



**SGS-CSTC Standards Technical Services
(Shanghai) Co., Ltd.**

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Report No.: SHEM150700238301
Page: 1 of 16

1 Cover Page

TEST REPORT

Application No.:	SHEM1507002383CR
Applicant:	FEITIAN Technologies Co., Ltd.
FCC ID:	ZD3FTEPASS
Equipment Under Test (EUT): NOTE: The following sample(s) was/were submitted and identified by the client as	
Product Name:	USB Token
Model No.(EUT):	ePass
Standards:	CFR 47 FCC Part 15 subpart B, 2014
Date of Receipt:	July 21, 2015
Date of Test:	August 04, 2015
Date of Issue:	August 12, 2015
Test Result:	Pass*

* In the configuration tested, the EUT (Equipment under test) complied with the standards specified above.



Parlam Zhan
E&E Section Manager
SGS-CSTC (Shanghai) Co., Ltd.

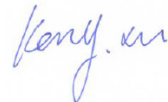
The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00	/	August 12, 2015	/	Original

Authorized for issue by:				
Engineer		Eddy Zong		
		Print Name		
Clerk		Susie Liu		
		Print Name		
Reviewer		Keny Xu		
		Print Name		

3 Test Summary

Test	FCC Requirement	Test Method	Result
Conducted Emission (150kHz to 30MHz)	CFR 47 FCC Part 15 subpart B	ANSI C63.4: 2014	PASS
Radiated Emission, (30MHz to 1GHz)	CFR 47 FCC Part 15 subpart B	ANSI C63.4: 2014	PASS
Radiated Emission above 1 GHz	CFR 47 FCC Part 15 subpart B	ANSI C63.4: 2014	N/A*
Remark: N/A: Not Applicable. * If the highest frequency of the internal sources of the EUT is less than 108MHz, the measurement shall only be made up to 1GHz.			



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5 General Information

5.1 Client Information

Applicant:	FEITIAN Technologies Co., Ltd.
Address of Applicant:	Floor 17th, Tower B, Huizhi Mansion, No.9 Xueqing Road Haidian District, Beijing, P.R.China
Manufacturer:	FEITIAN Technologies Co., Ltd.
Address of Manufacturer:	Floor 17th, Tower B, Huizhi Mansion, No.9 Xueqing Road Haidian District, Beijing, P.R.China
Factory:	FEITIAN Technologies Co., Ltd.
Address of Factory:	Floor 17th, Tower B, Huizhi Mansion, No.9 Xueqing Road Haidian District, Beijing, P.R.China

5.2 General Description of E.U.T.

Product Description:	Connect product to PC and using management tool encrypted file
Operating Frequency:	50 MHz (the Highing working frequency)
Power Supply:	DC 5V via USB interface
Test Voltage:	AC 120V 60Hz

5.3 E.U.T Operation Environment

Temperature Range:	20-25°C
Humidity Range:	30-60% RH
Atmospheric Pressure Range:	100-102kPa

5.4 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.	Supplied by
PC	Lenovo	ThinkPad X100e	SGS
Mouse	Lenovo	MO28UOL	SGS

Note: For the cable details please refer to below table.

CableType	Length, m	Shield	Metallic hood	Ferrite
USB Cable	1.5	Yes	No	No
AC Cable	1.0	Yes	No	No
DC Cable	1.8	Yes	No	No

Description	Manufacturer	Software name	Version no.
Encrypted	Feitian	ePass2003	1.0.0.1

5.5 Test Mode

Test Mode	Description of Test Mode
Encrypted mode	Connect product to PC and using management tool encrypted file

5.6 Deviation from Standards

None.

5.7 Abnormalities from Standard Conditions

None.

5.8 Modification/Retest Record

None.

5.9 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab

No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.

Tel: +86 21 6191 5666

Fax: +86 21 6191 5678

No tests were sub-contracted.

5.10 Test Facility

- CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2017-07-14.

- FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2017-09-16.

- Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A-1. Expiry Date: 2017-06-18.

- VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3868, C-4336, T-2221, G-830 respectively. Date of Expiry: 2017-11-16.

6 Equipment list

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Due date
Conducted Emission						
1	EMI test receiver	Rohde & Schwarz	ESCS30	TDGC2	2015-01-22	2016-01-21
2	Line impedance stabilization network	SCHWARZBECK	NSLK8127	8127490	2015-01-22	2016-01-21
3	Line impedance stabilization network	EMCO	3816/2	00034161	2015-01-22	2016-01-21
Radiated Emission						
1	EMI test receiver	Rohde & Schwarz	ESU40	100109	2015-02-13	2016-02-12
2	Loop Antenna (9KHz – 30MHz)	SCHWARZBECK	FMZB1519	1519-034	2015-02-07	2016-02-06
3	Broadband UHF-VHF ANTENNA (30MHz – 1GHz)	SCHWARZBECK	VULB9168	9168-313	2015-02-07	2016-02-06
4	Horn Antenna (1GHz to 18GHz)	SCHWARZBECK	BBHA9120D	9120D-679	2015-02-07	2016-02-06
5	Low noise Pre-amplifier (9KHz – 1GHz)	LNA6900	TESEQ	71033	2014-12-27	2015-12-27
General Equipment						
1	Digital pressure meter	YONGZHI	DYM3-01	101012	2015-04-13	2016-04-12
2	Temperature & humidity recorder	ShangHai weather meter work	ZJ 1-2B	0804081 0802150 0805126 0805177	2014-08-19	2015-08-18
3	Digital Multimeter	FLUKE	17B	19720439	2015-01-22	2016-01-21

7 Electromagnetic Interference Test Results

7.1 Conducted Emissions on Mains Terminals, 150 kHz to 30 MHz

Class / Severity: Class B

Detector: Peak for pre-scan (9 kHz Resolution Bandwidth from 150 kHz to 30 MHz)

Limit:

Frequency range (MHz)	LimitdB (μV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Note1: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50MHz.		
Note2: The lower limit is applicable at the transition frequency.		

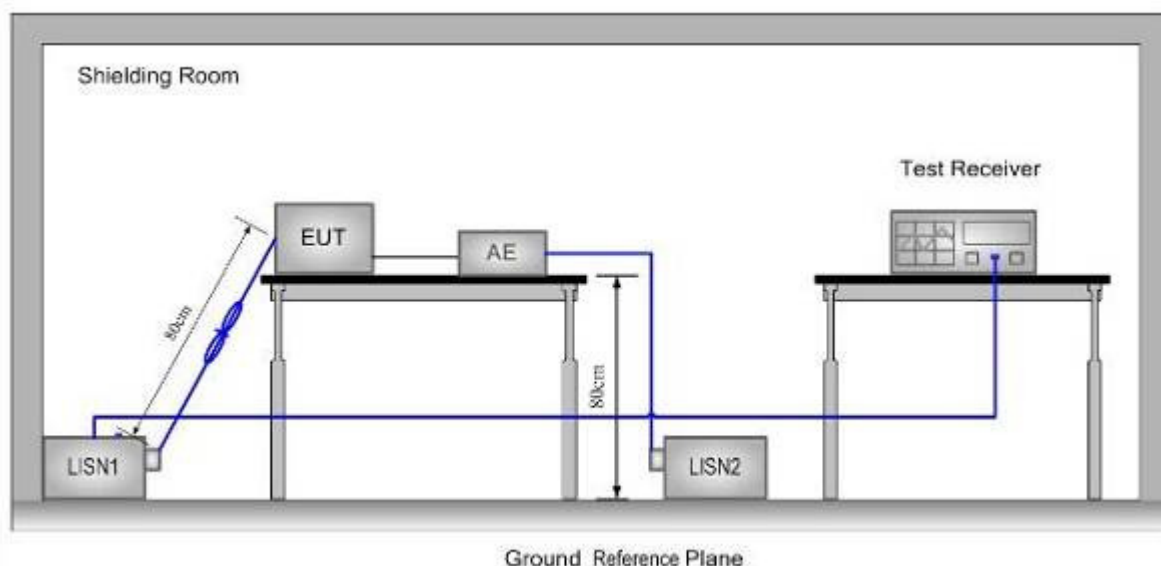
7.1.1 E.U.T. Operation

Test mode: Encrypted mode

Pre-scan was performed with peak detected on all ports, Quasi-peak & average measurements were performed at the frequencies at which maximum peak emission level were detected.

Please see the attached Quasi-peak and Average test results.

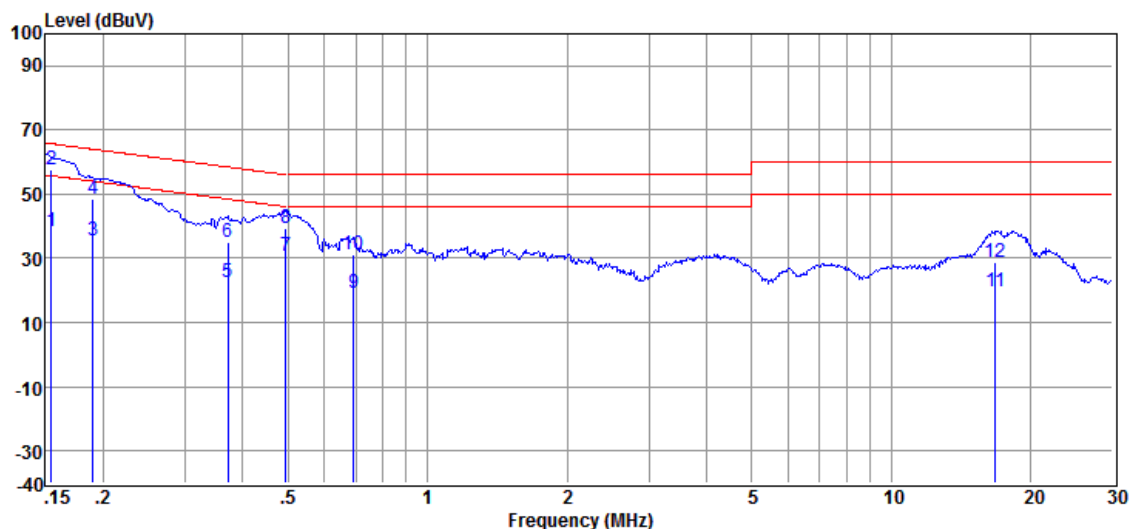
7.1.2 Test Setup and Procedure



1. The mains terminal disturbance voltage was measured with the EUT in a shielded room.
2. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the EUT were connected to a second LISN, which was bonded to the ground reference plane in the same way as the LISN for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance was between the closest points of the LISN and the EUT. The mains lead of EUT excess 0.8m was folded back and forth parallel to the lead so as to form a horizontal bundle with a length between 0.3m and 0.4m. All other units of the EUT and associated equipment was at least 0.8 m from the LISN.

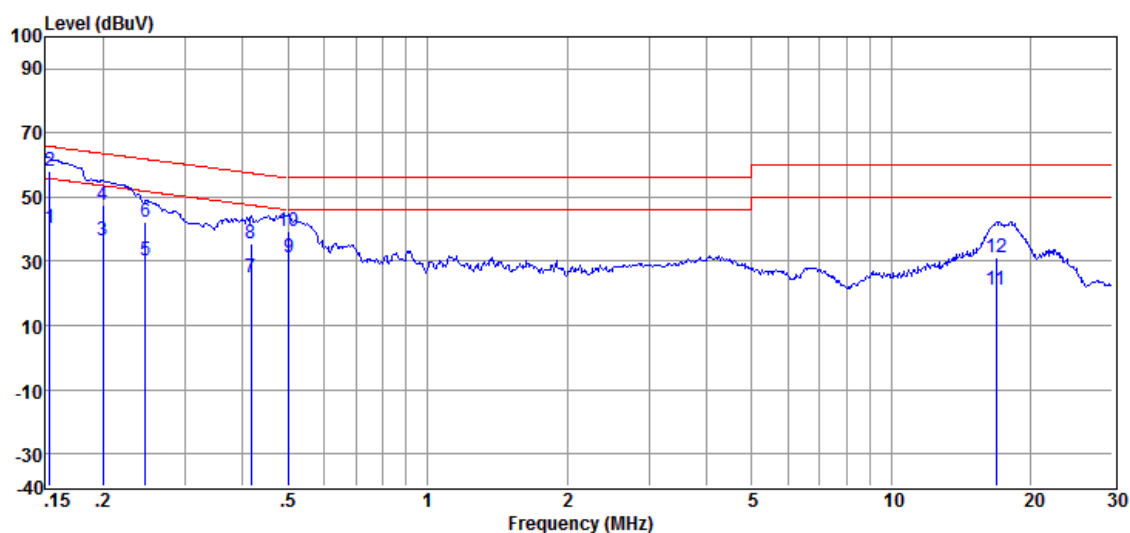
7.1.3 Measurement Data

Live Line:



Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)	
1	0.155	28.47	0.32	9.86	38.65	55.74	-17.09	Average
2	0.155	47.32	0.32	9.86	57.50	65.74	-8.24	QP
3	0.190	25.51	0.27	9.86	35.64	54.02	-18.38	Average
4	0.190	38.21	0.27	9.86	48.34	64.02	-15.68	QP
5	0.371	12.47	0.25	9.86	22.58	48.47	-25.89	Average
6	0.371	25.06	0.25	9.86	35.17	58.47	-23.30	QP
7	0.494	20.54	0.25	9.86	30.65	46.10	-15.45	Average
8	0.494	29.42	0.25	9.86	39.53	56.10	-16.57	QP
9	0.694	9.01	0.22	9.86	19.09	46.00	-26.91	Average
10	0.694	21.26	0.22	9.86	31.34	56.00	-24.66	QP
11	16.750	9.50	0.36	9.93	19.79	50.00	-30.21	Average
12	16.750	18.62	0.36	9.93	28.91	60.00	-31.09	QP

Neutral Line:



Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)	
1	0.153	30.01	0.34	9.86	40.21	55.82	-15.61	Average
2	0.153	48.04	0.34	9.86	58.24	65.82	-7.58	QP
3	0.200	26.36	0.29	9.86	36.51	53.62	-17.11	Average
4	0.200	37.42	0.29	9.86	47.57	63.62	-16.05	QP
5	0.247	19.92	0.29	9.86	30.07	51.86	-21.79	Average
6	0.247	32.02	0.29	9.86	42.17	61.86	-19.69	QP
7	0.417	14.79	0.30	9.86	24.95	47.51	-22.56	Average
8	0.417	25.42	0.30	9.86	35.58	57.51	-21.93	QP
9	0.502	21.22	0.30	9.86	31.38	46.00	-14.62	Average
10	0.502	29.00	0.30	9.86	39.16	56.00	-16.84	QP
11	16.839	10.65	0.41	9.94	21.00	50.00	-29.00	Average
12	16.839	21.04	0.41	9.94	31.39	60.00	-28.61	QP

Level = Read Level + LISN/ISN Factor + Cable Loss.

7.2 Radiated Emissions, 30MHz to 1GHz

Measurement Distance: 3m

Class: Class B

Detector: Peak for pre-scan (120 kHz resolution bandwidth)

Limit:

Frequency range MHz	Quasi-peak limits dB (μV/m)
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960	54
Note: At transitional frequencies the lower limit applies. Test distance is 3m	

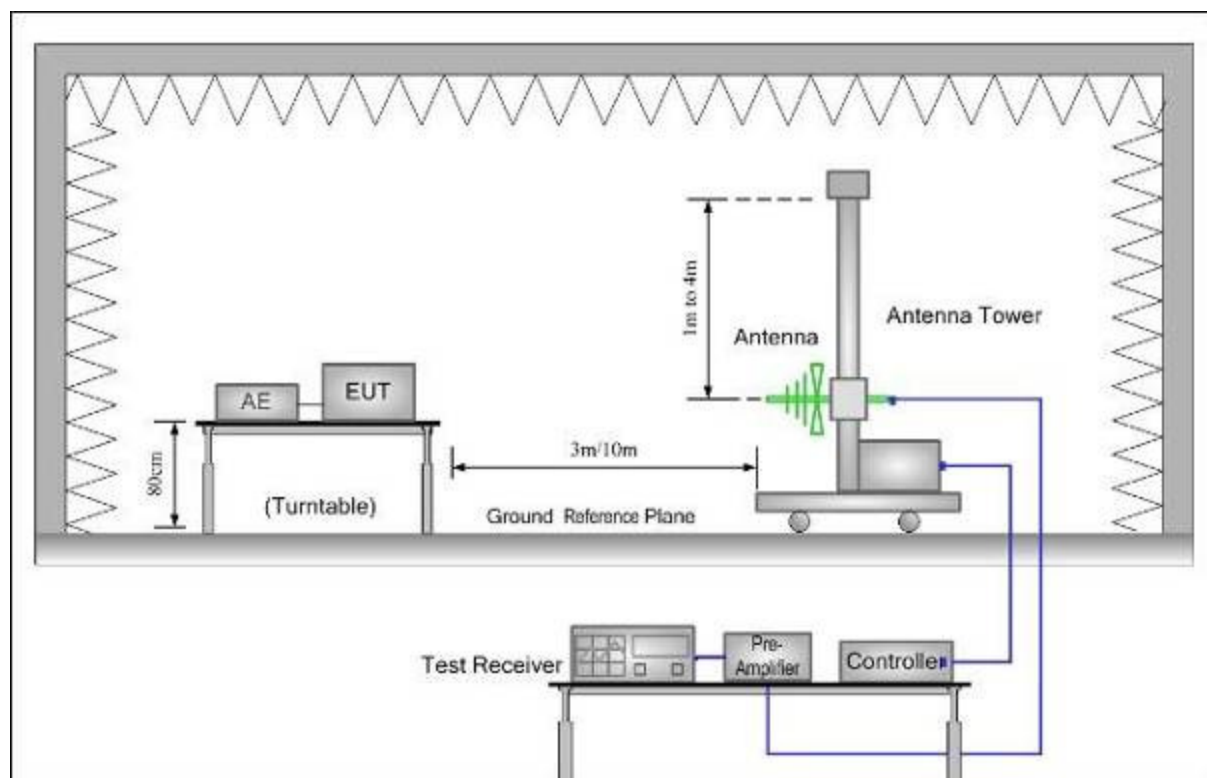
7.2.1 E.U.T. Operation

Test mode: Encrypted mode

Pre-scan was performed with peak detected on all ports, Quasi-peak measurements was performed at the frequencies at which maximum peak emission level were detected.

Please see the attached Quasi-peak test results.

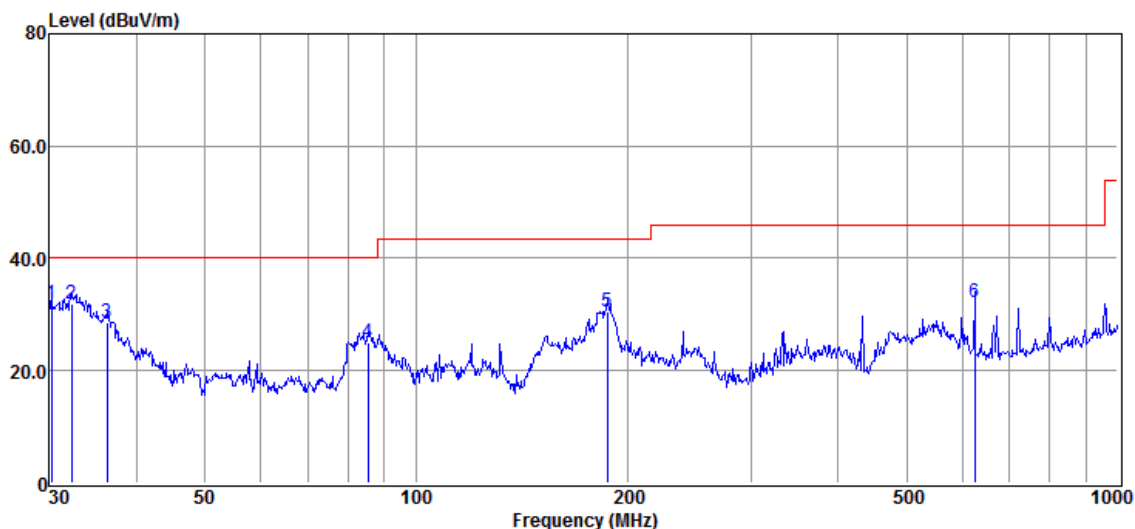
7.2.2 Test Setup and Procedure



1. The radiated emissions test was conducted in a semi-anechoic chamber.
2. The EUT was connected to AC power source through a mains power outlet which was bonded to the ground reference plane; the mains cables shall drape to the ground reference plane.
3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emission spectrum signature data plots of the EUT.
5. The frequencies of maximum emission were determined in the final radiated emissions measurement, the physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.

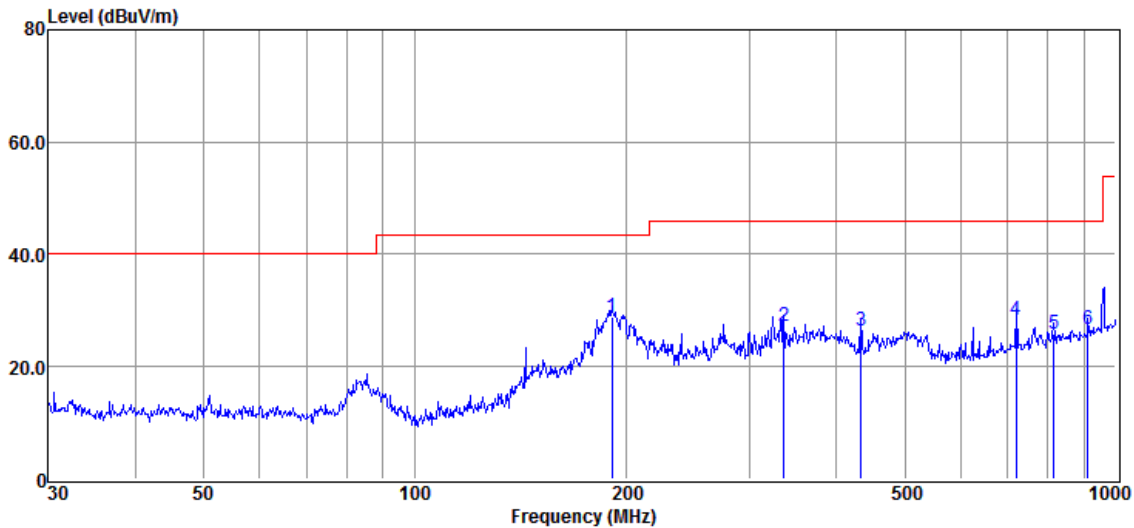
7.2.3 Measurement Data

Vertical:



Item	Freq.	Read Level	Antenna Factor	Preamplifier Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	30.21	42.50	12.51	23.72	0.55	31.84	40.00	-8.16	QP
2	32.29	42.77	12.55	23.71	0.14	31.75	40.00	-8.25	QP
3	36.24	39.39	12.73	23.71	0.20	28.61	40.00	-11.39	QP
4	85.42	39.40	8.58	23.67	0.77	25.08	40.00	-14.92	QP
5	187.07	41.24	11.62	23.62	1.36	30.60	43.50	-12.90	QP
6	625.67	33.79	19.40	23.83	2.79	32.15	46.00	-13.85	QP

Horizontal:



Item	Freq.	Read Level	Antenna Factor	Preamplifier Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	190.97	39.88	11.22	23.62	1.37	28.85	43.50	-14.65	QP
2	335.89	35.74	13.14	23.68	1.94	27.14	46.00	-18.86	QP
3	433.21	32.34	15.52	23.71	2.28	26.43	46.00	-19.57	QP
4	720.62	28.37	20.74	23.88	3.01	28.24	46.00	-17.76	QP
5	816.96	24.59	21.87	23.93	3.24	25.77	46.00	-20.23	QP
6	913.36	24.32	22.80	23.94	3.45	26.63	46.00	-19.37	QP

For radiated emission: Level = Read Level + Antenna Factor + Cable Loss – Preamplifier Factor.

8 Test Setup Photographs

Refer to the < ePass_Test Setup Photos-FCC >

9 EUT Constructional Details

Refer to the < ePass_External Photos > & < ePass_Internal Photos >.

--End of the Report--