



## EMC TEST REPORT

Product Name: ThinkNode M1

Trade mark: /

Model No.: M1 for Meshtastic, M1 for Meshcore, M5 for Meshtastic, M5 for Meshcore

S/N: /

Report No.: CTB25072304404E01

Applicant: Shenzhen Elecrow Limited

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Manufacturer: Shenzhen Elecrow Limited

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Prepared by: Shenzhen CTB Testing Technology Co., Ltd.

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Sample No.: 25072304404

Date of Receipt: Jul. 31, 2025

Date of Test(s): Jul. 31, 2025 ~ Aug. 06, 2025

Date of Issue: Aug. 29, 2025

Test Standard(s): EN 55032:2015+A11:2020+A1:2020, EN 55035:2017+A11:2020

Test Result: Pass

In the configuration tested, the EUT complied with the standards specified above.

Compiled by:

Reviewed by:

Approved by:

Blake Cai

Bin Mei

Rita Xiao

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Note: If there is any objection to the inspection results in this report, please submit a written report to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client. "★" indicates the testing items were fulfilled by subcontracted lab. "×" indicates the items are not in CNAS accreditation scope.

## Table of Contents

1. Description of version .....	3
2. Test summary .....	4
3. Measurement uncertainty .....	5
4. General information .....	7
4.1. Description of EUT .....	7
4.2. Description of accessory device .....	7
4.3. Test conditions .....	7
4.4. Block diagram of EUT configuration .....	7
4.5. Operating condition of EUT .....	8
5. List of Test and Measurement Instruments .....	9
6. Emission .....	12
6.1. Conducted emission .....	12
6.2. Radiated emissions .....	16
7. Immunity .....	24
7.1. Electrostatic discharges (ESD) .....	25
7.2. Electromagnetic field .....	28
8. Photographs of test setup .....	30
9. Photographs of EUT .....	33



1. Description of version

Report No.	Issue Date	Description	Approved
CTB25072304404E01	Aug. 29, 2025	Original	Valid



## 2. Test summary

Emission		
Test Item	Test Method	Result
Conducted Emission	EN 55032	PASS
Radiated emissions at frequencies up to 1 GHz		PASS
Radiated emissions at frequencies above 1 GHz		PASS
Immunity(EN 55035)		
Test Item	Test Method	Result
Electrostatic discharges (ESD)	IEC 61000-4-2	PASS
Continuous RF electromagnetic field disturbances	IEC 61000-4-3	PASS
Electrical fast transients/burst (EFT/B)	IEC 61000-4-4	N/A <sup>1</sup>
Surges	IEC 61000-4-5	N/A <sup>1</sup>
Continuous induced RF disturbances	IEC 61000-4-6	N/A <sup>1</sup>
Power frequency magnetic field	IEC 61000-4-8	N/A <sup>2</sup>
Voltage dips and Voltage interruptions	IEC 61000-4-11	N/A <sup>1</sup>

**Note:** N/A is abbreviation for Not Applicable.

1. The Product is powered by USB power, this test items is not applicable.
2. The Product doesn't contain any device susceptible to magnetic fields.

### 3. Measurement uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expanded uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %

Test Item	Parameters	Expanded Uncertainty ( $U_{Lab}$ )
No.1 Conducted Emission	150 kHz to 30 MHz	$\pm 3.1$ dB
No.2 Conducted Emission	150 kHz to 30 MHz	$\pm 3.2$ dB
Radiated Emission	30 MHz to 1000 MHz	$\pm 4.1$ dB
Radiated Emission	1000 MHz to 6000 MHz	$\pm 4.8$ dB



#### 4. General information

##### 4.1. Description of EUT

Product name	ThinkNode M1
Trade Mark	/
Model	M1 for Meshtastic
Serial Model No.	M1 for Meshcore, M5 for Meshtastic, M5 for Meshcore
Model Difference	All model's are the same except for the model names. Test sample model: M1 for Meshtastic
Rated Power	/
Rated Voltage& current	DC 5V 1A from adapter(AC 230V/50Hz) or DC 3.7V from battery
Highest Internal Frequency	>108MHz
Configuration	<input checked="" type="checkbox"/> Table-top <input type="checkbox"/> Floor-standing
Classification	<input type="checkbox"/> Class A <input checked="" type="checkbox"/> Class B
The highest frequency of the internal sources of the EUT	<input type="checkbox"/> less than 108 MHz, the measurement shall only be made up to 1 GHz. <input type="checkbox"/> between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz. <input type="checkbox"/> between 500 MHz and 1 GHz, the measurement shall only be made up to 5 GHz. <input checked="" type="checkbox"/> above 1 GHz, the measurement shall be made up to 6 GHz.
Adapter Information	/

**Note:** The above EUT information is declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

##### 4.2. Description of accessory device

Description	Manufacturer	Model	Specification	Note
Adapter	HUAWEI	HW-050100C01	Input: 100-240V~ 50/60Hz 0.2A Output: 5V---1A	<input type="checkbox"/> Applicant <input checked="" type="checkbox"/> CTB

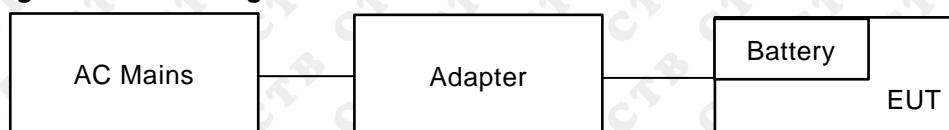
##### External I/O Cable

Cable Description	Shielded Type	Ferrite Core	Length(m)	Note
USB Cable	<input type="checkbox"/> Shielded <input checked="" type="checkbox"/> Non-shielded	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	0.3	<input checked="" type="checkbox"/> Applicant <input type="checkbox"/> CTB

##### 4.3. Test conditions

Temperature: 15-25℃  
 Relative Humidity: 30-60 %  
 Atmospheric pressure: 800hPa-1060hPa

##### 4.4. Block diagram of EUT configuration





#### 4.5. Operating condition of EUT

The test system was pre-tested based on the consideration of all possible combinations of EUT operation modes according to test plan. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively. All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, (\*)the worst data were recorded and reported.

Pretest Test Mode	Description	Test Voltage
Mode 1*	Charging+Working	AC 230V/50Hz
Mode 2*	Working	DC 3.7V

Conducted emission test		
Final Test Mode	Description	Test Voltage
Mode 1*	Charging+Working	AC 230V/50Hz

Radiated emission test		
Final Test Mode	Description	Test Voltage
Mode 1*	Charging+Working	DC 3.7V

Immunity test		
Final Test Mode	Description	Test Voltage
Mode 2*	Working	DC 3.7V



## 5. List of Test and Measurement Instruments

No.1 Continuous disturbance						
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware version	Calibrated until
1	843 Shield Room	C/ R/ T	843	/	/	2027/6/21
2	LISN	ROHDE&SCHWARZ	ESH3-Z5	100318	/	2026/5/21
3	Pulse limiter	ROHDE&SCHWARZ	ESH3-Z2	0357.8810.54-1 02700-NB	/	2026/5/21
4	EMI TEST RECEIVER	R&S	ESCI	100428	V4.42.SP3	2026/5/21
5	Coaxial cable	Agilent	UCE500-SMNM-1. 5M	/	/	2026/5/21
6	ISN	Schwarzbeck	NTFM8158	183	/	2026/6/17
7	ISN	Schwarzbeck	CAT5 8158	473	/	2026/6/17
8	Voltage Probe	Schwarzbeck	TK 9420	01189	/	2025/10/25
9	EMI test software	Frad	EZ-EMC	Ver/ EMC-con3A1/1	/	/
10	Current Probe	FCC	F-52B	199453	/	2026/5/23

Radiated emission(No.1 Chamber)						
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware version	Calibrated until
1	966 Chamber	C/ R/ T	966	/	/	2027/6/21
2	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	01911	/	2026/6/1
3	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	/	2026/6/28
4	Preamplifier	Agilent	8449B	3008A01838	/	2026/6/3
5	Amplifier	HP	8447E	2945A02747	/	2026/5/23
6	loop antenna	Schwarzbeck	FMZB 1519B	1519B-224	/	2026/6/1
7	EMI TEST RECEIVER	ROHDE&SCHWA RZ	ESPI	100362	RF_ATTEN_7 (104489/003)	2026/5/23
8	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	A.14.16	2026/5/22
9	26.5G cable	ETS	RFC-SNS-100-N MS-80	/	/	2026/5/23
10	26.5G cable	ETS	RFC-SN-100-NM S-20	/	/	2026/5/23
11	26.5G cable	ETS	RFC-SNS-100-S MS-20	/	/	2026/5/23

12	26.5G cable	ETS	RFC-NNS-100-N MS-300	/	/	2026/5/23
13	EMI test software	Frad	EZ-EMC	Ver/ FA-03A2 RE	/	/

Radiated emission(No.2 Chamber)						
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware version	Calibrated until
1	966 Chamber	C/ R/ T	966	/	/	2026/11/14
2	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA 9120 D	01911	/	2026/6/1
3	Broadband Antenna	Schwarzbeck	VULB 9168	1471	/	2025/10/25
4	Preamplifier	Agilent	8449B	3008A01838	/	2026/6/3
5	Preamplifier	Schwarzbeck	BBV 9743 B	00500	/	2026/5/29
6	EMI TEST RECEIVER	R&S	ESCI7	100861	/	2025/10/25
7	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	A.14.16	2026/5/22
8	EMI test software	Farad	EZ-EMC	/	Ver. FARAD-3A1+	/
9	Coaxial cable	Rosenberg	8m	/	/	2025/10/25
10	Coaxial cable	Times	2m	/	/	2025/10/25
11	Coaxial cable	Times	2m	/	/	2025/10/25
12	Coaxial cable	Times	1m	/	/	2025/10/25
13	loop antenna	Schwarzbeck	FMZB 1519B	1519B-224	/	2026/6/1

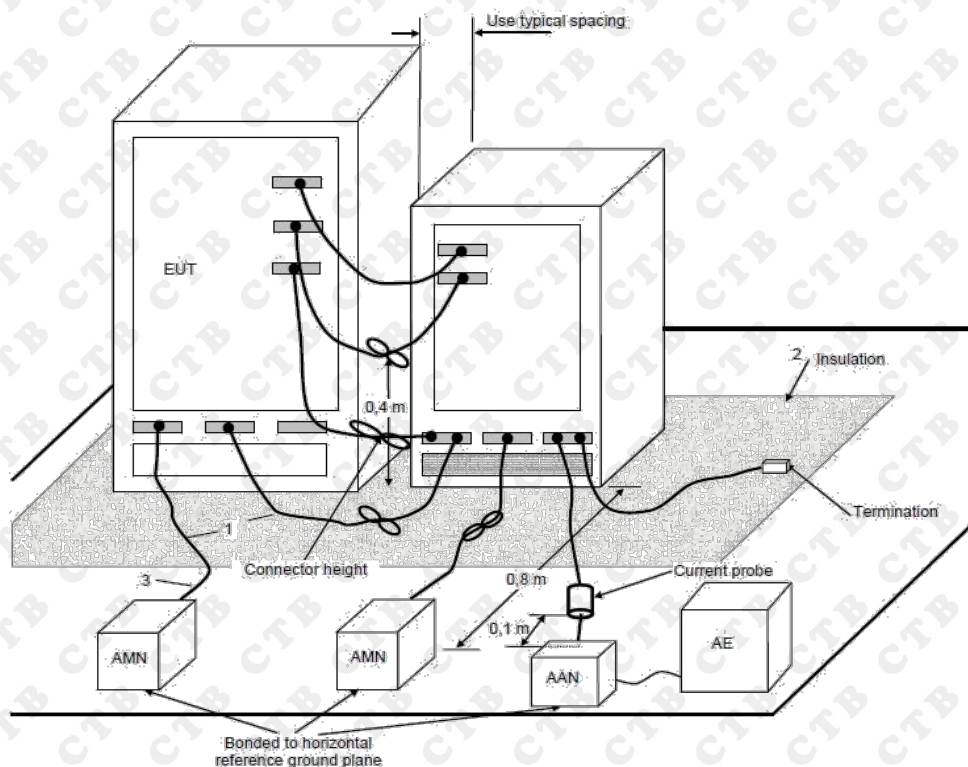
Electrostatic discharges						
No.	Equipment	Manufacturer	Model No.	Serial No.	Firmware version	Calibrated until
1	ESD Simulator	TESTQ	NSG437	329	V01.00	2026/6/2

Radio frequency electromagnetic field						
No.	Equipment	Manufacturer	Type No.	Serial No.	Firmware version	Calibrated until
1	966 Chamber	C/ R/ T	966	/	/	2026/11/14
2	Signal Generator	Agilent	N5181A	MY50140365	A.01.60	2026/5/22
3	Stacked Double Log.-Per. Antenna	SKET	STLP 9129 Plus	2106070106	/	/
4	Switch Controller	SKET	RFSU-DC18G-4C	2106070105	/	/
5	RF Power Meter	Agilent	E9304A	MY41490462	/	2026/5/22
6	RF Power Meter	Agilent	E9301A	MY41495675	/	2026/5/22
7	E-Field Probe	Narda	EP-601	811ZX10305	/	2026/6/2
8	Power Amplifier	SKET	HAP-80M01G-250W	2106070103	/	2026/5/29
9	Power Amplifier	SKET	HAP-01G 06G-75W	2106070104	/	2026/5/29
10	Audio Analysis	R&S	ATS-1	ATS 1-41152	/	2026/5/22
11	Audio Output Matching Network	SKET	RCO Network	/	/	2026/5/22
12	Power Meter	Agilent	E4419B	GB42421440	/	2026/5/22
13	RS test software	SKET	EMC-S	V2.0.0.19	/	/



### 6.1. Conducted emission

For table-top equipment



### 6.1.2. Limit

Requirements for conducted emissions from the AC mains power ports of Class A equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class A limits dB(μV)
0,15 to 0,5	AMN	Quasi Peak / 9 kHz	79
0,5 to 30			73
0,15 to 0,5		Average / 9 kHz	66
0,5 to 30			60

Requirements for conducted emissions from the AC mains power ports of Class B equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0,15 to 0,5	AMN	Quasi Peak / 9 kHz	66 to 56
0,5 to 5			56
5 to 30			60
0,15 to 0,5		Average / 9 kHz	56 to 46
0,5 to 5			46
5 to 30			50

Requirements for asymmetric mode conducted emissions from Class A equipment

Frequency range MHz	Coupling device	Detector type / bandwidth	Class A limits dB(μV)
0,15 to 0,5	AAN	Quasi Peak / 9 kHz	97 to 87
0,5 to 30			87
0,15 to 0,5		Average / 9 kHz	84 to 74
0,5 to 30			74

Requirements for asymmetric mode conducted emissions from Class B equipment

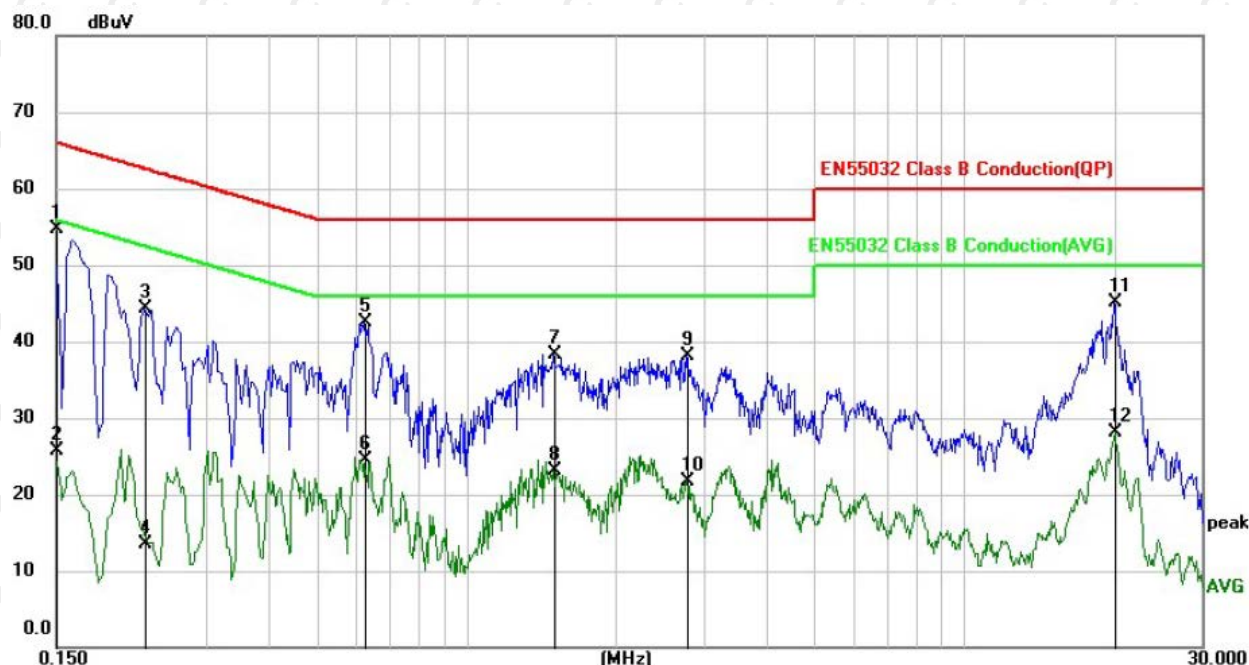
Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0,15 to 0,5	AAN	Quasi Peak / 9 kHz	84 to 74
0,5 to 30			74
0,15 to 0,5		Average / 9 kHz	74 to 64
0,5 to 30			64

### 6.1.3. Test procedure

1. Measurement was performed in shielded room, and instruments used were followed CISPR 16-2-1 clause 7.
2. Detailed test procedure was following clause 7 of CISPR 16-2-1.
3. Frequency range 150kHz – 30MHz was checked and EMI receiver measurement bandwidth was set to 9 kHz.

## 6.1.4. Test results

Temperature:	23°C	Relative Humidity:	54 %
Pressure:	101kPa	Phase :	Line
Test Voltage :	AC 230V/50Hz	Test Mode:	Mode 1



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1500	44.54	10.07	54.61	66.00	-11.39	QP
2		0.1500	15.59	10.07	25.66	56.00	-30.34	AVG
3		0.2260	34.31	10.08	44.39	62.60	-18.21	QP
4		0.2260	3.49	10.08	13.57	52.60	-39.03	AVG
5		0.6260	32.38	10.10	42.48	56.00	-13.52	QP
6		0.6260	14.36	10.10	24.46	46.00	-21.54	AVG
7		1.5020	28.21	10.15	38.36	56.00	-17.64	QP
8		1.5020	12.98	10.15	23.13	46.00	-22.87	AVG
9		2.7740	27.82	10.20	38.02	56.00	-17.98	QP
10		2.7740	11.60	10.20	21.80	46.00	-24.20	AVG
11		20.0100	34.07	10.96	45.03	60.00	-14.97	QP
12		20.0100	17.21	10.96	28.17	50.00	-21.83	AVG

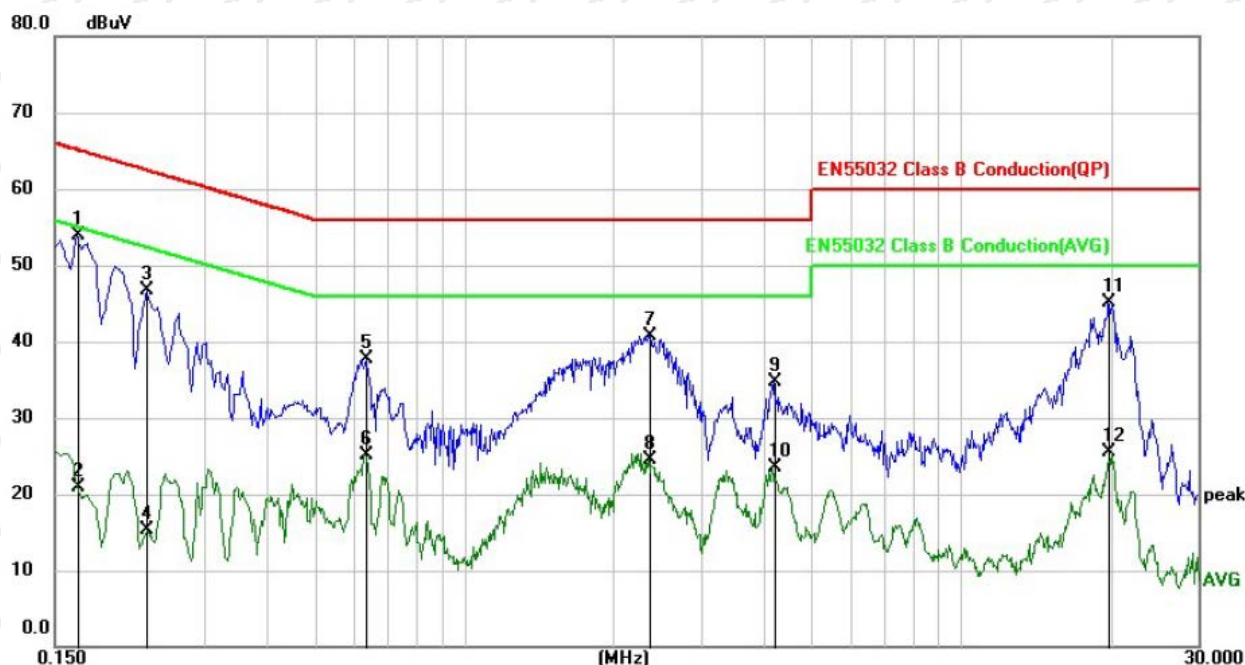
Note:

Result=Reading + Factor

Over Limit=Result – Limit



Temperature:	23°C	Relative Humidity:	54 %
Pressure:	101kPa	Phase :	Neutral
Test Voltage :	AC 230V/50Hz	Test Mode:	Mode 1



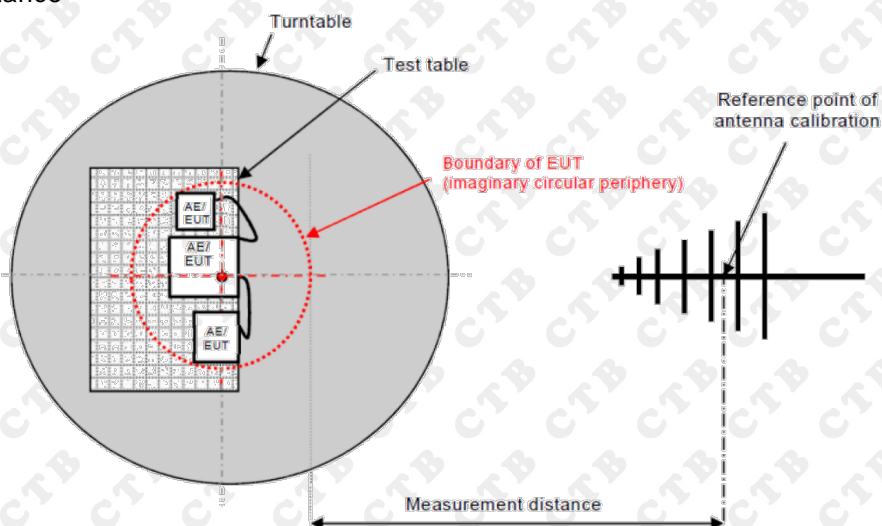
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector
		MHz	dBuV	dB	dBuV	dBuV	dB	
1	*	0.1660	43.85	10.07	53.92	65.16	-11.24	QP
2		0.1660	10.93	10.07	21.00	55.16	-34.16	AVG
3		0.2300	36.68	10.08	46.76	62.45	-15.69	QP
4		0.2300	5.30	10.08	15.38	52.45	-37.07	AVG
5		0.6340	27.67	10.10	37.77	56.00	-18.23	QP
6		0.6340	15.10	10.10	25.20	46.00	-20.80	AVG
7		2.3580	30.58	10.18	40.76	56.00	-15.24	QP
8		2.3580	14.29	10.18	24.47	46.00	-21.53	AVG
9		4.2139	24.41	10.25	34.66	56.00	-21.34	QP
10		4.2139	13.30	10.25	23.55	46.00	-22.45	AVG
11		19.7619	34.11	10.95	45.06	60.00	-14.94	QP
12		19.7619	14.53	10.95	25.48	50.00	-24.52	AVG

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

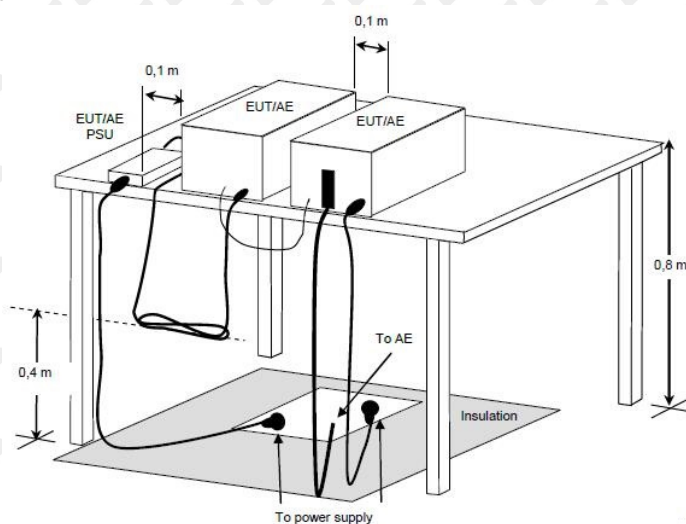
## 6.2. Radiated emissions

### 6.2.1. Block diagram of test setup

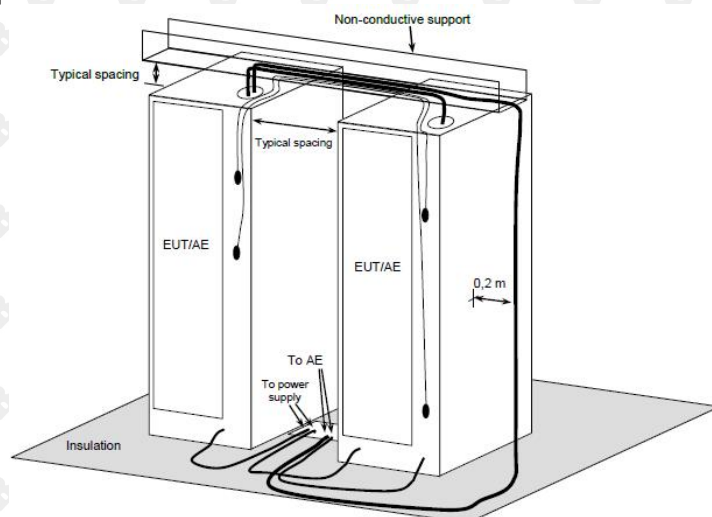
Measurement distance



For table-top equipment



For floor standing equipment



## 6.2.2. Limit

Requirements for radiated emissions at frequencies up to 1 GHz for class A equipment

Frequency range MHz	Measurement			Class A limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
30 to 230	SAC	3	Quasi Peak / 120 kHz	50
230 to 1 000				57

Requirements for radiated emissions at frequencies above 1 GHz for class A equipment

Frequency range MHz	Measurement			Class A limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
1 000 to 6 000	FSOATS	3	Average / 1MHz	60
1 000 to 6 000		3	Peak / 1MHz	80

Requirements for radiated emissions at frequencies up to 1 GHz for class B equipment

Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
30 to 230	SAC	3	Quasi Peak / 120 kHz	40
230 to 1 000				47

Requirements for radiated emissions at frequencies above 1 GHz for class B equipment

Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance m	Detector type / bandwidth	
1 000 to 6 000	FSOATS	3	Average / 1MHz	54
1 000 to 6 000		3	Peak / 1MHz	74

## 6.2.3. Test procedure

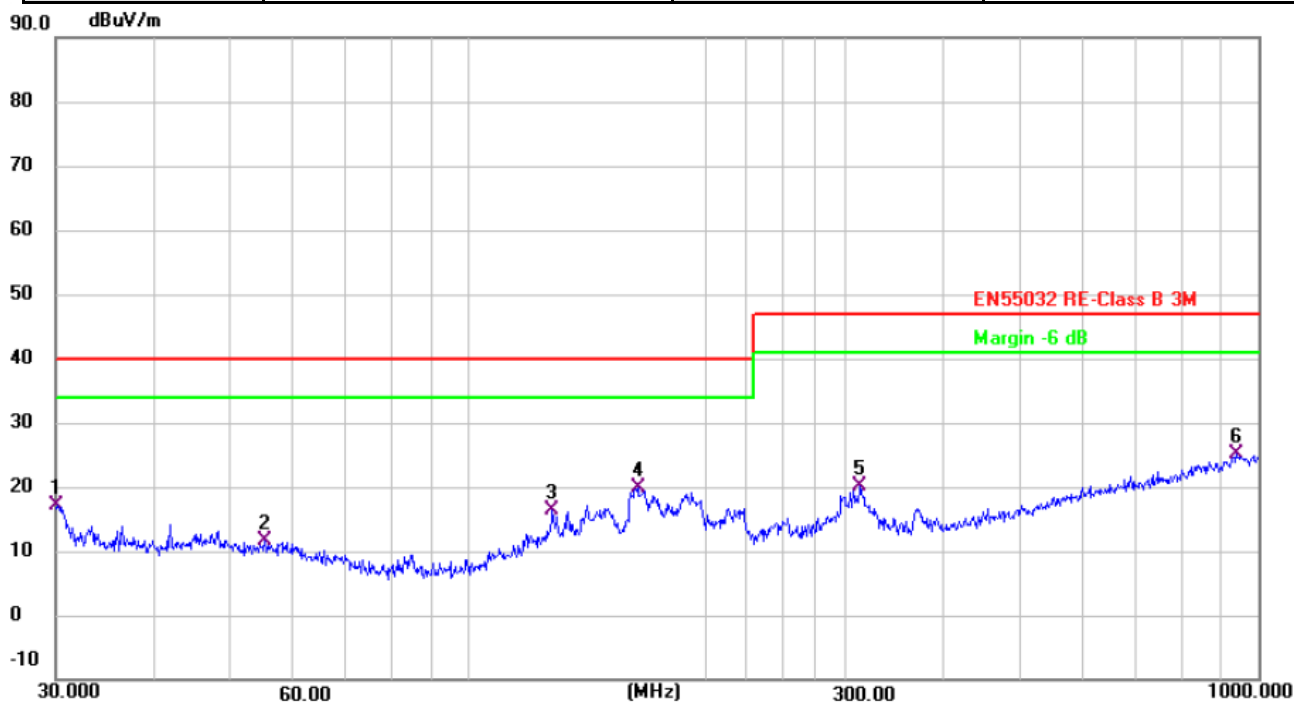
1. The measurement was performed in a semi-anechoic chamber.
2. The distance from EUT to receiving antenna is 3 meters.
3. Measurement was performed according to clause 7.3 of CISPR 16-2-3.



## 6.2.4. Test results

Up to 1GHz

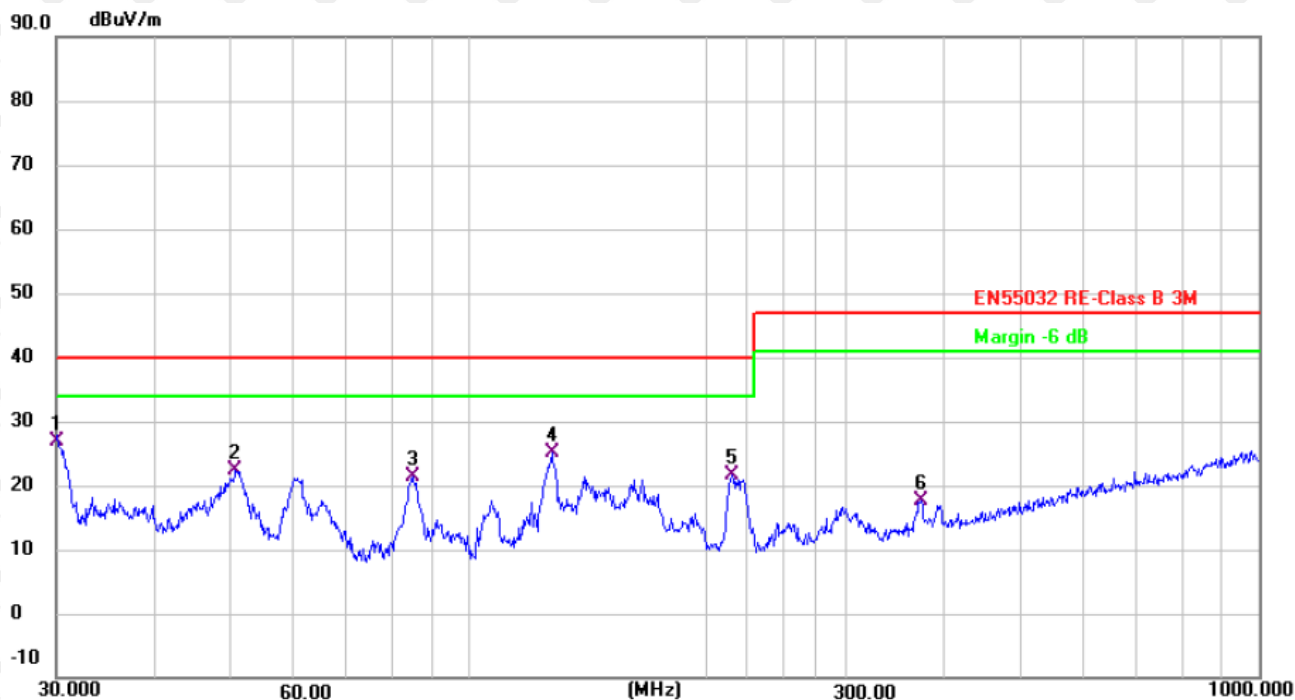
Temperature:	23°C	Relative Humidity:	54 %
Pressure:	101kPa	Polarization :	Horizontal
Test Voltage :	AC 230V/50Hz	Test Mode:	Mode 1



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	30.0000	30.86	-13.75	17.11	40.00	-22.89	QP
2	55.2207	25.83	-14.22	11.61	40.00	-28.39	QP
3	127.6645	31.03	-14.77	16.26	40.00	-23.74	QP
4 *	163.7550	33.31	-13.52	19.79	40.00	-20.21	QP
5	313.2760	33.21	-13.15	20.06	47.00	-26.94	QP
6	938.8326	26.06	-0.88	25.18	47.00	-21.82	QP

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

Temperature:	23°C	Relative Humidity:	54 %
Pressure:	101kPa	Polarization :	Vertical
Test Voltage :	AC 230V/50Hz	Test Mode:	Mode 1

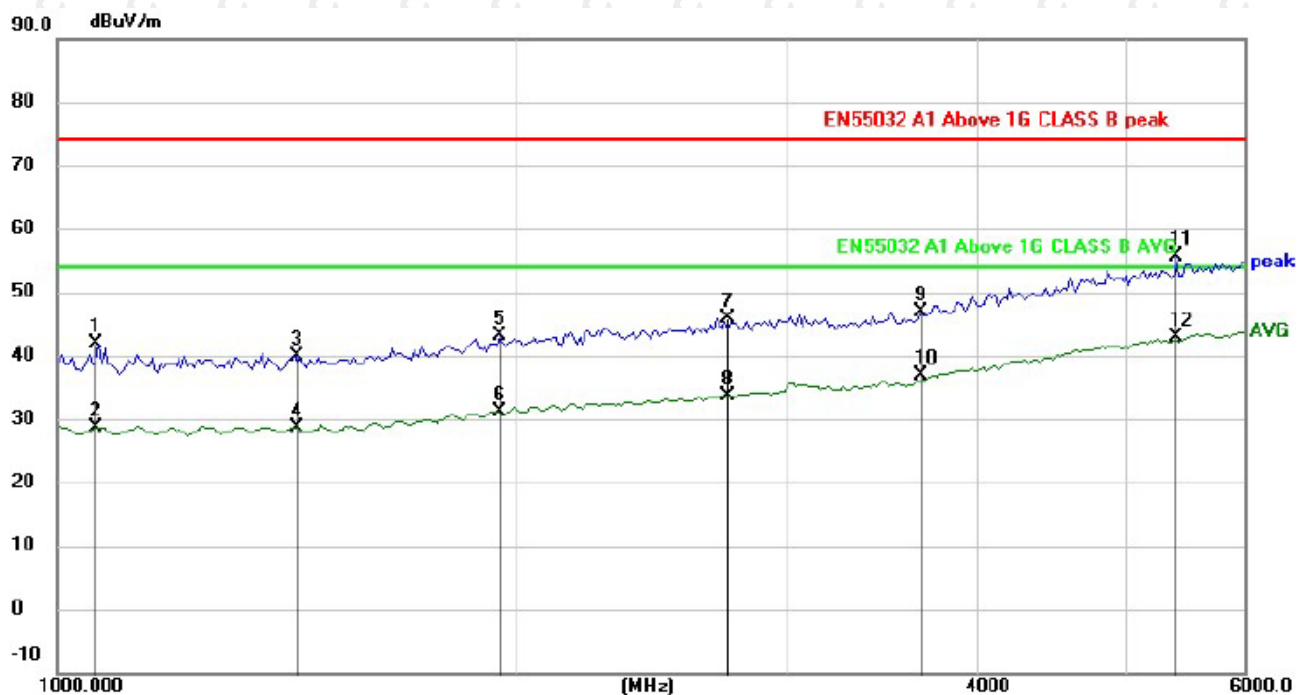


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	30.1053	40.75	-13.75	27.00	40.00	-13.00	QP
2	50.5860	35.91	-13.64	22.27	40.00	-17.73	QP
3	84.7020	39.38	-18.11	21.27	40.00	-18.73	QP
4	127.2176	39.88	-14.81	25.07	40.00	-14.93	QP
5	215.2678	37.91	-16.40	21.51	40.00	-18.49	QP
6	373.3112	29.43	-11.82	17.61	47.00	-29.39	QP

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

Above 1GHz

Temperature:	23°C	Relative Humidity:	54 %
Pressure:	101kPa	Polarization :	Horizontal
Test Voltage :	AC 230V/50Hz	Test Mode:	Mode 2



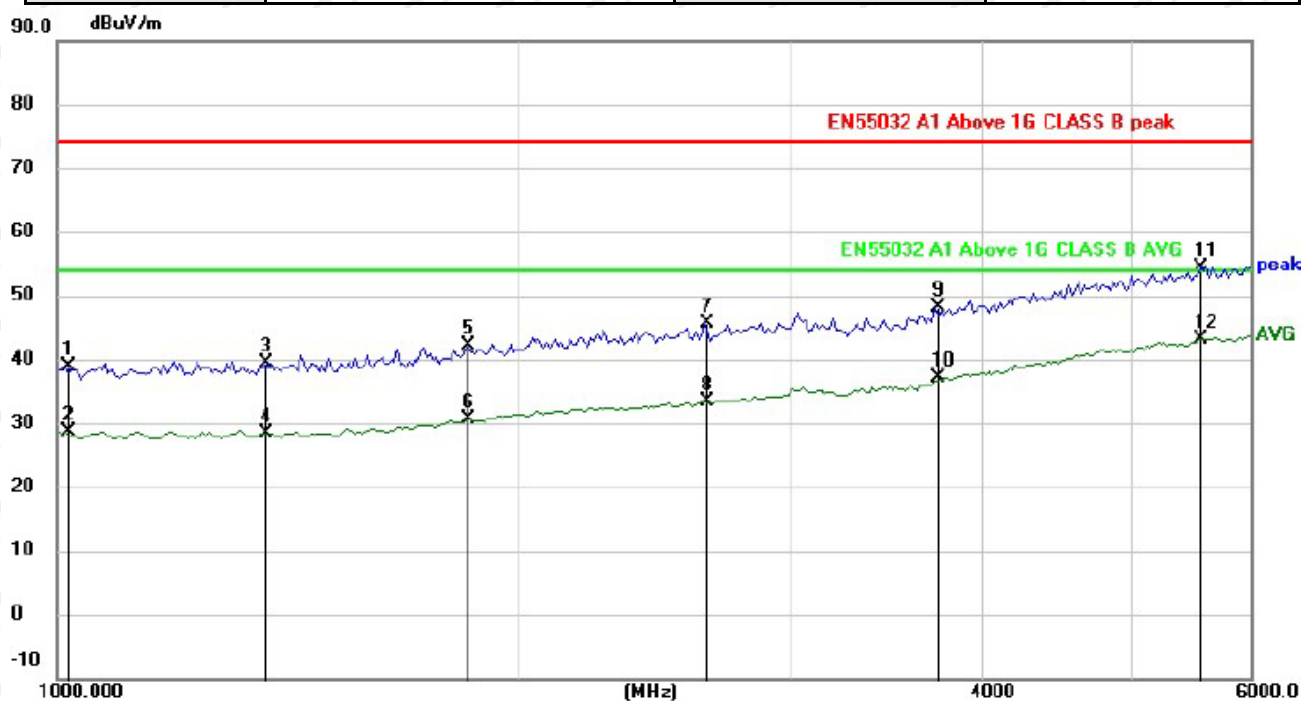
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		1059.961	45.83	-4.05	41.78	74.00	-32.22	peak
2		1059.961	32.70	-4.05	28.65	54.00	-25.35	AVG
3		1437.393	42.12	-2.32	39.80	74.00	-34.20	peak
4		1437.393	30.92	-2.32	28.60	54.00	-25.40	AVG
5		1949.222	41.43	1.61	43.04	74.00	-30.96	peak
6		1949.222	29.59	1.61	31.20	54.00	-22.80	AVG
7		2752.044	40.25	5.51	45.76	74.00	-28.24	peak
8		2752.044	28.20	5.51	33.71	54.00	-20.29	AVG
9		3682.180	37.84	9.12	46.96	74.00	-27.04	peak
10		3682.180	27.73	9.12	36.85	54.00	-17.15	AVG
11		5412.620	39.96	15.61	55.57	74.00	-18.43	peak
12	*	5412.620	27.25	15.61	42.86	54.00	-11.14	AVG

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





Temperature:	23°C	Relative Humidity:	54 %
Pressure:	101kPa	Polarization :	Vertical
Test Voltage :	AC 230V/50Hz	Test Mode:	Mode 2



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1		1013.529	43.14	-4.24	38.90	74.00	-35.10	peak
2		1013.529	32.90	-4.24	28.66	54.00	-25.34	AVG
3		1368.284	41.85	-2.59	39.26	74.00	-34.74	peak
4		1368.284	31.07	-2.59	28.48	54.00	-25.52	AVG
5		1855.505	41.36	0.84	42.20	74.00	-31.80	peak
6		1855.505	29.72	0.84	30.56	54.00	-23.44	AVG
7		2643.304	40.55	5.01	45.56	74.00	-28.44	peak
8		2643.304	28.36	5.01	33.37	54.00	-20.63	AVG
9		3731.996	38.73	9.30	48.03	74.00	-25.97	peak
10		3731.996	27.84	9.30	37.14	54.00	-16.86	AVG
11		5560.064	38.48	15.98	54.46	74.00	-19.54	peak
12	*	5560.064	27.15	15.98	43.13	54.00	-10.87	AVG

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





## 7. Immunity

### Performance criteria

#### Performance criterion A

The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. 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 by what the user may reasonably expect from the equipment if used as intended.

#### Performance criterion B

During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test.

After the test, the equipment shall continue to operate as intended without operator intervention; no degradation of performance or loss of function is allowed, below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance.

If the minimum performance level (or the permissible performance loss), or recovery time, is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

#### Performance criterion C

Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A reboot or re-start operation is allowed.

Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

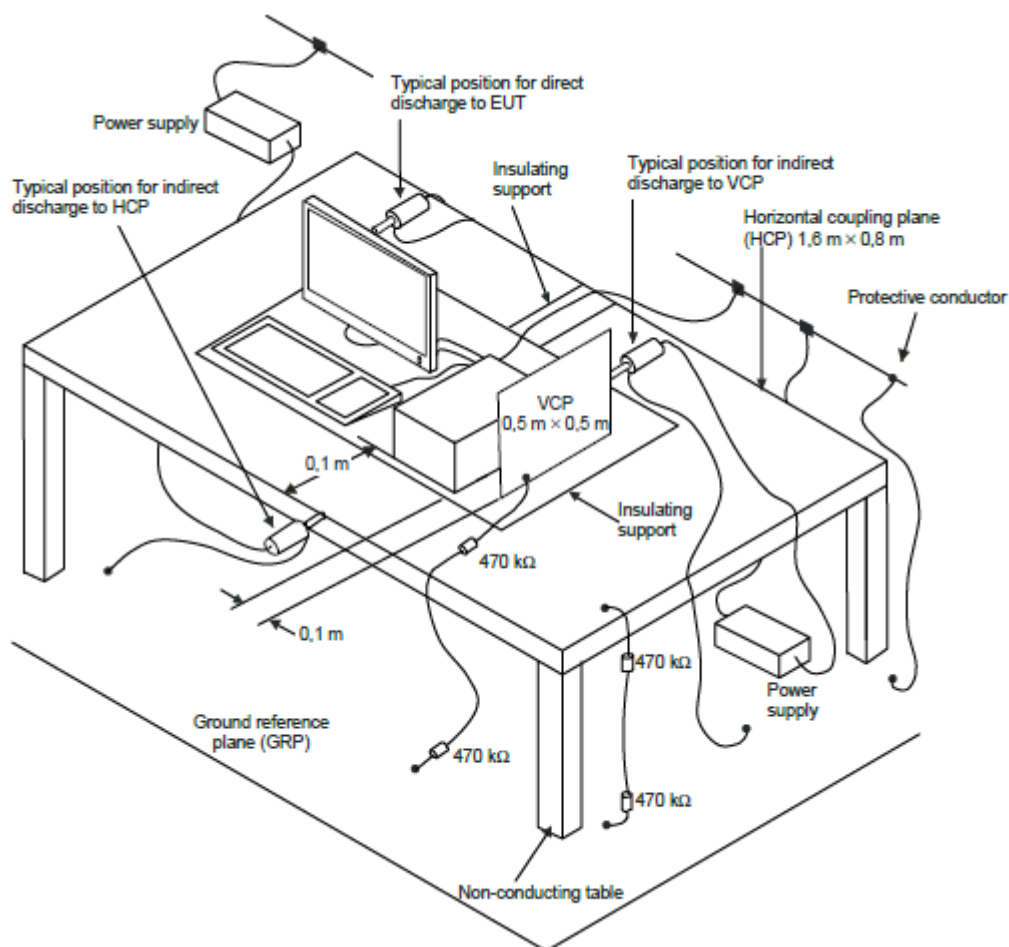
## 7.1. Electrostatic discharges (ESD)

### 7.1.1. Test standard and Levels

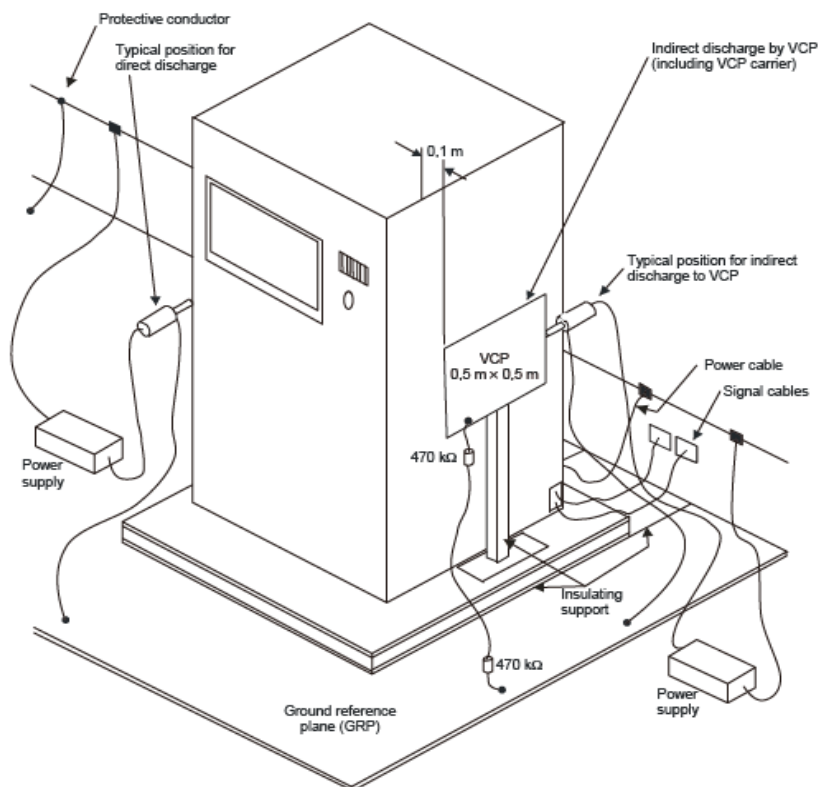
Environmental phenomenon	Test specifications	Basic standard
Electrostatic discharge	$\pm 8$ kV air discharge	IEC 61000-4-2
	$\pm 4$ kV contact discharge	

### 7.1.2. Block diagram of test setup

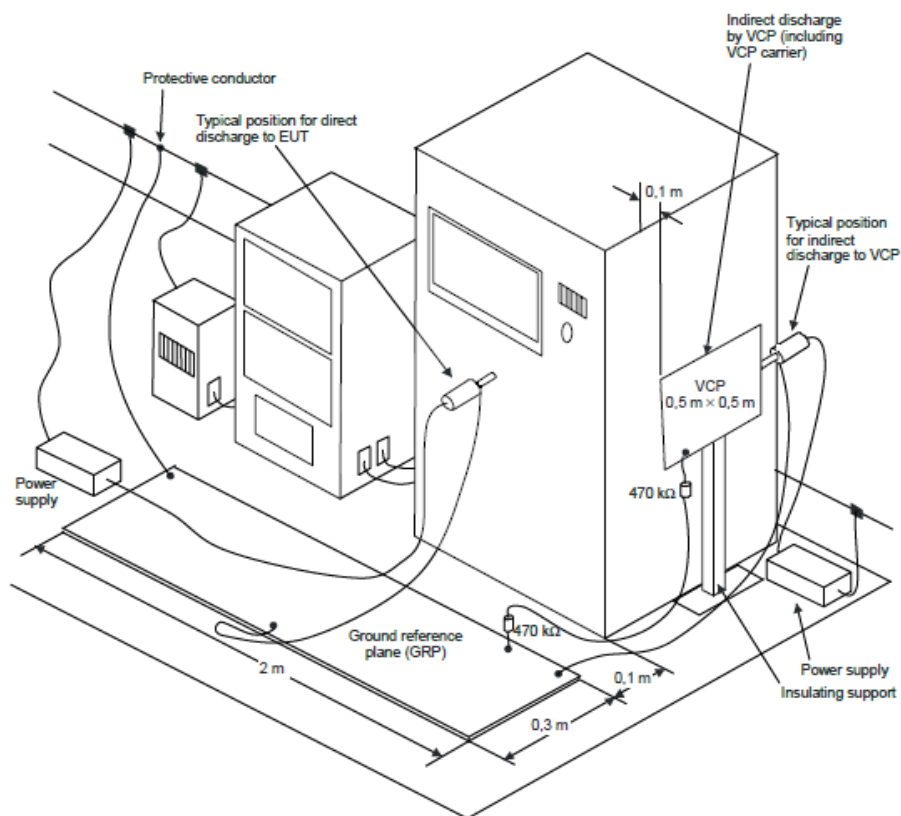
For table-top equipment



## For floor standing equipment



## For table-top & floor standing equipment





### 7.1.3. Test Procedure

#### 1. Air discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

#### 2. Contact discharge:

All the procedure shall be same as Section 1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

#### 3. Indirect discharge for horizontal coupling plane

At least 20 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

#### 4. Indirect discharge for vertical coupling plane

At least 20 single discharge shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

### 7.1.4. Test Result

Temperature:	23°C	Relative Humidity:	54 %
Pressure:	101kPa	Test Mode:	Mode 2
Test Voltage :	DC 3.7V		

Discharge Method	Discharge Position	Voltage (±kV)	Min. No. of Discharge per polarity (Each Point)	Performance Criterion	Required Criterion
Contact Discharge	Conductive Surfaces	4	10	B	A
	Indirect Discharge HCP	4	10	B	A
	Indirect Discharge VCP	4	10	B	A
Air Discharge	Slots, Apertures, and Insulating Surfaces	8	10	B	A
Note: N/A					

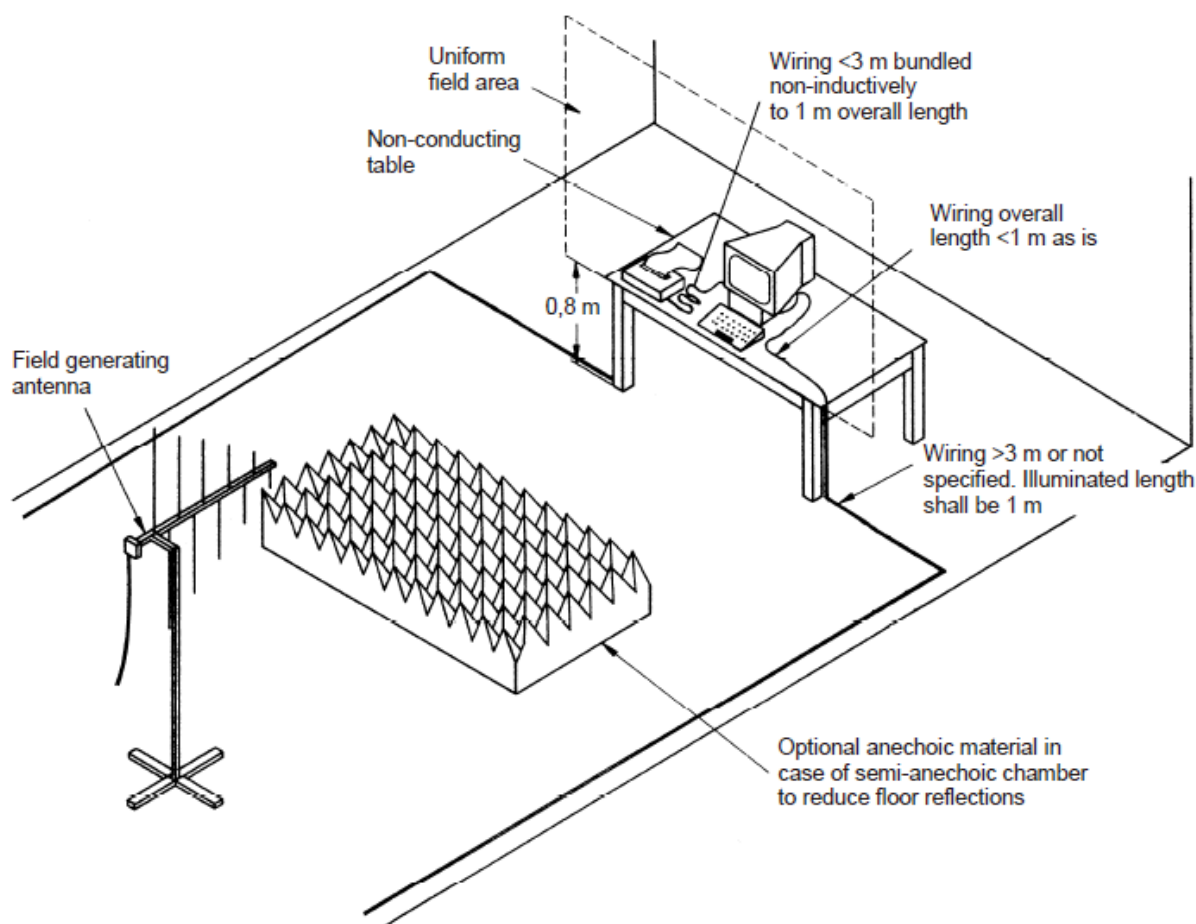
## 7.2. Electromagnetic field

### 7.2.1. Test standard and Levels

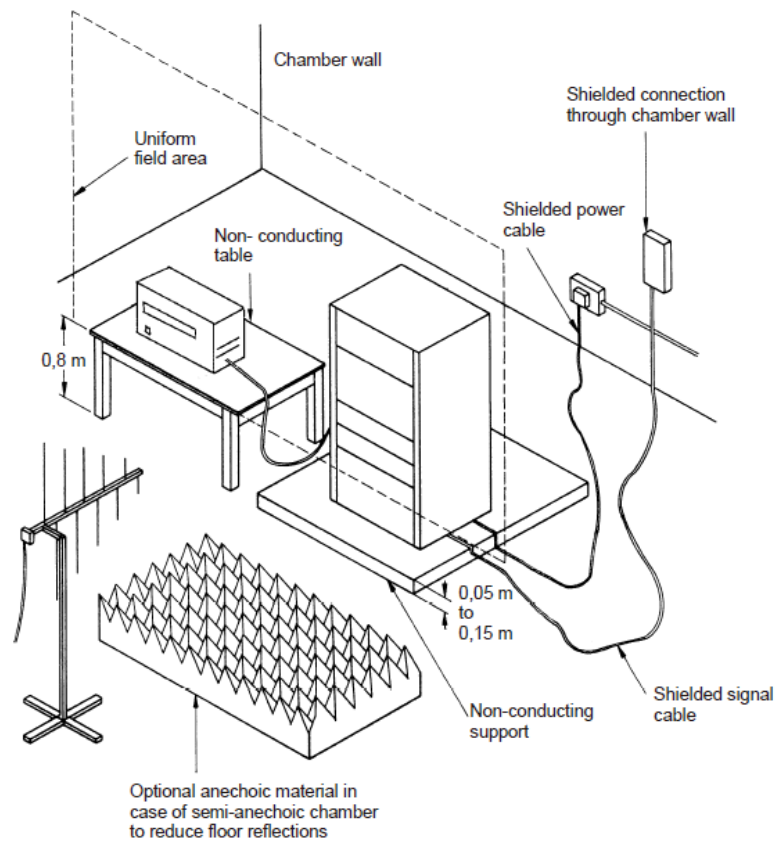
Characteristics	Test levels	Test levels	Basic standard
Frequency range	80 MHz to 1000 MHz,	1800MHz, 2600MHz, 3500MHz, 5000MHz	IEC 61000-4-3
Test level	3 V/m (unmodulated)	3 V/m (unmodulated)	
Modulation	1 kHz, 80 % AM, sine wave	1 kHz, 80 % AM, sine wave	

### 7.2.2. Block diagram of test setup

For table-top equipment



For floor standing equipment



## 7.2.3. Test Procedure

1. Measurement was performed in full-anechoic chamber.
2. Measurement procedure was applied according to EN 61000-4-3 clause 8.
3. The test method and equipment was specified by EN 61000-4-3.

## 7.2.4. Test Result

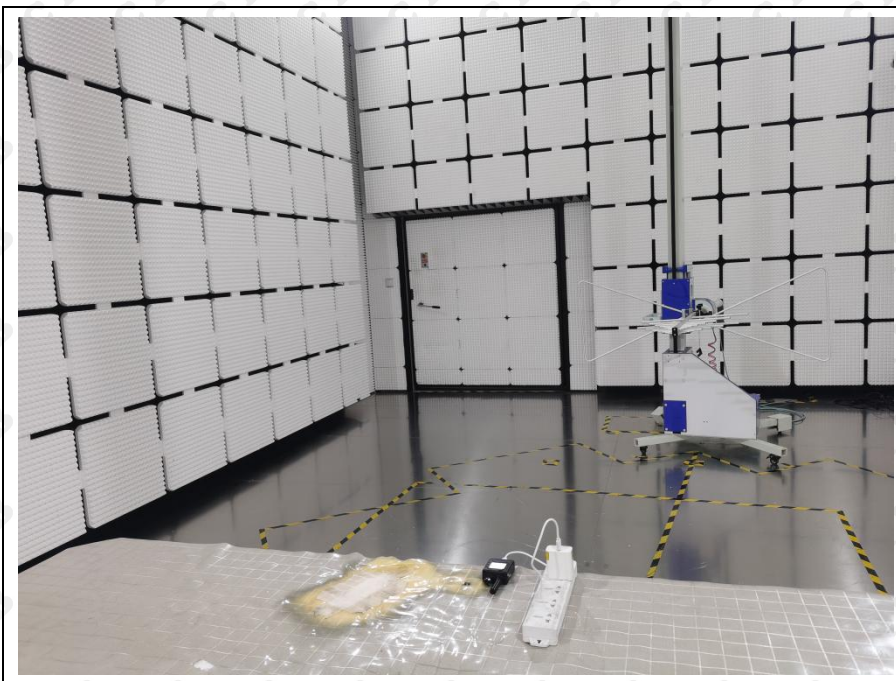
Temperature:	23°C	Relative Humidity:	54 %
Pressure:	101kPa	Test Mode:	Mode 2
Test Voltage :	DC 3.7V		

Frequency range [MHz]	Test Level [V/m]	Polarization	EUT Face	Performance Criterion	Required Criterion
80 to 1000, 1800, 2600, 3500, 5000	3	Horizontal & Vertical	Front/ Rear	A	A
			Right/ Left	A	A
			Top/ Underside	A	A
Note: N/A					



## 8. Photographs of test setup

### RE up to 1GHz



### RE above 1GHz



## CE

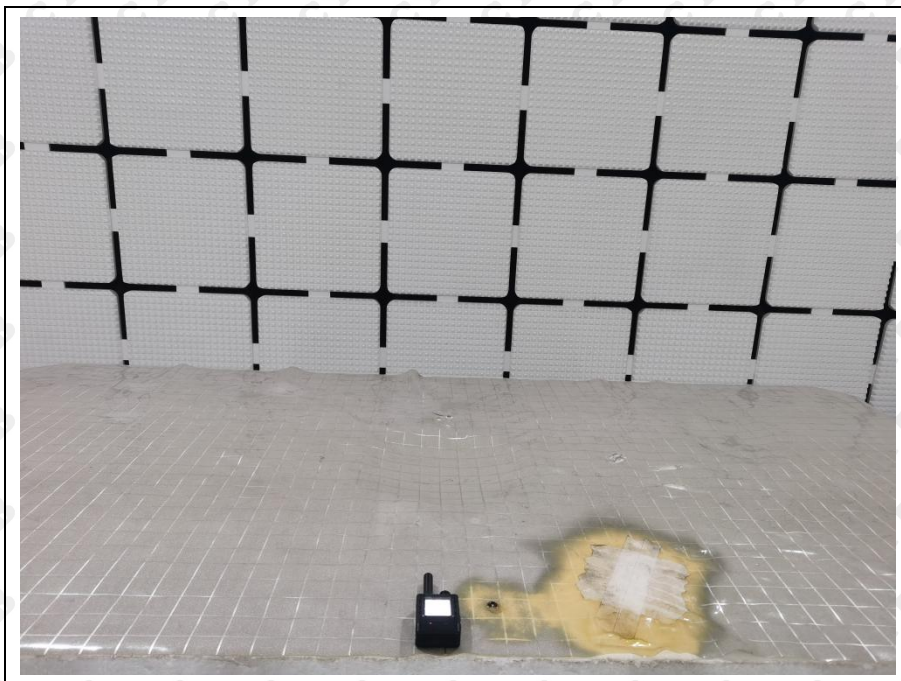


## ESD





RS





## 9. Photographs of EUT

EUT photo 1



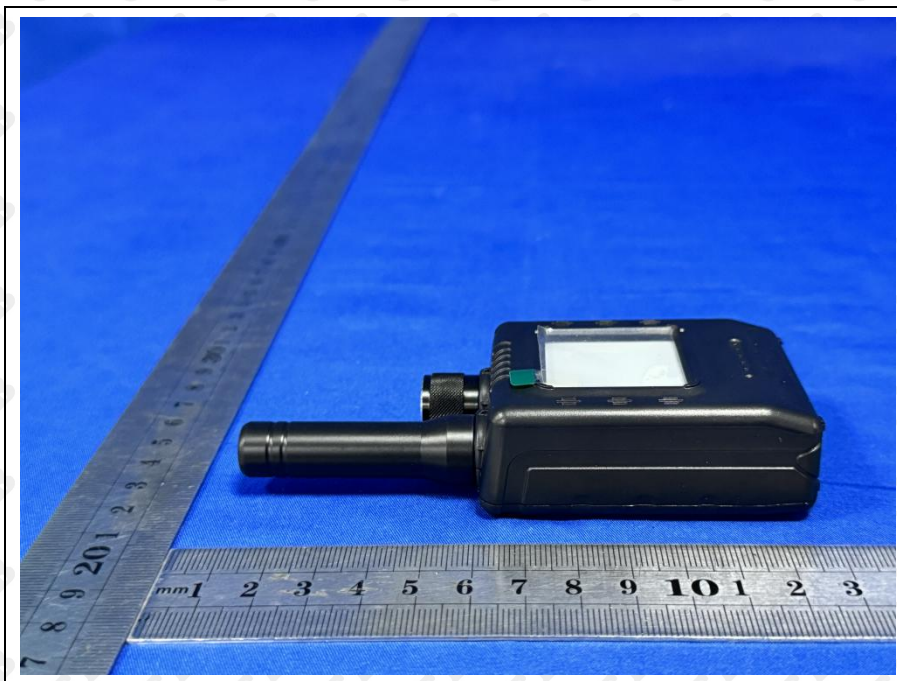
EUT photo 2



EUT photo 3



EUT photo 4





EUT photo 5

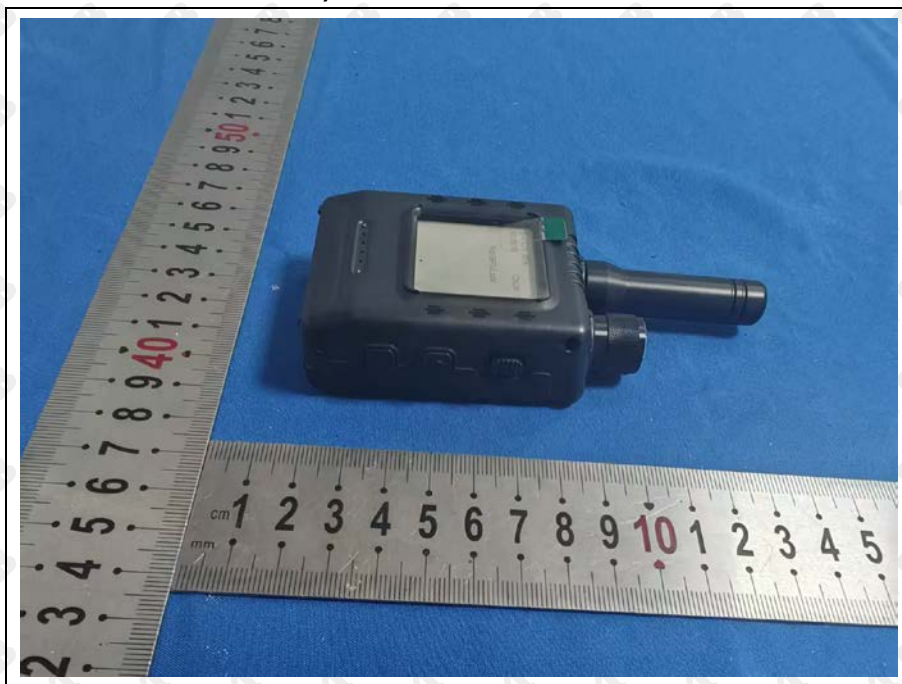


EUT photo 6





EUT photo 7 (Model: M5 for Meshtastic)



EUT photo 8 (Model: M5 for Meshtastic)



\*\*\*End of report\*\*\*