EMC Test Report

Client Name	:	**Cermate Technologies Inc.**
Client Address	:	**7F.-1, No.168, Liancheng Rd. Zhonghe Dist.,New Taipei City 235, Taiwan**
Product Name	:	**Human machine interface**
Report Date	:	**Mar. 23, 2023**

Shenzhen Anbotek Compliance Laboratory Limited

Contents

1. General Information 5
1.1. Client Information 5
1.2. Description of Device (EUT) 5
1.3. Auxiliary Equipment Used During Test 5
1.4. Description of Test Mode 6
1.5. Test Summary 6
1.6. Test Equipment List 7
1.7. Description of Test Facility 11
1.8. EMS Performance Criteria 12
1.9. Model List 12
2. Power Line Conducted Emission Test 13
2.1. Test Standard and Limit 13
2.2. Test Setup 13
2.3. Test Procedure 14
2.4. Test Results 14
3. Asymmetric Mode Conducted Emission at Telecom Port 17
3.1. Test Standard and Limit 17
3.2. Test Setup 17
3.3. Test Procedure 18
3.4. Test Results 18
4. Radiated Emission Test (Below 1 GHz) 20
4.1. Test Standard and Limit 20
4.2. Test Setup 20
4.3. Test Procedure 20
4.4. Test Results 21
5. Radiated Emission Test (Above 1GHz) 24
5.1. Test Standard and Limit 24
5.2. Test Setup 24
5.3. Test Procedure 24
5.4. Test Results 25
6. Harmonic Current Test 28
6.1. Test Standard 28
6.2. Test Setup 28
6.3. Test Procedure 28
6.4. Test Results 28
7. Voltage Fluctuations & Flicker Test 29
7.1. Test Standard 29
7.2. Test Setup 29
7.3. Test Procedure 29

7.4. Test Results 29
8. Electrostatic Discharge Immunity Test 30
8.1. Test Specification 30
8.2. Test Setup 30
8.3. Test Procedure 30
8.4. Test Results 31
9. RF Field Strength Immunity Test 35
9.1. Test Specification 35
9.2. Test Setup 35
9.3. Test Procedure 36
9.4. Test Results 36
10. Electrical Fast Transient/Burst Immunity Test 38
10.1. Test Specification 38
10.2. Test Setup 38
10.3. Test Procedure 39
10.4. Test Results 39
11. Surge Immunity Test 41
11.1. Test Specification 41
11.2. Test Setup 41
11.3. Test Procedure 41
11.4. Test Results 41
12. Injected Currents Susceptibility Test 43
12.1. Test Specification 43
12.2. Test Setup 43
12.3. Test Procedure 44
12.4. Test Results 44
13. Power Frequency Magnetic Field Immunity Test 46
13.1. Test Specification 46
13.2. Test Setup 46
13.3. Test Procedure 46
13.4. Test Results 46
14. Voltage Dips and Interruptions Immunity Test 47
14.1. Test Specification 47
14.2. Test Setup 47
14.3. Test Procedure 47
14.4. Test Results 47
APPENDIX I -- TEST SETUP PHOTOGRAPH 48
APPENDIX II -- EXTERNAL PHOTOGRAPH 54
APPENDIX III -- INTERNAL PHOTOGRAPH 57

TEST REPORT

Applicant	:	Cermate Technologies Inc.
Manufacturer	:	Cermate Technologies Inc.
Product Name	:	Human machine interface
Test Model No.	:	PM210
Reference Model No.	:	See Chapter 1.9 for model list
Trade Mark	:	N.A.
Rating(s)	:	Input: 24V 0.8A(Battery: DC3V 240mAh)
Test Standard(s)	:	**EN IEC 61000-6-4: 2019; EN IEC 61000-3-2: 2019+A1:2021; EN 61000-3-3: 2013+A1:2019+A2:2021; EN IEC 61000-6-2: 2019; (IEC 61000-4-2; IEC 61000-4-3; IEC 61000-4-4; IEC 61000-4-5; IEC 61000-4-6; IEC 61000-4-8; IEC 61000-4-11)**

The device described above is tested by Shenzhen Anbotek Compliance Laboratory Limited to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Shenzhen Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the EN IEC 61000-6-2, EN IEC 61000-3-2, EN 61000-3-3, EN IEC 61000-6-4 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen Anbotek Compliance Laboratory Limited.

Date of Receipt: Nov. 09, 2022

Date of Test: Nov. 09~Dec. 07, 2022

Prepared By: We Zeng

(We Zeng)

Approved & Authorized Signer: KingKong Jin

(KingKong Jin)

1. General Information

1.1. Client Information

Applicant	:	Cermate Technologies Inc.
Address	:	7F.-1, No.168, Liancheng Rd. Zhonghe Dist.,New Taipei City 235, Taiwan
Manufacturer	:	Cermate Technologies Inc.
Address	:	7F.-1, No.168, Liancheng Rd. Zhonghe Dist.,New Taipei City 235, Taiwan
Factory	:	Cermate Technologies Inc.
Address	:	7F.-1, No.168, Liancheng Rd. Zhonghe Dist.,New Taipei City 235, Taiwan

1.2. Description of Device (EUT)

Product Name	:	Human machine interface
Test Model No.	:	PM210
Reference Model No.	:	See Chapter 1.9 for model list (Note: All samples are the same except the model number & appearance, so we prepare “PM210” for test only.)
Trade Mark	:	N.A.
Test Power Supply	:	DC 24V
Test Sample No.	:	1-1-1
Product Description	:	N/A
Remark: (1) For a more detailed features description, please refer to the manufacturer’s specifications or the User’s Manual. (2)The test report 18250EC20110201-M1 supersedes the test report 18250EC20110201 which is withdrawn.		

1.3. Auxiliary Equipment Used During Test

Notebook	:	MacBook Air
		Model: A1466 Input: 14.85V/3.05A CMIIT ID:C02HXB48DRVC

1.4. Description of Test Mode

Pretest Mode	Description
Mode 1	On

For Mode 1 Block Diagram of Test Setup

1.5. Test Summary

Test Items	Test Mode	Status
Power Line Conducted Emission Test	Mode 1	P
Asymmetric Mode Conducted Emission at Telecom Port	Mode 1	P
Radiated Emission Test (Below 1 GHz)	Mode 1	P
Radiated Emission Test (Above 1GHz)	Mode 1	P
Harmonic Current Test	/	N
Voltage Fluctuations & Flicker Test	/	N
Electrostatic Discharge Immunity Test	Mode 1	P
RF Field Strength Immunity Test	Mode 1	P
Electrical Fast Transient/Burst Immunity Test	Mode 1	P
Surge Immunity Test	Mode 1	P
Injected Currents Susceptibility Test	Mode 1	P
Power frequency Magnetic Field Immunity Test	/	N
Voltage Dips and Interruptions Immunity Test	/	N
P) Indicates “PASS”. F) Indicates “Fail”. N) Indicates “Not applicable”.		

1.6. Test Equipment List

☒ Power Line Conducted Emission Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	L.I.S.N. Artificial Mains Network	Rohde & Schwarz	ENV216	100055	Oct. 23, 2022	1 Year
2.	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040DT001	Jul. 05, 2022	1 Year
3.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Oct. 13, 2022	1 Year
4.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Oct. 22, 2022	1 Year
5.	Software Name EZ-EMC	Ferrari Technology	ANB-03A	N/A	N/A	N/A

☒ Asymmetric Mode Conducted Emission at Telecom Port

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	ISN	Schwarzbeck	NTFM 8158	#172	Oct. 13, 2022	1 Year
2.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Oct. 13, 2022	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Oct. 22, 2022	1 Year
4.	Software Name EZ-EMC	Ferrari Technology	ANB-03A	N/A	N/A	N/A
5.	Three Phase V-type Artificial Power Network	CYBERTEK	EM5040DT	E215040DT001	Jul. 05, 2022	1 Year

☒ Radiated Emission Test (Below 1 GHz)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	Oct. 23, 2022	1 Year
2.	Pre-amplifier	SONOMA	310N	186860	Oct. 23, 2022	1 Year
3.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Oct. 23, 2022	1 Year
4.	Software Name EZ-EMC	Ferrari Technology	ANB-03A	N/A	N/A	N/A

☒ Radiated Emission Test (Above 1GHz)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESR26	101481	Oct. 23, 2022	1 Year
2.	Bilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Oct. 23, 2022	1 Year
3.	Pre-amplifier	SONOMA	310N	186860	Oct. 23, 2022	1 Year
4.	Software Name EZ-EMC	Ferrari Technology	ANB-03A	N/A	N/A	N/A
5.	EMI Preamplifier	SKET Electronic	LNPA-0118G-45	SKET-PA-002	Oct. 13, 2022	1 Year
6.	Double Ridged Horn Antenna	SCHWARZBECK	BBHA 9120D	02555	Oct. 16, 2022	3 Year

☐ Harmonic Current and Flicker Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Programmable AC Power source	IVYTECH	APS-5005A	632734	Oct. 23, 2022	1 Year
2.	Harmonic and Flicker Analyzer	EMC-PARTNER	HMONICS 1000-1P	164	Oct. 23, 2022	1 Year
3.	Harmonics-1000	N/A	Ed.3.0+4.0	N.A	N/A	N/A

☒ Electrostatic Discharge Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	ESD Simulators	emtest	ESD NX30.1	11936	Mar. 25, 2022	1 Year

☒ RF Field Strength Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Signal Generator	Agilent	N5182A	MY48180656	Oct. 13, 2022	1 Year
2.	Amplifier	Micotoop	MPA-80-1000-250	MPA1903096	Oct. 23, 2022	1 Year
3.	Amplifier	Micotoop	MPA-1000-6000-100	MPA1903122	Oct. 23, 2022	1 Year
4.	Log-Periodic Antenna	Schwarzbeck	VULP9118E	00992	N/A	N/A
5.	Double Ridged Horn Antenna	SCHWARZBECK	BBHA 9120D	02555	Oct. 16, 2022	3 Year
6.	Power Sensor	Agilent	E9301A	MY41498906	Oct. 23, 2022	1 Year
7.	Power Sensor	Agilent	E9301A	MY41498088	Oct. 23, 2022	1 Year
8.	Power Meter	Agilent	E4419B	GB40202909	Oct. 23, 2022	1 Year
9.	Electric field Probe	Narda	EP 601	811ZX10351	Oct. 23, 2022	1 Year
10.	RS Test software	EMtrace	EM 3	V1.1.7	N/A	N/A

☒ Electrical Fast Transient/Burst Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Surge Generator	TESEQ	NSG 3060	1480	Oct. 23, 2022	1 Year
2.	CDN	TESEQ	CDN 3061	1408	Oct. 23, 2022	1 Year
3.	EFT-Clamp	PRIMA	EFT-Clamp	/	Oct. 13, 2022	1 Year

☒ Surge Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Combined Wave Lightning Surge Simulator	3Ctest	CCS600	ES3771702	Jul. 05, 2022	1 Year
2.	Three Phase Power Coupling Network	3Ctest	SEPN69100T	ES0801757	Jul. 05, 2022	1 Year
3.	Telecom port surge generator	PMI	TW101	190411	May 13, 2022	1 Year

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Surge Generator	TESEQ	NSG 3060	1480	Oct. 23, 2022	1 Year
2.	CDN	TESEQ	CDN 3061	1408	Oct. 23, 2022	1 Year
3.	Telecom port surge generator	PMI	TW101	190411	May 13, 2022	1 Year

☒ Injected Currents Susceptibility Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	C/S Conducted Immunity Test System	FRANKONIA	CIT-10	126A1196/2012	Oct. 23, 2022	1 Year
2.	CDN	FRANKONIA	CDN - M2+ M3	A2210178/2012	Oct. 23, 2022	1 Year
3.	6dB Attenuator	FRANKONIA	DAM 26W	1172202	Oct. 23, 2022	1 Year
4.	CIT-10	FRANKONIA	Version1.1.7	N/A	N/A	N/A
5.	EM-Clamp	FRANKONIA	EMCL-20	18101728-0103	May 17, 2022	1 Year

☐ Power frequency Magnetic Field Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Power Frequency Magnetic Field Generator	EVERFINE	EMS61000-8K	906002	Oct. 23, 2022	1 Year

☐ Voltage Dips and Interruptions Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	CYCLE SAG Simulator	PRIMA	DRP61011AG	PR12046234	Oct. 23, 2022	1 Year

1.7. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 184111

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No. 184111.

ISED-Registration No.: 8058A

Shenzhen Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (ISED) Innovation, Science and Economic Development Canada. The acceptance letter from the ISED is maintained in our files. Registration 8058A.

Test Location

Shenzhen Anbotek Compliance Laboratory Limited.
1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.518128

1.8. EMS Performance Criteria

Performance criterion A

The EUT 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 EUT is used as intended. If the performance level is not specified by the manufacturer. this may be derived from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.

Performance criterion B

The EUT 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 EUT is used as intended. The performance level may be replaced by a permissible loss of performance. However. during the test degradation of performance is allowed but no change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer. either of these may be derived from the product description and and what the user may reasonably expect from the equipment if used as intended.

Performance criterion C

Ternporary loss of function is allowed during the test. provided the function is self-recoverable or can be restored by the operation of the controls.

If. as a result of the application of the tests defined in this standard. the EUT becomes dangerous or unsafe. it shall be deemed to have failed the test.

1.9. Model List

WOP-110E-SAE, KSM-210, AST-207CHS-0, PM210-xxx0, PM210-C20, FM210-xxxx0, RM210-xxx0, KM210-xxx0, GM210-xxx0, Xpm210-xxx0, LCM210-xxx0, IPM210-xxx0, PMM210-xxx0, LKM210-xxx0, SM210-xxx0, HM210-xxx0, WM210-xxx0, UM210-xxx0, CM210-xxx0, VM210-xxx0, MHM210-xxx0, GPM210-xxx0, SPM210-xxx0, PM210-xxx1, SPM210-xxx1

(The first x represents the number 0 or 1, "0" means LCM 800*480, "1" means LCM 1024*600; The second x represents the letters A,B,C or D, "A" represents the work gauge screen LCM (-30~70℃), "B" represents the work gauge screen LCM (-10~60℃), "C" represents the business gauge LCM (0~50℃), "D" represents the custom specification LCM; The third X represents the number 2 for build-in 2 serial ports / 3 for build-in 3 serial ports / 4 for build-in 2 serial ports & extension bus / 5 for build-in 3 serial ports & extension bus)

2. Power Line Conducted Emission Test

2.1. Test Standard and Limit

Test Standard:	EN IEC 61000-6-4

☐ **Limits for conducted emission at the AC mains power ports**

Frequency (MHz)	Limits (dBμV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	79.0	66.0
0.50 ~ 30.00	73.0	60.0
Remark: The lower limit shall apply at the transition frequencies.		

☒ **Limits for conducted emission at the DC power ports**

Frequency (MHz)	Limits (dBμV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	89.0	76.0
0.50 ~ 30.00	83.0	70.0
Remark: The lower limit shall apply at the transition frequencies.		

2.2. Test Setup

2.3. Test Procedure

The table-top EUT is placed on a non-conductive table 0.8 m above the horizontal ground reference plane, and the back of the EUT is 0.4 m away from the vertical ground reference plane, and at least 0.8 m from any other metal surface or ground plane. The floor-standing EUT is placed on an insulating support 0.1 m above the horizontal ground reference plate, at least 0.8 m away from other metal objects.

Connect EUT to the power mains through an LISN. Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the center into a bundle no longer than 0.4 m, so that its length is shortened to 1 m. All the peripherals are connecting to the other LISN.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest disturbance with respect to the limit was found by investigating disturbances at a number of significant frequencies. The probable frequency of maximum disturbance had been found and that the associated cable and EUT configuration and mode of operation had been identified.

Set the test-receiver to quasi peak detect function and average detect function, and to measure the conducted emissions values.

2.4. Test Results

PASS

The test curves are shown in the following pages.

Power Line Conducted Test Data

Test Site:	1# Shielded Room
Test Specification:	DC 24V
Comment:	+
	Temp.: 23.9℃ Hum.: 45%

No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1500	46.63	9.82	56.45	89.00	-32.55	QP	
2	0.1500	46.38	9.82	56.20	76.00	-19.80	AVG	
3	0.2260	42.35	9.83	52.18	89.00	-36.82	QP	
4	0.2260	41.74	9.83	51.57	76.00	-24.43	AVG	
5	0.3020	34.45	9.83	44.28	89.00	-44.72	QP	
6	0.3020	34.24	9.83	44.07	76.00	-31.93	AVG	
7	0.5260	28.80	9.85	38.65	83.00	-44.35	QP	
8	0.5260	28.23	9.85	38.08	70.00	-31.92	AVG	
9	0.6020	26.40	9.86	36.26	70.00	-33.74	AVG	
10	2.7380	28.43	9.84	38.27	83.00	-44.73	QP	
11	2.7380	25.62	9.84	35.46	70.00	-34.54	AVG	
12	16.2300	27.39	10.21	37.60	83.00	-45.40	QP	

Note: Result = Reading + Factor Over Limit = Result - Limit

Power Line Conducted Test Data

Test Site:	1# Shielded Room
Test Specification:	DC 24V
Comment:	-
	Temp.: 23.9℃ Hum.: 45%

No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.1500	45.98	9.82	55.80	89.00	-33.20	QP	
2	0.1500	45.51	9.82	55.33	76.00	-20.67	AVG	
3	0.2260	40.99	9.83	50.82	89.00	-38.18	QP	
4	0.2260	40.20	9.83	50.03	76.00	-25.97	AVG	
5	0.3020	37.51	9.83	47.34	89.00	-41.66	QP	
6	0.3020	37.09	9.83	46.92	76.00	-29.08	AVG	
7	0.5260	28.49	9.85	38.34	83.00	-44.66	QP	
8	0.5299	27.31	9.85	37.16	70.00	-32.84	AVG	
9	0.6020	28.38	9.86	38.24	83.00	-44.76	QP	
10	0.6020	27.51	9.86	37.37	70.00	-32.63	AVG	
11	2.7380	28.81	9.84	38.65	83.00	-44.35	QP	
12	2.7380	25.62	9.84	35.46	70.00	-34.54	AVG	

Note: Result = Reading + Factor Over Limit = Result - Limit

3. Asymmetric Mode Conducted Emission at Telecom Port

3.1. Test Standard and Limit

Test Standard	EN IEC 61000-6-4

Limits for asymmetric mode conducted emissions

Frequency (MHz)	Limits (dBμV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	97.0 ~ 87.0 *	87.0 ~ 74.0 *
0.50 ~ 30.00	87.0	74.0

Remark:
The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

3.2. Test Setup

3.3. Test Procedure

The table-top EUT is placed on a non-conductive table 0.8 m above the horizontal ground reference plane, and the back of the EUT is 0.4 m away from the vertical ground reference plane, and at least 0.8 m from any other metal surface or ground plane. The floor-standing EUT is placed on an insulating support 0.1 m above the horizontal ground reference plane, at least 0.8 m away from other metal objects.

Connect EUT to the power mains through an LISN. Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the center into a bundle no longer than 0.4 m, so that its length is shortened to 1 m. All the peripherals are connecting to the other LISN.

The EUT was connected to the peripheral equipment through the ISN and linked in normal condition.

Set the test-receiver to quasi peak detect function and average detect function, and to measure the asymmetric mode conducted emission values.

3.4. Test Results

PASS

The test curves are shown in the following pages.

Asymmetric Mode Conducted Emission Test Data

Test Site:	1# Shielded Room
Test Specification:	DC 24V
Comment:	Telecom Port
	Temp.: 23.9℃ Hum.: 45%

No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Over Limit (dB)	Detector	Remark
1	0.9020	55.80	9.52	65.32	87.00	-21.68	QP	
2	0.9020	54.57	9.52	64.09	74.00	-9.91	AVG	
3	0.9780	61.44	9.52	70.96	87.00	-16.04	QP	
4	0.9780	60.43	9.52	69.95	74.00	-4.05	AVG	
5	1.0540	57.42	9.52	66.94	87.00	-20.06	QP	
6	1.0540	53.18	9.52	62.70	74.00	-11.30	AVG	
7	1.2020	48.45	9.52	57.97	74.00	-16.03	AVG	
8	1.2780	51.09	9.52	60.61	87.00	-26.39	QP	
9	1.2780	48.92	9.52	58.44	74.00	-15.56	AVG	
10	1.7380	52.26	9.51	61.77	87.00	-25.23	QP	
11	1.7820	47.93	9.51	57.44	74.00	-16.56	AVG	
12	3.1900	52.66	9.51	62.17	87.00	-24.83	QP	

Note: Result = Reading + Factor Over Limit = Result - Limit

4. Radiated Emission Test (Below 1 GHz)

4.1. Test Standard and Limit

Test Standard	EN IEC 61000-6-4

Limit for radiated emissions at frequencies up to 1 GHz

Frequency (MHz)	Distance (Meters)	Field Strengths Limit (dBμV/m)
30 ~ 230	3	50
230 ~ 1000	3	57
Remark: The lower limit shall apply at the transition frequencies.		

4.2. Test Setup

4.3. Test Procedure

The table-top EUT is placed on a non-conductive table 0.8 m above the horizontal ground reference plane. The floor-standing EUT is placed on an insulating support 0.1 m above the horizontal ground reference plane.

The EUT was set 3 m away from the receiving antenna that was mounted on a non-conductive mast. The antenna can move up and down between 1 to 4 m to find out the maximum emission level.

The turntable can rotate 360 degree to determine the position of the maximum emission level.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

The bandwidth of the Receiver is set at 120 kHz.

4.4. Test Results

PASS

The test curves are shown in the following pages.

Test item:	Radiation Test	Polarization:	Horizontal
Standard:	(RE)EN IEC 61000-6-4	Power Source:	DC 24V
Frequency Range:	30MHz ~ 1000MHz	Temp.(℃)/Hum.(%RH):	24.3(℃)/49%RH
Distance:	3m		

No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	350.4768	57.34	-16.00	41.34	57.00	-15.66	QP			
2	400.4319	62.24	-16.14	46.10	57.00	-10.90	QP			
3	451.1350	58.90	-15.44	43.46	57.00	-13.54	QP			
4	501.1790	56.92	-13.72	43.20	57.00	-13.80	QP			
5	550.9480	56.58	-11.74	44.84	57.00	-12.16	QP			
6	601.4265	49.77	-10.53	39.24	57.00	-17.76	QP			

Note: Result= Reading + Factor Over Limit=Result-Limit

Test item:	Radiation Test	Polarization:	Vertical
Standard:	(RE)EN IEC 61000-6-4	Power Source:	DC 24V
Frequency Range:	30MHz ~ 1000MHz	Temp.(℃)/Hum.(%RH):	24.3(℃)/49%RH
Distance:	3m		

No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	52.5753	52.18	-16.73	35.45	50.00	-14.55	QP			
2	150.0108	60.14	-22.09	38.05	50.00	-11.95	QP			
3	400.4319	59.29	-14.43	44.86	57.00	-12.14	QP			
4	451.1350	57.98	-13.65	44.33	57.00	-12.67	QP			
5	501.1790	55.63	-12.22	43.41	57.00	-13.59	QP			
6	550.9480	54.19	-11.74	42.45	57.00	-14.55	QP			

Note: Result= Reading + Factor Over Limit=Result-Limit

5. Radiated Emission Test (Above 1GHz)

5.1. Test Standard and Limit

Test Standard	EN IEC 61000-6-4

Limit for radiated emissions at frequencies above 1 GHz

Frequency (MHz)	Distance (Meters)	Field Strengths Limit (dBμV/m)	
		Peak	Average
1000 ~ 3000	3	76	56
3000 ~ 6000	3	80	60
Remark: The lower limit shall apply at the transition frequencies.			

5.2. Test Setup

5.3. Test Procedure

The table-top EUT is placed on a non-conductive table 0.8 m above the horizontal ground reference plane. The floor-standing EUT is placed on an insulating support 0.1 m above the horizontal ground reference plane.

The EUT was set 3 m away from the receiving antenna that was mounted on a non-conductive mast. The antenna can move up and down between 1 to 4 m to find out the maximum emission level.

The turntable can rotate 360 degree to determine the position of the maximum emission level.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

The test receiver is set to peak and average detects function.

The bandwidth of the test receiver is set at 1MHz.

5.4. Test Results

PASS

The test curves are shown in the following pages.

Test item:	Radiation Test	Polarization:	Horizontal
Standard:	(RE)EN IEC 61000-6-4	Power Source:	DC 24V
Frequency Range:	1GHz ~ 6GHz	Temp.(℃)/Hum.(%RH):	23.6(℃)/47%RH
Distance:	3m		

No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	1117.495	64.15	-27.60	36.55	76.00	-39.45	peak			
2	1117.495	51.91	-27.60	24.31	56.00	-31.69	AVG			
3	1393.022	63.96	-26.92	37.04	76.00	-38.96	peak			
4	1393.022	53.23	-26.92	26.31	56.00	-29.69	AVG			
5	1986.241	63.82	-25.40	38.42	76.00	-37.58	peak			
6	1986.241	54.51	-25.40	29.11	56.00	-26.89	AVG			
7	2862.693	60.19	-23.13	37.06	76.00	-38.94	peak			
8	2862.693	48.92	-23.13	25.79	56.00	-30.21	AVG			
9	3833.659	59.04	-20.37	38.67	80.00	-41.33	peak			
10	3833.659	46.70	-20.37	26.33	60.00	-33.67	AVG			
11	5851.364	60.59	-14.39	46.20	80.00	-33.80	peak			
12	5851.364	49.79	-14.39	35.40	60.00	-24.60	AVG			

Note: Result=Reading + Factor Over Limit=Result - Limit

Test item:	Radiation Test	Polarization:	Vertical
Standard:	(RE)EN IEC 61000-6-4	Power Source:	DC 24V
Frequency Range:	1GHz ~ 6GHz	Temp.(℃)/Hum.(%RH):	23.6(℃)/47%RH
Distance:	3m		

No.	Freq. (MHz)	Reading (dBuV)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	1113.497	63.09	-27.62	35.47	76.00	-40.53	peak			
2	1113.497	52.28	-27.62	24.66	56.00	-31.34	AVG			
3	1678.362	62.67	-26.69	35.98	76.00	-40.02	peak			
4	1678.362	50.43	-26.69	23.74	56.00	-32.26	AVG			
5	2440.728	64.49	-24.37	40.12	76.00	-35.88	peak			
6	2440.728	54.38	-24.37	30.01	56.00	-25.99	AVG			
7	2898.824	65.34	-22.93	42.41	76.00	-33.59	peak			
8	2898.824	54.57	-22.93	31.64	56.00	-24.36	AVG			
9	3745.394	62.51	-20.77	41.74	80.00	-38.26	peak			
10	3745.394	51.32	-20.77	30.55	60.00	-29.45	AVG			
11	4496.441	59.89	-18.35	41.54	80.00	-38.46	peak			
12	4496.441	48.14	-18.35	29.79	60.00	-30.21	AVG			

Note: Result=Reading + Factor Over Limit=Result - Limit

6. Harmonic Current Test

6.1. Test Standard

Test Standard:	EN IEC 61000-3-2

6.2. Test Setup

6.3. Test Procedure

The table-top EUT is placed on the top of a wooden table 0.8 m above the ground (0.1 m for the floor-standing EUT) and operated to produce the maximum harmonic components under normal operating conditions for each successive harmonic component in turn. The correspondent test program of test instrument to measure the current harmonics emanated from EUT is chosen. The measure time shall be not less than the necessary for the EUT to be exercised.

6.4. Test Results

Not applicable.

7. Voltage Fluctuations & Flicker Test

7.1. Test Standard

Test Standard:	EN 61000-3-3

7.2. Test Setup

7.3. Test Procedure

The table-top EUT is placed on the top of a wooden table 0.8 m above the ground (0.1 m for the floor-standing EUT) and operated to produce the most unfavorable sequence of voltage changes under normal conditions during the flicker measurement. The observation period for short-term flicker indicator is 10 minutes and the observation period for long-term flicker indicator is 2 hours.

7.4. Test Results

Not applicable.

8. Electrostatic Discharge Immunity Test

8.1. Test Specification

Test Standard :	EN IEC 61000-6-2	
Basic standard :	IEC 61000-4-2: 2008	
Performance criteria:	B	
Test Level :	± 8kV (Air Discharge)	± 4kV (Contact Discharge)

8.2. Test Setup

8.3. Test Procedure

a. In the case of air discharge testing, the climatic conditions shall be within the following ranges:
- Ambient temperature: 15°C to 35°C;
- Relative humidity: 30% to 60%;
- Atmospheric pressure: 86 kPa (860 mbar) to 106 kPa (1060 mbar)

b. In the case of contact discharges, the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

c. In the case of painted surface covering a conducting substrate, the following procedure shall be adopted: - If the coating is not declared to be an insulating coating by the equipment manufacturer, then the pointed tip of the generator shall penetrate the coating so as to make contact with the conducting substrate. - Coating declared as insulating by the manufacturer shall only be submitted to the air discharge. - The contact discharge test shall not be applied to such surfaces.

d. In the case of air discharges, the round discharge tip of the discharge electrode shall be approached as fast as possible (without causing mechanical damage) to touch the EUT. After each discharge, the ESD generator (discharge electrode) shall be removed from the EUT. The generator is then retriggered for a new single discharge. This procedure shall be repeated until the discharges are completed. In the case of an air discharge test, the discharge switch, which is used for contact discharge, shall be closed.

e. The test voltage shall be increased from the minimum to the selected test severity level, in order to determine any threshold of failure. The final test level should not exceed the product specification value in order to avoid damage to the equipment.

f. The test shall be performed with both air discharge and contact discharge. The test shall be performed with single discharges. On each pre-selected point at least 10 single discharges (in the most sensitive polarity) shall be applied. For the time interval between successive single discharges an initial value of 1 s is recommended. Longer intervals may be necessary to determine whether a system failure has occurred.

g. Ensure that the applied charge on the EUT has been dis-charged before next ESD pulse.

8.4. Test Results

PASS

Please refer to the following page.

Electrostatic Discharge Test Results

Test Result:	☒ Pass ☐ Fail	Temperature:	22.2℃
Power Supply:	DC 24V	Humidity:	50%

Location		Kind A-Air Discharge C-Contact Discharge	Result
Air discharge: ±2.0 kV, ±4.0 kV, ±8.0 kV		Contact discharge: ±4.0 kV	
Screen	4 points	A	☒A ☐B ☐C
Screw	4 points	C	☒A ☐B ☐C
Slot	4 points	A	☒A ☐B ☐C
DC Port	4 points	A	☒A ☐B ☐C
USB Port	4 points	C	☒A ☐B ☐C
LAN Port	4 points	C	☒A ☐B ☐C
COM Port	4 points	A	☒A ☐B ☐C
HCP	4 points	C	☒A ☐B ☐C
VCP of the front	4 points	C	☒A ☐B ☐C
VCP of the rear	4 points	C	☒A ☐B ☐C
VCP of the left	4 points	C	☒A ☐B ☐C
VCP of the right	4 points	C	☒A ☐B ☐C

Note: The detailed discharge point is shown in the following picture(s).

View of Discharge Point-1 (Green: Air discharge; Red: Contact discharge)

View of Discharge Point-2 (Green: Air discharge; Red: Contact discharge)

View of Discharge Point-3 (Green: Air discharge; Red: Contact discharge)

View of Discharge Point-4 (Green: Air discharge; Red: Contact discharge)

9. RF Field Strength Immunity Test

9.1. Test Specification

Test Standard:	EN IEC 61000-6-2	
Basic standard:	IEC 61000-4-3: 2020	
Performance criteria:	A	A
Frequency Range:	80MHz to 1000MHz	1.4GHz to 6GHz
Test level:	10 V/m	3 V/m
Modulation:	1kHz Sine Wave, 80%, AM Modulation	
Frequency Step:	1 % of preceding frequency value	
Polarity of Antenna:	Horizontal and Vertical	
Test Distance:	3 m	
Antenna Height:	1.5 m	
Dwell Time:	at least 0.5s	

9.2. Test Setup

9.3. Test Procedure

The procedure defined in this part requires the generation of electromagnetic fields within which the test sample is placed and its operation observed. To generate fields that are useful for simulation of actual (field) conditions may require significant antenna drive power and the resultant high field strength levels. To comply with local regulations and to prevent biological hazards to the testing personnel, it is recommended that these tests be carried out in a shielded enclosure or semi-anechoic chamber.

a. The antenna is placed 3 m from the equipment. The required field strength is determined by placing the field strength meter(s) on top of or directly alongside the equipment under test and monitoring the field strength meter via a remote field strength indicator outside the enclosure while adjusting the continuous-wave to the antenna.

b. The test shall normally be performed with the generating antenna facing each side of the EUT. When equipment can be used in different orientations (i.e. vertical or horizontal) all sides shall be exposed to the field during the test. When technically justified, some EUTs can be tested by exposing fewer faces to the generating antenna. In other cases, as determined for example by the type and size of EUT or the frequencies of test, more than four azimuths may need to be exposed.

c. The polarization of the field generated by each antenna necessitates testing each selected side twice, once with the antenna positioned vertically and again with the antenna positioned horizontally.

d. The step size of the frequency is set to 1%. The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised and to be able to respond. However, the dwell time should not exceed 5 s at each of the frequencies during the scan.

9.4. Test Results

PASS

Please refer to the following page.

RF Field Strength Susceptibility Test Results

Test Result:	☒ Pass ☐ Fail	Temperature:	23.2℃
Power Supply:	DC 24V	Humidity:	53%

Frequency Range	Antenna Polarity	R.F. Field Strength	Dwell Time	Azimuth	Result
80 MHz ~ 1000 MHz	H / V	10 V/m	1s	Front	☒ A ☐ B ☐ C
				Rear	
				Left	
				Right	
1.4Hz ~ 6GHz	H / V	3 V/m	1s	Front	☒ A ☐ B ☐ C
				Rear	
				Left	
				Right	

Note: N/A

10. Electrical Fast Transient/Burst Immunity Test

10.1. Test Specification

Test Standard:	EN IEC 61000-6-2
Basic standard:	IEC 61000-4-4: 2012
Performance criteria:	B
Test Level:	☐ 2 kV, AC mains power ports
	☒ 1 kV, DC network power ports
	☒ 1 kV, Signal/Control ports

10.2. Test Setup

AC mains power ports and DC network power ports:

Analogue/digital data ports:

10.3. Test Procedure

The table-top EUT is placed on a table that is 0.8 m height, a ground reference plane is placed on the table, and uses 0.1 m insulation between the EUT and ground reference plane. The floor-standing EUT is placed on a ground reference plane and insulated from it by an insulating support with a thickness of 0.1 m. This reference ground plane shall project beyond the EUT by at least 0.1 m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5 m.

All cables to the EUT shall be placed on the insulation support 0.1 m above the ground reference plane. Cables not subject to electrical fast transients shall be routed as far as possible from the cable under test to minimize the coupling between the cables.

10.4. Test Results

PASS

Please refer to the following page.

Electrical Fast Transient/Burst Test Results

Test Result:	☒ Pass ☐ Fail	Temperature:	22.5℃
Power Supply:	DC 24V	Humidity:	49%

Ports	Polarity	Inject Time(s)	Repetition Frequency（kHz）	Test Voltage (kV)	Result
AC mains power ports	±	120 s	☐ 5 ☐ 100	2.0 kV	☐A ☐B ☐C
☒ DC mains power ports P-N	±	120 s	☒ 5 ☐ 100	1.0 kV	☒A ☐B ☐C
☒ DC mains power ports GND-P	±	120 s	☒ 5 ☐ 100	1.0 kV	☒A ☐B ☐C
☒ DC mains power ports GND-N	±	120 s	☒ 5 ☐ 100	1.0 kV	☒A ☐B ☐C
☒ DC mains power ports P-GND-N	±	120 s	☒ 5 ☐ 100	1.0 kV	☒A ☐B ☐C
☒ Signal/ COM1	±	120 s	☒ 5 ☐ 100	1.0 kV	☒A ☐B ☐C
☒ Signal/ COM2	±	120 s	☒ 5 ☐ 100	1.0 kV	☒A ☐B ☐C
☒ LAN Port	±	120 s	☒ 5 ☐ 100	1.0 kV	☒A ☐B ☐C
Note: N/A					

11. Surge Immunity Test

11.1. Test Specification

Test Standard:		EN IEC 61000-6-2
Basic standard:		IEC 61000-4-5: 2014+A1:2017
Test level	AC power port:	☐ 1 kV, Line to Line, Criterion B
		☐ 2 kV, Line to Ground, Criterion B
	DC network power port:	☒ 0.5 kV, Line to Line, Criterion B
		☒ 1 kV, Line to Ground, Criterion B
	Signal/Control ports:	☒ 1 kV, lines to lines, Criterion B
Number of surges		5 (for each combination of parameters)
Repetition rate		1 minute / time
Polarity:		Positive / Negative
Phase angle:		0°, 90°, 180°, 270° (Only AC mains power ports)

11.2. Test Setup

11.3. Test Procedure

Table-top EUT is placed on a table of 0.8 m heights above a metal ground reference plane. Floor standing EUT is placed on a ground reference plane and insulated from it by an insulating support with a thickness of 0.1 m. The length of the power cord between the EUT and the coupling/decoupling network is not more than 2 m, and the length of the interconnection line between the EUT and the coupling/decoupling network is not more than 2 m. The tests were done at repetition rate 1 per minute.

11.4. Test Results

PASS

Please refer to the following page.

Surge Immunity Test Results

Test Result:	☒ Pass ☐ Fail	Temperature :	22.5℃
Power Supply :	DC 24V	Humidity :	49%

Location	Polarity	Phase Angle	Number of Pulse	Pulse Voltage (kV)	Result
☐ AC power port (Waveform: 1.2 us / 50 us (8 us / 20us))					
L-N	+	☒ 0° ☒ 90° ☒ 180° ☒ 270°	5	1 kV	☐A ☐B ☐C
	-	☒ 0° ☒ 90° ☒ 180° ☒ 270°	5	1 kV	☐A ☐B ☐C
L-GND	+	☒ 0° ☒ 90° ☒ 180° ☒ 270°	5	2 kV	☐A ☐B ☐C
	-	☒ 0° ☒ 90° ☒ 180° ☒ 270°	5	2 kV	☐A ☐B ☐C
N-GND	+	☒ 0° ☒ 90° ☒ 180° ☒ 270°	5	2 kV	☐A ☐B ☐C
	-	☒ 0° ☒ 90° ☒ 180° ☒ 270°	5	2 kV	☐A ☐B ☐C
☒ DC network power ports (Waveform: 1.2 us / 50 us (8 us / 20us))					
P to N	+	/	5	0.5 kV	☒A ☐B ☐C
	-	/	5	0.5 kV	☒A ☐B ☐C
P to GND	+	/	5	1 kV	☒A ☐B ☐C
	-	/	5	1 kV	☒A ☐B ☐C
N to GND	+	/	5	1 kV	☒A ☐B ☐C
	-	/	5	1 kV	☒A ☐B ☐C
☒ Signal/Control ports (Waveform: 1.2 us / 50 us (8 us / 20us))					
COM1	+	/	5	1 kV	☒A ☐B ☐C
	-	/	5	1 kV	☒A ☐B ☐C
COM2	+	/	5	1 kV	☒A ☐B ☐C
	-	/	5	1 kV	☒A ☐B ☐C
LAN Line	+	/	5	1 kV	☒A ☐B ☐C
	-	/	5	1 kV	☒A ☐B ☐C
Note: N/A					

12. Injected Currents Susceptibility Test

12.1. Test Specification

Test Standard:	EN IEC 61000-6-2
Basic standard:	IEC 61000-4-6: 2013
Performance criteria:	A
Frequency range:	0.15MHz to 80MHz
Test level:	10V
Modulation:	AM 80%, 1kHz sine-wave
Frequency Step:	1% of fundamental

12.2. Test Setup

CDN injection:

Clamp injection:

12.3. Test Procedure

a. The EUT and peripheral are placed on an insulating support of 0.1 m height above a ground reference plan. The distance between EUT and CDN is 0.1 m to 0.3 m. All cables exiting the EUT are supported at a height of at least 30 mm above the ground reference plan.

b. The frequency range is swept from 150 kHz to 80MHz, with the signal 80% amplitude modulated with a 1 kHz sine wave. The rate of sweep did not exceed 1.5x 10-3 decade/s. The frequency range is swept incrementally. The step size was 1% of fundamental from 0.15MHz to 80MHz.

c. The dwell time at each frequency isn't less than the time necessary for the EUT to be able to respond.

12.4. Test Results

PASS

Please refer to the following page.

Injected Currents Susceptibility Test Results

Test Result:	☒ Pass ☐ Fail	Temperature:	22.5℃
Power Supply:	DC 24V	Humidity:	49%
Frequency Range (MHz)	Injected Position	Strength (Un-modulated)	Result
0.15 ~ 80	AC Mains	10V	☐A ☐B ☐C
0.15 ~ 80	☒DC Line	10V	☒A ☐B ☐C
0.15 ~ 80	☒COM Line	10V	☒A ☐B ☐C
0.15 ~ 80	☒LNA Line	10V	☒A ☐B ☐C
Note: N/A			

13. Power Frequency Magnetic Field Immunity Test

13.1. Test Specification

Test Standard:	EN IEC 61000-6-2
Basic Standard	IEC 61000-4-8: 2009
Performance criteria	A
Test level	30A/m

13.2. Test Setup

13.3. Test Procedure

Table-top EUT is placed on a table that is 0.8 m height. Floor standing EUT is placed on a ground reference plane and insulated from it by an insulating support with a thickness of 0.1 m.

The EUT is placed in the middle of an induction coil. The proximity method is used when the EUT does not fit into the standard inductive coil

13.4. Test Results

Not applicable.

14. Voltage Dips and Interruptions Immunity Test

14.1. Test Specification

Test Standard:		EN IEC 61000-6-2
Basic standard:		IEC 61000-4-11: 2020
Test level:	Voltage Dips	☒0%, 1 period, Criterion B
		☒40%, 10 periods for 50Hz, Criteria C
		☐40%, 12 periods for 50Hz, Criteria C
		☒70%, 25 periods for 60Hz, Criteria C
		☐70%, 30 periods for 60Hz, Criteria C
	Voltage interruptions	☒0%, 250 periods for 50Hz, Criteria C
		☐0%, 300 periods for 60Hz, Criteria C

14.2. Test Setup

14.3. Test Procedure

a. Where the equipment has a rated voltage the following shall apply:

- If the voltage range does not exceed 20% of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification.
- In all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range.

b. Test Conditions

- Select operated voltage and frequency of EUT - Test of interval: 10 sec.
- Level and duration: Sequence of 3 dips/interrupts.
- Voltage rise (and fall) time: 1.5 μs.

c. Changes to occur at 0 degree crossover point of the voltage waveform.

14.4. Test Results

Not applicable.

APPENDIX I -- TEST SETUP PHOTOGRAPH

Photo of Power Line Conducted Emission Test

Photo of Asymmetric Mode Conducted Emission at Telecom Port

Photo of Radiated Emission Test (Below 1 GHz)

Photo of Radiated Emission Test (Above 1GHz)

Photo of Electrostatic Discharge Immunity Test

Photo of RF Field Strength Immunity Test

Photo of Electrical Fast Transient/Burst Immunity Test

Photo of Electrical Fast Transient/Burst Immunity Test(Signal)

Photo of Surge Immunity Test

Photo of Surge Immunity Test(Signal)

Photo of Injected Currents Susceptibility Test

Photo of Injected Currents Susceptibility Test(Signal)

APPENDIX II -- EXTERNAL PHOTOGRAPH

APPENDIX III -- INTERNAL PHOTOGRAPH

CON6 20220426
+24V

CE Label

1. The CE conformity marking must consist of the initials 'CE' taking the following form:

   If the CE marking is reduced or enlarged, the proportions given in the above graduated drawing must be respected.

2. The CE marking must have a height of at least 5 mm except where this is not possible on account of the nature of the apparatus.

3. The CE marking must be affixed to the product or to its data plate. Additionally it must be affixed to the packaging, if any, and to the accompanying documents.

4. The CE marking must be affixed visibly, legibly and indelibly.

   It must have the same height as the initials 'CE'.

---------- End of Report ----------