

20A-004660(A3)

Date of Report Issue:

August 17, 2020

Date of Sample Received:

July 31, 2020

Pages:

Page 1 of 37

PRODUCT DESIGNATION: Book light

BRAND NAME: N/A

MODEL NAME: MO9460

CLIENT: Mid Ocean Brands B.V.

DATE OF ISSUE: August 17, 2020

STANDARD(S): EN 55015:2019

EN 61547:2009



Test Report #

20A-004660(A3)

July 31, 2020

Date of Report Issue:

August 17, 2020

Pages: Page 2 of 37

TABLE OF CONTENTS

<u>Description</u>	Page
1.VERIFICATION OF CONFORMITY	3
2.SYSTEM DESCRIPTION	4
3.MEASUREMENT UNCERTAINTY	4
4.PRODUCT INFORMATION	5
5.SUPPORT EQUIPMENT	6
6.TEST FACILITY	7
7.TEST EQUITMENT LIST	7
8.TEST SUMMARY LIST	9
9.EN 55015 RADIATED EMISSION TEST	10
9.1. LIMITS OF RADIATED DISTURBANCES	10
9.2. BLOCK DIAGRAM OF TEST SETUP	10
9.3. PROCEDURE OF RADIATED EMISSION TEST	
9.4. TEST RESULT OF RADIATED EMISSION TEST	
10.EN 55015 RADIATED EMISSION ELECTROMAGENTIC DISTURBANCE TEST	14
10.1. LIMITS OF RADIATED ELECTROMAGENTIC DISTURBANCE IN THE RANGE 9	KHz TO
30MHz	
10.2. BLOCK DIAGRAM OF TEST SETUP	
10.3. TEST PROCEDURE	_
10.4. TEST RESULT OF RADIATED ELECTROMAGENTIC DISTURBANCE	
11. EN 61000-4-2 ESD IMMUNITY TEST	
11.1. BLOCK DIAGRAM OF TEST SETUP	_
11.2. TEST PROCEDURE	
11.3. PERFORMANCE & RESULT	
12. EN 61000-4-3 RS IMMUNITY TEST	
12.1. BLOCK DIAGRAM OF TEST SETUP	
12.2. TEST PROCEDURE	
12.3. PERFORMANCE & RESULT	
13. EN 61000-4-8 PFMF TEST	
13.1. BLOCK DIAGRAM OF TEST SETUP	
13.2. TEST PROCEDURE	
13.3. PERFORMANCE & RESULT	26

APPENDIX A: PHOTOGRAPHS OF TEST SETUP APPENDIX B: PHOTOGRAPHS OF EUT



Date of Sample Received: July 31, 2020 Pages: Page 3 of 37

1. VERIFICATION OF CONFORMITY

Mid Ocean Brands B.V.
7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Mid Ocean Brands B.V.
7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Mid Ocean Brands B.V.
7/F, Kings Tower, 111 King Lam Street, Cheung Sha Wan, Kowloon, Hong Kong
Book light
N/A
MO9460
Aug.03, 2020 to Aug.10, 2010
The sample has no any deviation to the method of standard mentioned on page 1
Normal
PASS

*Note

The above device has been tested by QIMA (Hangzhou)Testing Technology Co.,Ltd To determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The test record, data evaluation & Equipment Under Test (EUT) configurations represented are contained in this test report and QIMA (Hangzhou) Testing Technology Co.,Ltd Is assumed full responsibility for the accuracy and completeness of test. Also, this report shows that the EUT is technically compliant with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced except in full, without written approval of QIMA (Hangzhou) Testing Technology Co.,Ltd, this document may be altered or revised by QIMA (Hangzhou) Testing Technology Co.,Ltd, personal only, and shall be noted in the revision of the document..



Date of Sample Received: July 31, 2020 Pages: Page 4 of 37

2. SYSTEM DESCRIPTION

TEST MODE DESCRIPTION						
NO.	NO. TEST MODE DESCRIPTION WORST					
1	1 Lighting on V					
Note: 1. V m	Note: 1. V means EMI worst mode.					

3. MEASUREMENT UNCERTAINTY

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in measurement" (GUM) published by ISO.

-Uncertainty of Radiated Emission, Uc = ±4.5dB



Date of Sample Received: July 31, 2020 Pages: Page 5 of 37

4. PRODUCT INFORMATION

Housing Type	Plastic and metal
EUT Input Rating	DC 6V by Button cell

I/O Port Information (□Applicable ⊠Not Applicable)

I/O Port of EUT						
I/O Port Type Number Cable Description Tested With						



Date of Sample Received: July 31, 2020 Pages: Page 6 of 37

5. SUPPORT EQUIPMENT

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
-	-	-	-	-	-



Date of Sample Received: July 31, 2020 Pages: Page 7 of 37

6. TEST FACILITY

Site	QIMA (Hangzhou) Testing Technology Co.,Ltd.
Location 4-5/F A2 BLDG NO. 1213 HUOJU SOUTH ROAD PUYAN STREET BINJIANG	
	DISTRICT HANGZHOU CHINA

7. TEST EQUIREMENT LIST

TEST EQUIPMENT OF RADIATED EMISSION TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
EMI Test Receiver	Rohde&Schwarz	ESU 8	100471	Sep.19,2019	Sep.18,2020
Log Periodic Antenna	Schwarzbeck	VULB 9163	9163-603	Sep.19,2019	Sep.18,2020
3m					
Semi-anechoic Chamber	TDK	966	201244UH0077	Sep.29,2019	Sep.28,2020
Preamplifier	Schwarzbeck	BBV9743	9743-0071	Apr.16,2020	Apr.15,2021
Video Generator	Tronson	TAG-101	Tr17052027	N/A	N/A

TEST EQUIPMENT OF RADIATED ELECTROMAGNETIC DISTURBANCE TEST

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Triple Loop	Schwarzbeck	HXYZ9170-246	201244UH0018	Sep.25,2019	Sep.24,2020
Antenna	Scriwarzbeck	NA129170-240	2012440110016	3ep.23,2019	3ep.24,2020
EMI Test	KEVCICUT	NOOZOA	NAVE 4120002	Amr. 1C 2020	Amr 15 2021
Receiver	KEYSIGHT	N9038A	MY54130082	Apr.16,2020	Apr.15,2021

TEST EQUIPMENT OF ESD TEST

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
ESD Generator	TESEQ	NSG438	1240	Sep.24,2019	Sep.23,2020



Date of Sample Received: July 31, 2020 Pages: Page 8 of 37

TEST EQUIPMENT OF RS IMMUNITY TEST

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Transmitting	Schwarzbeck	VULP9118	D69250	Sep.25,2019	Sep.24,2020
Antenna		E-921		, ,	, ,
Amplifier (80- 1000MHz)	MILMEGA	80RF1000-175	1055332	Sep.25,2019	Sep.24,2020
Signal Generator	Agilent	N5181B	MY53050432	Sep.19,2019	Sep.18,2020
Directional Coupler	Werlatone	C5597-10	99814	Sep.25,2019	Sep.24,2020
Anechoic chamber	TDK	844	201244UH0078	Sep.19,2019	Sep.18,2020

TEST EQUIPMENT OF PFMF TEST

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Magnetic Field Generator	TESEQ	MFO 6501	185	Apr.24,2020	Apr.23,2020
Magnetic coil	TESEQ	INA 702	251	Apr.26,2020	Apr.25,2020



Date of Sample Received: July 31, 2020 Pages: Page 9 of 37

8.TEST SUNMMER LIST

Test item	Test Requirement	Test Method	Class/Severity	Result
CONDUCTED EMISSION	EN 55015	EN 55015	0.009MHz -30MHz	N/A
RADIATED EMISSION	EN 55015	EN 55015	30MHz -300MHz	Pass
RADIATED ELECTROMAGNETIC DISTURBANCE	EN 55015	EN 55015	0.009MHz -30MHz	Pass
Harmonic current emission	EN 61000-3-2	EN 61000-3-2	Class C	N/A
Voltage fluctuations & flicker	EN 61000-3-3	EN 61000-3-3	§5 of EN 61000-3-3	N/A
Electrostatic Discharge Immunity	EN 61547	EN 61000-4-2	± 8.0 kV (Air Discharge) ± 4.0 kV (Contact Discharge) ± 4.0 kV (Indirect Discharge)	Pass
Radiated RF Electromagnetic	EN 61547	EN 61000-4-3	3V/m with 80% AM. 1kHz Modulation.	Pass
Electrical fast transient/burst Immunity	EN 61547	EN 61000-4-4	+/- 1kV for Power Supply Lines	N/A
SURGE IMMUNITY	EN 61547	EN 61000-4-5	>25W +/-1kV (Line to Line) +/-2kV (Line to Ground) <25W +/-0.5kV (Line to Line) +/-1kV (Line to Ground)	N/A
Immunity to Conducted Disturbances Induced by RF fields	EN 61547	EN 61000-4-6	3V with 80% AM. 1 kHz Modulation	N/A
Power Frequency Magnetic Fields	EN 61547	EN 61000-4-8	50/60 Hz, 3A/m	Pass
Voltage dips and short interruptions immunity	EN 61547	EN 61000-4-11	PHASE ANGLE 0, 45, 90, 135, 180,225, 270, 315 degrees	N/A

Note: N/A means not applicable.



Test Report # 20A-004660(A3) Date of Report Issue: August 17, 2020
Date of Sample Received: July 31, 2020 Pages: Page 10 of 37

9. EN 55015 RADIATED EMISSION TEST

9.1. LIMITS OF RADIATED DISTURBANCES

AT 10M DISTANCES

Frequency (MHz)	Distance (m)	Maximum Field Strength Limit (dBuV/m Q.P.)
30-230	10	30.00
230-300	10	37.00

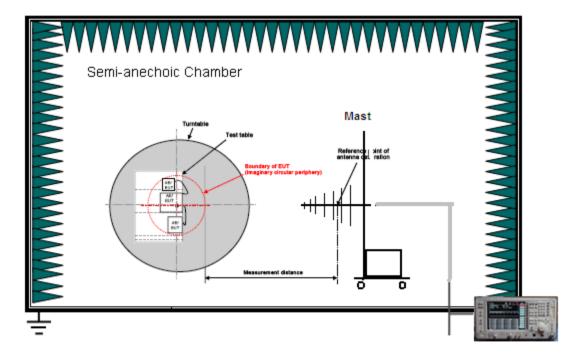
AT 3M DISTANCES

Frequency	Distance	Maximum Field Strength Limit
(MHz)	(m)	(dBuV/m Q.P.)
30-230	3	40.00
230-300	3	47.00

Note: The lower limit shall apply at the transition frequency

9.2. BLOCK DIAGRAM OF TEST SETUP

System Diagram of Connections between EUT and Simulators





Date of Sample Received: July 31, 2020 Pages: Page 11 of 37

9.3. PROCEDURE OF RADIATED EMISSION TEST

(1) The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden turntable with a height of 0.8 meters is used which is placed on the ground plane as per EN 55015 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 10 cm non-conductive covering to insulate the EUT from the ground plane.

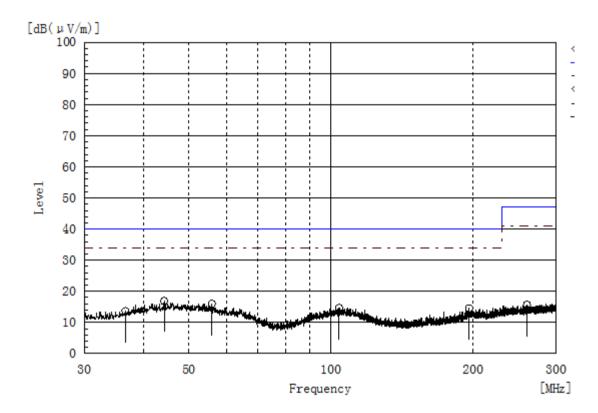
- (2) Support equipment, if needed, was placed as per EN 55015.
- (3) All I/O cables were positioned to simulate typical actual usage as per EN 55015.
- (4) The EUT was turned on.
- (5) The antenna was placed at 3 meters away from the EUT as stated in EN 55015. The antenna connected to the Analyzer via a cable and at times a pre-amplifier would be used.
- (6) The Analyzer / Receiver quickly scanned from 30MHz to 1000MHz. The EUT test program was started. Emissions were scanned and measured rotating the EUT to 360 degrees and positioning the antenna 1 to 4 meters above the ground plane, in both the vertical and the horizontal polarization, to maximize the emission reading level.
- (7) The test mode(s) were scanned during the test:
- (8) Recorded at least the six highest emissions. Emission frequency, amplitude, antenna position, polarization and turntable position were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit and Q.P./Peak reading is presented.



Date of Sample Received: July 31, 2020 Pages: Page 12 of 37

9.4. TEST RESULT OF RADIATED EMISSION TEST

Radiated Emission Test at 3m Distance-Horizontal



Frequency (MHz)	Polarization	Reading PK (dBuV)	Factor dB(1/m)	Level PK (dBuV/m)	Limit QP (dBuV/m)	Marge QP (dB)	Height (cm)	Angle deg	Pass/Fail
44.256	Н	29.6	-12.7	16.9	40.0	23.1	100.0	8.7	Pass
55.866	Н	29.3	-13.2	16.1	40.0	23.9	303.0	347.0	Pass
103.980	Н	29.1	-14.4	14.7	40.0	25.3	303.0	309.7	Pass
196.158	Н	30.0	-15.4	14.6	40.0	25.4	100.0	346.2	Pass
260.256	Н	29.5	-13.8	15.7	47.0	31.3	100.0	291.8	Pass
36.642	Н	28.2	-14.5	13.7	40.0	26.3	100.0	358.8	Pass



20A-004660(A3)

Date of Report Issue:

August 17, 2020

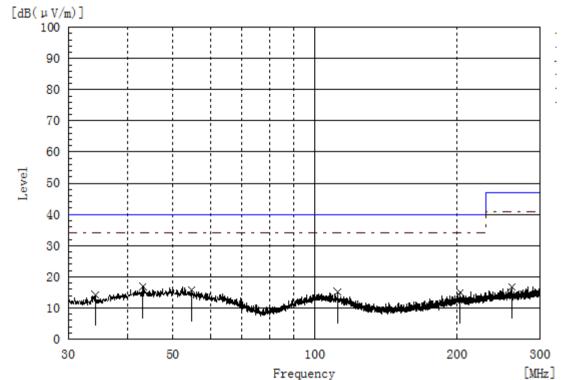
Date of Sample Received:

July 31, 2020

Pages:

Page 13 of 37

Radiated Emission Test at 3m Distance-Vertical



				•	-				
Frequency (MHz)	Polarizatio n	Reading PK (dBuV)	Factor dB(1/m)	Level PK (dBuV/m)	Limit QP (dBuV/m)	Marge QP (dB)	Height (cm)	Angle deg	Pass/Fail
34.212	V	29.7	-15.4	14.3	40.0	25.7	100.0	351.8	Pass
43.176	V	29.5	-12.7	16.8	40.0	23.2	100.0	117.3	Pass
54.732	V	28.7	-12.9	15.8	40.0	24.2	100.0	356.0	Pass
111.702	V	30.3	-15	15.3	40.0	24.7	100.0	331.7	Pass
203.070	V	30.1	-15.2	14.9	40.0	25.1	297.0	6.3	Pass
261.714	V	30.6	-13.8	16.8	47.0	30.2	197.0	354.8	Pass



Date of Sample Received: July 31, 2020 Pages: Page 14 of 37

10. EN 55015 RADIATED EMISSION ELECTROMAGENTIC DISTURBANCE TEST

10.1. LIMITS OF RADIATED ELECTROMAGENTIC DISTURBANCE IN THE RANGE 9 KHz TO 30MHz

Frequency Range	Limits for Loop Diameter dB(uA)*					
rrequerity name	2m	3m	4m			
9 KHz-70 KHz	88*	81*	75*			
70 KHz-150 KHz	88 to 58**	81 to 51**	75 to 45**			
150 kHz-3.0 MHz	58 to 22**	51 to 15**	45 to 9**			
3.0 MHz-30 MHz	22***	15 to 16***	9 to 12***			

Note:

- * At the transition frequency, the lower limit applies.
- * * Decreasing linearly with the logarithm of the frequency. For electrode less lamps and luminaries, the limit in the frequency range of 2.2 MHz to 3.0 MHz is 58 dB(uA) for 2m, 51 dB(uA) for 3m and 45 dB(uA) for 4m loop diameter.
- * * * Increasing linearly with the logarithm of the frequency.



20A-004660(A3)

Date of Report Issue:

August 17, 2020

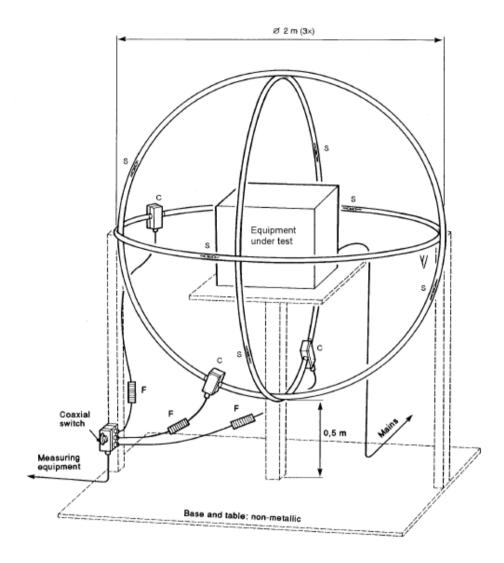
Date of Sample Received:

July 31, 2020

Pages: P

Page 15 of 37

10.2 BLOCK DIAGRAM OF TEST SETUP



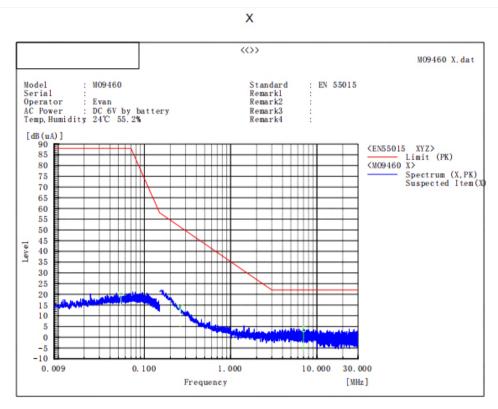
10.3. TEST PROCEDURE

The magnetic component shall be measured by means of a loop antenna as described in EN 55015. The lighting equipment shall be placed in the centre of the antenna, and the position is not critical. The test object was operated at its upper limit of its rated voltage and its rated frequency. The induced current in the loop antenna is measured by means of a current probe(1V/A) and the CISPR measuring receiver. By means of a coaxial switch the three field directions can be measured in sequence. Each value shall fulfill the requirements given.



Date of Sample Received: July 31, 2020 Pages: Page 16 of 37

10.4. TEST RESULTS OF RADIATED ELECTROMAGNETIC DISTURBANCE



Frequency MHz	Line Phase	Reading dB(uV)	Factor dB(1/Ohm)	Level dB(uA)	Limit dB(uA)	Margin dB	Pass/Fail
0.0536	X	20.6	0.0	20.6	88.0	67.4	Pass
0.26022	X	14.4	0.1	14.5	51.4	36.9	Pass
7.003	X	3.5	0.2	3.7	22.0	18.3	Pass



Date of Sample Received:

20A-004660(A3)

July 31, 2020

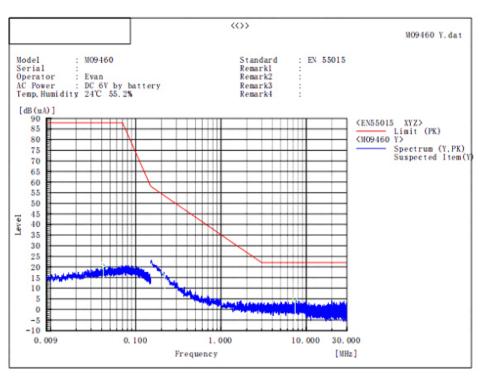
Date of Report Issue:

August 17, 2020

Page 17 of 37

Υ

Pages:



Frequency MHz	Line Phase	Reading dB(uV)	Factor dB(1/Ohm)	Level dB(uA)	Limit dB(uA)	Margin dB	Pass/Fail
0.04199	Y	21.3	0.0	21.3	88.0	66.7	Pass
0.21828	Y	17.4	0.1	17.5	53.5	36.0	Pass
7.381	Y	4.1	0.2	4.3	22.0	17.7	Pass



Test Report #

20A-004660(A3)

July 31, 2020

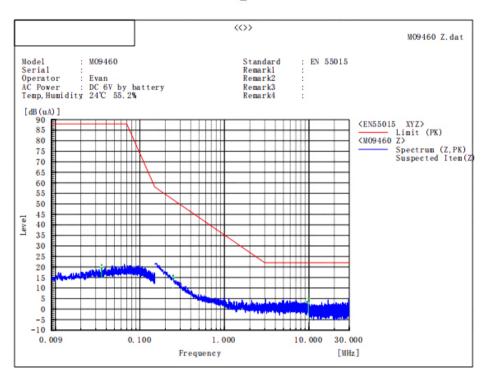
Date of Report Issue:

August 17, 2020

Page 18 of 37

Z

Pages:



Frequency MHz	Line Phase	Reading dB(uV)	Factor dB(1/Ohm)	Level dB(uA)	Limit dB(uA)	Margin dB	Pass/Fail
0.03518	Z	21.3	0.0	21.3	88.0	66.7	Pass
0.24718	Z	16.2	0.1	16.3	52.0	35.7	Pass
9.826	Z	3.8	0.2	4.0	22.0	18.0	Pass

RESULT: PASS



Date of Sample Received: July 31, 2020 Pages: Page 19 of 37

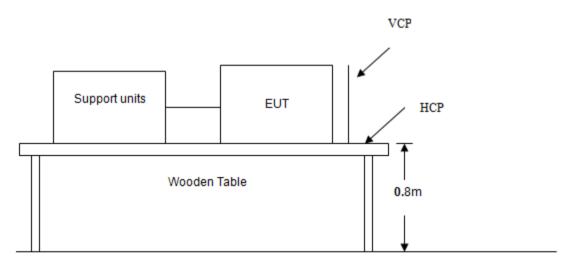
11. EN 61000-4-2 ESD IMMUNITY TEST

ELECTROMAGENTIC DISCHARGE (ESD) IMMUNITY TEST

Port	Enclosure	
Basic Standard	EN 61000-4-2	
Test Level	± 8.0 kV (Air Discharge)	
	\pm 4.0 kV (Contact Discharge)	
	\pm 4.0 kV (Indirect Discharge)	
Standard require	В	
Temperature	23.3℃	
Humidity	57.3%	

11.1. BLOCK DIAGRAM OF TEST SETUP

(The 470 k ohm resistors are installed per standard requirement)



Ground Reference Plane₽



Date of Sample Received: July 31, 2020 Pages: Page 20 of 37

11.2. TEST PROCEDURE

The EUT was located 0.1 m minimum from all side of the HCP.

The support units were located 1 m minimum away from the EUT.

EUT worked with resistance load, and make sure EUT worked normally.

Actives the communication function if the EUT with such port(s).

As per the requirement of EN 61547: Contact discharge is the preferred test method, twenty discharges (10 with positive and 10 with negative polarity) shall be applied on each accessible metallic part of the enclosure, terminals are excluded. Air discharges shall be used where contact discharges cannot be applied. Discharges shall be applied on the horizontal or vertical coupling planes as specified in EN 61000-4-2.

The following test condition was followed during the tests.

Note: As per the A2 to EN 61000-4-2, a bleed resistor cable is connected between the EUT and HCP during the test.

The electrostatic discharges were applied as follows:

Voltage	Coupling	Test Performance	Result
± 4kV	Contact Discharge	No function loss	А
± 4kV	Indirect Discharge HCP (Front)	No function loss	А
± 4kV	Indirect Discharge HCP (Left)	No function loss	А
± 4kV	Indirect Discharge HCP (Back)	No function loss	А
± 4kV	Indirect Discharge HCP (Right)	No function loss	А
± 4kV	Indirect Discharge VCP (Front)	No function loss	А
± 4kV	Indirect Discharge VCP (Left)	No function loss	А
± 4kV	Indirect Discharge VCP (Back)	No function loss	А
± 4kV	Indirect Discharge VCP (Right)	No function loss	А
± 8kV	Air Discharge	No function loss	А



Date of Sample Received: July 31, 2020 Pages: Page 21 of 37

11.3. PERFORMANCE & RESULT

Criteria A:	The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.
Criteria B:	The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
Criteria C:	Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

⊠PASS	FAIL



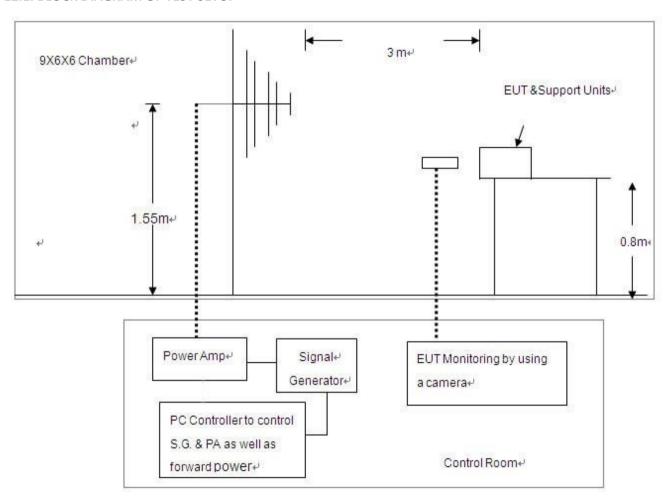
Test Report # 20A-004660(A3) Date of Report Issue: August 17, 2020
Date of Sample Received: July 31, 2020 Pages: Page 22 of 37

12. EN 61000-4-3 RS IMMUNITY TEST

RADIATED ELECTROMAGNETIC FIELD IMMUNITY TEST

Port	Enclosure
Basic Standard	EN 61000-4-3
Test Level	3V/m with 80% AM. 1kHz Modulation.
Standard require	A
Temperature	23.4°C
Humidity	58%

12.1. BLOCK DIAGRAM OF TEST SETUP





Date of Sample Received: July 31, 2020 Pages: Page 23 of 37

12.2. TEST PROCEDURE

The EUT was located at the edge of supporting table keep 3 meter away from transmitting antenna, it just the calibrated square area of field uniformity. The support units were located outside of the uniformity area, but the cable(s) connected with EUT were exposed to the calibrated field as per EN 61000-4-3.

EUT worked with resistance load, and make sure EUT worked normally.

Setting the testing parameters of RS test software per EN 61000-4-3.

Performing the test at each side of with specified level (3V/m) at 1% steps and test frequency from 80MHz to 1000MHz

Recording the test result in following table.

EN 61000-4-3 Final test conditions:

Test level: 3V/m

Steps: 1 % of fundamental

Dwell Time: 1 sec

Range (MHz)	Field	Modulation	Polarity	Position	Test Performance	Result
80-1000	3V/m	AM	Н	Front	No function loss	Α
80-1000	3V/m	AM	Н	Left	No function loss	Α
80-1000	3V/m	AM	Н	Back	No function loss	Α
80-1000	3V/m	AM	Н	Right	No function loss	Α
80-1000	3V/m	AM	V	Front	No function loss	Α
80-1000	3V/m	AM	V	Left	No function loss	Α
80-1000	3V/m	AM	V	Back	No function loss	Α
80-1000	3V/m	AM	V	Right	No function loss	Α



Date of Sample Received: July 31, 2020 Pages: Page 24 of 37

12.3. PERFORMANCE & RESULT

Criteria A:	The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.
Criteria B:	The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
Criteria C:	Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

⋈ D	A C C	IEAH
		IFAII
	733	FAIL



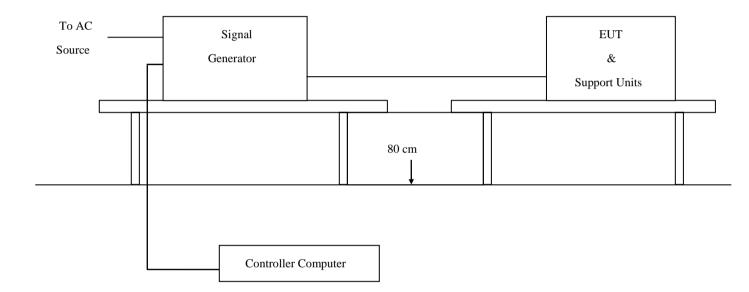
Date of Sample Received: July 31, 2020 Pages: Page 25 of 37

13. EN 61000-4-8 PFMT TEST

POWER FREQUENCY MAGNETIC FIELDS IMMUNITY TEST

Port	Enclosure		
Basic Standard	EN 61000-4-8		
Test Level	50/60 Hz, 3A/m		
Standard require	A		
Temperature	23.2℃		
Humidity	57.0%		

13.1. BLOCK DIAGRAM OF TEST SETUP





Date of Sample Received: July 31, 2020 Pages: Page 26 of 37

13.2. TEST PROCEDURE

The EUT shall be subjected to the test magnetic field by using the induction coil of standard dimensions ($1m \times 1m$). The induction coil shall then be rotated by 90° in order to expose the EUT to the test field with different orientations.

Test Condition:

Frequency	Polarity	Level	Test Performance	Performance Result
50 Hz	Х	3 A/m	No function loss	Α
50 Hz	Υ	3 A/m	No function loss	Α
50 Hz	Z	3 A/m	No function loss	А

13.3. PERFORMANCE & RESULT

Criteria A:	The apparatus continues to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance.
Criteria B:	The apparatus continues to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended. In some cases the performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is however allowed.
Criteria C:	Temporary loss of function is allowed, provided the functions self recoverable or can be restored by the operation of controls.

⊠PASS	∏FAIL	



20A-004660(A3)

Date of Report Issue:

August 17, 2020

Date of Sample Received:

July 31, 2020

Pages: Page 27 of 37

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

EN 55015 RADIATED EMISSION TEST SETUP



EN 55015 RADIATED ELECTROMAGNETIC DISTURBANCE TEST





20A-004660(A3)

Date of Report Issue:

August 17, 2020

Date of Sample Received:

July 31, 2020

Pages: Page 28 of 37

EN 61000-4-2 ESD IMMUNITY TEST SETUP



EN 61000-4-3 RS IMMUNITY TEST SETUP





Test Report #

20A-004660(A3)

July 31, 2020

Date of Report Issue:

August 17, 2020

Pages: Page 29 of 37

EN 61000-4-8 PPFT TEST SETUP





20A-004660(A3)

Date of Report Issue:

August 17, 2020

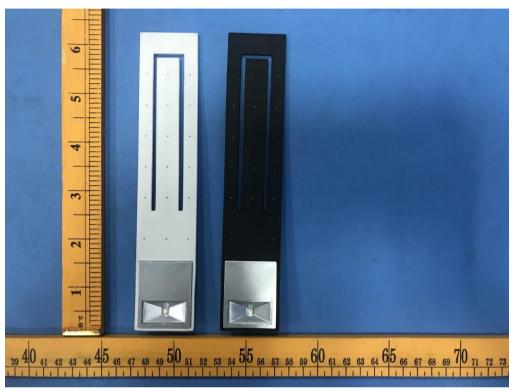
Date of Sample Received:

July 31, 2020

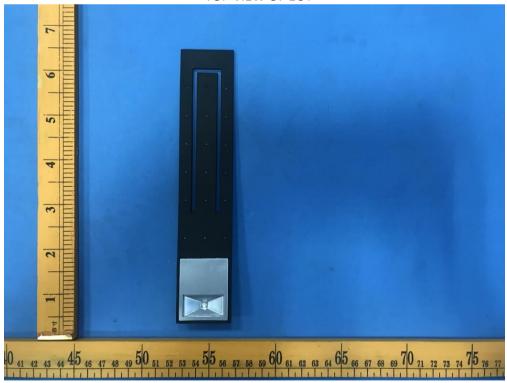
Pages: Page 30 of 37

APPENDIX B: PHOTOGRAPHS OF EUT

ALL VIEW OF EU



TOP VIEW OF EUT





Test Report #

20A-004660(A3)

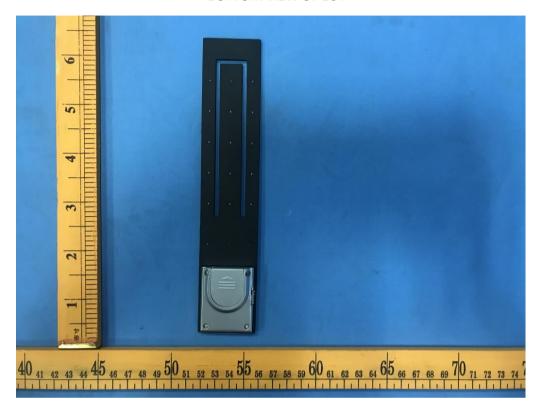
July 31, 2020

Date of Report Issue:

August 17, 2020

Pages: Page 31 of 37

BOTTOM VIEW OF EUT



FRONT VIEW OF EUT





Test Report #

20A-004660(A3)

July 31, 2020

Date of Report Issue:

August 17, 2020

Pages: Page 32 of 37

BACK VIEW OF EUT



LEFT VIEW OF EUT





Test Report #

20A-004660(A3)

July 31, 2020

Date of Report Issue:

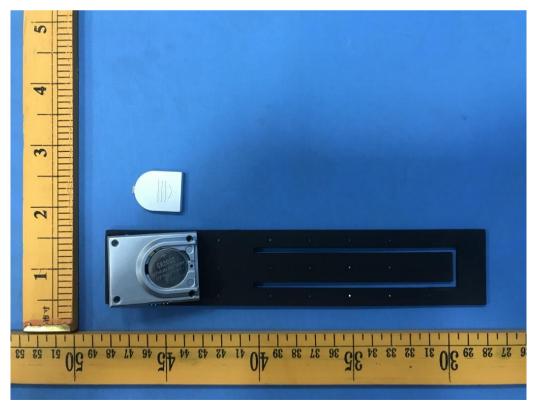
August 17, 2020

Pages: Page 33 of 37

RIGHT VIEW OF EUT



OPEN VIEW OF EUT-1





20A-004660(A3)

Date of Report Issue:

August 17, 2020

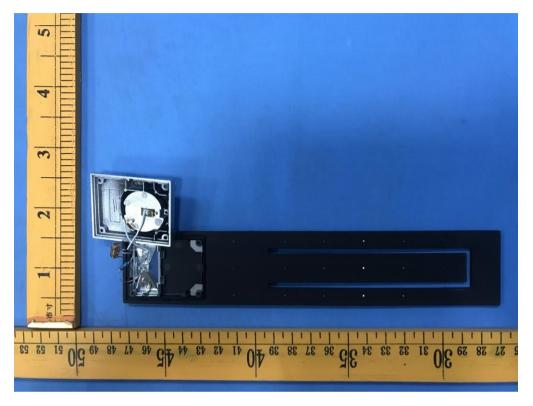
Date of Sample Received:

July 31, 2020

Pages:

Page 34 of 37

OPEN VIEW OF EUT-2



----END OF REPORT----



20A-004660(A3)

July 31, 2020

Date of Report Issue:

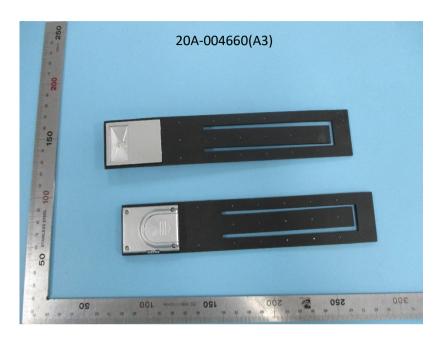
Pages:

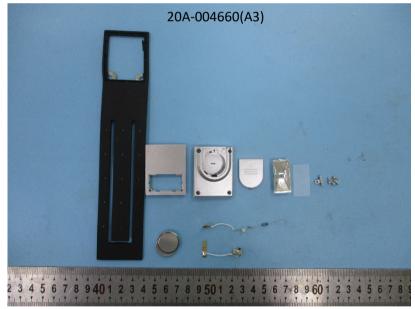
August 17, 2020

Page 35 of 37

SAMPLE PHOTO:

Date of Sample Received:







20A-004660(A3)

July 31, 2020

Date of Report Issue:

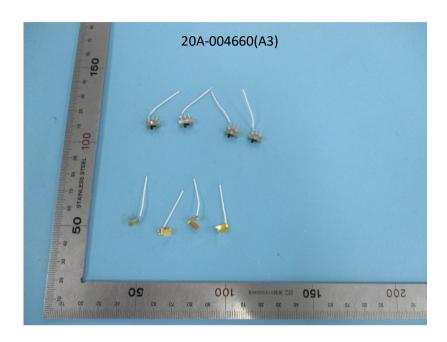
Pages:

August 17, 2020

Page 36 of 37

SAMPLE PHOTO:

Date of Sample Received:





20A-004660(A3)

July 31, 2020

Date of Report Issue:

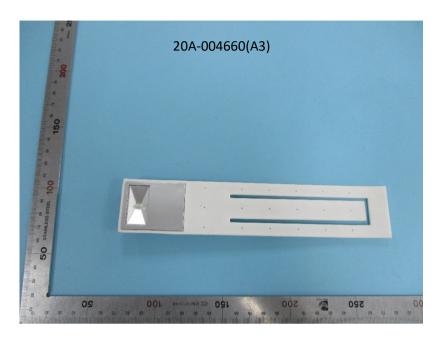
Pages:

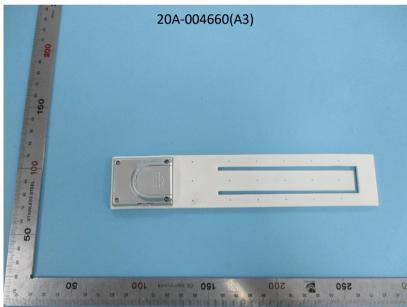
August 17, 2020

Page 37 of 37

PRODUCT PHOTO:

Date of Sample Received:





-End Report-