FCC TEST REPORT

FCC ID	: ZBW-YPSIDE4
Applicant	: SAFRAN MORPHO
Address	: 18, chaussée Jules Cesar OSNY France 95520
Manufacturer	: Taiguen Technology (ShenZhen) Co., Ltd.
Address	: NO.23,The Third Industrial Park of Xia village，Gongming，Guangming new District，Shenzhen City, Guangdong Province,P.R.China
Equipment Under Test (EUT) :	
Product Name	: ypsID Token
Model No.	: ypsID E4
Rules	: FCC CFR47 Part 15 Section 15.107:2010 FCC CFR47 Part 15 Section 15.109:2010
Date of Test	: May 8~10, 2013
Date of Issue	: May 22, 2013
Test Result	**: PASS ***

Remark:

* The sample described above has been tested to be in compliance with the requirements of ANSI C63.4:2003. The test results have been reviewed and comply with the rules listed above and found to meet their essential requirements.

The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company.

The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

Prepared By:

Waltek Services (Shenzhen) Co., Ltd.

1/F, Fukangtai Building, West Baima Rd., Songgang Street, Baoan District,

Shenzhen 518105, China

Tel: +86-755-83551033 Fax: +86-755-83552400

Compiled by: Maikou Zhang

Approved by: Philo Zhong

Maikou Zhang / Project Engineer

Philo Zhong / Manager

2 Test Summary

Test Items	Test Requirement	Result
Conducted Emission	FCC Part 15.107:2010	PASS
Radiated Emission	FCC Part 15.109:2010	PASS

3 Contents

4 General Information

4.1 General Description of E.U.T.

Product Name : ypsID Token

Model No. : ypsID E4

Operation Frequency : 13.56MHz

Oscillator :Crystal 8MHz

Antenna installation PCB Printed Antenna

4.2 Details of E.U.T.

Technical Data : DC 5V

Adapter : N/A

4.3 Description of Support Units

No.	Equipment	Manufacturer	Model No.	Serial No
1	Computer	Acer	Aspire AG1720	1300148096
2	LCD	Acer	AL1515	EFL240B2176120021C391B
3	Keyboard	Shuangfeiyan	KB-3	-
4	Mouse	Shuangfeiyan	OP-220	-
5	Notebook	IBM	2672-39C	99-8D3W4

4.4 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 7760A**

  Waltek Services(Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration 7760A, July 12, 2012.

- **FCC – Registration No.: 880581**

  Waltek Services(Shenzhen) Co., Ltd. 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 880581, May 26, 2011.

4.5 Test Location

All the tests were performed at:
Waltek Services(Shenzhen) Co., Ltd. at 1/F, Fukangtai Building, West Baima Rd.,Songgang Street, Baoan District, Shenzhen, China

5 Equipment Used during Test

3m Semi-anechoic Chamber for Radiation(TDK)						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No**	**Last Calibration Date**	**Calibration Due Date**
1	Test Receiver	R&S	ESCI	101296	Aug.09, 2012	Aug.08,2013
2	Active Loop Antenna	Beijing Dazhi	ZN30900A	-	Aug. 13, 2012	Aug.12, 013
3	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	Apr.20, 2013	Apr.19, 2014
4	Amplifier	Compliance pirection systems inc	PAP-0203	22024	Apr.07, 2013	Apr.06, 2014
5	Cable	HUBER+SUHNER	CBL2	525178	Sep.15, 2012	Sep.14, 2013

5.1 Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	± 1 x 10^{-6}
Bandwidth	± 1.5 x 10^{-6}
RF Power	± 1.0 dB
RF Power Density	± 2.2 dB
Temperature	± 1 °C
DC Source	±0.05%
Radiated Emissions test	± 3.58 dB (9KH~30MHz)
	± 5.03 dB (30M~1000MHz)
	± 4.74 dB (1000M~25000MHz)
Conducted Spurious Emissions test	± 0.5 dB (9KHz~1000MHz)
	± 1 dB(1000M~26500MHz)

6 Conducted Emission Data

Test Requirement:	FCC Part 15 Section 15.107
Test Method:	ANSI C63.4:2003
Test Result:	PASS
Frequency Range:	150kHz to 30MHz
Class:	Class B
Limit:	66-56 dBμV between 0.15MHz & 0.5MHz
	56 dBμV between 0.5MHz & 5MHz
	60 dBμV between 5MHz & 30MHz
	The tighter limit applies at the band edges.
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth)
	Quasi-Peak & Average if maximised peak within 6dB of Average Limit

6.1 E.U.T. Operation

Operating Environment:

Temperature: 25.5 °C

Humidity: 51 % RH

Atmospheric Pressure: 1012 mbar

EUT Operation:

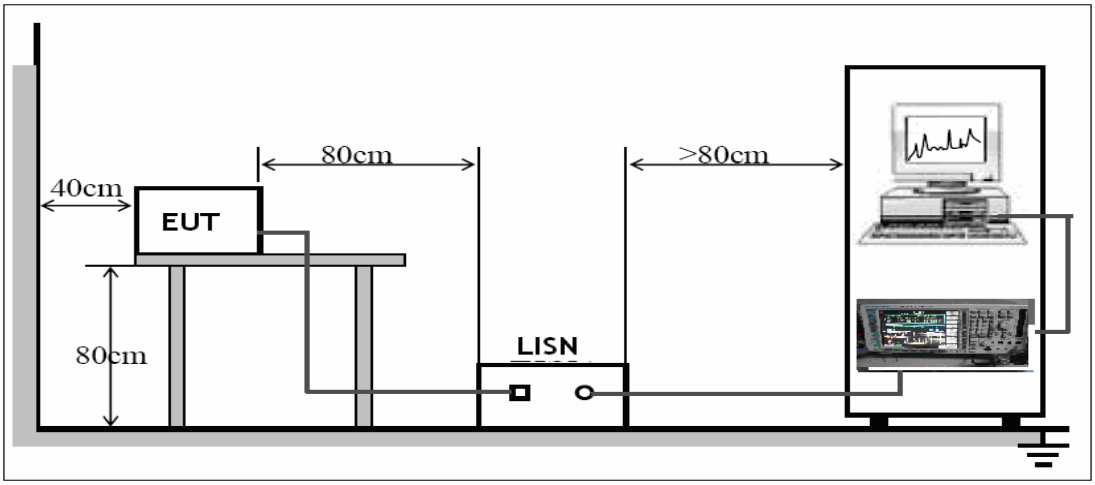
The test was performed on PC connecting mode.

The EUT was tested according to ANSI C63.4:2003. The frequency spectrum from 150kHz to 30MHz was investigated.

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

6.2 EUT Setup

The EUT was placed on the test table in shielding room.

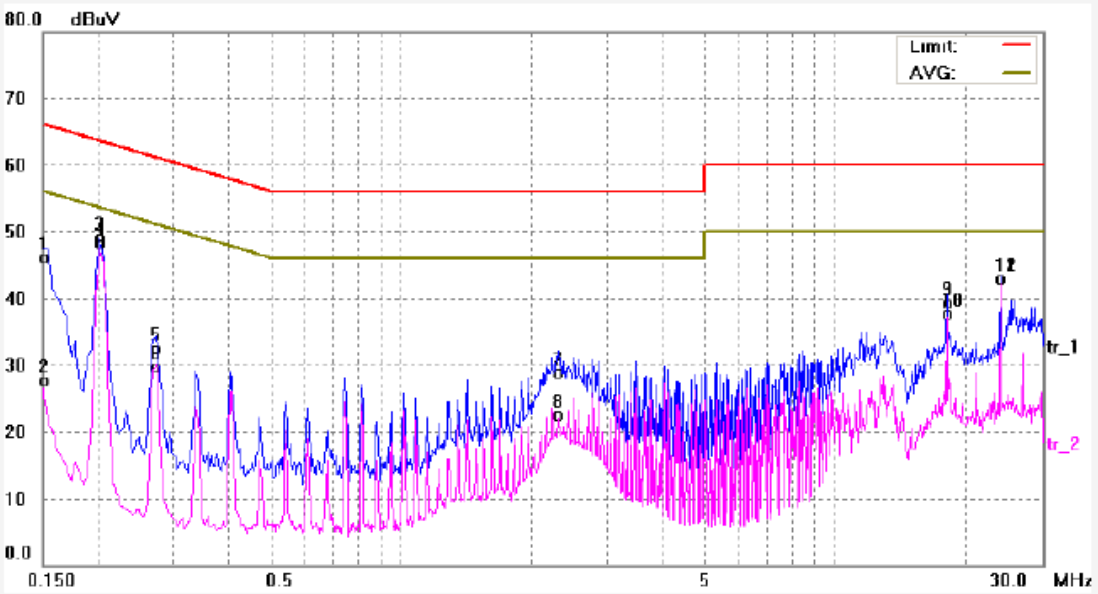


6.3 Conducted Emission Test Result

An initial pre-scan was performed on the live and neutral lines.

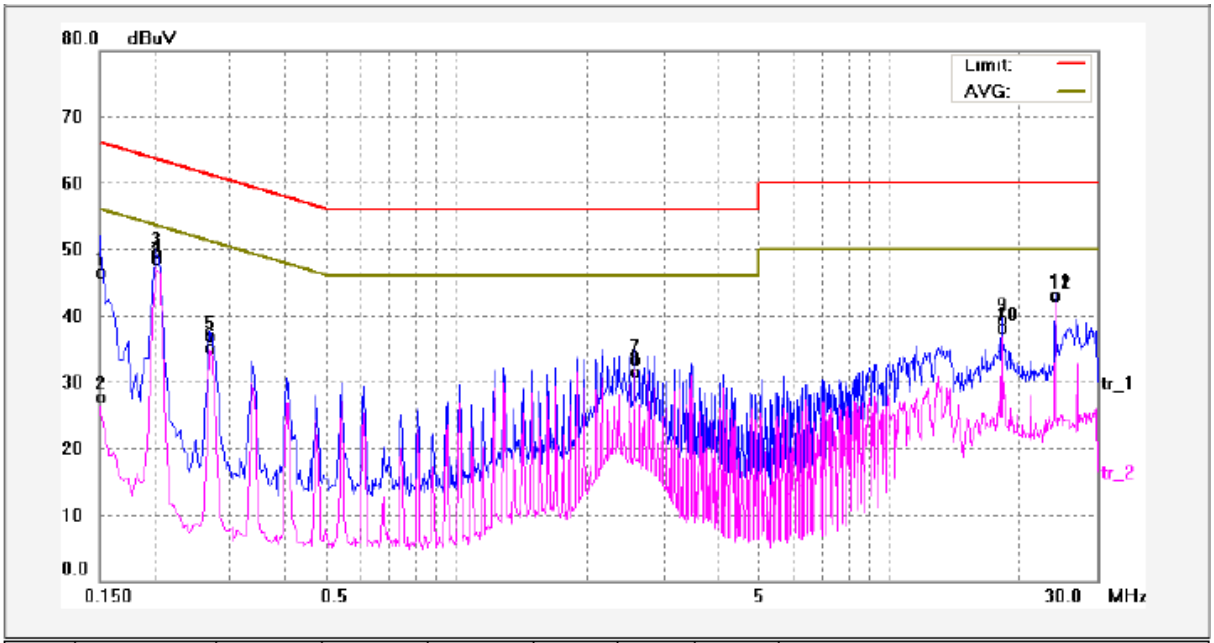
Test mode: working with PC

Live line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1500	35.54	9.80	45.34	65.99	-20.65	QP	
2	0.1500	17.01	9.80	26.81	55.99	-29.18	AVG	
3	0.2020	38.37	9.84	48.21	63.52	-15.31	QP	
4	0.2020	37.61	9.84	47.45	53.52	-6.07	AVG	
5	0.2740	21.87	9.86	31.73	60.99	-29.26	QP	
6	0.2740	19.06	9.86	28.92	50.99	-22.07	AVG	
7	2.3020	18.13	10.01	28.14	56.00	-27.86	QP	
8	2.3020	11.62	10.01	21.63	46.00	-24.37	AVG	
9	18.0580	27.33	11.08	38.41	60.00	-21.59	QP	
10	18.0580	25.79	11.08	36.87	50.00	-13.13	AVG	
11	24.0780	30.63	11.53	42.16	60.00	-17.84	QP	
12	24.0780	30.51	11.53	42.04	50.00	-7.96	AVG	

Neutral line:



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1500	35.98	9.80	45.78	65.99	-20.21	QP	
2	0.1500	17.15	9.80	26.95	55.99	-29.04	AVG	
3	0.2020	38.80	9.84	48.64	63.52	-14.88	QP	
4	0.2020	37.77	9.84	47.61	53.52	-5.91	AVG	
5	0.2700	26.29	9.86	36.15	61.12	-24.97	QP	
6	0.2700	24.52	9.86	34.38	51.12	-16.74	AVG	
7	2.5740	22.56	10.02	32.58	56.00	-23.42	QP	
8	2.5740	20.75	10.02	30.77	46.00	-15.23	AVG	
9	18.0580	27.71	11.08	38.79	60.00	-21.21	QP	
10	18.0580	26.27	11.08	37.35	50.00	-12.65	AVG	
11	24.0780	30.69	11.53	42.22	60.00	-17.78	QP	
12	24.0780	30.53	11.53	42.06	50.00	-7.94	AVG	

7 Radiation Emission Data

Test Requirement:	FCC Part 15 Section 15.109
Test Method:	ANSI C63.4:2003
Test Result:	PASS
Frequency Range:	8MHz to 1GHz
Measurement Distance:	3m
Class:	Class B
Limit:	40.0 dBμV/m between 30MHz & 88MHz for Quasi-Peak
	43.5 dBμV/m between 88MHz & 216MHz for Quasi-Peak
	46.0 dBμV/m between 216MHz & 960MHz for Quasi-Peak
	54.0 dBμV/m above 960MHz & 1GHz for Quasi-Peak
	54.0 dBuV/m above 1GHz for AV
	74.0 dBuV/m above 1GHz for Peak
	The tighter limit applies at the band edges.
Detector:	Peak for pre-scan (120kHz resolution bandwidth)
	Quasi-Peak if maximised peak within 6dB of limit

7.1 E.U.T. Operation

Operating Environment:

Temperature: 25.5 °C

Humidity: 51 % RH

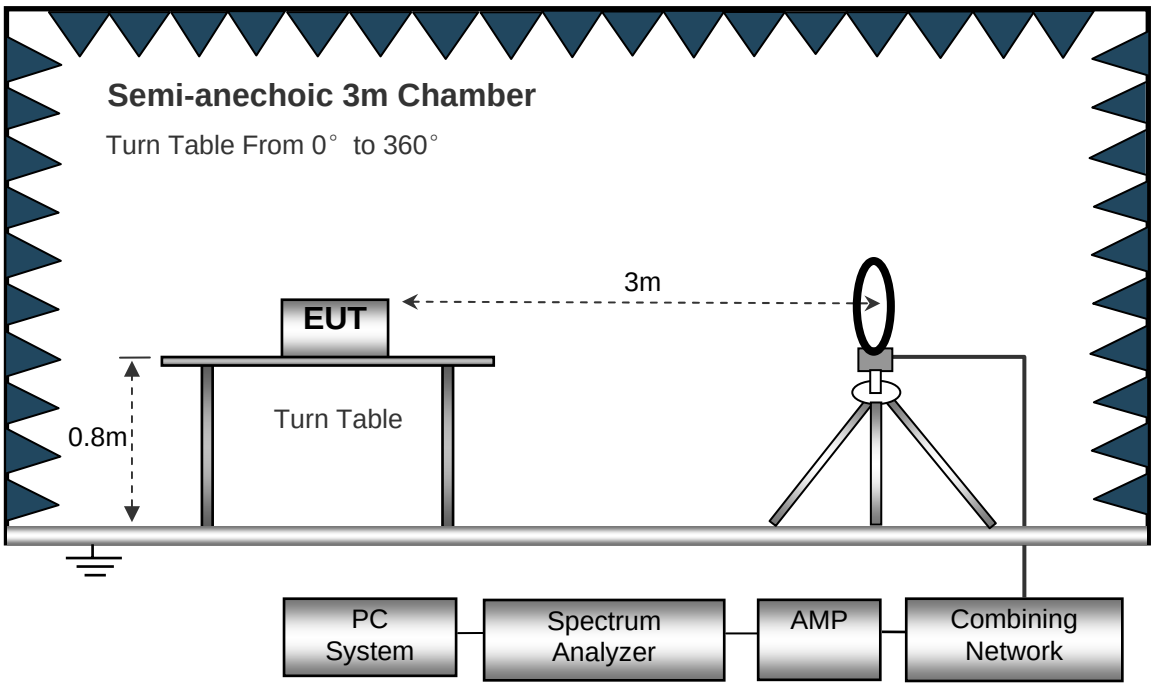
Atmospheric Pressure: 1012 mbar

EUT Operation:

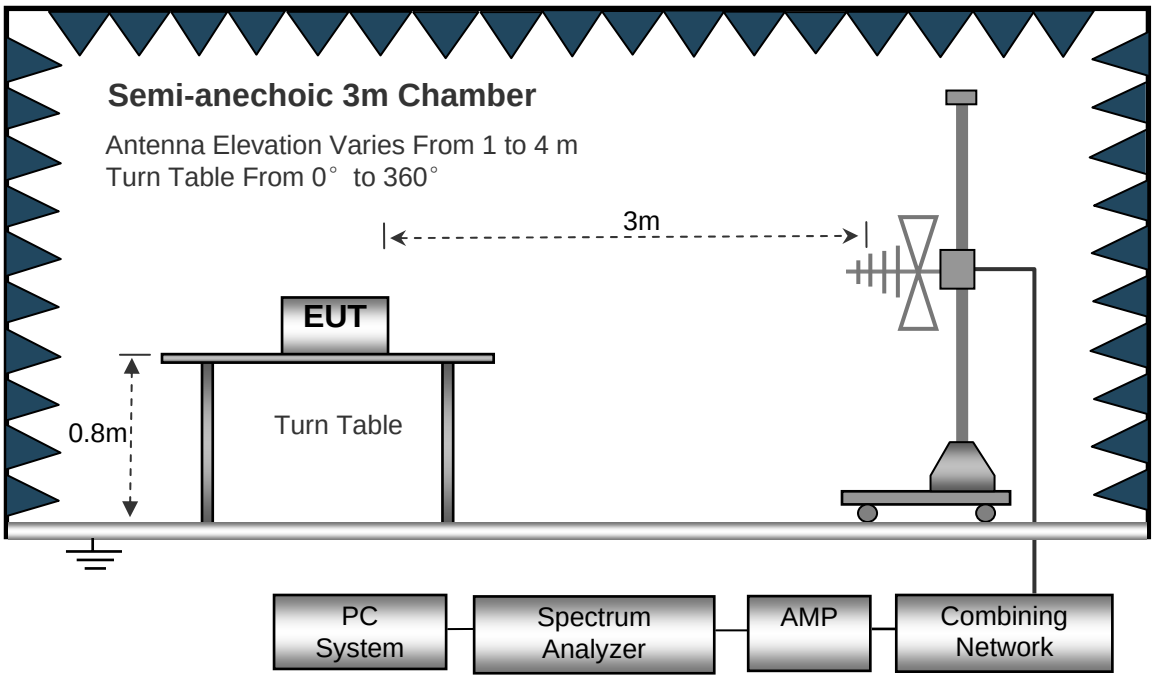
The pre-test was performed on PC connecting mode.

7.2 EUT Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site.
The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



7.3 Spectrum Analyzer Setup

According to FCC Part15 B Rules, the system was tested 8MHz to 1GHz.

Below 30MHz

Sweep Speed..... Auto
IF Bandwidth 10KHz
Video Bandwidth 10KHz
Resolution Bandwidth 10KHz

30MHz ~ 1GHz

Sweep Speed..... Auto
IF Bandwidth ..... 120 KHz
Video Bandwidth 100KHz
Quasi-Peak Adapter Bandwidth..... 120 KHz
Quasi-Peak Adapter Mode..... Normal
Resolution Bandwidth 100KHz

7.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are performed in X(normal uses) axis positioning.

7.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dBμV means the emission is 7dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – Class B Limit

7.6 Summary of Test Results

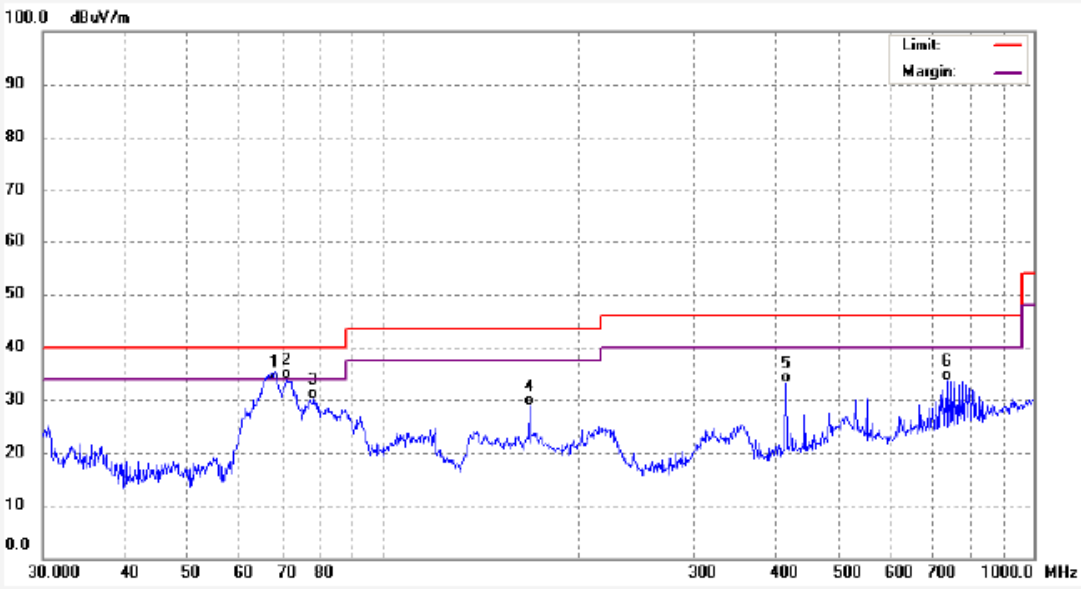
Test Frequency :Below 30MHz

After pretest, we found no higher emission than background level. So the data is not shown in the test report.

Test Frequency : 30MHz ~ 1000MHz

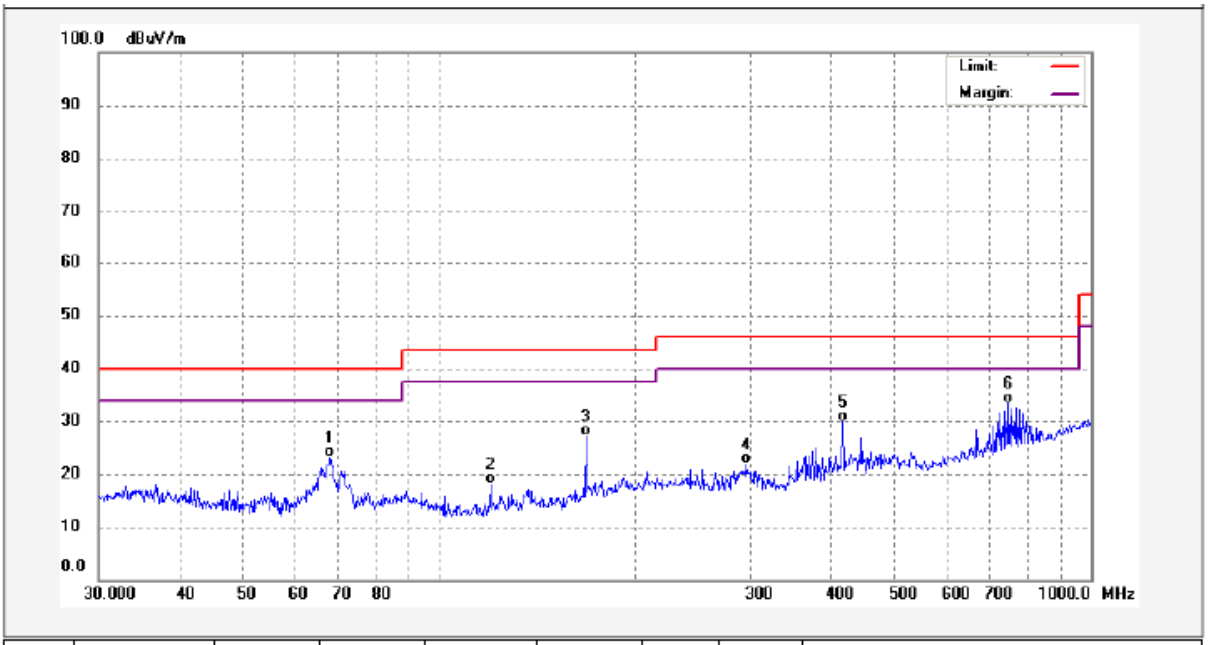
Test mode: working with PC

Antenna polarization: Vertical



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	68.1514	56.50	-23.22	33.28	40.00	-6.72	QP	
2	71.0803	57.05	-23.26	33.79	40.00	-6.21	QP	
3	78.1389	53.84	-23.60	30.24	40.00	-9.76	QP	
4	167.8243	50.80	-21.83	28.97	43.50	-14.53	QP	
5	416.1791	49.56	-16.32	33.24	46.00	-12.76	QP	
6	737.0714	42.48	-8.81	33.67	46.00	-12.33	QP	

Antenna polarization: Horizontal

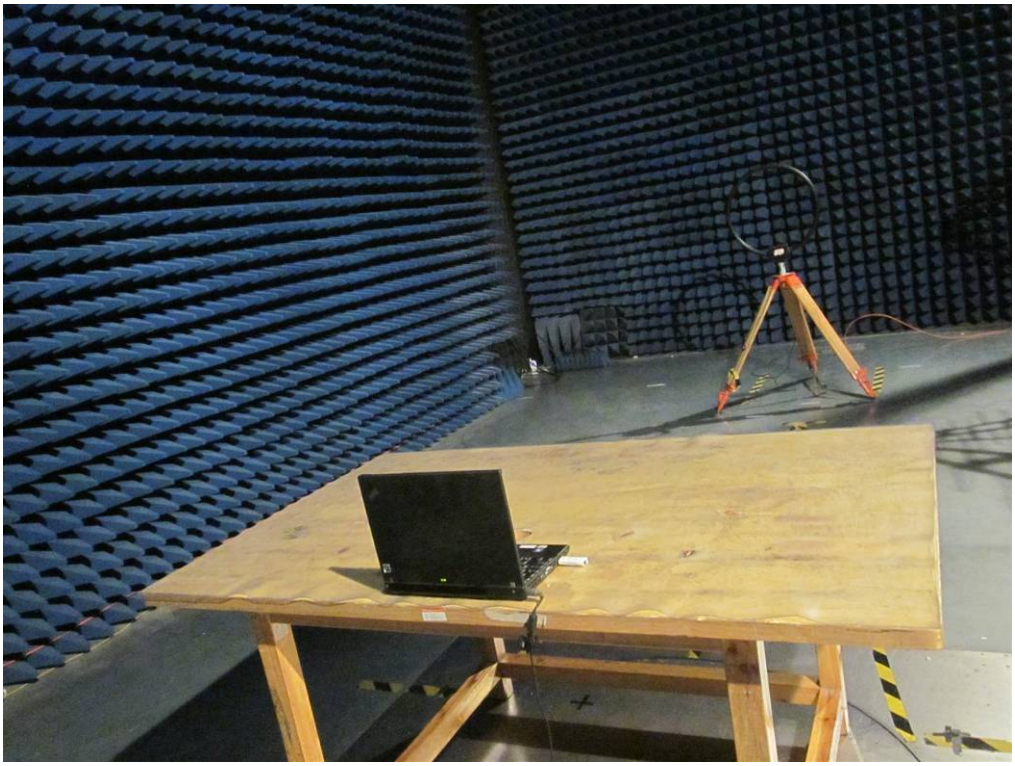


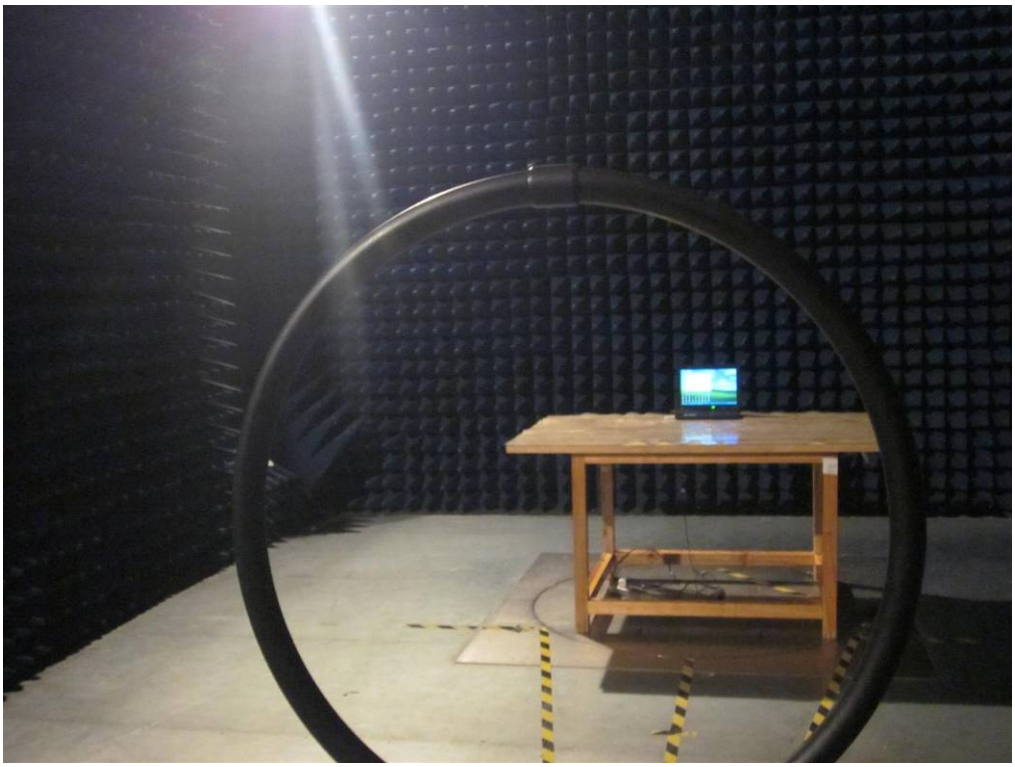
No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Remark
1	67.9129	45.66	-22.60	23.06	40.00	-16.94	QP	
2	119.8556	40.81	-22.80	18.01	43.50	-25.49	QP	
3	167.8243	48.16	-21.11	27.05	43.50	-16.45	QP	
4	296.1836	41.55	-19.77	21.78	46.00	-24.22	QP	
5	416.1791	46.08	-16.29	29.79	46.00	-16.21	QP	
6	747.4825	41.58	-8.19	33.39	46.00	-12.61	QP	

8 Photographs – Test Setup

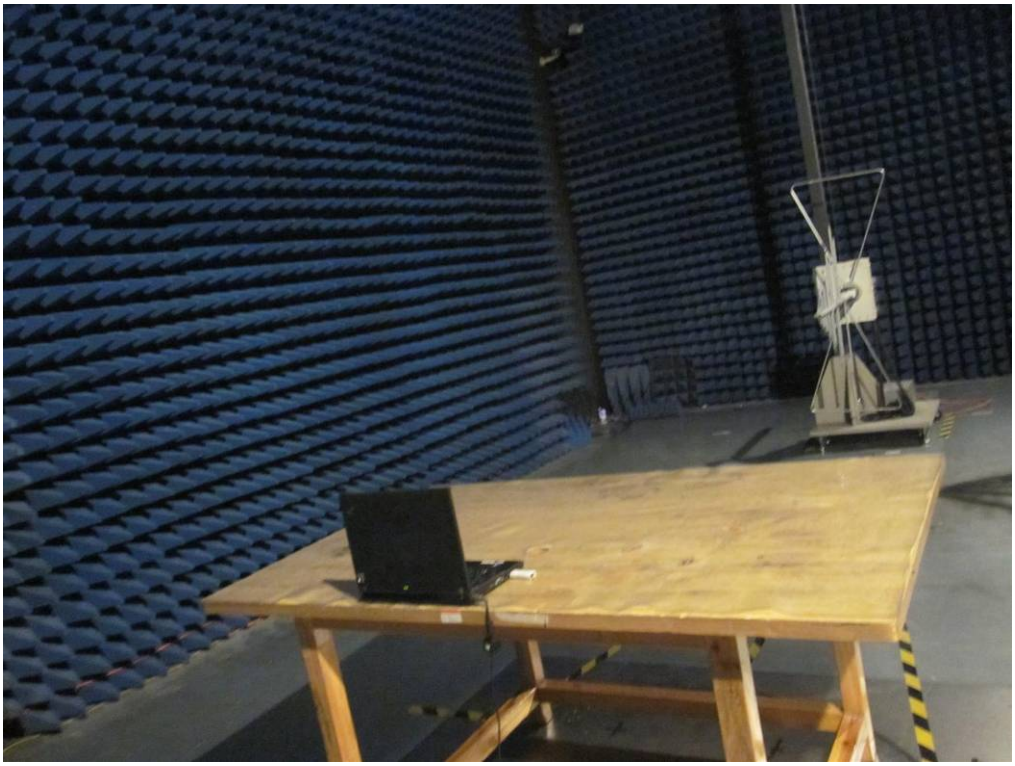
8.1 Photograph – Radiation Emission Test Setup

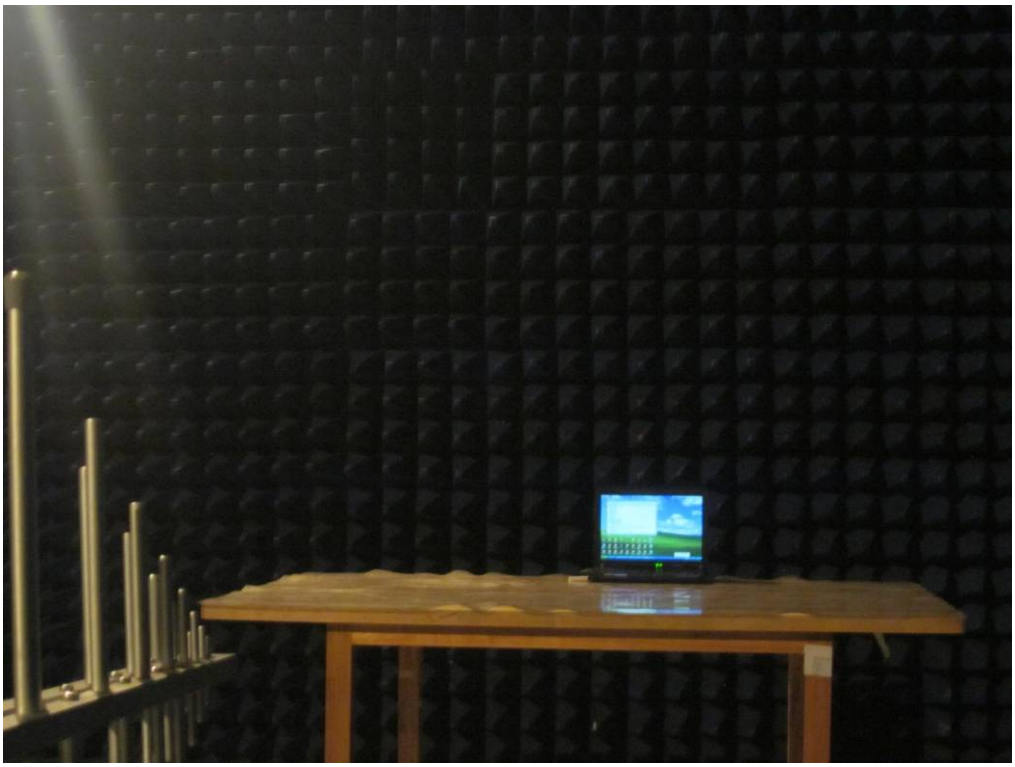
Below 30MHz





30MHz to 1GHz





8.2 Photograph – Conducted Emission Test Setup

9 Photographs –Constructional Details

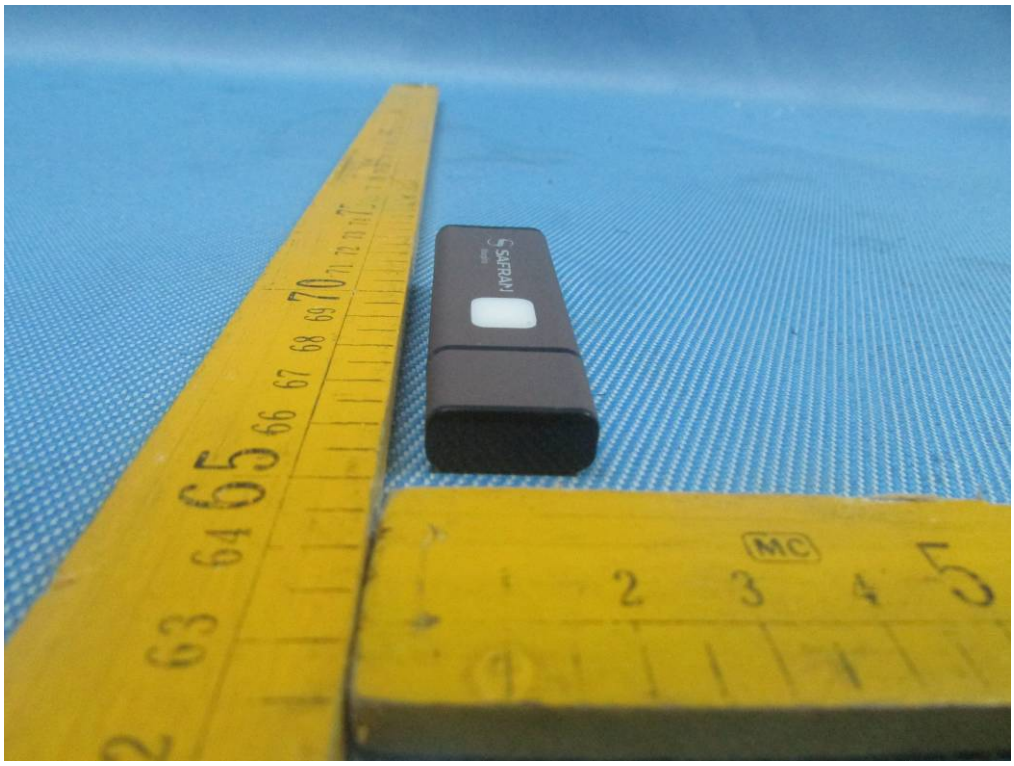
9.1 EUT - External View

Green:

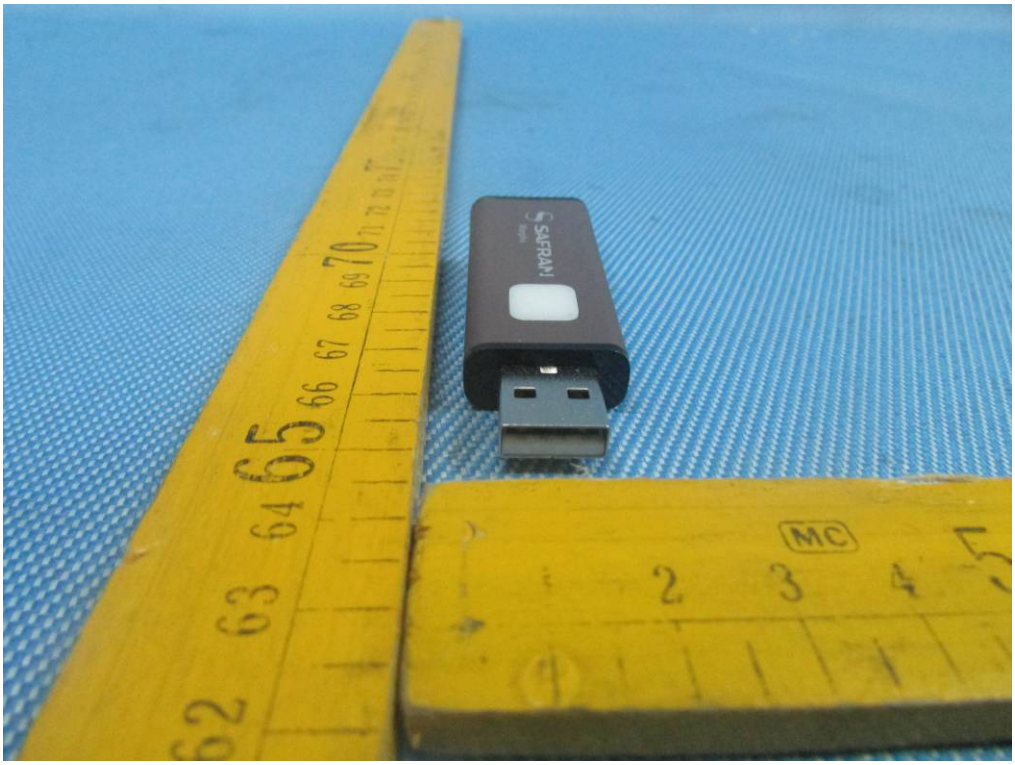
Blue:

Gray:

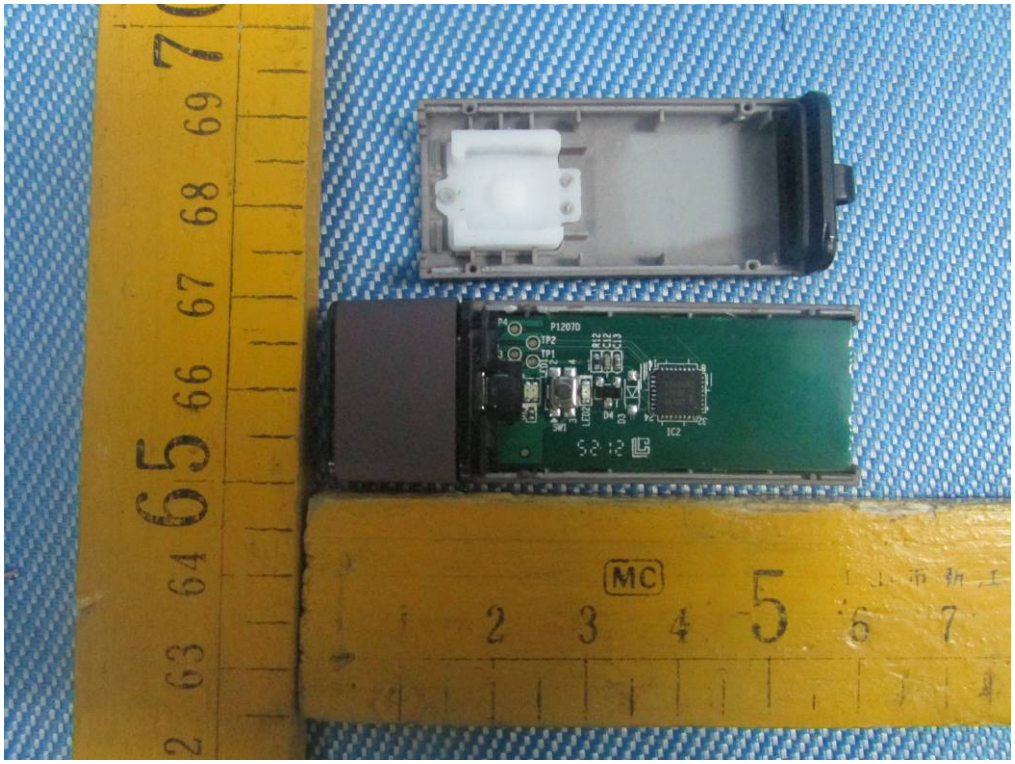

SAFRAN
MC

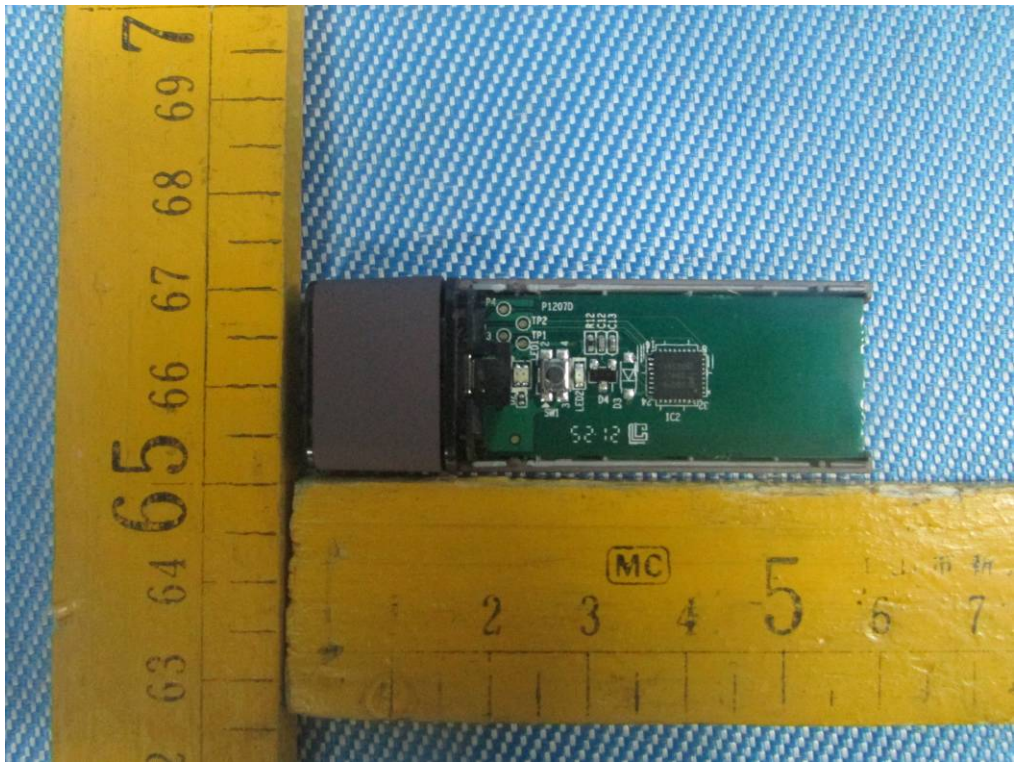

SAFRAN
MC

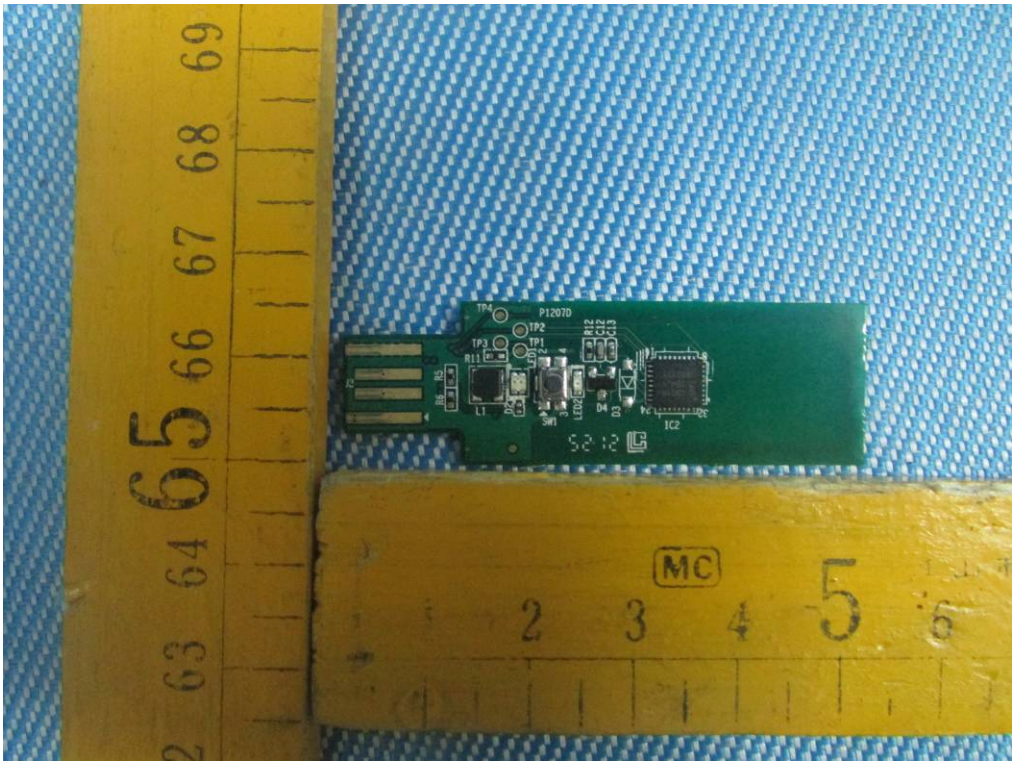

SAFRAN
Morpho
MC

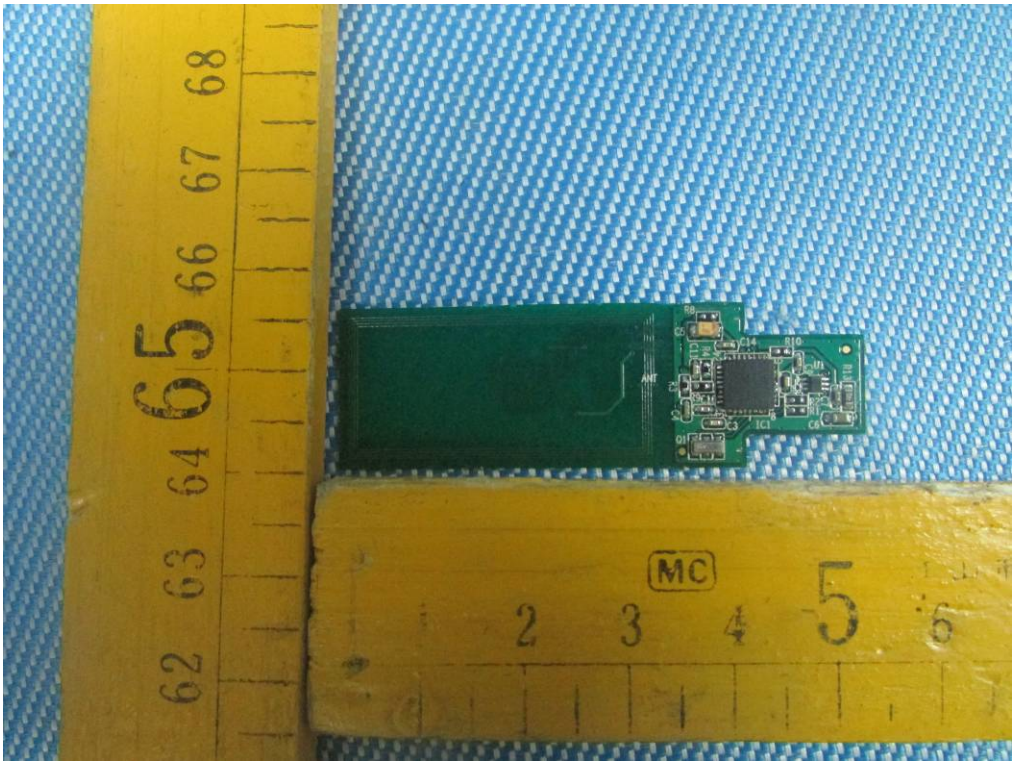

SAFRAN
MC

9.2 EUT - Internal View









==END==