

# EMC Test Report

Applicant: Qingdao Vzense Technology Co., Ltd.

Product: TOF CAMERA

Model: DCAM560C Pro, DCAM560C Lite

In accordance with EN IEC 61000-6-4, EN IEC 61000-6-2, EN IEC 61000-3-2 and EN 61000-3-3




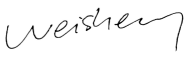


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Prepared for: Qingdao Vzense Technology Co., Ltd.  
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No. 393 Songling Road, Laoshan District, 266100 Qingdao,  
Shandong, PEOPLE'S REPUBLIC OF CHINA

**COMMERCIAL-IN-CONFIDENCE**

Report Number: 4842022311600

RESPONSIBLE FOR	NAME	SIGNATURE	DATE
Approved By	Weisheng Jiang 		2022.09.20
Prepared By	Peng Liu 		2022.09.20

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Product Service document control rules.

## EXECUTIVE SUMMARY

Two samples of these products were tested and found to be compliant with EN IEC 61000-6-2:2019, EN IEC 61000-6-4:2019, EN IEC 61000-3-2:2019/A1:2021 and EN 61000-3-3:2013/A1:2019/A2:2021.

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## Contents

<b>1</b>	<b>Report Summary .....</b>	<b>3</b>
1.1	Report Modification Record.....	3
1.2	Introduction.....	3
1.3	Brief Summary of Results .....	4
1.4	Product Information .....	5
1.5	Deviations from the Standard.....	6
1.6	Test Location.....	6
<b>2</b>	<b>Test Details .....</b>	<b>7</b>
2.1	Emission - Enclosure port .....	7
2.2	Emission - Low voltage AC mains port .....	19
2.3	Emission - Wired network port .....	30
2.4	Flicker .....	36
2.5	Immunity - Enclosure port - Electrostatic discharge.....	41
2.6	Immunity - Enclosure port - Radio-frequency electromagnetic field. Amplitude modulated .....	44
2.7	Immunity - Input and output AC power ports - Fast transients .....	47
2.8	Immunity - Wired network port - Fast transients .....	50
2.9	Immunity - Input and output AC power ports - Surges.....	53
2.10	Immunity - Wired network port - Surges.....	56
2.11	Immunity - Input and output AC power ports - Radio-frequency common mode.....	58
2.12	Immunity - Wired network port - Radio-frequency common mode .....	61
2.13	Immunity - Input and output AC power ports - Voltage dips .....	64
2.14	Immunity - Input and output AC power ports - Voltage interruptions .....	67
<b>3</b>	<b>Test Equipment Information .....</b>	<b>70</b>
3.1	General Test Equipment Used.....	70
<b>4</b>	<b>Measurement Uncertainty .....</b>	<b>72</b>
<b>5</b>	<b>Photographs .....</b>	<b>73</b>

## 1 Report Summary

### 1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	15/09/2022

### 1.2 Introduction

The information contained in this report is intended to show verification of the EMC Qualification Approval Testing of the requirements of the standards for the tests listed in Section 1.3.

Applicant	Qingdao Vzense Technology Co., Ltd.
Address	3 Building, Qingdao Research Institute of Beihang University, No. 393 Songling Road, Laoshan District, 266100 Qingdao, Shandong, PEOPLE'S REPUBLIC OF CHINA
Manufacturer	Qingdao Vzense Technology Co., Ltd.
Address	3 Building, Qingdao Research Institute of Beihang University, No. 393 Songling Road, Laoshan District, 266100 Qingdao, Shandong, PEOPLE'S REPUBLIC OF CHINA
Model number(s)	DCAM560C Pro, DCAM560C Lite
Rated input	12-24V d.c.
Samples tested	667548-4, 667548-2
Test Specification	EN IEC 61000-6-2:2019, EN IEC 61000-6-4:2019, EN IEC 61000-3-2:2019/A1:2021 and EN 61000-3-3:2013/A1:2019/A2:2021.
Date of Receipt of EUT	05/08/2022
Start of Test	05/08/2022
Finish of Test	20/08/2022
Name of Engineer(s)	Peng Liu

### 1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with EN IEC 61000-6-4, EN IEC 61000-6-2, EN IEC 61000-3-2, EN 61000-3-3 is shown below.

Section	Specification	Clause	Test Description	Result	Comments/Base Standard
2.1	EN IEC 61000-6-4:2019	9 Table 3; 3.1	Emission - Enclosure port	Pass	--
2.2	EN IEC 61000-6-4:2019	9 Table 4; 4.1	Emission - Low voltage AC mains port	Pass	--
2.3	EN IEC 61000-6-4:2019	9 Table 5; 5.1	Emission – wired network port	Pass	
	EN IEC 61000-3-2:2019/A1:2019	7	Harmonic current emission	N/A	
2.4	EN 61000-3-3:2013/A1:2019/A2:2022	6	Flicker	Pass	
2.5	EN IEC 61000-6-2:2019	9 Table 1; 1.4	Immunity - Enclosure ports - Electrostatic discharge	Pass	IEC 61000-4-2
2.6	EN IEC 61000-6-2:2019	9 Table 1; 1.2, 1.3	Immunity - Enclosure ports - Radio-frequency electromagnetic field. Amplitude modulated	Pass	IEC 61000-4-3
2.7	EN IEC 61000-6-2:2019	9 Table 3; 3.3	Immunity - Input and output AC power ports - Fast transients	Pass	IEC 61000-4-4
2.8	EN IEC 61000-6-2:2019	9 Table 2; 2.3	Immunity - Wired network port - Fast transients	Pass	IEC 61000-4-4
2.9	EN IEC 61000-6-2:2019	9 Table 3; 3.2	Immunity - Input and output AC power ports - Surges	Pass	IEC 61000-4-5
2.10	EN IEC 61000-6-2:2019	9 Table 2; 2.2	Immunity - Wired network port - Surges	Pass	IEC 61000-4-5
2.11	EN IEC 61000-6-2:2019	9 Table 3; 3.1	Immunity - Input and output AC power ports - Radio-frequency common mode	Pass	IEC 61000-4-6
2.12	EN IEC 61000-6-2:2019	9 Table 2; 2.1 6	Immunity - Wired network port - Radio-frequency common mode	Pass	IEC 61000-4-6
	EN IEC 61000-6-2:2019	9 Table 1; 1.1 6	Immunity - Enclosure ports - Power-frequency magnetic field	N/A	IEC 61000-4-8
2.13	EN IEC 61000-6-2:2019	9 Table 4; 4.2	Immunity - Input and output AC power ports - Voltage dips	Pass	IEC 61000-4-11
2.14	EN IEC 61000-6-2:2019	9 Table 4; 4.3	Immunity - Input and output AC power ports - Voltage interruptions	Pass	IEC 61000-4-11

#### Remarks:

1. There is no requirement to do Harmonic Current Emissions test for equipment with a rated power of 75 W or less according to the standard of EN IEC 61000-3-2:2019/A1:2021.
2. There is no device sensitive to magnetic fields in the EUT, so it was not applicable for power frequency magnetic field.

## 1.4 Product Information

### 1.4.1 Technical Description

The Equipment Under Test (EUT) is TOF CAMERA. This is a Class A equipment. Operation of this equipment in a residential environment could cause radio interference.

All tests were performed on the model DCAM560C Pro, DCAM560C Lite.

### 1.4.2 EUT Port/Cable Identification

Port	Max Cable Length specified	Usage	Type	Screened
Enclosure Port	--	Enclosure	--	No
AC Power Port	--	AC power line	--	No
Wired network port	--	LAN cable	--	Yes

### 1.4.3 Test Configuration

Configuration	Description
1	AC Powered, the EUT was tested at 230V~/50Hz. Power supply by Delipo D08120030

### 1.4.4 Modes of Operation

Mode	Description
1	Keep EUT monitoring, measuring distance

### 1.4.5 Monitoring of Performance

The EUT works normally.

### 1.4.6 Performance Criteria

Performance criterion A: The apparatus shall continue to operate as intended during and 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. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Performance criterion B: The apparatus shall continue 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. During the test, degradation of performance is allowed, however no change of actual operating state or stored data is allowed to persist after test. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonable expect from the apparatus if used as intended.

Performance criterion C: Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls.

## 1.5 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

## 1.6 Test Location

The following tests were conducted at TÜV SÜD Certification and Testing (China) Co., Ltd.

Address:

No. 10 Huaxia Road (M)  
Dongting  
Wuxi  
Jiangsu Province  
214100  
China

Test Name	Name of Engineer(s)
Emission - Enclosure port	Tianshuo Yuan
Emission - Low voltage AC mains port	Tianshuo Yuan
Emission – wired network port	Tianshuo Yuan
Immunity - Enclosure ports - Electrostatic discharge	Tianshuo Yuan
Immunity - Enclosure ports - Radio-frequency electromagnetic field. Amplitude modulated	Tianshuo Yuan
Immunity - Input and output AC power ports - Fast transients	Tianshuo Yuan
Immunity - Wired network port - Fast transients	Tianshuo Yuan
Immunity - Input and output AC power ports - Surges	Tianshuo Yuan
Immunity - Wired network port - Surges	Tianshuo Yuan
Immunity - Input and output AC power ports - Radio-frequency common mode	Tianshuo Yuan
Immunity - Wired network port - Radio-frequency common mode	Tianshuo Yuan
Immunity - Enclosure ports - Power-frequency magnetic field	Tianshuo Yuan
Immunity - Input and output AC power ports - Voltage dips	Tianshuo Yuan
Immunity - Input and output AC power ports - Voltage interruptions	Tianshuo Yuan

## 2 Test Details

### 2.1 Emission - Enclosure port

#### 2.1.1 Specification Reference

EN IEC 61000-6-4:2019, Clause 9 Table 3; 3.1

#### 2.1.2 Equipment Under Test

DCAM560C Pro, DCAM560C Lite

#### 2.1.3 Date of Test

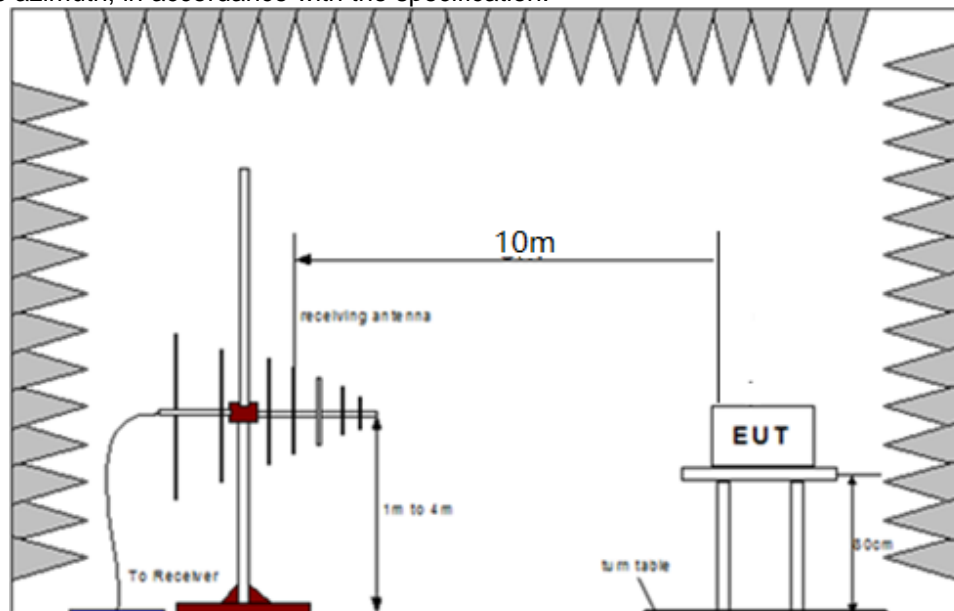
09/08/2022

#### 2.1.4 Test Method

Below 1 GHz

The EUT was set up in a semi-anechoic chamber on a remotely controlled turntable and placed on a non-conductive table 0.8 m above a reference ground plane.

A prescan of the EUT emissions profile was made while varying the antennae-to-EUT azimuth and antenna-to-EUT polarization using a peak detector; measurements were taken at a 3m distance. Using the prescan list of the highest emissions detected, their bearing and associated antenna polarization, the EUT was then formally measured using Quasi-Peak and Average detectors, as appropriate. The readings were maximized by adjusting the antenna height, polarization and turntable azimuth, in accordance with the specification.

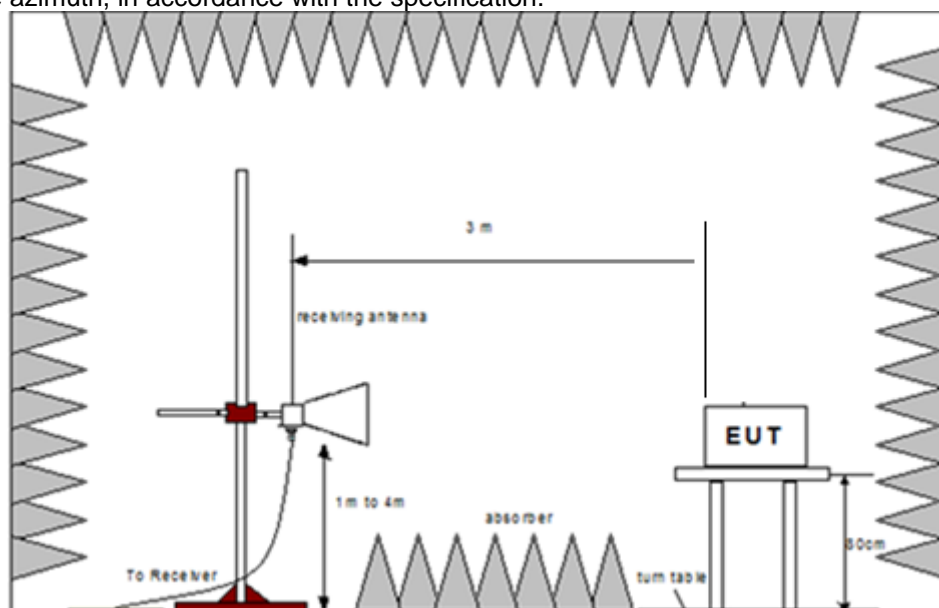


Above 1 GHz

The EUT was set up in a fully-anechoic chamber on a remotely controlled turntable and placed on a non-conductive table 0.8 m above a reference ground plane.

A prescan of the EUT emissions profile was made while varying the antennae-to-EUT azimuth and antenna-to-EUT polarization using a peak detector; measurements were taken at a 3m distance. Using the prescan list of the highest emissions detected, their bearing and associated antenna polarization, the EUT was then formally measured using Peak and Average detectors, as

appropriate. The readings were maximized by adjusting the antenna height, polarization and turntable azimuth, in accordance with the specification.



## 2.1.5 Environmental Conditions

Ambient Temperature 25.6 °C  
 Relative Humidity 58.2 %  
 Atmospheric Pressure 1002.8 mbar

## 2.1.6 Specification Limits

Port	Frequency range	Limits	Remarks
Enclosure Test facility: OATS or SAC	30 MHz to 230 MHz 230 MHz to 1000 MHz	40 dB(μV/m) quasi-peak at 10 m 47 dB(μV/m) quasi-peak at 10 m	May be measured at 3 m distance using the limits increased by 10 dB.
Enclosure Test facility: OATS, SAC or FAR	1 GHz to 3 GHz	76 dB(μV/m) peak at 3 m 56 dB(μV/m) average at 3 m	May be measured at greater distance with the limits decreased by 20 dB/decade (relative to distance)
	3 GHz to 6 GHz	80 dB(μV/m) peak at 3 m 60 dB(μV/m) average at 3 m	
NOTE: For apparatus containing devices operating at frequencies less than 9 kHz measurements only need to be performed up to 230 MHz.  If the highest internal frequency of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz. If the highest internal frequency of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz. If the highest internal frequency of the EUT is between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz. If the highest internal frequency of the EUT is above 1 GHz, the measurement shall be made up to 6 GHz.  Where the highest internal frequency if not known, tests shall be performed up to 6 GHz.  At transitional frequencies the lower limit applies.			



### **2.1.7 Test Results**

Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

Highest frequency generated or used within the EUT: 1GHz

Which necessitates an upper frequency test limit of: 6GHz

## Common Information

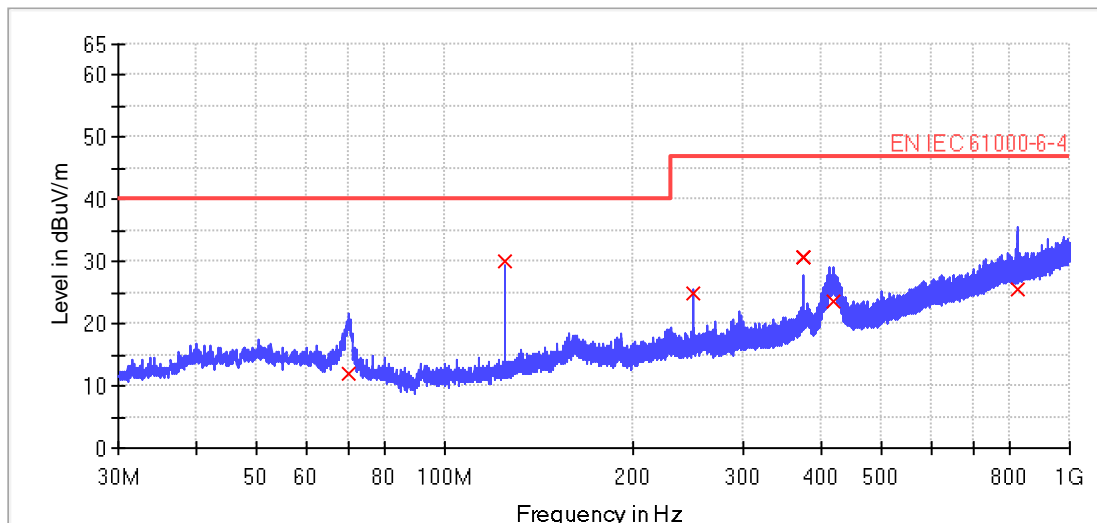
Test Description: 30-1000MHz Radiated Emission  
EUT: TOF CAMERA  
Model: DCAM560C Pro  
Client: Qingdao Vzense Technology Co.,Ltd.  
Operating Conditions: Power on,normal operation  
Operator Name: Zheng Xu  
Input: AC 230V 50Hz  
Sample No.: 667548-3  
Test Standard: EN IEC 61000-6-4  
Comment: Horizontal  
Comment: Temp.: 25.6°C, Humi.: 58.2%, Atm.:1002.8hPa

## Scan Setup: EN 61000-6-4 CLASS A [EMI radiated]

Hardware Setup: 30-1g  
Receiver: [ESU 8]  
Level Unit: dBuV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	.002 s	0 dB

EN 61000-6-4 CLASS A



## Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Height (cm)	Azimuth (deg)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
70.000000	11.9	1000.0	400.0	174.8	28.1	40.0
125.000000	30.2	1000.0	400.0	164.8	9.9	40.0
250.000000	25.0	1000.0	400.0	182.0	22.0	47.0
375.000000	30.7	1000.0	400.0	185.6	16.3	47.0
418.280000	23.7	1000.0	400.0	118.7	23.3	47.0
826.520000	25.5	1000.0	400.0	219.3	21.5	47.0

## Common Information

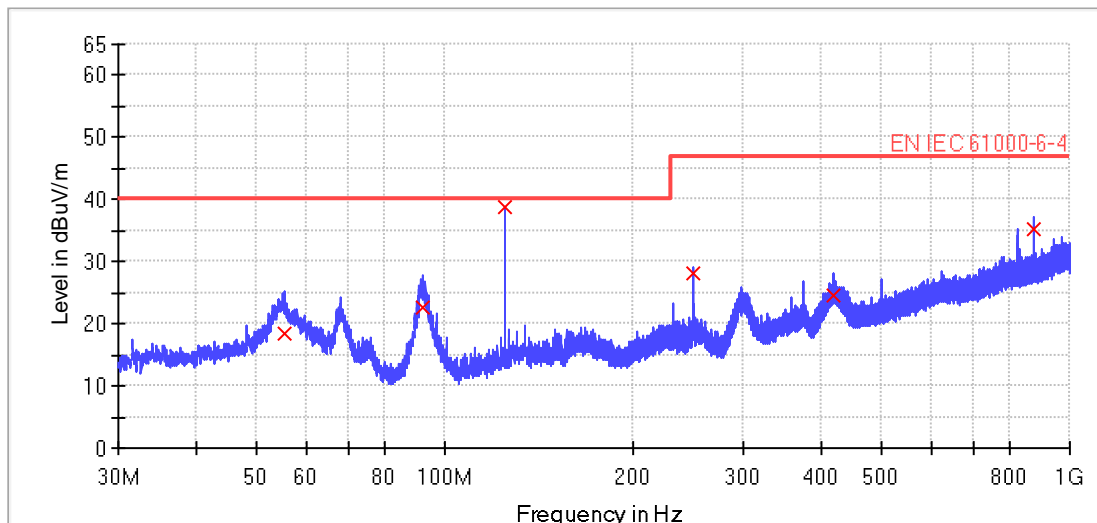
Test Description: 30-1000MHz Radiated Emission  
EUT: TOF CAMERA  
Model: DCAM560C Pro  
Client: Qingdao Vzense Technology Co.,Ltd.  
Operating Conditions: Power on,normal operation  
Operator Name: Zheng Xu  
Input: AC 230V 50Hz  
Sample No.: 667548-3  
Test Standard: EN IEC 61000-6-4  
Comment: Vertical  
Comment: Temp.: 25.6°C, Humi.: 58.2%, Atm.:1002.8hPa

## Scan Setup: EN 61000-6-4 CLASS A [EMI radiated]

Hardware Setup: 30-1g  
Receiver: [ESU 8]  
Level Unit: dBuV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	.002 s	0 dB

EN 61000-6-4 CLASS A



## Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Height (cm)	Azimuth (deg)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
55.400000	18.3	1000.0	100.0	158.2	21.7	40.0
92.080000	22.5	1000.0	100.0	229.1	17.5	40.0
125.000000	38.7	1000.0	100.0	134.7	1.4	40.0
250.000000	28.2	1000.0	100.0	115.5	18.8	47.0
419.480000	24.6	1000.0	100.0	232.9	22.4	47.0
875.000000	35.2	1000.0	100.0	152.1	11.9	47.0

## Common Information

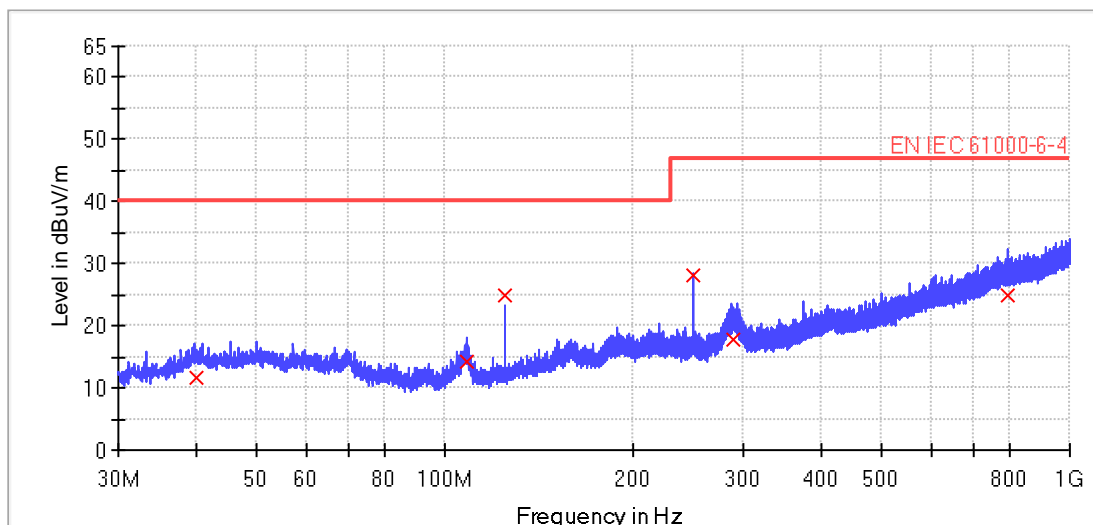
Test Description: 30-1000MHz Radiated Emission  
EUT: TOF CAMERA  
Model: DCAM560C Lite  
Client: Qingdao Vzense Technology Co.,Ltd.  
Operating Conditions: Power on,normal operation  
Operator Name: Zheng Xu  
Input: AC 230V 50Hz  
Sample No.: 667548-2  
Test Standard: EN IEC 61000-6-4  
Comment: Horizontal  
Comment: Temp.: 25.6°C, Humi.: 58.2%, Atm.:1002.8hPa

## Scan Setup: EN 61000-6-4 CLASS A [EMI radiated]

Hardware Setup: 30-1g  
Receiver: [ESU 8]  
Level Unit: dBuV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	.002 s	0 dB

EN 61000-6-4 CLASS A



## Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Height (cm)	Azimuth (deg)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
39.920000	11.6	1000.0	400.0	144.2	28.4	40.0
108.000000	14.1	1000.0	400.0	146.0	25.9	40.0
125.000000	25.0	1000.0	400.0	187.6	15.0	40.0
250.000000	28.3	1000.0	400.0	242.4	18.8	47.0
289.720000	17.7	1000.0	400.0	162.6	29.4	47.0
796.920000	25.0	1000.0	400.0	153.9	22.0	47.0

## Common Information

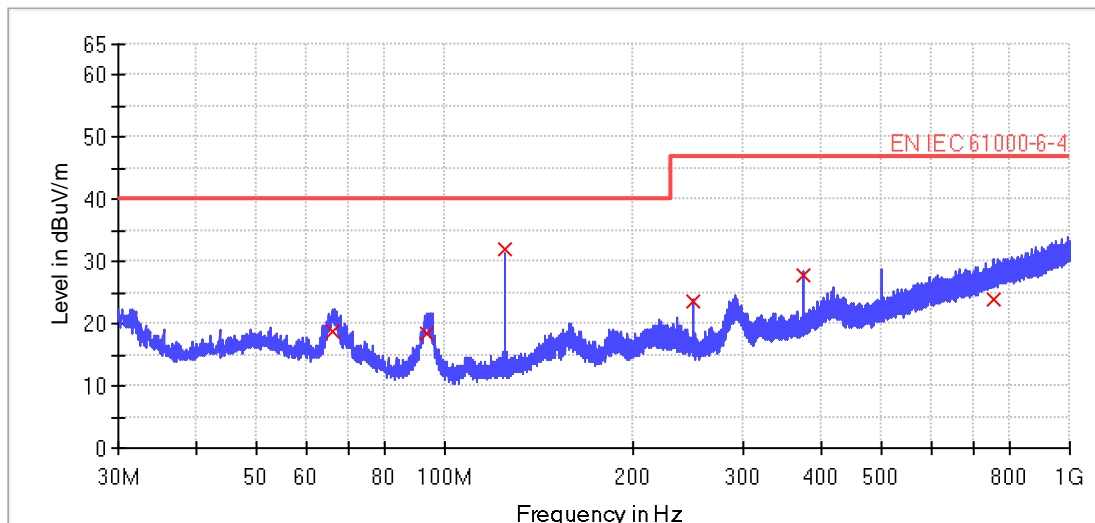
Test Description: 30-1000MHz Radiated Emission  
 EUT: TOF CAMERA  
 Model: DCAM560C Lite  
 Client: Qingdao Vzense Technology Co.,Ltd.  
 Operating Conditions: Power on,normal operation  
 Operator Name: Zheng Xu  
 Input: AC 230V 50Hz  
 Sample No.: 667548-2  
 Test Standard: EN IEC 61000-6-4  
 Comment: Vertical  
 Comment: Temp.: 25.6°C, Humi.: 58.2%, Atm.:1002.8hPa

## Scan Setup: EN 61000-6-4 CLASS A [EMI radiated]

Hardware Setup: 30-1g  
 Receiver: [ESU 8]  
 Level Unit: dBuV/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
30 MHz - 1 GHz	40 kHz	PK+	120 kHz	.002 s	0 dB

EN 61000-6-4 CLASS A



## Limit and Margin

Frequency (MHz)	QuasiPeak (dBuV/m)	Meas. Time (ms)	Height (cm)	Azimuth (deg)	Margin - QPK (dB)	Limit - QPK (dBuV/m)
66.200000	18.8	1000.0	100.0	171.2	21.2	40.0
93.440000	18.5	1000.0	100.0	203.8	21.5	40.0
125.000000	31.9	1000.0	100.0	194.8	8.1	40.0
250.000000	23.7	1000.0	100.0	110.2	23.3	47.0
375.000000	27.7	1000.0	100.0	170.7	19.3	47.0
753.200000	24.0	1000.0	100.0	214.7	23.0	47.0

## Common Information

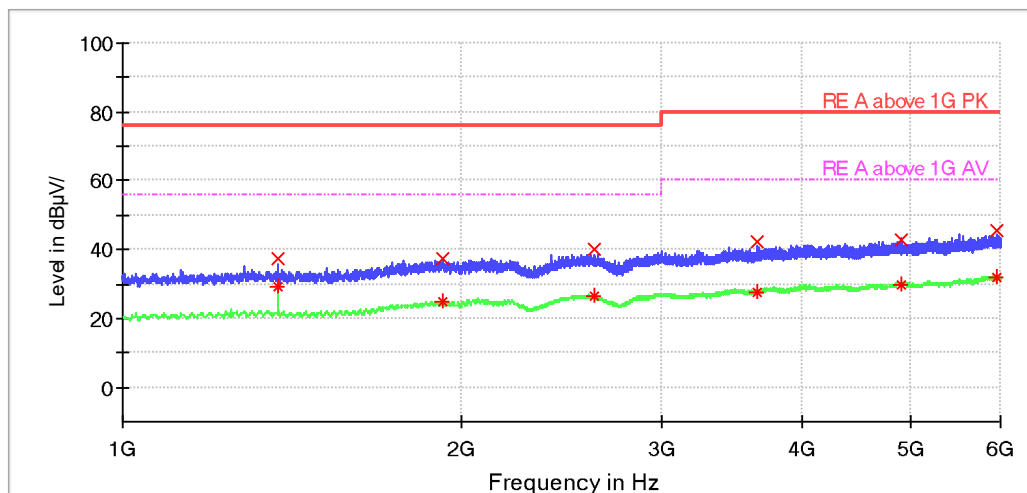
Test Description: 1-6GHz Radiated Emission  
EUT Name: TOF CAMERA  
Model: DCAM560C Pro  
Client: Qingdao Vzense Technology Co.,Ltd.  
Op Cond: Power on AC230V/50Hz-DC12V Normal operation  
Operator: Jie Wu  
Test Spec: EN 61000-6-4  
Sample No: WUX-667548  
Comment: Horizontal  
Comment: T26C, H59%, P1003hPa

## Scan Setup: RE-1-6GHz-ClassA-3115-Pre [EMI radiated]

Hardware Setup: TUV RE-1-18G-3115  
Receiver: [ESW 8]  
Level Unit: dB $\mu$ V/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
1 GHz - 6 GHz	400 kHz	PK+ ; AVG	1 MHz	0.001 s	0 dB

RE-1-6GHz-ClassA-3115-Pre



## Limit and Margin

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	CAverage (dB $\mu$ V/m)	Meas. Time (ms)	Height (cm)	Azimuth (deg)	Margin - PK+ (dB)	Limit - PK+ (dB $\mu$ V/m)	Margin - CAV (dB)	Limit - CAV (dB $\mu$ V/m)
1374.800000	37.5	29.1	1000.0	200.0	161.5	38.5	76.0	26.9	56.0
1919.600000	37.4	24.6	1000.0	200.0	142.7	38.6	76.0	31.4	56.0
2617.200000	40.2	26.5	1000.0	200.0	329.3	35.8	76.0	29.5	56.0
3658.000000	42.1	27.8	1000.0	200.0	141.4	37.9	80.0	32.2	60.0
4902.000000	42.9	29.8	1000.0	200.0	247.9	37.1	80.0	30.2	60.0
5965.200000	45.4	31.9	1000.0	200.0	221.8	34.6	80.0	28.2	60.0

## Common Information

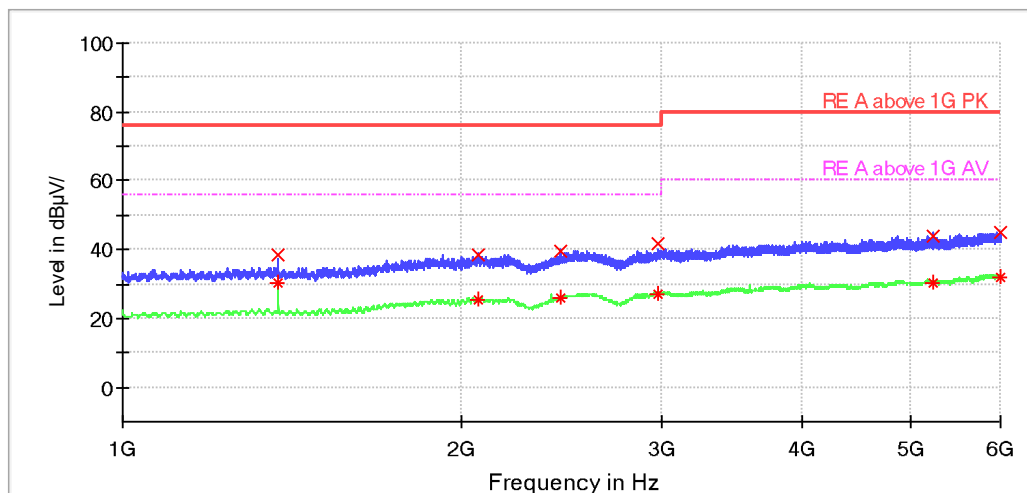
Test Description: 1-6GHz Radiated Emission  
EUT Name: TOF CAMERA  
Model: DCAM560C Pro  
Client: Qingdao Vzense Technology Co.,Ltd.  
Op Cond: Power on AC230V/50Hz-DC12V Normal operation  
Operator: Jie Wu  
Test Spec: EN 61000-6-4  
Sample No: WUX-667548  
Comment: Vertical  
Comment: T26C, H59%, P1003hPa

## Scan Setup: RE-1-6GHz-ClassA-3115-Pre [EMI radiated]

Hardware Setup: TUV RE-1-18G-3115  
Receiver: [ESW 8]  
Level Unit: dB $\mu$ V/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
1 GHz - 6 GHz	400 kHz	PK+ ; AVG	1 MHz	0.001 s	0 dB

RE-1-6GHz-ClassA-3115-Pre



## Limit and Margin

Freque ncy (MHz)	MaxPeak (dB $\mu$ V/m)	CAverage (dB $\mu$ V/m)	Meas. Time (ms)	Height (cm)	Azimuth (deg)	Margin - PK+ (dB)	Limit - PK+ (dB $\mu$ V/m)	Margin - CAV (dB)	Limit - CAV (dB $\mu$ V/m)
1374.8 00000	38.6	30.5	1000.0	100.0	211.1	37.4	76.0	25.5	56.0
2064.4 00000	38.6	25.4	1000.0	100.0	230.1	37.4	76.0	30.6	56.0
2447.6 00000	39.3	25.8	1000.0	100.0	194.9	36.7	76.0	30.2	56.0
2984.8 00000	41.5	27.1	1000.0	100.0	149.1	34.5	76.0	29.0	56.0
5236.0 00000	43.8	30.4	1000.0	100.0	244.9	36.2	80.0	29.6	60.0
5988.8 00000	45.1	32.1	1000.0	100.0	342.7	34.9	80.0	27.9	60.0

## Common Information

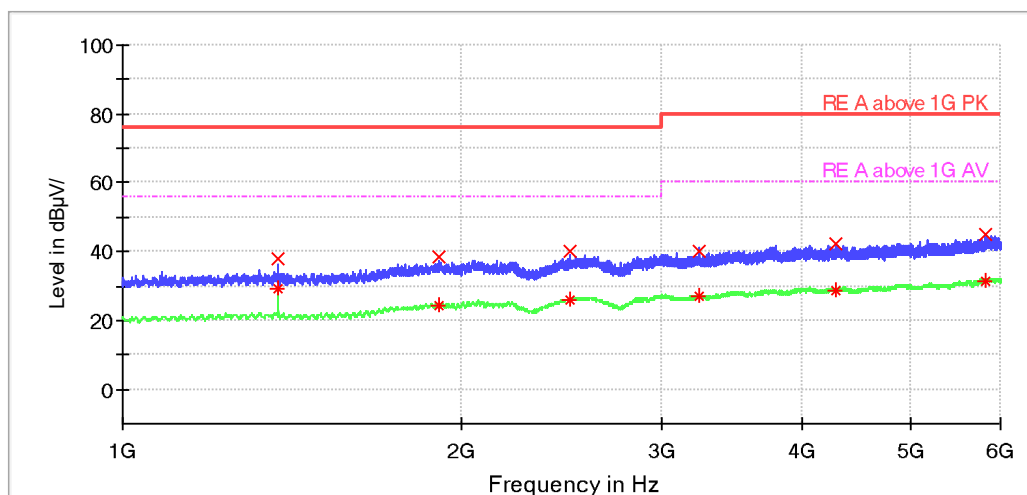
Test Description: 1-6GHz Radiated Emission  
EUT Name: TOF CAMERA  
Model: DCAM560C Lite  
Client: Qingdao Vzense Technology Co.,Ltd.  
Op Cond: Power on AC230V/50Hz-DC12V Normal operation  
Operator: Jie Wu  
Test Spec: EN 61000-6-4  
Sample No: WUX-667548  
Comment: Horizontal  
Comment: T26C, H59%, P1003hPa

## Scan Setup: RE-1-6GHz-ClassA-3115-Pre [EMI radiated]

Hardware Setup: TUV RE-1-18G-3115  
Receiver: [ESW 8]  
Level Unit: dB $\mu$ V/m

Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
1 GHz - 6 GHz	400 kHz	PK+ ; AVG	1 MHz	0.001 s	0 dB

RE-1-6GHz-ClassA-3115-Pre



## Limit and Margin

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	CAverage (dB $\mu$ V/m)	Meas. Time (ms)	Height (cm)	Azimuth (deg)	Margin - PK+ (dB)	Limit - PK+ (dB $\mu$ V/m)	Margin - CAV (dB)	Limit - CAV (dB $\mu$ V/m)
1374.800000	38.1	29.2	1000.0	200.0	317.2	38.0	76.0	26.8	56.0
1905.600000	38.4	24.1	1000.0	200.0	333.4	37.6	76.0	31.9	56.0
2494.000000	40.3	26.0	1000.0	200.0	107.8	35.7	76.0	30.0	56.0
3239.600000	40.1	26.9	1000.0	200.0	116.5	39.9	80.0	33.1	60.0
4289.200000	42.3	28.8	1000.0	200.0	147.1	37.7	80.0	31.2	60.0
5819.200000	45.1	31.5	1000.0	200.0	253.4	34.9	80.0	28.6	60.0



## Common Information

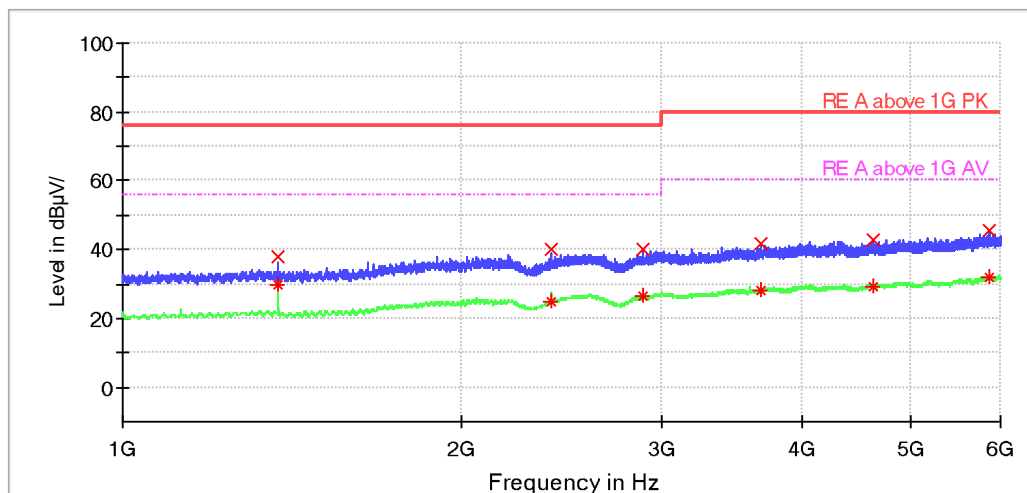
Test Description: 1-6GHz Radiated Emission  
EUT Name: TOF CAMERA  
Model: DCAM560C Lite  
Client: Qingdao Vzense Technology Co.,Ltd.  
Op Cond: Power on AC230V/50Hz-DC12V Normal operation  
Operator: Jie Wu  
Test Spec: EN 61000-6-4  
Sample No: WUX-667548  
Comment: Vertical  
Comment: T26C, H59%, P1003hPa

## Scan Setup: RE-1-6GHz-ClassA-3115-Pre [EMI radiated]

Hardware Setup: TUV RE-1-18G-3115  
Receiver: [ESW 8]  
Level Unit: dB $\mu$ V/m

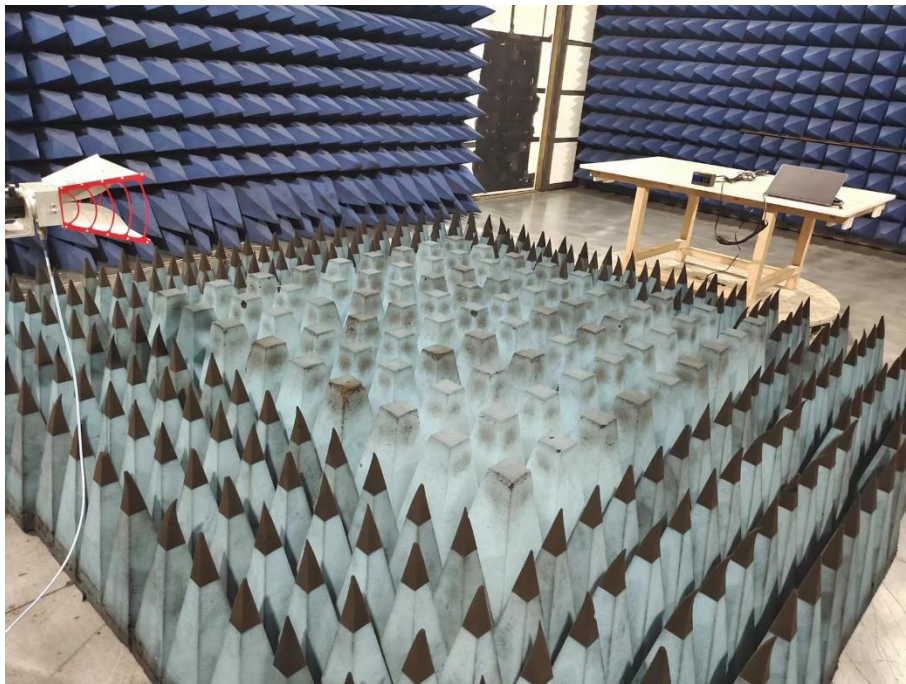
Subrange	Step Size	Detectors	IF BW	Meas. Time	Preamp
1 GHz - 6 GHz	400 kHz	PK+ ; AVG	1 MHz	0.001 s	0 dB

RE-1-6GHz-ClassA-3115-Pre



## Limit and Margin

Freque ncy (MHz)	MaxPeak (dB $\mu$ V/m)	CAverage (dB $\mu$ V/m)	Meas. Time (ms)	Height (cm)	Azimuth (deg)	Margin - PK+ (dB)	Limit - PK+ (dB $\mu$ V/m)	Margin - CAV (dB)	Limit - CAV (dB $\mu$ V/m)
1374.8 00000	37.8	30.0	1000.0	100.0	337.0	38.2	76.0	26.0	56.0
2402.0 00000	40.2	24.7	1000.0	100.0	125.6	35.9	76.0	31.3	56.0
2895.2 00000	40.1	26.3	1000.0	100.0	114.9	35.9	76.0	29.7	56.0
3684.0 00000	41.7	28.3	1000.0	100.0	125.4	38.3	80.0	31.7	60.0
4627.6 00000	42.6	29.1	1000.0	100.0	229.2	37.4	80.0	30.9	60.0
5868.0 00000	45.4	31.7	1000.0	100.0	204.0	34.6	80.0	28.3	60.0



**Test Setup**

### **2.1.8 Test Location**

This test was carried out in anechoic chamber

## 2.2 Emission - Low voltage AC mains port

### 2.2.1 Specification Reference

EN IEC 61000-6-4:2019, Clause 9 Table 4; 4.1

### 2.2.2 Equipment Under Test

DCAM560C Pro, DCAM560C Lite

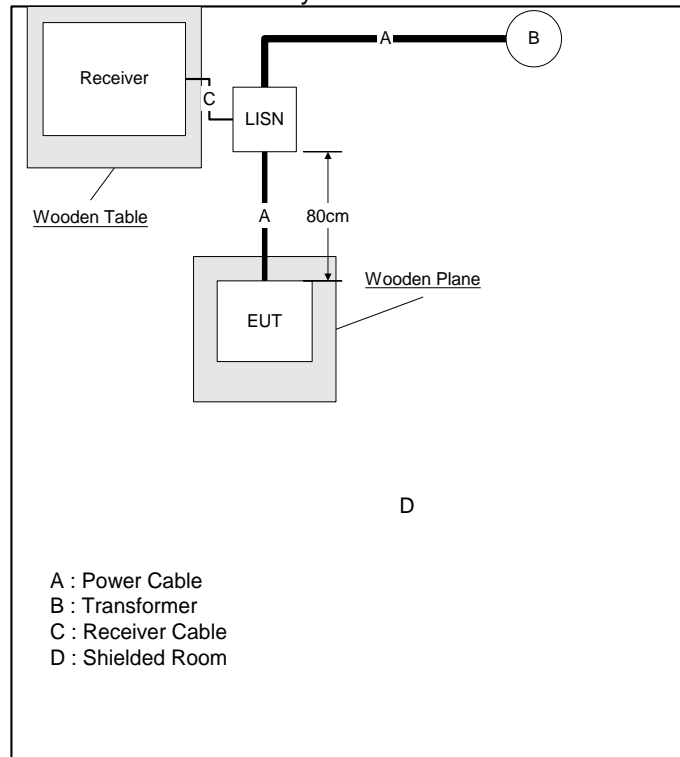
### 2.2.3 Date of Test

09/08/2022

### 2.2.4 Test Method

The EUT was placed on a non-conductive table 0.8 m above a reference ground plane and 0.4 m away from a vertical coupling plane.

All power was connected to the EUT through an Artificial Mains Network (AMN). Conducted disturbance voltage measurements on mains lines were made at the output of the AMN. The AMN was placed 0.8 m from the boundary of the EUT and bonded to the reference ground plane.



### 2.2.5 Environmental Conditions

Ambient Temperature 22.9 °C  
Relative Humidity 55.9 %  
Atmospheric Pressure 1003.3 mbar

### 2.2.6 Specification Limits

Port	Frequency range	Limits	Remarks
Low voltage AC mains	0.15 MHz to 0.5 MHz	79 dB(μV) quasi-peak a* 66 dB(μV) average a*	-
	0.5 MHz to 30 MHz	73 dB(μV) quasi-peak 60 dB(μV) average	-
a*: The limits decrease linearly with the logarithm of the frequency. At transitional frequencies the lower limit applies.			

### 2.2.7 Test Results

Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

## 150kHz-30MHz Conducted Emission Test

### DCAM560C Pro

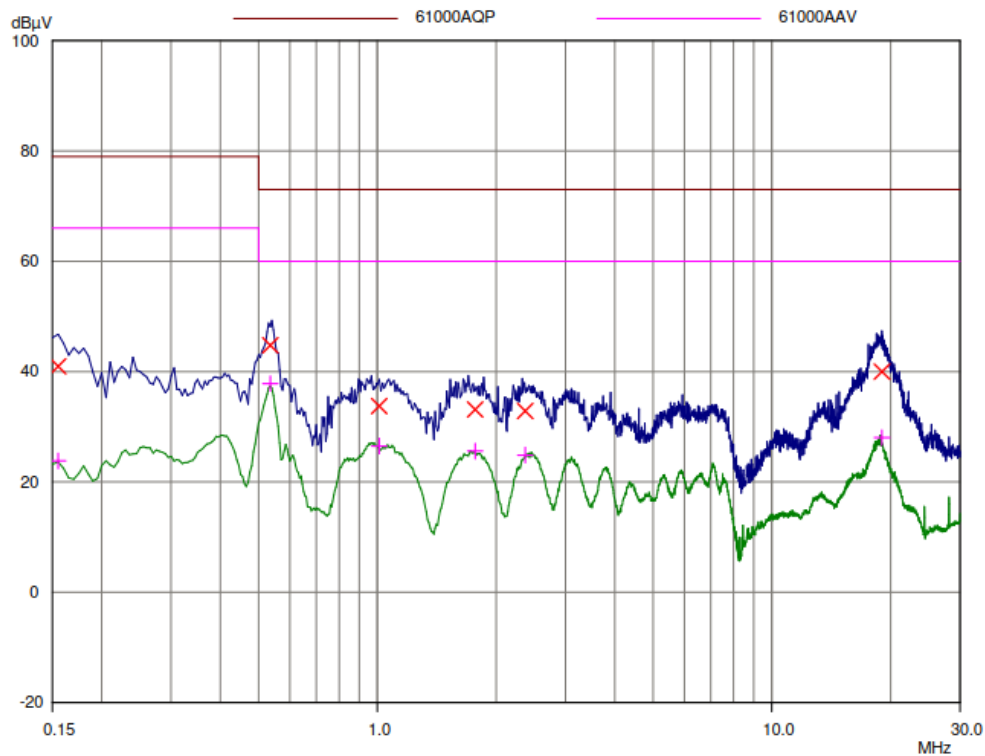
EUT: ToF Camera  
 Manuf: Qingdao Vzense Technology Co.,Ltd  
 Op Cond: Power on, AC 230V 50Hz; T22.9,H55.9%,1003.3hPa  
 Operator: Tianshuo Yuan  
 Test Spec: EN IEC 61000-6-4 Class A  
 Comment: Phase L  
 sample no:WUX-0667548-4  
 Result File: pro230L.dat : New Measurement

#### Scan Settings (2 Ranges)

Frequencies				Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	1000kHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB
1000kHz	30MHz	10kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	9kHz	30MHz	NSLK8127

Final Measurement: Detectors: X QP / + AV  
 Meas Time: 1sec  
 Subranges: 16  
 Acc Margin: 8 dB



## 150kHz-30MHz Conducted Emission Test

### DCAM560C Pro

EUT: ToF Camera  
 Manuf: Qingdao Vzense Technology Co.,Ltd  
 Op Cond: Power on, AC 230V 50Hz; T22.9,H55.9%,1003.3hPa  
 Operator: Tianshuo Yuan  
 Test Spec: EN IEC 61000-6-4 Class A  
 Comment: Phase L  
 sample no:WUX-0667548-4  
 Result File: pro230L.dat : New Measurement

#### Scan Settings (2 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	1000kHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB
1000kHz	30MHz	10kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	9kHz	30MHz	NSLK8127

Final Measurement: Detectors: X QP / + AV  
 Meas Time: 1sec  
 Subranges: 16  
 Acc Margin: 8 dB

#### Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB
0.155	40.96	79.00	38.04
0.535	44.76	73.00	28.24
1.01	33.72	73.00	39.28
1.77	33.12	73.00	39.88
2.37	32.86	73.00	40.14
18.99	39.97	73.00	33.03

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB
0.155	23.81	66.00	42.19
0.535	37.80	60.00	22.20
1.01	26.49	60.00	33.51
1.77	25.58	60.00	34.42
2.37	24.86	60.00	35.14
18.99	28.01	60.00	31.99

\* limit exceeded

## 150kHz-30MHz Conducted Emission Test

### DCAM560C Pro

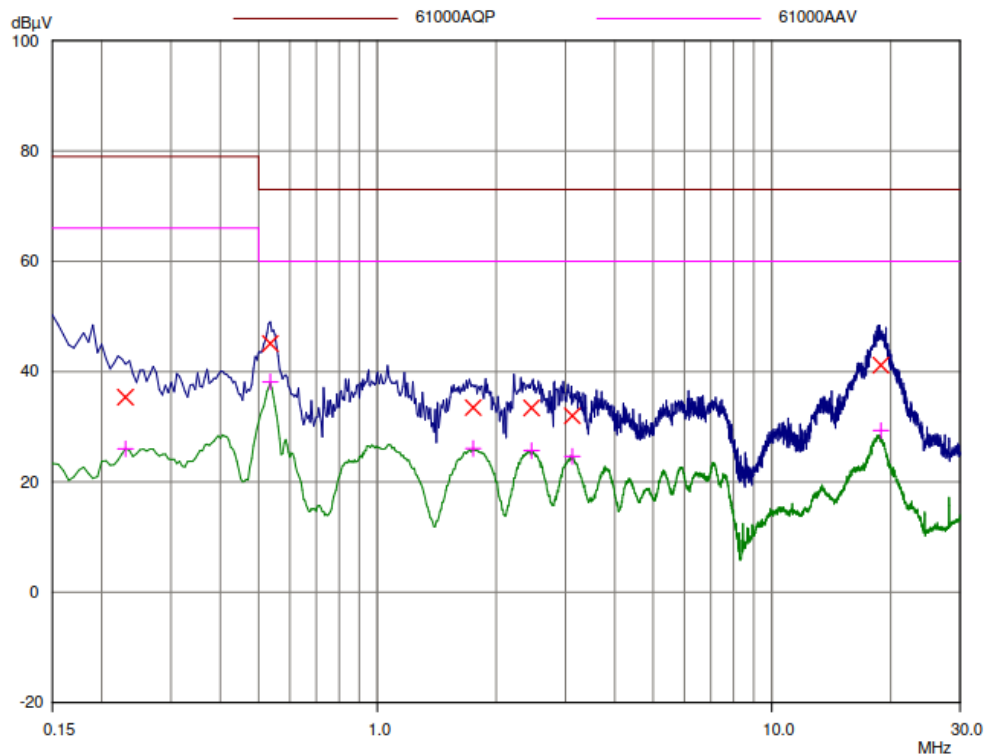
EUT: ToF Camera  
 Manuf: Qingdao Vzense Technology Co.,Ltd  
 Op Cond: Power on, AC 230V 50Hz; T22.9,H55.9%,1003.3hPa  
 Operator: Tianshuo Yuan  
 Test Spec: EN IEC 61000-6-4 Class A  
 Comment: Phase N  
 sample no:WUX-0667548-4  
 Result File: pro230N.dat : New Measurement

#### Scan Settings (2 Ranges)

Frequencies				Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	1000kHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB
1000kHz	30MHz	10kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	9kHz	30MHz	NSLK8127

Final Measurement: Detectors: X QP / + AV  
 Meas Time: 1sec  
 Subranges: 16  
 Acc Margin: 8 dB



## 150kHz-30MHz Conducted Emission Test

### DCAM560C Pro

EUT: ToF Camera  
 Manuf: Qingdao Vzense Technology Co.,Ltd  
 Op Cond: Power on, AC 230V 50Hz; T22.9,H55.9%,1003.3hPa  
 Operator: Tianshuo Yuan  
 Test Spec: EN IEC 61000-6-4 Class A  
 Comment: Phase N  
 sample no:WUX-0667548-4  
 Result File: pro230N.dat : New Measurement

#### Scan Settings (2 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	1000kHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB
1000kHz	30MHz	10kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	9kHz	30MHz	NSLK8127

Final Measurement: Detectors: X QP / + AV  
 Meas Time: 1sec  
 Subranges: 16  
 Acc Margin: 8 dB

#### Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB
0.23	35.34	79.00	43.66
0.535	45.08	73.00	27.92
1.75	33.46	73.00	39.54
2.46	33.40	73.00	39.60
3.12	31.96	73.00	41.04
18.89	41.15	73.00	31.85

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB
0.23	25.97	66.00	40.03
0.535	38.14	60.00	21.86
1.75	26.06	60.00	33.94
2.46	25.66	60.00	34.34
3.12	24.64	60.00	35.36
18.89	29.31	60.00	30.69

\* limit exceeded



## 150kHz-30MHz Conducted Emission Test

### DCAM560C Lite

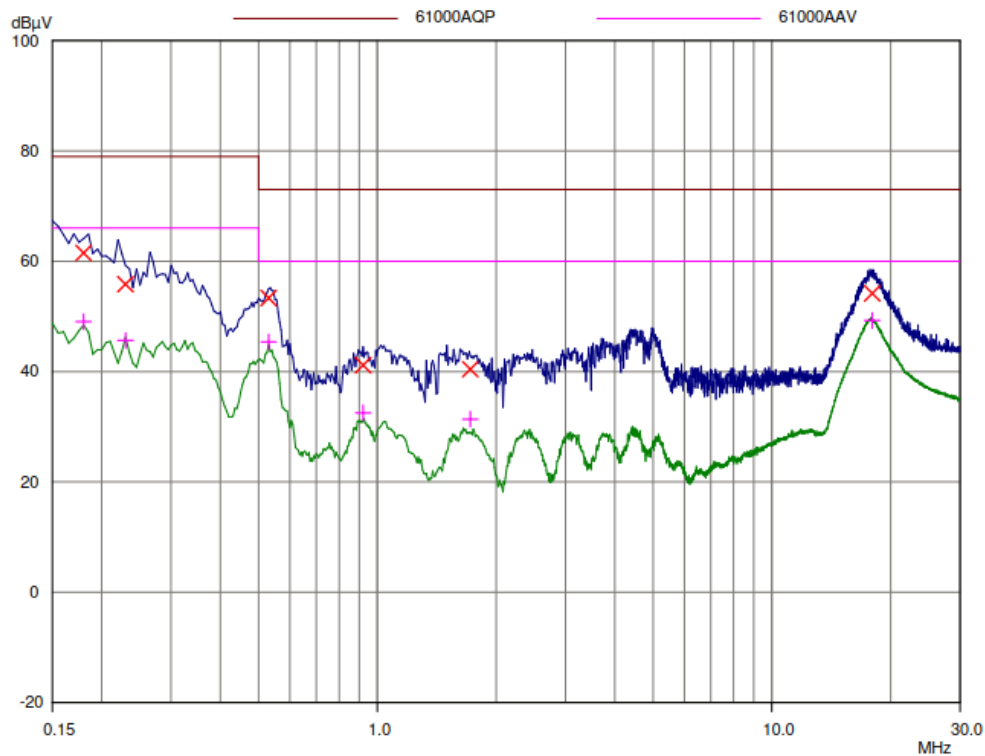
EUT: ToF Camera  
 Manuf: Qingdao Vzense Technology Co.,Ltd  
 Op Cond: Power on, AC 230V 50Hz; T22.9,H55.9%,1003.3hPa  
 Operator: Tianshuo Yuan  
 Test Spec: EN IEC 61000-6-4 Class A  
 Comment: Phase L  
 sample no:WUX-0667548-2  
 Result File: lite230L.dat : New Measurement

#### Scan Settings (2 Ranges)

Frequencies				Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	1000kHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB
1000kHz	30MHz	10kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	9kHz	30MHz	NSLK8127

Final Measurement: Detectors: X QP / + AV  
 Meas Time: 1sec  
 Subranges: 16  
 Acc Margin: 8 dB



## 150kHz-30MHz Conducted Emission Test

### DCAM560C Lite

EUT: ToF Camera  
 Manuf: Qingdao Vzense Technology Co.,Ltd  
 Op Cond: Power on, AC 230V 50Hz; T22.9,H55.9%,1003.3hPa  
 Operator: Tianshuo Yuan  
 Test Spec: EN IEC 61000-6-4 Class A  
 Comment: Phase L  
 sample no:WUX-0667548-2  
 Result File: lite230l.dat : New Measurement

#### Scan Settings (2 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	1000kHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB
1000kHz	30MHz	10kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	9kHz	30MHz	NSLK8127

Final Measurement: Detectors: X QP / + AV  
 Meas Time: 1sec  
 Subranges: 16  
 Acc Margin: 8 dB

#### Final Measurement Results

Frequency MHz	QP Level dBµV	QP Limit dBµV	QP Delta dB
0.18	61.48	79.00	17.52
0.23	55.82	79.00	23.18
0.53	53.34	73.00	19.66
0.92	41.16	73.00	31.84
1.72	40.42	73.00	32.58
17.95	54.17	73.00	18.83

Frequency MHz	AV Level dBµV	AV Limit dBµV	AV Delta dB
0.18	49.04	66.00	16.96
0.23	45.65	66.00	20.35
0.53	45.38	60.00	14.62
0.92	32.51	60.00	27.49
1.72	31.36	60.00	28.64
17.95	49.26	60.00	10.74

\* limit exceeded

## 150kHz-30MHz Conducted Emission Test

### DCAM560C Lite

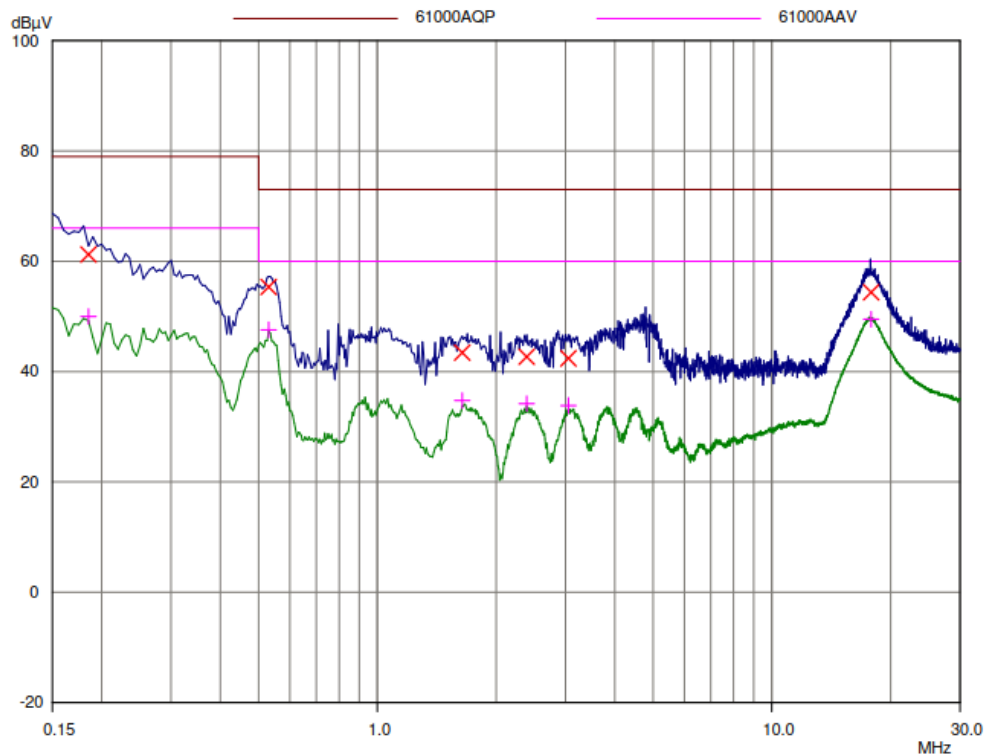
EUT: ToF Camera  
 Manuf: Qingdao Vzense Technology Co.,Ltd  
 Op Cond: Power on, AC 230V 50Hz; T22.9,H55.9%,1003.3hPa  
 Operator: Tianshuo Yuan  
 Test Spec: EN IEC 61000-6-4 Class A  
 Comment: Phase N  
 sample no:WUX-0667548-2  
 Result File: lite230N.dat : New Measurement

#### Scan Settings (2 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	1000kHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB
1000kHz	30MHz	10kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	9kHz	30MHz	NSLK8127

Final Measurement: Detectors: X QP / + AV  
 Meas Time: 1sec  
 Subranges: 16  
 Acc Margin: 8 dB



## 150kHz-30MHz Conducted Emission Test

### DCAM560C Lite

EUT: ToF Camera  
 Manuf: Qingdao Vzense Technology Co.,Ltd  
 Op Cond: Power on, AC 230V 50Hz; T22.9,H55.9%,1003.3hPa  
 Operator: Tianshuo Yuan  
 Test Spec: EN IEC 61000-6-4 Class A  
 Comment: Phase N  
 sample no:WUX-0667548-2  
 Result File: lite230N.dat : New Measurement

#### Scan Settings (2 Ranges)

Frequencies				Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	1000kHz	5kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB
1000kHz	30MHz	10kHz	10kHz	PK+AV	20msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	9kHz	30MHz	NSLK8127

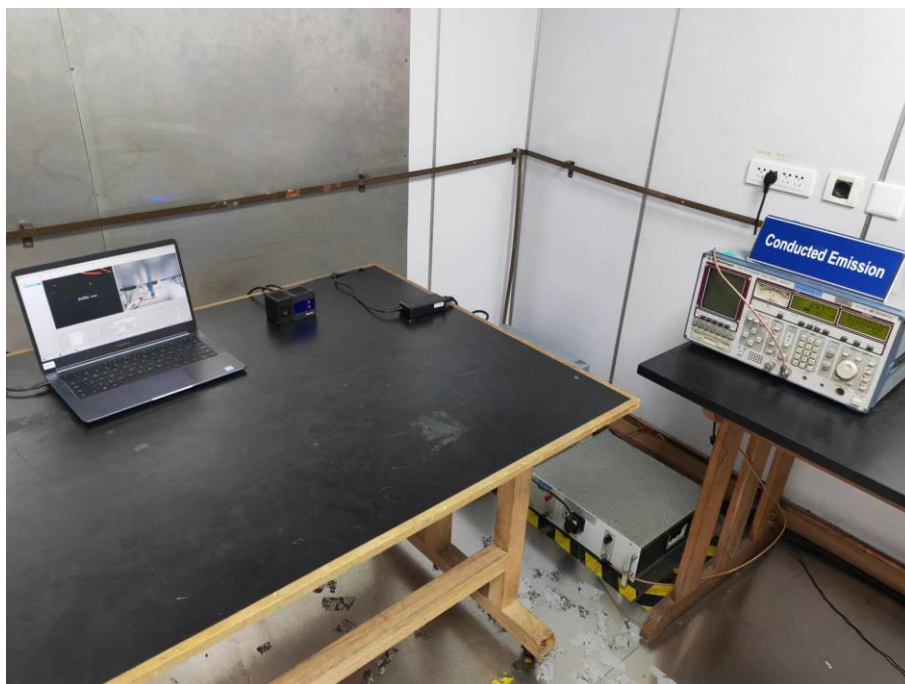
Final Measurement: Detectors: X QP / + AV  
 Meas Time: 1sec  
 Subranges: 16  
 Acc Margin: 8 dB

#### Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB
0.185	61.22	79.00	17.78
0.53	55.34	73.00	17.66
1.64	43.42	73.00	29.58
2.39	42.68	73.00	30.32
3.05	42.40	73.00	30.60
17.85	54.37	73.00	18.63

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB
0.185	49.98	66.00	16.02
0.53	47.56	60.00	12.44
1.64	34.74	60.00	25.26
2.39	34.19	60.00	25.81
3.05	33.84	60.00	26.16
17.85	49.48	60.00	10.52

\* limit exceeded



**Test Setup**

### **2.2.8 Test Location**

This test was carried out in shielded room C.

## 2.3 Emission – Wired network port

### 2.3.1 Specification Reference

EN IEC 61000-6-4:2019, Clause 9 Table 5; 5.1

### 2.3.2 Equipment Under Test

DCAM560C Pro, DCAM560C Lite

### 2.3.3 Date of Test

09/08/2022

### 2.3.4 Test Method

The EUT was placed on a non-conductive table 0.8 m above a reference ground plane  
All power was connected to the EUT through an Artificial Mains Network (AMN).  
Conducted common mode disturbance current measurements on wired network port were made with a current probe and externally fitted 150  $\Omega$  resistor in accordance with Annex C 4.1.6.3.

### 2.3.5 Environmental Conditions

Ambient Temperature 22.9 °C  
Relative Humidity 55.9 %  
Atmospheric Pressure 1003.3 mbar

### 2.3.6 Specification Limits

For Current Voltage Probe (CVP) and Current Probe

Required Specification Limits (Class B)					
Line Under Test	Frequency Range (MHz)	Voltage Limits		Current Limits	
		Quasi-peak (dB $\mu$ V)	Average (dB $\mu$ V)	Quasi-peak (dB $\mu$ A)	Average (dB $\mu$ A)
Communication Port	0.15 to 0.5	97 to 87	84 to 74	53 to 43	40 to 30
	5 to 30	87	74	43	30

### 2.3.7 Test Results

#### Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

Line Under Test: network line

# 150K-30MHz Conducted Emission Test

## DCAM560C Pro

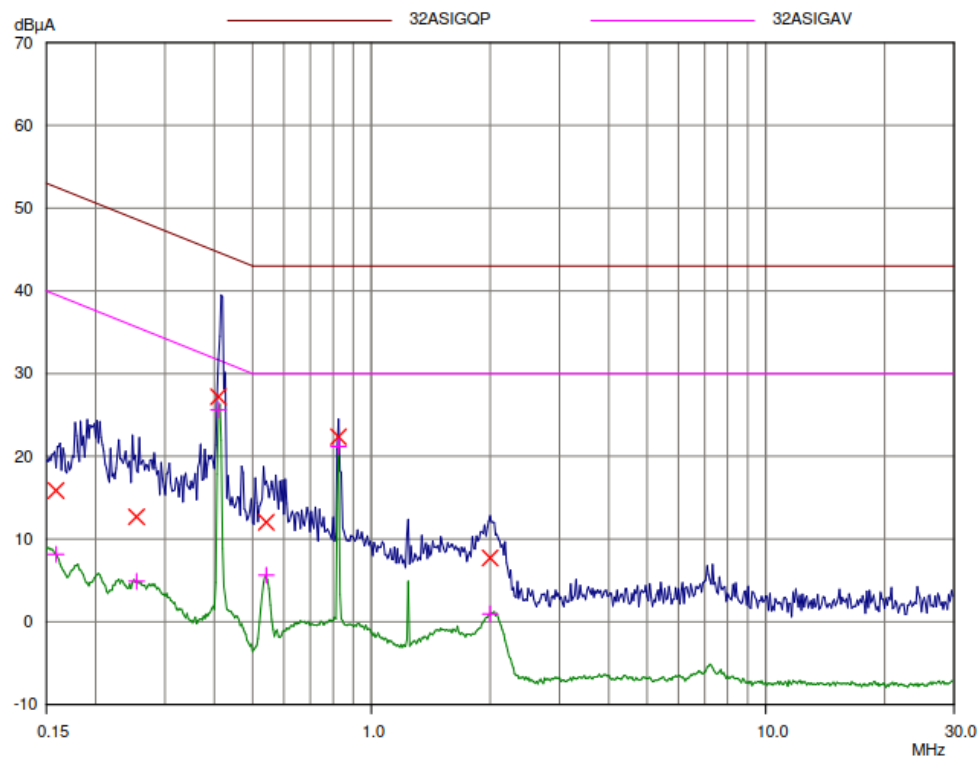
EUT: ToF Camera  
Manuf: Qingdao Vzense Technology Co.,Ltd  
Op Cond: Power on, AC 230V 50Hz; T22.9C ,H55.9%,1003.3hPa  
Operator: Tianshuo Yuan  
Test Spec: EN IEC 61000-6-4 CLASS A  
Comment: LAN  
Sample no:667548-4  
Result File: lanpro.dat : New Measurement.t

### Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	0.8%	10kHz	PK+AV	50msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	F55

Final Measurement: Detectors: X QP / + AV  
Meas Time: 1sec  
Subranges: 16  
Acc Margin: 6 dB



## 150K-30MHz Conducted Emission Test

### DCAM560C Pro

EUT: ToF Camera  
 Manuf: Qingdao Vzense Technology Co.,Ltd  
 Op Cond: Power on, AC 230V 50Hz; T22.9C ,H55.9%,1003.3hPa  
 Operator: Tianshuo Yuan  
 Test Spec: EN IEC 61000-6-4 CLASS A  
 Comment: LAN t  
 Sample no:667548-4  
 Result File: lanpro.dat : New Measurement.t

#### Scan Settings (1 Range)

Frequencies				Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	0.8%	10kHz	PK+AV	50msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	F55

Final Measurement: Detectors: X QP / + AV  
 Meas Time: 1sec  
 Subranges: 16  
 Acc Margin: 6 dB

#### Final Measurement Results

Frequency MHz	QP Level dBμA	QP Limit dBμA	QP Delta dB
0.1586	15.86	52.54	36.68
0.25379	12.70	48.63	35.93
0.40937	27.19	44.66	17.47
0.54104	12.03	43.00	30.97
0.82536	22.36	43.00	20.64
1.99877	7.72	43.00	35.28

Frequency MHz	AV Level dBμA	AV Limit dBμA	AV Delta dB
0.1586	8.16	39.54	31.38
0.25379	4.89	35.63	30.74
0.40937	25.61	31.66	6.05
0.54104	5.62	30.00	24.38
0.82536	21.19	30.00	8.81
1.99877	0.95	30.00	29.05

\* limit exceeded



# 150K-30MHz Conducted Emission Test

## DCAM560C Lite

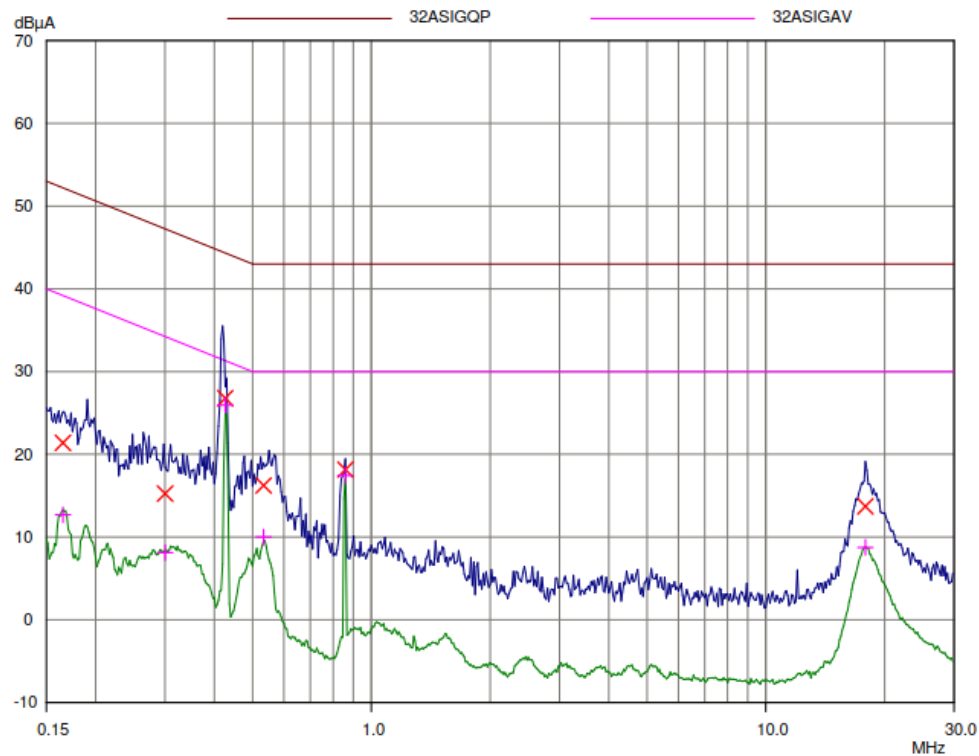
EUT: ToF Camera  
Manuf: Qingdao Vzense Technology Co.,Ltd  
Op Cond: Power on, AC 230V 50Hz; T22.9°C,H55.9%,1003.3hPa  
Operator: Tianshuo Yuan  
Test Spec: EN IEC 61000-6-4 CLASS A  
Comment: LAN t  
Sample no:667548-2  
Result File: lanli.dat : New Measurementent

### Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	0.8%	10kHz	PK+AV	50msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	F55

Final Measurement: Detectors: X QP / + AV  
Meas Time: 1sec  
Subranges: 16  
Acc Margin: 6 dB



## 150K-30MHz Conducted Emission Test

### DCAM560C Lite

EUT: ToF Camera  
 Manuf: Qingdao Vzense Technology Co.,Ltd  
 Op Cond: Power on, AC 230V 50Hz; T22.9°C,H55.9%,1003.3hPa  
 Operator: Tianshuo Yuan  
 Test Spec: EN IEC 61000-6-4 CLASS A  
 Comment: LAN  
 Sample no:667548-2  
 Result File: lanli.dat : New Measurementent

#### Scan Settings (1 Range)

Frequencies				Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	0.8%	10kHz	PK+AV	50msec	Auto	OFF	60dB

Transducer	No.	Start	Stop	Name
	1	150kHz	30MHz	F55

Final Measurement: Detectors: X QP / + AV  
 Meas Time: 1sec  
 Subranges: 16  
 Acc Margin: 6 dB

#### Final Measurement Results

Frequency MHz	QP Level dBμA	QP Limit dBμA	QP Delta dB
0.16505	21.38	52.21	30.83
0.30002	15.24	47.24	32.00
0.42601	26.79	44.33	17.54
0.53249	16.23	43.00	26.77
0.85891	18.15	43.00	24.85
17.88177	13.70	43.00	29.30

Frequency MHz	AV Level dBμA	AV Limit dBμA	AV Delta dB
0.16505	12.70	39.21	26.51
0.30002	8.11	34.24	26.13
0.42601	25.94	31.33	5.39
0.53249	9.99	30.00	20.01
0.85891	17.44	30.00	12.56
17.88177	8.75	30.00	21.25

\* limit exceeded



**Test Setup**

### **2.3.8 Test Location**

This test was carried out in shielded room C.

## 2.4 Flicker

### 2.4.1 Specification Reference

EN 61000-3-3:2013/A1:2019/A2:2021, Clause 6

### 2.4.2 Equipment Under Test

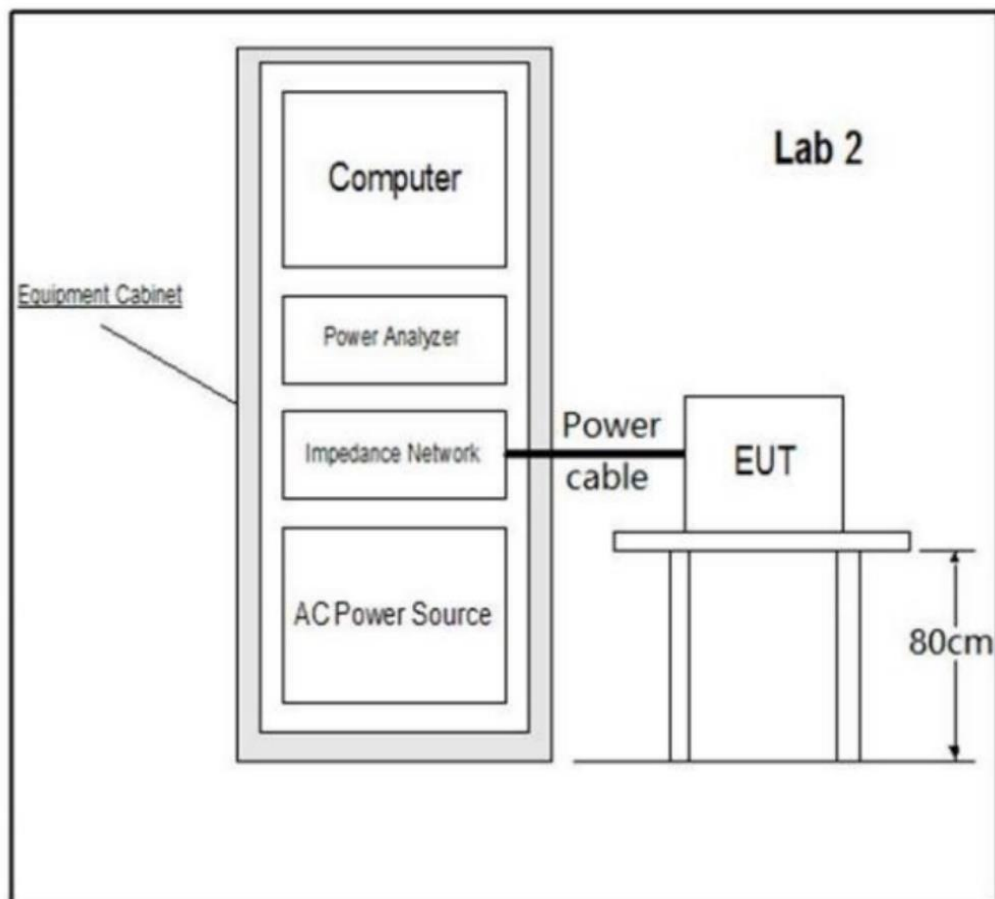
DCAM560C Pro, DCAM560C Lite

### 2.4.3 Date of Test

16/08/2022

### 2.4.4 Test Method

For equipment not mentioned in annex A, controls or automatic programs should be set to produce the most unfavorable sequence of voltage change, using only those combinations of controls and programmes which are mentioned by the manufacturer in the instruction manual, or are otherwise likely to be used



#### 2.4.5 Environmental Conditions

Ambient Temperature	23°C
Relative Humidity	49%
Atmospheric Pressure	1003.3 mbar

#### 2.4.6 Specification Limits

The value of  $P_{st}$  shall not be greater than 1.0

The value of  $P_{lt}$  shall not be greater than 0.65

$T_{max}$ , the accumulated time value of  $d(t)$  with a deviation exceeding 3.3% during a single voltage change at the EUT terminals, shall not exceed 500ms

The maximum relative steady-state voltage change,  $dc$ , shall not exceed 3.3%

The maximum relative voltage change  $d_{max}$ , shall not exceed

4% without additional conditions

6% for equipment which is:

Switched manually, or

Switched automatically more frequently than twice per day, and also has either a delayed start, or manual restart, after a power supply interruption

7% for equipment which is:

Attended whilst in use, or

Switched on automatically, or is intended to be switched on manually, no more than Twice per day, and also has either a delayed restart or manual restart, after a power supply interruption

#### 2.4.7 Test Results

Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

# Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (2013) (Run time)

EUT: ToF Camera

Test category: dt,dmax,dc and Pst (European limits)

Test date: 2022/8/16

Test duration (min): 10

Customer: Power on;Model:DCAM560C Pro;T:23.3,H:50.7%,P:1003.7hPa.SN:667548-3

Comment: Qingdao VzenseTechnology Co.,Ltd

Tested by: Tianshuo Yuan

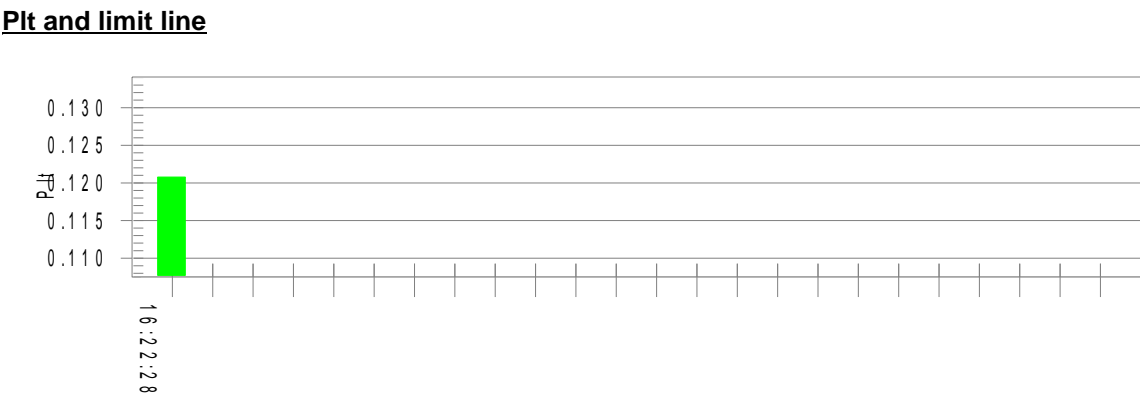
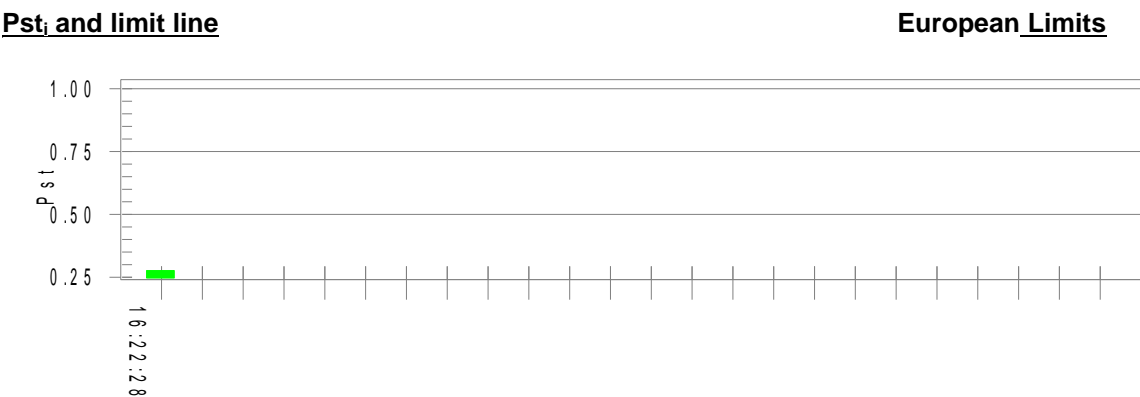
Test Margin: 100

End time: 16:22:34

Data file name: CTSMXL\_F-000018.cts\_data

Test Result: Pass

Status: Test Completed



Parameter values recorded during the test:				
Vrms at the end of test (Volt):	230.72	Test limit (mS):	500.0	Pass
T-max (mS):	0.0	Test limit (%):	3.30	Pass
Highest dc (%):	0.00	Test limit (%):	4.00	Pass
Highest dmax (%):	0.07	Test limit:	1.000	Pass
Highest Pst (10 min. period):	0.277			

# Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (2013) (Run time)

EUT: ToF Camera

Test category: dt,dmax,dc and Pst (European limits)

Test date: 2022/8/16

Test duration (min): 10

Comment: Power on;Model:DCAM560C Lite;T:23.3,H:50.7%,P:1003.7hPa.SN:667548-2

Customer: Qingdao Vzense Technology Co.,Ltd

Tested by: Tianshuo Yuan

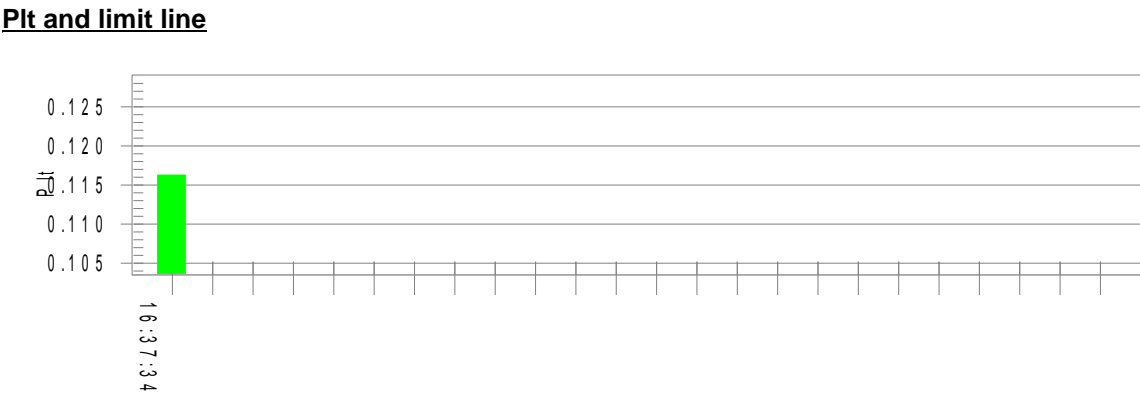
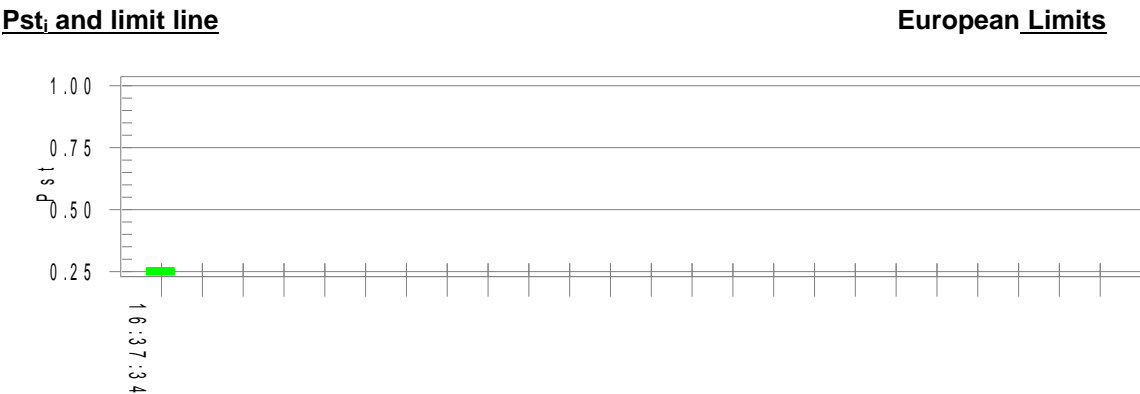
Test Margin: 100

End time: 16:37:40

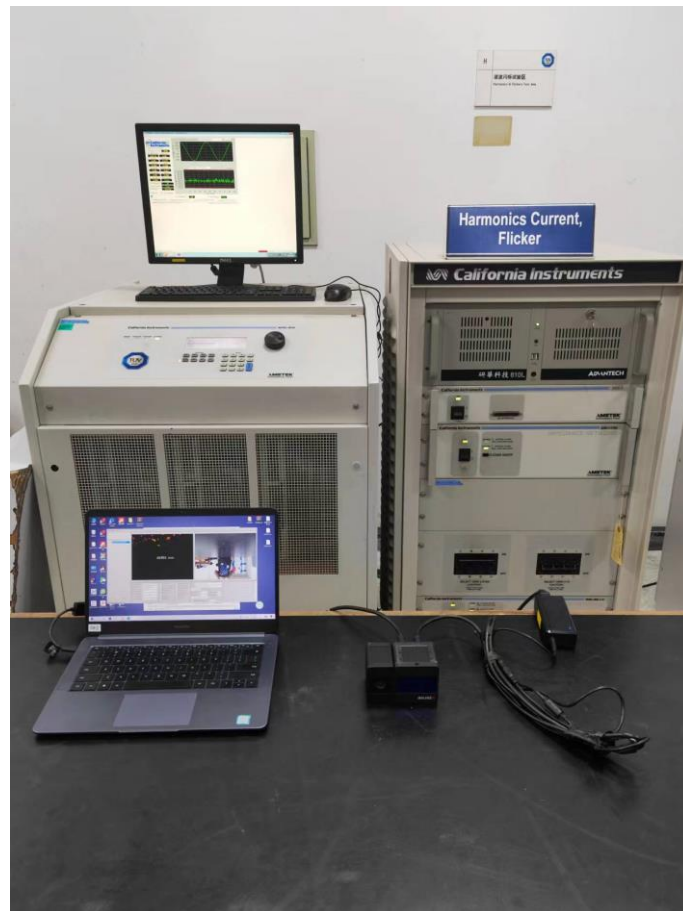
Data file name: CTSMXL\_F-000019.cts\_data

Test Result: Pass

Status: Test Completed



Parameter values recorded during the test:				
Vrms at the end of test (Volt):	230.66	Test limit (mS):	500.0	Pass
T-max (mS):	0.0	Test limit (%):	3.30	Pass
Highest dc (%):	0.00	Test limit (%):	4.00	Pass
Highest dmax (%):	0.06	Test limit:	1.000	Pass
Highest Pst (10 min. period):	0.266			



**Test setup**

#### **2.4.8 Test Location**

This test was carried out in Harmonic Flicker Test area.



## 2.5 Immunity - Enclosure port - Electrostatic discharge

### 2.5.1 Specification Reference

EN IEC 61000-6-2:2019, Clause 9 Table 1; 1.4

### 2.5.2 Equipment Under Test

DCAM560C Pro, DCAM560C Lite

### 2.5.3 Date of Test

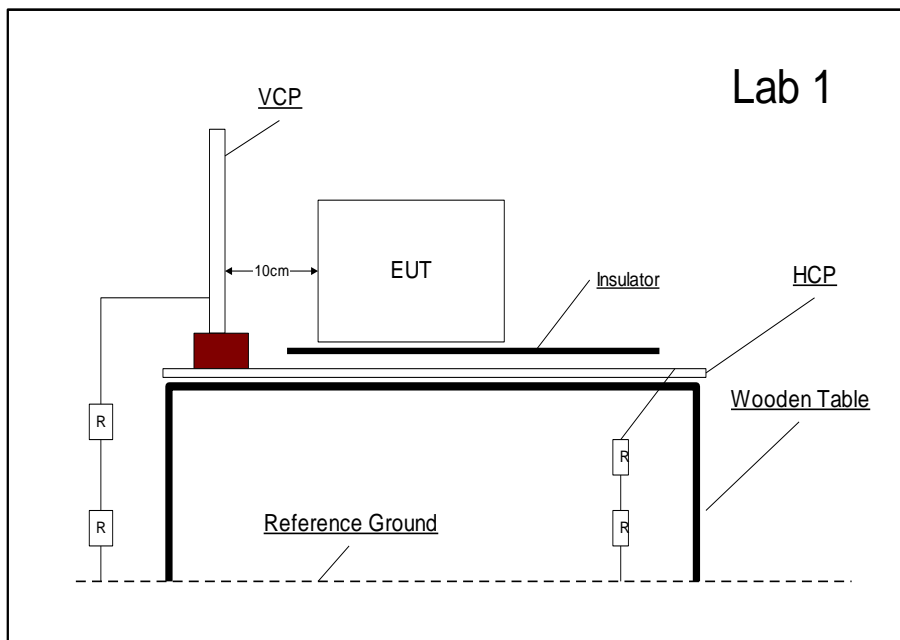
16/08/2022

### 2.5.4 Test Method

The equipment under test including associated cabling was configured on but insulated from, using a 0.5mm isolator, a horizontal coupling plane fitted to the top of a 0.8 m non-conductive table for table-top equipment; and on a 0.1 m insulated support for floor standing equipment; above a ground reference plane all within a test laboratory.

Using the air discharge method for non-metallic parts, contact discharge method for metallic parts with both vertical and horizontal couple plane discharge methods for the sides of the equipment under test, the required electrostatic discharge voltage levels in both voltage polarities were applied at the detailed pulse repartition rate.

During this testing any anomalies in the equipment under tests performance was recorded.



### 2.5.5 Environmental Conditions

Ambient Temperature 23°C  
Relative Humidity 49%  
Atmospheric Pressure 1003.3 mbar

### 2.5.6 Specification Limits

Environmental phenomena		Test specifications	Units	Remarks	Performance criteria
Electrostatic discharge	Contact discharge	±4 (charge voltage)	kV	-	B
	Air discharge	±8 (charge voltage)	kV	-	B

### 2.5.7 Test Results

Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

ID	Test Point	Discharge	Results: Pass PC A									
			2kV		4kV		6kV		8kV		15kV	
			+	-	+	-	+	-	+	-	+	-
A	Metallic part, HCP, VCP	Contact	✓	✓	✓	✓						
B	Ports, Cables	Air	✓	✓	✓	✓			✓	✓		

Key to Results	
✓	The EUT's performance was not impaired at this test point when the ESD pulse was applied.
✓*	No discharge occurred at this point when the ESD pulse was applied.
Ox	Observation.
Fx	Failed.
N/A	Not Applicable.



**Test setup**

#### **2.5.8 Test Location**

This test was carried out in room D.

## 2.6 Immunity - Enclosure port - Radio-frequency electromagnetic field. Amplitude modulated

### 2.6.1 Specification Reference

EN IEC 61000-6-2:2019, Clause 9 Table 1; 1.2, 1.3

### 2.6.2 Equipment Under Test

DCAM560C Pro, DCAM560C Lite

### 2.6.3 Date of Test

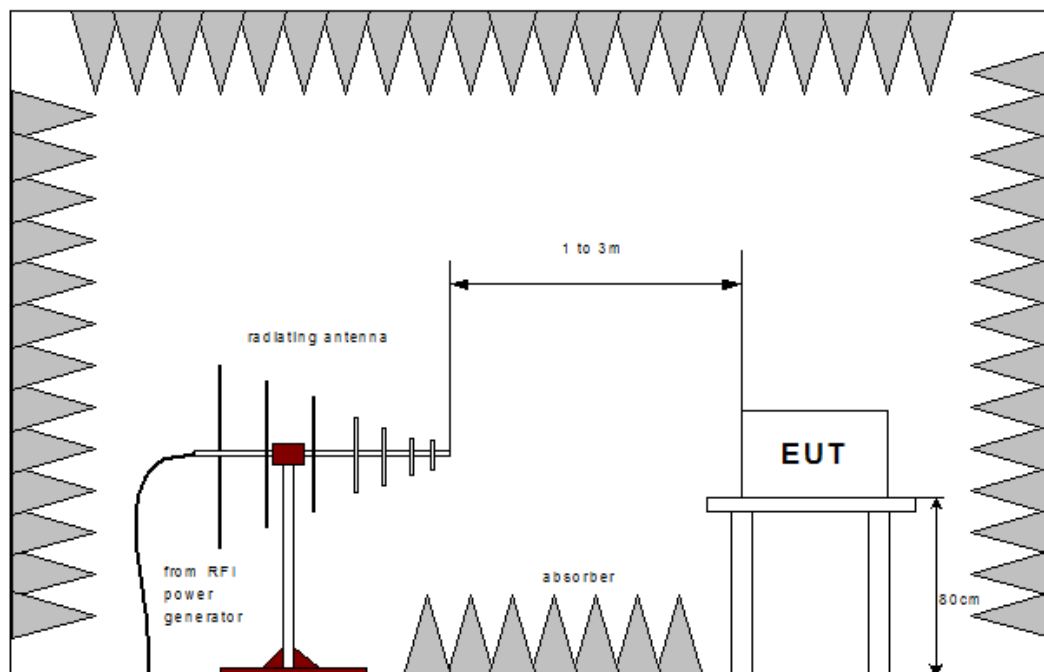
16/08/2022

### 2.6.4 Test Method

The equipment under test including associated cabling was configured, on a 0.8 m non-conductive table for table-top equipment and on a 0.1 m insulated support for floor standing equipment; with a pre-calibrated semi anechoic chamber.

All four side of the equipment under test were subjected to the required RF field strength, modulated as described, swept over the frequency range of test with the antenna positioned in both horizontal and vertical polarizations.

During this testing any anomalies in the equipment under tests performance was recorded.



### 2.6.5 Environmental Conditions

Ambient Temperature 23°C  
Relative Humidity 49%  
Atmospheric Pressure 1003.3 mbar

### 2.6.6 Specification Limits

Environmental phenomena	Test specifications	Units	Remarks	Performance criteria
Radio-frequency electromagnetic field. Amplitude modulated	80 to 1000 10 80	MHz V/m % AM (1 kHz)	The frequency range has been selected to cover the frequencies with the highest potential risk of disturbance.	A
Radio-frequency electromagnetic field. Amplitude modulated	1.4 to 6.0 3 80	GHz V/m % AM (1 kHz)	The frequency range has been selected to cover the frequencies with the highest potential risk of disturbance.	A
Supplementary information: Note: The test level specified is the r.m.s. value of the unmodulated carrier.				

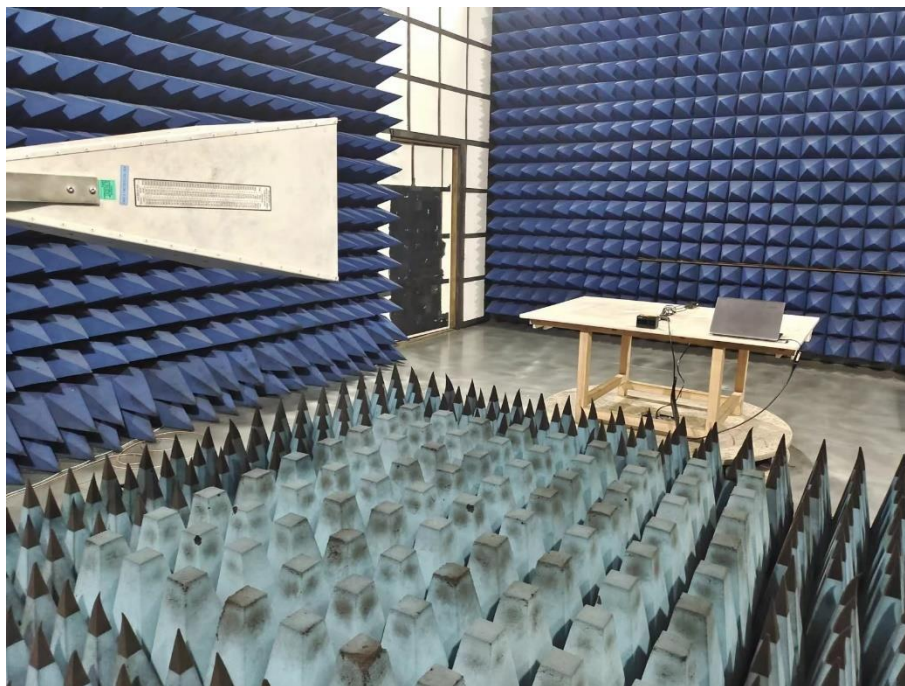
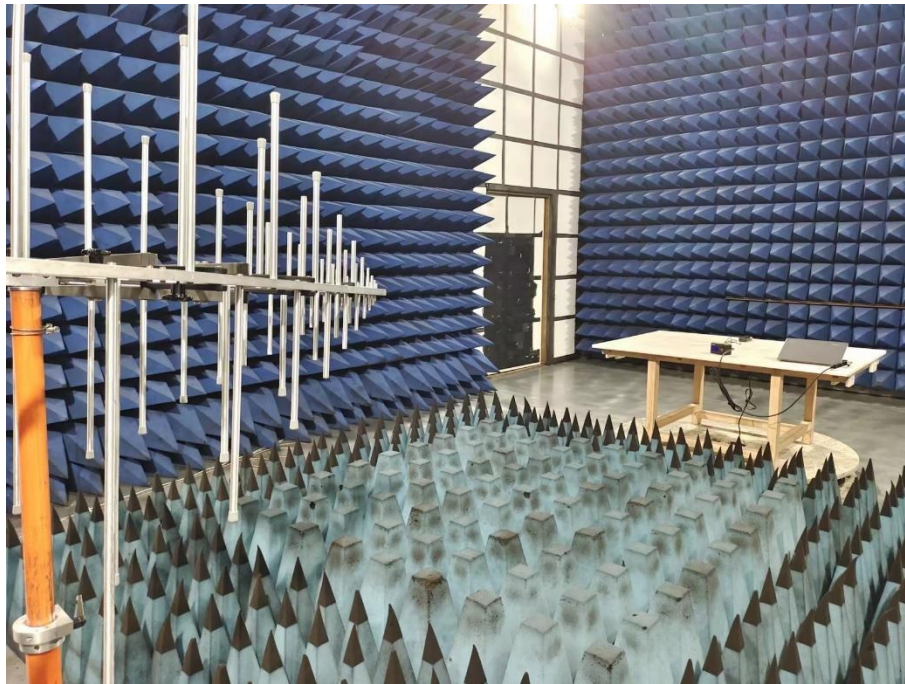
### 2.6.7 Test Results

Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

Tabulated Results for RF Electromagnetic Field				
Step Size	1%			
Dwell Time	3 s			
Modulation	1kHz sine 80% AM			
Frequency Range	Test Face	Antenna Polarization	Test Level (V/m)	Result
80 MHz to 1 GHz	Front, Rear, Left, Right	Horizontal and Vertical	10 V/m	Pass PC A
1.4 GHz to 6 GHz	Front, Rear, Left, Right	Horizontal and Vertical	3 V/m	Pass PC A



**Test Setup**

### **2.6.8 Test Location**

This test was carried out in 3m anechoic chamber.

## 2.7 Immunity - Input and output AC power ports - Fast transients

### 2.7.1 Specification Reference

EN IEC 61000-6-2:2019, Clause 9 Table 3; 3.3

### 2.7.2 Equipment Under Test

DCAM560C Pro, DCAM560C Lite

### 2.7.3 Date of Test

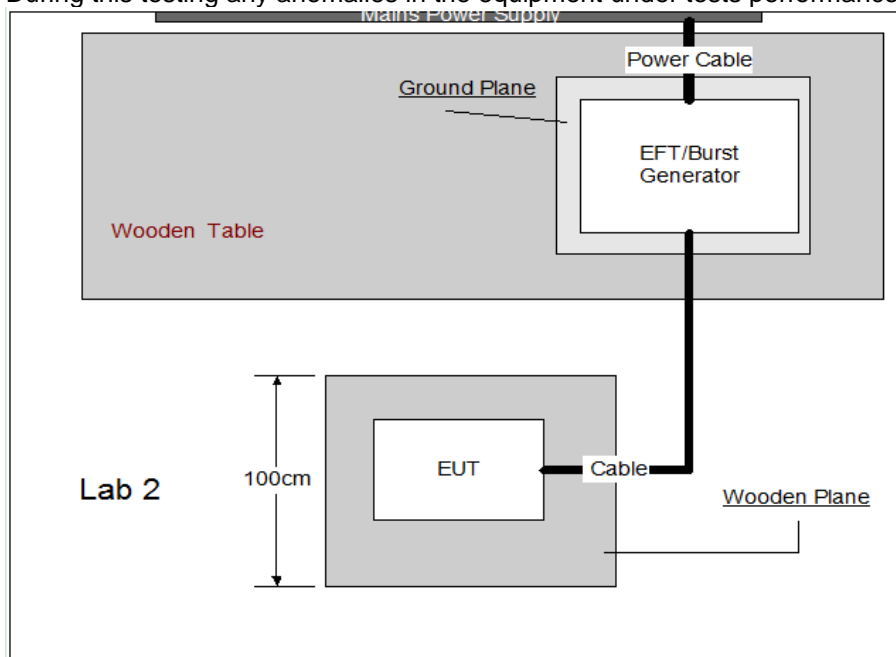
16/08/2022

### 2.7.4 Test Method

The equipment under test including associated cabling was configured on but insulated from, using a 0.1m isolator, a horizontal coupling plane fitted to the top of a 0.8 m non-conductive table for table-top equipment; and on a 0.1 m insulated support for floor standing equipment; above a ground reference plane all within a test laboratory.

Using a CDN for power ports, capacitive coupling clamp for signal and control ports and a 33 nF coupling capacitor for earth ports, the required fast transient burst voltage levels in both voltage polarities were applied at the detailed pulse repartition rate and duration of test.

During this testing any anomalies in the equipment under tests performance was recorded.



### 2.7.5 Environmental Conditions

Ambient Temperature 23°C  
Relative Humidity 49%  
Atmospheric Pressure 1003.3 mbar

### 2.7.6 Specification Limits

Environmental phenomena	Test specifications	Units	Remarks	Performance criteria
Fast transients (AC power ports)	±2 5/50 5 or 100	kV (open circuit test voltage) Tr/Th ns Repetition frequency kHz	-	B
Supplementary information:				

### 2.7.7 Test Results

Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

Tabulated Results for Fast Transient Burst Immunity					
Line under test	Test Level (kV)	Repetition Rate (kHz)	Test Duration (s)	Coupling Method	Result
Power line	±2	5 & 100	120	CDN	Pass PC A





**Test Setup**

#### **2.7.8 Test Location**

This test was carried out in Immunity test location.

## 2.8 Immunity - Wired network port - Fast transients

### 2.8.1 Specification Reference

EN IEC 61000-6-2:2019, Clause 9 Table 2; 2.3

### 2.8.2 Equipment Under Test

DCAM560C Pro, DCAM560C Lite

### 2.8.3 Date of Test

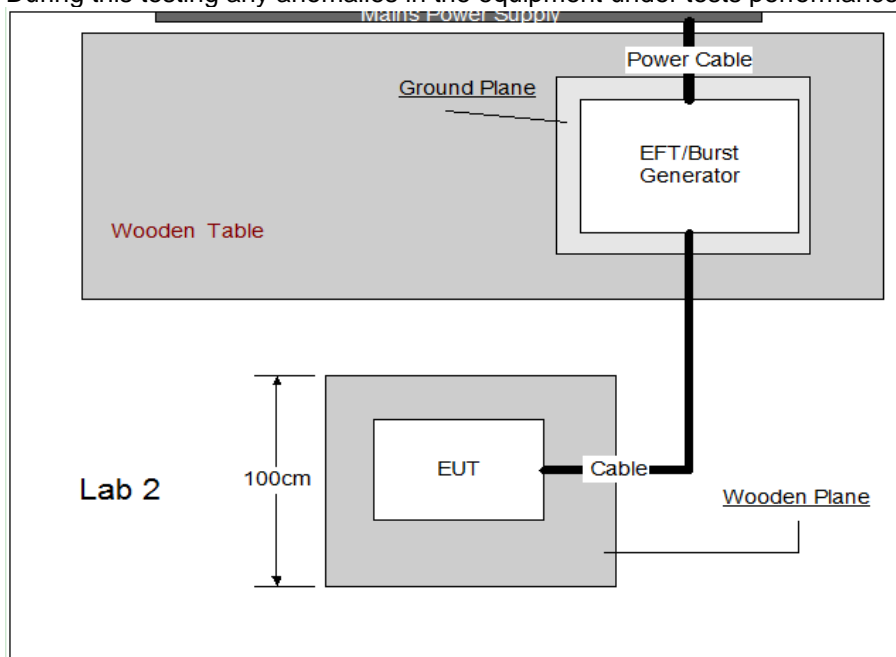
16/08/2022

### 2.8.4 Test Method

The equipment under test including associated cabling was configured on but insulated from, using a 0.1m isolator, a horizontal coupling plane fitted to the top of a 0.8 m non-conductive table for table-top equipment; and on a 0.1 m insulated support for floor standing equipment; above a ground reference plane all within a test laboratory.

Using a CDN for power ports, capacitive coupling clamp for signal and control ports and a 33 nF coupling capacitor for earth ports, the required fast transient burst voltage levels in both voltage polarities were applied at the detailed pulse repartition rate and duration of test.

During this testing any anomalies in the equipment under tests performance was recorded.



### 2.8.5 Environmental Conditions

Ambient Temperature 23°C  
Relative Humidity 49%  
Atmospheric Pressure 1003.3 mbar

### 2.8.6 Specification Limits

Environmental phenomena	Test specifications	Units	Remarks	Performance criteria
Fast transients (Wired network port )	±1 5/50 5 or 100	kV (open circuit test voltage) Tr/Th ns Repetition frequency kHz	Capacitive clamp used	B
Supplementary information:				

### 2.8.7 Test Results

Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

Tabulated Results for Fast Transient Burst Immunity					
Line under test	Test Level (kV)	Repetition Rate (kHz)	Test Duration (s)	Coupling Method	Result
Signal lines	±1	5 & 100	120	Capacitive Clamp	Pass PC A



**Test Setup**

#### **2.8.8 Test Location**

This test was carried out in Immunity test location.

## 2.9 Immunity - Input and output AC power ports - Surges

### 2.9.1 Specification Reference

EN IEC 61000-6-2:2019, Clause 9 Table 4; 3.2

### 2.9.2 Equipment Under Test

DCAM560C Pro, DCAM560C Lite

### 2.9.3 Date of Test

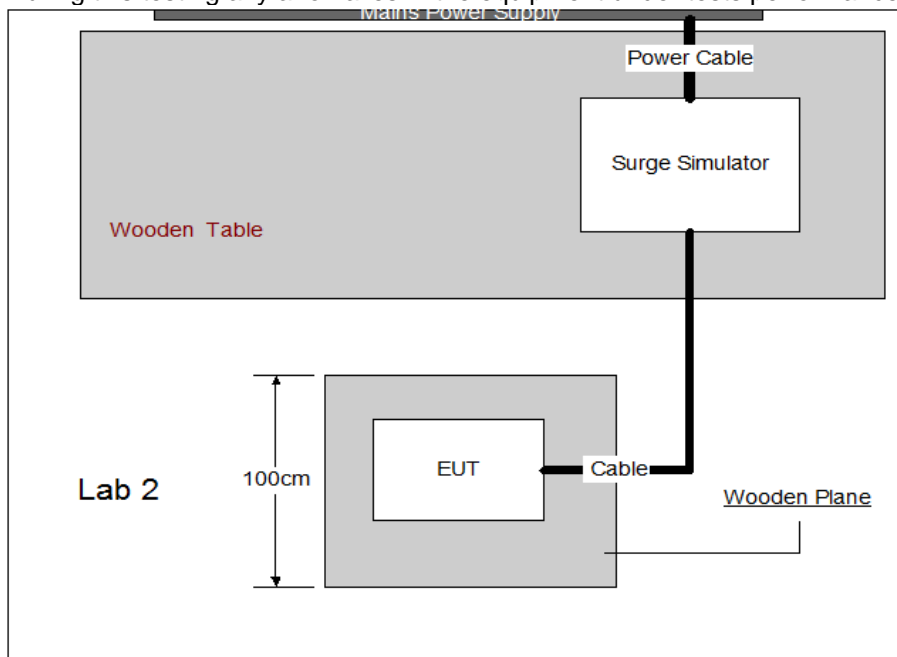
16/08/2022

### 2.9.4 Test Method

The equipment under test including associated cabling was configured, on a 0.8 m non-conductive table for table-top equipment and on a 0.1 m insulated support for floor standing equipment above a ground reference plane all within a test laboratory.

Using CDNs for power ports and appropriate coupling methods for applicable signal and control ports, the required number of surges was applied for each surge voltage level using both positive and negative surge voltage polarities. Surges were applied at the power line frequency phase angles and repartition rates detailed.

During this testing any anomalies in the equipment under tests performance was recorded.



### 2.9.5 Environmental Conditions

Ambient Temperature 23°C  
Relative Humidity 49%  
Atmospheric Pressure 1003.3 mbar

### 2.9.6 Specification Limits

Environmental phenomena	Test specifications	Units	Remarks	Performance criteria
Surges (AC power ports) line-to-earth line-to-line	1.2/50 (8/20) ±2 ±1	Tr/Th µs kV (open circuit test voltage) kV (open circuit test voltage)	-	B
Supplementary information:				

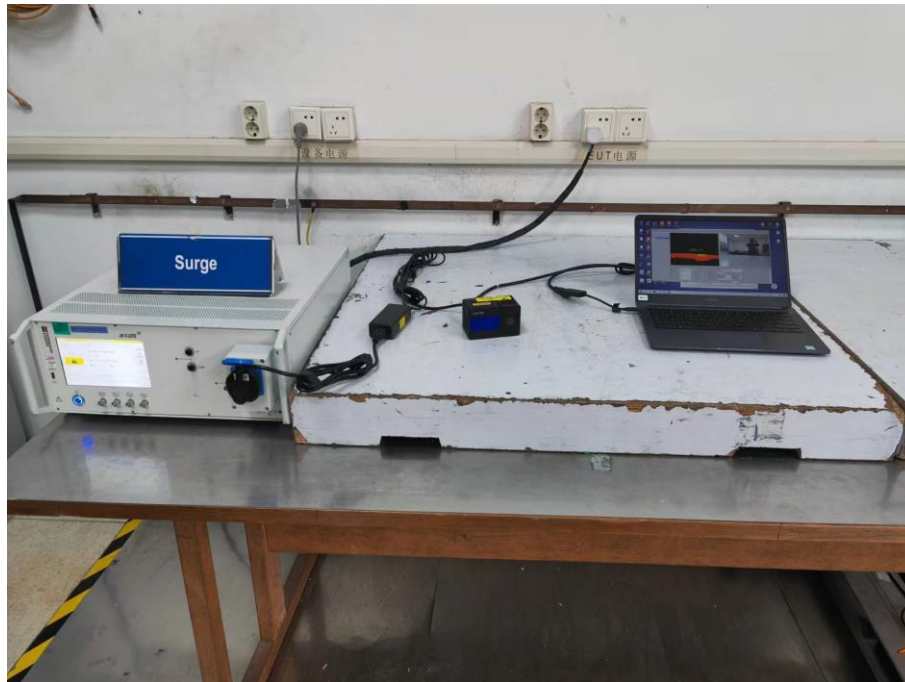
### 2.9.7 Test Results

Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

Tabulated Results for Surge Immunity (Power Ports)							
Line under test	Coupling	Level	Polarity	Phase Angle	No of Pulses	Repetition Rate	Result
Power line	L to N	1.0kV	POSITIVE & NEGATIVE	0, 90, 180, 270 deg	5	60 sec	Pass PC A
Power line	L to PE	2.0kV	POSITIVE & NEGATIVE	0, 90, 180, 270 deg	5	60 sec	Pass PC A
Power line	N to PE	2.0kV	POSITIVE & NEGATIVE	0, 90, 180, 270 deg	5	60 sec	Pass PC A



**Test Setup**

#### **2.9.8 Test Location**

This test was carried out in Immunity test location.

## 2.10 Immunity - Wired network port - Surges

### 2.10.1 Specification Reference

EN IEC 61000-6-2:2019, Clause 9 Table 2; 2.2

### 2.10.2 Equipment Under Test

DCAM560C Pro, DCAM560C Lite

### 2.10.3 Date of Test

16/08/2022

### 2.10.4 Test Method

The equipment under test including associated cabling was configured, on a 0.8 m non-conductive table for table-top equipment and on a 0.1 m insulated support for floor standing equipment above a ground reference plane all within a test laboratory.

Using CDNs for power ports and appropriate coupling methods for applicable signal and control ports, the required number of surges was applied for each surge voltage level using both positive and negative surge voltage polarities. Surges were applied at the power line frequency phase angles and repartition rates detailed.

During this testing any anomalies in the equipment under tests performance was recorded.

### 2.10.5 Environmental Conditions

Ambient Temperature 21.0 °C  
Relative Humidity 50.0 %  
Atmospheric Pressure 1019.0 mbar

### 2.10.6 Specification Limits

Required Test Levels				Performance Criteria
Line Under Test	Level (kV)	Surge Waveform	No of Pulse	
Signal and telecommunication ports <sup>(1)</sup>	± 0.5 (Lines to Earth)	1.2/50	5 per polarity	B
<b>Supplementary information:</b> Note 1. Only required for cables connecting directly with outdoor cables Note 2. For ports where primary protection is intended, surges are applied at voltages up to 4 kV with the primary protectors fitted.				

### 2.10.7 Test Results

Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.



Tabulated Results for Surge Immunity (Wired network port ) 1.2/50						
Line under test	Coupling	Level	Polarity	No of Pulses	Repetition Rate	Result
network line	Line to Earth	0.5kV	±	5	60 sec	Pass



**Test Setup**

#### **2.10.8 Test Location**

This test was carried out in Immunity test location.

## 2.11 Immunity - Input and output AC power ports - Radio-frequency common mode

### 2.11.1 Specification Reference

EN IEC 61000-6-2:2019, Clause 9 Table 3; 3.1

### 2.11.2 Equipment Under Test

DCAM560C Pro, DCAM560C Lite

### 2.11.3 Date of Test

16/08/2022

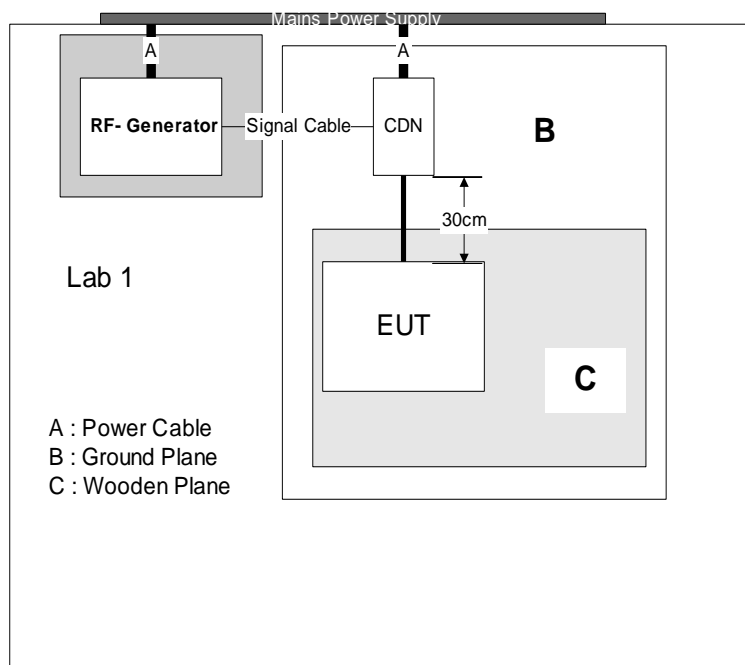
### 2.11.4 Test Method

The equipment under test was configured, on but insulated from, using a 0.1 m isolator, a horizontal coupling plane fitted to the top of a 0.8 m non-conductive table for table-top equipment; and on a 0.1 m insulated support for floor standing equipment; above a ground reference plane all within a test laboratory.

All associated cabling was configured, on but insulated from, using a 50 mm isolator, the same horizontal coupling plane as the equipment under test.

Using CDNs, EM Clamps or current clamps as appropriate, the power ports and applicable signal and control ports were subjected to the required, pre calibrated RF injected signal strength, modulated as described, swept over the frequency range of test.

During this testing any anomalies in the equipment under tests performance was recorded.



### 2.11.5 Environmental Conditions

Ambient Temperature 23°C  
Relative Humidity 49%  
Atmospheric Pressure 1003.3 mbar

### 2.11.6 Specification Limits

Environmental phenomena	Test specifications	Units	Remarks	Performance criteria
Radio-frequency common mode (AC power ports)	0.15 to 80 10 80	MHz V % AM (1 kHz)	The test level specified is the r.m.s. value of the unmodulated carrier. a*	A
Supplementary information: a* : The test level can also be defined as the equivalent current into a 150 $\Omega$ load.				

### 2.11.7 Test Results

Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

Tabulated Results for Conducted Radio Frequency Interference					
Modulation = 80 % AM (1 kHz)		Step Size = 1 %		Dwell = 3 s	
Line Under Test	Frequency Range	Test Level	Coupling Method	Interference Return Path	Result
Power line	150kHz to 80MHz	10 V	CDN	--	Pass PC A



**Test Setup**

#### **2.11.8 Test Location**

This test was carried out in Immunity test location.

## 2.12 Immunity - Wired network port - Radio-frequency common mode

### 2.12.1 Specification Reference

EN IEC 61000-6-2:2019, Clause 9 Table 2; 2.1

### 2.12.2 Equipment Under Test

DCAM560C Pro, DCAM560C Lite

### 2.12.3 Date of Test

16/08/2022

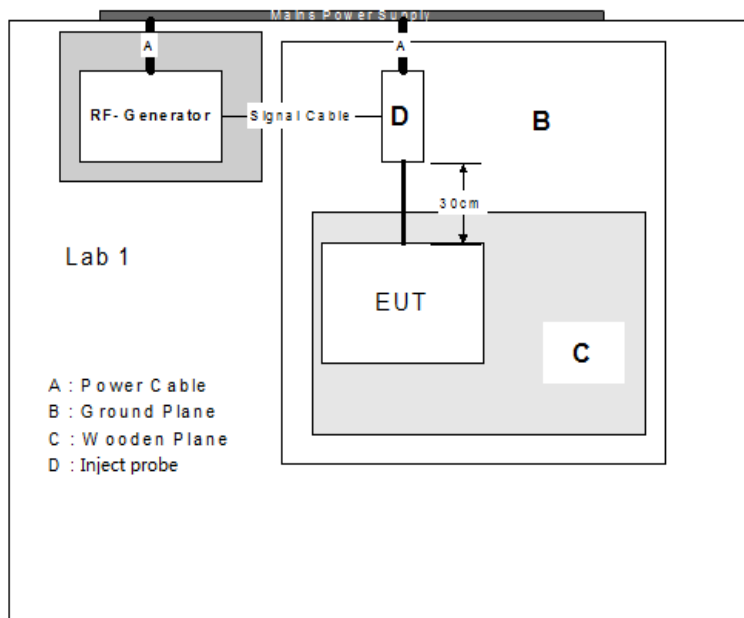
### 2.12.4 Test Method

The equipment under test was configured, on but insulated from, using a 0.1 m isolator, a horizontal coupling plane fitted to the top of a 0.8 m non-conductive table for table-top equipment; and on a 0.1 m insulated support for floor standing equipment; above a ground reference plane all within a test laboratory.

All associated cabling was configured, on but insulated from, using a 50 mm isolator, the same horizontal coupling plane as the equipment under test.

Using CDNs, EM Clamps or current clamps as appropriate, the power ports and applicable signal and control ports were subjected to the required, pre calibrated RF injected signal strength, modulated as described, swept over the frequency range of test.

During this testing any anomalies in the equipment under tests performance was recorded.



### 2.12.5 Environmental Conditions

Ambient Temperature 23°C  
Relative Humidity 49%  
Atmospheric Pressure 1003.3 mbar

### 2.12.6 Specification Limits

Environmental phenomena	Test specifications	Units	Remarks	Performance criteria
Radio-frequency common mode (wired network port )	0.15 to 80 10 80	MHz V % AM (1 kHz)	The test level specified is the r.m.s. value of the unmodulated carrier. a*	A
Supplementary information: a* : The test level can also be defined as the equivalent current into a 150 Ω load.				

### 2.12.7 Test Results

Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

Tabulated Results for Conducted Radio Frequency Interference					
Modulation = 80 % AM (1 kHz)		Step Size = 1 %		Dwell = 3 s	
Line Under Test	Frequency Range	Test Level	Coupling Method	Interference Return Path	Result
LAN	150kHz to 80MHz	10 V	Current injection clamp	--	Pass PC A



**Test Setup**

#### **2.12.8 Test Location**

This test was carried out in Immunity test location.

## 2.13 Immunity - Input and output AC power ports - Voltage dips

### 2.13.1 Specification Reference

EN IEC 61000-6-2:2019, Clause 9 Table 4; 4.2

### 2.13.2 Equipment Under Test

DCAM560C Pro, DCAM560C Lite

### 2.13.3 Date of Test

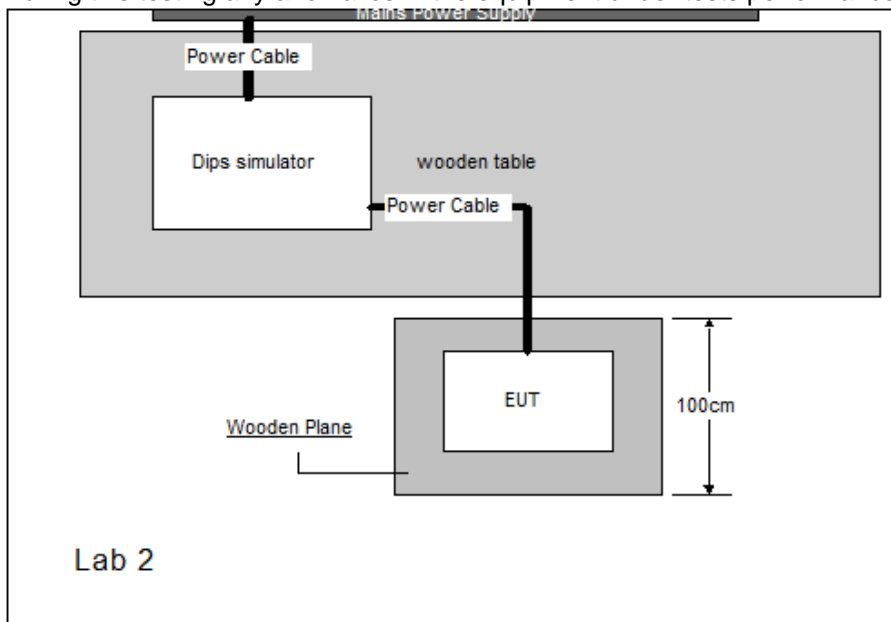
16/08/2022

### 2.13.4 Test Method

The equipment under test including associated cabling was configured, on a 0.8 m non-conductive table for table-top equipment and on a 0.1 m insulated support for floor standing equipment above a ground reference plane all within a test laboratory.

Using a programmable power supply the equipment under test was subjected to the detailed supply voltage dips and interruptions. The required supply phase synchronization and test repetition rate, detailed, was controlled by the programmable power supply.

During this testing any anomalies in the equipment under tests performance was recorded.





### 2.13.5 Environmental Conditions

Ambient Temperature 23°C  
Relative Humidity 49%  
Atmospheric Pressure 1003.3 mbar

### 2.13.6 Specification Limits

Environmental phenomena	Test specification	Units	Remarks	Performance criteria
Voltage dips	0 1	% residual voltage cycle	Voltage shift at zero crossing	B <sup>Note 2</sup>
	40 10/12 at 50/60Hz	% residual voltage cycle		C <sup>Note 2</sup>
	70 25/30 at 50/60Hz	% residual voltage cycle		C <sup>Note 2</sup>
Supplementary information: Note 1: Applicable only to input ports; Note 2: For electronic power converters, the operation of protective devices (e.g. undervoltage protection) and the performance criterion C are allowed.				

### 2.13.7 Test Results

Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

Tabulated Results for Voltage Dip and Short Interruption					
Line under test	Vnom	Operating Frequency	Test Level	Duration	Result
Power line	230V	50	0%	20ms	Pass PC A
Power line	230V	50	40%	200ms	Pass PC A
Power line	230V	50	70%	500ms	Pass PC A



**Test setup**

#### **2.13.8 Test Location**

This test was carried out in Immunity test location.

## 2.14 Immunity - Input and output AC power ports - Voltage interruptions

### 2.14.1 Specification Reference

EN IEC 61000-6-2:2019, Clause 9 Table 4; 4.3

### 2.14.2 Equipment Under Test

DCAM560C Pro, DCAM560C Lite

### 2.14.3 Date of Test

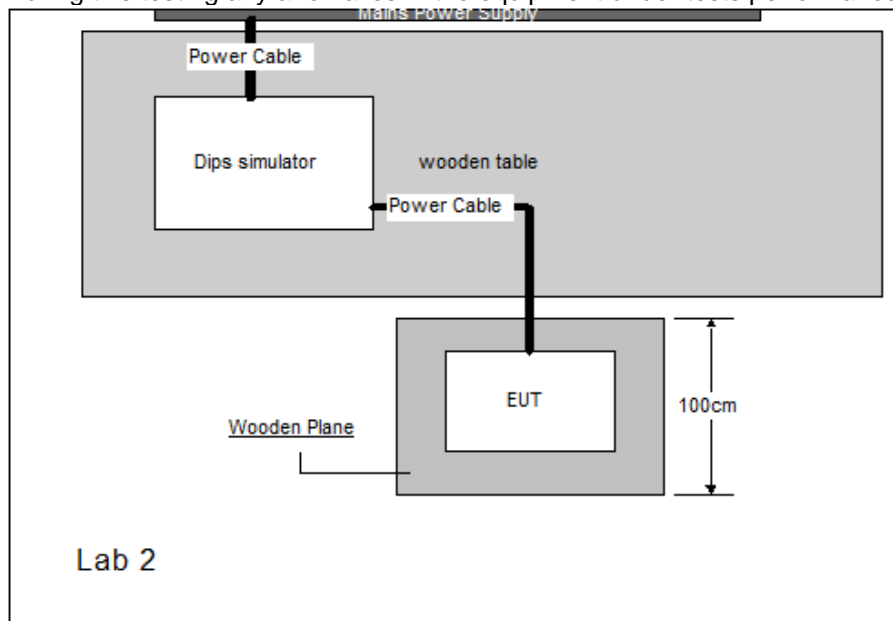
16/08/2022

### 2.14.4 Test Method

The equipment under test including associated cabling was configured, on a 0.8 m non-conductive table for table-top equipment and on a 0.1 m insulated support for floor standing equipment above a ground reference plane all within a test laboratory.

Using a programmable power supply the equipment under test was subjected to the detailed supply voltage dips and interruptions. The required supply phase synchronization and test repetition rate, detailed, was controlled by the programmable power supply.

During this testing any anomalies in the equipment under tests performance was recorded.



#### 2.14.5 Environmental Conditions

Ambient Temperature 23°C  
Relative Humidity 49%  
Atmospheric Pressure 1003.3 mbar

#### 2.14.6 Specification Limits

Environmental phenomena	Test specification	Units	Remark	Performance criteria
Voltage Interruptions	0 250/300 at 50/60Hz	% residual voltage cycle	Voltage shift at zero crossing	C <sup>Note 2</sup>
Supplementary information: Note 1: Applicable only to input ports; Note 2: For electronic power converters, the operation of protective devices (e.g. undervoltage protection) and the performance criterion C are allowed.				

#### 2.14.7 Test Results

Results for Configuration and Mode: Configuration 1, Mode 1.

Performance assessment of the EUT made during this test: Pass.

Detailed results are shown below.

Tabulated Results for Voltage Dip and Short Interruption					
Line under test	Vnom	Operating Frequency	Test Level	Duration	Result
Power line	230V	50	0%	5000ms	Pass PC B

Remark: During the test of voltage interruption of 5000ms, the EUT stopped working. Once removing the interference, it restored to its normal status automatically.



**Test setup**

#### **2.14.8 Test Location**

This test was carried out in Immunity test location.

### 3 Test Equipment Information

#### 3.1 General Test Equipment Used

Instrument	Manufacturer	Type No	TE No	Calibration Date	Calibration Due
Conducted Emission					
EMI Test Receiver	Rohde & Schwarz	ESHS30	707/639701	2022.05.06	2023.05.05
LISN	Schwarzbeck	NSLK8127	487/601428	2021.12.03	2022.12.02
RF Current Probe	FCC	F-55	487/750814	2022.05.06	2023.05.05
Radiated Emission					
EMI Test Receiver	Rohde & Schwarz	ESCI	487/631110	2022.05.06	2023.05.05
Broadband Antenna	Schwarzbeck	VULB9168	487/620214	2022.06.27	2023.06.26
Horn Antenna	ETS	3115	487/621838	2021.12.05	2022.12.04
EMI Test Receiver	Rohde & Schwarz	ESW8	487/631911	2022.05.06	2023.05.05
Semi-anechoic Chamber	TDK	10m	--	--	--
Semi-anechoic Chamber	Jinlida	3m	--	--	--
Harmonic and Flicker					
AC Power Supply Testing System	California Instruments	MX45-3PI	487/681243	2022.09.02	2023.09.01
Immunity					
ESD Simulator	HAEFELY	ONYX 30	487/751520	2022.09.02	2023.09.01
RF Generator	TESQ	NSG 4070C-80	487/391121	2022.05.06	2023.05.05
Compact immunity test system	HAEFELY	AXOS 5	487/751822	2022.07.02	2023.07.01
Capacitive coupling clamp	Schloder	SFT-415	487/571841	--	--
Current injection probe	TESQ	CIP9136A	487/431315	2022.09.02	2023.09.01
Coupling Network	TESQ	CDN M016	487/571539	2022.05.06	2023.05.05
Voltage Drop Generator	EM test	UCS500N5-PFS	487/751117	2022.05.06	2023.05.05

Signal Generator	Rohde & Schwarz	SMB-100A	487/391120	2021.11.28	2022.11.27
Power amplifier	TESEQ	CBA1G-500	487/400908	2021.11.28	2022.11.27
Power amplifier	TESEQ	CBA3G-100	487/400909	2021.11.28	2022.11.27
Power amplifier	Rohde & Schwarz	BBA150-E60	487/401816	2021.11.28	2022.11.27
Power Meter	Rohde & Schwarz	NRP-2	487/741156	2021.11.28	2022.11.27
Coupler	amplifier Research	DC6180A	487/571116	2021.11.28	2022.11.27
Coupler	amplifier Research	DC7114A	487/571117	2021.11.28	2022.11.27
Power sensor	Rohde & Schwarz	NRP-Z91	487/431113	2021.11.28	2022.11.27
Power sensor	Rohde & Schwarz	NRP-Z91	487/431114	2021.11.28	2022.11.27
Antenna	Schwarzbeck	STLP 9128Ds	487/621432	2021.11.28	2022.11.27
Horn Antenna	Schwarzbeck	BBHA 9120E	487/621535	2021.11.28	2022.11.27

## 4 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Emission - Low voltage AC mains port	150 kHz to 30 MHz, 3.08 dB
Emission - Enclosure port	30 MHz to 1 GHz, 4.47 dB 1 GHz to 6 GHz, 5.15 dB
Immunity - Enclosure port - Electrostatic discharge	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-2
Immunity - Enclosure port - Radio-frequency electromagnetic field. Amplitude modulated	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-3
Immunity - Input and output AC power ports - Fast transients	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4
Immunity - Wired network port - Fast transients	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4
Immunity - Input and output AC power ports - Surges	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-5
Immunity - Wired network port - Surges	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-5
Immunity - Input and output AC power ports - Radio-frequency common mode	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-6
Immunity - Wired network port - Radio-frequency common mode	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-6
Immunity - Enclosure ports - Power-frequency magnetic field	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-8
Immunity - Input and output AC power ports - Voltage dips	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11
Immunity - Input and output AC power ports - Voltage interruptions	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11

### Measurement Uncertainty Decision Rule

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2021, clause 4.4.3 and 4.5.1.



## 5 Photographs

DCAM560C Lite



DCAM560C Pro

