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TEST REPORT For FCC

Test Report No.	:	2008090021
Date of Issue	:	September 04, 2008
FCC ID	:	TBJDSM
Model/Type No.	:	DSM
Kind of Product	:	Automotive Scanner
Applicant	:	Nextech Co., Ltd.
Applicant Address	:	E&C Venture Dream Tower the 3rd ,13th Floor, 197-33, Guro-Dong, Guro-Gu, Seoul, Korea
Manufacturer	:	Nextech Co., Ltd.
Manufacturer Address	:	E&C Venture Dream Tower the 3rd ,13th Floor, 197-33, Guro-Dong, Guro-Gu, Seoul, Korea
Contact Person	:	Young-Hak Kwon / Assistant manager
Telephone	:	+82-2-3140-2583
Received Date	:	August 08, 2008
Test period	:	Start : August 20, 2008 End : September 04, 2008
Test Results	:	☒ In Compliance ☐ Not in Compliance

The test results presented in this report relate only to the object tested.

Tested by

Kyu-Chul, Shin
Test Engineer
Date: September 04, 2008

Reviewed by

Young-Joon, Park
Technical Manager
Date: September 04, 2008

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REPORT REVISION HISTORY

Date	Revision	Page No
September 04, 2008	Issued (2008090022)	All

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1.0 General Product Description

Equipment model name	: DSM
Serial number	: Prototype
EUT condition	: Pre-production, not damaged
Antenna type	: Chip antenna Gain : -2.51dBi
Frequency Range	: 2412Mhz ~ 2462MHz
RF output power	: 12.82 dBm Peak Conducted
Number of channels	: 11
Type of Modulation	: CCK, DQPSK, DBPSK for DSSS
Transfer Rate	: 11/5.5/2/1Mbps for 802.11b
Power Source	: Rechargeble battery(DC 3.7V Lithium Ion)

1.1 Tested Frequency

	LOW	MID	HIGH
Frequency (MHz)	2412	2437	2462

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1.2 Model Differences

Not applicable

1.3 Device Modifications

The following modifications were necessary for compliance:
Not applicable

1.4 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Notebook PC	SAMSUNG	S E N S 8 5 0	626591ER300185
Wireless USB Network Adaptor	UNICORN Co., Ltd.	WL-54G	23407264405-01E
Personal Computer	Hewlett-Packard Company	Hp pavilion t000_Gruper	KRJ50403HK
LCD Monitor	TIANJIN SAMSUNG ELCTRONICS DISPLAY	GH17US	N372HVEX225526
AC/DC Adapter	Anam Instruments (ShenZhen) Co., Ltd.	AP04214-UV	0312103885AC
Mouse	SAMSUNG CORPORATION	SOM-3200	S3203B000588
Keyboard	Samsung Electro-Mechanics Co., Ltd.	SEM-DT35	33008101
DC POWER SUPPLY	Topward Electric Instruments Co.,Ltd.	6303D	711196

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1.5 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

1.6 Test Facility

The measurement facility is located at 386-1, Ho-dong, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea. The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.

1.7 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
USA	**FCC**	3 & 10 meter Open Area Test Sites and one conducted site to perform FCC Part 15/18 measurements.	93250
JAPAN	**VCCI**	10 meter Open Area Test Site and one conducted site.	R-948, C-986
KOREA	**MIC**	EMI (10 meter Open Area Test Site and two conducted sites) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	No. 51, KR0025
International	**KOLAS**	EMC	
Europe	**GLAS**	EMC EN 55011, EN 55022, EN 61000-6-3, EN 61000-6-4, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, EN 50130-4, EN 55024, EN 61204-3, EN 60601-1-2, EN 61000-4-2, EN 61000-4-3, EN 61000-4-4, EN 61000-4-5, EN 61000-4-6, EN 61000-4-8, EN 61000-4-11	No.13000796-02

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2.0 Summary of tests

FCC Part Section(s)	Parameter	Limit	Test Condition	Status (note 1)
I. FCC Part Section(s)				
2.4GHz WLAN Terminal equipment (SL-2511CF) is certified by FCC(FCC ID: NI3-IS20V35) Refer to the test report of FCC ID: NI3-IS20V35				
II. Additional items				
15.209	Field Strength of Harmonics	< 54 dBuV (at 3m)	Radiated	C
15.207	AC Conducted Emissions	EN 55022	Line Conducted	C

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

The sample was tested according to the following specification:
- FCC Part 15.247, ANSI C63.4-2003

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2.1.1 Field Strength of Emissions

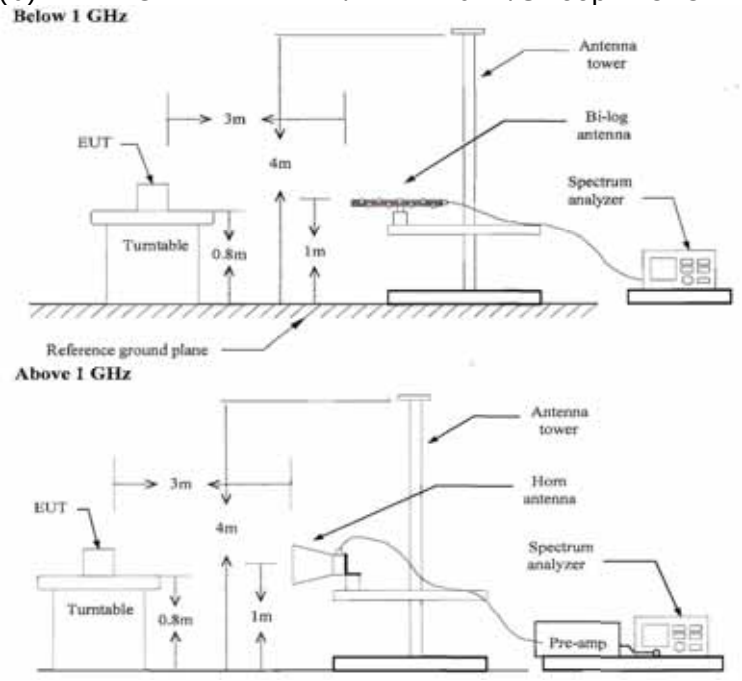
Test Location

☒ Testing was performed at a test distance of 3 meter Open Area Test Site

Test Procedures

The height of the measuring antenna was varied between 1 to 4 m and the table was rotated a full revolution in order to obtain maximum values of the electric field intensity. The measurement was made in both the vertical and horizontal polarization, and the maximum value is presented in the report.

The spectrum analyzer is set to:
Below 1GHz :
RBW=100KHz/VBW=300KHz/Sweep=AUTO
Above 1GHz:
(a) PEAK:RBW=VBW=1MHz/Sweep=AUTO
(b) AVERAGE:RBW=1MHz/VBW=10Hz/Sweep=AUTO



Limit

- **15.209(a)**

Frequency(MHz)	Field Strength uV/m@3m	Field Strength dBuV/m@3m
30-88	100**	40
88-216	150**	43.5
216-960	200**	46
Above 960	500	54

** Except as provided in 15.209(g).fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g.15.231 and 15.241.

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Test Results

EUT	Automotive Scanner	Measurement Detail	
Model	DSM	Frequency Range	Below 1000MHz
Channel	-	Detector function	Quasi-Peak

The requirements are:

☒ Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
900.06	41.2	4.8	Quasi-Peak

Test Data

Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor		Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Cable			
192.51	28.1	H	1.0	7.1	1.5	43.5	36.8	6.7
202.20	27.3	V	4.0	7.5	1.6	43.5	36.4	7.1
334.05	25.7	H	4.0	11.7	2.6	46.0	40.0	6.0
832.77	16.0	H	1.8	20.0	4.5	46.0	40.5	5.5
849.73	15.5	V	2.0	20.2	4.6	46.0	40.4	5.6
900.06	15.6	V	2.0	21.0	4.6	46.0	41.2	4.8

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Test Results

EUT	Automotive Scanner	Measurement Detail	
Model	DSM	Frequency Range	1-25GHz
Channel	Channel 1	Detector function	Average/Peak

The requirements are:

☒ Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
4823.5	51.26/66.39	2.74/7.61	Average/Peak

Frequency [MHz]	Reading A/P [dBuV/m]	Pol.	Height [m]	Correction Factor			Limits/ Detector A/P [dBuV/m]	Result A/P [dBuV/m]	Margin A/P [dB]
				Antenna	Amp.Gain	Cable			
4823.5	47.26/62.39	V	1.0	33.7	34.8	5.1	54.0 /74.0	51.26/66.39	2.74/7.61

Restricted band edge test data

Measured frequency range : 2310-2390 MHz, 2483.5-2500 MHz

Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor			Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Amp. Gain	Cable			
No emissions were detected at a level greater than 20dB below limit.									

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Test Results

EUT	Automotive Scanner	Measurement Detail	
Model	DSM	Frequency Range	1-25GHz
Channel	Channel 6	Detector function	Average/Peak

The requirements are:

☒ Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
4923.80	44.83/59.30	9.17/14.7	Average/Peak

Frequency [MHz]	Reading A/P [dBuV/m]	Pol.	Height [m]	Correction Factor			Limits/ Detector A/P [dBuV/m]	Result A/P [dBuV/m]	Margin A/P [dB]
				Antenna	Amp.Gain	Cable			
4923.80	40.83/55.30	V	1.0	33.7	34.8	5.1	54.0 /74.0	44.83/59.30	9.17/14.7

Restricted band edge test data

Measured frequency range : 2310-2390 MHz, 2483.5-2500 MHz

Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor			Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Amp. Gain	Cable			
No emissions were detected at a level greater than 20dB below limit.									

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Test Results

EUT	Automotive Scanner	Measurement Detail	
Model	DSM	Frequency Range	1-25GHz
Channel	Channel 11	Detector function	Average/Peak

The requirements are:

☒ Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
4924.05	45.85/59.53	8.15/14.47	Average/Peak

Frequency [MHz]	Reading A/P [dBuV/m]	Pol.	Height [m]	Correction Factor			Limits/ Detector A/P [dBuV/m]	Result A/P [dBuV/m]	Margin A/P [dB]
				Antenna	Amp.Gain	Cable			
4924.05	41.75/55.43	V	1.0	33.7	34.8	5.2	54.0 /74.0	45.85/59.53	8.15/14.47

Restricted band edge test data

Measured frequency range : 2310-2390 MHz, 2483.5-2500 MHz

Frequency [MHz]	Reading [dBuV/m]	Pol.	Height [m]	Correction Factor			Limits [dBuV/m]	Result [dBuV/m]	Margin [dB]
				Antenna	Amp. Gain	Cable			
No emissions were detected at a level greater than 20dB below limit.									

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2.1.2 AC Conducted Emissions

Test Location
Shielded Room

Frequency Range of Measurement
150 kHz to 30 MHz

Instrument Settings
IF Band Width: 9 kHz

Test Procedures

The EUT was placed on a non-metallic table 0.8m above the metallic, grounded floor and 0.4m from the reference ground plane wall. The distance to other metallic surfaces was at least 0.8m.
Amplitude measurements were performed with a quasi-peak detector and an average detector.

Limit

- **15.207(a)**

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15 ~ 0.5	66 to 56*	56 to 46*
0.5 ~ 5	56	46
5 ~ 30	60	50

* Decreases with the logarithm of the frequency.

Test Results
The requirements are:

☒ Complies

Frequency (MHz)	Measured Data (dBuV/m)	Margin (dB)	Remark
16.48	47.8	12.2	Quasi-peak

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Test Data

Frequency	Correction Factor		Line	Quasi-peak				Average			
				Limit	Reading	Result	Margin	Limit	Reading	Result	Margin
[MHz]	LISN	Cable		[dBuV]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dB]
16.36	0.6	0.9	H	60.0	47.0	48.5	11.5	50.0	31.7	33.2	16.8
16.41	0.6	0.9	N	60.0	44.4	45.9	14.1	50.0	30.8	32.3	17.7
16.48	0.6	0.9	H	60.0	46.3	47.8	12.2	50.0	32.2	33.7	16.3
16.50	0.7	0.8	N	60.0	45.1	46.6	13.4	50.0	31.5	33.0	17.0
16.55	0.7	0.8	N	60.0	44.4	45.9	14.1	50.0	30.8	32.3	17.7
20.62	0.8	0.9	H	60.0	41.2	42.9	17.1	50.0	31.1	32.8	17.2

H : HOT, N : NEUTRAL

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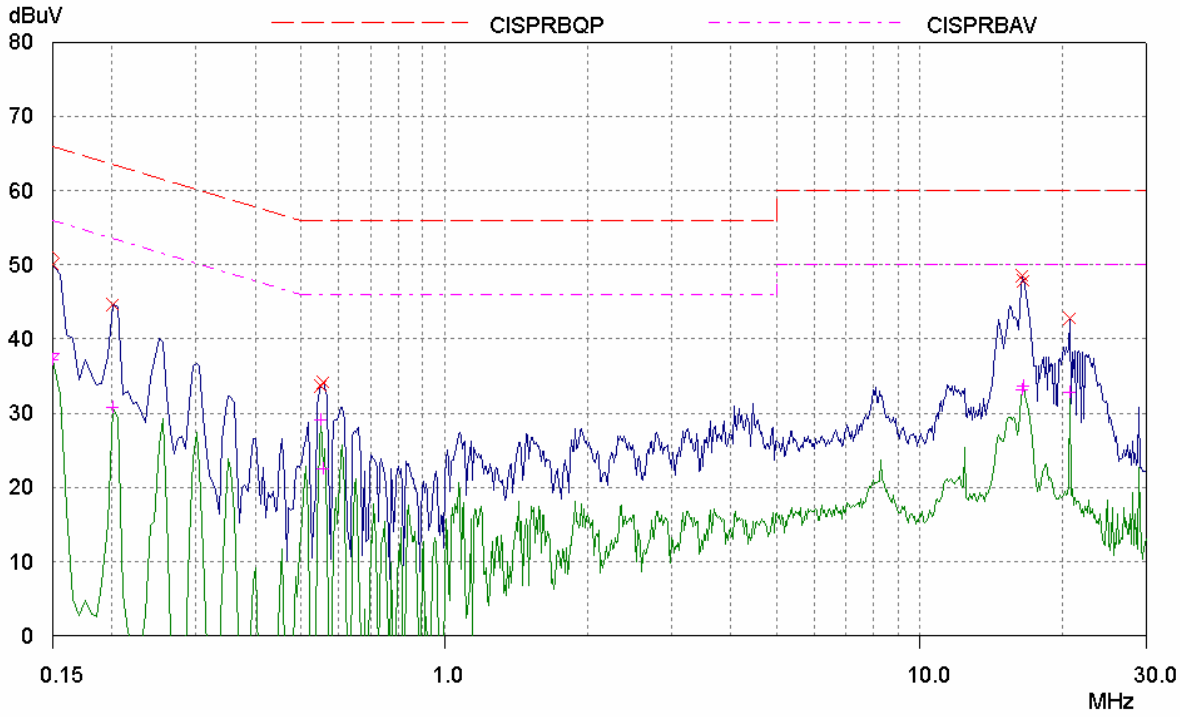
[HOT]



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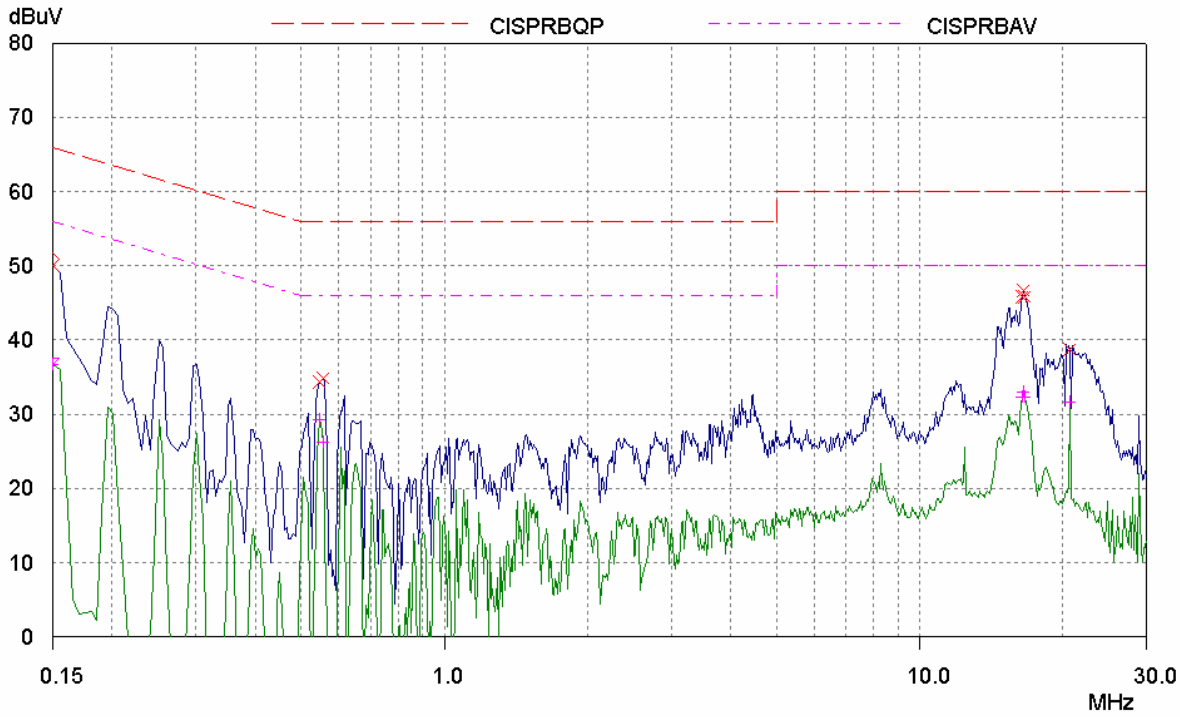

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APPENDIX A – Test Equipment Used For Tests

	Name of Equipment	Manufacturer	Model No.	Serial No.	Due Date
1	Spectrum Analyzer	Agilent	8564E	3551A0041	2008-11-01
2	Spectrum Analyzer	HP	E4403B	US39440619	2009-09-03
3	Spectrum Analyzer	Rohde & Schwarz	FSP-30	100994	2008-11-19
4	EMI Test Receiver	Rohde & Schwarz	ESVS30	826638/008	2009-03-07
5	ULTRA Broadband Antenna	Rohde & Schwarz	HL562	361324/014	2010-06-12
6	LOOP ANTENNA	EMCO	6502	9107-2652	2008-10-17
7	LOOP ANTENNA	EMCO	6502	9607-3020	2009-03-06
8	System Power Supply	HP	6032A	3440A-10521	2009-07-16
9	EPM Series Power Meter	HP	E4418A	GB38272734	2008-11-03
10	Power Sensor	HP	8481A	331BA92056	2008-11-03
11	Power Sensor	HP	8482B	331BA05406	2008-11-03
12	Audio Analyzer	HP	8903B	2747A03432	2008-11-01
13	ESG-D Series Signal Generator	Agilent	E4432B	US40054094	2008-11-01
14	SYNTHESIZED SWEEPER	HP	8341B	2819A01563	2008-11-22
15	Modulation Analyzer	HP	8901B	3438A05228	2008-11-08
16	Attenuator	HP	8494A	3308A33351	2008-11-06
17	Attenuator	HP	8496A	3308A15142	2008-11-06
18	Temp&Humi Chamber	Kunpoong	KP-1000	2002KP050041	2009-01-15
19	Temp&Humi Chamber	Kunpoong	KP-RC2000	2002KP650042	2009-01-15
20	EMC Analyzer	Agilent	E7405A	MY45110859	2009-01-09
21	Horn Antenna	ETS-Lindgren	3115	00078894	2008-11-29
22	Horn Antenna	ETS-Lindgren	3115	00078895	2008-11-29
23	Horn Antenna	ETS-Lindgren	3116	00062504	2008-11-27
24	Horn Antenna	ETS-Lindgren	3116	00062916	2008-11-27
25	Dipole Antenna	SCHWARZBECK	VHA 9103	VHA91032557	2009-11-27
26	Dipole Antenna	SCHWARZBECK	UHA 9105	UHA91052417	2009-11-27
27	OPT H64 AMPLIFIER	HP	8447F	3113A06814	2009-02-28
28	PREAMPLIFIER	Agilent	8449B	3008A02307	2008-11-20

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