

TEST REPORT			
ERP for electronic displays			
COMMISSION REGULATION (EU) 2019/2021			
COMMISSION DELEGATED REGULATION (EU) 2019/2013			
Report Reference No	AIT22081706N		
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Testing Laboratory name:	Dongguan Yaxu (AiT) Technology Limited		
Address	No. 22, Jinqianling Third Street, JitiGang, Huangjiang, Dongguan,		
	Guangdong, China		
Testing location	Same as above		
Tested by (+ signature):	Dave Long		
Approved by (+ signature):	Sandy Liang		
Applicant's name	Shenzhen iBoard Technology Co., Ltd.		
Address	1001, Block A, Tanglangcheng Square (West Zone), Fuguang Community, Taoyuan Street, Nanshan District, Shenzhen, Guangdong, China		
Manufacturer's name	Same as applicant		
Address	Same as applicant		
Factory's name	Same as applicant		
Address:	Same as applicant		
Test specification:			
Standard:	COMMISSION REGULATION (EU) 2019/2021, (EU) 2021/341; COMMISSION DELEGATED REGULATION (EU) 2019/2013, (EU) 2021/340		
Test procedure:	 EN 62087-1:2016 - Audio, video, and related equipment - Determination of power consumption - Part 1: General EN IEC 62087-7:2019 - Audio, video, and related equipment - Determination of power consumption - Part 7: Computer monitors EN 50564:2011 - Electrical and electronic household and office equipment - Measurement of low power consumption 		
Conclusion:	Compliant with the above measured standards and Commission Regulation		
Note: The test data was only valid for the received sample(s). This test report is prepared for the customer shown above and for the specific product described herein. It must not be duplicated or used in part without			

prior written consent from Dongguan Yaxu (AiT) Technology Limited.



Test Object

1. The above

the additional

-	
Description:	Interactive Flat Panel Display
Brand Name:	Iboard/StarBoard
Model and/or type reference:	TE-MP-86E1, TE-QS-86, TE-QS1H-86, TE-QS-86E1, TE-XP-86E1, TE-YL-86E1, TE-IT-86E1, TE-DP-86E1, TE-AP-86E1, TE-MP-86
Ratings	Input: 100-240V~, 50/60Hz, 4A

Copy of marking plate(Main unit):

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

IBOALO Interactive Flat Panel Display	SERIAL NO: 4A
RANGE OF SUPPLY VOL RATED FREQUENCY: 50	LTAGE: AC100-240V /60Hz
	CBFCCE
	DO NOT OPEN
StarBoard ^{® 86} " Inte	eractive Flat Panel Display
StarBoard[®] 86" Inte Power : AC 100-240V ~ 50/60 H Serial No. :	eractive Flat Panel Display
StarBoard [®] 86" Inte Power : AC 100-240V ~ 50/60 H Berial No. : =CC ID : 2AIHCMTSIFPD123 bis device compliance with Bart 15 of the ECC R	eractive Flat Panel Display Hz 4.0 A CEF© RoHS
StarBoard [®] 86" Interview StarBoard StarBoa	eractive Flat Panel Display Hz 4.0 A CEFC RoHS @@ Ons : toce and @@ C 2 @
StarBoard [®] 86" Inter Power : AC 100-240V ~ 50/60 H Serial No. : FCC ID : 2AIHCMTSIFPD123 This device complies with Part 15 of the FCC R Operation is subject to the following two condition 1) this device may not cause harmful interference 2) this device mush accept any interference red ncluding interference that may cause undesired	Hz 4.0 A Hz 4.0 A Ules. CE FC RoHS WWW.starboard-solution.com Design in Germany, Made in China.
StarBoard [®] 86" Interview StarBoard	ules. Ince and ceived, d operation. ONOT REMOVE THE REAR COVER OR SCREWS.
StarBoard [®] 86" Interview 100-240V ~ 50/60 H Serial No. : <u>CC ID : 2AIHCMTSIFPD123</u> This device complies with Part 15 of the FCC Ru operation is subject to the following two condition 1) this device may not cause harmful interference 2) this device may not cause harmful interference red cluding interference that may cause undesired CAUTION O PREVENT ELECTRICAL SHOCK, DO REFER TO QUALIFIED SERVICE PER	eractive Flat Panel Display Hz 4.0 A Ules. Ince and ceived, d operation. ONOT REMOVE THE REAR COVER OR SCREWS. RSONNEL FOR SERVICING.
StarBoard [®] 86" Interview StarBoard [®] 86" Interviewer : AC 100-240V ~ 50/60 H Serial No. : CC ID : 2AIHCMTSIFPD123 his device complies with Part 15 of the FCC Ri- poperation is subject to the following two conditions to this device may not cause harmful interference reduced ing interference that may cause undesired AUTION O PREVENT ELECTRICAL SHOCK, DO EFFER TO QUALIFIED SERVICE PER TE-MP-86E1	It a construction It a construction Interse and ceived, a construction It a construction
StarBoard [®] 86" Interview StarBoard [®] 86" Inte	Ites and ceived and ceived and responses Integration. Image: Not response of the response o
StarBoard [®] 86" Interview 100-240V ~ 50/60 H berial No. : CC ID : 2AIHCMTSIFPD123 his device complies with Part 15 of the FCC Ru poperation is subject to the following two condition 1) this device may not cause harmful interference cluding interference that may cause undesired AUTION 0 PREVENT ELECTRICAL SHOCK, DO EFER TO QUALIFIED SERVICE PER TE-MP-86E1 MPXXXX	Ites and ceived, a operation. Ites C FC RoHS Ites and ceived, a operation.

2. Height of CE mark at least 5mm, height of WEEE mark at least 7mm, height of other marks at least 5mm, height of letters and numerals at least 2mm.

3. According to the EU directives which have been aligned with EU NLF (new legislative framework), both of manufacturer and importer's name and address shall be affixed on the product or, where that is not possible, on its packaging or in a document accompanying the product before the product is placed on the EU market.



Test case verdicts

Test case does not apply to the test object N/A
Test item does meet the requirement P(ass)
Test item does meet the requirement: F(ail)
Testing
Date of receipt of test item 2022-08-17
Date(s) of performance of test 2022-08-17 to 2022-08-30
General remarks This test report shall not be reproduced except in full without the written approval of the testing laboratory. The test results presented in this report relate only to the item tested. "(see remark #)" refers to a remark appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a comma is used as the decimal separator.
General product information:

General product information:

The EUT is a Interactive Flat Panel Display designed as electronic displays equipment.
 All models are exactly the same except the model names.

3. Instructions and equipment marking related to safety is applied in the language that is acceptable in the country in which the equipment is to be sold.



1. General Product Information

Product type	Interactive Flat Panel Display
Screen Technology	TFT-LCD
Backlight Technology	E-LED
Display resolution	3840*2160
Size ratio	16:9
Contrast Ratio	5000:1
Viewable screen (Vertical)	10.66 dm
Viewable screen (Horizontal)	18.95 dm
Viewable Screen Area	202.0 dm ²
Viewable Screen Diagonal Size	86 inch=218.44 cm
Image refresh frequency rate (Hz)	60Hz
Available Interfaces	HDMI, DP, Type C, USB
Voice recognition sensor available	NO
Room presence sensor available	NO
Minimum guaranteed availability of software and firmware updates (until):	2032-08-30
Minimum guaranteed availability of spare parts (until):	2032-08-30
Minimum guaranteed product support (until):	2032-08-30
Is there ABC function ?	With 🔲 Without 🖂
Is there force menu ?	With 🔲 Without 🖂
Brightness for default	50%
Contrast for default	50%
Interface Tested	DP
Power supply type:	Internal
Adapter	1
- Average active efficiency (%)	1
- Efficiency at low load (10%) (%)	1
- No-load power consumption (W)	1
Nameplate input current for main unit	4.0A
Automatic Brightness Control	No
Automatic Brightness Control enabled	No
Volume for test	0.7W
Display panel	Maker: Shenzhen iBoard Technology Co., Ltd. Type: UV860QUD-N50



2. Set-up and connections used for electrical testing:





3. Technical documentation

Annex II Ecodesign requirements ((EU) 2019/2021)		-		
A. ENERGY EFFICIENCY REQUIREMENTS			-	
1. ENERGY EFFICIENCY INDEX LIMITS FOR ON-MODE			Р	
The energy effic	ciency index (EEI) of an ele	ectronic display shall be		Р
calculated using	g the following equation:			
$(P_{measured} + 1)$ See appended table			Р	
$EEI = \frac{1}{(3 \times 90)}$	$\times tanh(0,02+0,004 \times (A -$	(-11)) + 4 + 3 + corr		
Where [.]		., 1 ,		
A represents the	e screen area in dm ² :			
Pmeasured is the	ne measured power in Wat	ts in on mode in the		
normal configur	ation, in standard dynamic	range (SDR);		
corr is a correct	ion factor of 10 for OLED e	electronic displays that		
do not apply the	e ABC allowance in point B	(1). This shall apply		
until 28 Februar	ry 2023. corr shall be zero	in all other cases.		
The EEI of an e	lectronic display shall not	exceed the maximum		Р
EEI (EEImax) a	ccording to the limits in Ta	ble 1 from the dates		
indicated.		m 11 - 1		
		Table 1		Р
	EEI 1	imits for on-mode		
		EEL for electronic displays with		
	EEI _{max} for electronic displays with	resolution above 2 1 38 400 pixels	EEI _{max} for electronic displays with	
	(HD)	(HD) and up to 8 294 400	(UHD-4k) and for MicroLED displays	
		pixels (UHD-4k)		
1 March 2021	0,90	1,10	n.a.	
1 March 2023	0,75	0,90	0,90	
B. Allowances	and adjustments for the	purpose of the EEI calc	ulation and functional	-
requirements	· · · · · · · · · · · · · · · · · · ·			
From 1 March 2	2021, electronic displays sh	nall meet the		-
requirements lis	sted below.			
1. Electronic dis	plays with automatic brigh	tness control (ABC)		N/A
shall qualify for	a 10 % reduction in Pmea	sured if they meet all of		
the following red	quirements:			
(a) ABC is enab	oled in the normal configura	ation of the electronic		N/A
display and per-	sists in any other standard	dynamic range		
configuration av	Anable to the end user;	configuration is		N1/A
(b) the value of	APC disabled or if APC or	conliguration, is		N/A
ambient light co	andition of 100 lux measure	all the ABC sensor		
(c) if applicable	the value of Pmeasured v	with ABC disabled shall		Ν/Δ
be equal to or g	reater than the on mode n	ower measured with		1.1/7
ABC enabled in	an ambient light condition	of 100 lux measured at		
the ABC sensor	;			
(d) with ABC en	abled, the measured value	e of the on mode power		N/A
must decrease	by 20 % or more when the	ambient light condition,		
measured at the	e ABC sensor, is reduced f	rom 100 lux to 12 lux;		
(e) the ABC cor	ntrol of the display screen l	uminance meets all of		N/A
the following ch	aracteristics when the amb	pient light condition		
measured at the	e ABC sensor changes:			
- the measured	screen luminance at 60 lu	x is between 65 % and		N/A
95 % Of the scre	een iuminance measured a	at 100 IUX;		N1/A
- the measured	screen iuminance at 35 lui	x is between 50 % and		IN/A
- the measured	screen luminance measuleu a	x is hetween 35 % and		N/A
70 % of the scre	een luminance measured a	at 100 lux.		1.11/1



2. Forced menu and set up menus	. Forced menu and set up menus			P
Electronic displays may be placed on the market with a	a forced			Р
menu on initial activation proposing alternative settings	s. where a			
default choice, otherwise the normal configuration sha	ll be set as			
out of the box setting				
Ut the user selects a configuration other than the norms				D
r une user selects a configuration other than the normal			Г	
domand than the normal configuration a warning mas	power sage about			
the likely increase in energy use shall appear and cont	firmation of			
the action shall be explicitly requested	Innation of			
the action shall be explicitly requested.		D		
normal configuration and this setting results in a highe	r energy			ſ
consumption than the normal configuration a warning	message			
about the likely increase in energy consumption shall a	nnessaye			
confirmation of the action explicitly requested				
A change by the user in a single parameter in any sett	ing shall not			Р
trigger any change in any other energy-relevant param	eter unless			•
unavoidable. In such a case a warning message shall	annear			
about the change of other parameters and the confirm	ation of the			
change shall be explicitly requested				
3 Peak white luminance ratio				P
In the normal configuration, the neak white luminance	of the	See annended	tahla	P
electronic display in a 100 lux ambient light viewing en	vironment	See appended	lable	ſ
shall not be less than 220 cd/m2 or if the electronic di	enlav ie			
primarily intended for close viewing by a single user in	ot less than			
150 cd/m2				
If the electronic display's peak white luminance in the	normal	See appended	table	D
configuration is set to lower values, it shall not be less	than 65 %	See appended	lable	ſ
of the neak white luminance of the display, in a 100 lux	v amhient			
or the peak white luminance of the display, in a 100 lux ambient				
		_		
C. OFF WODE, STANDBT AND NETWORKED STANDBT WODE REQUIREMENTS			Р	
requirements listed below				•
requirements listed below.			_	
Electronic displays shall not exceed power demand limits in the different modes and conditions			Р	
listed in Table 2.				ľ
Table 2				Р
norman domand limits other the	n on mode in	Watta		•
power demand limits other tha	n on-mode, in	watts		
			Networked standby	
	Off mode	Standby mode	mode	
Mantanan Italia	0.20	0.50	2.00	
Maximum limits	0,30	0,50	2,00	
Allowances for additional functions when present and enabled				
Status display 0.0 0.2		0,20	0,20	
		- /		
Deactivation using room presence detection 0,0		0,50	0,50	
Touch functionality, if usable for activation 0,0 1,00		1,00		
HINA function	0,0	0,0	4,00	
Total maximum power demand with all additional functions when	0.30	2.20	7 70	
present and enabled	0,50	2,20	7,70	



	Operating mode	Magguromant (M)	Limpit (14/)	
	Operating mode	Measurement (VV)	Limit (VV)	-
	Off mode	See appended table		N/A
	Standby mode	See appended table		Р
	Networked standby mode	See appended table		N/A
2. Availability of off, standby and networked standby modes			Р	
Electronic of networked s applicable p	Electronic displays shall provide off mode or standby mode or a networked standby mode or other modes which do not exceed the applicable power demand requirements for standby mode.			Р
The configu documentation networked s	uration menu, instruction manuals a tion, if any, shall refer to off mode, standby mode using those terms.	and other standby mode or		Р
Automatic s mode which requiremen for network when in on	switch to off mode and/or standby r n does not exceed the applicable p ts for standby mode shall be set as ed displays where the network inte mode.	node and/or another ower demand s default, including rface is enabled		Ρ
Networked configuration prompted to needed for able to disa	standby mode shall be disabled in on' of a networked television. The e o confirm the activation of networke a chosen remotely activated functionable it.	'normal nd user shall be ed standby, if it is on, and must be		N/A
Networked for standby	electronic displays shall comply wi mode when networked standby m	th the requirements ode is disabled.		Р
3. Automati	c standby in televisions			N/A
(a) Television enabled as following the on mode intra another mode demand reconstandby mode standby mode show, for all of the imper- cancelling intra	ons shall provide a power manager delivered by the manufacturer that e last user interaction, shall switch to standby mode or networked star de which does not exceed the app quirements respectively for standby ode. Before such automatic switch, t least 20 seconds, an alert messag nding switch, with possibility of dela t.	ment function, within 4 hours the television from hdby mode or licable power or networked televisions shall ge warning the user aying or temporarily		N/A
(b) If the tel shorten, exi transitions of potential ind setting mus period or di	evision provides a function allowing tend or disable the 4-hour period for detailed in (a), a warning message crease in energy use and a confirm at be requested when an extension sabling is selected.	g the user to or automatic mode shall appear about a nation of the new beyond the 4-hour		N/A
(c) If the tel automatic ti applies if no	evision is equipped with a room pro ransition from on mode into any mo o presence is detected for no more	esence sensor, the ode as detailed in (a) than 1 hour.		N/A
4. Automati	c standby in displays other than te	levisions		Р



Electronic displays other than televisions, with various selectable input sources shall switch, as configured in the normal configuration, into standby mode, networked standby mode or another mode which does not exceed the applicable power demand requirements respectively for standby or networked standby mode when no input is detected by any input source for over 10 seconds and, for digital interactive whiteboards and for broadcast displays, for over 60 minutes.	Ρ
Before triggering such a switch, a warning message shall be displayed and the switch completed within 10 minutes.	Р
D. MATERIAL EFFICIENCY REQUIREMENTS	-
From 1 March 2021, electronic displays shall meet the requirements indicated below.	Р
1. Design for dismantling, recycling and recovery	N/A
Manufacturers, importers or their authorised representatives shall ensure that joining, fastening or sealing techniques do not prevent the removal, using commonly available tools, of the components indicated in point 1 of Annex VII of Directive 2012/19/EU on WEEE or in Article 11 of Directive 2006/66/EC of the European Parliament and of the Council (1) on batteries and accumulators and waste batteries and accumulators, when present.	N/A
Manufacturers, importers or their authorised representatives shall, without prejudice to point 1 of Article 15 of Directive 2012/19/EU, make available, on a free-access website, the dismantling information needed to access any of the products components referred to in point 1 of Annex VII of Directive 2012/19/EU.	N/A
This dismantling information shall include the sequence of dismantling steps, tools or technologies needed to access the targeted components.	N/A
The end of life information shall be available until at least 15 years after the placing on the market of the last unit of a product model.	N/A
2. Marking of plastic components	Р
Plastic components heavier than 50 g:	Р
(a) Shall be marked by specifying the type of polymer with the appropriate standard symbols or abbreviated terms set between the punctuation marks '>' and '<' as specified in available standards. The marking shall be legible.	Р
Plastic components are exempt from marking requirements in the following circumstances:	Р
(i) the marking is not possible because of the shape or size;	Р
(ii) the marking would impact on the performance or functionality of the plastic component; and	Р
(iii) marking is technically not possible because of the molding method.	Р
For the following plastic components no marking is required:	Р
(i) packaging, tape, labels and stretch wraps;	Р
(ii) wiring, cables and connectors, rubber parts and anywhere not enough appropriate surface area is available for the marking to be of a legible size;	Ρ
(iii) PCB assemblies, PMMA boards, optical components, electrostatic discharge components, electromagnetic interference components, speakers;	Р



(iv) transparent parts where the marking would obstruct the		Р
(b) Components containing flame retardants shall additionally be		Р
marked with the abbreviated term of the polymer followed by		
hyphen, then the symbol 'FR' followed by the code number of the		
flame retardant in parentheses. The marking on the enclosure and		
stand components shall be clearly visible and readable.		
3. Cadmium logo		Р
Electronic displays with a screen panel in which concentration values of Cadmium (Cd) by weight in homogeneous materials exceed 0,01 % as defined in Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment, shall be labelled with the 'Cadmium inside' logo. The logo shall be clearly visible durable, legible and indelible. The logo shall be in the form of the following graphic:	Cadmium free	Ρ
The dimension of 'a' shall be greater than 9 mm and the typeface to be used is 'Gill Sans'. An additional 'Cadmium inside' logo shall be firmly attached internally on the display panel or molded in a position clearly visible to workers once the external back cover bearing the external logo is removed. A 'Cadmium free' logo shall be used if concentration values of Cadmium (Cd) by weight in any homogeneous material part of the display do not exceed 0,01 % as defined in Directive 2011/65/EU.		
4. Halogenated flame retardants		Р
The use of halogenated flame retardants is not allowed in the		Р
enclosure and stand of electronic displays.		
		Р
(a) Availability of spare parts:		Р
(1) manufacturers, importers or authorised representatives of electronic displays shall make available to professional repairers at least the following spare parts: internal power supply, connectors to connect external equipment (cable, antenna, USB, DVD and Blue-Ray), capacitors, batteries and accumulators, DVD/Blue-Ray module if applicable and HD/SSD module if applicable for a minimum period of seven years after placing the last unit of the model on the market;		Ρ
(2) manufacturers, importers or authorised representatives of electronic displays shall make available to professional repairers and end-users at least the following spare parts: external power supply and remote control for a minimum period of seven years after placing the last unit of the model on the market;		P
(3) manufacturers shall ensure that these spare parts can be replaced with the use of commonly available tools and without permanent damage to the appliance;		Р



 (4) the list of spare parts concerned by point 1 and the procedure for ordering them shall be publicly available on the free access website of the manufacturer, importer or authorised representative, at the latest two years after the placing on the market of the first unit of a model and until the end of the period of availability of these spare parts; and 	Ρ
(5) the list of spare parts concerned by point 2 and the procedure for ordering them and the repair instructions shall be publicly available on the manufacturer's, the importer's or authorised representative's free access website, at the moment of the placing on the market of the first unit of a model and until the end of the period of availability of these spare parts.	Ρ
(b) Access to repair and maintenance information	Р
After a period of two years after the placing on the market of the first unit of a model or of an equivalent model, and until the end of the period mentioned under (a), the manufacturer, importer or authorised representative shall provide access to the appliance repair and maintenance information to professional repairers in the following conditions:	Ρ
(1) the manufacturer's, importer's or authorised representative's website shall indicate the process for professional repairers to register for access to information; to accept such a request, manufacturers, importers or authorised representative may require the professional repairer to demonstrate that:	Ρ
(i) the professional repairer has the technical competence to repair electronic displays and complies with the applicable regulations for repairers of electrical equipment in the Member States where it operates. Reference to an official registration system as professional repairer, where such system exists in the Member States concerned, shall be accepted as proof of compliance with this point;	Р
(ii) the professional repairer is covered by insurance covering liabilities resulting from its activity, regardless of whether this is required by the Member State;	Р
(2) the manufacturers, importers or authorised representatives shall accept or refuse the registration within 5 working days from the date of request by the professional repairer;	Р
(3) manufacturers, importers or authorised representatives may charge reasonable and proportionate fees for access to the repair and maintenance information or for receiving regular updates. A fee is reasonable if it does not discourage access by failing to take into account the extent to which the professional repairer uses the information.	Ρ
Once registered, a professional repairer shall have access to the requested repair and maintenance information within one working day after requesting it. The available repair and maintenance information shall include:	Р
- the unequivocal appliance identification;	Р
- a disassembly map or exploded view;	Р
- list of necessary repair and test equipment;	Р
- component and diagnosis information (such as minimum and maximum theoretical values for measurements);	Р
- wiring and connection diagrams;	Р
- diagnostic fault and error codes (including manufacturer-specific codes, where applicable); and	Р



- data records of reported failure incidents stored on the electronic display (where applicable).	Р
(c) Maximum delivery time of spare parts	Р
 (1) during the period mentioned under point 5(a)(1) and point 5(a)(2), the manufacturer, importer or authorised representatives shall ensure the delivery of the spare parts for electronic displays within 15 working days after having received the order; 	Р
(2) in the case of spare parts available only to professional repairers, this availability may be limited to professional repairers registered in accordance with point (b).	Р
E. INFORMATION AVAILABILITY REQUIREMENTS	Р
From 1 March 2021, the product manufacturer, importer or authorised representative shall make available the information set out below when placing on the market the first unit of a model or of an equivalent model.	Р
The information shall be provided free of charge to third parties dealing with professional repair and reuse of electronic displays (including third party maintenance actors, brokers and spare parts providers).	Р
1. Availability of software and firmware updates	Р
(a) The latest available version of the firmware shall be made available for a minimum period of eight years after the placing on the market of the last unit of a certain product model, free of charge or at a fair, transparent and non-discriminatory cost. The latest available security update to the firmware shall be made available until at least eight years after the placing on the market of the last product of a certain product model, free of charge.	Ρ
(b) Information on the minimum guaranteed availability of software and firmware updates, availability of spare parts and product support shall be indicated in the product information sheet as from Annex V of Regulation (EU) 2019/2013.	Ρ

Annex II Energy efficiency classes ((EU) 2019/2013)		
B. Energy Efficiency Index (EEllabel)		
The Energy Efficiency Index (EEIIabel) of the electronic display	See appended table	-
shall be calculated using the following equation:		
$FEI = (P_{measured} + 1)$		-
$EEI_{label} = \frac{1}{(3 \times [90 \times tanh(0,025 + 0,0035 \times (A - 1))])}$	$(11)) + 4 + 3 + corr_l$	
where:	له	
A represents the viewing surface area in dm ² ;		
$P_{measured}$ is the measured power in on mode in Watts in the normal configuration and set as indicated in Table 2;		
corr _l is a correction factor set as indicated in Table 3.		



	Table 2	-		
	Measurement of P _{measured}			
Dynamic Range level	P _{measured}			
Standard Dynamic Range (SDR): Pmeasured _{SDR} Power demand in Watts (W) in on mode, measured when displaying standardised test sequences of moving picture from dynamic broadcast content. Where allowances are applicable according to part C of this Annex, they should be deducted from P _{measured} .				
High Dynamic Range (HDR) Power demand in Watts (W) in on mode, measured as for Pmeasured_{SDR} but with the HDR functionality activated by metadata in the standard-ised HDR test sequences. Where allowances are applicable according to part C of this Annex, they should be deducted from Pmeasured.				
_	Table 3 corr _l value	-		
Electronic Display type	corr _l value			
Television	0,0			
Monitor	0,0			
Digital signage	0,00062*(lum-500)*A			
	where 'lum' is the peak white luminance, in cd/m^2 , of the brightest on mode configuration of the electronic display and A is the screen area in dm^2			
C. Allowances and adjustments for the calculation	e purpose of the EEIIabel	-		
Electronic displays with automatic brig qualify for a 10 % reduction in Pmeas following requirements:	ghtness control (ABC) shall ured if they meet all of the	N/A		
(a) ABC is enabled in the normal conf display and persists in any other stand configuration available to the end use	iguration of the electronic dard dynamic range r	N/A		
(b) the value of Pmeasured, in the normal measured, with ABC disabled or if AB	rmal configuration, is C cannot be disabled, in an	N/A		
(c) if applicable, the value of Pmeasur be equal to or greater than the on more ABC enabled in an ambient light cond the ABC sensor:	red with ABC disabled shall de power measured with lition of 100 lux measured at	N/A		
(d) with ABC enabled, the measured v must decrease by 20 % or more wher	value of the on mode power the ambient light condition, and from 100 lux to 12 lux:	N/A		
(e) the ABC control of the display scre the following characteristics when the measured at the ABC sensor changes	een luminance meets all of ambient light condition	N/A		
- the measured screen luminance at 6	60 lux is between 65 % and	N/A		
- the measured screen luminance measured 80 % of the screen luminance measured	B5 lux is between 50 % and red at 100 lux;	N/A		
- the measured screen luminance at 1 70 % of the screen luminance measured	2 lux is between 35 % and red at 100 lux.	N/A		



Annex IV Measurement methods and calculations ((EU) 2019/2013)				
1. MEASUREMENTS OF ON MODE POWER DEMAND	See appended table	Р		
Measurements of the on mode power demand shall fulfil all of the		-		
following general conditions:				
(a) electronic displays shall be measured in the normal		Р		
configuration;				
(b) measurements shall be made at an ambient temperature of 23 $^{\circ}C$ +/- 5 $^{\circ}C$;		Р		
(c) measurements shall be made using a dynamic broadcast video		Р		
signal test loops representing typical broadcast content for				
electronic displays in standard dynamic range (SDR). For the HDR				
measurement the electronic display must automatically and				
correctly respond to the HDR metadata in the test loop. The				
measurement shall be the average power consumed over 10				
consecutive minutes;				
(d) measurements shall be made after the electronic display has		P		
been in the off-mode or, if an off-mode is not available, in standby				
mode for a minimum of 1 hour immediately followed by a minimum				
of 1 hour in the on mode and shall be completed before a				
maximum of 3 hours in on-mode. The relevant video signal shall				
be displayed during the entire on mode duration. For electronic				
displays that are known to stabilise within 1 hour, these durations				
may be reduced if the resulting measurement can be shown to be				
within 2 % of the results that would otherwise be achieved using				
the durations described here;		N1/A		
(e) where ABC is available, measurements shall be made with it		N/A		
switched off. If ABC cannot be switched off, then the				
measurements shall be performed in an ambient light condition of				
100 IUX MEASURED AL LINE ABU SENSOL.				
2. MEASUREMENTS OF PEAK WHITE LUMINANCE				
Measurements of the peak white luminance shall be made:		P		
(a) with a luminance meter, detecting that portion of the screen		Р		
exhibiting a full (100%) while image, which is part of a full screen				
test pattern not exceeding the average picture level (APL) point				
where any power limiting or other inregularity occurs;				
(b) without disturbing the luminance meter's detection point on the				
electronic display whilst switching between the normal				
configuration and the brightest on mode configuration.		1		

Annex VI Technical documentation ((EU) 2019/2013)					
The technical documentation referred to in point 1(d) of Article 3 See below					
shall include:					
(1) identification data (general description of the model):		-			
(a) trademark and model identifier;	See the label	Р			
(b) supplier's name, address, registered trade name;	See the label	Р			
(2) references to the harmonised standards applied, other	See page 1	Р			
measurement standards and specifications used in measuring the					
technical parameters and calculations performed;					
(3) specific precautions to be taken when the model is assembled,					
installed and tested;					
(4) a list of all equivalent models, including model identifiers;					
(5) measured technical parameters of the model and calculations		Р			
performed with the measured parameters as listed in Table 5;					
General	See appended table	-			
ambient temperature;		-			
test voltage in V and frequency in Hz;					
total harmonic distortion of the electricity supply system;					



For on-mode:	See appended table	-
Peak white luminance of the brightest on mode configuration		Р
Peak white luminance of the normal configuration		Р
Peak white luminance ratio (calculated)		Р
For APD		-
Duration of the on mode condition, before the electronic display	1 min	Р
reaches automatically standby, or off mode, or another condition		
which does not exceed the applicable power consumption		
requirements for off mode and/or standby mode.		
For televisions: the measured value of the time before the		N/A
television automatically reaches standby, or off-mode, or another		
condition which does not exceed the applicable power		
consumption requirements for off-mode and/or standby-mode		
following the last user interaction;		
For televisions equipped with room presence sensor: the		N/A
measured value of the time before the television automatically		
reaches standby, or off-mode, or another condition which does not		
exceed the applicable power consumption requirements for off		
mode and/or standby mode when no presence is detected;		
Other electronic displays than televisions and broadcast displays:		N/A
The measured value of the time before the electronic display		
automatically reaches standby, or off-mode, or another condition		
which does not exceed the applicable power consumption		
requirements for off mode and/or standby mode when no input is		
detected;		
For ABC		-
Average on mode power demand of the electronic display at an		N/A
ambient light intensity, measured at the ABC sensor of the		
electronic display, of 100 lux and 12 lux.		
Percentage of power reduction due to ABC action between the 100		N/A
lux and 12 lux ambient light conditions.		
Display peak white luminance at each of the following ambient light		N/A
intensities measured at the ABC sensor of the electronic display,		
100 lux, 60 lux, 35 lux, 12 lux.		
Measured on mode power at 100 lux ambient light at the ABC		N/A
sensor		
Measured on mode power at 12 lux ambient light at the ABC		N/A
sensor		
The measured screen luminance at 60 lux ambient light at the ABC		N/A
sensor		
The measured screen luminance at 35 lux ambient at the ABC		N/A
sensor		
The measured screen luminance at 12 lux ambient light at the ABC		N/A
sensor		
(6) Additional information requirements:		<u> </u>
(a) input terminal for the audio and video test signals used for	אטן	P
testing;		<u> </u>
(b) information and documentation on the instrumentation, set-up		P
and circuits used for electrical testing;		N1/A
(c) any other testing condition not described or determined in point		N/A
(D):		



(d)	for on n	ando:	Sampling mathad	D
(u)		the characteristics of the dynamic broadcast content		Г
	(1)	video signal representing typical broadcast TV	method	
		content: for the HDR dynamic broadcast content video	Nirect meter reading	
		signal the electronic display must be automatically	method	
		switched to HDR mode by the HDR metadata of that	method	
		signal.		
	(ii)	the sequence of steps for achieving a stable condition		
	(")	with respect to power demand level: and		
	(iii)	the picture settings used for the brightest peak white		
	()	luminance measurement and the test pattern for the		
		video signal used for the measurement.		
(e)	For star	ndby and off mode:	The "monitors" was placed	Р
(-)	(i)	the measurement method used:	into "standby mode" by	-
	(ii)	description of how the mode was selected or	pressing the "Standby	
	()	programmed including any enhanced reactivation	button" on remote control	
		functions; and	of the monitors. In this	
	(iii)	sequence of events to reach the condition where the	state, the EUT only offers	
	()	electronic display automatically changes mode.	the reactivation function.	
(f)	For elec	ctronic displays with a designated computer signal		Р
l`'	interfac	e:		
	(i)	confirmation that the electronic display prioritises the		
	()	computer display power management protocols set		
		out in point 6.2.3 of Annex II of Commission		
		Regulation (EU) No 617/2013 (1). Any deviation from		
		the protocols should be reported;		
(g)	For the	networked electronic displays only:		N/A
	(i) numl	per and type of network interfaces and, except for		
	wireless	s network interfaces, their position in the electronic		
	display;			
	(ii) whe	ther the electronic display qualifies as electronic display		
	with Hil	NA functionality; if no information is provided the		
	electror	nic display is considered not to be HiNA display or		
	display	with HiNA functionality; and		
	(iii) info	rmation whether networked electronic display provides		
	functior	nality allowing the power management function and/or		
	the end	-user to switch the electronic display being in a		
	conditic	on providing networked standby into standby mode, or		
	off mod	e or another condition which does not exceed the		
	applical	ble power demand requirements for off mode and/or		
	standby	mode including enhanced reactivation function power		
	allowan	ce where applicable.		
(h)	For eac	h type of network port:		N/A
	(i) the c	default time (mm:ss) after which the power		
	mana	agement function, switches the display into a condition		
	provi	ding networked standby; and		
	(ii) the	trigger to be used to reactivate the electronic display.		
(7)	where th	ne information included in the technical documentation		Р
file	for a pai	rticular electronic display model has been obtained:		
(a)	from a i	model that has the same technical characteristics		Р
	relevan	t for the technical information to be provided but is		
	produce	ed by a different manufacturer or		
(b)	by calc	ulation on the basis of design or by extrapolation from		Р
	another	model of the same or of a different supplier, or both;		
the	technica	al documentation shall include, as appropriate, the		Р
det	ails of su	uch calculation, the assessment undertaken by		
sup	pliers to	verify the accuracy of the calculation and, where		
app	propriate	, the declaration of identity between the models of		
diff	erent su	opliers; and		



(8) the contact details of the person empowered to bind the	Р
supplier, if not included in the technical information uploaded into	
the database, shall be made available, on request, to market	
surveillance authorities or to the Commission for carrying out their	
tasks under this Regulation.	



Appended table:

Sumary of test results:					
Test Item	Input Voltage	Measured/calculated Value	Limit		
Off mode	230VAC, 50Hz	OW	≤0.3W		
Standby mode	230VAC, 50Hz	0.33W	≤0.5W		
Networked standby mode	230VAC, 50Hz	N/A			
On mode (SDR)	230VAC, 50Hz	112.0W			
On mode (HDR)	230VAC, 50Hz	N/A			
EEI		0.83	≤0.9		
Energy efficiency class, Energy E	Efficiency Index (E	El _{label})	·		
A			EEI _{label} < 0.30		
В			$0.30 \le \text{EEI}_{\text{label}} < 0.40$		
С			$0.40 \le \text{EEI}_{\text{label}} < 0.50$		
D			$0.50 \le \text{EEI}_{\text{label}} < 0.60$		
E			$0.60 \le \text{EEI}_{\text{label}} < 0.75$		
F		0.898	$0.75 \le \text{EEI}_{\text{label}} < 0.90$		
G			0.90 ≤ EEI _{label}		
Energy efficiency class: F; N	lanufacturer decla	are: /			
Peak white luminance of the brightest on mode configuration	230VAC, 50Hz	150.4 cd/m ²			
Peak white luminance of the normal configuration	230VAC, 50Hz	150.4 cd/m ²			
Peak white luminance ratio	230VAC, 50Hz	100%			
Peak white luminance of the brightest on measured	230VAC, 50Hz	501.2 cd/m ²			
Ambient temperature: 23.6°C; Total harmonic distortion of the electricity supply system: 0.68%					



4. Test equipment

Asset No.	Equipment Description	Manufacturer	Туре	Scale & Unit	Calibration Last Date	Calibration Due Date
AiT-F01316	Power meter	YOKOGAWA	WT310E	600V, 20A	2021-09-14	2022-09-13
AiT-F01179	Tape Measure	Deli	DL9005	5.0M	2020-09-03	2025-09-02
AiT-F01178	Humidity & Temp. Recorder	KTJ	TA218B	0-50°C, 0%-75%RH	2021-08-31	2022-08-30
AiT-F01010	AC Power Soure	APE	AFR-220	0-300Vac 50/60Hz 20KVA	-	-
AiT-F01207	Stopwatch	CHAOSUDA	PC2001	Full	2021-09-01	2022-08-31
AiT-F01213	Lumen meter	Xuan Bao	LX1010B	0~20000 Lux	2021-08-31	2022-08-30
AiT-F01315	Digital anemometer	Shenzhen Jumaoyuan Science And Technology Co., Ltd.	GM8901	0-45m/s 0-45°C	2021-09-14	2022-09-13
AiT-F01288	Luminance meter	Konica Minolta	CA-210	0.10-1000cd/m ²	2021-08-31	2022-08-30



5. Photos



Photo 1 overall view



Photo 2 back view





Photo 3 terminals view



Photo 4 internal view





Photo 5 internal view



Photo 6 power board top view





Photo 7 power board bottom view



Photo 8 main board top view





Photo 9 main board bottom view



Photo 10 signal board top view





Photo 11 signal board bottom view

*****End of Report*****