

FCC Test Report

FCC ID: 2AA5C-FSR001

Original Grant for Computing Device Peripheral

Report No. : TB-FCC139548
Applicant : CviLux Corporation
Equipment Under Test (EUT)
EUT Name : 3in1 Cloud Storage Box
Model No. : FSR001
Serial No. : N/A
Brand Name : O'pro9
Receipt Date : 2014-02-17
Test Date : 2014-02-18 to 2014-02-27
Issue Date : 2014-02-28
Standards : FCC Part 15: 2012, 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 : *IVAN SU*

Approved& Authorized : *Ray Lai*

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

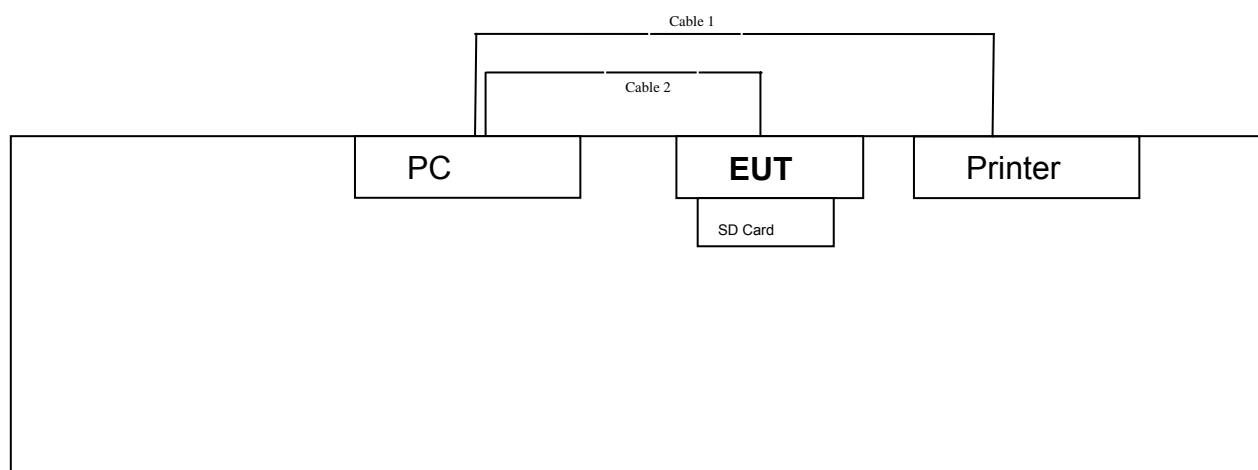
Applicant	:	CviLux Corporation
Address	:	9F., No.9, Lane 3, Sec 1, Chung-Cheng East Road, Tamshui, New Taipei City, 25147 Taiwan
Applicant	:	CviLux Corporation
Address	:	9F., No.9, Lane 3, Sec 1, Chung-Cheng East Road, Tamshui, New Taipei City, 25147 Taiwan

1.2 General Description of EUT (Equipment Under Test)

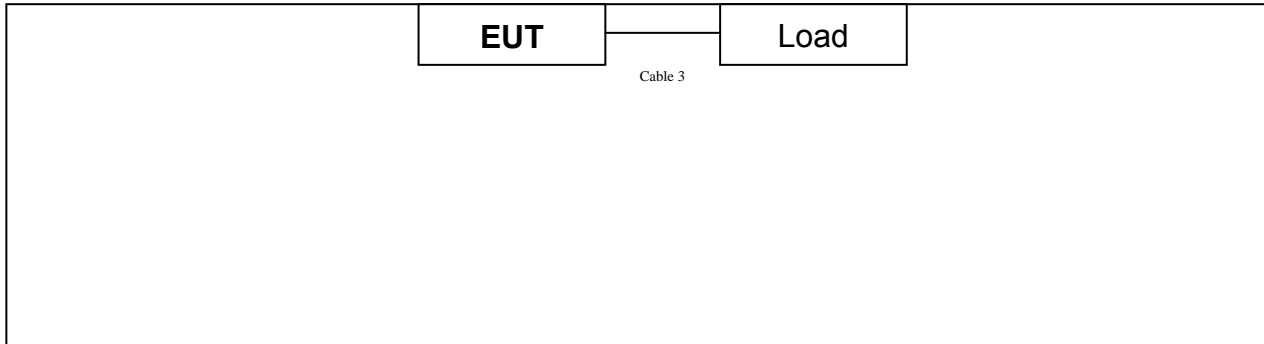
EUT Name	:	3in1 Cloud Storage Box
Model No.	:	FSR001
Model difference	:	N/A
Power Supply	:	USB Charging from PC. DC Voltage supplied from Li-ion battery.
Power Rating	:	USB DC 5V form PC. DC 3.7V 3200mAh from Li-ion battery
Connecting I/O Port(s)	:	The equipent have USB port for link with PC, so the 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. 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

USB Charging and Loading Data



Discharging mode



1.4 Description of Support Units

Name	Model	S/N	Manufacturer	Used “√”
Notebook	T60P	42W3244	Lenovo	√
Printer	HP1505n	VNF3G06957	HP	√
SD Card	2GB	2GB	Kingston	√
Cable Information				
Number	Shielded Type	Ferrite Core	Length	Note
Cable 1	Yes	Yes(1)	2.0m	
Cable 2	No	No	1.7m	Accessory
Cable 3	No	No	0.2m	

1.5 Description of Test Mode

Mode	Description
Mode 1: Loading Data form PC	USB cable connect with PC
Mode 2: RJ45 Link	RJ45 link and loading data
Mode 3: Discharging mode	Output 5V 2A with Load
Mode 4: WiFi Link	WiFi link with Notebook

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 performed at:

Shenzhen Certification Technology Service Co., Ltd

2F, Building B, East Area of Nanchang Second Industrial Zone, Gushu 2nd Road, Bao'an District, Shenzhen, 518126, China

Tel: 86-755-86375552 Fax: 86-755-26736857

The test report was fulfilled by Shenzhen Toby Technology Co., Ltd. Shenzhen Toby 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

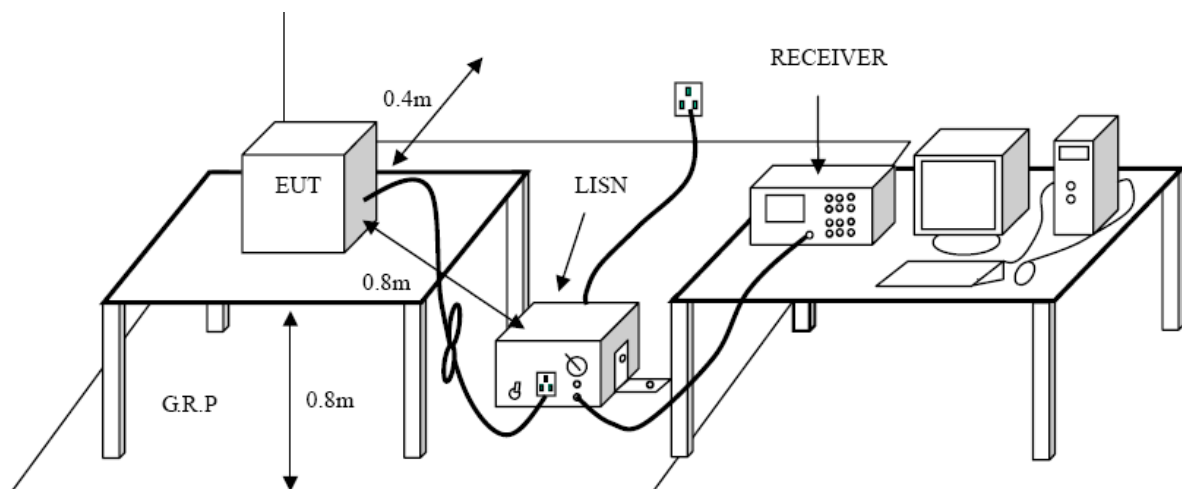
3.1.2 Test Limit

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. Due Date
EMI Test Receiver	ROHDE& SCHWARZ	ESCI	100321	2013-08-10	2014-08-09
50ΩCoaxial Switch	Anritsu	MP59B	X10321	2013-08-10	2014-08-09
L.I.S.N	Rohde & Schwarz	ENV216	101131	2013-08-10	2014-08-09
L.I.S.N	SCHWARZBECK	NNBL 8226-2	8226-2/164	2013-08-10	2014-08-09

3.5 EUT Operating Mode

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

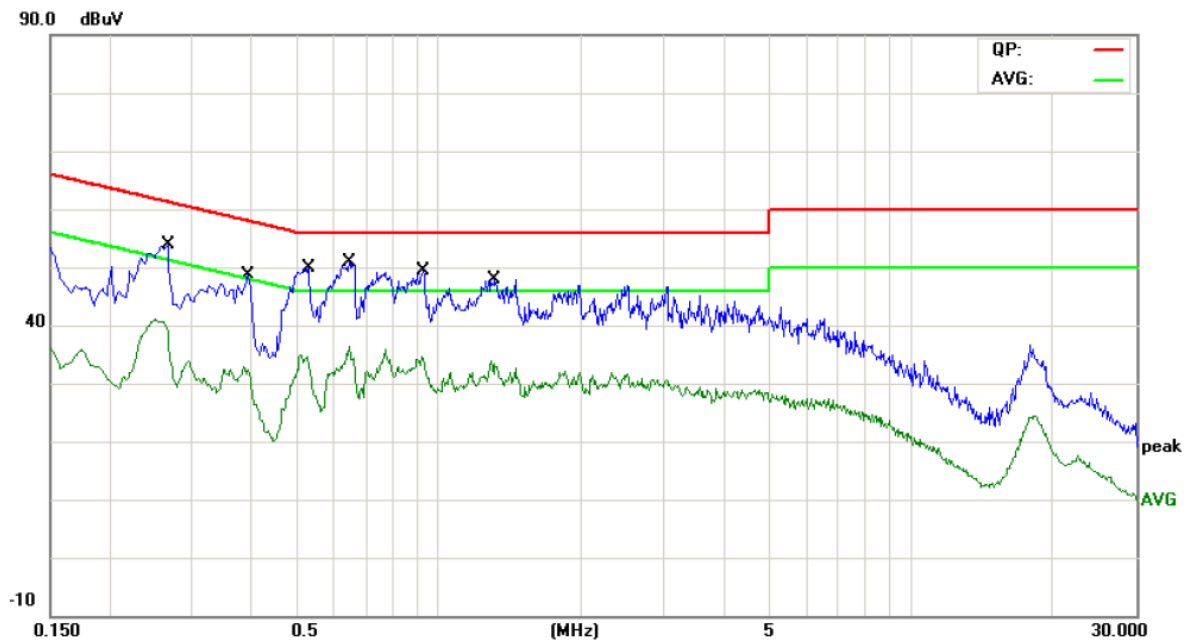
3.6 Deviation

The test is no deviation from the standard.

3.7 Test Data

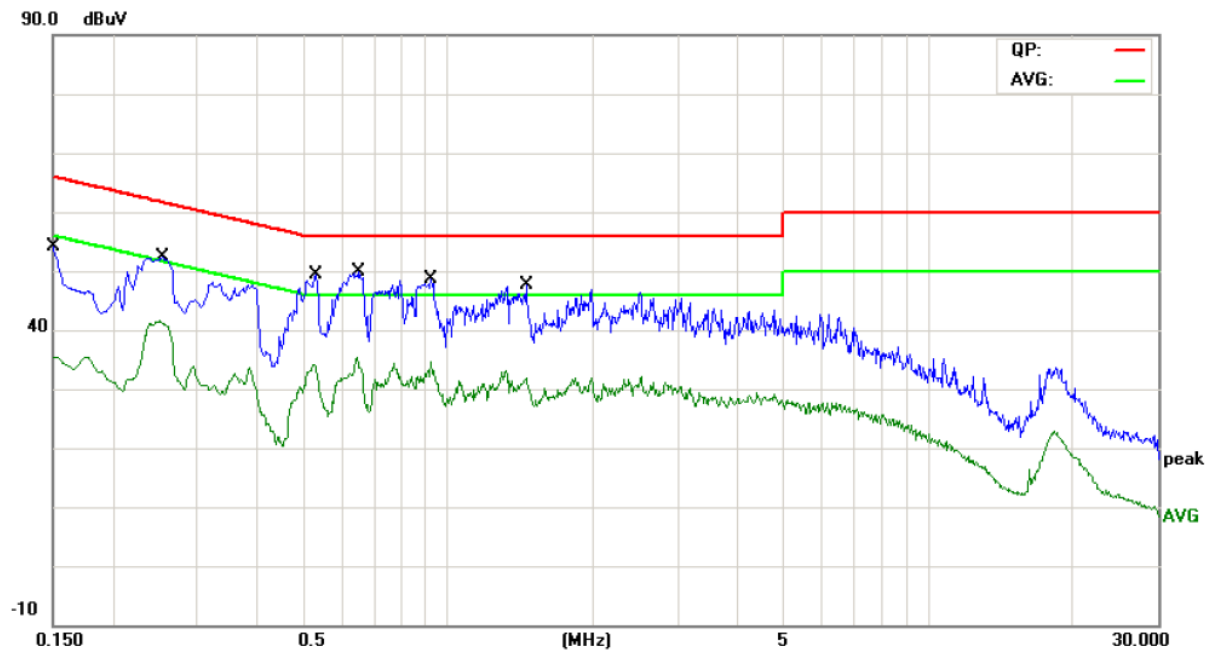
Please see the next page.

E.U.T :	3in1 Cloud Storage Box	Model Name :	FSR001
Temperature :	21°C	Relative Humidity :	51 %
Terminal	Line		
Test Voltage :	AC 120 V / 60Hz		
Test Mode :	Mode 1: Loading Data and Charging		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.2660	40.18	10.02	50.20	61.24	-11.04	QP	
2		0.2660	27.07	10.02	37.09	51.24	-14.15	AVG	
3		0.3940	34.04	10.02	44.06	57.98	-13.92	QP	
4		0.3940	21.29	10.02	31.31	47.98	-16.67	AVG	
5		0.5299	36.73	10.03	46.76	56.00	-9.24	QP	
6		0.5299	24.07	10.03	34.10	46.00	-11.90	AVG	
7	*	0.6460	37.54	10.09	47.63	56.00	-8.37	QP	
8		0.6460	25.38	10.09	35.47	46.00	-10.53	AVG	
9		0.9260	36.75	10.07	46.82	56.00	-9.18	QP	
10		0.9260	24.15	10.07	34.22	46.00	-11.78	AVG	
11		1.3140	32.74	10.06	42.80	56.00	-13.20	QP	
12		1.3140	22.29	10.06	32.35	46.00	-13.65	AVG	

E.U.T :	3in1 Cloud Storage Box	Model Name :	FSR001
Temperature :	26°C	Relative Humidity :	51 %
Terminal	Neutral		
Test Voltage :	AC 120 V / 60Hz		
Test Mode :	Mode 1: Normal Mode		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	41.58	10.12	51.70	65.99	-14.29	QP	
2		0.1500	24.74	10.12	34.86	55.99	-21.13	AVG	
3		0.2540	40.11	10.10	50.21	61.62	-11.41	QP	
4	*	0.2540	30.83	10.10	40.93	51.62	-10.69	AVG	
5		0.5299	25.61	10.02	35.63	56.00	-20.37	QP	
6		0.5299	17.66	10.02	27.68	46.00	-18.32	AVG	
7		0.6540	30.30	10.02	40.32	56.00	-15.68	QP	
8		0.6540	17.99	10.02	28.01	46.00	-17.99	AVG	
9		0.9220	30.13	10.12	40.25	56.00	-15.75	QP	
10		0.9220	19.69	10.12	29.81	46.00	-16.19	AVG	
11		1.4540	28.83	10.11	38.94	56.00	-17.06	QP	
12		1.4540	18.63	10.11	28.74	46.00	-17.26	AVG	

4. Radiated Emission Test

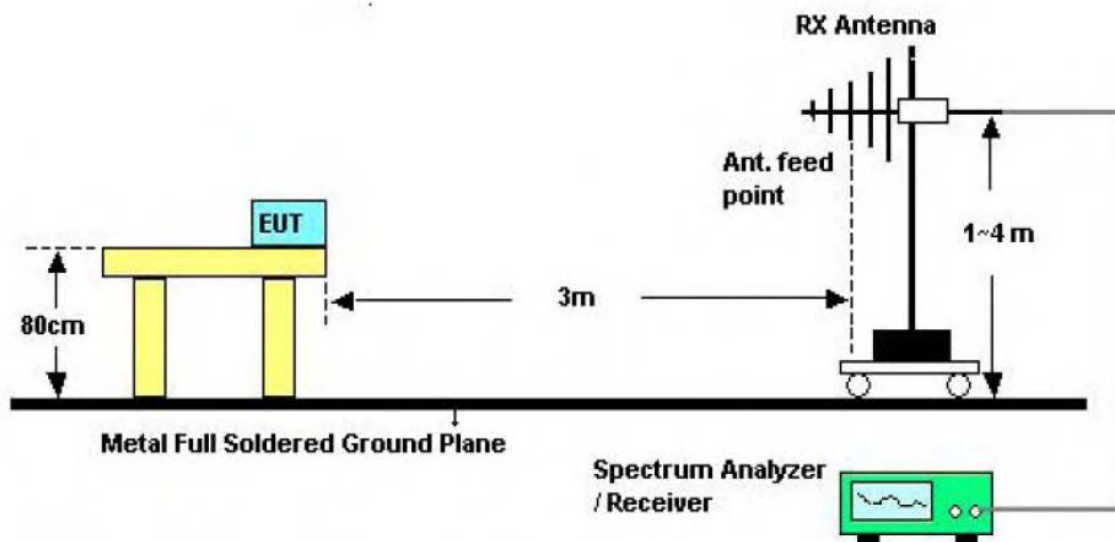
4.1 Test Standard and Limit

- 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)		

4.2 Test Setup



30MHz to 1000MHz 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 complies 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. Due Date
Spectrum Analyzer	ROHDE & SCHWARZ	FSP30	DE25181	2013-12-30	2014-12-29
Spectrum Analyzer	Agilent	E4407B	MY49510055	2013-12-30	2014-12-29
EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101165	2013-12-30	2014-12-29
Bilog Antenna	SCHWARZBECK	VULB9168	9168-438	2014-02-11	2015-02-10
Horn Antenna	SCHWARZBECK	BBHA 9120D	BBHA9120D	2014-02-11	2015-02-10
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170D	2014-02-11	2015-02-10
Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	2014-02-11	2015-02-10
Pre-amplifier	SCHWARZBECK	BBV9743	9743-019	2013-10-30	2014-10-29
Pre-amplifier	Quietek	AP-180C	CHM-0602012	2013-10-30	2014-10-29

4.5 EUT Operating Condition

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

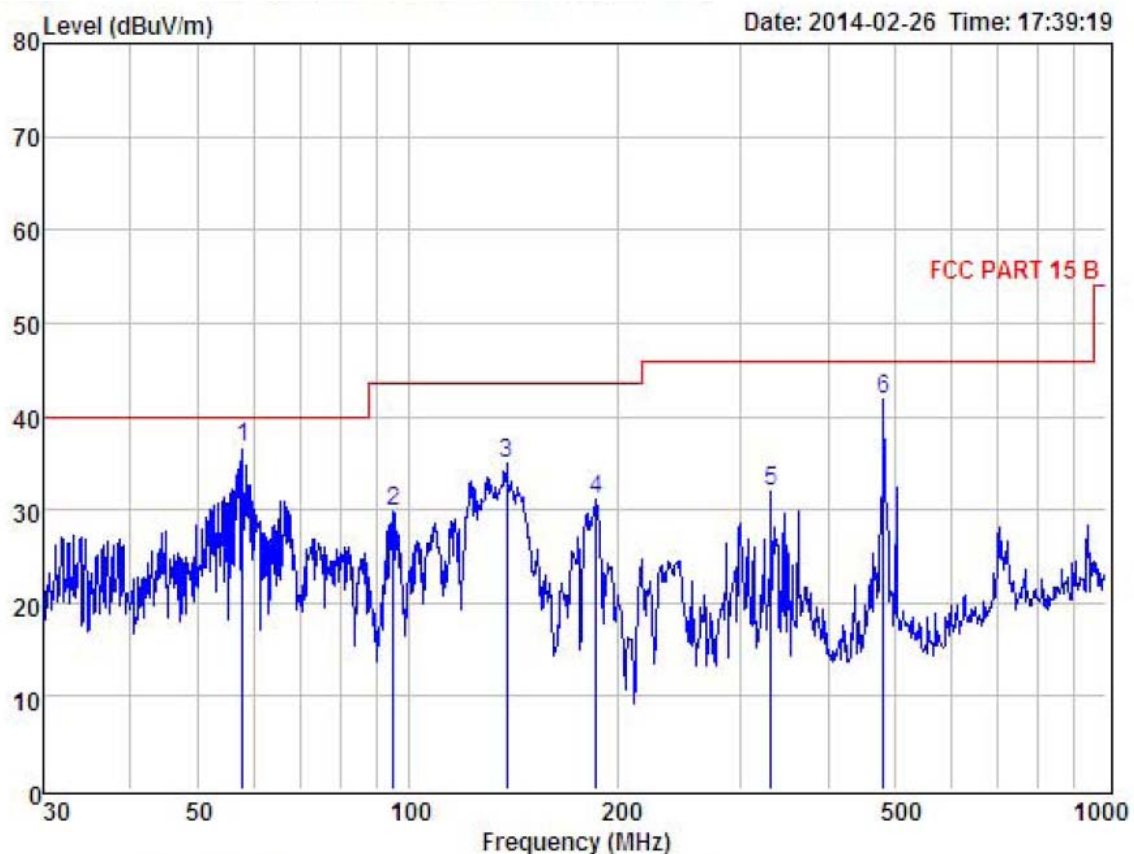
4.6 Deviation

The test is no deviation from the standard.

4.7 Test Data

Below 1 GHz

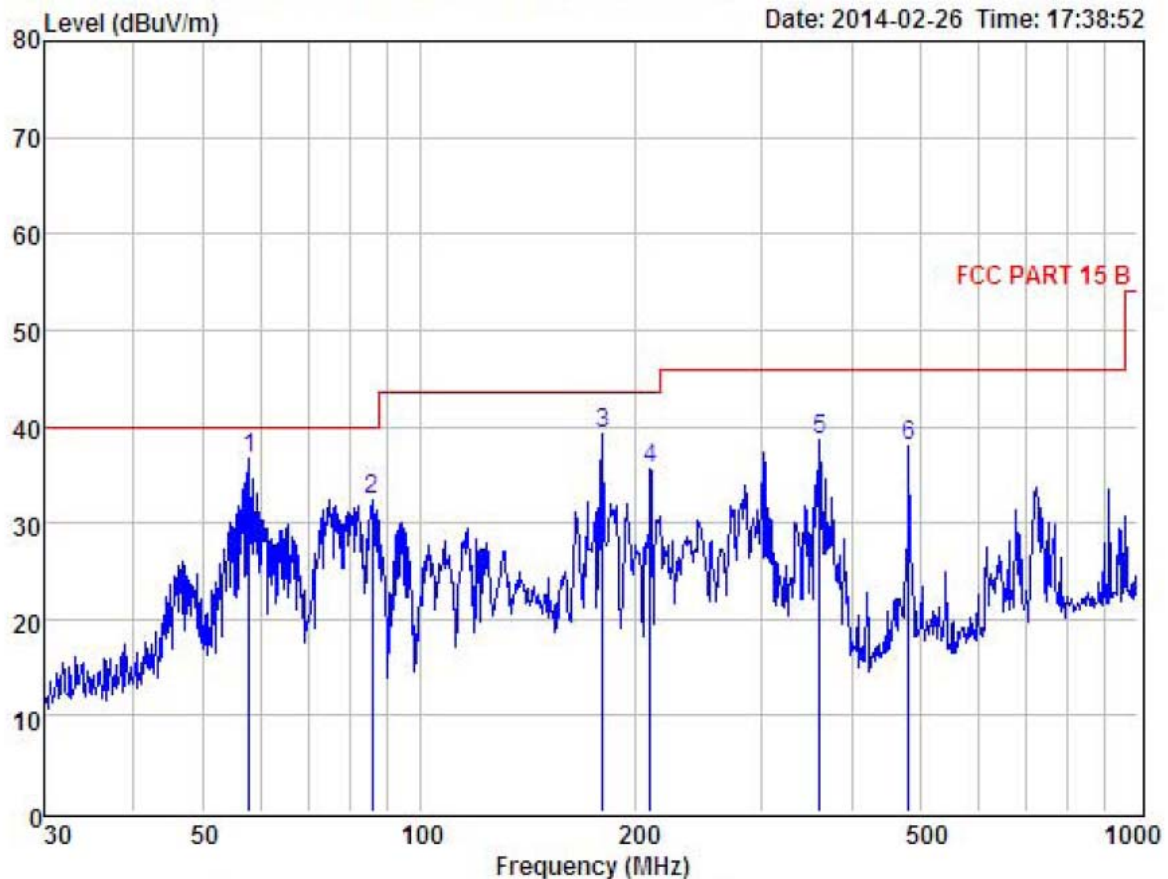
E.U.T :	3in1 Cloud Storage Box	Model Name :	FSR001
Temperature :	21°C	Relative Humidity :	51 %
Test Voltage :	DC 5.0V		
Antenna. Pol:	Horizontal		
Test Mode :	Mode 1: Loading Data form PC		



Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	58.00	50.96	12.91	27.36	0.23	36.74	40.00	-3.26	Peak
2	95.09	46.50	9.87	26.83	0.36	29.90	43.50	-13.60	Peak
3	138.39	48.04	13.37	26.90	0.38	34.89	43.50	-8.61	Peak
4	185.79	46.55	10.95	26.94	0.57	31.13	43.50	-12.37	Peak
5	331.35	41.84	13.52	24.24	0.81	31.93	46.00	-14.07	Peak
6	480.53	49.41	16.28	24.57	0.81	41.93	46.00	-4.07	Peak

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

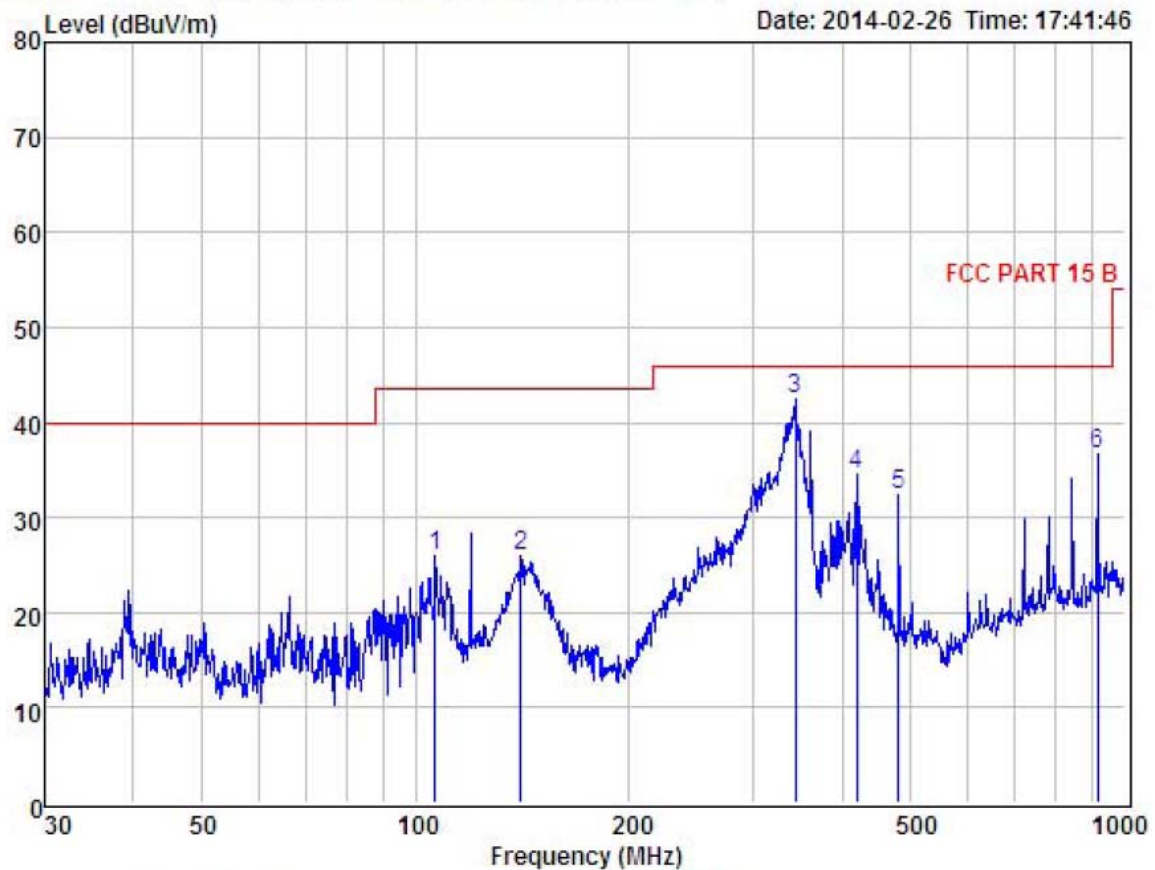
E.U.T :	3in1 Cloud Storage Box	Model Name :	FSR001
Temperature :	21°C	Relative Humidity :	51 %
Test Voltage :	DC 5.0V		
Antenna. Pol:	Vertical		
Test Mode :	Mode 1: Loading Data form PC		



Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	58.00	50.84	12.91	27.36	0.23	36.62	40.00	-3.38	Peak
2	85.90	49.49	9.38	26.81	0.32	32.38	40.00	-7.62	Peak
3	180.02	53.99	11.68	26.93	0.47	39.21	43.50	-4.29	Peak
4	209.31	51.90	10.07	27.02	0.65	35.60	43.50	-7.90	Peak
5	360.45	48.30	14.03	24.30	0.66	38.69	46.00	-7.31	Peak
6	480.53	45.37	16.28	24.57	0.81	37.89	46.00	-8.11	Peak

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

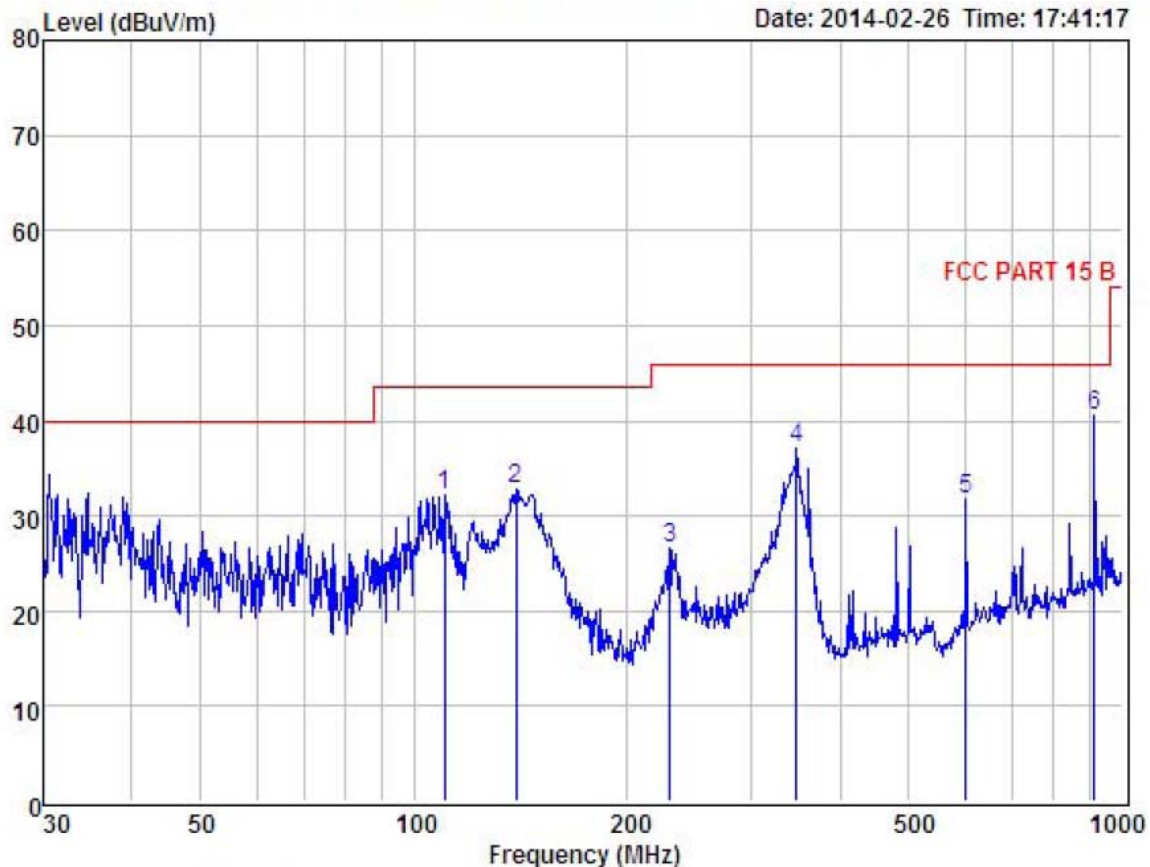
E.U.T :	3in1 Cloud Storage Box	Model Name :	FSR001
Temperature :	21°C	Relative Humidity :	51 %
Test Voltage :	DC 5.0V		
Antenna. Pol:	Horizontal		
Test Mode :	Mode 2: RJ45 Link		



Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	106.76	41.43	10.93	26.85	0.42	25.93	43.50	-17.57	Peak
2	140.84	38.97	13.51	26.90	0.27	25.85	43.50	-17.65	Peak
3	343.18	52.28	13.71	24.26	0.80	42.53	46.00	-3.47	Peak
4	419.11	43.08	15.23	24.45	0.78	34.64	46.00	-11.36	Peak
5	480.53	39.92	16.28	24.57	0.81	32.44	46.00	-13.56	Peak
6	916.07	38.66	21.87	25.64	1.82	36.71	46.00	-9.29	Peak

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

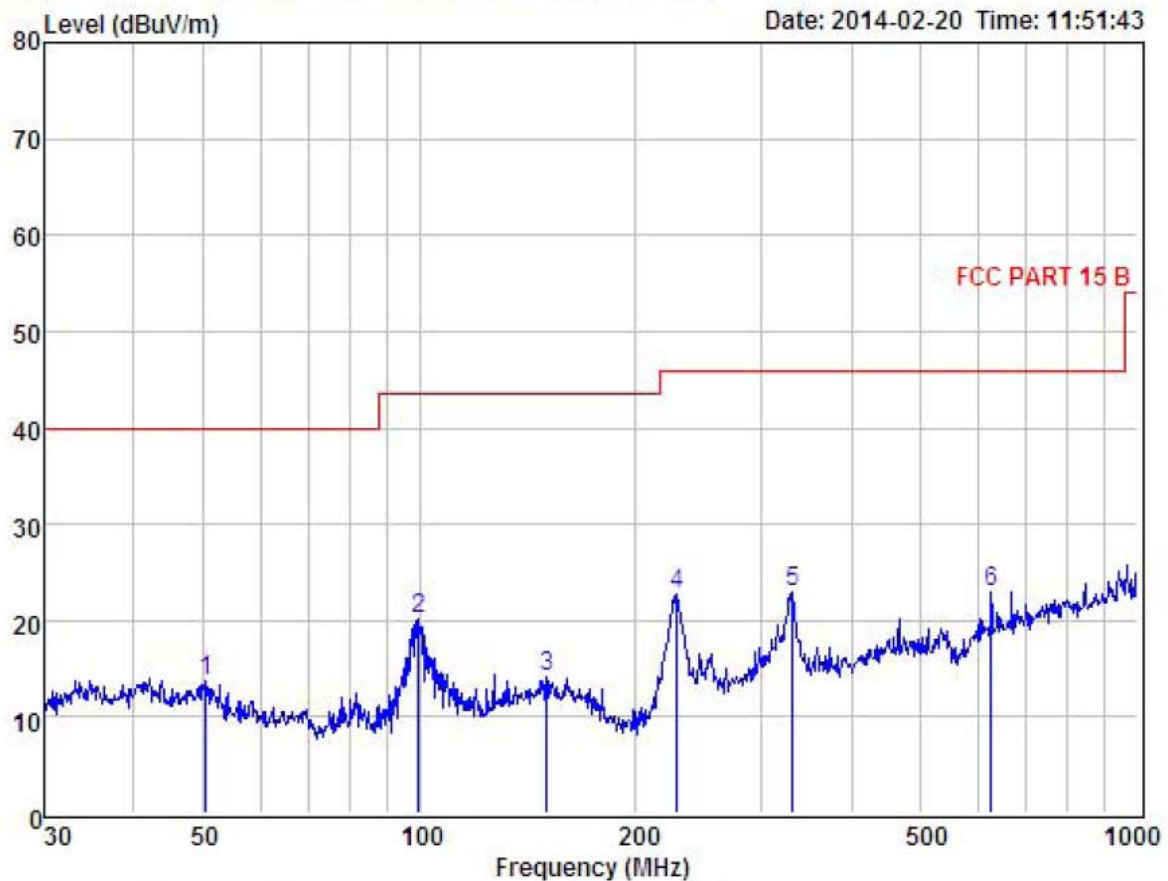
E.U.T :	3in1 Cloud Storage Box	Model Name :	FSR001
Temperature :	21°C	Relative Humidity :	51 %
Test Voltage :	DC 5.0V		
Antenna. Pol:	Vertical		
Test Mode :	Mode 2: RJ45 Link		



Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamplifier Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	110.57	47.20	11.32	26.86	0.41	32.07	43.50	-11.43	Peak
2	139.36	45.94	13.37	26.90	0.32	32.73	43.50	-10.77	Peak
3	230.10	41.40	11.21	26.57	0.58	26.62	46.00	-19.38	Peak
4	346.81	46.81	13.77	24.26	0.69	37.01	46.00	-8.99	Peak
5	601.43	38.14	18.36	25.82	1.07	31.75	46.00	-14.25	Peak
6	912.86	42.72	21.82	25.64	1.62	40.52	46.00	-5.48	Peak

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

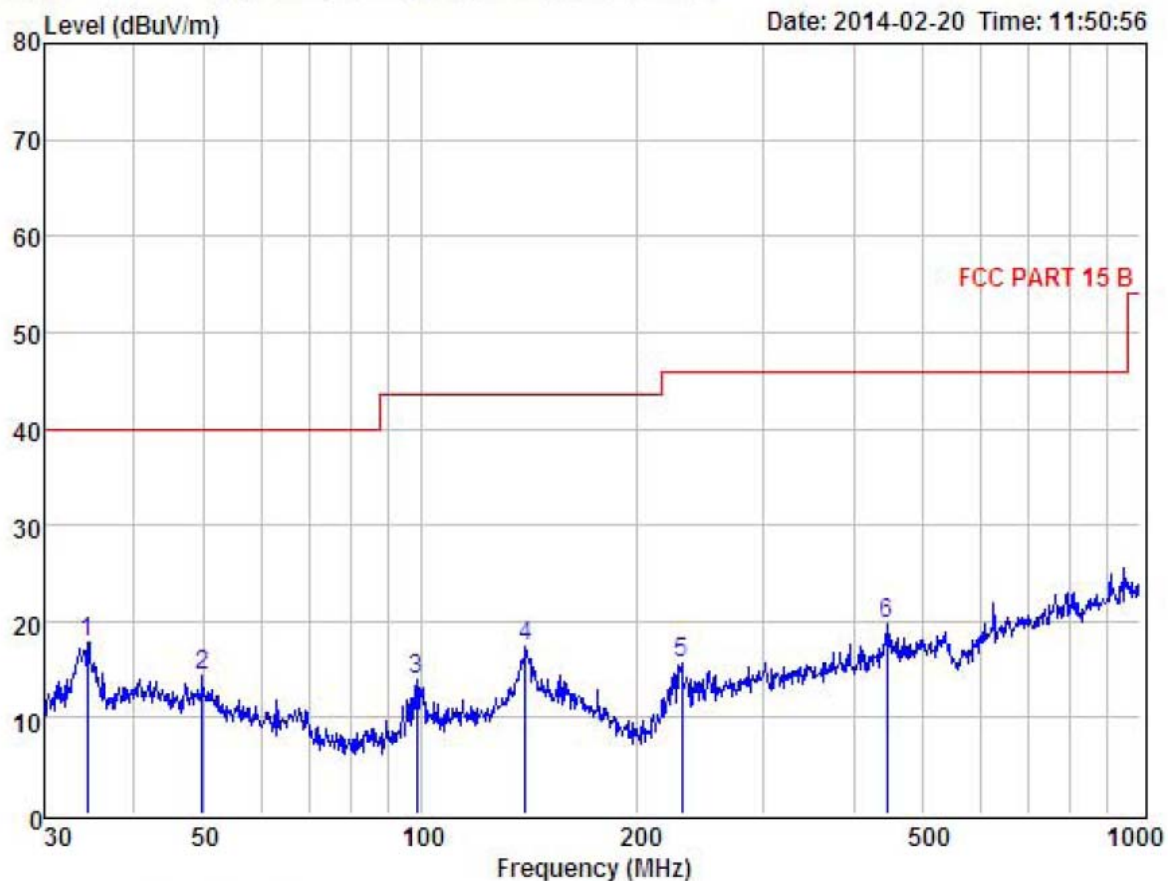
E.U.T :	3in1 Cloud Storage Box	Model Name :	FSR001
Temperature :	21°C	Relative Humidity :	51 %
Test Voltage :	DC 3.7V		
Antenna. Pol:	Horizontal		
Test Mode :	Mode 3: Discharging Mode		



Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	50.41	25.81	13.54	25.82	0.18	13.71	40.00	-26.29	Peak
2	99.88	36.33	10.15	26.84	0.46	20.10	43.50	-23.40	Peak
3	150.54	26.61	14.16	26.90	0.39	14.26	43.50	-29.24	Peak
4	228.49	37.72	11.10	26.67	0.55	22.70	46.00	-23.30	Peak
5	331.35	32.92	13.52	24.24	0.81	23.01	46.00	-22.99	Peak
6	625.08	28.84	18.80	25.82	1.11	22.93	46.00	-23.07	Peak

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

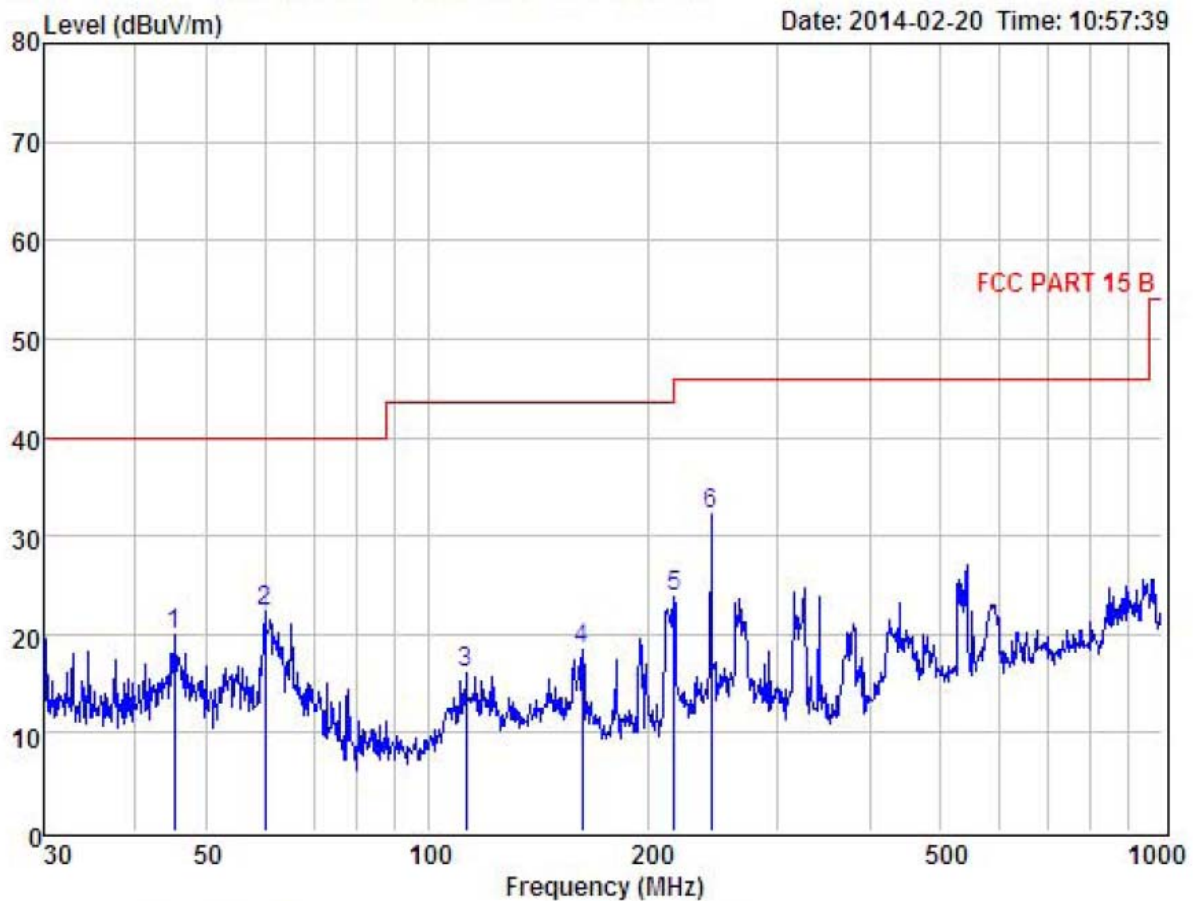
E.U.T :	3in1 Cloud Storage Box	Model Name :	FSR001
Temperature :	21°C	Relative Humidity :	51 %
Test Voltage :	DC 3.7V		
Antenna. Pol:	Vertical		
Test Mode :	Mode 3: Discharging Mode		



Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	34.40	29.98	13.33	25.58	0.13	17.86	40.00	-22.14	Peak
2	49.71	26.60	13.54	25.82	0.10	14.42	40.00	-25.58	Peak
3	98.83	30.31	10.15	26.84	0.38	14.00	43.50	-29.50	Peak
4	139.85	30.37	13.51	26.90	0.32	17.30	43.50	-26.20	Peak
5	230.91	30.20	11.26	26.47	0.61	15.60	46.00	-30.40	Peak
6	444.85	27.56	15.87	24.49	0.76	19.70	46.00	-26.30	Peak

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

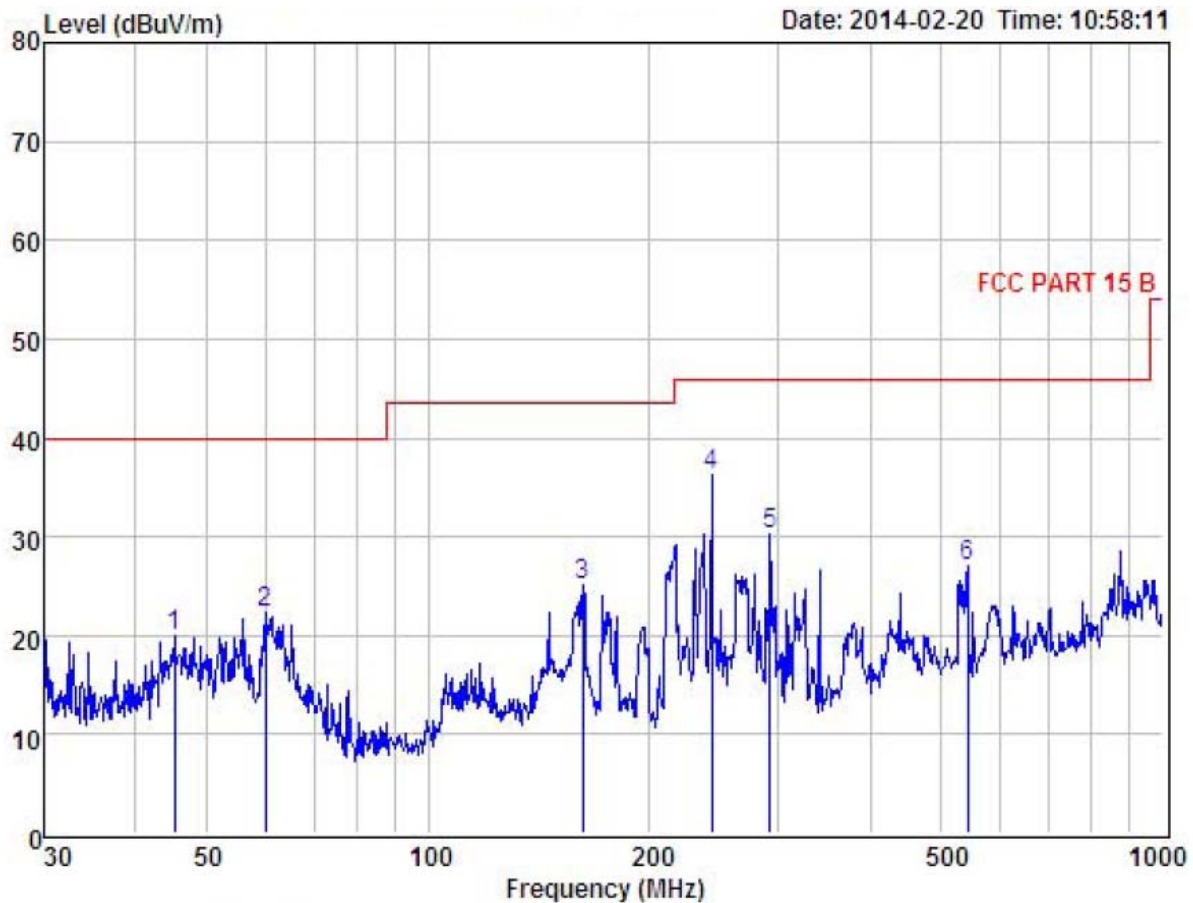
E.U.T :	3in1 Cloud Storage Box	Model Name :	FSR001
Temperature :	21°C	Relative Humidity :	51 %
Test Voltage :	DC 3.7V		
Antenna. Pol:	Horizontal		
Test Mode :	Mode 4: WiFi Link		



Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	50.41	25.81	13.54	25.82	0.18	13.71	40.00	-26.29	Peak
2	99.88	36.33	10.15	26.84	0.46	20.10	43.50	-23.40	Peak
3	150.54	26.61	14.16	26.90	0.39	14.26	43.50	-29.24	Peak
4	228.49	37.72	11.10	26.67	0.55	22.70	46.00	-23.30	Peak
5	331.35	32.92	13.52	24.24	0.81	23.01	46.00	-22.99	Peak
6	625.08	28.84	18.80	25.82	1.11	22.93	46.00	-23.07	Peak

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

E.U.T :	3in1 Cloud Storage Box	Model Name :	FSR001
Temperature :	21°C	Relative Humidity :	51 %
Test Voltage :	DC 3.7V		
Antenna. Pol:	Vertical		
Test Mode :	Mode 4: WiFi Link		



Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	45.22	34.03	13.65	27.82	0.05	19.91	40.00	-20.09	Peak
2	60.07	37.28	12.75	27.87	0.24	22.40	40.00	-17.60	Peak
3	162.61	37.65	13.95	26.91	0.45	25.14	43.50	-18.36	Peak
4	243.38	51.34	11.50	27.10	0.45	36.19	46.00	-9.81	Peak
5	292.06	44.17	12.62	27.17	0.67	30.29	46.00	-15.71	Peak
6	543.27	36.60	17.26	27.69	0.86	27.03	46.00	-18.97	Peak

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

1 GHz~26.5GHz

E.U.T :	3in1 Cloud Storage Box	Model Name :	FSR001
Temperature :	21°C	Relative Humidity :	51 %
Test Voltage :	DC 3.7V		
Test Mode :	Mode 4: WiFi Link		

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)		Limit3m (dBuV/m)		Margin(dB)	
		PK	AV	PK	AV	PK	AV
1632.800	V	49.74	42.05	74.00	54.00	24.26	11.95
--	V	--	--	74.00	54.00	--	--
--	V	--	--	74.00	54.00	--	--
--	V	--	--	74.00	54.00	--	--
1632.800	H	46.11	40.18	74.00	54.00	27.89	13.82
--	H	--	--	74.00	54.00	--	--
--	H	--	--	74.00	54.00	--	--
--	H	--	--	74.00	54.00	--	--