

**PRODUCT SPECIFICATION**

Date:04.01.2017

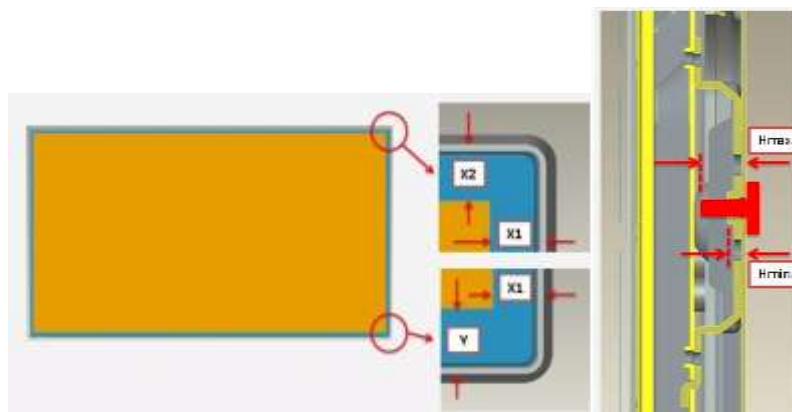
**VESTEL****ST43U01****43" SOC BASED****16/7 – Full HD****DIGITAL SIGNAGE DISPLAY**

## SPECIFICATIONS

	<b>ST43U01</b>
<b>Panel</b>	
<i>Mainboard Model</i>	System-On-Chip Model: 17MB120DS
<i>H-Freq</i>	67.5 KHz
<i>Max. Pixel Freq.</i>	74.25 MHz
<i>V-Freq</i>	60 Hz
<i>Size</i>	43"
<i>Backlight Type</i>	EDGE TYPE LED
<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>	1920 x 1080 (16:9) - FHD
<i>Active Area</i>	942 mm(H) x 530 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>	6 ms
<i>Color Value</i>	8 Bit, 16.7 M Colors
<i>Areas of Usage</i>	Indoor
<b>Monitor Connectivity</b>	
<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
<b>Mechanical Features</b>	
<i>Size</i>	966 mm(L) x 562 mm(H) x 66 mm(D)
<i>Shipping Size</i>	1085 mm(L) x 135 mm(W) x 775 mm(H)
<i>Weight</i>	13 KG
<i>Shipping Weight</i>	14.5 KG
<i>Vesa Mounting Size</i>	200 mm(H)x 200 mm(V)
<i>Bezel Width(Bottom-Side-Top)</i>	17 mm / 10 mm / 10 mm
<b>Working Conditions</b>	
<i>Temperature Conditions</i>	+40°C / 0°C
<i>Humidity</i>	90%
<b>Features</b>	

<b>Main Features</b>	Open Content Management Support, Scheduler, USB-Autoplay, Auto-Launch, HDMI-CEC, HDMI-Hotplug, Auto-switch on Failover, Panel Lock
<b>Mechanical Features</b>	Mechanical Buttons, IR Extender Support
<b>Speaker</b>	2 x 10 W
<b>Power</b>	
<b>Power Supply</b>	110 VAC - 240 VAC
<b>Power Consumption(Deep StandBy)</b>	≤0.5W
<b>Power Consumption(On Full Load)</b>	88W
<b>Accessory</b>	
<b>Standard</b>	QSG, Warranty Card, IB, Power Cord, Remote Control, RC Battery, Mounting Kit
<b>Certification</b>	
<b>Safety Approval</b>	<input checked="" type="checkbox"/>
CB	<input checked="" type="checkbox"/>
S-MARK	<input checked="" type="checkbox"/>
<b>EMC Approval</b>	<input checked="" type="checkbox"/>
CE	<input checked="" type="checkbox"/>
<b>Reliability Approval</b>	<input checked="" type="checkbox"/>

<b>Bezel Dimensions</b>	X1 = X2 (mm)	7,8
	Y (mm)	15,1
<b>Edge Radius</b>		
<b>Vesa Boss (Hmax/Hmin/Type)</b>	15 mm / 5 mm / M6	



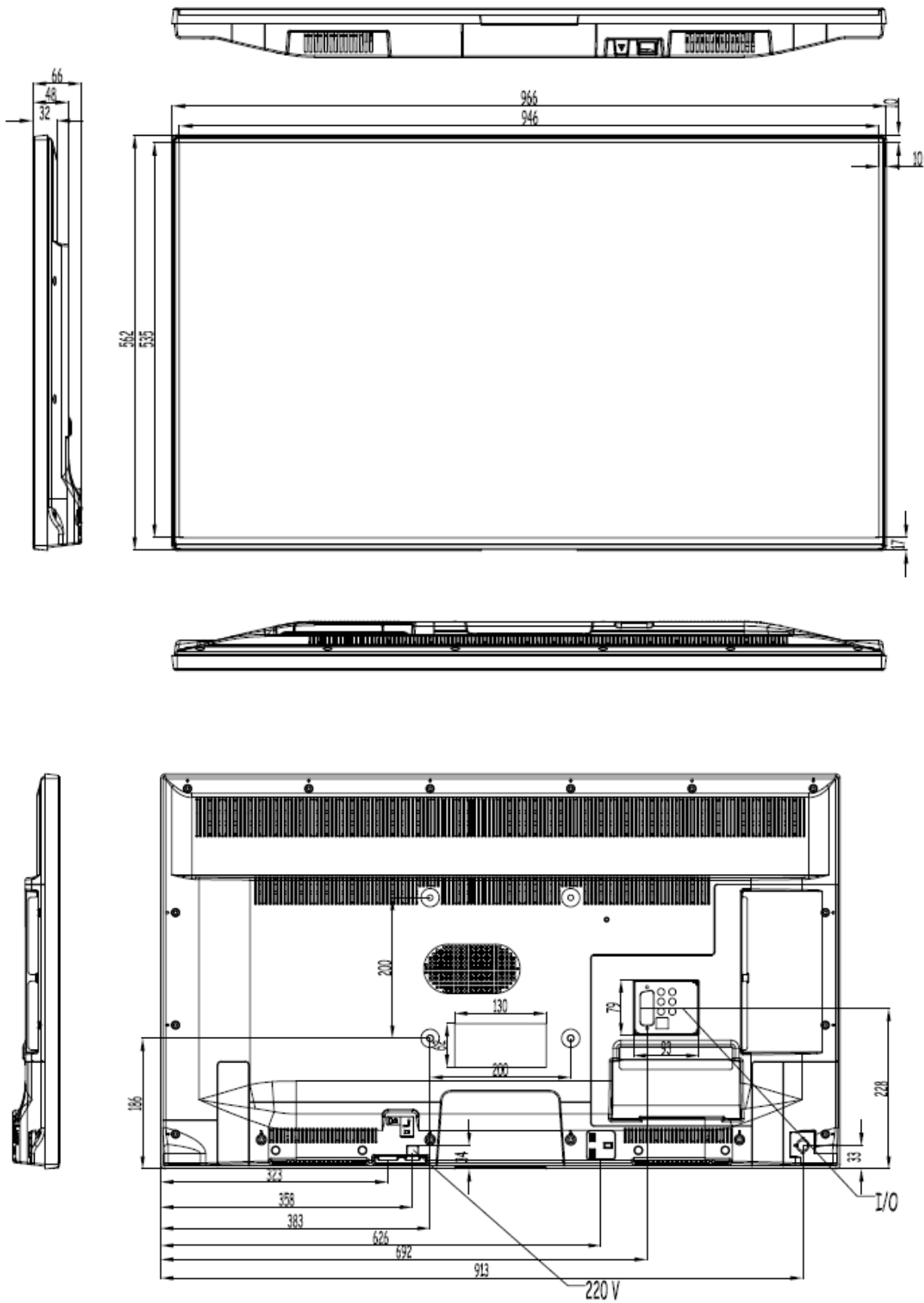
## VIEW



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## DESIGN



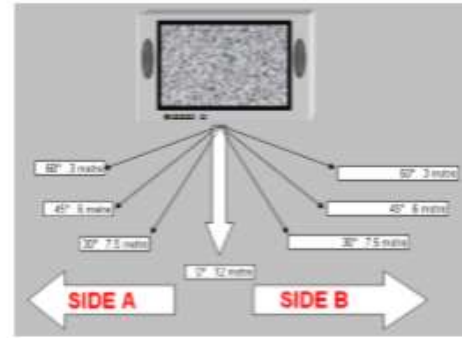
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## REMOTE CONTROLLER



Symbol	TV Function	DVB Function	MM Function	SYS CODE: 01 Code (RC5)
	Stand By	Stand By	Stand By	0C
<b>RED</b>			ZOOM	37
<b>GREEN</b>			REPEAT	36
<b>YELLOW</b>			ROOT	32
<b>BLUE</b>			TITLE	34
<b>T.TEXT</b>	TTEXT Mode On / Off / Mix			3C
<b>INTERNET</b>	internet	Internet	internet	2E
<b>PR. GUIDE</b>		Guide (Electronic Programming Guide)		2F
<b>1/..@</b>	Direct Programme	DTV spelling	1	01
<b>2/ABC</b>	Direct Programme	DTV spelling	2	02
<b>3/DEF</b>	Direct Programme	DTV spelling	3	03
<b>4/GHI</b>	Direct Programme	DTV spelling	4	04
<b>5/JKL</b>	Direct Programme	DTV spelling	5	05
<b>6/MNO</b>	Direct Programme	DTV spelling	6	06
<b>7/PQRS</b>	Direct Programme	DTV spelling	7	07
<b>8/TUV</b>	Direct Programme	DTV spelling	8	08
<b>9/WXYZ</b>	Direct Programme	DTV spelling	9	09
<b>SWAP</b>	Previous Programme/Swap	Previous Programme/Swap		22
<b>0</b>	0	0	0	00
<b>BACK</b>	Back (Return) / TXT Index	Back (Return)		0A
<b>V-</b>	Volume Decrease	Volume Decrease	Volume Decrease	11
<b>V+</b>	Volume Increase	Volume Increase	Volume Increase	10
	Mute	Mute	Mute	0D
<b>P-</b>	Programme/Channel -	Programme/Channel -		21
<b>P+</b>	Programme/Channel +	Programme/Channel +		20
<b>I</b>	Info / TXT Reveal	IDTV Info	TIME	12
<b>SOURCE</b>	Source	Source	Source	38
	Cursor Up			14
	Cursor Left			15
<b>OK</b>	OK (Select)/ TXT HOLD	OK (Select)		35
	Cursor Right / TXT subpage			16
<b>MENU</b>	Menu	Menu		30
	Cursor Down / TXT page down			13
<b>Q MENU</b>	Quick Menu	Quick Menu	Quick Menu	2B
<b>EXIT</b>	EXIT	EXIT	EXIT	25
<b>LANG.</b>	Language	Language	Language	0F
<b>SUBTT.</b>	Subtitle	Subtitle	Subtitle	1F
<b>SCREEN</b>	Screen Mod (4:3 / 16:9)	Screen Mod (4:3 / 16:9)	Screen Mod (4:3 / 16:9)	0B
<b>MY BUTTON 1 / DISPLAY</b>	My Button	My Button	Display	3B
<b>MY BUTTON 2 / SEARCH MODE</b>	My Button 2	My Button 2	Search Mode	1A
<b>CHANNELS</b>	TV - AV / TV Channel List / DVB-T-C	TV - AV / TV Channel List / DVB-T-C		26
<b>RECORD</b>		Record On/Off	Record On/Off	33
<b>PLAY</b>		PLAY	PLAY	19
<b>STOP</b>		STOP	STOP	18
<b>PAUSE</b>		PAUSE	PAUSE	31
<b>search back</b>		Search Back	Search Back	1B
<b>search forward</b>		Search Forward	Search Forward	1C
<b>MULTIMEDIA (Angel)</b>	Media Browser	Media Browser	Angle	39

DESCRIPTION	SPECIFICATION
Carrier Frequency	System clock : 429KHz Carrier : 36 KHz
Operating Voltage	Loaded Voltage 2,6V – 3,4V
Initial Current, whenpressed.	Max. : 30 mA
Stable Current, while pressing.	Max. :15 mA
In idle mode, leakage current.	Max. : 10 uA



Min. Emit Power : 70µw/cm²


DIMMENSIONS	
Width	
Length	
Depth	
Weight	

	CONDITION	SPECIFICATION
DROP TEST	Drop the sample with batteries from a height of 80 cm to the ground which is covered with a flat wooden board of 30 mm thickness, the test is performed at 6 faces.	1) No functional failure is allowed 2) No mechanical crack on the product is allowed

	CONDITION	SPECIFICATION
KEYS OPERATING LIFE	Activate the key at the centre with a load of 200 gr at 2 or 3 cycles/sec. Test is done for 50.000 cycles	It must satisfy the specification. Check all products.

	CONDITION	SPECIFICATION
BATTERY LID LIFE	Open and close the battery lid 100 times in or 3 cycles/sec	Don't close by the weight of the door.

 Weee logo should be added.

 Recycling logo should be added on Remote Control package

CE CE logo should be added.

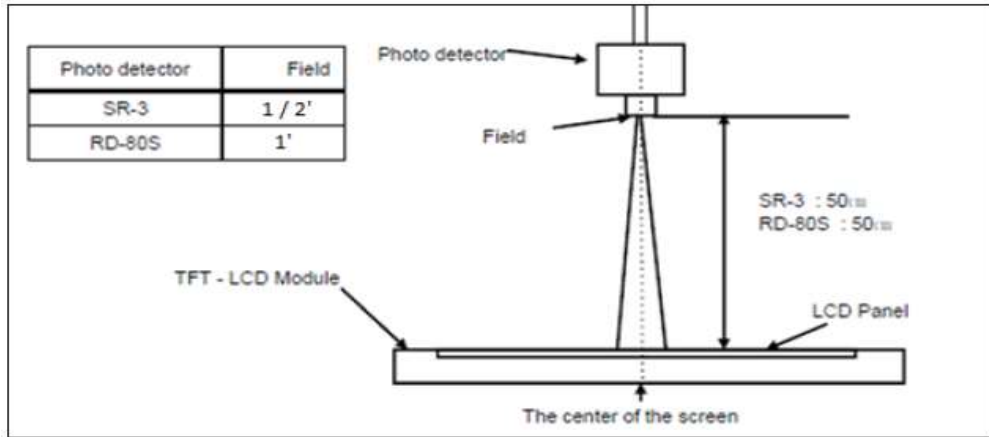
There should be rib on 5 key button for blind people.

There should be a label that describes Company Name, system code and batch number.

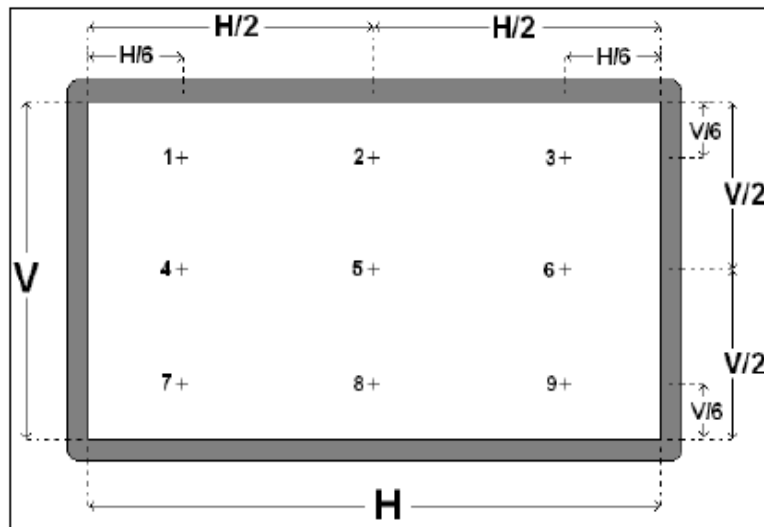


**TESTING STANDARDS**

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):

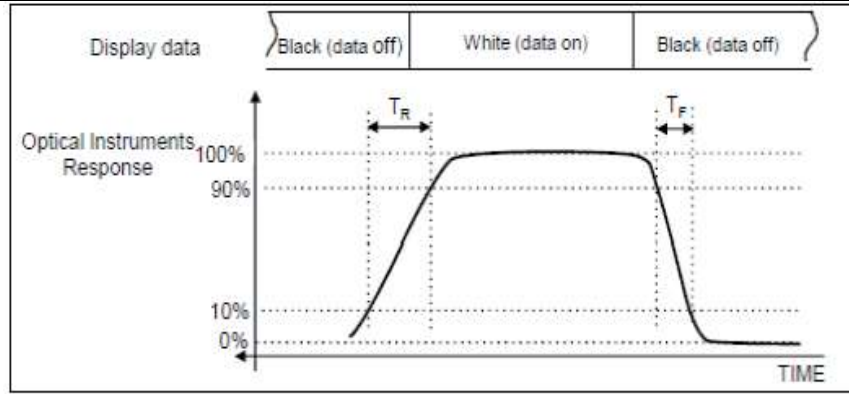
Ratio of gray max (Gmax) & gray min (Gmin) at the center point (5) the panel

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

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:

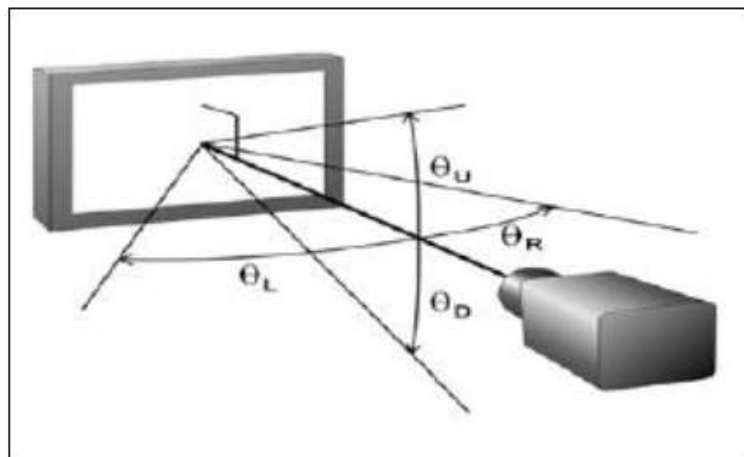
Luminance of white at center point 5

**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**

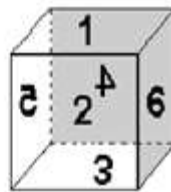
After the test Product should work properly as electrically and mechanically.  
No software crash, No hang up, No lock up.

**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 <sup>2</sup> /Hz	10min	60min	1Grms(9.81m/s <sup>2</sup> )