

# Intertek Testing Services ETL SEMKO

FCC ID.: M4Y-0001250A

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# EMC TEST REPORT

Report No. : EME-020226

Model No. : XI-1250A

Issued Date : April 2, 2002

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Test By : Intertek Testing Services Taiwan Ltd.

No. 11, Ko-Tze-Nan Chia-Tung Li, Shiang-Shan District,

Hsinchu, Taiwan, R.O.C.

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**Project Engineer** 

Approved By

Elton Chen

MANAGER (EMC LABORATOR) ETL SEMEO DIVISION

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## **Summary of Tests**

## 11Mbps Access Point -Model: XI-1250A FCC ID: M4Y-0001250A

Test	Reference	Results
Minimum 6dB Bandwidth test	15.247(a)(2)	Complies
Maximum Output Power test	15.247(b)	Complies
RF Antenna Conducted test	15.247(c)	Complies
Radiated Spurious Emission test	15.205, 15.209	Complies
Power Spectrum Density test	15.247(d)	Complies
Power Line Conducted Emission test	15.207	Complies

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## 1. General information

## 1.1 Identification of the EUT

Manufacturer : Z-COM, Inc.

Product : 11Mbps Access Point

Model No. : XI-1250A

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Frequency Range : 2412MHz to 2462MHz

Channel Number : 11 channels

Frequency of Each Channel: 2412MHz, 2417MHz, 2422MHz, 2427MHz,

2432MHz, 2437MHz, 2442MHz, 2447MHz,

2452MHz, 2457MHz, 2462MHz

Type of Modulation : CCK, DQPSK, DBPSK, DSSS

Power Supply : 120Vac, 60Hz with Adapter (UL110-0520)

Power Cord : N/A

Sample Received : Mar. 13, 2002

Test Date(s) : Mar. 11, 2002 to Mar. 25, 2002

A FCC DoC report has been generated for the client.

#### 1.2 Additional information about the EUT

The wireless LAN device – 11Mbps Access Point, brings Ethernet-like performance to the wireless realm. Fully compliant with IEEE802.11b standard, the 11Mbps Access Point also provides powerful features such as the Windows-based configuration utility, WEP security, SNMP and more.

For more detail features, please refer to User's manual as file name "Installation guide.pdf"

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## 1.3 Antenna description

The EUT uses a permanently connected antenna.

Antenna Gain : 0dBi Antenna Type : Dipole

## 1.4 Peripherals equipment

Peripherals	Manufacturer	Product No.	Serial No.	FCC ID
Printer	НР	C2642A	TH86K1N2ZB	FCC DoC
rimei		C2042A	THOOKINZED	Approval
Notebook HP		VE	TW20705468	FCC DoC
Notebook	HP XE <sub>3</sub>		1 W 20/03406	Approval
Modem Aski V1456V0		V1456VQE	700V23100066865	FCC DoC
IVIOUCIII	ASKI	V 1430 V QE	/00 v 23 100000803	Approval

Signal cable description:

Unshielded RJ 45 Cat.5 UTP Cable length 1.2 meter ×1

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## 2. Test specifications

## 2.1 Test standard

The EUT was performed according to the procedures in FCC Part 15 Subpart C Section §15.207 \ §15.209 \ §15.247 and ANSI C63.4/1992.

The AC power conducted emissions was invested over the frequency range from 0.45MHz to 30MHz using a receiver bandwidth of 9kHz. (15.207 paragraph)

Radiated emissions were invested cover the frequency range from 30MHz to 1000MHz using a receiver RBW of 120kHz record QP reading, and the frequency over 1GHz using a spectrum analyzer RBW of 1MHz and 10Hz VBW record Average reading. (15.209 paragraph), the Peak reading recorded also on the report.

The test of radiated measurements according to FCC Part15 Section 15.33(a) had been conducted and the field strength of this frequency band were all meet limit requirement, thus we evaluate the EUT pass the specified test.

The EUT setup configurations please refer to the photo of test configuration in item.

## 2.2 Operation mode

The EUT was supplied with a 120Vac to 5Vdc adapter.

Connect to notebook via a 1.2m length unshielded RJ45 Cat.5 cable.

Run the software "rfb11.exe" under Windows OS.

Select the wanted mode (Continuously Transmit) to perform all the tests.

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## 2.4 Test equipment

Equipment	Brand	Frequency range	Model No.	Series No.	Next Cal.Date
EMI Receiver	Rohde & Schwarz	9kHz~2.75GHz	ESCS 30	825788/014	May 29, 2002
Pulse Limiter	Rohde & Schwarz	9kHz~30MHz	ESH3-Z2	848.766/052	N/A
Spectrum Analyzer	Rohde & Schwarz	9kHz~30GHz	FSP 30	100137	July 9, 2002
Horn Antenna	EMCO	1GHz~18GHz	3115	9906-5822	Sep. 10, 2002
Horn Antenna	SCHWARZBECK	14GHz~40GHz	BBHA 9170	159	June 21, 2002
Bilog Antenna	SCHWARZBECK	25MHz~1.7GHz	VULB 9160	3111	June 21, 2002
Turn Table	HDGmbH	N/A	DS 420S	420/669/01	N/A
Antenna Tower	HDGmbH	N/A	MA 240	240/573	N/A
RF Power Meter	Boonton	10kHz~100GHz	4230	27003	June 12, 2002
Power Sensor	Boonton	30MHz~8GHz	51011-EMC	30417	June 12, 2002
Microwave Amplifier	Agilent	2GHz~26.5GHz	8348A	3111A00567	Dec. 20, 2002

## Note:

1. The calibration interval of the above instruments is 12 months.

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## 3. Minimum 6dB Bandwidth test

## 3.1 Operating environment

Temperature: 22  $^{\circ}$ C Relative Humidity: 58  $^{\circ}$ 

## 3.2 Test setup & procedure

The minimum 6dB bandwidth per FCC §15.247(a)(2) was measured using a 50 ohm spectrum analyzer with the resolutions bandwidth set at 1MHz, the video bandwidth set at 3MHz, and the SPAN>>RBW. The test was performed at 3 channels (lowest, middle and highest channel). The minimum 6-dB modulation bandwidth is in the following Table.

See Minimum 6dB Bandwidth plot as file name "Minimum 6dB Bandwidth plot.pdf"

## 3.3 Measured data of Minimum 6dB Bandwidth test results

Channel	Frequency (MHz)	Bandwidth (MHz)	Limit
Low	2413.60	11.70	>500kHz
Middle	2438.50	11.90	>500kHz
High	2463.80	11.90	>500kHz

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## 4. Maximum Output Power test

## **4.1 Operating environment**

Temperature: 22  $^{\circ}$ C Relative Humidity: 60  $^{\circ}$ 

## 4.2 Test setup & procedure

The power output per FCC §15.247(b) was measured on the EUT using a 50 ohm SMA cable connected to power meter via power sensor. Power was read directly and cable loss correction (1dB) was added to the reading to obtain power at the EUT antenna terminals. The test was performed at 3 channels (lowest, middle and highest channel).

## 4.3 Measured data of Maximum Output Power test results

Channel Frequency C.B.L.		Channel Frequency C.B.L. Reading		Power	Limit	
Chamier	(MHz)	(dB)	(dBm)	(dBm)	(mW)	(W)
Lowest	2412	1	16.42	17.42	55.20	1
Middle	2437	1	16.70	17.70	58.88	1
Highest	2462	1	16.24	17.24	52.97	1

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## 5. RF Antenna Conducted Spurious test

## **5.1 Operating environment**

Temperature: 22 °C Relative Humidity: 58 %

## 5.2 Test setup & procedure

The measurements were performed from 30MHz to 25GHz RF antenna conducted per FCC 15.247 (c) was measured from the EUT antenna port using a 50ohm spectrum analyzer with the resolution bandwidth set at 100 kHz, and the video bandwidth set at 300 kHz.

Harmonics and spurious noise must be at least 20dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW. The table below is the results from the highest emission for each channel within the authorized band. This table was used to determine the spurious limits for each channel.

See RF Antenna Conducted plot as file name "RF Antenna Conducted plot.pdf"

## 5.3 Measured data of the highest RF Antenna Conducted Spurious test result

Channel	Max Spurious level at Frequency (MHz)	Spurious Emission level (dBm)	Limit (dB)
Low	672.20	-43.98	-18.12
Middle	698.92	-40.03	-16.91
High	721.60	-43.40	-18.81

Note: 1. Limit = peak power output (in 100kHz RBW) – 20dB

2. All the other emissions were very low the limit.

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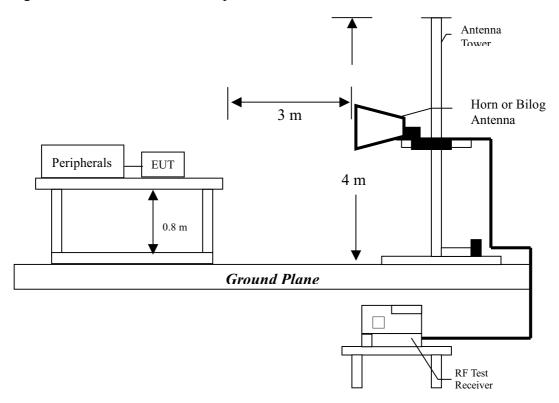
## 6. Radiated Emission test

## **6.1 Operating environment**

Temperature: 22 °C Relative Humidity: 58 %

## 6.2 Test setup & procedure

The Diagram below shows the test setup, which is utilized to make these measurements.



Radiated emission measurements were performed from 30MHz to 25GHz. Spectrum Analyzer Resolution Bandwidth is 100kHz or greater for frequencies 30MHz to 1GHz, 1MHz – for frequencies above 1GHz.

The EUT for testing is arranged on a wooden turntable. If some peripherals apply to the EUT, the peripherals will be connected to EUT and the whole system. During the test, all cables were arranged to produce worst-case emissions. The signal is maximized through rotation. The height of antenna and polarization is changing constantly for exploring for maximum signal level. The height of antenna can be up to 4 meters and down to 1 meter.

The measurement for radiated emission will be done at the distance of three meters unless the signal level is too low to measure at that distance. In the case of the reading under noise floor, a pre-amplifier is used and/or the test is conducted at a closer distance. And then all readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance.

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## **6.3 Emission limits**

The spurious Emission shall test through the 10th harmonic. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

Frequency	Limits
(MHz)	$(dB \mu V/m@3m)$
30-88	40
88-216	43.5
216-960	46
Above 960	54

## Remark:

- 1. In the above table, the tighter limit applies at the band edges.
- 2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system

Uncertainty was calculated in accordance with NAMAS NIS 81. In the General Radiated Emission Test, the uncertainty is within  $\pm 2.5 dB$ 

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## 6.4 Radiated spurious emission test data

## 6.4.1 Measurement results: frequencies equal to or less than 1 GHz

## The radiated spurious emissions at

Frequency(MHz)	Margin
399.40000	-0.90

are less than uncertainty. This is within the stated measurement uncertainty, this may affect compliance determined in other test arrangements.

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Worst case Condition : Tx mode at low channel

Frequency	Spectrum	Antenna	Correction	Reading	Corrected	Limit	Margin
	Analyzer	Polariz.	Factor		Reading	@ 3 m	
(MHz)	Detector	(H/V)	(dB/m)	(dBuV)	(dBuV)	(dBuV)	(dB)
43.00000	QP	V	14.26	19.94	34.20	40	-5.80
62.40000	QP	V	11.13	22.77	33.90	40	-6.10
159.60000	QP	V	10.82	24.28	35.10	43.5	-8.40
199.60000	QP	V	12.59	26.61	39.20	43.5	-4.30
399.40000	QP	V	19.53	21.87	41.40	46	-4.60
748.00000	QP	V	25.27	11.23	36.50	46	-9.50
199.60000	QP	Н	12.59	27.91	40.50	43.5	-3.00
280.00000	QP	Н	14.88	23.12	38.00	46	-8.00
368.60000	QP	Н	19.53	18.57	38.10	46	-7.90
399.40000	QP	Н	19.53	25.57	45.10	46	-0.90
431.60000	QP	Н	20.30	16.10	36.40	46	-9.60
748.00000	QP	Н	25.27	16.13	41.40	46	-4.60

- 1.Corrected Level = Reading Level + Correction Factor
- 2.Correction Factor = Antenna Factor + Cable Loss
- 3. "-" means the emission is below the noise floor.

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## 6.4.2 Measurement results: frequency above 1GHz

## The radiated spurious emissions at

Frequency(MHz)	Margin
2037.95	-2.01

are less than uncertainty. This is within the stated measurement uncertainty, this may affect compliance determined in other test arrangements.

EUT : XI-1250A
Test Channel : Low channel
Test Mode : Transmitted mode

Frequency	Spectrum	Antenna	Preamp	Correction	Reading	Corrected	Limit	Margin
	Analyzer	Polariz.		Factor		Reading	@ 3 m	
(MHz)	Detector	(H/V)	(dB)	(dB/m)	(dBuV)	(dBuV)	(dBuV)	(dB)
2037.95	PK	V	0	31.99	26.94	58.93	74	-15.07
2037.95	AV	V	0	31.99	20	51.99	54	-2.01
4076.1	PK	V	28.02	38.94	42.84	53.76	74	-20.24
4076.1	AV	V	28.02	38.94	30.51	41.43	54	-12.57
6113.79	PK	V	28.02	41.72	41.93	55.63	74	-18.37
6113.79	AV	V	28.02	41.72	28.91	42.61	54	-11.39
8151.86	PK	V	28.02	45.75	ı	ı	74	-
8151.86	AV	V	28.02	45.75	ı	ı	54	-
4823.98	PK	V	28.02	38.7	40.12	50.8	74	-23.2
4823.98	AV	V	28.02	38.7	28.22	38.9	54	-15.1
7236.54	PK	V	28.02	43.86	40.38	56.22	74	-17.78
7236.54	AV	V	28.02	43.86	29.94	45.78	54	-8.22
9648	PK	V	28.02	46.9	42.78	61.66	74	-12.34
9648	AV	V	28.02	46.9	31.28	50.16	54	-3.84
12060.2	PK	V	28.02	48.97	38.64	59.59	74	-14.41
12060.2	AV	V	28.02	48.97	29.51	50.46	54	-3.54
14472	PK	V	28.02	52.05	-		74	-
14472	AV	V	28.02	52.05	-	-	54	-

- 1. Corrected Level = Reading Level + Correction Factor Preamp
- 2.Correction Factor = Antenna Factor + Cable Loss
- 3. "-" means the emission is below the noise floor.

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EUT : XI-1250A

Test Channel : Low channel

Test Mode : Transmitted mode

Frequency	Spectrum	Antenna	Preamp	Correction	Reading	Corrected	Limit	Margin
	Analyzer	Polariz.		Factor		Reading	@ 3 m	
(MHz)	Detector	(H/V)	(dB)	(dB/m)	(dBuV)	(dBuV)	(dBuV)	(dB)
2037.95	PK	Н	0	31.99	23.65	55.64	74	-18.36
2037.95	AV	Н	0	31.99	13.49	45.48	54	-8.52
4076.1	PK	Н	28.02	38.94	40.95	51.87	74	-22.13
4076.1	AV	Н	28.02	38.94	29.88	40.8	54	-13.2
6113.79	PK	Н	28.02	41.72	40.88	54.58	74	-19.42
6113.79	AV	Н	28.02	41.72	29.52	43.22	54	-10.78
8151.86	PK	Н	28.02	45.75	ı	ı	74	-
8151.86	AV	Н	28.02	45.75	-	1	54	-
4824	PK	Н	28.02	38.7	40.73	51.41	74	-22.59
4824	AV	Н	28.02	38.7	28.81	39.49	54	-14.51
7236	PK	Н	28.02	43.86	41.74	57.58	74	-16.42
7236	AV	Н	28.02	43.86	30.41	46.25	54	-7.75
9648	PK	Н	28.02	46.9	43.02	61.9	74	-12.1
9648	AV	Н	28.02	46.9	31.65	50.53	54	-3.47
12060.2	PK	Н	28.02	48.97	-	-	74	-
12060.2	AV	Н	28.02	48.97	-	-	54	-

- 1. Corrected Level = Reading Level + Correction Factor Preamp
- 2.Correction Factor = Antenna Factor + Cable Loss
- 3. "-" means the emission is below the noise floor.

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EUT : XI-1250A
Test Channel : Middle channel
Test Mode : Transmitted mode

Frequency	Spectrum	Antenna	Preamp	Correction	Reading	Corrected	Limit	Margin
	Analyzer	Polariz.		Factor		Reading	@ 3 m	
(MHz)	Detector	(H/V)	(dB)	(dB/m)	(dBuV)	(dBuV)	(dBuV)	(dB)
2062.96	PK	V	0	31.99	23.97	55.96	74	-18.04
2062.96	AV	V	0	31.99	12.96	44.95	54	-9.05
4125.5	PK	V	28.02	38.94	37.97	48.89	74	-25.11
4125.5	AV	V	28.02	38.94	28.3	39.22	54	-14.78
6188.25	PK	V	28.02	41.72	40.84	54.54	74	-19.46
6188.25	AV	V	28.02	41.72	29.34	43.04	54	-10.96
8251	PK	V	28.02	45.92	-	-	74	-
8251	AV	V	28.02	45.92	-	-	54	-
4873.82	PK	V	28.02	38.7	39.97	50.65	74	-23.35
4873.82	AV	V	28.02	38.7	28.84	39.52	54	-14.48
7311	PK	V	28.02	43.86	40.64	56.48	74	-17.52
7311	AV	V	28.02	43.86	30.84	46.68	54	-7.32
9748	PK	V	28.02	46.9	43.86	62.74	74	-11.26
9748	AV	V	28.02	46.9	31.5	50.38	54	-3.62
12185	PK	V	28.02	48.97	-	-	74	-
12185	AV	V	28.02	48.97	-	-	54	-

- 1.Corrected Level = Reading Level + Correction Factor Preamp
- 2.Correction Factor = Antenna Factor + Cable Loss
- 3. "-" means the emission is below the noise floor.

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EUT : XI-1250A
Test Channel : Middle channel
Test Mode : Transmitted mode

Frequency	Spectrum	Antenna	Preamp	Correction	Reading	Corrected	Limit	Margin
	Analyzer	Polariz.		Factor		Reading	@ 3 m	
(MHz)	Detector	(H/V)	(dB)	(dB/m)	(dBuV)	(dBuV)	(dBuV)	(dB)
2062.95	PK	Н	0	31.99	24.54	56.53	74	-17.47
2062.95	AV	Н	0	31.99	13.38	45.37	54	-8.63
4125.5	PK	Н	28.02	38.94	39.35	50.27	74	-23.73
4125.5	AV	Н	28.02	38.94	28.44	39.36	54	-14.64
6188.25	PK	Н	28.02	41.72	40.18	53.88	74	-20.12
6188.25	AV	Н	28.02	41.72	29.37	43.07	54	-10.93
8251	PK	Н	28.02	45.92	-	-	74	-
8251	AV	Н	28.02	45.92	-	-	54	-
4874	PK	Н	28.02	38.7	39.42	50.1	74	-23.9
4874	AV	Н	28.02	38.7	28.89	39.57	54	-14.43
7311	PK	Н	28.02	43.86	42.18	58.02	74	-15.98
7311	AV	Н	28.02	43.86	30.87	46.71	54	-7.29
9748	PK	Н	28.02	46.9	42.51	61.39	74	-12.61
9748	AV	Н	28.02	46.9	31.44	50.32	54	-3.68
12185	PK	Н	28.02	48.97	-	-	74	-
12185	AV	Н	28.02	48.97	-	-	54	-

- 1.Corrected Level = Reading Level + Correction Factor Preamp
- 2.Correction Factor = Antenna Factor + Cable Loss
- 3. "-" means the emission is below the noise floor.

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Test Channel : High channel

Test Mode : Transmitted mode

Frequency	Spectrum	Antenna	Preamp	Correction	Reading	Corrected	Limit	Margin
	Analyzer	Polariz.		Factor		Reading	@ 3 m	
(MHz)	Detector	(H/V)	(dB)	(dB/m)	(dBuV)	(dBuV)	(dBuV)	(dB)
2087.92	PK	V	0	31.99	25.11	57.1	74	-16.9
2087.92	AV	V	0	31.99	14.45	46.44	54	-7.56
4175.89	PK	V	28.02	38.94	41.06	51.98	74	-22.02
4175.89	AV	V	28.02	38.94	29.59	40.51	54	-13.49
6263.25	PK	V	28.02	41.88	40.14	54	74	-20
6263.25	AV	V	28.02	41.88	29.79	43.65	54	-10.35
8351	PK	V	28.02	45.92	-	-	74	-
8351	AV	V	28.02	45.92	-	-	54	-
4924	PK	V	28.02	38.7	41.99	52.67	74	-21.33
4924	AV	V	28.02	38.7	29.56	40.24	54	-13.76
7386	PK	V	28.02	43.86	42.53	58.37	74	-15.63
7386	AV	V	28.02	43.86	30.5	46.34	54	-7.66
9848	PK	V	28.02	46.88	42.63	61.49	74	-12.51
9848	AV	V	28.02	46.88	31.57	50.43	54	-3.57
12310	PK	V	28.02	49.12	-	-	74	-
12310	AV	V	28.02	49.12	-	-	54	-

- 1.Corrected Level = Reading Level + Correction Factor Preamp
- 2.Correction Factor = Antenna Factor + Cable Loss
- 3. "-" means the emission is below the noise floor.

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EUT : XI-1250A

Test Channel : High channel

Test Mode : Transmitted mode

Frequency	Spectrum	Antenna	Preamp	Correction	Reading	Corrected	Limit	Margin
	Analyzer	Polariz.		Factor		Reading	@ 3 m	
(MHz)	Detector	(H/V)	(dB)	(dB/m)	(dBuV)	(dBuV)	(dBuV)	(dB)
2087.982	PK	Н	0	31.99	23.95	55.94	74	-18.06
2087.982	AV	Н	0	31.99	13.26	45.25	54	-8.75
4176.03	PK	Н	28.02	38.94	39.94	50.86	74	-23.14
4176.03	AV	Н	28.02	38.94	29.89	40.81	54	-13.19
6263.25	PK	Н	28.02	41.88	39.56	53.42	74	-20.58
6263.25	AV	Н	28.02	41.88	29.71	43.57	54	-10.43
8351	PK	Н	28.02	45.92	ı	ı	74	-
8351	AV	Н	28.02	45.92	-	1	54	-
4924	PK	Н	28.02	38.7	40.66	51.34	74	-22.66
4924	AV	Н	28.02	38.7	28.7	39.38	54	-14.62
7386	PK	Н	28.02	43.86	41.9	57.74	74	-16.26
7386	AV	Н	28.02	43.86	30.14	45.98	54	-8.02
9848	PK	Н	28.02	46.88	42.64	61.5	74	-12.5
9848	AV	Н	28.02	46.88	31.77	50.63	54	-3.37
12310	PK	Н	28.02	49.12	-		74	-
12310	AV	Н	28.02	49.12	-	-	54	-

- 1.Corrected Level = Reading Level + Correction Factor Preamp
- 2.Correction Factor = Antenna Factor + Cable Loss
- 3. "-" means the emission is below the noise floor.

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## 7. Power Spectrum Density test

## 7.1 Operating environment

Temperature: 25  $^{\circ}$ C Relative Humidity: 59  $^{\circ}$ %

## 7.2 Test setup & procedure

The power spectrum density per FCC §15.247(d) was measured from the antenna port of the EUT using a 50ohm spectrum analyzer with the resolution bandwidth set at 3kHz, the video bandwidth set at 30kHz, a span of 1.5 MHz, and the sweep time set at 500 seconds. Power Density was read directly and cable loss (1dB)/external attenuator (3dB) correction was added to the reading to obtain power at the EUT antenna terminals. The test was performed at 3 channels (lowest, middle and highest channel). The Power Spectral Density measured result is in the following table.

See Power Spectrum Density plot as file name "Power Spectrum Density plot.pdf"

## 7.3 Measured data of Power Spectrum Density test results

Channel	Frequency (MHz)	Measured level (dBm)	Limit (dBm)
Low	2413.647	-7.20	8
Middle	2437.789	-6.69	8
High	2459.999	-8.20	8

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## 8. Emission on the band edge §FCC 15.247(C)

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

See band-edge plot as file name "Band-edge plot.pdf".

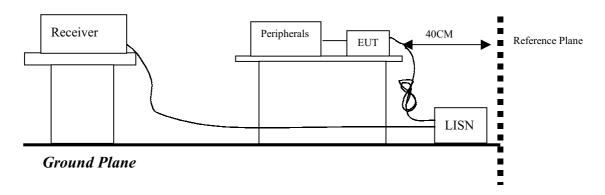
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## 9. Power Line Conducted Emission test §FCC 15.207

## 9.1 Operating environment

Temperature: 22 °C Relative Humidity: 59 %

## 9.2 Test setup & procedure



The EUT are connected to the main power through a line impedance stabilization network (LISN). This provides a 50 ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination.

Both sides (Line and Neutral) of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4/1992 on conducted measurement.

The bandwidth of the field strength meter (R & S Test Receiver ESCS 30) is set at 9kHz.

See Power Line Conducted Emission plot as file name "Power Line Conducted Emission plot.pdf".

## **Emission Limit**

FCC Part 15 Paragraph 15.207						
Frog (MUz)	Maximum RF	Line Voltage				
Freq. (MHz)	uV	dBuV				
0.45 - 30	250	48.0				

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## 9.3 Power Line Conducted Emission test data

## The conducted emissions at

Frequency(MHz)	Margin
3.65000	-2.30
0.65000	-1.50
0.78600	-2.30

are less than uncertainty. This is within the stated measurement uncertainty, this may affect compliance determined in other test arrangements.

EUT : XI-1250A

Test Mode : Low Channel

Test Condition : Transmitter Mode

Power Line (circle)	Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Margin (dB) QP
LINE	0.68200	44.0	48.00	-4.00
LINE	2.45000	44.5	48.00	-3.50
LINE	2.57800	41.8	48.00	-6.20
LINE	3.41800	43.6	48.00	-4.40
LINE	3.53000	44.0	48.00	-4.00
LINE	3.65000	45.7	48.00	-2.30
LINE	3.80200	44.0	48.00	-4.00
NEUTRAL	0.52200	44.8	48.00	-3.20
NEUTRAL	0.65000	46.5	48.00	-1.50
NEUTRAL	0.78600	45.7	48.00	-2.30
NEUTRAL	2.36200	41.2	48.00	-6.80
NEUTRAL	2.73800	40.7	48.00	-7.30
NEUTRAL	3.53800	43.5	48.00	-4.50

- 1. The reading value including cable loss and LISN factor.
- 2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the Conducted Emission Test, the uncertainty is within ±2.6dB



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## The conducted emissions at

Frequency(MHz)	Margin
3.55400	-1.20
3.64200	-1.70
0.65800	-1.30
0.78600	-2.50

are less than uncertainty. This is within the stated measurement uncertainty, this may affect compliance determined in other test arrangements.

EUT : XI-1250A Test Mode : Middle Channel

Test Condition : Transmitter Mode

Power Line (circle)	Freq. (MHz)	Reading (dB μ V)  QP	Limit (dB μ V) QP	Margin (dB) QP
LINE	0.65000	45.1	48.00	-2.90
LINE	1.44200	42.8	48.00	-5.20
LINE	1.84200	43.5	48.00	-4.50
LINE	1.97000	43.5	48.00	-4.50
LINE	3.38600	44.2	48.00	-3.80
LINE	3.55400	46.8	48.00	-1.20
LINE	3.64200	46.3	48.00	-1.70
NEUTRAL	0.52200	45.1	48.00	-2.90
NEUTRAL	0.65800	46.7	48.00	-1.30
NEUTRAL	0.78600	45.5	48.00	-2.50
NEUTRAL	1.17800	42.5	48.00	-5.50
NEUTRAL	2.37000	41.5	48.00	-6.50
NEUTRAL	3.52200	41.1	48.00	-6.90

- 1. 1. The reading value included cable loss and LISN factor.
- 2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the Conducted Emission Test, the uncertainty is within  $\pm 2.6 dB$

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## The conducted emissions at

Frequency(MHz)	Margin
3.53000	-1.60
0.65800	-1.30

are less than uncertainty. This is within the stated measurement uncertainty, this may affect compliance determined in other test arrangements.

EUT : XI-1250A
Test Mode : High Channel
Test Condition : Transmitter Mode

Power Line (circle)	Freq. (MHz)	Reading (dB μ V) QP	Limit (dB μ V) QP	Margin (dB) QP
LINE	0.65800	44.4	48.00	-3.60
LINE	0.78600	45.3	48.00	-2.70
LINE	1.83400	44.5	48.00	-3.50
LINE	1.96200	42.8	48.00	-5.20
LINE	2.36200	44.7	48.00	-3.30
LINE	3.53000	46.4	48.00	-1.60
NEUTRAL	0.52200	45.3	48.00	-2.70
NEUTRAL	0.65800	46.7	48.00	-1.30
NEUTRAL	0.78600	45.1	48.00	-2.90
NEUTRAL	1.97000	41.3	48.00	-6.70
NEUTRAL	2.37000	45.3	48.00	-2.70
NEUTRAL	3.52200	43.0	48.00	-5.00

- 1. 1. The reading value included cable loss and LISN factor.
- 2. Uncertainty was calculated in accordance with NAMAS NIS 81. In the Conducted Emission Test, the uncertainty is within ±2.6dB