



TEST REPORT

Application No.: SZEM2010010422CR
Applicant: PAX Technology Limited
Address of Applicant: Room 2416, 24/F., Sun Hung Kai Centre, 30 Harbour, Hong Kong, China
Manufacturer: PAX Computer Technology(Shenzhen) Co., Ltd.
Address of Manufacturer: 4/F, No.3 Building, Software Park, Second Central Science-Tech Road, High-Tech industrial Park, Shenzhen, Guangdong, P.R.C.
Factory: Guangzhou PAX Computer Technology Co., Ltd
Address of Factory: No.2 Bldg, No.113 Jinyang Road, Hualong Town, Panyu, Guangzhou, Guangdong, China
Equipment Under Test (EUT):
EUT Name: Mobile Payment Terminal
Model No.: D170
Trade mark: PAX
FCC ID: V5PD170
Standard(s) : 47 CFR Part 15, Subpart C 15.225
Date of Receipt: 2020-10-19
Date of Test: 2020-10-21 to 2020-11-05
Date of Issue: 2020-11-05

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu

Keny Xu
EMC Laboratory Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch EMC Laboratory

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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2020-11-05		Original

Authorized for issue by:			
			
		Calvin Weng/Project Engineer	
			
		Eric Fu/Reviewer	

2 Test Summary

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
20dB Bandwidth	47 CFR Part 15, Subpart C 15.225	ANSI C63.10 (2013) Section 6.9	47 CFR Part 15, Subpart C 15.215	Pass
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.225	ANSI C63.10 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Emission Mask	47 CFR Part 15, Subpart C 15.225	ANSI C63.10 (2013) Section 6.4	47 CFR Part 15, Subpart C 15.225(a)&(b)&(C)	Pass
Frequency tolerance	47 CFR Part 15, Subpart C 15.225	ANSI C63.10 (2013) Section 6.8	47 CFR Part 15, Subpart C 15.225(e)	Pass
Radiated Emissions (30MHz-1GHz)	47 CFR Part 15, Subpart C 15.225	ANSI C63.10 (2013) Section 6.4&6.5	47 CFR Part 15, Subpart C 15.225(d) & 15.209	Pass
Radiated Emissions (9kHz-30MHz)	47 CFR Part 15, Subpart C 15.225	ANSI C63.10 (2013) Section 6.4&6.5	47 CFR Part 15, Subpart C 15.225(d) & 15.209	Pass



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4 General Information

4.1 Details of E.U.T.

Rated voltage:	DC3.7V
Power adapter:	Adapter M/N: A18A-050100U-US2 Adapter input: AC100-240V, 50/60Hz, 0.2A Adapter output: DC5V/1A
Battery:	DC3.7V(1100mAh)
Antenna Type:	Loop antenna
Modulation Type:	ASK
Operation Frequency:	13.56MHz

4.2 Cable

Cable	Length	Shielding	Core
USB cable	1m	Unshielded	Non-Core

4.3 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
--	--	--	--

The EUT has been tested as an independent unit.

4.4 Measurement Uncertainty

Test Item	Measurement Uncertainty
20dB Bandwidth	± 3%
Conducted Emissions at Mains Terminals (150kHz-30MHz)	± 3.0dB
Emission Mask	± 4.5dB (Below 1GHz)
Frequency tolerance	± 3%
Radiated Emissions (30MHz-1GHz)	± 4.5dB (Below 1GHz)
Radiated Emissions (9kHz-30MHz)	± 4.5dB (Below 1GHz)

Remark:

The U_{lab} (lab Uncertainty) is less than U_{CISPR} (CISPR Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

4.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.6 Test Facility

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

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None

5 Equipment List

20dB Bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	SAEMC	MSR733	SEM001-09	2019-06-13	2022-06-12
DC Power Supply	Zhao Xin	KXN-6020D	SEM011-08	2020-09-23	2021-09-22
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2020-09-23	2021-09-22
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2020-07-10	2021-07-09

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2019-06-13	2022-06-12
EMI Test Receiver	Rohde&Schwarz	ESCI	SEM004-02	2020-03-24	2021-03-23
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2020-07-10	2021-07-09
LISN	Rohde&Schwarz	ENV216	SEM007-01	2020-09-23	2021-09-22

Emission Mask					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2018-03-31	2021-03-30
MXE EMI receiver	KEYSIGHT	N9038A	SEM004-16	2020-11-02	2021-11-01
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-18	2019-08-08	2022-08-07
Pre-amplifier	Sonoma Instrument Co	310N	SEM005-04	2020-04-09	2021-04-08
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2020-08-14	2023-08-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM029-01	2020-07-10	2021-07-09

Frequency tolerance					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	SAEMC	MSR733	SEM001-09	2019-06-13	2022-06-12
DC Power Supply	Zhao Xin	KXN-6020D	SEM011-08	2020-09-23	2021-09-22
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2020-09-23	2021-09-22
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2020-07-10	2021-07-09



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Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2020-07-19	2023-07-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2019-11-03	2020-11-02
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2020-11-02	2021-11-01
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-02	2019-05-24	2022-05-23
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2020-04-01	2021-03-31
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2020-07-10	2021-07-09

Radiated Emissions (9kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2018-03-31	2021-03-30
MXE EMI receiver	KEYSIGHT	N9038A	SEM004-16	2020-11-02	2021-11-01
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-18	2019-08-08	2022-08-07
Pre-amplifier	Sonoma Instrument Co	310N	SEM005-04	2020-04-09	2021-04-08
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2020-08-14	2023-08-13
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM029-01	2020-07-10	2021-07-09

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2020-09-15	2021-09-14
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2020-09-15	2021-09-14
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2020-04-07	2021-04-06

6 Radio Spectrum Matter Test Results

6.1 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.215

Test Method: ANSI C63.10 (2013) Section 6.9

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.5 °C

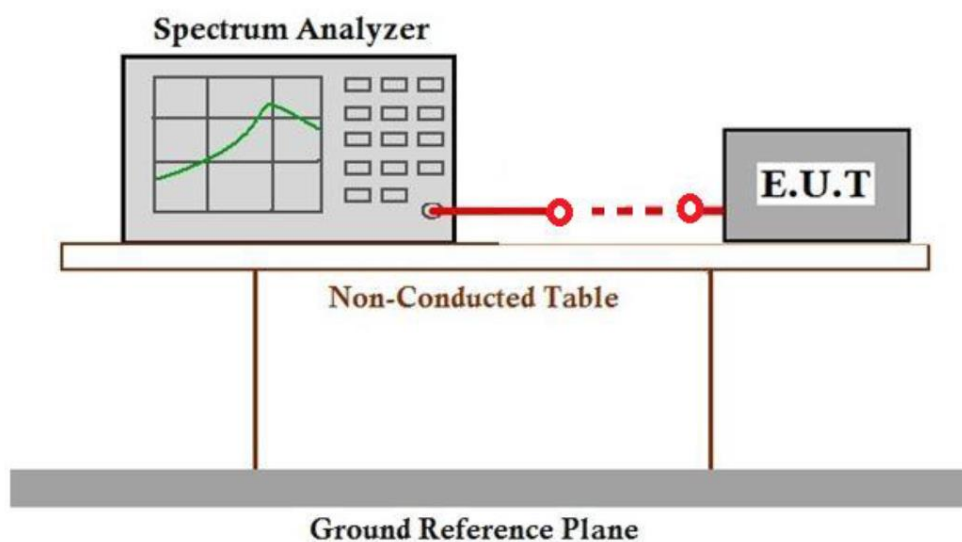
Humidity: 54.8 % RH

Atmospheric Pressure: 1015 mbar

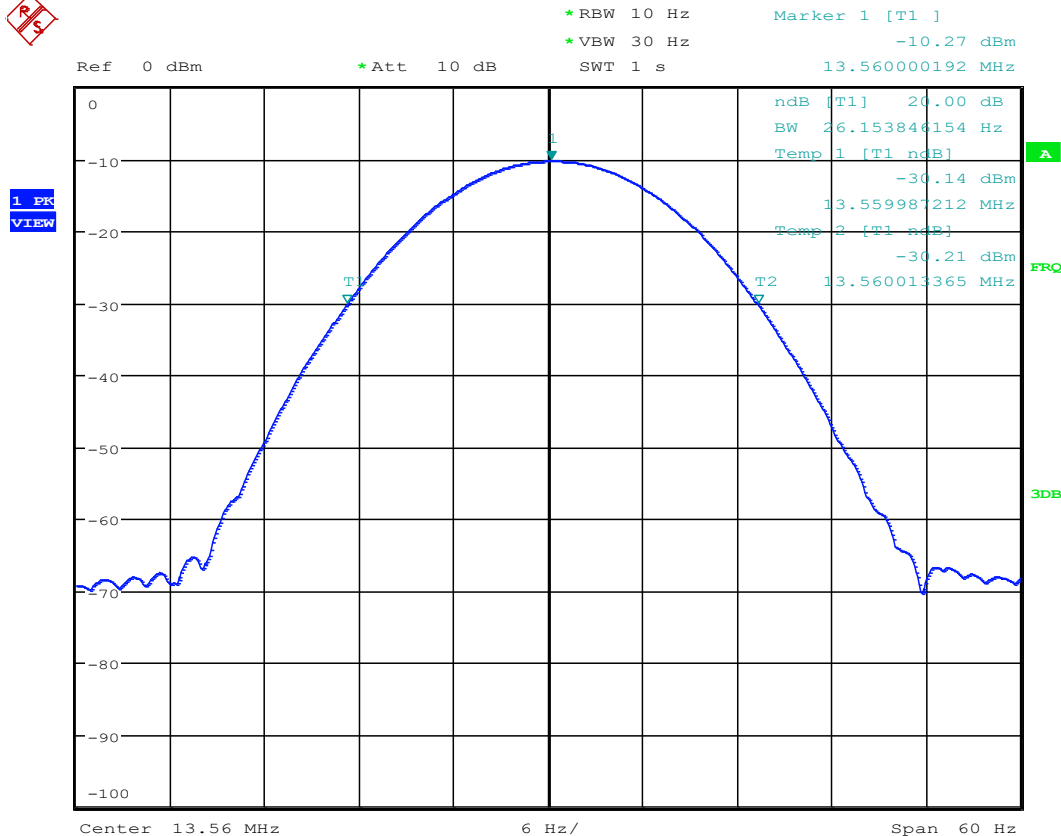
6.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	TX mode with modulation

6.1.3 Test Setup Diagram



6.1.4 Measurement Procedure and Data



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6.2 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2013) Section 6.2

Limit:

Frequency range (MHz)	Limit (dBuV)	
	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.

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.8 °C

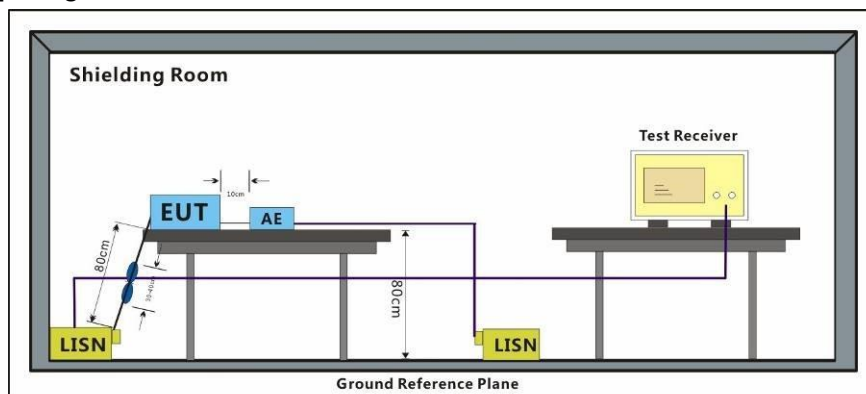
Humidity: 55.3 % RH

Atmospheric Pressure: 1015 mbar

6.2.2 Test Mode Description

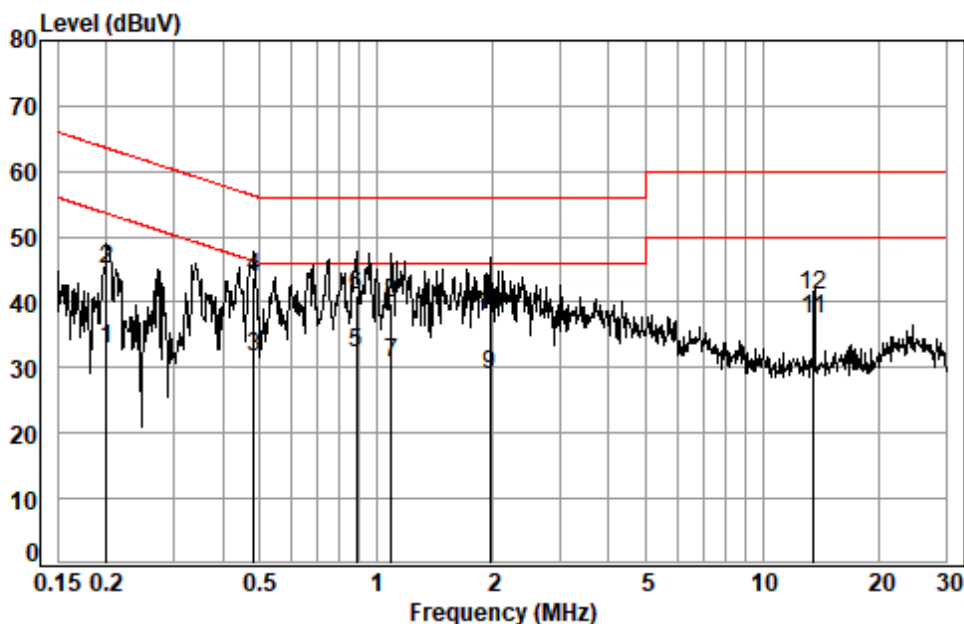
Pre-scan / Final test	Mode Code	Description
Final test	07	TX mode with modulation

6.2.3 Test Setup Diagram



6.2.4 Measurement Procedure and Data

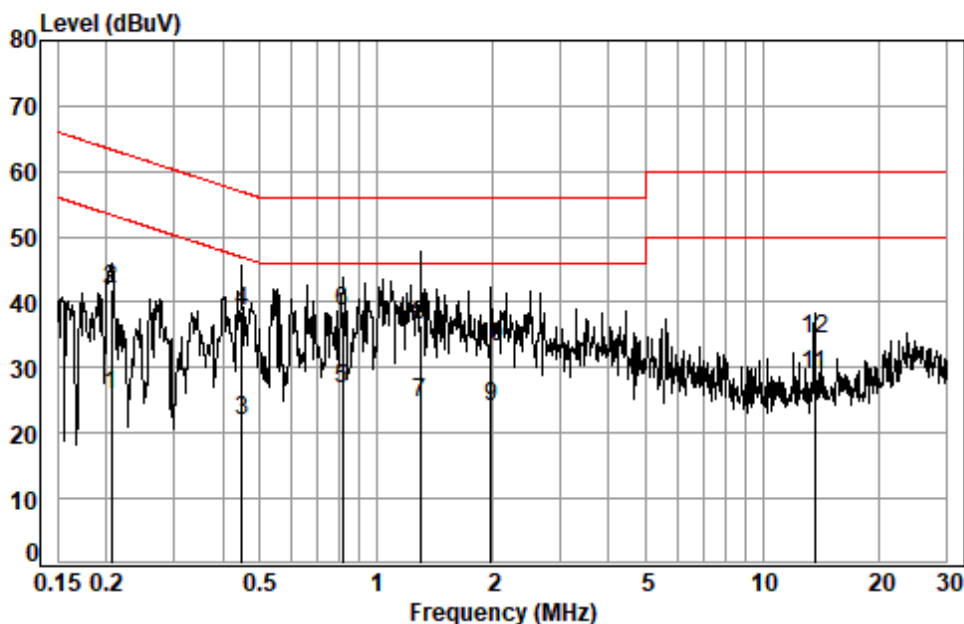
Test Mode: 07; Line: Live line



Site : Shielding Room
Condition: Line
Job No. : 10422CR
Test mode: 07

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.2007	0.02	9.72	23.23	32.97	53.58	-20.61	Average
2	0.2007	0.02	9.72	35.39	45.13	63.58	-18.45	QP
3	0.4812	0.06	9.77	21.67	31.50	46.32	-14.82	Average
4	0.4812	0.06	9.77	33.99	43.82	56.32	-12.50	QP
5	0.8897	0.08	9.78	22.28	32.14	46.00	-13.86	Average
6	0.8897	0.08	9.78	31.23	41.09	56.00	-14.91	QP
7	1.0939	0.10	9.78	20.80	30.68	46.00	-15.32	Average
8	1.0939	0.10	9.78	30.05	39.93	56.00	-16.07	QP
9	1.9697	0.16	9.81	18.80	28.77	46.00	-17.23	Average
10	1.9697	0.16	9.81	28.15	38.12	56.00	-17.88	QP
11	13.5609	0.20	10.44	26.67	37.31	50.00	-12.69	Average
12	13.5609	0.20	10.44	30.41	41.05	60.00	-18.95	QP

Test Mode: 07; Line: Neutral Line



Site : Shielding Room
Condition: Neutral
Job No. : 10422CR
Test mode: 07

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.2061	0.02	9.72	16.13	25.87	53.36	-27.49	Average
2	0.2061	0.02	9.72	32.27	42.01	63.36	-21.35	QP
3	0.4492	0.06	9.76	12.12	21.94	46.89	-24.95	Average
4	0.4492	0.06	9.76	28.87	38.69	56.89	-18.20	QP
5	0.8174	0.08	9.77	16.82	26.67	46.00	-19.33	Average
6	0.8174	0.08	9.77	28.77	38.62	56.00	-17.38	QP
7	1.3029	0.12	9.79	14.63	24.54	46.00	-21.46	Average
8	1.3029	0.12	9.79	26.58	36.49	56.00	-19.51	QP
9	1.9801	0.16	9.81	13.94	23.91	46.00	-22.09	Average
10	1.9801	0.16	9.81	23.11	33.08	56.00	-22.92	QP
11	13.6228	0.20	10.45	18.24	28.89	50.00	-21.11	Average
12	13.6228	0.20	10.45	23.64	34.29	60.00	-25.71	QP

6.3 Emission Mask

Test Requirement 47 CFR Part 15, Subpart C 15.225(a)&(b)&(C)
Test Method: ANSI C63.10 (2013) Section 6.4
Measurement Distance: 3m

Limit:

- (a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.
- (b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
- (c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.
- (d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

Below 30MHz

The test was performed at a 10m test site, while the test distance is 3m.

The factor calculated by the following equation:

$$FS_{\text{limit}} = FS_{\text{max}} - 40 \log \left(\frac{d_{\text{limit}}}{d_{\text{measure}}} \right)$$

where

FS_{limit} is the calculation of field strength at the limit distance, expressed in dBμV/m
 FS_{max} is the measured field strength, expressed in dBμV/m
 d_{measure} is the distance of the measurement point from the EUT
 d_{limit} is the reference distance or the distance of the $\lambda/2\pi$ point

The limit at 10m test distance is below:

The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 103.08 dBuV/m at 10 meters.

6.3.1 E.U.T. Operation

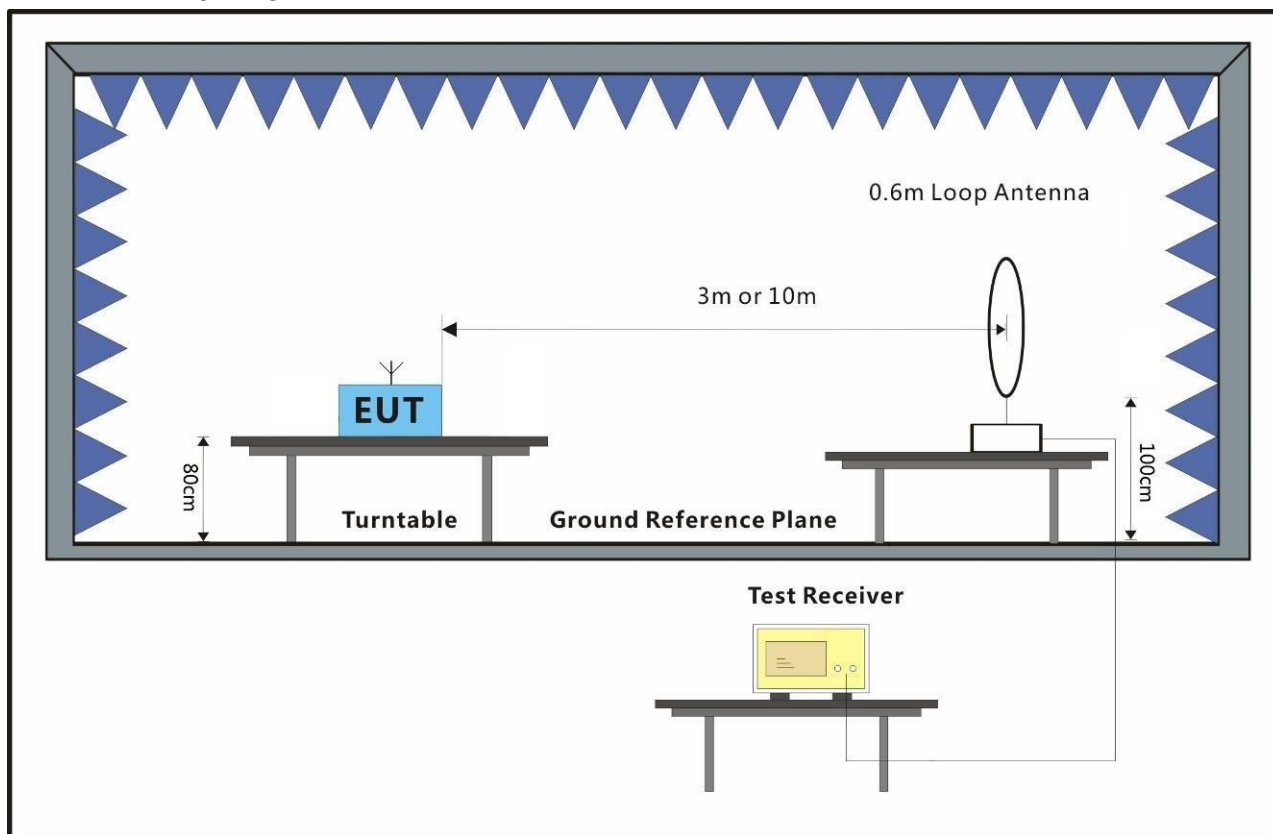
Operating Environment:

Temperature: 22.9 °C Humidity: 48 % RH Atmospheric Pressure: 1015 mbar

6.3.2 Test Mode Description

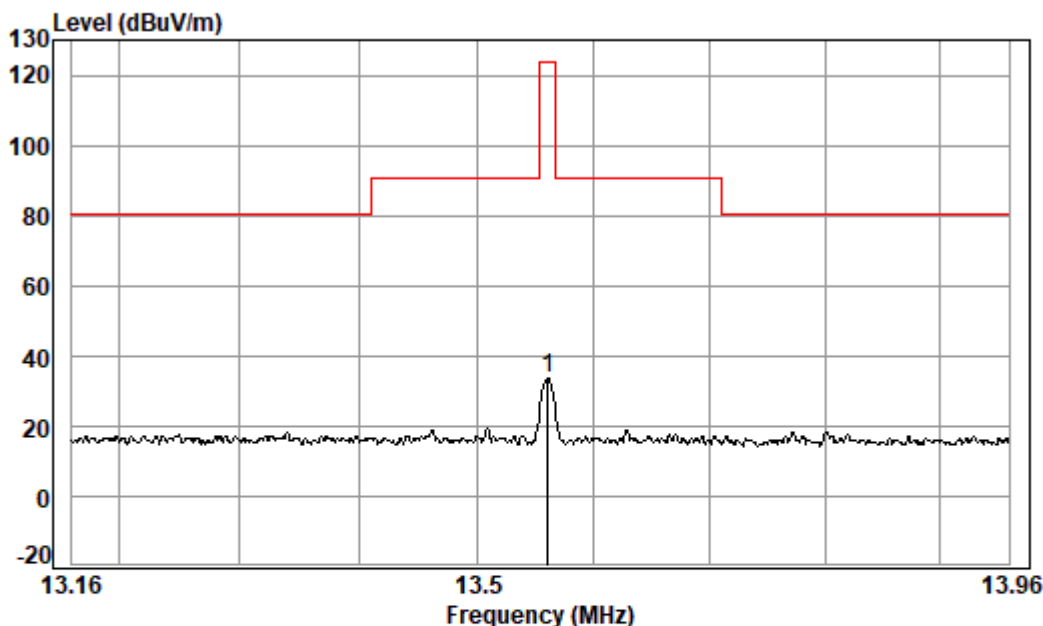
Pre-scan / Final test	Mode Code	Description
Final test	07	TX mode with modulation

6.3.3 Test Setup Diagram



6.3.4 Measurement Procedure and Data

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.



Condition: 3m

Job No. : 10422CR

Test Mode: 07

	Ant	Preamp	Cable	Read		Limit	Over	
Freq	Factor	Factor	Loss	Level	Level	Line	Limit	Remark
MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1 pp 13.561	8.88	32.35	0.62	56.20	33.35	124.00	-90.65	QP

Frequency (MHz)	Cable loss (dB)	ANT Factor (dB)	Preamp Factor (dB)	Read Level @ 3m (dBuV)	Level @ 3m (dBuV/m)	Level @ 30m (dBuV/m)	Limit @ 30m (dBuV/m)	Margin (dB)
13.56	0.62	8.88	32.35	56.2	33.35	-6.65	84.00	-90.65



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6.4 Frequency tolerance

Test Requirement 47 CFR Part 15, Subpart C 15.225(e)

Test Method: ANSI C63.10 (2013) Section 6.8

Limit:

± 0.01

6.4.1 E.U.T. Operation

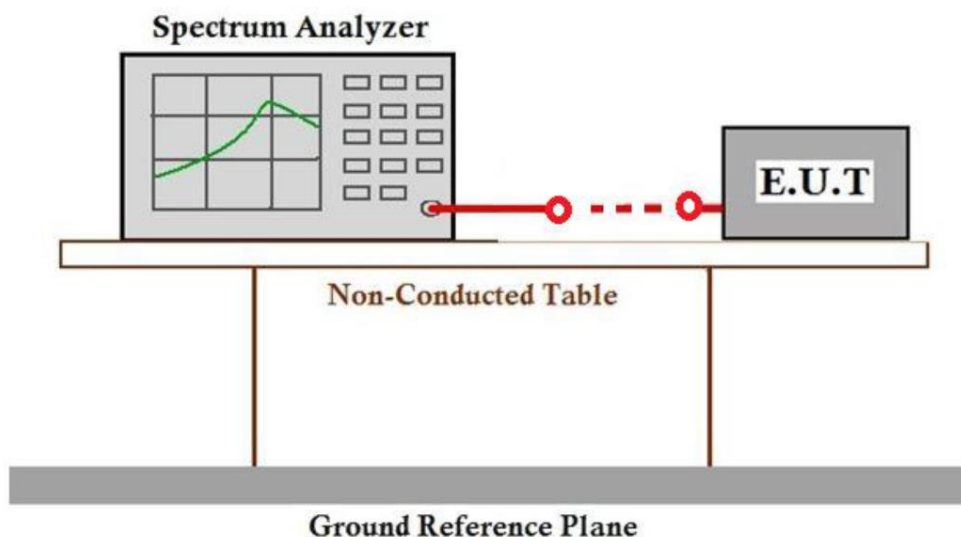
Operating Environment:

Temperature: 23.5 °C Humidity: 54.6 % RH Atmospheric Pressure: 1015 mbar

6.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	TX mode with modulation

6.4.3 Test Setup Diagram



6.4.4 Measurement Procedure and Data

Declared Frequency (MHz)	13.56MHz
--------------------------	----------

Temperature (°C)	Voltage(VDC)	Measurement Frequency(MHz)	Frequency Tolerance (%)	Limit (%)	Result
50	3.70	13.559961	-0.0003	±0.01	Pass
40		13.559988	-0.0001		Pass
30		13.55995	-0.0004		Pass
20		13.56	0.0000		Pass
10		13.559984	-0.0001		Pass
0		13.559965	-0.0003		Pass
-10		13.559953	-0.0003		Pass
-20		13.559922	-0.0006		Pass
20	4.20	13.559961	-0.0003		Pass
	3.30	13.559945	-0.0004		Pass



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6.5 Radiated Emissions (30MHz-1GHz)

Test Requirement 47 CFR Part 15, Subpart C 15.225(d), 15.209

Test Method: ANSI C63.10 (2013) Section 6.4&6.5

Limit:

Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3

6.5.1 E.U.T. Operation

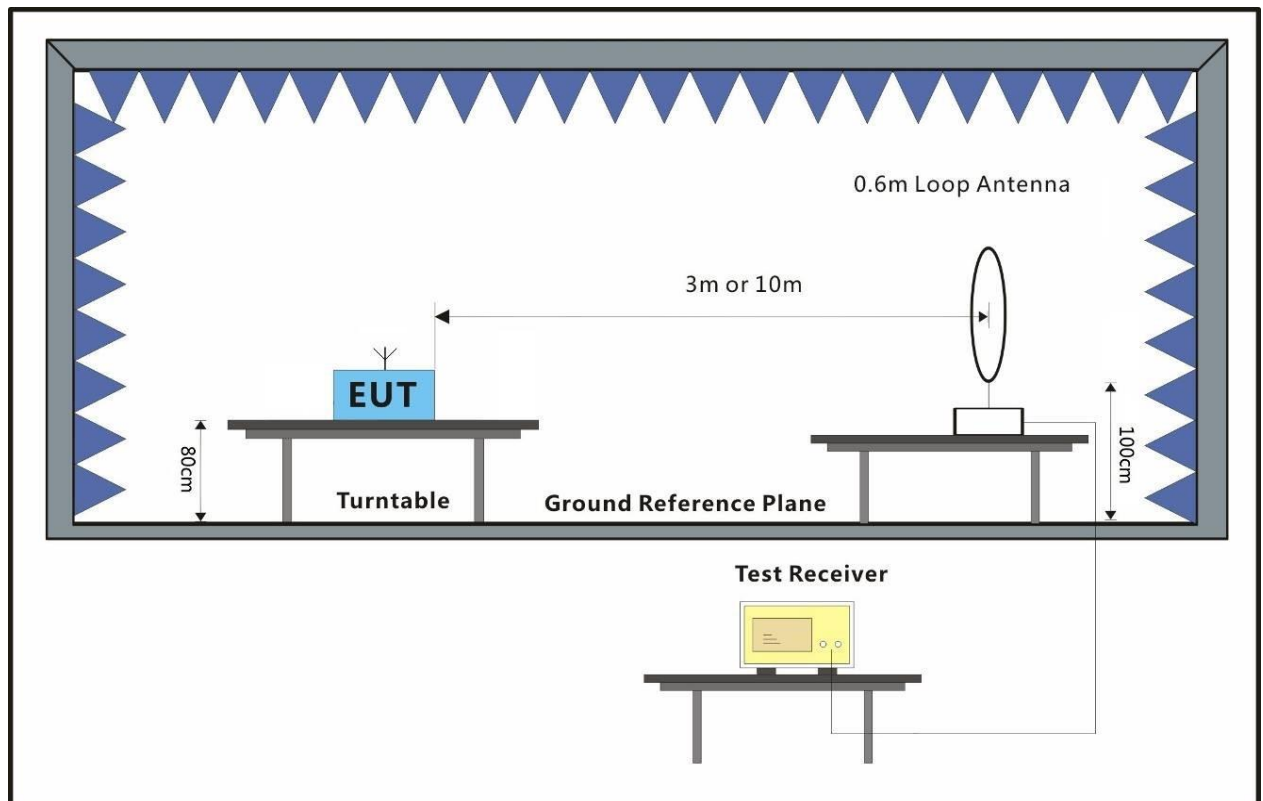
Operating Environment:

Temperature: 25.3 °C Humidity: 51.4 % RH Atmospheric Pressure: 1015 mbar

6.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	07	TX mode with modulation

6.5.3 Test Setup Diagram

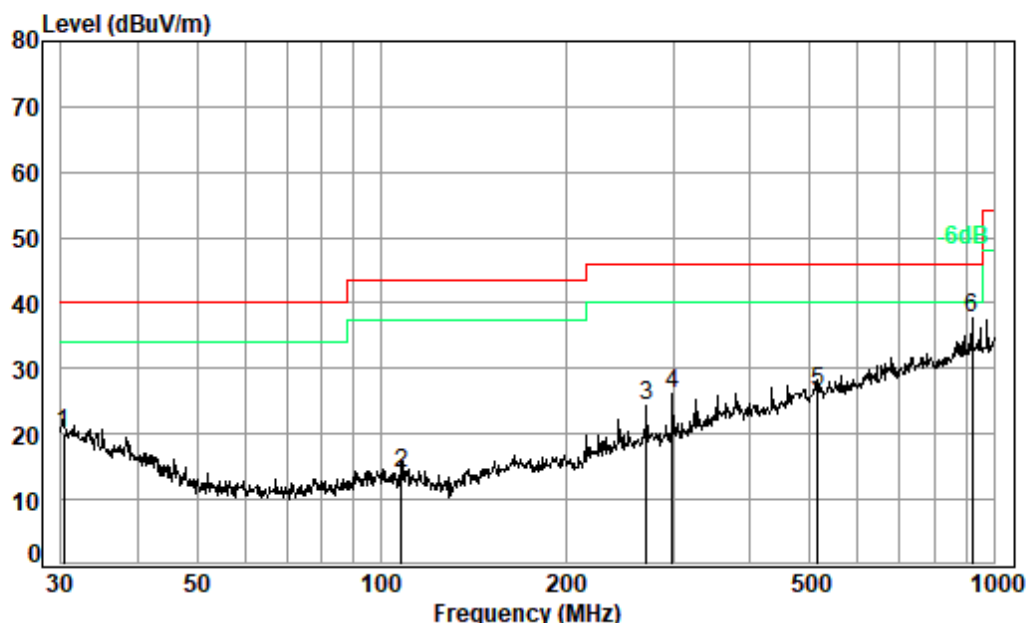


6.5.4 Measurement Procedure and Data

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground for below 1GHz at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

Test Mode: 07; Polarity: Horizontal



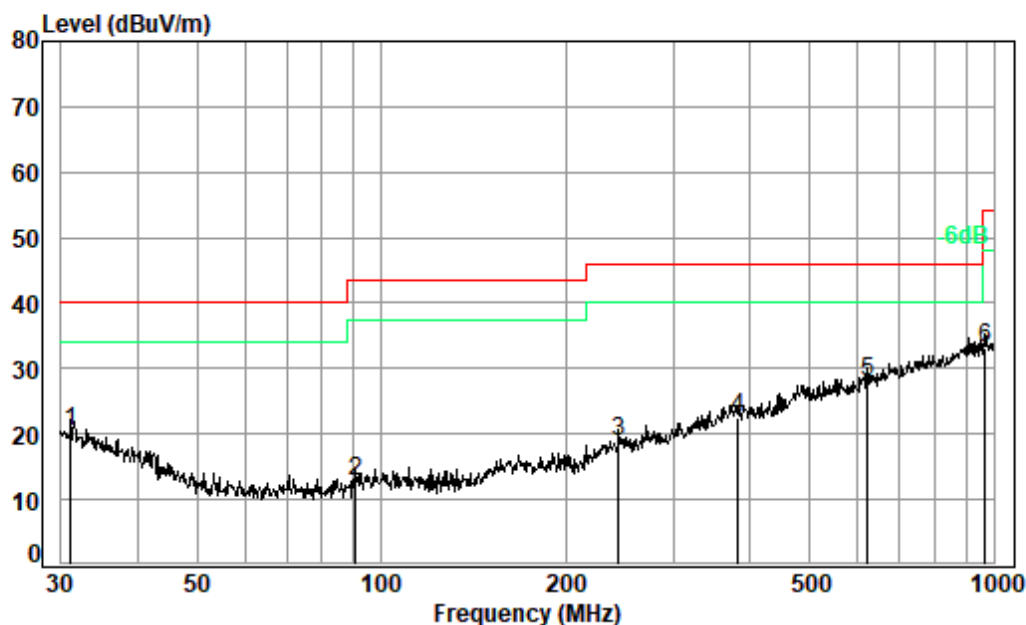
Condition: 3m HORIZONTAL

Job No. : 10422CR

Test Mode: 07

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	30.32	0.60	22.76	27.73	24.55	20.18	40.00	-19.82	QP
2	107.89	1.11	13.76	27.56	26.61	13.92	43.50	-29.58	QP
3	271.32	1.80	18.57	26.94	30.86	24.29	46.00	-21.71	QP
4	298.27	1.99	18.96	26.87	32.17	26.25	46.00	-19.75	QP
5	515.44	2.53	24.46	27.85	27.26	26.40	46.00	-19.60	QP
6 pp	922.52	3.52	29.20	27.05	32.03	37.70	46.00	-8.30	QP

Test Mode: 07; Polarity: Vertical



Condition: 3m VERTICAL

Job No. : 10422CR

Test Mode: 07

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	31.07	0.61	22.19	27.73	25.25	20.32	40.00	-19.68 QP
2	90.86	1.28	13.27	27.62	25.77	12.70	43.50	-30.80 QP
3	244.23	1.59	17.97	27.01	26.19	18.74	46.00	-27.26 QP
4	382.59	2.25	22.23	27.31	25.29	22.46	46.00	-23.54 QP
5 pp	622.89	2.75	26.64	28.08	26.81	28.12	46.00	-17.88 QP
6	968.93	3.57	29.50	26.81	26.96	33.22	54.00	-20.78 QP

6.6 Radiated Emissions (9kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.225(d), 15.209

Test Method: ANSI C63.10 (2013) Section 6.4&6.5

Measurement Distance: 3m

Limit:

Frequency(MHz)	Field strength (microvolts/meter)	Limit (dBuV/m)	Detector	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	-	-	300
0.490-1.705	24000/F(kHz)	-	-	30
1.705-30	30	-	-	30

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

If field strength is measured at only a single point, then that point shall be at the radial from the EUT that produces the maximum emission at the frequency being measured, as described in 5.4. If that point is closer to the EUT than $\lambda/2\pi$ and the limit distance is greater than $\lambda/2\pi$, the measurement shall be extrapolated to the limit distance by conservatively presuming that the field strength decreases at a 40 dB/decade of distance rate to the $\lambda/2\pi$ distance, and at a 20 dB/decade of distance rate beyond $\lambda/2\pi$. This shall be accomplished using Equation (2):

$$FS_{(10m)} = FS_{(30/300m)} + 40\log\{d_{(near\ field)}/d_{(10m)}\} + 20\log\{d_{(30/300m)}/d_{(near\ field)}\} \quad (2)$$

If the single point measured is at a distance greater than $\lambda/2\pi$, then extrapolation to the limit distance shall be calculated using Equation (3):

$$FS_{(10m)} = FS_{(30/300m)} + 20\log\{d_{(30/300m)}/d_{(10m)}\} \quad (3)$$

If both the single point and the limit distance are equal to or closer to the EUT than $\lambda/2\pi$, then extrapolation to the limit distance shall be calculated using Equation (4):

$$FS_{(10m)} = FS_{(30/300m)} + 40\log\{d_{(30/300m)}/d_{(10m)}\} \quad (4)$$

Remark:

$$d_{near\ field} = 47.77 / f_{MHz}$$

where f_{MHz} is the frequency of the emission being measured in MHz.

6.6.1 E.U.T. Operation

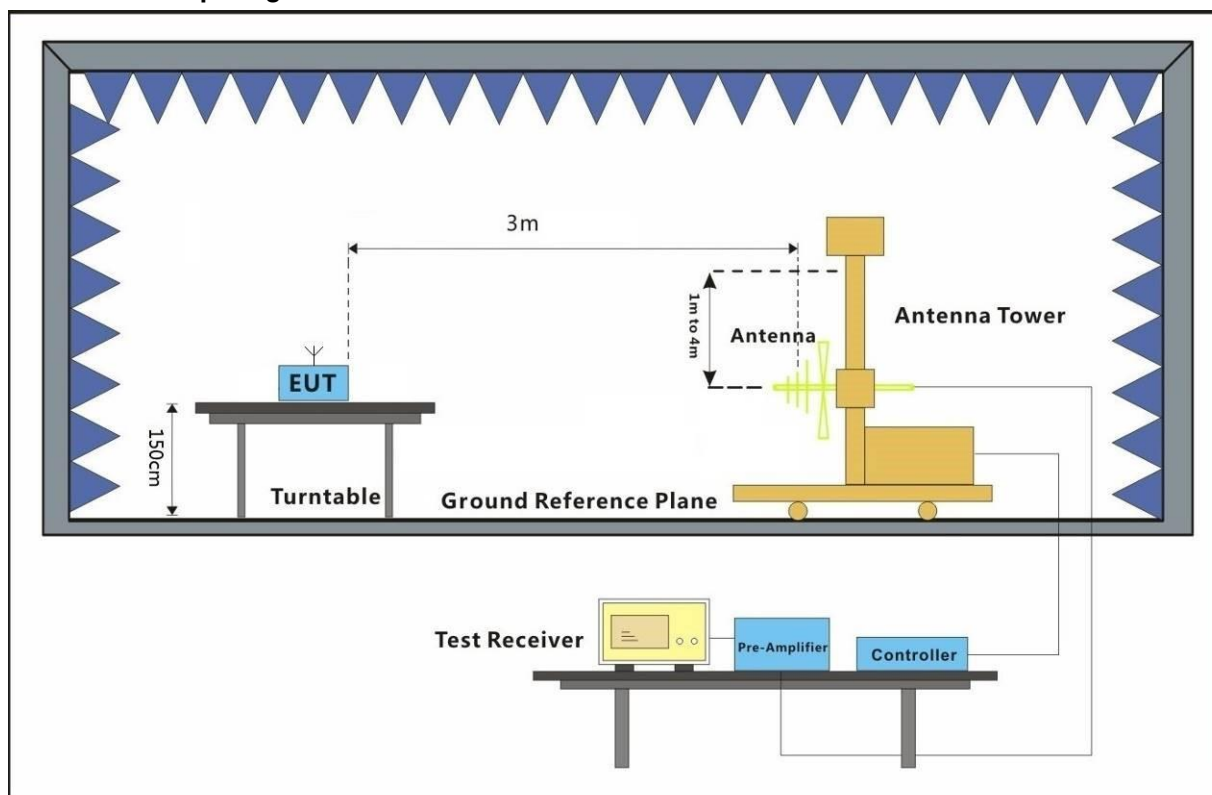
Operating Environment:

Temperature: 22.8 °C Humidity: 48 % RH Atmospheric Pressure: 1015 mbar

6.6.2 Test Mode Description

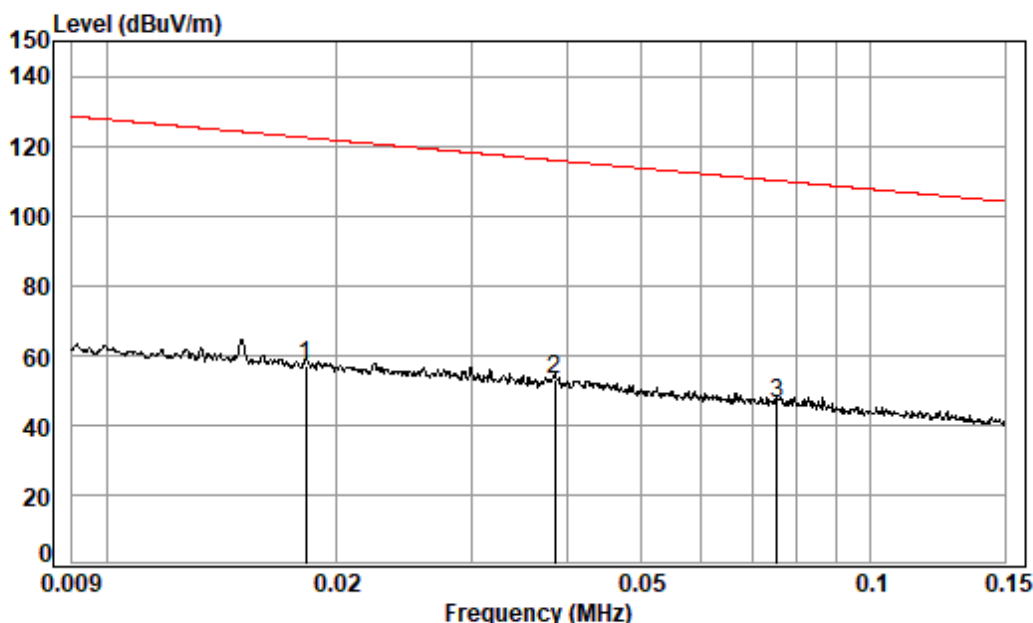
Pre-scan / Final test	Mode Code	Description
Final test	07	TX mode with modulation

6.6.3 Test Setup Diagram



6.6.4 Measurement Procedure and Data

For testing performed with the loop antenna, the center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specified distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane. Only the worst position of vertical was shown in the report.



Condition: 3m

Job No. : 10422CR

Test Mode: 07

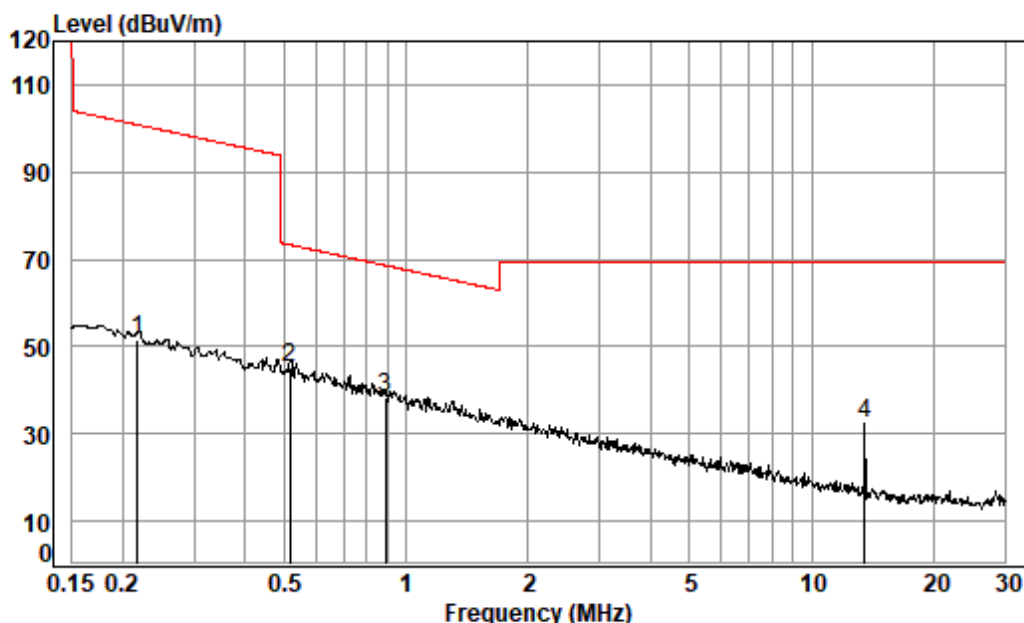
		Ant	Preamp	Cable	Read	Limit	Over	
	Freq	Factor	Factor	Loss	Level	Level	Line	Limit
	MHz		dB	dB	dBuV	dBuV/m	dBuV/m	dB
1	0.018	14.75	31.05	0.01	73.53	57.24	122.37	-65.13
2	0.039	12.02	31.55	0.01	72.33	52.81	115.85	-63.04
3	0.076	11.21	32.00	0.01	66.87	46.09	110.04	-63.95



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Condition: 3m

Job No. : 10422CR

Test Mode: 07

		Ant	Preamp	Cable	Read		Limit	Over	
	Freq	Factor	Factor	Loss	Level	Level	Line	Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1 av	0.217	10.94	32.22	0.16	72.51	51.39	100.86	-49.47	Average
2 pp	0.518	10.85	32.25	0.49	65.85	44.94	73.31	-28.37	QP
3	0.890	10.83	32.27	0.56	59.18	38.30	68.59	-30.29	QP
4	13.551	8.88	32.35	0.61	55.31	32.45	69.50	-37.05	OP



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Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

2) Limit line above has already converted from standard test distance to 10m.





7 Test Setup Photo

Please refer to setup photos.



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8 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of Constructional Details for SZEM2010010422CR

- End of the Report -



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