



FCC TEST REPORT

according to

FCC Rules and Regulations Part 15 Subpart C

Applicant	: Partner Tech Corp.
Address	: 10FL, 233-2, Baoqiao Road, Xindian, New Taipei City, Taiwan
Equipment	: Enterprise Tablet
Model No.	: EM-70
Trade Name	: PARTNER
FCC ID	: NDPEM-70

- The test result refers exclusively to the test presented test model / sample.,
- Without written approval of **Cerpass Technology Corp.** the test report shall not be reproduced except in full.
- The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

Laboratory Accreditation





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History of this test report

■ ORIGINAL.

☐ Additional attachment as following record:

Attachment No.	Issue Date	Description
TEFO1406213	Oct. 03, 2014	Original.



CERTIFICATE OF COMPLIANCE

according to

FCC Rules and Regulations Part 15 Subpart C

Applicant : Partner Tech Corp.

Address : 10FL, 233-2, Baoqiao Road, Xindian, New
Taipei City, Taiwan

Equipment : Enterprise Tablet

Model No. : EM-70

FCC ID : NDPEM-70

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4**. The equipment was **passed** the test performed according to **FCC Rules and Regulations Part 15 Subpart C (2010)**.

The sample was received on Sep. 17, 2014 and the testing was carried out on Feb. 24, 2014 at **CerpPASS Technology Corp.**

Approved by:

Hill Chen
EMC/RF B.U. Assistant Manager

Tested by:

Aiden Lu
Engineer



1. Report of Measurements and Examinations

1.1 List of Measurements and Examinations

FCC Rule	Description of Test	Result
15.207	. Conducted Emission	Pass
15.225(d)	. Radiated Emission	Pass
15.225(a)	. Peak Power Output	Pass
15.225(e)	. Frequency Stability	Pass



2. Test Configuration of Equipment under Test

2.1 Feature of Equipment under Test

Item	Specification
CPU	Freescale i.MX 6 1G Dual Lite
OS	Android 4.2.x or above , need CTS, GMS
Memory	DDR 1G (up to 2G), NAND flash 8GB (eMMC/8G/KE4CN3K6A/FBGA169)
Display	Type: High Brightness TFT Color LCD 天馬, Capacitive multi touch SILEAD GSL1688 Size: 7";Resolution: 1024 x 600;Brightness 350nits
Back Camera	5.0 Mega Pixels, Flash Light, Auto Focus, MIPI interface (Sensor Type OV5640)
I/O Interface	1 x SIM (Internal);1 x Micro SD;1 x DC Jack;1 x Earphone Jack 1 x Micro USB Female type, OTG & Charging function 1 x Power button;2 x Volume button;1 x Internal Host USB for MSR 1 x Internal RS232 for 1D & 2D barcode scanner
NFC	NFC Controller/NXP PN544 C3
SENSOR	3-Axis Gyroscope/MPU-3050 Acceleration sensor/KXTI9-1001 Compass Sensor/AMI306/SMD LGA10 Vibrator
Storage	Support MicroSD card (SDHC) with Eject function, Max. 32GB
LED	1 x Red/Green LED for Power & System
Weight	630g (approx.) with battery
Others	1 x Audio speaker
Dimension	219.4(L) x 41.3(W) x 22.3(H) mm
Battery	Li-polymer, 3.7V, 6000mAh
Sealing	IP54
Drop Specification	1.2M (w/o MSR/Scanner)
Temperature	Operation Temperature 0 to 40 degrees °C Storage Temperature -20 to 60 degrees °C
Humidity	Operation Temperature 5% to 95% Storage Temperature 5% to 95%
EMC & Safety	CE/FCC/VCCI/BSMI/NCC
Accessory	Power adapter Rating: AC Input: 100-240V~, 0.5A, 50-60Hz DC Output: 5.0V, 3.0A MAX. USB-Cable



2.2 Test Manner

- a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
- b. The complete test system included Notebook and EUT for RF test.

2.3 Description of Test System

Device	Manufacturer	Model No.	Description
Notebook	SONY	PCG-71218P	Power Cable, Unshielding, 1.8m

Used cable

Cable	Quantity	Description
USB	1	Shielding, 0.9m



2.4 General Information of Test

Test Site :	Cerpass Technology Corporation Test Laboratory No.10, Lane 2, Lianfu Street, Luzhu Township, Taoyuan County 33848, Taiwan(R.O.C.)
Test Site Location :	2F-11, No. 3, Yuan Qu St., (Nankang Software Park), Taipei, Taiwan 115, R.O.C.
Test Site Location :	No.68-1, Shihbachongsi, Shihding Township, New Taipei City 223, Taiwan, R.O.C.
FCC Registration Number :	TW1079, TW1061, 488071, 390316, 228391, 641184
IC Registration Number :	4934B-1, 4934D-1, 4934E-1, 4934E-2
VCCI Registration Number:	T-1173 for Telecommunication Test C-4139 for Conducted emission test R-3428 for Radiated emission test G-97 for Radiated emission test above 1GHz
Test Distance:	The test distance of radiated emission from antenna to EUT is 3 M.



3. Antenna Requirements

3.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

3.2 Antenna Construction and Directional Gain

WIFI/ Bluetooth

Antenna Type: PIFA Antenna

Antenna Gain: 3.03 dBi@ 2.4GHz,
0.88dBi@ 5.15GHz
5.74dBi@ 5.8GHz

NFC

Antenna Type: PCB Antenna



4. Test of Conducted Emission

4.1 Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2003 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

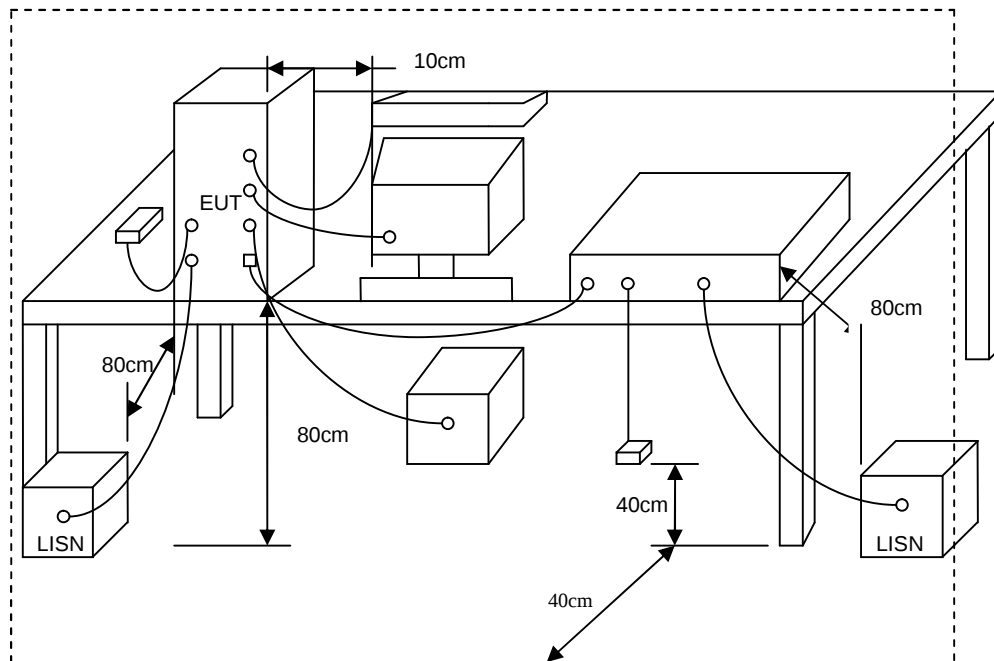
*Decreases with the logarithm of the frequency.

4.2 Test Procedures

- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- Connect EUT to the power mains through a line impedance stabilization network (LISN).
- All the support units are connecting to the other LISN.
- The LISN provides 50 ohm coupling impedance for the measuring instrument.
- The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- Both sides of AC line were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched.
- Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.



4.3 Typical Test Setup



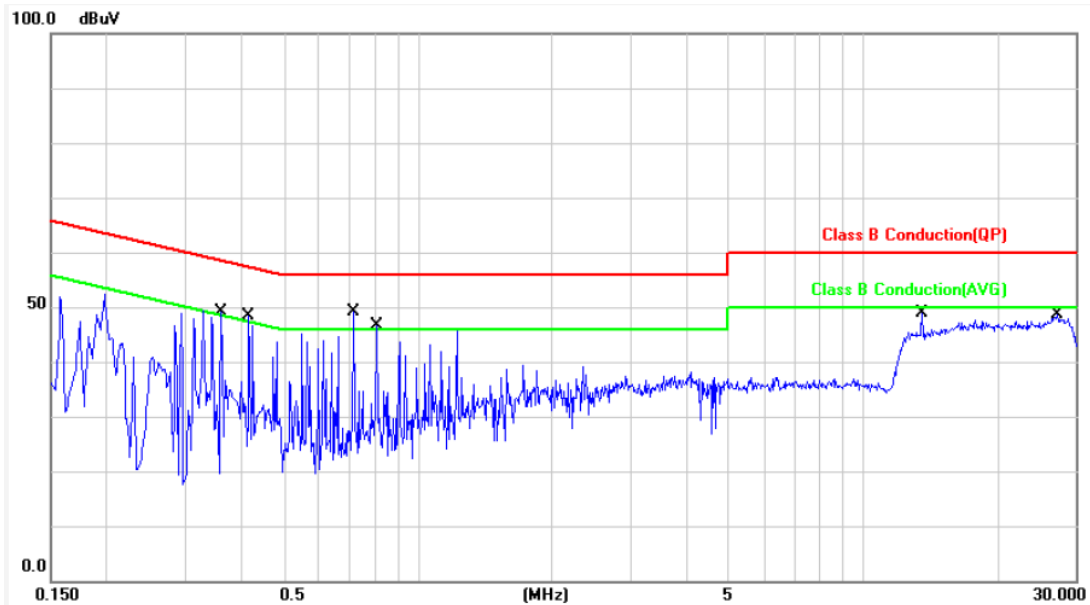
4.4 Measurement equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
EMI Receiver	R&S	ESCI	101423	2014/06/05	2015/06/04
LISN	Schwarzbeck	NSLK 8127	8127-740	2014/08/14	2015/08/13
LISN	Schwarzbeck	NSLK 8127	8127-516	2014/03/10	2015/03/09
Pulse Limiter	R&S	ESH3-Z2	101933	2014/08/12	2015/08/11
Software	Farad	Ez-EMC	ver.ct3a1	N/A	N/A



4.5 Test Result and Data

Power	: AC 110V	Pol/Phase	: LINE
Test Mode	: NFC	Temperature	: 26 °C
		Humidity	: 48 %
Test date	: Sep. 24, 2014	Atmospheric Pressure	: 1008 hpa

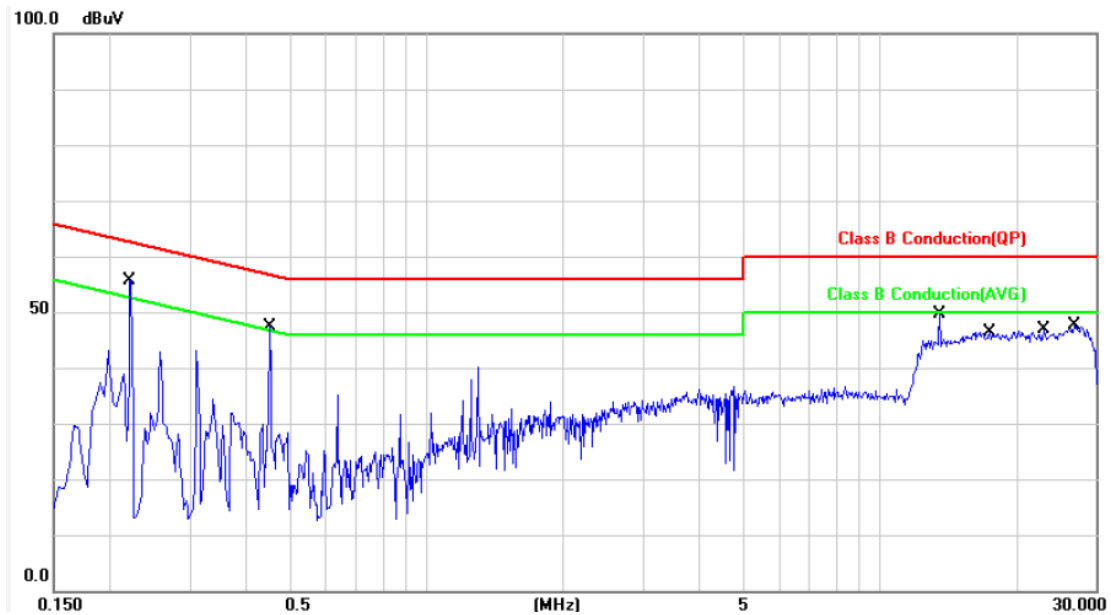


No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.3620	9.92	2.98	12.90	58.68	-45.78	QP	P
2	0.3620	9.92	-2.33	7.59	48.68	-41.09	AVG	P
3	0.4180	9.92	12.51	22.43	57.49	-35.06	QP	P
4	0.4180	9.92	0.19	10.11	47.49	-37.38	AVG	P
5	0.7180	9.95	9.65	19.60	56.00	-36.40	QP	P
6	0.7180	9.95	1.70	11.65	46.00	-34.35	AVG	P
7	0.8100	9.95	8.82	18.77	56.00	-37.23	QP	P
8	0.8100	9.95	1.85	11.80	46.00	-34.20	AVG	P
9	13.5580	10.35	33.08	43.43	60.00	-16.57	QP	P
10	13.5580	10.35	26.24	36.59	50.00	-13.41	AVG	P
11	27.2860	10.54	34.30	44.84	60.00	-15.16	QP	P
12	27.2860	10.54	26.31	36.85	50.00	-13.15	AVG	P

Note: Level = Reading + Factor
Margin = Level – Limit



Power	: AC 110V	Pol/Phase	: NEUTRAL
Test Mode	: NFC	Temperature	: 26 °C
		Humidity	: 48 %
Test date	: Sep. 24, 2014	Atmospheric Pressure	: 1008 hpa



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.2220	9.91	29.14	39.05	62.74	-23.69	QP	P
2	0.2220	9.91	1.77	11.68	52.74	-41.06	AVG	P
3	0.4500	9.92	24.35	34.27	56.87	-22.60	QP	P
4	0.4500	9.92	6.26	16.18	46.87	-30.69	AVG	P
5	13.5580	10.33	33.09	43.42	60.00	-16.58	QP	P
6	13.5580	10.33	26.20	36.53	50.00	-13.47	AVG	P
7	17.5300	10.41	32.80	43.21	60.00	-16.79	QP	P
8	17.5300	10.41	24.29	34.70	50.00	-15.30	AVG	P
9	23.0780	10.49	32.67	43.16	60.00	-16.84	QP	P
10	23.0780	10.49	23.29	33.78	50.00	-16.22	AVG	P
11	26.9340	10.53	33.76	44.29	60.00	-15.71	QP	P
12	26.9340	10.53	25.33	35.86	50.00	-14.14	AVG	P

Note: Level = Reading + Factor
Margin = Level – Limit



5. Test of Radiated Emission

5.1 Test Limit

Radiated emissions from 13.553 MHz to 13.567 MHz were measured according to the 15.225(a), the field strength of any emissions within the band 13.553 – 13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

The field strength of any emissions which appear outside of the 13.110 – 14.010 MHz band shall not exceed the general radiated emission limits in Section 15.209.

Frequency (MHz)	Distance Meters	Radiated ($\mu V / M$)	Radiated (dB $\mu V / M$)
13.553-13.567	30	15848	84.0
13.410-13.553 13.567-13.710	30	334	50.5
13.110-13.410 13.710-14.010	30	106	40.5

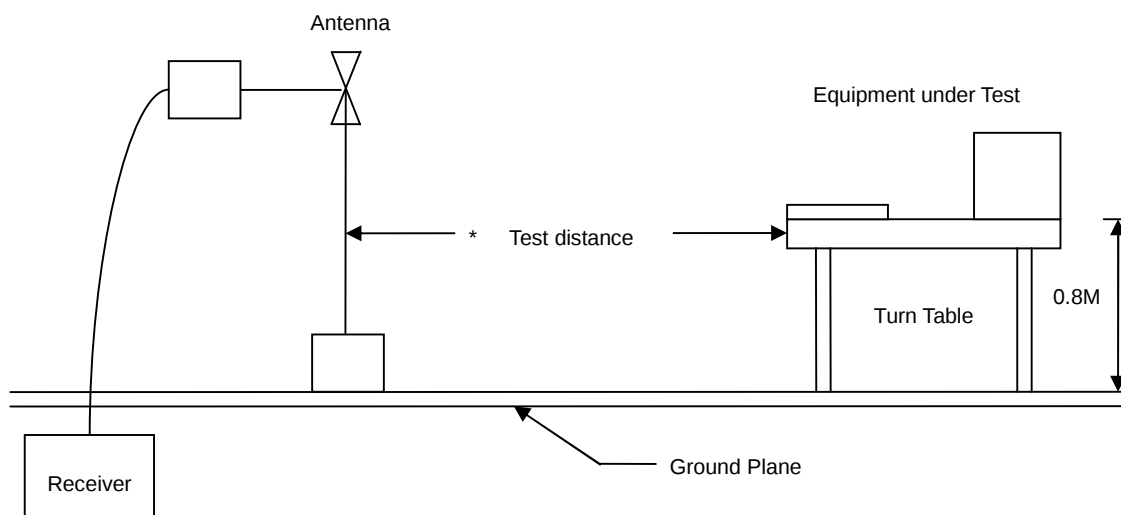
Frequency (MHz)	Distance Meters	Radiated ($\mu V / M$)	Radiated (dB $\mu V / M$)
1.705 to 30	30	30	29.5
30-88	3	100	40.0
88-216	3	150	43.5
216-960	3	200	46.0
Above 960	3	500	54.0

5.2 Test Procedures

- The EUT was placed on a rotatable table top 0.8 meter above ground.
- The EUT was set 30 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- The table was rotated 360 degrees to determine the position of the highest radiation.
- The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.



5.3 Typical Test Setup



5.4 Measurement equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
EMI Receiver	R&S	ESCI	100443	2014/04/09	2015/04/08
Bilog Antenna	Schwarzbeck	VULB 9168	275	2014/09/18	2015/09/17
Amplifier	QuieTek	AP/0100A	CHM0906075	2014/09/17	2015/09/16
Loop Antenna	EMCO	6507	40855	2013/09/30	2014/09/29
Software	Farad	Ez-EMC	ver.ct3a1	N/A	N/A



5.5 Test Result and Data

4.5.1 Test Result of Fundamental Emission

Power	: AC 120V	Temperature	: 24 °C
Test Mode	: Transmit/ Receive	Humidity	: 54 %
Test Date	: Sep. 23, 2014	Atmospheric Pressure	: 1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	13.5503	-23.19	57.38	34.19	124.00	-89.81	peak	105	178

Note: Level = Reading + Factor

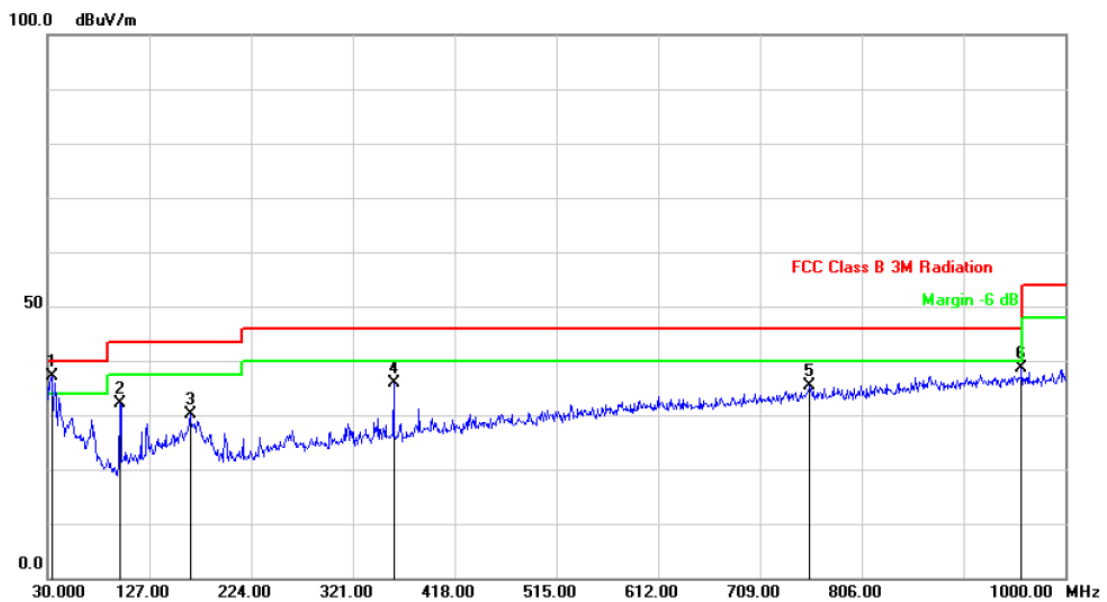
Margin = Level – Limit

Factor= Antenna Factor + Cable Loss - Amplifier Factor



4.5.2 Test Result of Spurious emission

Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode	: Transmit/ Receive	Temperature	: 24 °C
Test Date	: Sep. 23, 2014	Humidity	: 54 %
Memo	:	Atmospheric Pressure	: 1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	33.8800	-8.73	45.86	37.13	40.00	-2.87	peak	101	182
2	98.8700	-13.22	45.44	32.22	43.50	-11.28	peak	101	182
3	165.8000	-8.41	38.53	30.12	43.50	-13.38	peak	101	182
4	359.8000	-5.88	41.85	35.97	46.00	-10.03	peak	101	182
5	756.5300	1.83	33.50	35.33	46.00	-10.67	peak	101	182
6	958.2900	4.46	34.05	38.51	46.00	-7.49	peak	101	182

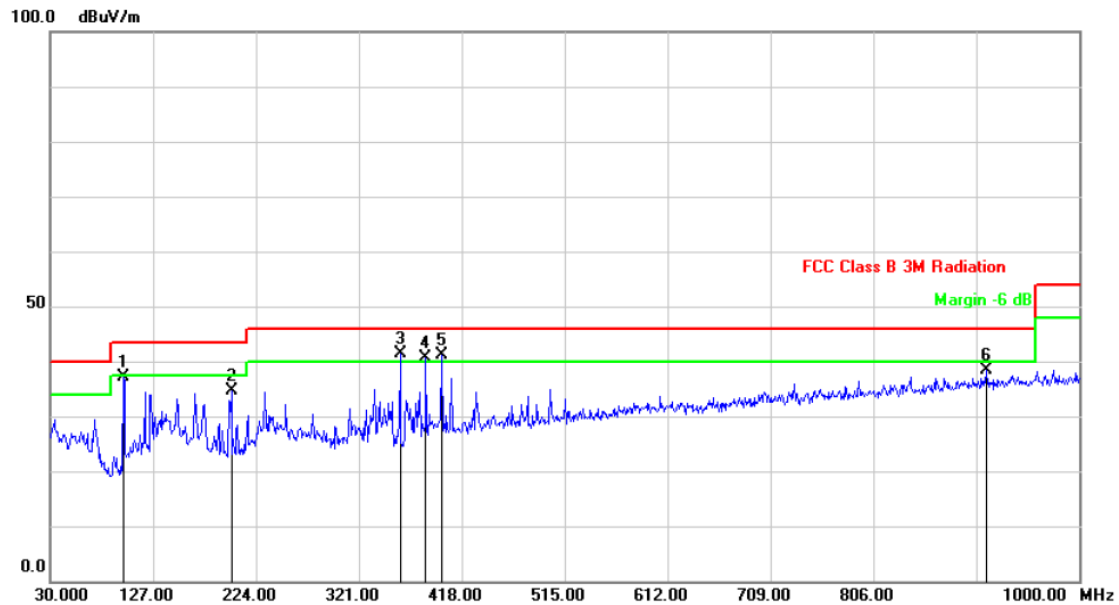
Note: Level = Reading + Factor

Margin = Level – Limit

Factor= Antenna Factor + Cable Loss - Amplifier Factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode	: Transmit/ Receive	Temperature	: 24 °C
Test Date	: Sep. 23, 2014	Humidity	: 54 %
Memo	:	Atmospheric Pressure	: 1010 hpa



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	Height (cm)	Azimuth (deg)
1	98.8700	-13.22	50.26	37.04	43.50	-6.46	peak	107	176
2	200.7200	-11.04	45.75	34.71	43.50	-8.79	peak	107	176
3	359.8000	-5.88	47.22	41.34	46.00	-4.66	peak	107	176
4	384.0500	-5.15	45.72	40.57	46.00	-5.43	peak	107	176
5	398.6000	-4.71	45.74	41.03	46.00	-4.97	peak	107	176
6	912.7000	3.87	34.53	38.40	46.00	-7.60	peak	107	176

Note: Level = Reading + Factor

Margin = Level – Limit

Factor= Antenna Factor + Cable Loss - Amplifier Factor



6. Frequency Stability

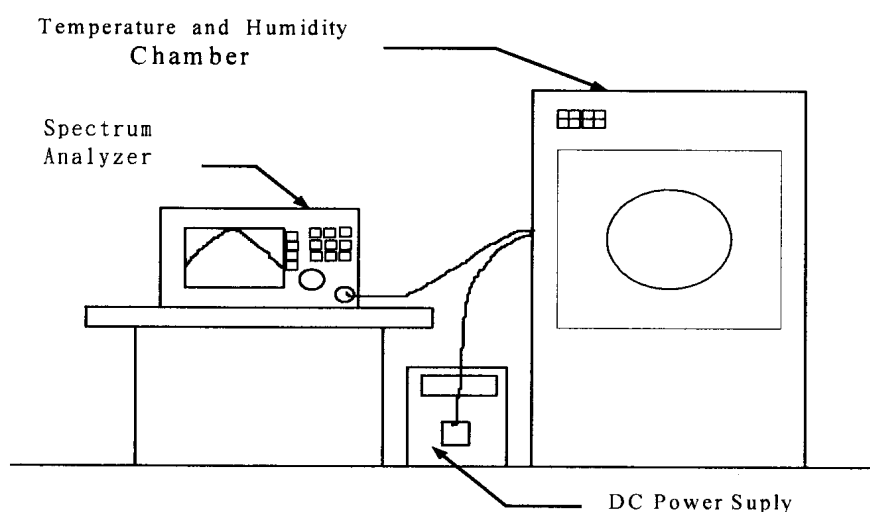
6.1 Test Limit

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20°C to $+50^{\circ}\text{C}$ at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20°C . For battery operated equipment, the equipment tests shall be performed using a new battery.

6.2 Test Procedure

1. The EUT was placed inside the Temperature and Humidity chamber.
2. The transmitter output was connected to spectrum analyzer.
3. Turn the EUT on and couple its output to a spectrum analyzer.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
6. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
7. The test chamber was allowed to stabilize at $+20^{\circ}\text{C}$ for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

6.3 Test Setup Layout



6.4 Measurement equipment

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
Spectrum Analyzer	R&S	FSP40	100047	2014/03/27	2015/03/26
TEMPERATURE CHAMBER	T MACHINE	TMJ-9712	T-12-040111	2013/09/3	2014/09/2
DC Power Supply	GPD-3030	GM	7020936	N/A	N/A
AC Power Converter	AFC-11005	APC	F103120008	N/A	N/A



6.5 Test Result and Data

Operating frequency: 13.56 MHz

Temperature ()	Power supply (V)	Observe Time	Read Frequency (MHz)	Tolerance (%)	Limit
50	120	Start	13.560110	0.001%	±0.01 %
		2 minute	13.560110	0.001%	±0.01 %
		5 minute	13.560200	0.001%	±0.01 %
		10 minute	13.560400	0.003%	±0.01 %
40	120	Start	13.560050	0.000%	±0.01 %
		2 minute	13.560050	0.000%	±0.01 %
		5 minute	13.560100	0.001%	±0.01 %
		10 minute	13.560200	0.001%	±0.01 %
30	120	Start	13.560030	0.000%	±0.01 %
		2 minute	13.560030	0.000%	±0.01 %
		5 minute	13.560030	0.000%	±0.01 %
		10 minute	13.560100	0.001%	±0.01 %
20	120	Start	13.560000	0.000%	±0.01 %
		2 minute	13.560000	0.000%	±0.01 %
		5 minute	13.560000	0.000%	±0.01 %
		10 minute	13.560010	0.000%	±0.01 %
20	108	Start	13.560100	0.001%	±0.01 %
		2 minute	13.560100	0.001%	±0.01 %
		5 minute	13.560120	0.001%	±0.01 %
		10 minute	13.560200	0.001%	±0.01 %
20	132	Start	13.560050	0.000%	±0.01 %
		2 minute	13.560100	0.001%	±0.01 %
		5 minute	13.560100	0.001%	±0.01 %
		10 minute	13.560100	0.001%	±0.01 %
10	120	Start	13.560120	0.001%	±0.01 %
		2 minute	13.560120	0.001%	±0.01 %
		5 minute	13.560200	0.001%	±0.01 %
		10 minute	13.560200	0.001%	±0.01 %
0	120	Start	13.560150	0.001%	±0.01 %
		2 minute	13.560150	0.001%	±0.01 %
		5 minute	13.560200	0.001%	±0.01 %
		10 minute	13.560300	0.002%	±0.01 %
-10	120	Start	13.560250	0.002%	±0.01 %
		2 minute	13.560400	0.003%	±0.01 %
		5 minute	13.560400	0.003%	±0.01 %
		10 minute	13.560600	0.004%	±0.01 %
-20	120	Start	13.560600	0.004%	±0.01 %
		2 minute	13.560600	0.004%	±0.01 %
		5 minute	13.560800	0.006%	±0.01 %
		10 minute	13.561000	0.007%	±0.01 %



7. Restricted Bands of Operation

Only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.09000 – 0.11000	16.42000 – 16.42300	399.9 – 410.0	4.500 – 5.250
0.49500 – 0.505**	16.69475 – 16.69525	608.0 – 614.0	5.350 – 5.460
2.17350 – 2.19050	16.80425 – 16.80475	960.0 – 1240.0	7.250 – 7.750
4.12500 – 4.12800	25.50000 – 25.67000	1300.0 – 1427.0	8.025 – 8.500
4.17725 – 4.17775	37.50000 – 38.25000	1435.0 – 1626.5	9.000 – 9.200
4.20725 – 4.20775	73.00000 – 74.60000	1645.5 – 1646.5	9.300 – 9.500
6.21500 – 6.21800	74.80000 – 75.20000	1660.0 – 1710.0	10.600 – 12.700
6.26775 – 6.26825	108.00000 – 121.94000	1718.8 – 1722.2	13.250 – 13.400
6.31175 – 6.31225	123.00000 – 138.00000	2200.0 – 2300.0	14.470 – 14.500
8.29100 – 8.29400	149.90000 – 150.05000	2310.0 – 2390.0	15.350 – 16.200
8.36200 – 8.36600	156.52475 – 156.52525	2483.5 – 2500.0	17.700 – 21.400
8.37625 – 8.38675	156.70000 – 156.90000	2655.0 – 2900.0	22.010 – 23.120
8.41425 – 8.41475	162.01250 – 167.17000	3260.0 – 3267.0	23.600 – 24.000
12.29000 – 12.29300	167.72000 – 173.20000	3332.0 – 3339.0	31.200 – 31.800
12.51975 – 12.52025	240.00000 – 285.00000	3345.8 – 3358.0	36.430 – 36.500
12.57675 – 12.57725	322.00000 – 335.40000	3600.0 – 4400.0	Above 38.6
13.36000 – 13.41000			

** : Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz

7.1 Labeling Requirement

The device shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.