TEST REPORT

FCC ID: 2AD4F-AIRX1

Applicant : CLOUDPROJECT GENERATION SRL
Address : VIA MELCHIORRE GIOIA 82
20125 MILANO (ITALY)

Equipment Under Test (EUT):

Name	:	Personal Computer
Model	:	AIR X1

In Accordance with: FCC PART 15, SUBPART C : 2014 (Section 15.247)

Report No : T1850002 06
Date of Test : December 28,2014 to January 18 2015
Date of Issue : January 19 2015

Tset Result : PASS

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

Authorized Signature

(Mark Zhu)
General Manager

The manufacture should ensure that all the 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 Alpha Product Testing Laboratory Or test done by Alpha Product Testing Laboratory Approvals in connection with, distribution or use of the product described in this report must be approved by Alpha Product Testing Laboratory Approvals in writing.

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1 General Information

1.1 Description of Device (EUT)

EUT	:	Personal Computer
Model No.	:	AIR X1
DIFF		N/A
Trade mark	:	N/A
Power supply	:	DC 5V from adapter
Radio Technology	:	WiFi IEEE802.11b/g/n20/n40
Operation frequency	:	IEEE 802.11b: 2412MHz-2462MHz IEEE 802.11g: 2412MHz-2462MHz IEEE 802.11n HT20: 2412-2462MHz IEEE 802.11n HT40: 2422-2442MHz
Channel No.		IEEE 802.11b/g/ n HT20: 11 Channels IEEE 802.11n HT40 2.4GHz band: 7 Channels
Modulation	:	IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n :OFDM(64QAM, 16QAM, QPSK, BPSK)
Antenna Type	:	Integrated Antenna, max gain 2.5dBi.
Applicant	:	CLOUDPROJECT GENERATION SRL
Address	:	VIA MELCHIORRE GIOIA 82 20125 MILANO (ITALY)
Manufacturer		Artway Technology International Ltd
Address		621-622, B3 Block, NO.168, Baoyuan Road, Bao’an D., Shenzhen, Guangdong, China

1.2 Description of Test Facility

Alpha Product Testing Laboratory
Building B, East Area of Nanchang Second, Industrial Zone, Gushu 2nd Road,
Bao'an, Shenzhen, China

August 11, 2014 File on Federal Communication Commission
Registration Number: 203110

July 18, 2014 Certificated by IC
Registration Number: 12135A

2 EMC Equipment List

Equipment	Manufacture	Model No.	Serial No.	Cal. Due day	Cal Interval
3m Semi-Anechoic	ETS-LINDGREN	N/A	SEL0017	2015.01.19	1Year
Spectrum analyzer	Agilent	E4407B	MY49510055	2015.01.19	1Year
Receiver	R&S	ESCI	101165	2015.01.19	1Year
Bilog Antenna	SCHWARZBECK	VULB 9168	9168-438	2016.01.21	2Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	2016.01.21	2Year
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170 D(1432)	2016.01.21	2Year
Active Loop Antenna	Beijing Daze	ZN30900A	SEL0097	2015.01.19	1Year
Cable	Resenberger	SUCOFLEX 104	MY6562/4	2015.01.19	1Year
Cable	Resenberger	SUCOFLEX 104	309972/4	2015.01.19	1Year
Cable	Resenberger	SUCOFLEX 104	329112/4	2015.01.19	1Year
Power Meter	Anritsu	ML2487A	6K00001491	2015.01.19	1Year
Power sensor	Anritsu	ML2491A	32516	2015.01.19	1Year
Pre-amplifier	SCHWARZBECK	BBV9743	9743-019	2015.01.19	1Year

Pre-amplifier	Quietek	AP-180C	CHM-0602012	2015.01.19	1Year
Spectrum analyzer	Agilent	E4407B	MY46185649	2015.01.19	1 Year
L.I.S.N.#1	Rohde & Schwarz	NSLK8126	8126466	2015.01.19	1 Year
L.I.S.N.#2	Rohde & Schwarz	ENV216	101043	2015.01.19	1 Year

3 Test Procedure

POWER LINE CONDUCTED INTERFERENCE: The test procedure used was ANSI Standard C63.4-2003 using a 50 u H LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25℃ with a humidity of 58%.

RADIATION INTERFERENCE: The test procedure used was ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3MHz above 1 GHz. The ambient temperature of the EUT was 25℃ with a humidity of 58%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.
Example:
Freq (MHz) METER READING + ACF + CABLE = FS
33.20 dBuV + 10.36 dB + 0.9 dB= 44.46 dBuV/m @ 3m
ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes. The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard C63.4-2003 10.1.7 with the EUT 40 cm from the vertical ground wall.

4 Summary of Measurement

4.1 Summary of test result

Test Item	Test Requirement	Standards Paragraph	Result
Spurious Emission	FCC PART 15:2014	Section 15.247&15.209	Compliance
Conduction Emission	FCC PART 15:2014	Section 15.207	Compliance
Bandwidth Test	FCC PART 15:2014	Section 15.247	Compliance
Peak Power	FCC PART 15:2014	Section 15.247	Compliance
Power Density	FCC PART 15:2014	Section 15.247	Compliance
Band Edge	FCC PART 15:2014	Section 15.247	Compliance
Antenna Requirement	FCC PART 15:2014	Section 15.203	Compliance
Note: N/A means this test item is not applicable for this device.			

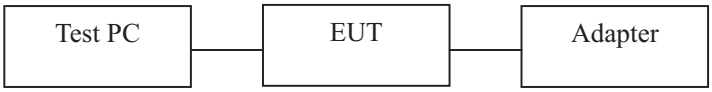
Note: The EUT has been tested as an independent unit. And Continual Transmitting in maximum power (Fully charged battery is used during the test)

EUT is configured to transmit continuously (Duty cycle) is 100%，average correction factor = 20 log 1=0

4.2 Test connection

1, For radiated emissions test: EUT was placed on a turn table, which is 0.8 meter high above ground. EUT was be set into BT TX mode by Bluesuite software before test

TX Mode:



4.3 Assistant equipment used for test

Description	:	Test PC, Notebook
Manufacturer	:	Dell
Model No.	:	D430
Remark ：FCC DOC approved		

4.4 Test mode

The test software “ADB.exe” was used to control EUT work in Continuous TX mode, and select test channel, wireless mode

Tested mode, channel, and data rate information			
Mode	data rate (Mpbs)(see Note)	Channel	Frequency (MHz)
IEEE 802.11b	1	Low :CH1	2412
	1	Middle: CH6	2437
	1	High: CH11	2462
IEEE 802.11g	6	Low :CH1	2412
	6	Middle: CH6	2437
	6	High: CH11	2462
IEEE 802.11 n/HT20 with 2.4G	6.5	Low :CH1	2412
	6.5	Middle: CH6	2437
	6.5	High: CH11	2462
IEEE 802.11 n/HT40 with 2.4G	13.5	Low :CH3	2422
	13.5	Middle: CH6	2437
	13.5	High: CH9	2452
Note: According exploratory test, EUT will have maximum output power in those data rate. so those data rate were used for all test.			

4.5 Test Conditions

Temperature range	21-25℃
Humidity range	40-75%
Pressure range	86-106kPa

4.6 Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for Power point Conducted Emissions Test	2.42dB	
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.13 dB	Polarize: V
	2.57dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.54dB	Polarize: V
	4.1dB	Polarize: H
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	2.08dB	Polarize: H
	2.56dB	Polarize: V
Uncertainty for radio frequency	1×10-9	
Uncertainty for DC and low frequency voltages	0.06%	

5 Spurious Emission

5.1 Radiation Emission

5.1.1 Radiation Emission Limits(15.209)

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

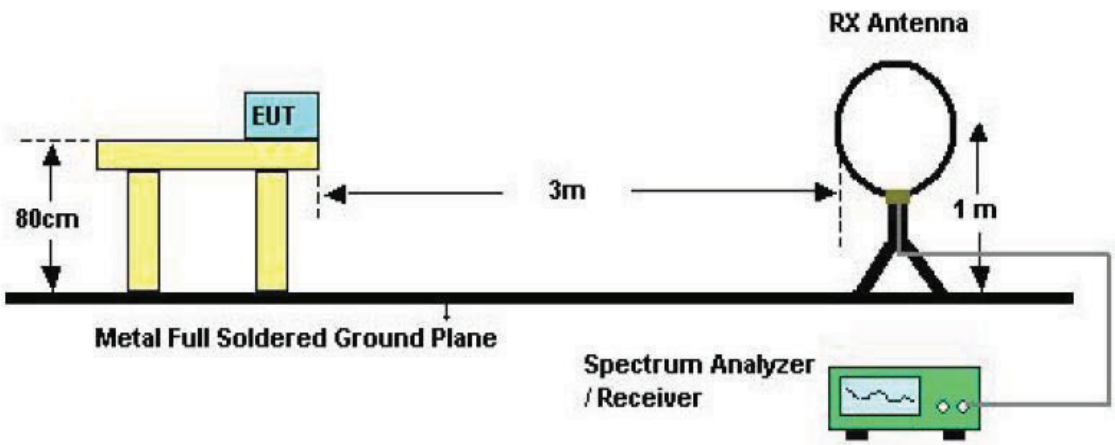
Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

NOTE:

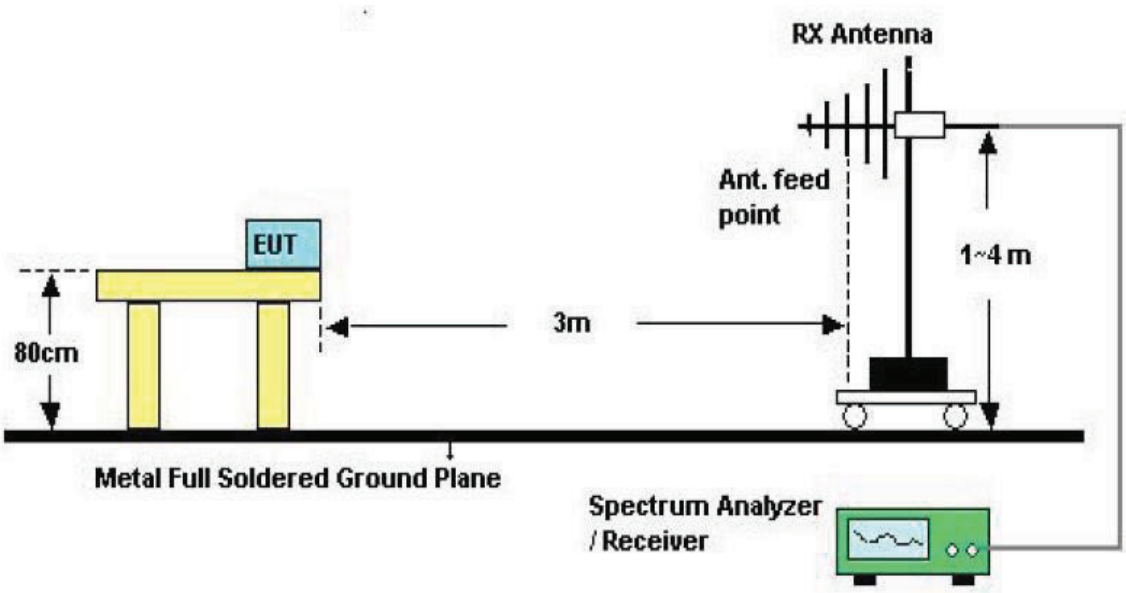
a) The tighter limit applies at the band edges.
b) Emission Level(dB uV/m)=20log Emission Level(Uv/m)

5.1.2 Test Setup

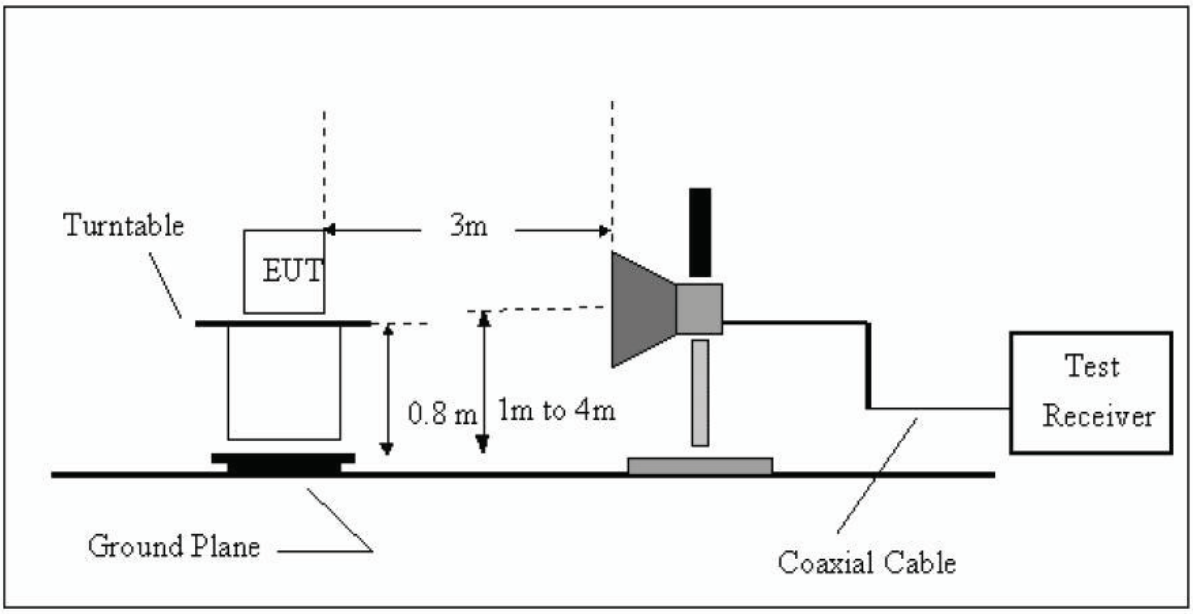
See the next page



Below 30MHz Test Setup



Above 30MHz Test Setup



Above 1GHz Test Setup

5.1.3 Test Procedure

a) The measuring distance of 3m shall be used for measurements at frequency up

to 1GHz and above 1GHz, The EUT was placed on a rotating 0.8 m high above ground, The table was rotated 360 degrees to determine the position of the highest radiation

b) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set of make measurement.
c) The initial step in collecting conducted emission data is a spectrum analyzer Peak detector mode pre-scanning the measurement frequency range. Significant Peaks are then marked. and then Qusia Peak Detector mode premeasured
d) If Peak value comply with QP limit Below 1GHz.The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.
e) For the actual test configuration, please see the test setup photo.

5.1.4 Test Equipment Setting For emission test Result.

9KHz~150KHz	RBW 200Hz	VBW1KHz
150KHz~30MHz	RBW 9KHz	VBW 30KHz
30MHZ~1GHz	RBW 120KHz	VBW 300KHz
Above 1GHz	RBW 1MHz	VBW 3MHz

5.1.5 Test Condition

Continual Transmitting in maximum power.

5.1.6 Test Result

We have scanned the 10th harmonic from 9KHz to the EUT.
Detailed information please see the following page.

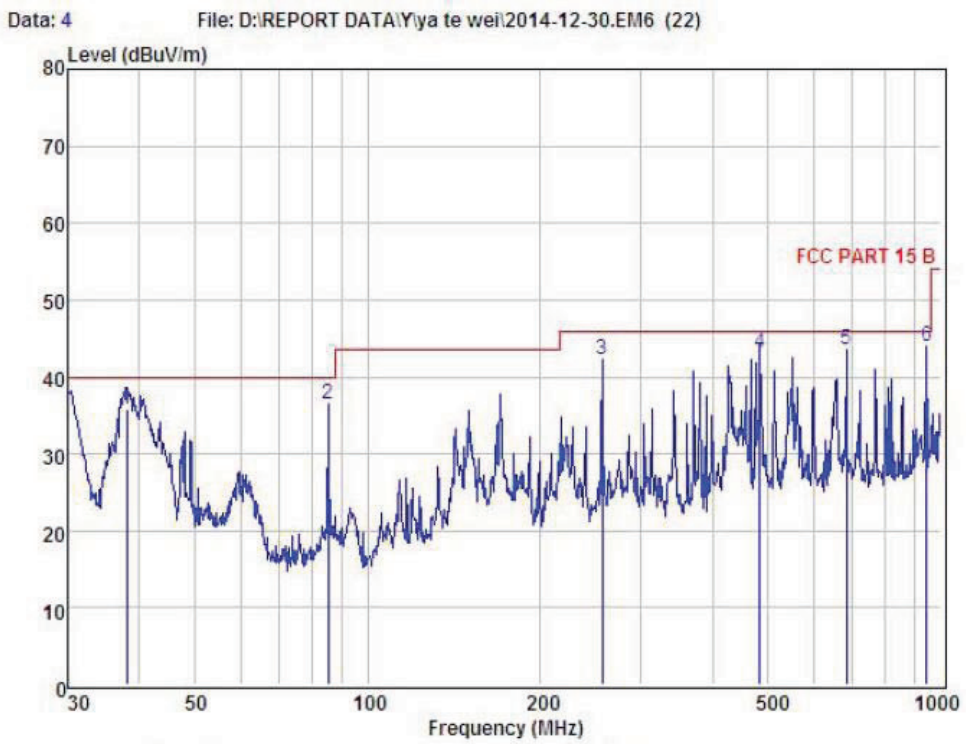
From 9KHz to 30MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Remark: Keeping TX mode

From 30MHz to 1000MHz: Conclusion: PASS

Horizontal:

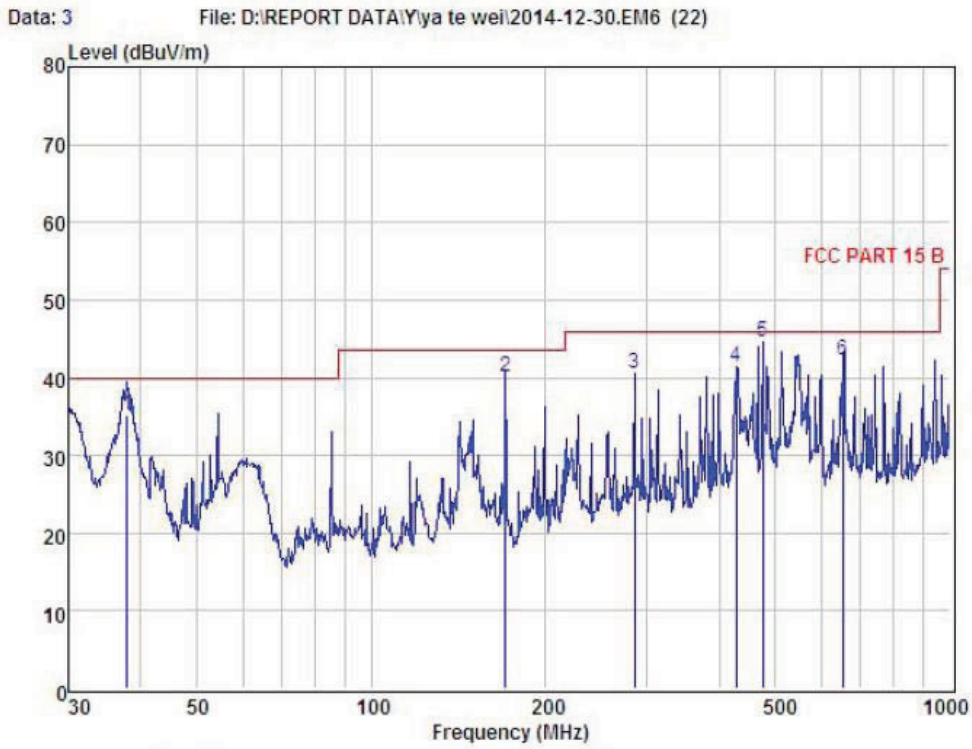


Condition : FCC PART 15 B 3m POL: HORIZONTAL
EUT :
Model No : ATRX1
Test Mode : Working
Power : AC 120V/60Hz
Test Engineer :
Remark :
Temp : 24.2℃
Hum : 54%

Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	38.08	54.86	13.73	32.86	0.08	35.81	40.00	-4.19	QP
2	85.30	59.33	9.38	32.56	0.29	36.44	40.00	-3.56	Peak
3	256.52	62.64	11.69	32.73	0.57	42.17	46.00	-3.83	Peak
4	483.91	57.81	16.30	31.78	0.88	43.21	46.00	-2.79	Peak
5	684.75	54.42	19.50	31.76	1.42	43.58	46.00	-2.42	Peak
6	942.13	52.39	22.09	31.77	1.19	43.90	46.00	-2.10	Peak

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

Vertical:



Condition : FCC PART 15 B 3m POL: VERTICAL
EUT :
Model No : ATRX1
Test Mode : Working
Power : AC 120V/60Hz
Test Engineer :
Remark :
Temp : 24.2℃
Hum : 54%

Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	37.94	54.26	13.73	32.86	0.08	35.21	40.00	-4.79	QP
2	170.79	58.93	13.18	32.78	0.68	40.01	43.50	-3.49	Peak
3	284.98	59.97	12.50	32.68	0.67	40.46	46.00	-5.54	Peak
4	428.02	57.57	15.43	32.36	0.68	41.32	46.00	-4.68	Peak
5	475.50	59.52	16.20	31.85	0.77	44.64	46.00	-1.36	Peak
6	654.23	53.68	19.14	31.63	1.11	42.30	46.00	-3.70	Peak

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

From 1G-25GHz
IEEE 802.11b

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1103	V	41.99	---	-11.24	30.75	---	74	54	43.25	Peak
4824	V	36.99	---	0.64	37.63	---	74	54	36.37	Peak
N/A										

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1103	H	44.31	---	-11.24	33.07	---	74	54	40.93	Peak
4824	H	37.37	---	0.64	38.01	---	74	54	35.99	Peak
N/A										

Notes: RBW 1MHz VBW 3MHz PEAK detector for PK value , RMS detector for AV value
Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1103	V	42.55	---	-11.24	31.31	---	74	54	42.69	Peak
4874	V	38.33	---	0.76	39.09	---	74	54	34.91	Peak

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1103	H	42.41	---	-11.24	31.17	---	74	54	42.83	Peak
4874	H	38.38	---	0.76	39.14	---	74	54	34.86	Peak

Notes: RBW 1MHz VBW 3MHz PEAK detector for PK value , RMS detector for AV value

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1103	V	41.9	---	-11.24	30.66	---	74	54	43.34	Peak
4924	V	37.93	---	0.87	38.8	---	74	54	35.2	Peak

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1103	H	42.06	---	-11.24	30.82	---	74	54	43.18	Peak
4924	H	34.14	---	0.87	35.01	---	74	54	38.99	Peak

Notes: RBW 1MHz VBW 3MHz PEAK detector for PK value， RMS detector for AV value

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11 g:

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1145	V	43.12	---	-11.24	31.88	---	74	54	42.12	Peak
2586	V	47.02	---	-7.13	39.89	---	74	54	34.11	Peak
3062	V	45.24	---	-5.74	39.5	---	74	54	34.5	Peak
4824	V	41.19	---	0.64	41.83	---	74	54	32.17	Peak
N/A										

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1294	H	42.36	---	-10.96	31.4	---	74	54	42.6	Peak
2038	H	42.27	---	-8.58	33.69	---	74	54	40.31	Peak
3483	H	41.56	---	-4.95	36.61	---	74	54	37.39	Peak
4824	H	38.43	---	0.64	39.07	---	74	54	34.93	Peak
N/A										

Notes: RBW 1MHz VBW 3MHz PEAK detector for PK value， RMS detector for AV value

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1374	V	42.34	---	-10.43	31.91	---	74	54	42.09	Peak
2589	V	43.1	---	-7.13	35.97	---	74	54	38.03	Peak
3365	V	42.27	---	-5.18	37.09	---	74	54	36.91	Peak
4874	V	41.41	---	0.76	42.17	---	74	54	31.83	Peak

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1321	H	42.87	---	-10.84	32.03	---	74	54	41.97	Peak
2314	H	42.62	---	-7.46	35.16	---	74	54	38.84	Peak
3577	H	43.59	---	-4.76	38.83	---	74	54	35.17	Peak
4874	H	39.69	---	0.76	40.45	---	74	54	33.55	Peak

Notes: RBW 1MHz VBW 3MHz PEAK detector for PK value , RMS detector for AV value

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1302	V	43.33	---	-10.84	32.49	---	74	54	41.51	Peak
2982	V	43.69	---	-5.86	37.83	---	74	54	36.17	Peak
3831	V	42.53	---	-3.96	38.57	---	74	54	35.43	Peak
4924	V	39.87	---	0.87	40.74	---	74	54	33.26	Peak

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1446	H	44.17	---	-10.29	33.88	---	74	54	40.12	Peak
2198	H	43.97	---	-8.24	35.73	---	74	54	38.27	Peak
3905	H	44.21	---	-3.68	40.53	---	74	54	33.47	Peak
4924	H	39.88	---	0.87	40.75	---	74	54	33.25	Peak

Notes: RBW 1MHz VBW 3MHz PEAK detector for PK value， RMS detector for AV value

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT20 with 2.4G

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1492	V	44.27	---	-10.27	34	---	74	54	40	Peak
2671	V	43.97	---	-6.94	37.03	---	74	54	36.97	Peak
3948	V	43.08	---	-3.68	39.4	---	74	54	34.6	Peak
4824	V	39.49	---	0.64	40.13	---	74	54	33.87	Peak
N/A										

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1451	H	44.3	---	-10.27	34.03	---	74	54	39.97	Peak
2839	H	43.55	---	-6.17	37.38	---	74	54	36.62	Peak
3607	H	44.58	---	-4.52	40.06	---	74	54	33.94	Peak
4824	H	40.25	---	0.64	40.89	---	74	54	33.11	Peak
N/A										

Notes: RBW 1MHz VBW 3MHz PEAK detector for PK value , RMS detector for AV value

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1262	V	44.02	---	-10.96	33.06	---	74	54	40.94	Peak
2013	V	43.72	---	-8.58	35.14	---	74	54	38.86	Peak
3798	V	43.76	---	-4.07	39.69	---	74	54	34.31	Peak
4874	V	40.68	---	0.76	41.44	---	74	54	32.56	Peak

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1511	H	44.94	---	-10.14	34.8	---	74	54	39.2	Peak
2353	H	43.71	---	-7.59	36.12	---	74	54	37.88	Peak
3266	H	43.22	---	-5.39	37.83	---	74	54	36.17	Peak
4874	H	39.99	---	0.76	40.75	---	74	54	33.25	Peak

Notes: RBW 1MHz VBW 3MHz PEAK detector for PK value , RMS detector for AV value

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Personal Computer	Model Name	AIR X1
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V From adapter
Test Mode	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1477	V	44.02	---	-10.27	33.75	---	74	54	40.25	Peak
2703	V	44.29	---	-6.43	37.86	---	74	54	36.14	Peak
3561	V	43.87	---	-4.76	39.11	---	74	54	34.89	Peak
4924	V	39.99	---	0.87	40.86	---	74	54	33.14	Peak

EUT	Personal Computer	Model Name	AIR X1
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V From adapter
Test Mode	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1503	H	44.13	---	-10.14	33.99	---	74	54	40.01	Peak
3588	H	44.37	---	-4.96	39.41	---	74	54	34.59	Peak
4153	H	43.18	---	-2.48	40.7	---	74	54	33.3	Peak
4924	H	40	---	0.87	40.87	---	74	54	33.13	Peak

Notes: RBW 1MHz VBW 3MHz PEAK detector for PK value， RMS detector for AV value

Emissions attenuated more than 20 dB below the permissible value are not reported.

IEEE 802.11n/HT40 with 2.4G

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1551	V	44.4	---	-10.07	34.33	---	74	54	39.67	Peak
2695	V	44.13	---	-6.94	37.19	---	74	54	36.81	Peak
3463	V	44.53	---	-4.95	39.58	---	74	54	34.42	Peak
4844	V	40.39	---	0.64	41.03	---	74	54	32.97	Peak
N/A										

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	Low Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1542	H	44.01	---	-10.14	33.87	---	74	54	40.13	Peak
2358	H	44.3	---	-7.59	36.71	---	74	54	37.29	Peak
3096	H	44.06	---	-5.74	38.32	---	74	54	35.68	Peak
4844	H	40.64	---	0.64	41.28	---	74	54	32.72	Peak
N/A										

Notes: RBW 1MHz VBW 3MHz PEAK detector for PK value， RMS detector for AV value

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Personal Computer	Model Name	AIR X1
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V From adapter
Test Mode	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1628	V	44.47	---	-9.84	34.63	---	74	54	39.37	Peak
2593	V	44	---	-7.13	36.87	---	74	54	37.13	Peak
3301	V	43.29	---	-5.31	37.98	---	74	54	36.02	Peak
4874	V	40.15	---	0.76	40.91	---	74	54	33.09	Peak

EUT	Personal Computer	Model Name	AIR X1
Temperature	26°C	Relative Humidity	56%
Pressure	960hPa	Test voltage	DC 5V From adapter
Test Mode	Middle Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1564	H	44.83	---	-10.07	34.76	---	74	54	39.24	Peak
2248	H	44.14	---	-8.13	36.01	---	74	54	37.99	Peak
3159	H	43.57	---	-5.52	38.05	---	74	54	35.95	Peak
4874	H	40.01	---	0.76	40.77	---	74	54	33.23	Peak

Notes: RBW 1MHz VBW 3MHz PEAK detector for PK value， RMS detector for AV value

Emissions attenuated more than 20 dB below the permissible value are not reported.

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1645	V	43.94	---	-9.84	34.1	---	74	54	39.9	Peak
2590	V	43.12	---	-7.13	35.99	---	74	54	38.01	Peak
3851	V	43.27	---	-3.84	39.43	---	74	54	34.57	Peak
4904	V	39.98	---	0.87	40.85	---	74	54	33.15	Peak

EUT	Personal Computer	**Model Name**	AIR X1
Temperature	26°C	**Relative Humidity**	56%
Pressure	960hPa	**Test voltage**	DC 5V From adapter
Test Mode	High Channel		

Freq. (MHz)	Ant. Pol H/V	Peak Reading (dBuV)	AV Reading (dBuV)	Ant. / CL CF (dB)	Actual Fs		Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)	Remark
					Peak (dBuV/m)	AV (dBuV/m)				
1792	H	44.13	---	-9.27	34.86	---	74	54	39.14	Peak
2804	H	43.52	---	-6.17	37.35	---	74	54	36.65	Peak
3743	H	44.8	---	-4.24	40.56	---	74	54	33.44	Peak
4904	H	40.87	---	0.87	41.74	---	74	54	32.26	Peak

Notes: RBW 1MHz VBW 3MHz PEAK detector for PK value , RMS detector for AV value

Emissions attenuated more than 20 dB below the permissible value are not reported.

6 POWER LINE CONDUCTED EMISSION

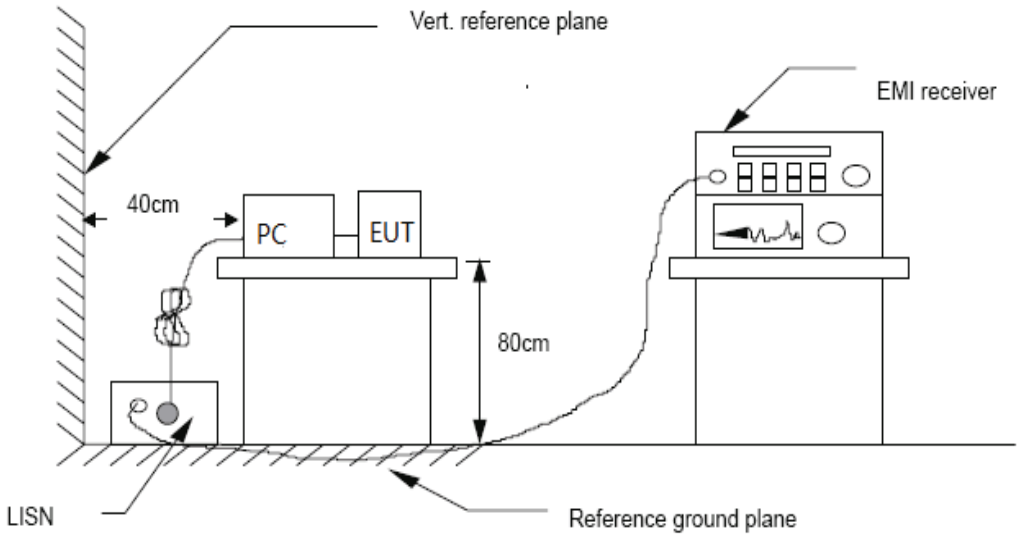
6.1 Conducted Emission Limits(15.207)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 -0.50	66 -56*	56 - 46*
0.50 -5.00	56	46
5.00 -30.00	60	50

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

3.The limit decreases in line with the logarithm of the frequency in the rang of 0.15 to 0.50 MHz.

6.2 Test Setup

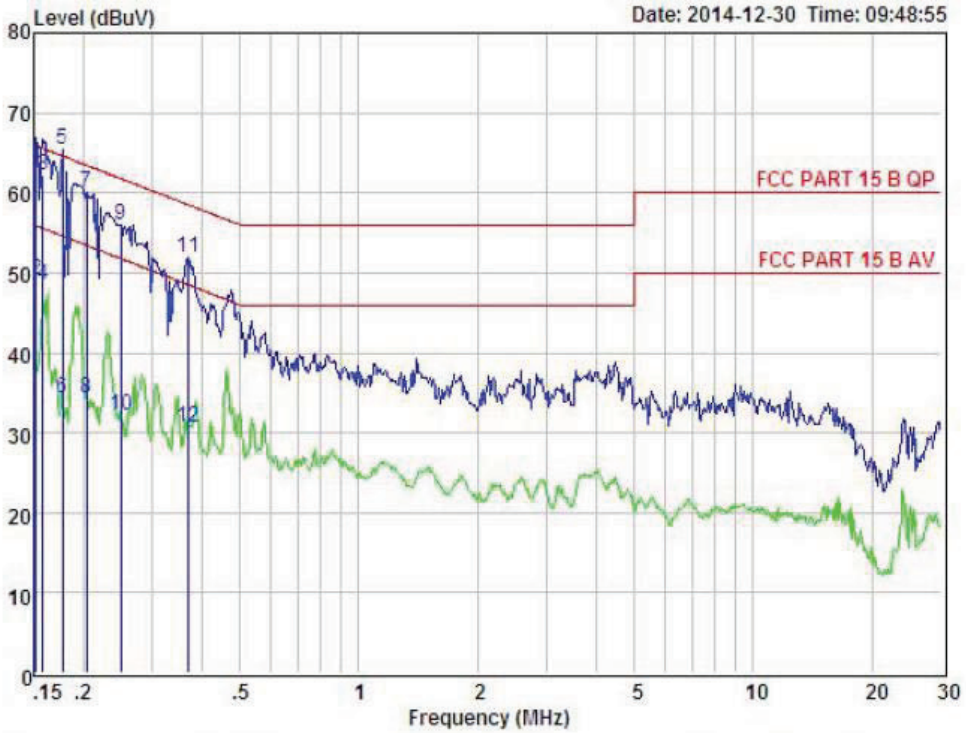


6.3 Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.4-2003 on Conducted Emission Measurement.
The bandwidth of test receiver (R & S ESCS30) is set at 9 kHz.

6.4 Test Results

PASS. (See below detailed test data)



Condition : FCC PART 15 B QP POL: LINE Temp:20.1 ℃ Hum:45 %
EUT :
Model No : ATR-X1
Test Mode : keeping TX mode
Power : DC 5V From Adapte With AC 120V/60Hz
Test Engineer:
Remark :

Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Lose dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.152	52.60	0.03	-9.72	0.10	62.45	65.91	-3.46	QP
2	0.152	39.20	0.03	-9.72	0.10	49.05	55.91	-6.86	Average
3	0.158	52.40	0.03	-9.72	0.10	62.25	65.56	-3.31	QP
4	0.158	38.70	0.03	-9.72	0.10	48.55	55.56	-7.01	Average
5	0.178	52.86	0.03	-9.72	0.10	62.71	64.59	-1.88	QP
6	0.178	24.46	0.03	-9.72	0.10	34.31	54.59	-20.28	Average
7	0.204	50.11	0.03	-9.72	0.10	59.96	63.45	-3.49	Peak
8	0.204	24.37	0.03	-9.72	0.10	34.22	53.45	-19.23	Average
9	0.249	46.20	0.03	-9.72	0.10	56.05	61.78	-5.73	Peak
10	0.249	22.26	0.03	-9.72	0.10	32.11	51.78	-19.67	Average
11	0.371	42.14	0.03	-9.72	0.10	51.99	58.47	-6.48	Peak
12	0.371	20.90	0.03	-9.72	0.10	30.75	48.47	-17.72	Average

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss