TEST REPORT

1. Applicant

Name	: INTsys Co.,Ltd
Address	: 4th fl. Heehoon Tower building Guro5Dong, Guro-Gu, Seoul, Korea (152-055)

2. Products

Name	: N-GEN
Model/Type	: INT-910HA
Manufacturer	: INTsys Co.,Ltd

3. Test Standard	: FCC CFR 47 Part 15, Subpart B
4. Test Method	: ANSI C63.4-2003
5. Test Result	: Positive
6. Date of Application	: January 4, 2008
7. Date of Issue	: January 16, 2008

Tested by

Bum-Jong Kim
Telecommunication Team
Engineer

Approved by

Seok-Jin Kim
Telecommunication Team
Manager

TABLE OF CONTENTS

Ⅰ. GENERAL INFORMATIONS

1.1 Applicant (Client)

Name	Intsys.Co.Ltd.
Address	4th fl. Heehoon Tower building Guro5Dong, Guro-Gu, Seoul, Korea (152-055)
Contact Person	Jung-Ho, Park
Telephone No.	+82-2-3281-1777
Facsimile No.	+82-2-3281-1528
E-mail address	parkjh@intsys.co.kr

1.2 Equipment (EUT)

Type of equipment	N-GEN
Model Name	INT-910HA
FCC ID	**VZA-INT910HA**
Frequency Band	Including RFID, WLAN b/g
Type of Modulation	-
Number of Channels	-
Antenna Gain	-
Function Type	Transceiver
Power Source	AC 220V adaptor
Manufacturer Name	Intsys.Co.Ltd.
Manufacturer Address	4th fl. Heehoon Tower building Guro5Dong, Guro-Gu, Seoul, Korea (152-055)

1.3 Testing Laboratory

Testing Place	Korea Testing Labortory (KTL) 1271-12, Sa-Dong Sangnok-Gu, Ansan-si Gyunggi-Do , Korea
Test Engineer	Bum-Jong KIM
Telephone number	+82 31 5000 131
Facsimile number	+82 31 5000 159
E-mail address	temple@ktl.re.kr
Other Comments	-

Ⅱ. SUMMARY OF TEST RESULTS

Testing performed for : N-GEN

Equipment Under Test : INT-910HA

Receipt of Test Sample : January 4, 2008

Test Start Date : January 5, 2008

Test End Date : January 13, 2008

The following table represents the list of measurements required under the FCC CFR47 Part 15.107 and 15.109

PDA mode

FCC Rules	Test Requirements	Result
15.107	Conducted Emission	Pass
15.109	Radiated Emission	Pass

Note 1 : Test results reported in this document relate only to the items tested
Note 2 : The required tests demonstrated compliance as per client declaration of test configuration, monitoring methodology and associated pass/fail criteria
Note 3 : Test results apply only to the item(s) tested

*** Modifications required for compliance**
No modifications were implemented by KTL.
All results in this report pertain to the un-modified sample provided to KTL.

Ⅲ. Measurement & Results

3.1 Radiated Emissions (FCC Part 15.109)

3.1.1 Test Procedure

3.1.1.1 Preliminary Testing for Reference

Preliminary testing was performed in a KTL absorber-lined room to determine the emission characteristics of the EUT. The EUT was placed on the wooden table which has dimensions of 0.8 meters in height, 1 meter in length and 1.5 meters in width. Receiving antenna (Biconi-Log antenna : 30 to 1000 MHz or Horn Antenna : 1 to 18 GHz) was placed at the distance of 1 meter from the EUT.

An attempt was made to maximize the emission level with the various configurations of the EUT. Emission levels from the EUT with various configurations were examined on a spectrum analyzer connected with a RF amplifier and graphed by a plotter.

3.1.1.2 Final Radiated Emission Test at an Absorber-Lined Room

The final measurement of radiated field strength was carried out in a KTL Absorber-Lined Room that was listed up at FCC according to the "Radiated Emissions Testing" procedure specified by ANSI C63.4.

Based on the test results in preliminary test, measurement was made in same test set up and configuration which produced maximum emission level. Receiving antenna was installed at 3-meter distance from the EUT, and was connected to an EMI receiver.

Turntable was rotated through 360 degrees and receiving antenna height was varied from 1 to 4 meters above the ground plane to read maximum emission level. Receiving antenna polarization was changed vertical and horizontal. The worst value was recorded.

If necessary, the radiated emission measurements could be performed at a closer distance than specified distance to ensure higher accuracy and their results were extrapolated to the specified distance using an inverse linear distance extrapolation factor (20 dB/decade) as per Section 15.31(f).

The maximum emission level from the EUT occurred in such configuration as shown in the following photograph.

3.1.2 Sample Calculation

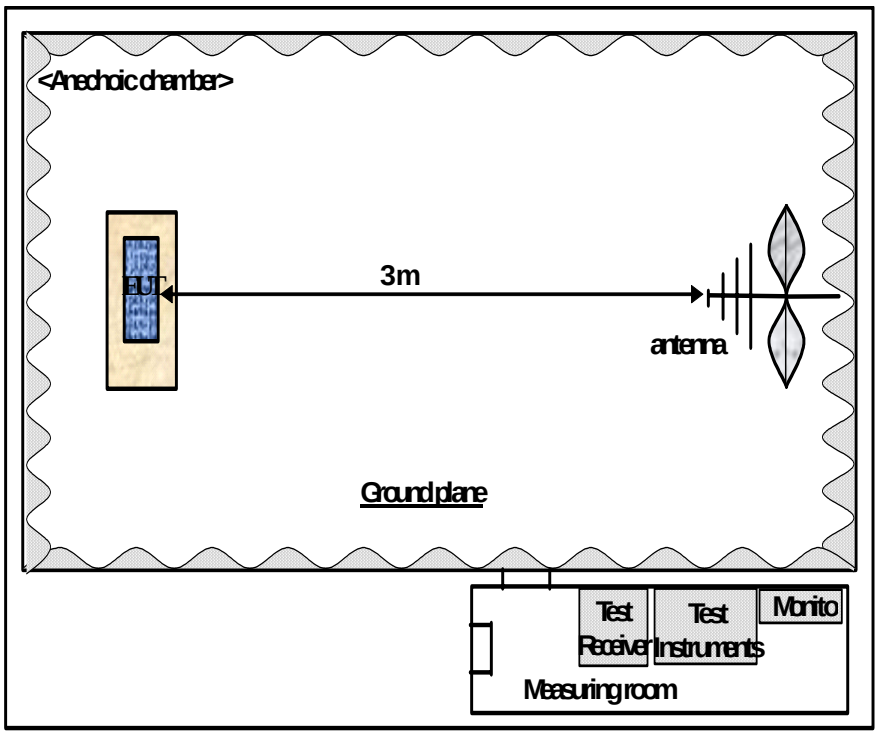
The emission level measured in decibels above one microvolt (dB μV) was converted into microvolt per meter (μV/m) as shown in following sample calculation.

For example :

Measured Value at	31.4 MHz	23.7 dB μV
+	Antenna Factor & Cable loss	13.0 dB
−	Preamplifier	0.0 dB
−	Distance Correction Factor *	0.0 dB
=	Radiated Emission	36.7 dB μV/m
		(= 68.4 μV/m)

* Extrapolated from the measured distance to the specified distance by an inverse linear distance extrapolation.

3.9.3 Photograph for the test configuration



3.1.4 Test Results

- Measurement mode : **PDA**
- Resolution Bandwidth: __x__ CISPR Quasi-Peak (6dB Bandwidth : 120kHz for below 1GHz)
  Peak (3dB Bandwidth : 1MHz for above 1GHz)
- Measurement mode : No Transmit power with RFID and WLAN
- Measurement Distance : 3 Meter
- The worst case is Z axes

Frequency (MHz)	* D.M.	* A.P.	Measured Value (dBμV)	* A.F. + C.L (dB/m)	* A.G. (dB)	* D.C.F. (dB)	Emission Level (dBμV/m)	Limit (dBμV/m)	** Margin (dB)
31.4	Q	V	23.7	13.0	0.0	0.0	36.7	40.0	-3.3
33.3	Q	V	22.9	13.0	0.0	0.0	35.9	40.0	-4.1
41.3	Q	V	22.4	13.8	0.0	0.0	36.2	40.0	-3.8
65.2	Q	V	19.5	13.0	0.0	0.0	32.5	40.0	-7.5
77.3	Q	V	20.7	10.7	0.0	0.0	31.4	40.0	-8.6
98.4	Q	V	19.8	10.2	0.0	0.0	30.0	43.5	-13.5
124.3	Q	V	23.5	12.7	0.0	0.0	36.2	43.5	-7.3
135.8	Q	V	25.6	13.9	0.0	0.0	39.5	43.5	-4.0
144.0	Q	V	25.1	14.5	0.0	0.0	39.6	43.5	-3.9
362.9	Q	H	19.2	17.1	0.0	0.0	36.3	46.0	-9.7
424.8	Q	H	20.5	18.8	0.0	0.0	39.3	46.0	-6.7
520.0	Q	H	21.5	20.9	0.0	0.0	42.4	46.0	-3.6

Note

The observed EMI receiver(ESVS30) noise floor level was 2.0 dBμV. And all other emissions not reported on data were more than 25 dB below the permitted level.

* D.M. : Detect Mode (P : Peak, Q : Quasi-Peak, A : Average)
A.P. : Antenna Polarization (H : Horizontal, V : Vertical)
A.F. : Antenna Factor
C.L. : Cable Loss
A.G. : Amplifier Gain
D.C.F. : Distance Correction Factor
< : Less than

** Margin (dB) = Emission Level (dB) - Limit (dB)

3.2 Conducted Emissions (FCC Part 15.107)

3.2.1 Test Procedure

Conducted emission measurements on the EUT were performed by "AC Power Line Conducted Emissions Testing" procedure as per ANSI C63.4. The EUT was set up on a wooden table 0.8 meters height, 1.0 by 1.5 meters in size, placed in the shielded enclosed with a side of wall of which constituted a vertical conducting surface of 2.2 m x 3.1 m in size to maintain 40 cm from the rear of EUT

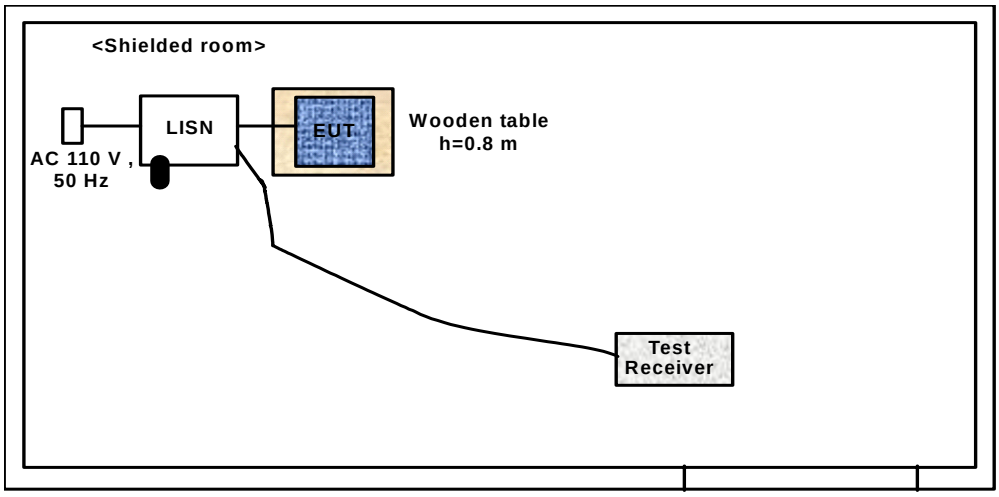
LISN(Line Impedance Stabilization Network, ROHDE & SCHWARZ, ESH3-Z5, 50 ohm / 50 μH) was installed and electrically boned to the conducting ground plane. The EUT was connected to the LISN using a typical power adapter.

One of two 50 ohm output terminals of the LISN was connected to the EMI Receiver (ROHDE & SCHWARZ, ESCI, 9 kHz to 3 GHz) and the other was terminated in 50 ohms. Measurements were again performed after interchanging such a connection oppositely.

The frequency range from 150 kHz to 30 MHz was examined and the remarkable frequencies were measured with Quasi-peak and Average values using the EMI receiver instrument (ROHDE & SCHWARZ, ESI, 9 kHz to 3 GHz ; Detector Function ; CISPR Quasi-Peak & Average). The 6 dB bandwidth of the Receiver was set to 9 kHz

The position of connecting cables of the EUT was changed to find the worst case configuration during measurements. The maximum emission level from the EUT occurred in such configuration as shown in the following photograph.

3.2.2 Photograph for the test configuration



3.2.3 Sample calculation

The emission level measured in decibels above one microvolt (dB μV) was converted into microvolt (μV) as shown in following sample calculation.

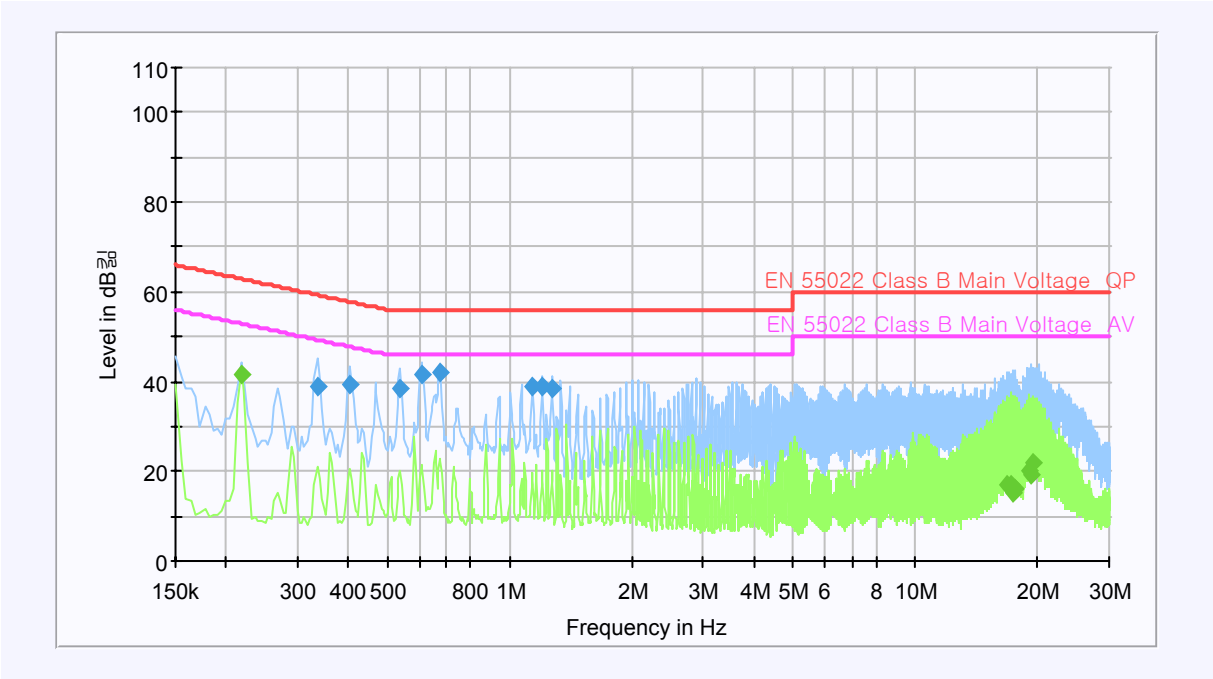
For example :

Measured Value at	16.38 MHz	25.1 dB μV @ Q-Peak mode
+ Correct factor *		10.7 dB
= Conducted Emission		35.8 dB μV

* Correct factor is adding RF cable loss and Attenuation.

3.2.4 Test Results

FCC 15.107(a) - PDA



Final Measurement Detector 1

Frequency (MHz)	QuasiPeak (dB µV)	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
0.334500	39.0	L1	10.1	20.3	59.3
0.402000	39.4	L1	10.1	18.4	57.8
0.537000	38.3	N	10.2	17.7	56.0
0.604500	41.7	L1	10.1	14.3	56.0
0.672000	42.2	L1	10.2	13.8	56.0
1.135500	38.7	L1	10.2	17.3	56.0
1.203000	38.9	L1	10.2	17.1	56.0
1.270500	38.5	L1	10.2	17.5	56.0

Final Measurement Detector 2

Frequency (MHz)	Average (dB µV)	Line	Corr. (dB)	Margin (dB)	Limit (dB µV)
0.217500	41.7	L1	10.1	11.2	52.9
16.863000	16.9	L1	10.8	33.1	50.0
17.232000	17.2	L1	10.8	32.8	50.0
17.452500	15.3	L1	10.8	34.7	50.0
17.601000	16.2	L1	10.8	33.8	50.0
19.068000	20.0	L1	10.8	30.0	50.0
19.360500	19.4	L1	10.8	30.6	50.0
19.437000	22.1	L1	10.8	27.9	50.0

Ⅵ. TEST EQUIPMENTS

No.	Equipment	Manufacturer	Model	S/N	Effective Cal.Duration
1	EMI Receiver (20 MHz ~ 1 GHz)	R&S	ESVS30	830516002	03/15/2007 ~ 03/15/2008
2	EMI Receiver (9 kHz ~ 3 GHz)	R&S	ESCI	100076	03/28/2007 ~ 03/28/2008
3	Spectrum Analyzer (100 Hz ~ 26.5 GHz)	Agilent	E4407B	US41443316	12/01/2007 ~ 12/01/2008
4	Spectrum Analyzer (3 Hz ~ 50 GHz)	Agilent	E4448A	MY43360322	02/26/2007 ~ 02/26/2008
5	Test Receicer (9 kHz ~ 30 MHz)	R&S	ESH3	860905001	06/18/2007 ~ 06/18/2008
6	Pre-Amplifier (100 kHz ~ 3 GHz)	H.P.	8347A	2834A00543	05/19/2007 ~ 05/19/2008
7	Pre-Amplifier (1 GHz ~ 26.5 GHz)	H.P.	8449B	3008A00302	06/14/2007 ~ 06/14/2008
8	LISN(50 Ω , 50 μH) (10 kHz ~ 100 MHz)	R&S	ESH3-Z5	826789009	07/05/2007 ~ 07/05/2008
9	Biconi-Log Ant. (30 MHz ~ 1000 MHz)	Schwarzbeck	VULB9168	9168-168	08/16/2007 ~ 08/16/2008
10	Horn Ant. (1 GHz ~ 18 GHz)	EMCO	3115	--	05/09/2007 ~ 05/09/2008
11	Active Loop Ant. (9 kHz ~ 30 MHz)	EMCO	6502	2532	06/08/2007 ~ 06/08/2008
12	Shielded Room (5.0 m x 4.5 m)	SIN-MYUNG	--	--	--
13	Signal Generator (250 kHz ~ 20 GHz)	Agilent	E8257D	MY44320379	01/02/2007 ~ 01/02/2008
14	DC Power Supply	Agilent	E4356A	MY41000296	09/28/2007 ~ 09/28/2008
15	Power Splitter	H.P.	11667A	21063	10/09/2007 ~ 10/09/2008
16	Power Meter	Agilent	E4417A	GB4129075	09/17/2007 ~ 09/17/2008
17	Attenuator	Weinschel	56-20	N8257	01/13/2007 ~ 01/13/2008
18	Oscillator	Kenwood	AG-203D	10040568	10/23/2007 ~ 10/23/2008

APPENDIXS

1. EUT photo

2. Test setup photo

<Radiated Emission>

<Conducted Emission>