TEST REPORT

APPLICANT	:	Xiamen Zhichuangcheng Technology Co., LTD
PRODUCT NAME	:	Concrete 3D printing machine
MODEL NAME	:	zcc0202
BRAND NAME	:	N/A
STANDARD(S)	:	EN 55032:2015/A11:2020 Annex A3
RECEIPT DATE	:	2022-09-20
TEST DATE	:	2022-09-20
ISSUE DATE	:	2022-09-23

Edited by: Qijie Xiao

Approved by: Anne Liu

Morlab Test Laboratory

XIAMEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.
Unit 235-253, No.4 Gaodian Road, Xiamen Area, Pilot Free Trade Zone (Fujian) , P. R. China

Tel: +86 592 5612050
Fax: +86 592 5612095

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Template History		
Version	**Date**	**Controlled number**
1.0	2022-09-23	First edition

1. Technical Information

Note: Provide by manufacturer.

1.1. Applicant and Manufacturer Information

Applicant:	Xiamen Zhichuangcheng Technology Co., LTD
Applicant Address:	206 Xiamen Industrial Design Center, 84 Longshan South Road, Siming District, Xiamen City

1.2. Equipment Under Test (EUT) Description

EUT Type:	Concrete 3D printing machine
Serial No:	N/A
Model Name:	zcc0202
Hardware Version:	N/A
Software Version:	N/A

Note:

1. For a more detailed description, please refer to specification or user's manual supplied by the applicant and/or manufacturer.

2. Test Results

2.1. Applied Reference Documents

The objective of the report is to perform testing according to following standards for CE marking:

No.	Identity	Document Title
1	EN 55032:2015/A11:2020 Annex A3	Electromagnetic compatibility of multimedia equipment - Emission requirements

Test detailed items required and results are listed as below (the latest versions of basic standards are applied):

No.	Base Standard	Test Type	Test Date	Test Engineer	Result	Method determination /Remark
Emission						
1	EN 55032:2015/A11:2020 Annex A3	Radiated Emission	2022-09-20	Peng Fuwei	PASS	No deviation

2.2. EUT Setup and Operating Conditions

Frequency range was investigated: Radiated emission test: from 30 MHz to 1000 MHz.

Note: All of the following test modes are tested in all the test items.

Test Mode	
Mode 1 :	EUT ON

During the test,the environmental conditions were as follows:

Category	Shield room
Temperature():	23.4
Relative Humidity(%):	53
Atmospheric Pressure(kPa):	N/A

3. Emission Tests

3.1. Radiated Disturbance

3.1.1. Limits of Radiated Disturbance

Frequency range (MHz)	Quasi-Peak Limit (dBμV/m)	---
30 – 230	50	---
230 – 1000	57	---

Note:

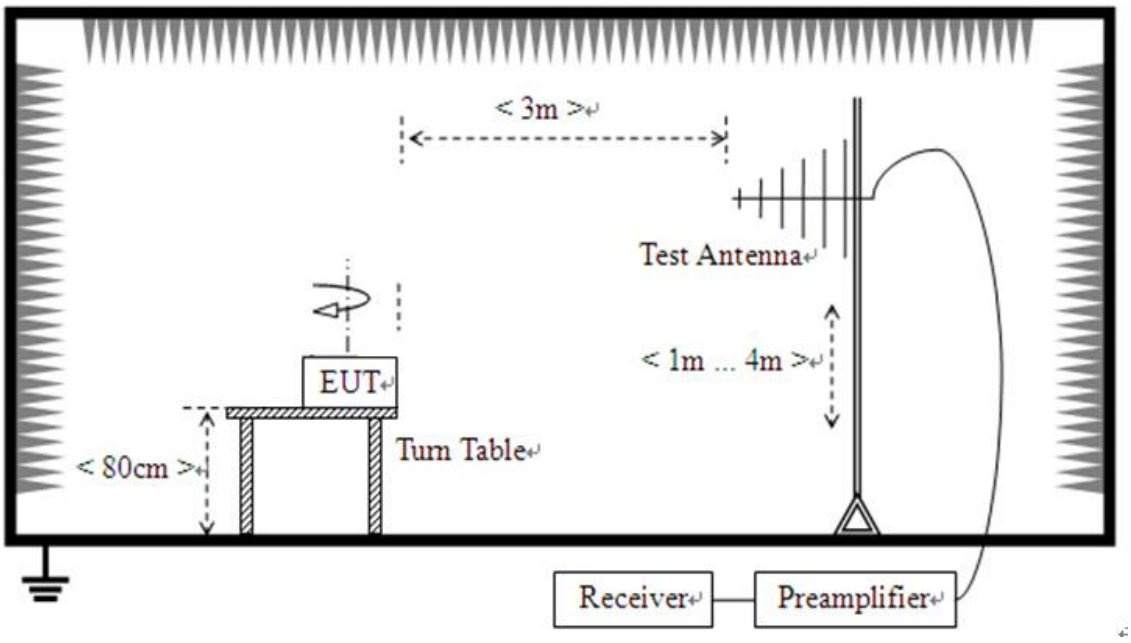
1. The limit is applicable to 3m measurement distance.
2. The lower limit shall apply at the transition frequency.
3. Additional provisions may be required for cases where interference occurs.

3.1.2. Test Procedure

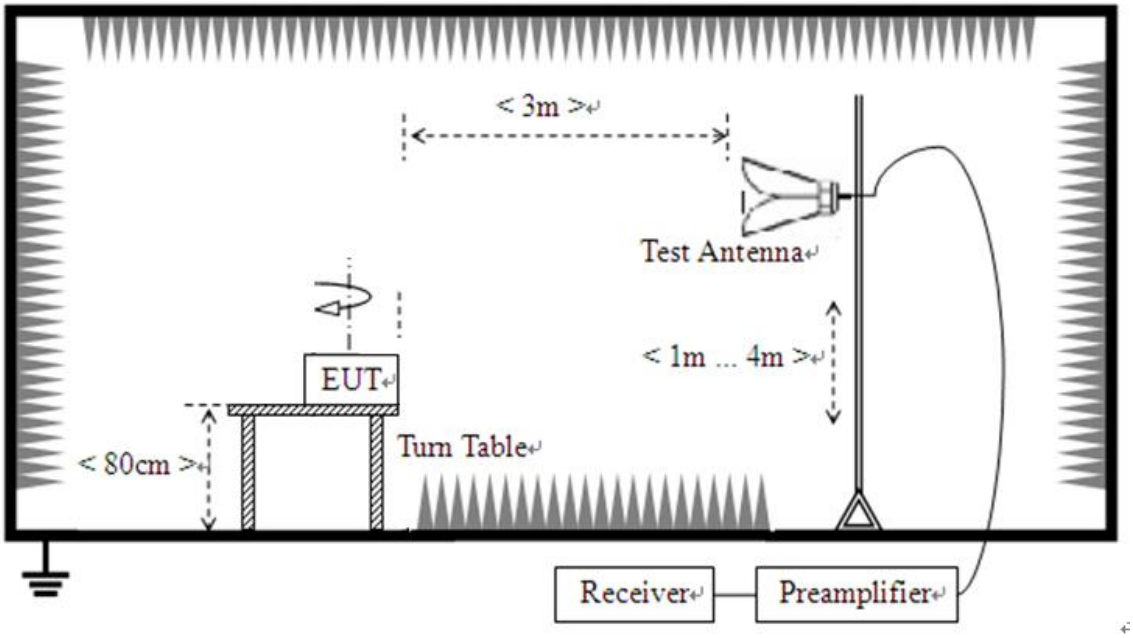
1. The test is performed in a 3m Semi-Anechoic Chamber; the antenna factor. The EUT is placed on a 0.8m high insulating Turn Table, and keeps 3m away from the Test Antenna, which is mounted on a variable-height antenna master tower.
2. For each suspected emission, the EUT is arranged to its worst case and then the Test Antenna is tuned to the heights from 1 to 4m and the Turn Table is tuned from 0 to 360 degrees to find the maximum reading.
3. The Test Antenna is a bi-log one, and its height is varied from 1 to 4m above the ground to determine the maximum value of the field strength. Both the vertical and the horizontal polarization of the Test Antenna are considered to perform the tests.
4. The maximum radiated emission is searched using PK, QP and AV detectors; the emission levels more than the limits, and that have narrow margins from the limits will be re-measured with QP and AV detectors.

3.1.3. Test Setup

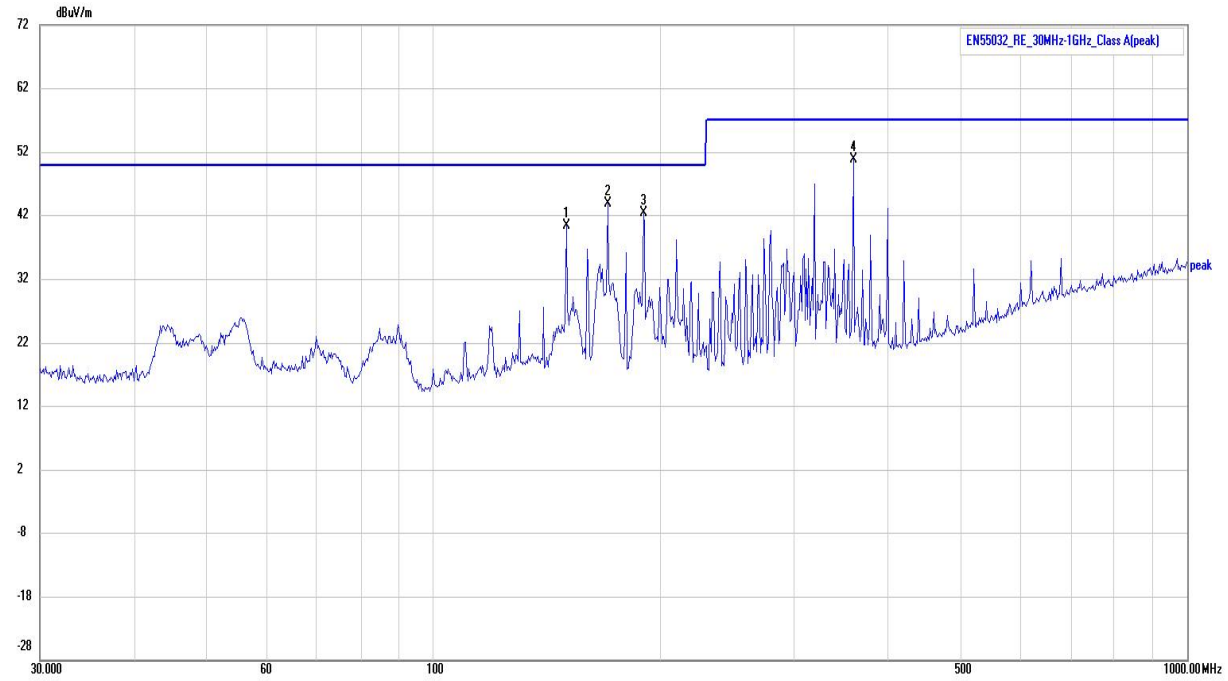
1） For radiated emissions from 30MHz to1GH



2) For radiated emissions above 1GHz

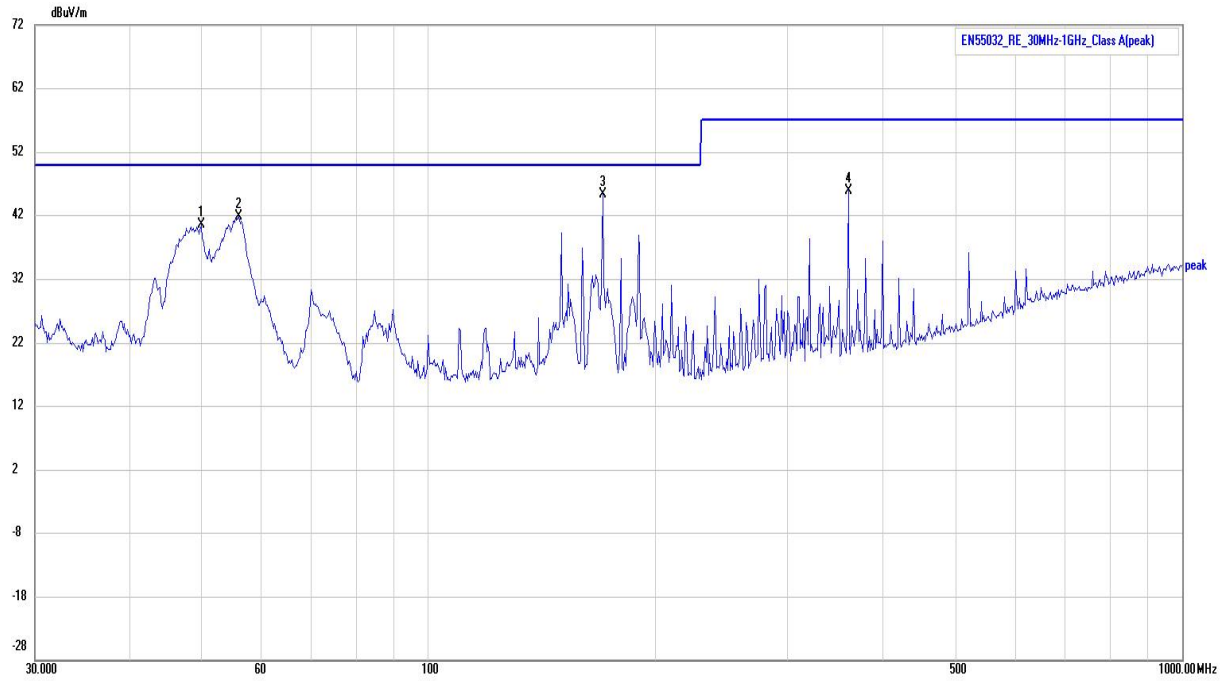


3.1.4. Test Result



(Plot: ANT-Horizontal,30MHz - 1GHz)

Frequency	Reading	Correction	Result	Limit	Margin	Detector
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
150.011	27.43	12.96	40.39	50.00	-9.61	peak
170.195	30.94	12.90	43.84	50.00	-6.16	peak
189.739	30.38	12.00	42.38	50.00	-7.62	peak
360.448	34.83	16.02	50.85	57.00	-6.15	peak



(Plot: ANT-Vertical,30MHz - 1GHz)

Frequency	Reading	Correction	Result	Limit	Margin	Detector
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
49.881	28.52	11.99	40.51	50.00	-9.49	peak
56.001	29.68	12.22	41.90	50.00	-8.10	peak
170.195	32.45	12.90	45.35	50.00	-4.65	peak
360.448	29.96	16.02	45.98	57.00	-11.02	peak

Annex A Test 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 Measurement

Measuring Uncertainty for a Level of Confidence of 95%(U=2Uc(y))	30MHz-200MHz	±4.40dB
	200MHz-1000MHz	±4.53dB
	1GHz-6GHz	±5.48dB

Annex B Testing Laboratory Information

1. Identification of the Responsible Testing Laboratory

Company Name:	Xiamen Morlab Communications Technology Co., Ltd.
Address:	Unit 235-253, No.4 Gaodian Road, Xiamen Area, Pilot Free Trade Zone (Fujian) , P. R. China
Telephone:	+86-592-5612050
Facsimile:	+86-592-5612095

2. Identification of the Responsible Testing Location

Name:	Xiamen Morlab Communications Technology Co., Ltd.
Address:	Unit 235-253, No.4 Gaodian Road, Xiamen Area, Pilot Free Trade Zone (Fujian) , P. R. China

3. Test Software Utilized

Model	Version Number	Producer	Test Item
EZ_EMC	EMEC-5A2.1	Shenzhen	RE

4. Test Equipment Utilized

Description	Manufacturer	Model	Serial No.	Cal.Due Date
EMI Receiver	R&S/Germany	ESCI3	100783	2022-12-27
Broadband log-periodic antenna	Schwarzbeck/ Germany	VULB 9168	1358	2022-12-30
EMC chamber	Shenzhen	9m*6m*6m	N/A	2026-10-26

Annex D Matters Needing Attention

1. The report is invalid without the seal of the inspection unit.

2. The report has no editor and approver signature is invalid.

3. The alteration of the report is invalid.

4. If you have any objections to the test report, please submit it to the test unit within 15 days of receiving the report.

5. "P" means "test results meet the requirements", "F" means "test results do not meet the requirements", "N/A" means "the requirements do not apply to this product","/" means "not tested".

6. "*" means that the project is not within the scope of CNAS/CMA accreditation. (This description is only applicable to the case with the CNAS/CMA stamp).

END OF REPORT