FCC Test Report

For

Applicant Name:	**TECNO MOBILE LIMITED**
Address:	FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG
EUT Name:	Laptop Computer
Brand Name:	TECNO
Model Number:	T15RA
Series Model Number:	Refer to section 2

Issued By

Company Name:	**BTF Testing Lab (Shenzhen) Co., Ltd.**
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Report Number:	BTF230918R00306
Test Standards:	47 CFR Part 15, Subpart B
FCC ID:	2ADYY-T15RA
Test Conclusion:	Pass
Test Date:	2023-08-25 to 2023-09-22
Date of Issue:	2023-09-22

Prepared By: Chris Liu / Project Engineer

Date: 2023-09-22

Approved By: Ryan.CJ / EMC Manager

Date: 2023-09-22

Note: All the test results in this report only related to the testing samples. Which can be duplicated completely for the legal use with approval of applicant; it shall not be reproduced except in full without the written approval of BTF Testing Lab (Shenzhen) Co., Ltd., All the objections should be raised within thirty days from the date of issue. To validate the report, you can contact us.

Revision History		
Version	Issue Date	Revisions Content
R_V0	2023-09-22	Original
Note: Once the revision has been made, then previous versions reports are invalid.		

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1 Introduction

1.1 Identification of Testing Laboratory

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130

1.2 Identification of the Responsible Testing Location

Company Name:	BTF Testing Lab (Shenzhen) Co., Ltd.
Address:	F101, 201 and 301, Building 1, Block 2, Tantou Industrial Park, Tantou Community, Songgang Street, Bao'an District, Shenzhen, China
Phone Number:	+86-0755-23146130
Fax Number:	+86-0755-23146130
FCC Registration Number:	518915
Designation Number:	CN1330

1.3 Announcement

(1) The test report reference to the report template version v0.
(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing, reviewing and approving the test report.
(3) The test report is invalid if there is any evidence and/or falsification.
(4) This document may not be altered or revised in any way unless done so by BTF and all revisions are duly noted in the revisions section.
(5) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
(6) The laboratory is only responsible for the data released by the laboratory, except for the part provided by the applicant.

2 Product Information

2.1 Application Information

Company Name:	TECNO MOBILE LIMITED
Address:	FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG

2.2 Manufacturer Information

Company Name:	TECNO MOBILE LIMITED
Address:	FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG

2.3 Factory Information

Company Name:	GUANGXI SHANCHAUN TECHNOLOGY CO LTD
Address:	The Second Floor of Plant C01, Plant C02, Plant C03 and Plant D03 Guangxi Sannuo Smart Industrial Park, No.3, Gaoke Road, Beihai Industrial Park, BEIHAI, 536000 Guangxi, P.R.China

2.4 General Description of Equipment under Test (EUT)

EUT Name:	Laptop Computer
Test Model Number:	T15RA
Series Model Number:	N/A
Software Version:	Win 11 home
Hardware Version:	N156EAL01_MB_V11

2.5 Technical Information

Power Supply:	Li-ion Battery: 156 Rated Voltage: 11.55V Rated Capacity: 6060mAh/70Wh Typical Capacity: 6160mAh/71.14Wh Limited Charge Voltage: 13.2V
Power Adaptor:	Adapter1:TCW-A61S-65W Input: 100-240V~50/60Hz 1.5A Max Output: PD: 5V⎓3A 9V⎓3A 12V⎓3A 15V⎓3A 20V⎓3.25A PPS:3.3-11V⎓5A Max Adapter2: DS65-2 Input: 100-240V~50/60Hz 1.5A Max Output: 5.0V⎓3.0A 9.0V⎓3.0A 12.0V⎓3.0A 15.0V⎓3.0A 20.0V⎓3.25A 65.0W

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3 Summary of Test Results

3.1 Test Standards

The tests were performed according to following standards: **47 CFR Part 15, Subpart B:** Unintentional Radiators

3.2 Uncertainty of Test

Item	Measurement Uncertainty
Conducted Emission (150 kHz-30 MHz)	±2.64dB
All emissions, radiated (<1GHz)	±4.12dB
The following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

3.3 Summary of Test Result

Item	Standard	Requirement	Result
Conducted emissions on AC mains	47 CFR Part 15, Subpart B	15.107, Class B	Pass
Radiated emissions (Below 1GHz)	47 CFR Part 15, Subpart B	15.109, Class B	Pass
Radiated emissions (Above 1GHz)	47 CFR Part 15, Subpart B	15.109, Class B	Pass

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4 Test Configuration

4.1 Test Equipment List

Conducted emissions on AC mains					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Pulse Limiter	SCHWARZBECK	VTSD 9561-F	00953	2022-11-24	2023-11-23
Coaxial Switcher	SCHWARZBECK	CX210	CX210	2022-11-24	2023-11-23
V-LISN	SCHWARZBECK	NSLK 8127	01073	2022-11-24	2023-11-23
LISN	AFJ	LS16/110VAC	16010020076	2023-02-23	2024-02-22
EMI Receiver	ROHDE&SCHWARZ	ESCI3	101422	2022-11-24	2023-11-23

Radiated emissions (Below 1GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023-03-24	2024-03-23
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-1m	21101568	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022-11-24	2023-11-23
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplilifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ_EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2023-11-27

Radiated emissions (Above 1GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Coaxial cable Multiflex 141	Schwarzbeck	N/SMA 0.5m	517386	2023-03-24	2024-03-23
Preamplifier	SCHWARZBECK	BBV9744	00246	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF1-SMASMAM-10m	21101566	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-10m	21101570	2022-11-24	2023-11-23
RE Cable	REBES Talent	UF2-NMNM-1m	21101576	2022-11-24	2023-11-23

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RE Cable	REBES Talent	UF2-NMNM-2.5m	21101573	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Horn Antenna	SCHWARZBECK	BBHA9170	01157	2021-11-28	2023-11-27
EMI TEST RECEIVER	ROHDE&SCHWARZ	ESCI7	101032	2022-11-24	2023-11-23
SIGNAL ANALYZER	ROHDE&SCHWARZ	FSQ40	100010	2022-11-24	2023-11-23
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Broadband Preamplilifier	SCHWARZBECK	BBV9718D	00008	2023-03-24	2024-03-23
Horn Antenna	SCHWARZBECK	BBHA9120D	2597	2022-05-22	2024-05-21
EZ_EMC	Frad	FA-03A2 RE+	/	/	/
POSITIONAL CONTROLLER	SKET	PCI-GPIB	/	/	/
Log periodic antenna	SCHWARZBECK	VULB 9168	01328	2021-11-28	2023-11-27

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4.2 Test Auxiliary Equipment

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

4.3 Test Modes

Pretest Mode	Description
Mode 1	Video Recording
Mode 2	Video Playing
Mode 3	Transferring with USB Disk (the worst case)
Mode 4	TF Card Playing

5 Emission Test Results (EMI)

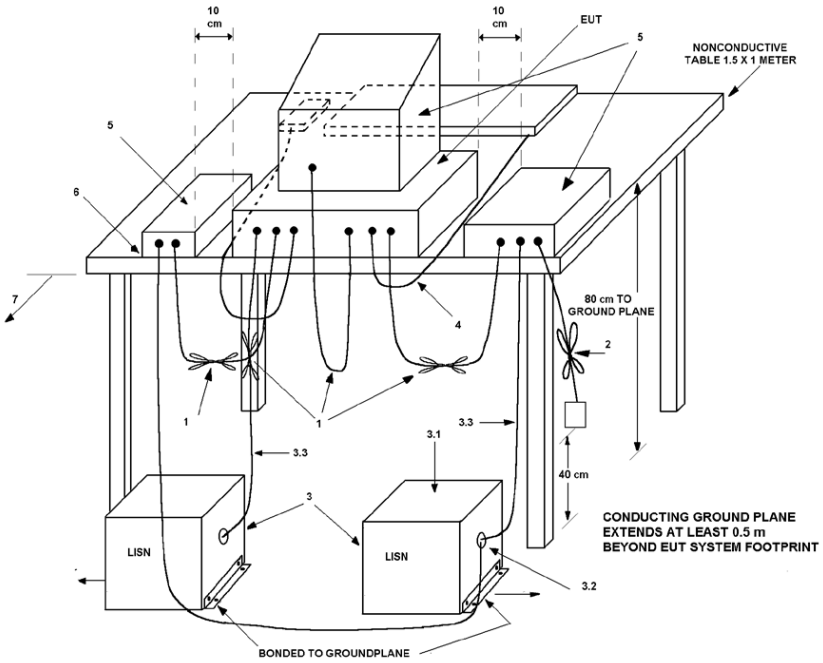
5.1 Conducted emissions on AC mains

Test Requirement:	15.107, Class B
Test Method:	ANSI C63.4
Test Limit:	**Frequency of emission (MHz)** / **Conducted limit (dBμV)** — **Quasi-peak** / **Average** 0.15-0.5: 66 to 56* / 56 to 46* 0.5-5: 56 / 46 5-30: 60 / 50 *Decreases with the logarithm of the frequency.
Procedure:	An initial pre-scan was performed with peak detector.Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected. Remark: Level= Read Level+ Cable Loss+ LISN Factor

5.1.1 E.U.T. Operation:

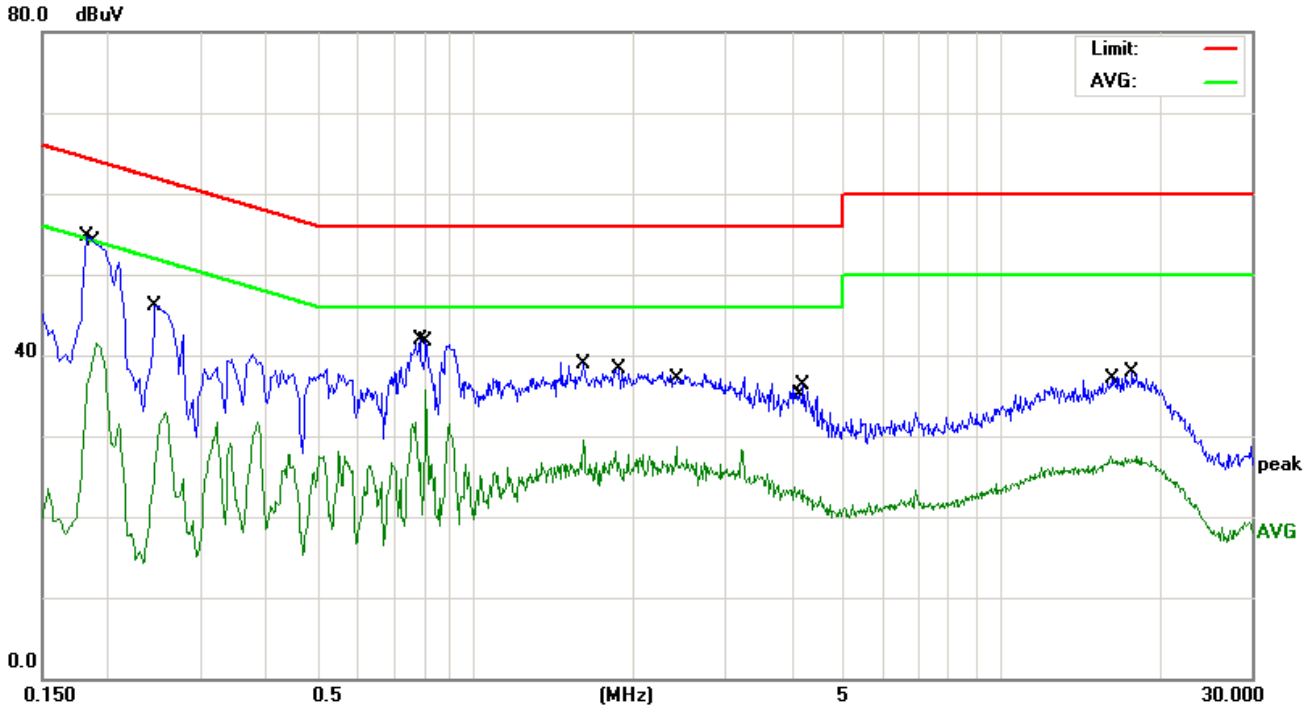
Operating Environment:	
Temperature:	24.1 °C
Humidity:	48.7 %
Atmospheric Pressure:	1010 mbar

5.1.2 Test Setup Diagram:



5.1.3 Test Data:

TM1 / Line: Line Mode 3(the worst case)



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1819	44.30	10.45	54.75	64.39	-9.64	QP
2		0.1900	30.97	10.45	41.42	54.03	-12.61	AVG
3		0.2460	35.65	10.46	46.11	61.89	-15.78	QP
4		0.7860	31.28	10.54	41.82	56.00	-14.18	QP
5		0.8059	25.10	10.54	35.64	46.00	-10.36	AVG
6		1.6100	18.86	10.65	29.51	46.00	-16.49	AVG
7		1.8820	27.60	10.69	38.29	56.00	-17.71	QP
8		2.4180	17.99	10.71	28.70	46.00	-17.30	AVG
9		4.1460	12.62	10.73	23.35	46.00	-22.65	AVG
10		4.2060	25.67	10.73	36.40	56.00	-19.60	QP
11		16.2139	16.34	11.16	27.50	50.00	-22.50	AVG
12		17.8420	26.83	11.11	37.94	60.00	-22.06	QP

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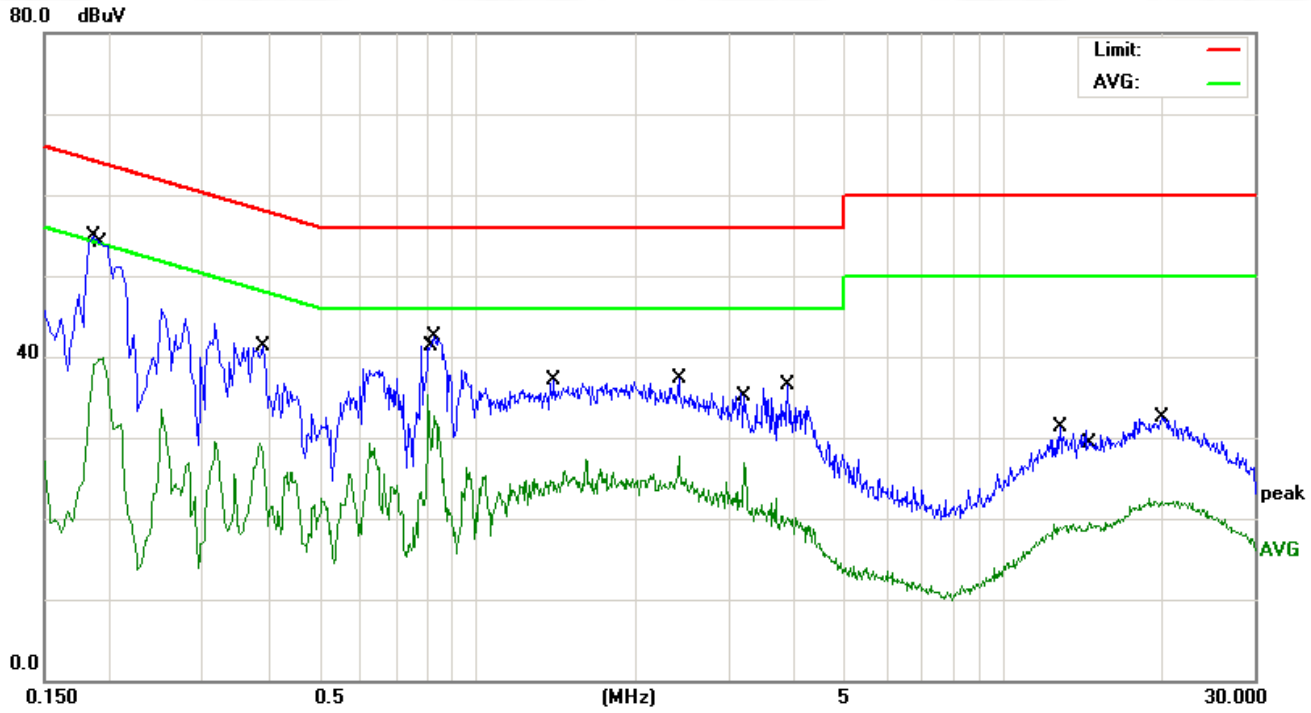
TM1 / Line: Neutral



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1	*	0.1860	44.38	10.45	54.83	64.21	-9.38	QP
2		0.1940	29.40	10.45	39.85	53.86	-14.01	AVG
3		0.3860	18.75	10.49	29.24	48.15	-18.91	AVG
4		0.8059	24.74	10.54	35.28	46.00	-10.72	AVG
5		0.8300	31.93	10.54	42.47	56.00	-13.53	QP
6		1.4020	26.40	10.61	37.01	56.00	-18.99	QP
7		2.4180	17.01	10.71	27.72	46.00	-18.28	AVG
8		3.2220	16.21	10.72	26.93	46.00	-19.07	AVG
9		3.8980	25.83	10.73	36.56	56.00	-19.44	QP
10		12.8060	20.31	11.04	31.35	60.00	-28.65	QP
11		14.5540	8.38	11.17	19.55	50.00	-30.45	AVG
12		19.9580	21.42	11.05	32.47	60.00	-27.53	QP

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5.2 Radiated emissions (Below 1GHz)

Test Requirement:	15.109, Class B
Test Method:	ANSI C63.4
Test Limit:	Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

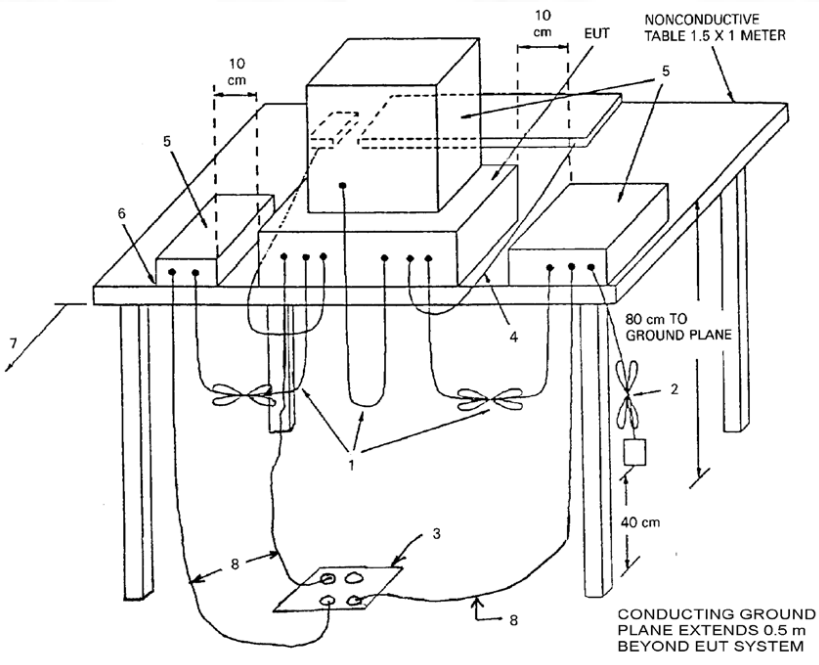
Frequency of emission (MHz)	Field strength @3m		Field strength @10m	
	(uV/m)	(dBuV/m)	(uV/m)	(dBuV/m)
30 – 88	100	40	30	29.5
88 – 216	150	43.5	45	33.1
216 – 960	200	46	60	35.6
Above 960	500	54	150	43.5

Procedure:	An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

5.2.1 E.U.T. Operation:

Operating Environment:	
Temperature:	24.1 °C
Humidity:	48.7 %
Atmospheric Pressure:	1010 mbar

5.2.2 Test Setup Diagram:



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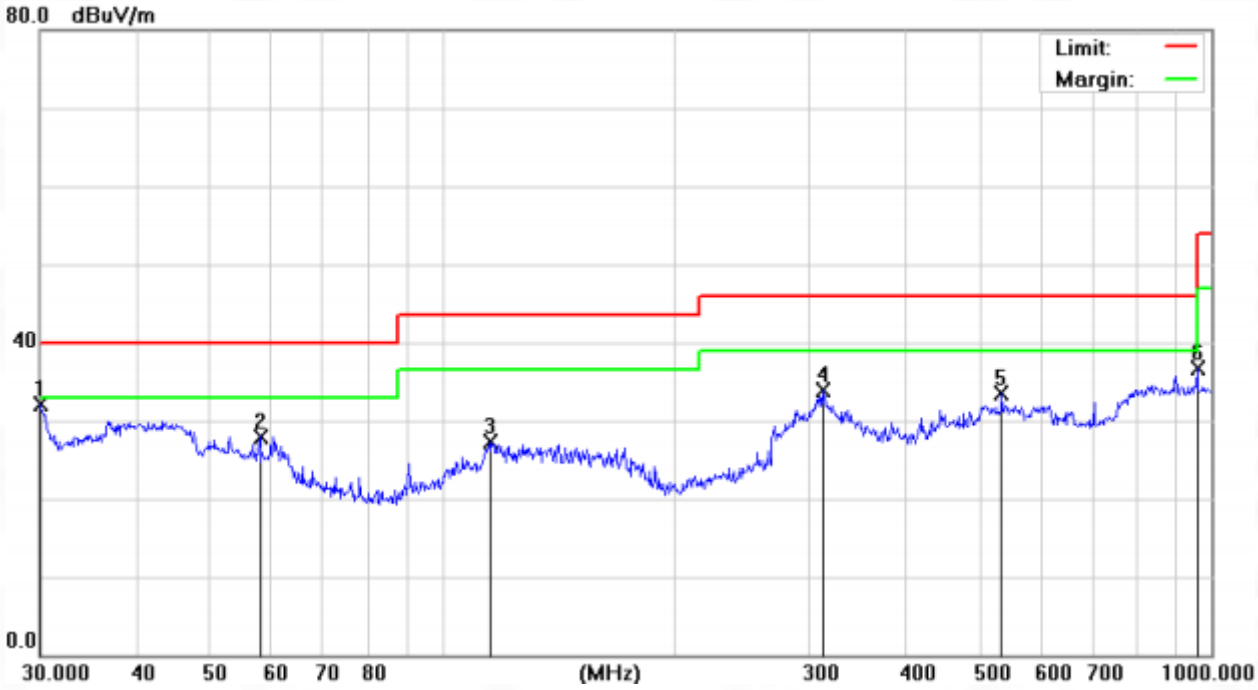
5.2.3 Test Data:

TM1 / Polarization: Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1	*	30.0000	29.85	2.19	32.04	40.00	-7.96	QP
2		57.9993	25.97	2.03	28.00	40.00	-12.00	QP
3		115.3205	26.35	0.89	27.24	43.50	-16.26	QP
4		312.1794	31.37	2.57	33.94	46.00	-12.06	QP
5		533.8321	26.53	6.90	33.43	46.00	-12.57	QP
6		958.7943	21.57	15.18	36.75	46.00	-9.25	QP

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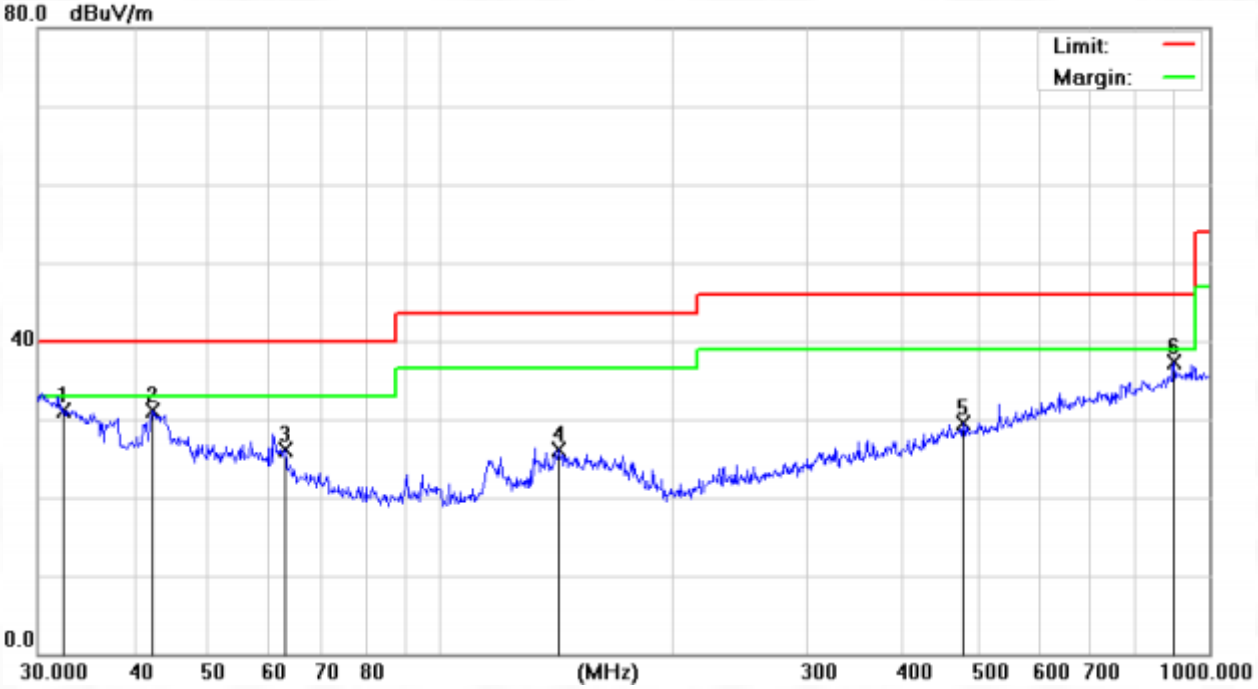
TM1 / Polarization: Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector
1		32.4059	47.70	-16.58	31.12	40.00	-8.88	QP
2		42.3022	47.63	-16.52	31.11	40.00	-8.89	QP
3		62.8708	42.82	-16.65	26.17	40.00	-13.83	QP
4		142.8243	43.05	-16.86	26.19	43.50	-17.31	QP
5		478.8456	46.65	-17.21	29.44	46.00	-16.56	QP
6	*	900.1474	51.92	-14.67	37.25	46.00	-8.75	QP

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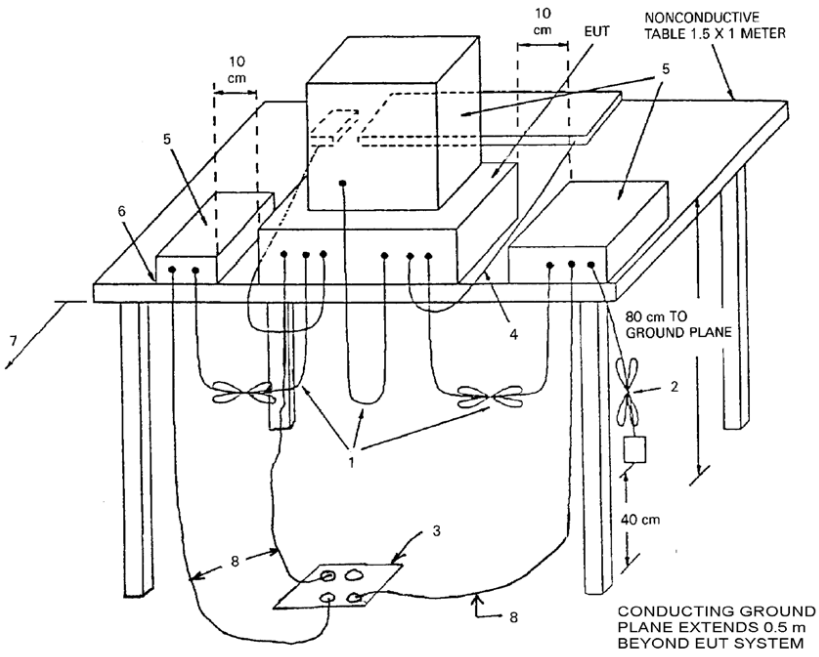
5.3 Radiated emissions (Above 1GHz)

Test Requirement:	15.109, Class B
Test Method:	ANSI C63.4
Test Limit:	**Frequency of emission (MHz)** / **Field strength @3m** — **Average (uV/m)** / **Average (dBuV/m)** / **Peak (dBuV/m)**: Above 1GHz / 500 / 54 / 74
Procedure:	An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. For below 1GHz test, Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities. For above 1GHz test, Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities. Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

5.3.1 E.U.T. Operation:

Operating Environment:	
Temperature:	22.2 °C
Humidity:	54.7 %
Atmospheric Pressure:	1010 mbar

5.3.2 Test Setup Diagram:



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5.3.3 Test Data:

TEST RESULTS

Above 1GHz(1~6GHz) :(Mode 3—worst case)

Freq. (MHz)	Ant.Pol. H/V	Emission Level(dBuV)		Limit 3m(dBuV/m)		Over(dB)	
		PK	AV	PK	AV	PK	AV
1552.35	V	60.90	41.36	74	54	-13.10	-12.64
2399.95	V	59.77	40.42	74	54	-14.23	-13.58
1614.23	H	59.31	39.56	74	54	-14.69	-14.44
2333.72	H	59.50	40.50	74	54	-14.50	-13.50

Remark:
All emissions not reported were more than 20dB below the specified limit or in the noise floor.
Freq.= Emission frequency in MHz
Factor = Antenna Factor + Cable Loss – Pre-amplifier.
Over= Emission Level - Limit.
All the x/y/z orientation has been investigated, and only worst case is presented in this report.

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