SGS-CSTC Standards Technical Services Co., Ltd.

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

Telephone: +86 (0) 755 2601 2053
Fax: +86 (0) 755 2671 0594
Email: sgs_internet_operations@sgs.com

FCC Test Report (Verification)

Application No.:	SZEM1108003060IT
Applicant:	Kenxen Limited
Address of Applicant:	26/F., Lever Tech Center, 69-71 King Yip St., Kwun Tong, H.K.
Manufacturer/Factory:	Kenxen Electronic (SZ) Limited
Address of Manufacturer /Factory:	3/F, BIK.6 HuaXinRuiMing Industrial Park, Lang Rong Road, XinWei DaLang Community, Bao'an District, Shenzhen, China
FCC ID:	ZVTA4X00
Equipment Under Test (EUT):	
EUT Name:	Portable Scanner
Item No.:	A4A, A4B, A4C, A4D, A4E, A4F♣
♣	Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
Standards:	FCC PART15 SUBPART B:2010
Date of Receipt:	2011-08-17
Date of Test:	2011-08-24 to 2011-08-30
Date of Issue:	2011-09-01
Test Result :	**Pass***

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

Authorized Signature:

Jack Zhang
EMC Laboratory Manager

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. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.
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.

2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (30MHz to 1GHz)	FCC PART 15, SUBPART B: 2010	ANSI C63.4:2009	Class B	PASS
Conducted Emission (150kHz to 30MHz)	FCC PART 15, SUBPART B: 2010	ANSI C63.4:2009	Class B	PASS

Remark:

Item No.: A4A, A4B, A4C, A4D, A4E, A4F

Only the item A4A was tested, since the electrical circuit design, layout, component used and internal wiring were identical for all above items. The only difference is model name and cosmetic part.

3 Contents

4 General Information

4.1 Details of E.U.T.

Power Supply: 4.5V DC (1.5V x 3 “AAA” Size Batteries)
Work voltage: DC 3.3V-5V

USB Cable 100cm

4.2 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.
PC	DELL	OPTIPLEX 755
LCD-displaying	DELL	E1909WF
KEYBOARD	DELL	SK-8115
MOUSE	DELL	MOC5110
PC	DELL	OPTIDLEX 330
LCD-displaying	DELL	SP2208WFPT
KEYBOARD	DELL	SK-8115
MOUSE	DELL	MOC5110
Coder	HengTong ELECTRON	HT4000
Printer	Canon	BJC-1000SP

4.3 Standards Applicable for Testing

The customer requested FCC tests for Portable Scanner.
The standard used was FCC PART 15, SUBPART B, CLASS B.

4.4 Test Location

All tests were performed at:

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

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.

4.5 Test Facility

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

- **CNAS (No. CNAS L2929)**
  CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab 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.
- **VCCI**
  The 3m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197 and C-2383 respectively.
  Date of Registration: September 29, 2008. Valid until September 28, 2011.
- **FCC – Registration No.: 556682**
  SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen 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 556682, March 16, 2011
- **Industry Canada (IC)**
  The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1.

4.6 Deviation from Standards

None.

4.7 Abnormalities from Standard Conditions

None.

5 Equipments Used during Test

RE in Chamber						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (yyyy-mm-dd)**	**Cal.Due date (yyyy-mm-dd)**
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2011-06-10	2012-06-10
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	2011-03-11	2012-03-11
3	EMI Test software	AUDIX	E3	SEL0050	N/A	N/A
4	Coaxial cable	SGS	N/A	SEL0028	2011-05-29	2012-05-29
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2010-11-09	2011-11-09
6	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2011-05-26	2012-05-26
7	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2010-11-09	2011-11-09
8	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2010-11-09	2011-11-09
9	Band filter	Amindeon	Asi 3314	SEL0094	2011-05-26	2012-05-26
10	Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	2010-11-09	2011-11-09

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (yyyy-mm-dd)**	**Cal.Due date (yyyy-mm-dd)**
1	Shielding Room	ZhongYu Electron	GB-88	SEL0042	2011-06-10	2012-06-10
2	LISN	Rohde & Schwarz	ENV216	SEL0152	2010-10-27	2011-10-26
3	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	EMC0120	2011-01-17	2012-01-17
4	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	EMC0121	2011-01-17	2012-01-17
5	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	EMC0122	2011-01-17	2012-01-17
6	EMI Test Receiver	Rohde & Schwarz	ESCI	SEL0022	2011-05-26	2012-05-26
7	Coaxial Cable	SGS	N/A	SEL0024	2011-05-29	2012-05-29

General used equipment						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (yyyy-mm-dd)**	**Cal.Due date (yyyy-mm-dd)**
1	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0102 to SEL0103	2010-11-04	2011-11-04
2	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0101	2011-03-10	2012-03-10
3	Barometer	ChangChun	DYM3	SEL0088	2011-05-18	2012-05-18

6 Test Results

6.1 Conducted Emissions Mains Terminals, 150kHz to 30MHz

Test Requirement:	FCC Part15 B
Test Method:	ANSI C 63.4
Frequency Range:	150kHz to 30MHz
Class / Severity:	Class B
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth)
	Quasi-Peak if maximised peak within 6dB of Quasi-Peak limit

6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

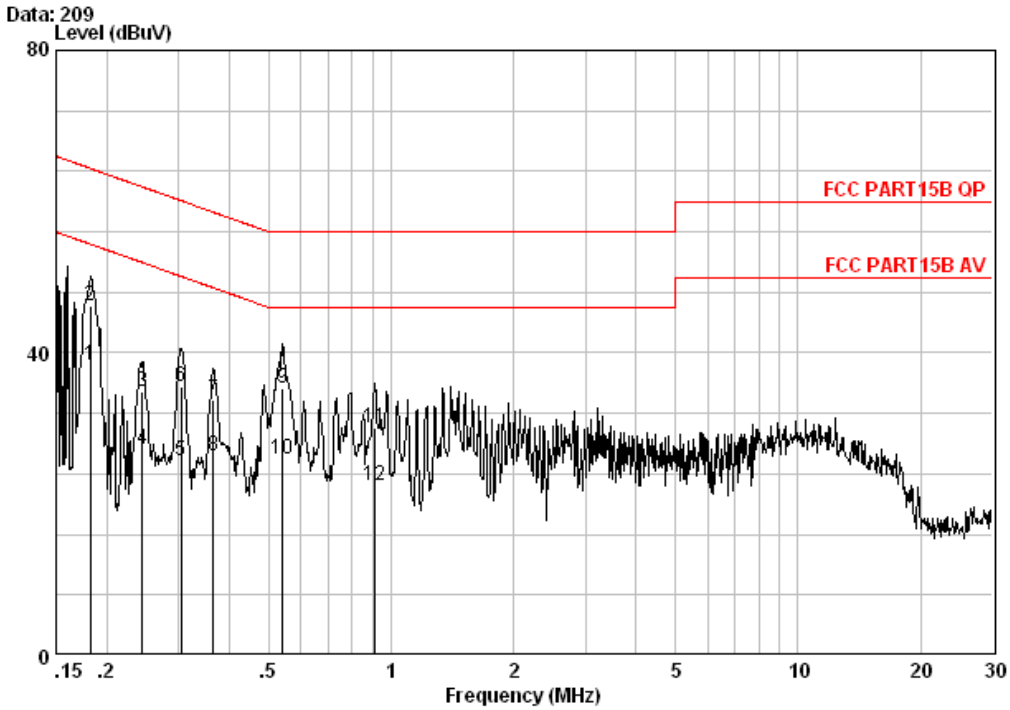
EUT Operation: Test the EUT in read and write SD card mode(Pretest PC scanner mode, read and write SD card mode to find the worst case, the compliance test was performed at read and write SD card mode since no worst case was found), build the connection between the EUT and PC, keep the EUT exchanging data with SD card.

6.1.2 Measurement Data

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

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

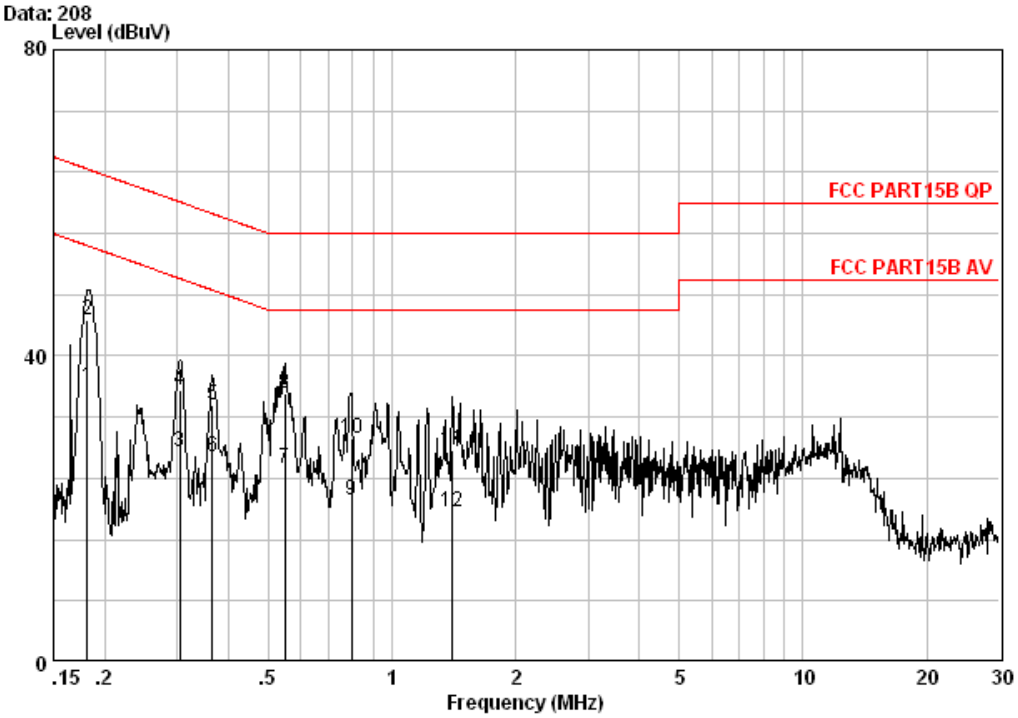
Live Line



Site : Shielding Room
Condition : FCC PART15B QP CE-20101216 LINE
Job No. : 3060IT
Mode : Read & Write SD card

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1 @	0.18249	0.14	9.60	28.60	38.34	54.37	-16.03	Average
2	0.18249	0.14	9.60	36.45	46.19	64.37	-18.18	QP
3	0.24422	0.15	9.60	25.16	34.91	61.95	-27.04	QP
4	0.24422	0.15	9.60	17.50	27.25	51.95	-24.70	Average
5	0.30509	0.16	9.60	16.04	25.80	50.10	-24.30	Average
6	0.30509	0.16	9.60	25.80	35.56	60.10	-24.54	QP
7	0.36531	0.16	9.60	24.13	33.89	58.61	-24.72	QP
8	0.36531	0.16	9.60	16.67	26.43	48.61	-22.18	Average
9	0.54068	0.16	9.62	25.47	35.26	56.00	-20.74	QP
10	0.54068	0.16	9.62	16.16	25.94	46.00	-20.06	Average
11	0.91357	0.19	9.70	20.16	30.05	56.00	-25.95	QP
12	0.91357	0.19	9.70	12.57	22.46	46.00	-23.54	Average

Neutral Line



Site : Shielding Room
Condition : FCC PART15B QP CE-20101216 NEUTRAL
Job No. : 3060IT
Mode : Read & Write SD card

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.18152	0.14	9.60	26.28	36.02	54.42	-18.40	Average
2	0.18152	0.14	9.60	34.94	44.68	64.42	-19.74	QP
3	0.30509	0.16	9.60	17.63	27.39	50.10	-22.71	Average
4	0.30509	0.16	9.60	25.76	35.52	60.10	-24.59	QP
5	0.36531	0.16	9.60	23.81	33.57	58.61	-25.03	QP
6	0.36531	0.16	9.60	16.95	26.71	48.61	-21.90	Average
7	0.54934	0.16	9.63	15.57	25.36	46.00	-20.64	Average
8	0.54934	0.16	9.63	25.31	35.10	56.00	-20.90	QP
9	0.79600	0.18	9.70	11.16	21.04	46.00	-24.96	Average
10	0.79600	0.18	9.70	19.29	29.17	56.00	-26.83	QP
11	1.403	0.20	9.70	17.69	27.59	56.00	-28.41	QP
12	1.403	0.20	9.70	9.64	19.54	46.00	-26.46	Average

6.2 Radiated Emissions, 30MHz to 1GHz

Test Requirement:	FCC Part15 B
Test Method:	ANSI C63.4
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Class / Severity:	Class B
Limit:	40.0 dBμV/m between 30MHz & 88MHz
	43.5 dBμV/m between 88MHz & 216MHz
	46.0 dBμV/m between 216MHz & 960MHz
	54.0 dBμV/m above 960MHz
Detector:	Peak for pre-scan (120kHz resolution bandwidth)
	Quasi-Peak if maximised peak within 6dB of limit

6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23 °C Humidity: 50 % RH Atmospheric Pressure: 1010 mbar

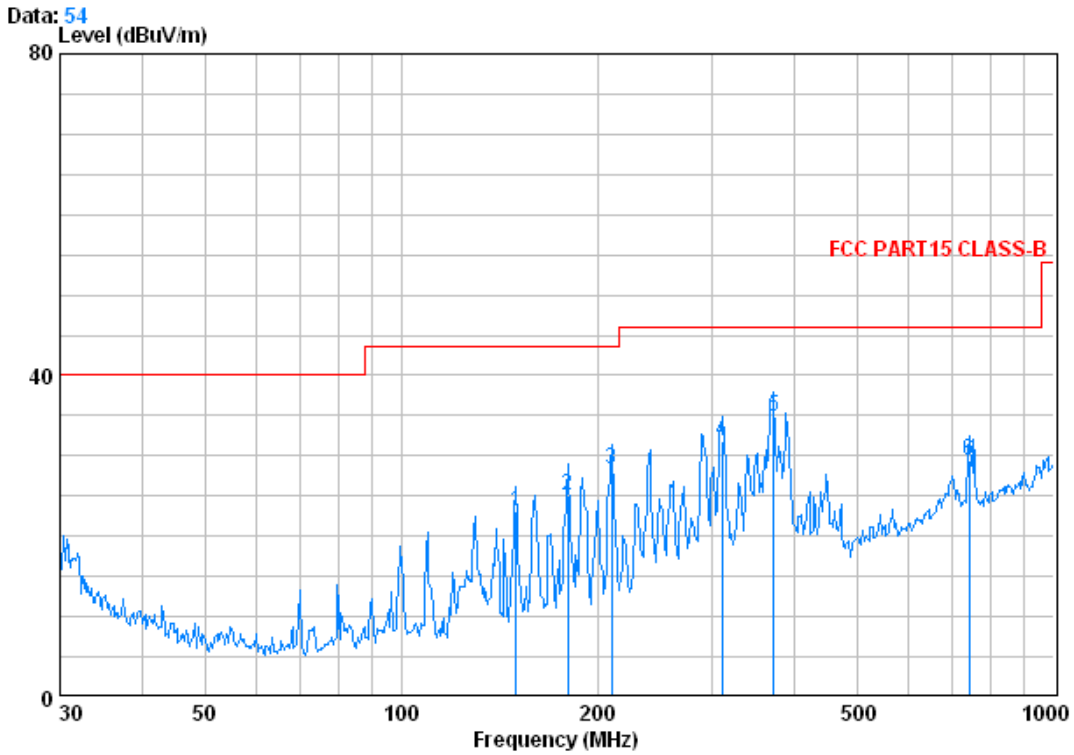
EUT Operation: Test the EUT in scanner mode, keep the EUT working as a scanner.
Test the EUT in PC scanner mode, build the connection between the EUT and PC, keep the EUT scanning image to PC software.
Test the EUT in read and write SD card mode, build the connection between the EUT and PC, keep the EUT exchanging data with SD card.

6.2.2 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

Scanner mode

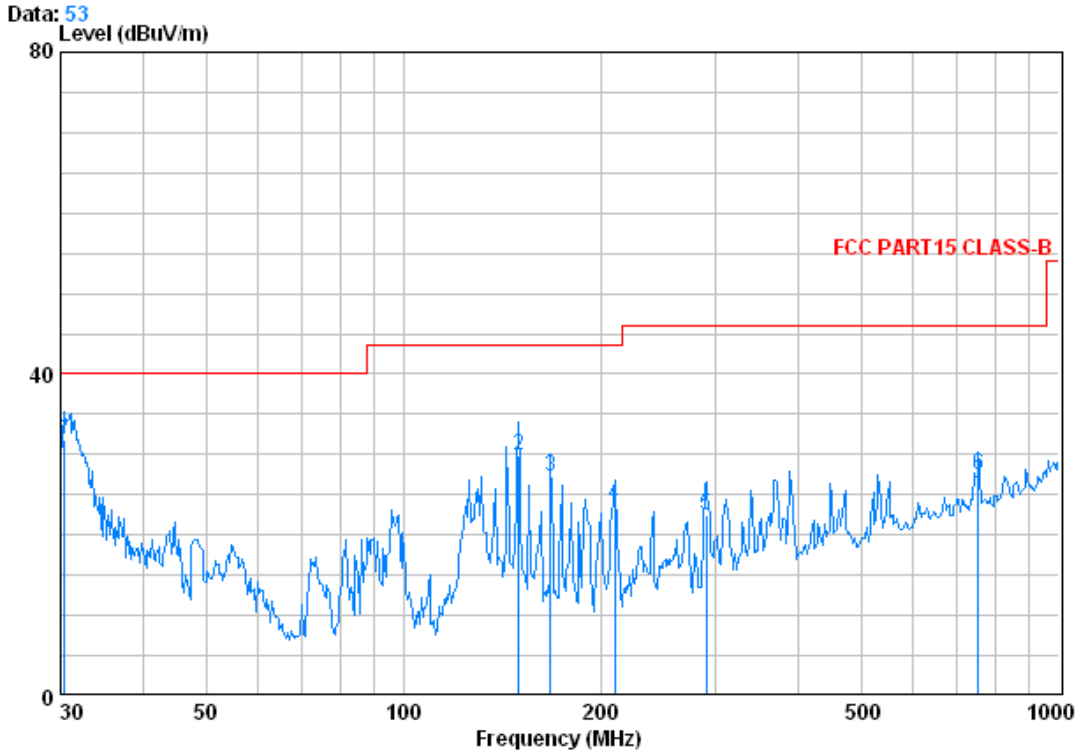
Horizontal



Condition : FCC PART15 CLASS-B 3m 0042673 HORIZONTAL
Job No. : 3060IT
Test mode : SCANNER

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	150.011	1.32	9.00	26.91	39.71	23.12	43.50	-20.38
2	180.017	1.37	9.90	26.77	40.49	24.99	43.50	-18.51
3	210.048	1.46	10.73	26.66	42.76	28.28	43.50	-15.22
4	309.998	1.93	14.29	26.48	42.13	31.86	46.00	-14.14
5	372.005	2.12	15.94	26.95	43.77	34.88	46.00	-11.12
6	742.259	3.03	21.67	27.36	32.09	29.43	46.00	-16.57

Vertical

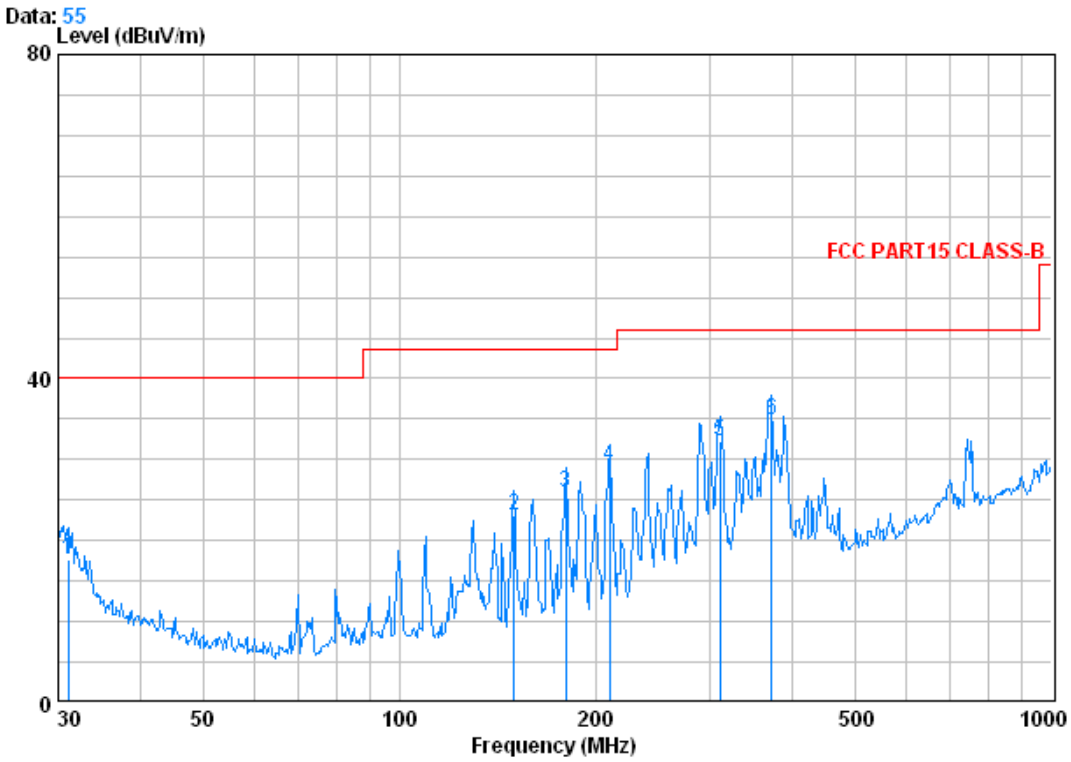


Condition : FCC PART15 CLASS-B 3m 0042673 VERTICAL
Job No. : 3060IT
Test mode : SCANNER

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	30.424	0.60	15.17	27.36	43.45	31.87	40.00	-8.13
2	150.011	1.32	9.00	26.91	46.55	29.95	43.50	-13.55
3	167.824	1.35	9.52	26.82	43.12	27.17	43.50	-16.33
4	210.048	1.46	10.73	26.66	38.21	23.74	43.50	-19.76
5	290.017	1.86	13.44	26.43	33.66	22.53	46.00	-23.47
6	752.743	3.07	21.73	27.35	29.96	27.41	46.00	-18.59

PC scanner mode

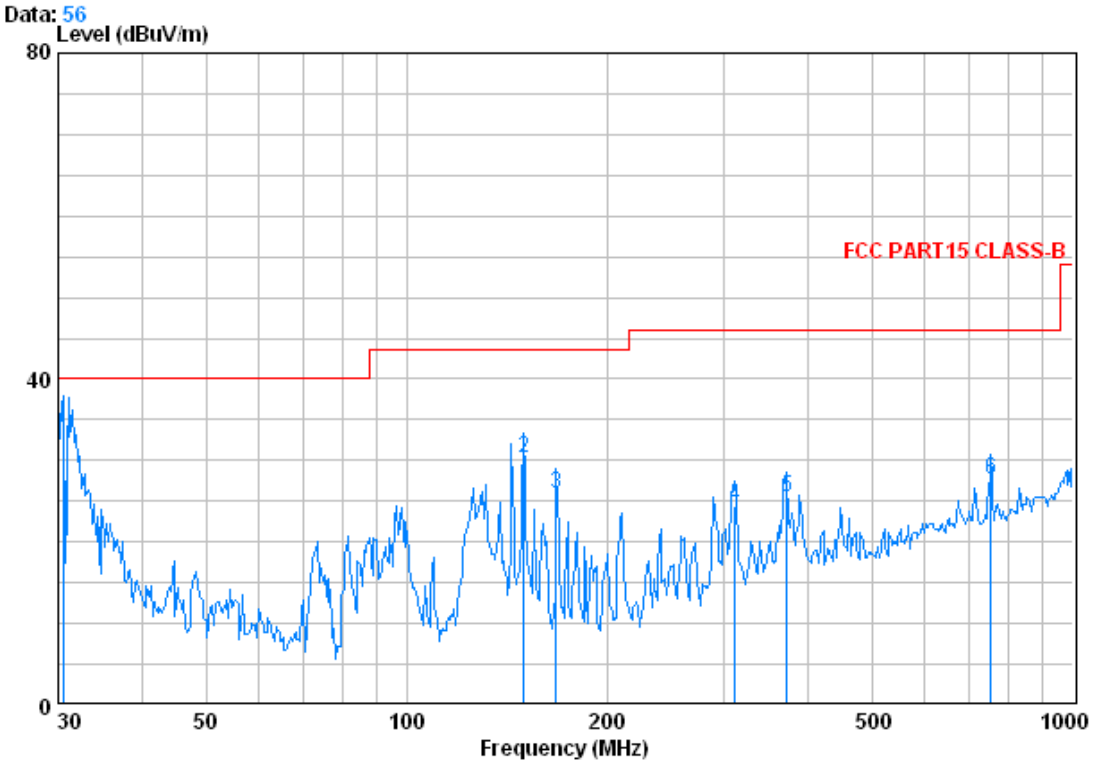
Horizontal



Condition : FCC PART15 CLASS-B 3m 0042673 HORIZONTAL
Job No. : 3060IT
Test mode : PC SCANNER

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	31.071	0.60	14.68	27.35	29.76	17.68	40.00	-22.32
2	150.011	1.32	9.00	26.91	39.71	23.12	43.50	-20.38
3	180.017	1.37	9.90	26.77	41.49	25.99	43.50	-17.51
4	210.048	1.46	10.73	26.66	43.76	29.28	43.50	-14.22
5	309.998	1.93	14.29	26.48	42.49	32.22	46.00	-13.78
6	372.005	2.12	15.94	26.95	43.77	34.88	46.00	-11.12

Vertical

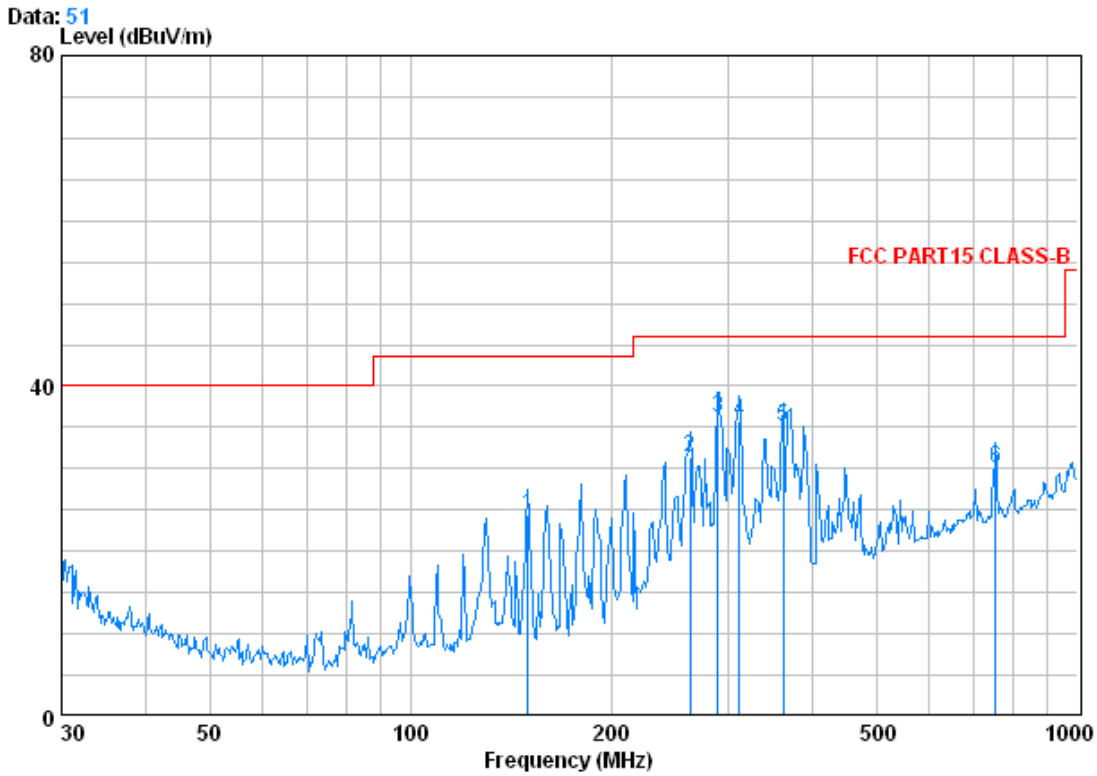


Condition : FCC PART15 CLASS-B 3m 0042673 VERTICAL
Job No. : 3060IT
Test mode : PC SCANNER

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	30.638	0.60	15.06	27.35	44.54	32.84	40.00	-7.16
2	150.011	1.32	9.00	26.91	46.96	30.37	43.50	-13.13
3	167.824	1.35	9.52	26.82	41.97	26.02	43.50	-17.48
4	311.087	1.94	14.29	26.48	34.73	24.47	46.00	-21.53
5	372.005	2.12	15.94	26.95	34.45	25.56	46.00	-20.44
6	752.743	3.07	21.73	27.35	30.30	27.76	46.00	-18.24

Read and Write SD card mode

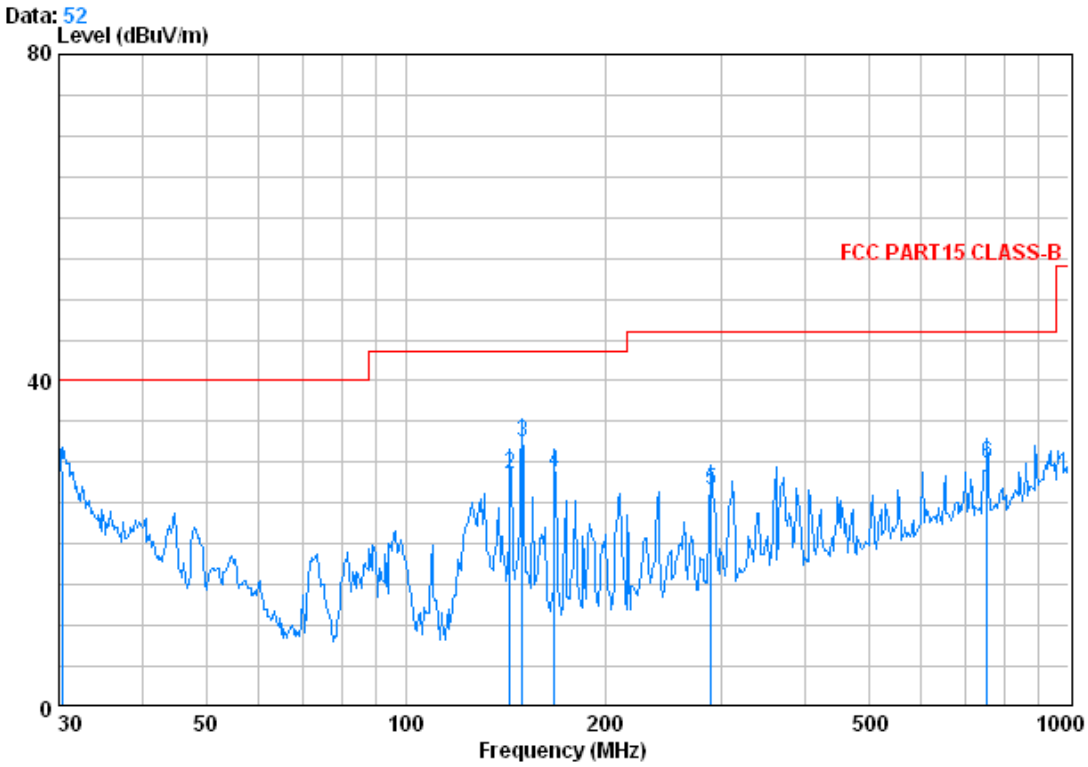
Horizontal



Condition : FCC PART15 CLASS-B 3m 0042673 HORIZONTAL
Job No. : 3060IT
Test mode : READ & WRITE SD CARD

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	150.011	1.32	9.00	26.91	40.96	24.37	43.50	-19.13
2	262.896	1.74	12.57	26.50	43.63	31.43	46.00	-14.57
3	289.002	1.85	13.40	26.43	47.35	36.17	46.00	-9.83
4	311.087	1.94	14.29	26.48	45.97	35.71	46.00	-10.29
5	361.714	2.09	15.68	26.87	44.12	35.03	46.00	-10.97
6	752.743	3.07	21.73	27.35	32.64	30.09	46.00	-15.91

Vertical



Condition : FCC PART15 CLASS-B 3m 0042673 VERTICAL
Job No. : 3060IT
Test mode : READ & WRITE SD CARD

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	30.317	0.60	15.23	27.36	40.43	28.91	40.00	-11.09
2	143.830	1.31	8.43	26.94	45.81	28.61	43.50	-14.89
3	150.011	1.32	9.00	26.91	49.00	32.40	43.50	-11.10
4	167.824	1.35	9.52	26.82	44.63	28.68	43.50	-14.82
5	289.002	1.85	13.40	26.43	37.74	26.56	46.00	-19.44
6	752.743	3.07	21.73	27.35	32.39	29.84	46.00	-16.16