

FCC 15B Test Report

FCC ID: RS9-Q510

Computing Device Peripheral

Report No. : TB-FCC136900
Applicant : Echoii Technologies (Tianjin) CO., LTD.
Equipment Under Test (EUT)
EUT Name : Wireless Storage
Model No. : Q510
Serial No. : E920
Brand Name : N/A
Receipt Date : 2013-04-08
Test Date : 2013-04-09 to 2013-04-22
Issue Date : 2013-05-03
Standards : FCC Part 15: 2011, Subpart B, Class B
Test Method : ANSI C63.4-2003
Conclusions : **PASS**

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

The EUT technically complies with the FCC requirements

Test/Witness Engineer : Ray Lai

Approved& Authorized : Justin Zheng

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

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1. General Information About EUT

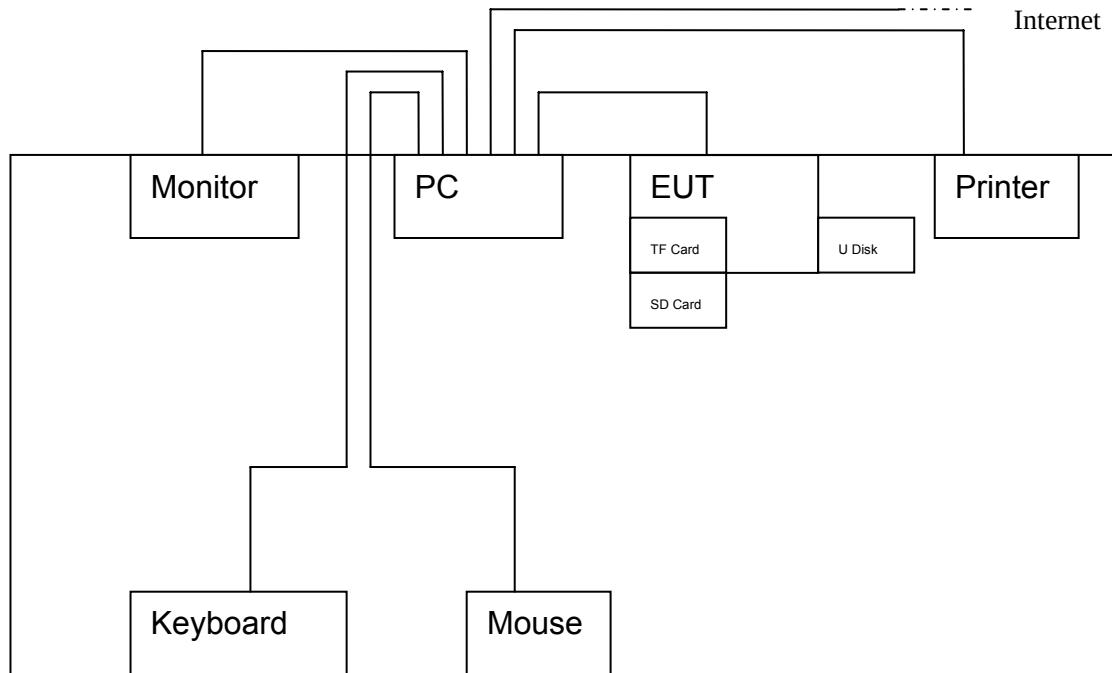
1.1 Client Information

Applicant	:	Echoii Technologies (Tianjin) CO., LTD.
Address	:	5/F Block A, Building No.2 GuangXian Park, No.13 ZiYuan Road, Huayuan Industrial Zone, Nankai District, Tianjin, China
Applicant	:	Echoii Technologies (Tianjin) CO., LTD.
Address	:	5/F Block A, Building No.2 GuangXian Park, No.13 ZiYuan Road, Huayuan Industrial Zone, Nankai District, Tianjin, China

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	Wireless Storage
Model No.	:	Q510, E920
Model difference	:	The different models are identical in schematic, structure and critical component, the only different is the appearance.
Power Supply	:	USB Charging from PC. DC Voltage supplied from Li-Polymer battery.
Power Rating	:	USB DC 5V form PC. DC 3.7V 18.5Wh from Li-Polymer battery
Connecting I/O Port(s)	:	The equipent have USB port for link with PC, so the equipment is considered as a Computing Device Peripheral.
Note: The equipment have WiFi (802.11b/g/n) mode, WiFi part have test comply with FCC Part 15C Rules. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.		

1.3 Block Diagram Showing the Configuration of System Tested



Note: During Testing the EUT is charging and loading data form PC with USB Cable.

1.4 Description of Support Units

Name	Model	S/N	Manufacturer	Used “√”
Printer	HP1505n	VNF3G06957	HP	√
LCD Monitor	E170Sc	----	DELL	√
PC	OPTIPLEX380	----	DELL	√
Keyboard	L100	U01C	DELL	√
Mouse	M-UARDEL7	----	DELL	√
SD Card	2GB	----	Kingston	√
TF Card	1GB	----	Kingston	√
U Disk	1GB	----	SSK	√

1.5 Description of Test Mode

Mode	Description
Mode 1	USB Charging with WiFi Link
Mode 2	Discharging Mode
Mode 3	SD Card and U Disk Loading Data
Mode 4	TF Card and U Disk Loading Data
Mode 5	RJ 45 Link

To investigate the maximum EMI emission characteristics generates from EUT, the test

system was pre-scanning tested base on the consideration of the EUT operation mode, and the maximum emission levels of the conducted and radiated emissions are compared to the FCC Part 15 Subpart B (Class B) limits.

Note: The test results for EUT's RF functions are contained in another Certification Report.

1.6 Test Facility

The tests were perform at:

Bontek Compliance Testing Laboratory Ltd

1/F., Block East H-3, OCT Eastern Ind. Zone, Qiaocheng East Road, Nanshan, Shenzhen, 518055 China

Tel: 86-755-86337020 Fax: 86-755-86337028

At the time of testing, the Laboratory is accredited. It is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 338263.

The test report was fulfilled by Shenzhen Meihua Electronic Co., Ltd. Shenzhen Meihua Electronic Technology Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements results.

2. Test Summary

FCC Part15, Subpart B				
Section	Test Method	Test Item	Limit	Judgment
15.109	ANSI C63.4:2003	Radiated Emission (30M~1GHz)	Class B	PASS
15.107	ANSI C63.4:2003	Conducted Emission (9KHz to 30MHz)	Class B	PASS
Note: N/A is an abbreviation for Not Applicable.				

3. Conducted Emission Test

3.1 Test Standard and Limit

3.1.1 Test Standard

FCC Part 15.107

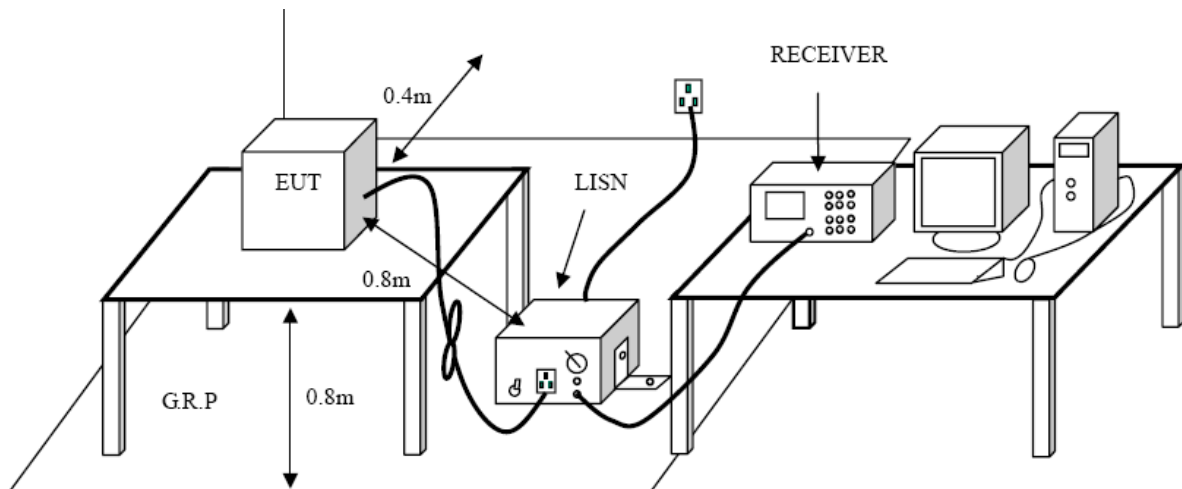
3.1.2 Test Limit

Conducted Emission Test Limit

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak Level	Average Level
0.15~0.5	66 ~ 56 *	56 ~ 46 *
0.5~5.0	56.00	46.00
5.0~30.0	60.00	50.00

Notes: (1) *Decreasing linearly with logarithm of the frequency.
(2) The lower limit shall apply at the transition frequencies.

3.2 Test Setup



3.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance.

The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

For the actual test configuration, please refer to the EUT test Photos.

3.4 Test Equipment Used

Description	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Date
EMI Test Receiver	ROHDE&SCHWARZ	ESC30	DE25181	2012-08-07	2013-08-06
50ΩCoaxial Switch	Anritsu	MP59B	X10321	2012-08-07	2013-08-06
L.I.S.N	EMCO	3624/1	00063417	2012-08-07	2013-08-06
L.I.S.N	EMCO	3624/1	00063417	2012-08-07	2013-08-06

3.5 EUT Operating Mode

(1) Setup the EUT and peripherals refer to the description of test mode.

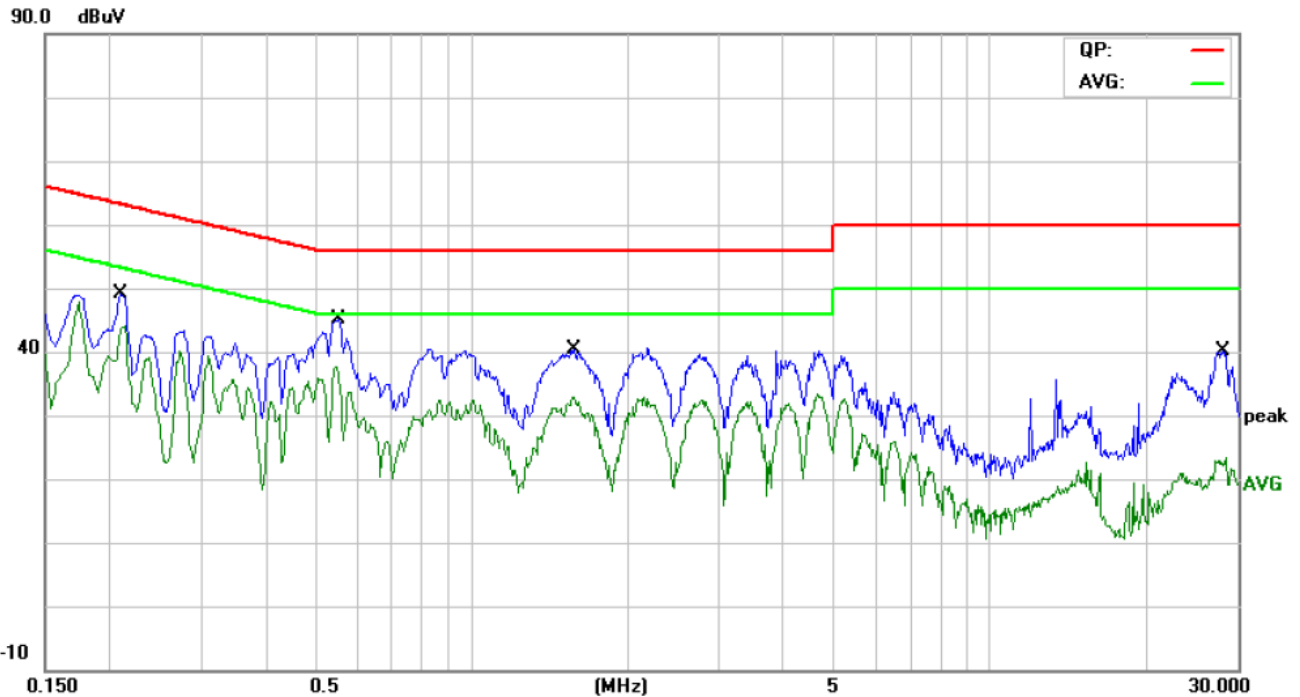
3.6 Deviation

The test is no deviation from the standard.

3.7 Test Data

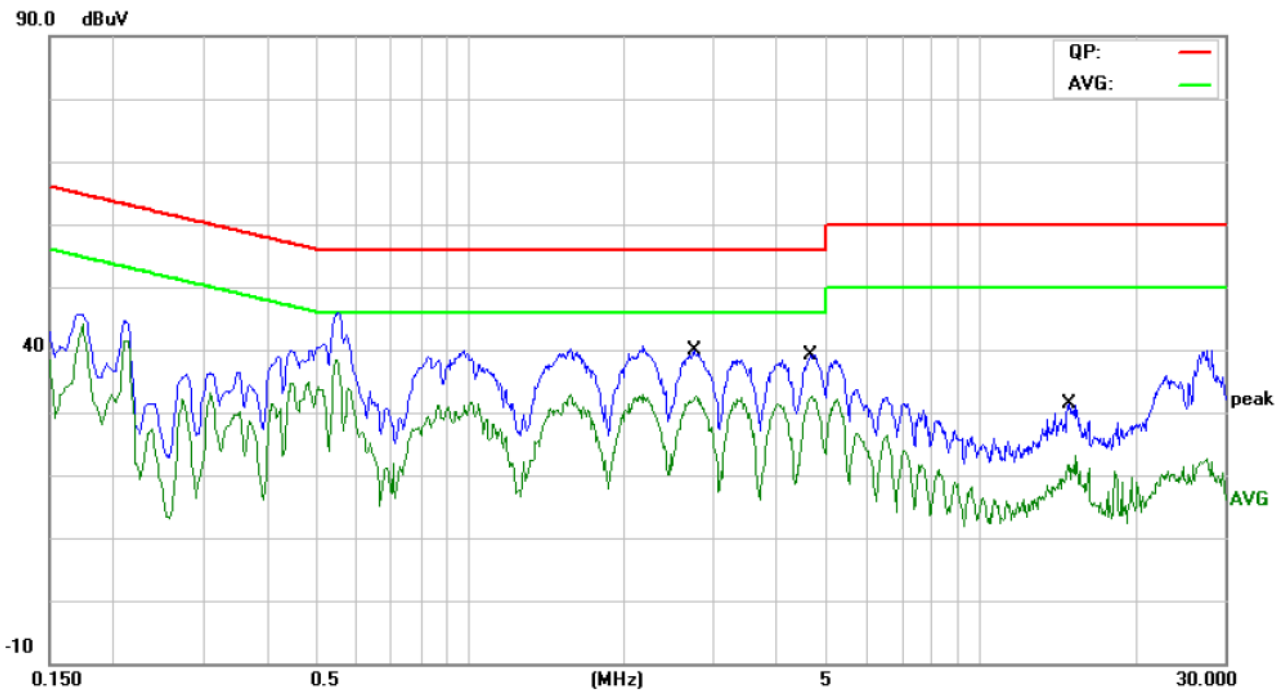
Please see the next page.

E.U.T :	Wireless Storage	Model Name :	Q510
Temperature :	26°C	Relative Humidity :	51 %
Terminal	Line		
Test Voltage :	AC 120 V / 60Hz		
Test Mode :	Mode 1: USB Charging With WiFi Link		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2100	37.05	10.28	47.33	63.20	-15.87	QP	
2	*	0.2100	33.69	10.28	43.97	53.20	-9.23	AVG	
3		0.5540	35.26	9.46	44.72	56.00	-11.28	QP	
4		0.5540	27.05	9.46	36.51	46.00	-9.49	AVG	
5		1.5700	29.04	9.35	38.39	56.00	-17.61	QP	
6		1.5700	23.40	9.35	32.75	46.00	-13.25	AVG	
7		28.0860	17.13	10.12	27.25	60.00	-32.75	QP	
8		28.0860	5.46	10.12	15.58	50.00	-34.42	AVG	

E.U.T :	Wireless Storage	Model Name :	Q510
Temperature :	26°C	Relative Humidity :	51 %
Terminal	Neutral		
Test Voltage :	AC 120 V / 60Hz		
Test Mode :	Mode 1: USB Charging With WiFi Link		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		2.7500	27.27	9.40	36.67	56.00	-19.33	QP	
2		2.7500	22.55	9.40	31.95	46.00	-14.05	AVG	
3		4.6420	26.88	9.46	36.34	56.00	-19.66	QP	
4	*	4.6420	22.89	9.46	32.35	46.00	-13.65	AVG	
5		14.8900	15.51	10.11	25.62	60.00	-34.38	QP	
6		14.8900	9.84	10.11	19.95	50.00	-30.05	AVG	

4. Radiated Emission Test

4.1 Test Standard and Limit

4.1.1 Test Standard

FCC Part 15.109

4.1.2 Test Limit

Radiated Emission Limit

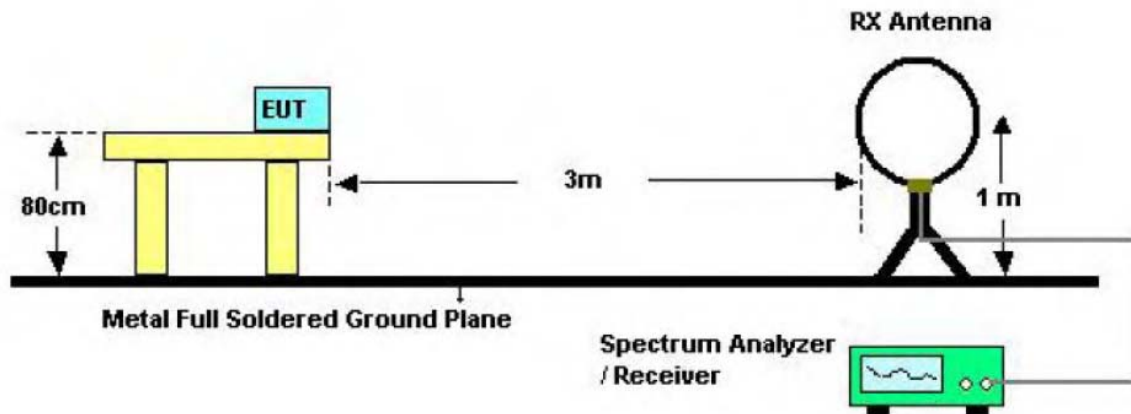
Frequency (MHz)	Field Strength (dBuV/m)	Measurement Distance (meters)
30~88	40	3
88~216	43.5	3
216~960	46	3
Above 960	54	3
Note: Emission Level(dBuV/m)=20log Emission Level(uV/m)		

For unintentional radiators (FCC Part 15, section 15.33(1)):

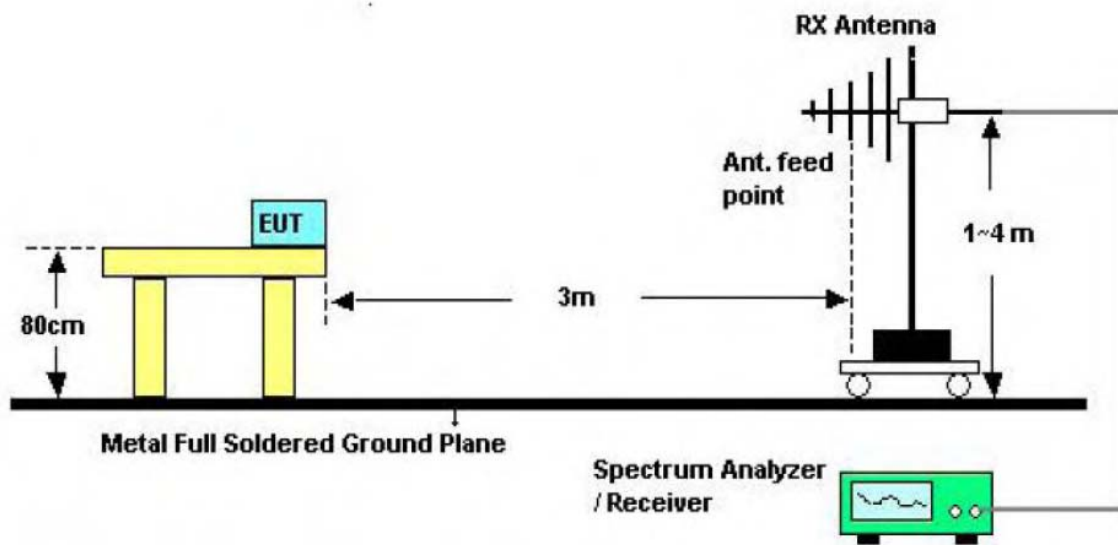
Except as otherwise indicated in paragraphs (b)(2) or (b)(3), for an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705~108	1000
108~500	2000
500~1000	5000
Above 1000	5 th harmonic of the highest frequency or 40 GHz, whichever is lower

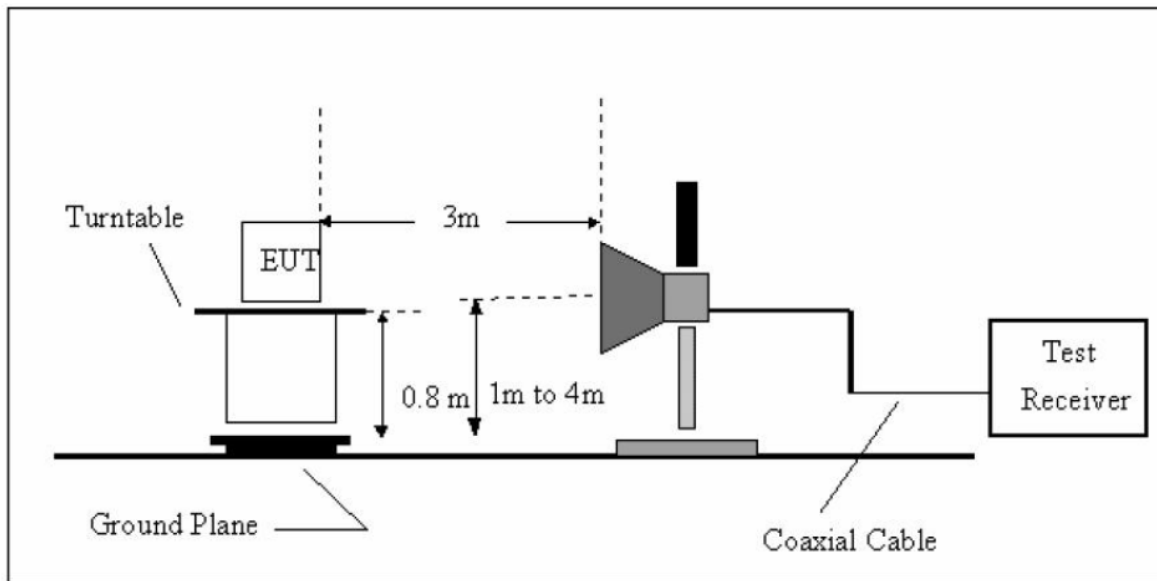
4.2 Test Setup



Bellow 30MHz Test Setup



30MHz to 1000MHz Test Setup



Above 1GHz Test Setup

4.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency from 30MHz up to 1GHz.
- (2) The EUT was placed on the top of a rotating table 0.8 meters above the ground. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The height of the equipment or of the substitution antenna shall be 0.8m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- (4) The initial step in collecting radiated emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- (6) For more details, please refer to the EUT Test Photos.

4.4 Test Equipment

Description	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Date
Spectrum Analyzer	Agilent	E7405A	MY45114970	2012-08-07	2013-08-06
Pre-Amplifier	CD	PAM0203	804203	2012-08-07	2013-08-06
RF Switch	CD	RSU-M3	RSU-M3	2012-07-13	2013-07-12
Trilog Broadband	SCHWARZBECK	VULB9163	345	2012-07-13	2013-07-12

Antenna					
Coaxial Cable	SCHWARZBECK	RG214-N-8	11065	2012-08-07	2013-08-06
Broadband Preamplifier 0.5-18GHz	SCHWARZBECK	BBV9718	9718-148	2012-08-07	2013-08-06
Horn Antenna	SCHWARZBECK	BBHA9120 D	667	2012-08-07	2013-08-06
Coaxial Cable	SCHWARZBECK	AK9513	9513-10	2012-08-07	2013-08-06
Coaxial Cable	SCHWARZBECK	AK9515H	9515-10	2012-08-07	2013-08-06

4.5 EUT Operating Condition

(1) Setup the EUT and peripherals refer to the description of test mode.

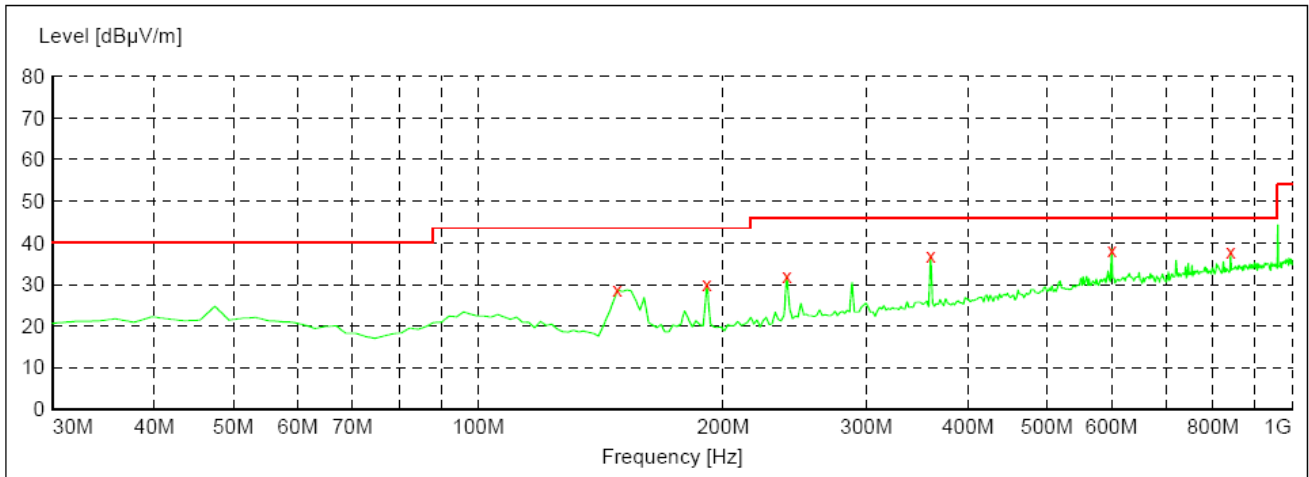
4.6 Deviation

The test is no deviation from the standard.

4.7 Test Data

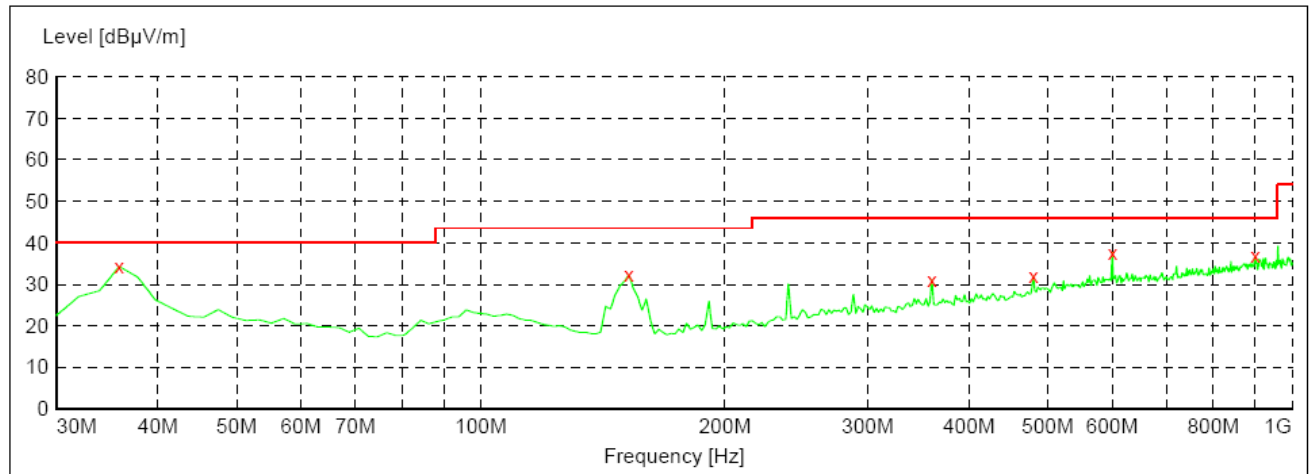
(1) Bellow 1GHz

E.U.T :	Wireless Storage	Model Name :	Q510
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Horizontal		
Test Mode :	Mode 1: USB Charging and WiFi Link		



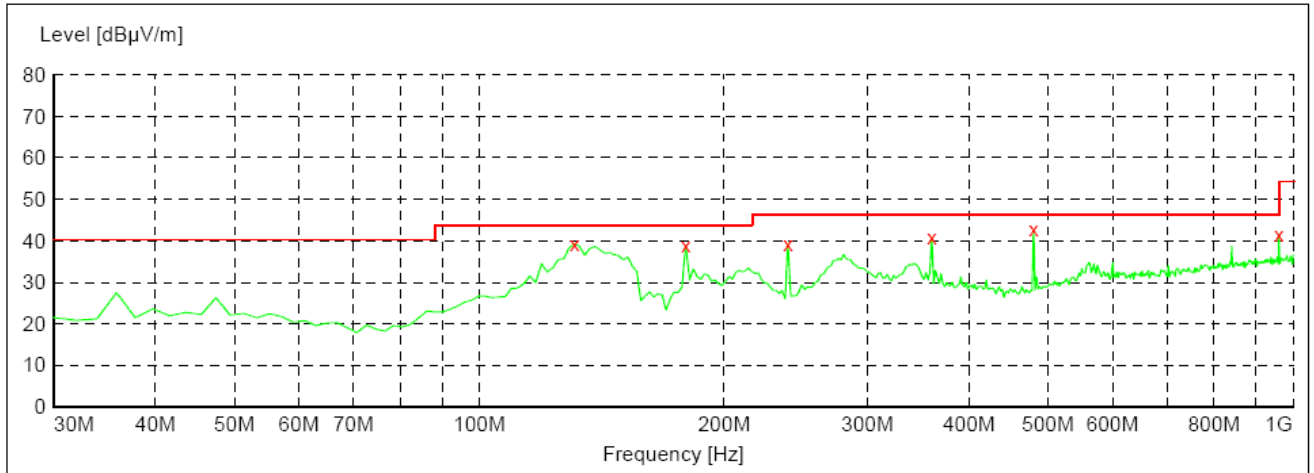
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
148.340000	28.80	12.3	43.5	14.7	---	100.0	0.00	HORIZONTAL
191.020000	30.20	14.8	43.5	13.3	---	100.0	0.00	HORIZONTAL
239.520000	32.10	16.9	46.0	13.9	---	100.0	0.00	HORIZONTAL
359.800000	37.00	20.6	46.0	9.0	---	100.0	0.00	HORIZONTAL
600.360000	38.40	25.9	46.0	7.6	---	100.0	0.00	HORIZONTAL
840.920000	38.10	28.5	46.0	7.9	---	100.0	0.00	HORIZONTAL

E.U.T :	Wireless Storage	Model Name :	Q510
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Vertical		
Test Mode :	Mode 1: USB Charging and WiFi Link		



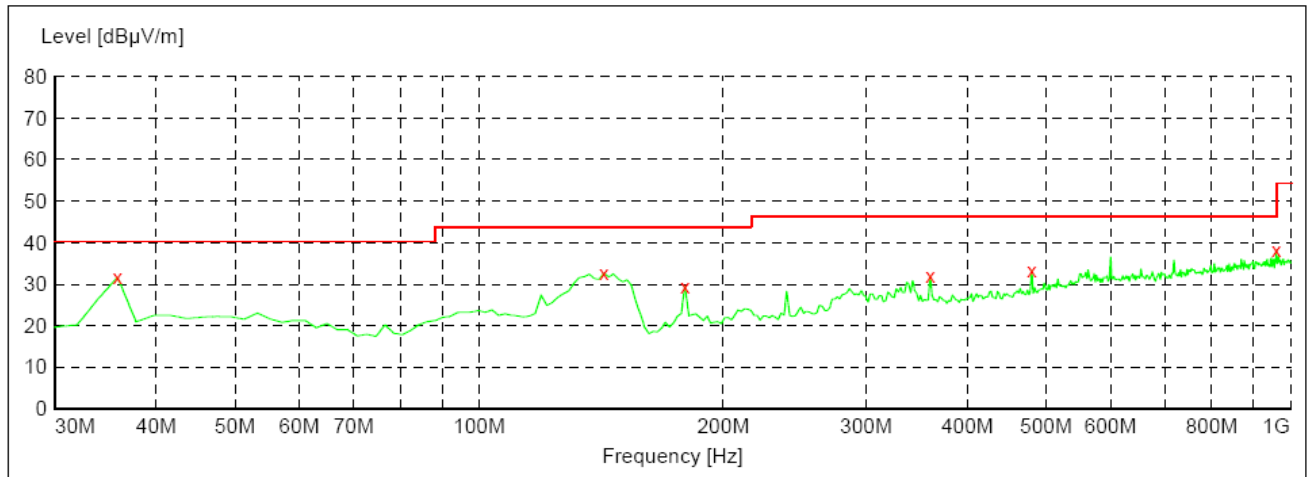
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
35.820000	34.30	14.7	40.0	5.7	---	100.0	0.00	VERTICAL
152.220000	32.30	12.4	43.5	11.2	---	100.0	0.00	VERTICAL
359.800000	31.20	20.6	46.0	14.8	---	100.0	0.00	VERTICAL
480.080000	32.00	23.1	46.0	14.0	---	100.0	0.00	VERTICAL
600.360000	37.60	25.9	46.0	8.4	---	100.0	0.00	VERTICAL
901.060000	36.80	29.2	46.0	9.2	---	100.0	0.00	VERTICAL

E.U.T :	Wireless Storage	Model Name :	Q510
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Horizontal		
Test Mode :	Mode 2: Discharging Mode		



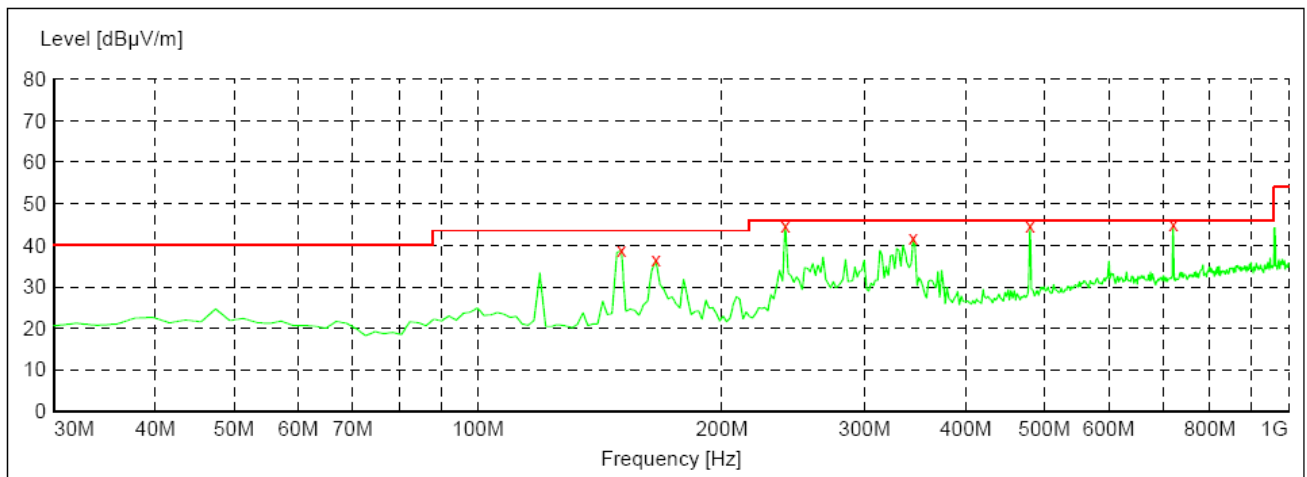
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
130.880000	39.30	13.0	43.5	4.2	---	300.0	0.00	HORIZONTAL
179.380000	38.80	13.8	43.5	4.7	---	300.0	0.00	HORIZONTAL
239.520000	39.30	16.9	46.0	6.7	---	100.0	0.00	HORIZONTAL
359.800000	40.90	20.6	46.0	5.1	---	100.0	0.00	HORIZONTAL
480.080000	42.90	23.1	46.0	3.1	---	100.0	0.00	HORIZONTAL
961.200000	41.60	29.6	46.0	4.4	---	100.0	0.00	HORIZONTAL

E.U.T :	Wireless Storage	Model Name :	Q510
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Vertical		
Test Mode :	Mode 2: Discharging Mode		



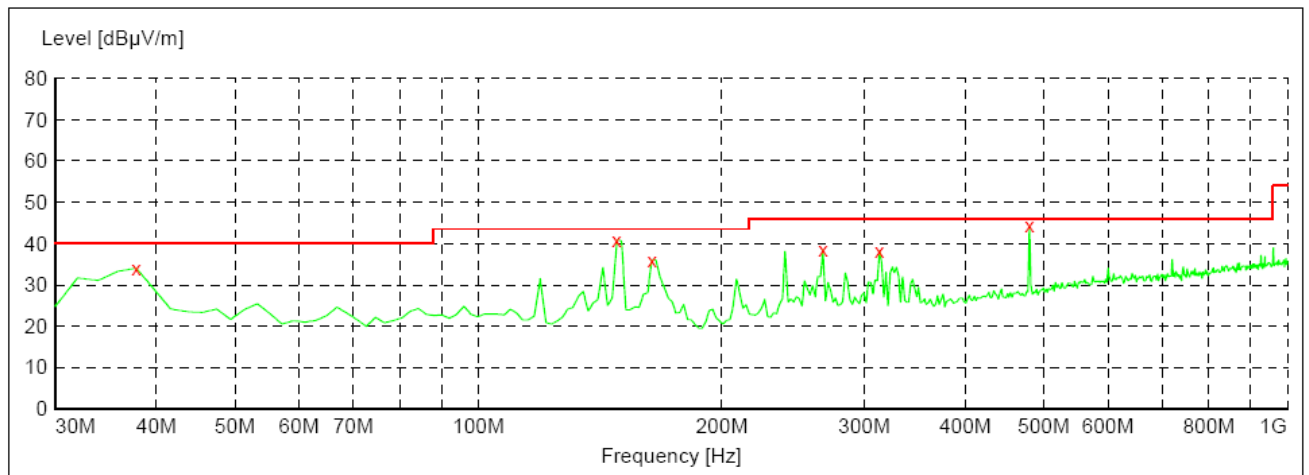
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
35.820000	31.70	14.7	40.0	8.3	---	100.0	0.00	VERTICAL
142.520000	32.70	12.3	43.5	10.8	---	100.0	0.00	VERTICAL
179.380000	29.50	13.8	43.5	14.0	---	100.0	0.00	VERTICAL
359.800000	32.00	20.6	46.0	14.0	---	100.0	0.00	VERTICAL
480.080000	33.40	23.1	46.0	12.6	---	100.0	0.00	VERTICAL
961.200000	38.20	29.6	46.0	7.8	---	100.0	0.00	VERTICAL

E.U.T :	Wireless Storage	Model Name :	Q510
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Horizontal		
Test Mode :	Mode 3: SD Card and U Disk Loading Data		



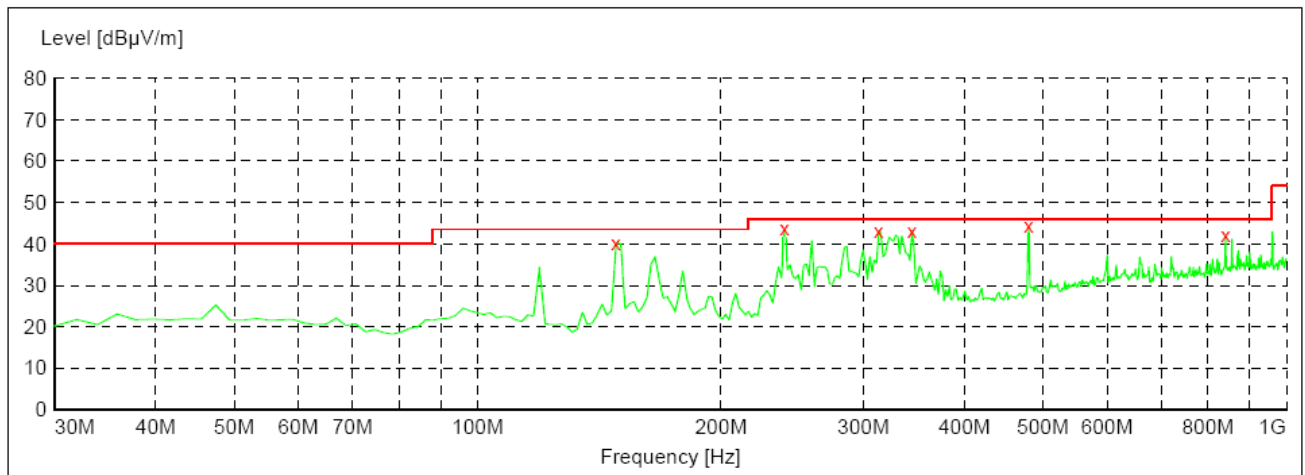
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
130.880000	39.30	13.0	43.5	4.2	---	300.0	0.00	HORIZONTAL
179.380000	38.80	13.8	43.5	4.7	---	300.0	0.00	HORIZONTAL
239.520000	39.30	16.9	46.0	6.7	---	100.0	0.00	HORIZONTAL
359.800000	40.90	20.6	46.0	5.1	---	100.0	0.00	HORIZONTAL
480.080000	42.90	23.1	46.0	3.1	---	100.0	0.00	HORIZONTAL
961.200000	41.60	29.6	46.0	4.4	---	100.0	0.00	HORIZONTAL

E.U.T :	Wireless Storage	Model Name :	Q510
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Vertical		
Test Mode :	Mode 3: SD Card and U Disk Loading Data		



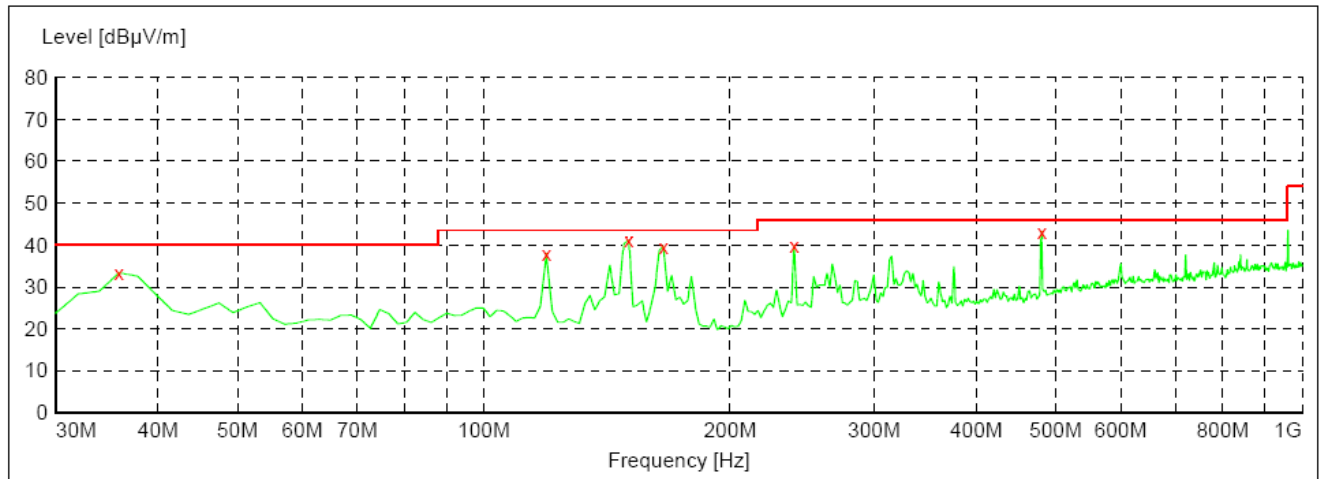
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
37.760000	34.00	15.2	40.0	6.0	---	100.0	0.00	VERTICAL
148.340000	40.90	12.3	43.5	2.6	---	100.0	0.00	VERTICAL
163.860000	36.10	12.9	43.5	7.4	---	100.0	0.00	VERTICAL
266.680000	38.60	17.6	46.0	7.4	---	100.0	0.00	VERTICAL
313.240000	38.30	19.0	46.0	7.7	---	100.0	0.00	VERTICAL
480.080000	44.40	23.1	46.0	1.6	---	100.0	0.00	VERTICAL

E.U.T :	Wireless Storage	Model Name :	Q510
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Horizontal		
Test Mode :	Mode 4: TF Card and U Disk Loading Data		



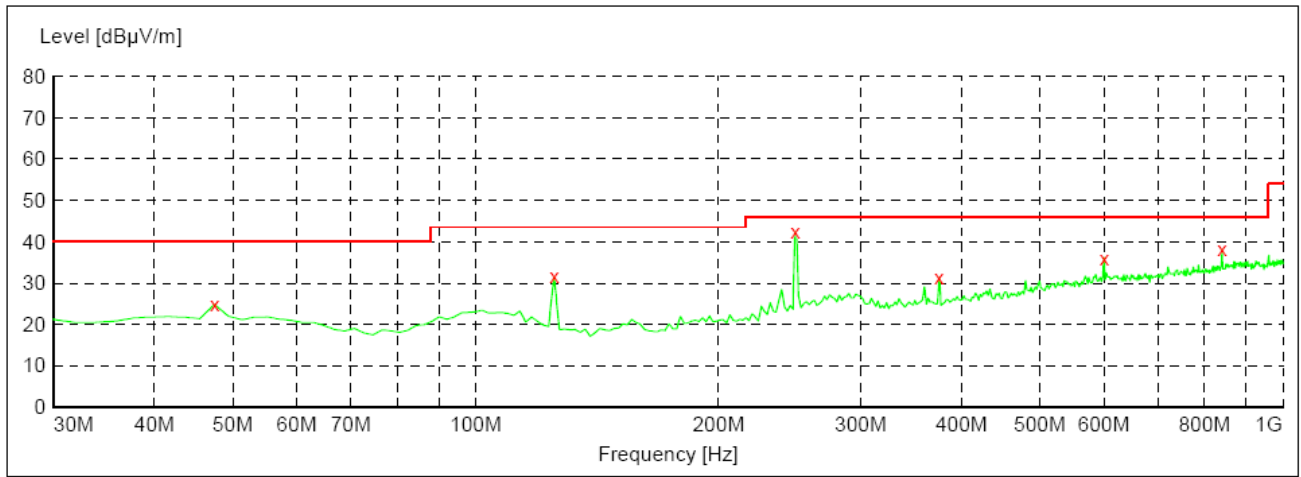
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
148.340000	40.30	12.3	43.5	3.2	---	100.0	0.00	HORIZONTAL
239.520000	43.30	16.9	46.0	2.7	---	100.0	0.00	HORIZONTAL
313.240000	43.00	19.0	46.0	3.0	---	100.0	0.00	HORIZONTAL
344.280000	43.10	20.3	46.0	2.9	---	100.0	0.00	HORIZONTAL
480.080000	43.80	23.1	46.0	2.2	---	100.0	0.00	HORIZONTAL
840.920000	42.30	28.5	46.0	3.7	---	100.0	0.00	HORIZONTAL

E.U.T :	Wireless Storage	Model Name :	Q510
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Vertical		
Test Mode :	Mode 4: TF Card and U Disk Loading Data		



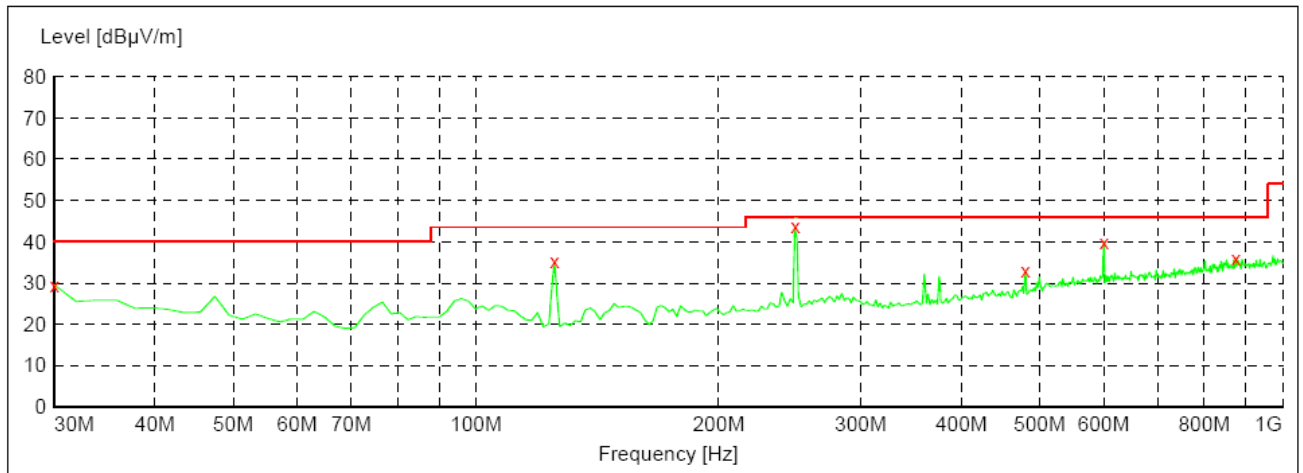
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
35.820000	33.40	14.7	40.0	6.6	---	100.0	0.00	VERTICAL
119.240000	38.10	14.8	43.5	5.4	---	100.0	0.00	VERTICAL
150.280000	40.90	12.3	43.5	2.6	---	100.0	0.00	VERTICAL
165.800000	39.70	13.0	43.5	3.8	---	100.0	0.00	VERTICAL
239.520000	39.80	16.9	46.0	6.2	---	100.0	0.00	VERTICAL
480.080000	42.40	23.1	46.0	3.6	---	100.0	0.00	VERTICAL

E.U.T :	Wireless Storage	Model Name :	Q510
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Horizontal		
Test Mode :	Mode 5: RJ45 Link		



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
47.460000	24.80	15.8	40.0	15.2	---	100.0	0.00	HORIZONTAL
125.060000	31.60	13.8	43.5	11.9	---	100.0	0.00	HORIZONTAL
249.220000	42.40	17.2	46.0	3.6	---	100.0	0.00	HORIZONTAL
375.320000	31.40	20.8	46.0	14.6	---	100.0	0.00	HORIZONTAL
600.360000	36.10	25.9	46.0	9.9	---	100.0	0.00	HORIZONTAL
840.920000	38.20	28.5	46.0	7.8	---	100.0	0.00	HORIZONTAL

E.U.T :	Wireless Storage	Model Name :	Q510
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Vertical		
Test Mode :	Mode 5: RJ45 Link		



Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	29.50	14.3	40.0	10.5	---	100.0	0.00	VERTICAL
125.060000	35.30	13.8	43.5	8.2	---	100.0	0.00	VERTICAL
249.220000	43.30	17.2	46.0	2.7	---	100.0	0.00	VERTICAL
480.080000	33.00	23.1	46.0	13.0	---	100.0	0.00	VERTICAL
600.360000	40.00	25.9	46.0	6.0	---	100.0	0.00	VERTICAL
875.840000	36.10	28.9	46.0	9.9	---	100.0	0.00	VERTICAL

(2) Above 1GHz

E.U.T :	Wireless Storage	Model Name :	Q510
Temperature :	26°C	Relative Humidity :	51 %
Test Voltage :	AC 120 V / 60Hz		
Antenna. Pol:	Vertical		
Test Mode :	RX Mode		

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)		Limit3m (dBuV/m)		Margin(dB)	
		PK	AV	PK	AV	PK	AV
1916.500	V	45.21	40.61	74.00	54.00	28.79	13.39
3209.000	V	48.71	44.05	74.00	54.00	25.29	9.95
--	V	--	--	74.00	54.00	--	--
--	V	--	--	74.00	54.00	--	--
--	V	--	--	74.00	54.00	--	--
1916.500	H	47.33	43.26	74.00	54.00	26.67	10.74
3209.000	H	43.27	39.49	74.00	54.00	30.73	14.51
--	H	--	--	74.00	54.00	--	--
--	H	--	--	74.00	54.00	--	--
--	H	--	--	74.00	54.00	--	--