$$

Gmax: Luminance with all pixels white

Gmin: Luminance with all pixels black

Note (2) Definition of Response Time: $T_R + T_F$



Note (3) Definition of 9 points brightness uniformity:

$$B_{uni} = 100 * \frac{(B_{max} - B_{min})}{B_{max}}$$

(Test pattern: Full White)

Bmax: Maximum brightness

Bmin: Minimum brightness

Note (4) Definition of Luminance of White:

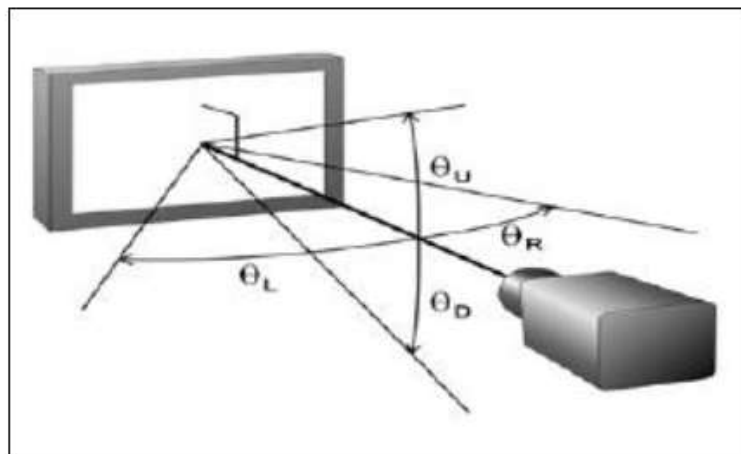
Luminance of white at center point 5

Note (5) Definition of White Color Chromaticity:

Color coordinates of White at center point 5

Note (6) Definition of Viewing Angle

Viewing angle range (C/R > 10)



Safety IEC 60950-1: 2005+A1:2009
EN 60950-1: 2006+A11: 2009+A12:2011

EMC

Immunity Tests	
Specification	Description
EN 55024:2010	Immunity
EN 61000-4-2:2009	Electrostatic Discharge (ESD)
EN 61000-4-3:2006+A2:2010	Radiated, radio-frequency, electromagnetic field immunity
EN 61000-4-4:2004+A1:2010	Electrical Fast Transient/Burst Immunity
EN 61000-4-5:2006	Surge
EN 61000-4-6:2009	Conducted Disturbances Induced by Radio-Frequency Fields
EN 61000-4-11:2004	Voltage Dips and Short Interruptions

Emission Test	
Specification	Description
EN 55022:2010/AC:2011 – Class B	Disturbance Voltage at the Mains Terminals (Conducted Emission)
EN 55022:2010/AC:2011 – Class B	Disturbance Voltage at the Telecommunication Terminals (Conducted Emission)
EN 55022:2010/AC:2011 – Class B	Field Strength (Radiated Emission) (1GHz-6GHz)
EN 55022:2010/AC:2011 – Class B	Field Strength (Radiated Emission) (30MHz-1GHz)
EN 61000-3-2:2006+A1:2009+A2:2009	Harmonics
EN 61000-3-3:2008	Flicker

Note EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN61000-4-8 and EN 61000-4-11 are basic standards referred from EN 55024.

According to EN 55024, EN 61000-4-8 Power Frequency Magnetic Field test is not performed since the EUT is not sensitive power frequency magnetic field.

EN 301489 – 1 V1.9.2	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
EN 301489 – 17 V2.2.1	Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for Broadband Data Transmission Systems

Reliability Test Standards

Low Temperature Test

Products must be boot up without any delay more than one minute. No abnormality on operation. There mustn't come out any electrical and functional problems.

Test Condition :

Temperature: -15 °C , Humidity: 50% , Duration: 24 hours , Mode of Operation: Power Off

High Temperature Test

After the test, product should work properly as electrical and mechanically.
No software crash, No hang up, No lock up.

Test Condition :

Temperature: 50 °C , Humidity: 90% , Duration: 72 hours , Mode of Operation: 3D Mark 2011

Life Test

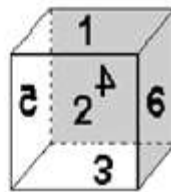
After the test Product should work properly as electrically and mechanically.
No software crash, No hang up, No lock up.

Test Condition :

Temperature: 35 °C , Humidity: 50% , Duration: 150 hours , Mode of Operation: 3D Mark 2011

Drop Test

Product should work properly and there mustn't be any crack at the cabin or any cosmetic problem. In addition, there mustn't be any major problem at the product packaging and snow boxes.



The test is performed on the packed digital products sample under following conditions;

Drop Order :

- 1- Face 3of the package
- 2- 2-3-5 corner of package
- 3- 2-5 edge of package
- 4- 3-5 edge of package
- 5- 2-3 edge of package
- 6- Face 1 of the package
- 7- Face 5 of the package
- 8- Face 6 of the package
- 9- Face 2 of the package
- 10- Face 4 of the package

Total: 10 drops

Test Condition :

Dropping height: Face 3 (Bottom surface): 55cm, Other surfaces: 40cm
Temperature: 25 ± 2 °C , Humidity: 45% ± 10

Vibration Test

Product should work properly and there mustn't be any crack at the cabin, at the solder points of chassis, at the pins of components. In addition, there mustn't be any major problem at the product packaging and snow boxes.

Direction of Vibration	Frequency of Vibration	Power Spectral Density	Sweep Time	Total Duration	Acceleration
Z	10Hz – 500Hz	0.002G ² /Hz	10min	60min	1Grms(9.81m/s ²)