RF TEST REPORT

Test item	:	DIGITAL CAR AVN SYSTEM
Model No.	:	ATB30E4AN
Order No.	:	DEMC1401-00087
Date of receipt	:	2014-01-09
Test duration	:	2014-01-14~ 2014-01-27
Date of issue	:	2014-02-07
Use of report	:	FCC Original Grant

Applicant : Hyundai Mobis Co., Ltd.
203 Teheran-ro, Gangnam-gu, Seoul, Korea, 135-977

Test laboratory : Digital EMC Co., Ltd.
683-3, Yubang-Dong, Cheoin-Gu, Yongin-Si, Gyeonggi-Do, 449-080, Korea

Test specification	:	§22(H), §24(E)
Test environment	:	See appended test report
Test result	:	☒ Pass ☐ Fail

Tested by:

Engineer
HyunSu Son

Reviewed by:

Deputy General Manager
HongHee Lee

Test Report Version

Test Report No.	Date	Description
DRTFCC1402-0154	Feb. 07, 2014	Initial issue

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1. GENERAL INFORMATION

Applicant Name: **Hyundai Mobis Co., Ltd.**

Address: **203 Teheran-ro, Gangnam-gu, Seoul, Korea, 135-977**

FCC ID	:	TQ8-ATB30E4AN	
FCC Classification	:	PCS Licensed Transmitter (PCB)	
EUT Type	:	DIGITAL CAR AVN SYSTEM	
Model Name	:	ATB30E4AN	
Add Model Name	:	N/A	
Supplying power	:	DC 14.4 V	
Antenna Information	:	External Antenna	
Tx Frequency	:	Cellular band CDMA 1x	824.70MHz ~ 848.31 MHz
		Cellular band CDMA 1x EVDO(Rev. A):	824.70 MHz ~ 848.31 MHz
		PCS band CDMA 1x	1851.25 MHz ~ 1908.75 MHz
		PCS band CDMA 1x EVDO(Rev. A):	1851.25 MHz ~ 1908.75 MHz
Rx Frequency	:	Cellular band CDMA 1x	869.70 ~ 893.31 MHz
		Cellular band CDMA 1x EVDO(Rev. A):	869.70 ~ 893.31 MHz
		PCS band CDMA 1x	1931.25 MHz ~ 1988.75 MHz
		PCS band CDMA 1x EVDO(Rev. A):	1931.25 MHz ~ 1988.75 MHz
Max. RF Output Power	:	Cellular band CDMA 1x	0.271 W ERP(24.33 dBm)
		Cellular band CDMA 1x EVDO(Rev. A):	0.281 W ERP(24.48 dBm)
		PCS band CDMA 1x	0.309 W EIRP(24.90 dBm)
		PCS band CDMA 1x EVDO(Rev. A):	0.318 W EIRP(25.02 dBm)
Emission Designator(s)	:	Cellular band CDMA 1x	1M27F9W
		Cellular band CDMA 1x EVDO(Rev. A):	1M28F9W
		PCS band CDMA 1x	1M27F9W
		PCS band CDMA 1x EVDO(Rev. A):	1M27F9W

2. INTRODUCTION

2.1. EUT DESCRIPTION

The Equipment Under Test(EUT) supports CDMA and EVDO(Rev. A) of Cellular/PCS bands

2.2. MEASURING INSTRUMENT CALIBRATION

The measuring equipment, which was utilized in performing the tests documented herein, has been calibrated in accordance with the manufacturer's recommendations for utilizing calibration equipment, which is traceable to recognized national standards.

2.3. TEST FACILITY

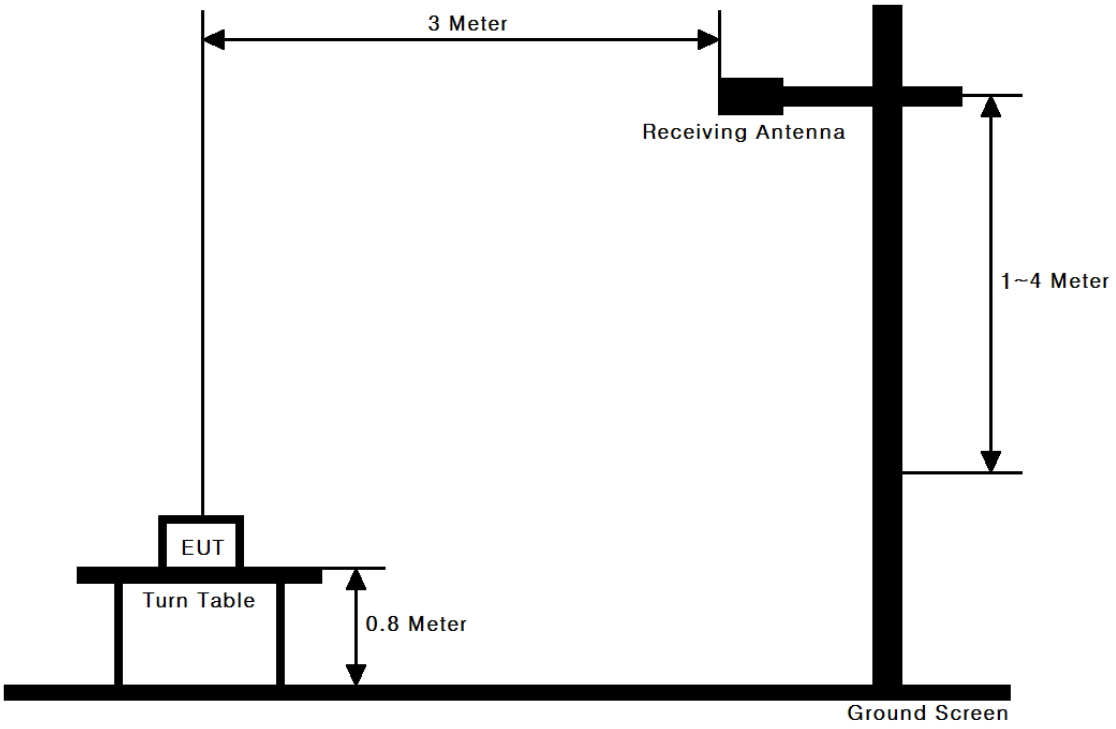
The 3&10M test site and conducted measurement facility used to collect the radiated data are located at the 38, Yurim-ro, 154beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea 449-935. The site is constructed in conformance with the requirements.

- 3 & 10M test site registration Number: 678747

3. DESCRIPTION OF TESTS

3.1 ERP&EIRP
(Effective Radiated Power & Equivalent Isotropic Radiated Power)

Test Set-up



Test Procedure

These measurements were performed at 3 & 10m test site. The equipment under test is placed on a wooden turntable 0.8 meters above the ground plane and 3-meters from the receive antenna.

The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer.

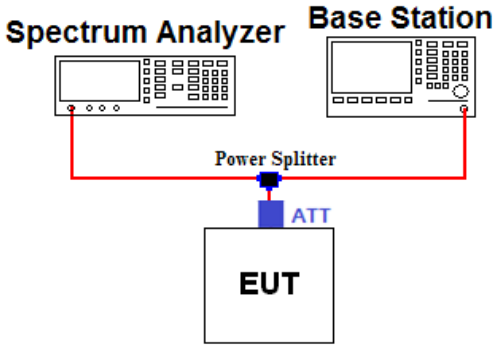
A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminal of the substitute antenna is measured. The ERP/EIRP is calculated using the following formula,

ERP/EIRP = The conducted power at the substitute antenna`s terminal + substitute antenna gain

For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.

3.2 PEAK TO AVERAGE RATIO

Test set-up



Test Procedure

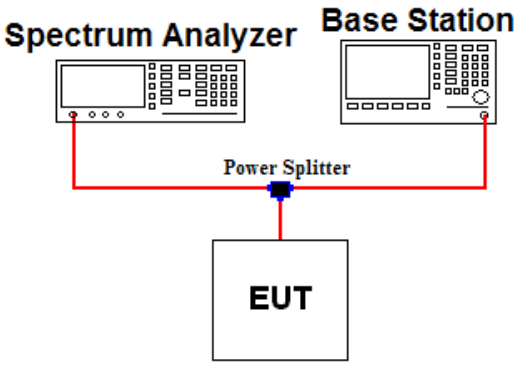
A peak to average ratio measurement is performed at the conducted port of the EUT.

The spectrum analyzers Complementary Cumulative Distribution Function(CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The present of time the signal spends at or above the level defines the probability for that particular power level.

1. Set resolution/measurement bandwidth ≥ signal`s occupied bandwidth
2. Set the number of counts to a value that stabilizes the measured CCDF curve
3. Set the measurement interval as follows:
   1) For continuous transmissions, set to 1 ms
   2) For burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
4. Record the maximum PAPR level associated with a probability of 0.1%

3.3 OCCUPIED BANDWIDTH.

Test set-up



Offset value information

CDMA 1x

Frequency (MHz)	Offset Value (dB)	Frequency (MHz)	Offset Value (dB)
-	-	-	-
-	-	-	-
-	-	-	-

Note. 1: The offset values from EUT to Spectrum analyzer were measured and used for test.
Offset value = Splitter + Cables

CDMA 1x EVDO(Rev. A)

Frequency (MHz)	Offset Value (dB)	Frequency (MHz)	Offset Value (dB)
-	-	-	-
-	-	-	-
-	-	-	-

Note. 1: The offset values from EUT to Spectrum analyzer were measured and used for test.
Offset value = Splitter + Cables

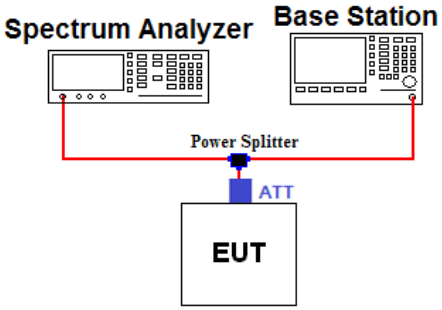
Test Procedure

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power of a given emission.

1. The signal analyzer`s automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 ~ 5% of the expected OBW & VBW ≥ 3 X RBW
3. Detector = Peak
4. Trance mode = Max hold
5. Sweep = Auto couple
6. The trace was allowed to stabilize
7. If necessary, step 2 ~ 7 were repeated after changing the RBW such that it would be within 1 ~ 5% of the 99% occupied bandwidth observed in step 7.

3.4 SPURIOUS AND HARMONIC EMISSIONS AT ANTENNA TERMINAL.

Test set-up



Offset value information

CDMA 1x

Frequency (MHz)	Offset Value (dB)	Frequency (MHz)	Offset Value (dB)	Frequency (MHz)	Offset Value (dB)
-	-	-	-	-	-
-	-	-	-	-	-

Note. 1: The offset values from EUT to Spectrum analyzer were measured and used for test.
Offset value = Cable A + Splitter + Cable B+ Cable C

CDMA 1x EVDO(Rev. A)

Frequency (MHz)	Offset Value (dB)	Frequency (MHz)	Offset Value (dB)	Frequency (MHz)	Offset Value (dB)
-	-	-	-	-	-
-	-	-	-	-	-

Note. 1: The offset values from EUT to Spectrum analyzer were measured and used for test.
Offset value = Cable A + Splitter + Cable B

Test Procedure

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer.
The EUT was setup to maximum output power at its lowest channel. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic.

1. RBW = 1MHz & VBW ≥ 3MHz
2. Detector = Positive peak
3. Trace mode = Max hold
4. Sweep time = Auto
5. The trace was allowed to stabilize

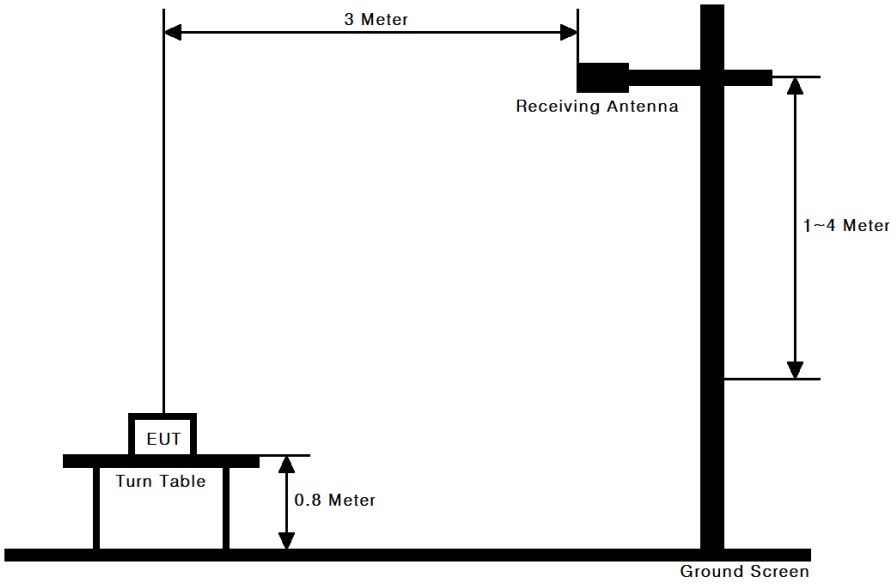
The highest, lowest and a middle channel were tested for out of band measurements.
The minimum permissible attenuation level of any spurious emission is 43 + log10($P_{[Watts]}$), where P is the transmitter power in Watts.

Note 1: In the 1MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of thetransmitter was employed to measure the out of band Emissions.

Note 2: Compliance with the applicable limits is based on the use of measurement instrumentation employing a RBW of 100 KHz or greater for Part 22 and 1 MHz or greater for Part24.

3.5 RADIATED SPURIOUS EMISSIONS

Test Set-up



Test Procedure

This measurement was performed at 3meter test range. The equipment under test is placed on a wooden turntable 0.8-meters above the ground plane and 3-meters from the receive antenna.

The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer.

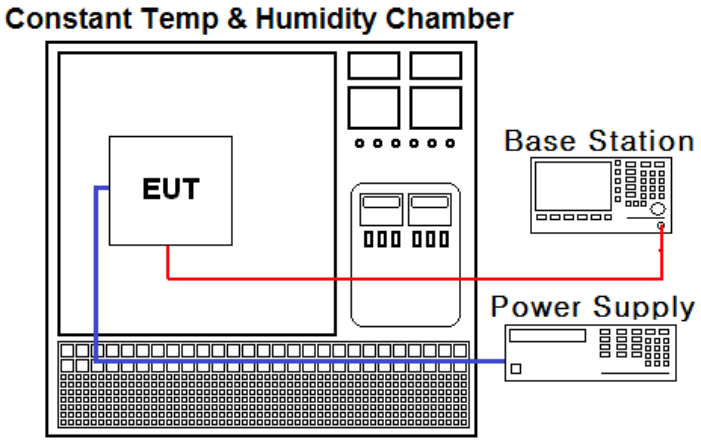
For radiated power measurements below 1GHz, a half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading.

For radiated power measurements above 1GHz, a Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same spectrum analyzer reading. The difference between the gain of the horn and an isotropic antenna are taken into consideration.

This measurement was performed with the EUT oriented in 3 orthogonal axis.

3.6 FREQUENCY STABILITY / VARIATION OF AMBIENT TEMPERATURE

Test Set-up



Test Procedure

The frequency stability of the transmitter is measured by:

a.) **Temperature:** The temperature is varied from - 30 °C to + 50 °C using an environmental chamber.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from battery end point to 115 % of the voltage normally at the input to the device or at the power supply terminals if cables are not normally supplied.

Specification - the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ± 0.000 25 %(± 2.5 ppm) of the center frequency.

Time Period and Procedure:

1. The carrier frequency of the transmitter is measured at room temperature. (25°C to provide a reference).

2. The equipment is turned on in a “standby” condition for one minute before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.

3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

4. LIST OF TEST EQUIPMENT

Type	Manufacturer	Model	Cal.Date (yy/mm/dd)	Next.Cal. Date (yy/mm/dd)	S/N
Multimeter	HP	34401A	13/02/27	14/02/27	3146A13475
DC Power Supply	SM techno	SDP30-5D	13/02/14	14/02/14	305DLJ204
Attenuator	Aeroflex/Weinschel	56-3	13/09/12	14/09/12	Y2342
Attenuator	WEINSCHEL	23-10-34	13/09/12	14/09/12	BP4386
Thermohygrometer	BODYCOM	BJ5478	13/06/01	14/06/01	120612-2
Dipole Antenna	Schwarzbeck	VHA9103	12/03/12	14/03/12	2116
Dipole Antenna	Schwarzbeck	VHA9103	12/03/22	14/03/22	2117
Dipole Antenna	Schwarzbeck	UHA9105	12/03/12	14/03/12	2261
Dipole Antenna	Schwarzbeck	UHA9105	12/03/22	14/03/22	2262
Bilog Antenna	SCHAFFNER	CBL6112B	12/11/06	14/11/06	2737
HORN ANT	ETS	3115	12/02/20	14/02/20	6419
HORN ANT	ETS	3115	13/02/28	15/02/28	00021097
HORN ANT	A.H.Systems	SAS-574	13/03/20	15/03/20	154
HORN ANT	A.H.Systems	SAS-574	13/05/27	15/05/27	155
Amplifier (22dB)	Agilent	8447E	14/01/07	15/01/07	2945A02865
Amplifier (30dB)	Agilent	8449B	13/02/27	14/02/27	3008A00370
High-pass filter	Wainwright Instruments	WHKX1.0	13/09/12	14/09/12	9
High-Pass Filter	Wainwright	WHNX2.1	13/09/12	14/09/12	1
8960 Series 10 Wireless Comms Test Set	Agilent	E5515C	13/02/28	14/02/28	GB43461134
Universal Radio Communication Tester	Rohde Schwarz	CMU200	13/02/28	14/02/28	106760
Vector Signal Generator	Rohde Schwarz	SMJ100A	14/01/07	15/01/07	100148
Signal Generator	Rohde Schwarz	SMF100A	13/07/22	14/07/22	102341
Amplifier	EMPOWER	BBS3Q7ELU	13/09/12	14/09/12	1020
Spectrum Analyzer	Agilent	E4440A	13/10/24	14/10/24	US45303051
Spectrum Analyzer	Agilent	N9020A	13/04/10	14/04/10	MY50200816

5. SUMMARY OF TEST RESULTS

FCC Part Section(s)	RSS Section(s)	Parameter	Status Note 1
2.1046	RSS-132 (4.4) RSS-133 (4.1)	Conducted Output Power	C
22.913(a) 24.232(c)	RSS-132 (4.4) [SRSP-503(5.1.3)] RSS-133 (6.4) [SRSP-510(5.1.2)]	Effective Radiated Power Equivalent Isotropic Radiated Power	C
22.917(a) 24.238(a) 2.1049	RSS-Gen (4.6.1) RSS-133 (2.3)	Occupied Bandwidth	NA Note 3
22.917(a) 24.238(a) 2.1051	RSS-132 (4.5.1) RSS-133 (6.5.1)	Band Edge Spurious and Harmonic Emissions at Antenna Terminal	NA Note 3
24.232(d)	RSS-133 (6.4)	Peak to Average Ratio	NA Note 3
22.917(a) 24.238(a) 2.1053	RSS-132 (4.5.1) RSS-133 (6.5.1)	Radiated Spurious and Harmonic Emissions	C
22.355 24.235 2.1055	RSS-132 (4.3) RSS-133 (6.3)	Frequency Stability	NA Note 3

Note 1: **C**=Comply **NC**=Not Comply **NT**=Not Tested **NA**=Not Applicable
Note 2: This test report is for CDMA 1x and CDMA 1x EVDO(Rev. A) functions.
Note 3: These test items were not performed because this device uses the granted module.
(FCCID: YZP-D660V)
Please refer to the test report of the granted module.
The module test report number:
- Part 22/24: F690501/RF-RTL005496-1(By SGS Korea Co., Ltd.)

The sample was tested according to the following specification:
ANSI/TIA/EIA-603-C-2004 and KDB 971168 D01 v02r01

6. SAMPLE CALCULATION

A. Emission Designator

Cellular CDMA1x

Emission Designator = **1M27F9W**

Cellular CDMA 1x EVDO(Rev. A)

Emission Designator = **1M28F9W**

PCS CDMA1x

Emission Designator = **1M27F9W**

PCS CDMA 1x EVDO(Rev. A)

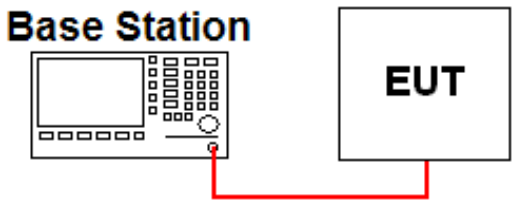
Emission Designator = **1M27F9W**

Note: Emission designators of the granted module were used.

7. TEST DATA

7.1 CONDUCTED OUTPUT POWER

A base station simulator was used to establish communication with the EUT. The base station simulator parameters were set to produce the maximum power from the EUT. This device was tested under all configurations and the highest power is reported. Conducted Output Powers of EUT are reported below.



▪CDMA 1x

Band	CH.	CDMA 1x						EVDO			
		RC1		RC3		F+SCH	FCH	Rev.0		Rev.A	
		SO 2	SO55	SO 2	SO55	SO32	SO32	FTAP	RTAP	FETAP	RETAP
Cellular	**1013**	24.09	**24.15**	24.01	24.04	24.07	24.09	N/A	N/A	N/A	N/A
	384	24.02	**24.10**	23.93	23.98	24.04	24.06	N/A	N/A	N/A	N/A
	777	24.27	**24.34**	24.14	24.17	24.25	24.29	N/A	N/A	N/A	N/A
PCS	**25**	24.21	**24.22**	24.15	24.17	24.17	24.20	N/A	N/A	N/A	N/A
	600	23.87	**23.89**	23.80	23.84	23.84	23.86	N/A	N/A	N/A	N/A
	1175	23.90	**23.94**	23.82	23.83	23.85	23.90	N/A	N/A	N/A	N/A

The output power was measured using the Agilent E5515C

▪ CDMA 1x EVDO(Rev. A)

Band	CH.	CDMA 1x						EVDO			
		RC1		RC3		F+SCH	FCH	Rev.0		Rev.A	
		SO 2	SO55	SO 2	SO55	SO32	SO32	FTAP	RTAP	FETAP	RETAP
Cellular	**1013**	-	-	-	-	-	-	24.23	24.21	**24.26**	24.23
	384	-	-	-	-	-	-	24.28	24.26	**24.32**	24.30
	777	-	-	-	-	-	-	24.45	24.40	**24.48**	24.45
PCS	**25**	-	-	-	-	-	-	24.41	24.39	**24.43**	24.40
	600	-	-	-	-	-	-	23.98	23.99	**24.05**	24.02
	1175	-	-	-	-	-	-	24.09	24.10	**24.13**	24.09

The output power was measured using the Agilent E5515C

7.2 EFFECTIVE RADIATED POWER

- CDMA1x

CH.	EUT Position (Axis)	TEST CONDITIONS							
		Reading Value (dBm)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Power Supply	Note.
1013	X	- 10.13	H	22.60	1.20	23.80	0.240	DC 14.4 V	-
384	X	- 12.23	V	22.45	1.15	23.60	0.229	DC 14.4 V	-
777	***X***	***- 12.89***	***V***	***23.28***	***1.05***	***24.33***	***0.271***	***DC 14.4 V***	***-***

- CDMA 1x EVDO(Rev. A)

CH.	EUT Position (Axis)	TEST CONDITIONS							
		Reading Value (dBm)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBd)	ERP (dBm)	ERP (W)	Power Supply	Note.
1013	X	- 10.02	H	22.71	1.20	23.91	0.246	DC 14.4 V	-
384	X	-12.09	V	22.59	1.15	23.74	0.237	DC 14.4 V	-
777	***X***	***- 12.74***	***V***	***23.43***	***1.05***	***24.48***	***0.281***	***DC 14.4 V***	***-***

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT is placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation is adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5MHz. For AMPS, GSM, and TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz.

A half-wave dipole is substituted in place of the EUT. This dipole antenna is driven by a signal generator and the level of the signal generator is adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

The worst case data is reported.

7.3 EQUIVALENT ISOTROPIC RADIATED POWER

- CDMA 1x

CH.	EUT Position (Axis)	TEST CONDITIONS							
		Reading Value (dBm)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Power Supply	Note.
25	X	- 13.33	V	16.46	8.06	24.52	0.283	DC 14.4 V	-
600	X	- 13.34	V	16.30	8.12	24.42	0.277	DC 14.4 V	-
1175	***X***	***- 14.82***	***V***	***16.72***	***8.18***	***24.90***	***0.309***	***DC 14.4 V***	***-***

- CDMA 1x EVDO(Rev. A)

CH.	EUT Position (Axis)	TEST CONDITIONS							
		Reading Value (dBm)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBi)	EIRP (dBm)	EIRP (W)	Power Supply	Note.
25	X	- 13.27	V	16.52	8.06	24.58	0.287	DC 14.4 V	-
600	X	- 13.26	V	16.38	8.12	24.50	0.282	DC 14.4 V	-
1175	***X***	***- 14.70***	***V***	***16.84***	***8.18***	***25.02***	***0.318***	***DC 14.4 V***	***-***

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT is placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation is adjusted for the highest reading on the receive spectrum analyzer. For CDMA signals, a peak detector is used, with RBW = VBW = 3 MHz. For WCDMA signals, a peak detector is used, with RBW = VBW = 5MHz. For AMPS, GSM, and TDMA signals, a peak detector is used, with RBW = VBW = 1 MHz.

A half-wave dipole is substituted in place of the EUT. This dipole antenna is driven by a signal generator and the level of the signal generator is adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

The worst case data is reported.

7.4 RADIATED SPURIOUS EMISSIONS

7.4.1 RADIATED SPURIOUS EMISSIONS- CDMA 1x

Channel (ERP)	Freq. (MHz)	EUT Position (Axis)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBd)	Correct Generator Level (dBm)	Result (dBc)	Limit (dBc)
1013 (0.240 W)	1649.51	X	V	- 51.02	5.89	- 45.13	68.93	36.80
	2474.56	X	V	- 46.47	7.30	- 39.17	62.97	
	-	-	-	-	-	-	-	
384 (0.229 W)	1673.37	X	V	- 50.95	5.96	- 44.99	68.59	36.60
	2509.74	X	V	- 46.08	7.33	- 38.75	62.35	
	-	-	-	-	-	-	-	
777 (0.271 W)	1696.70	X	V	- 51.45	6.02	- 45.43	69.76	37.33
	2545.09	X	V	- 45.45	7.36	- 38.09	62.42	
	-	-	-	-	-	-	-	

- Limit Calculation= 43 + 10 $\log_{10}$(ERP [W]) [dBc]

- No other spurious and harmonic emissions were reported greater than listed emissions above table.

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT is placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation is adjusted for the highest reading on the receive spectrum analyzer.

A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

The worst case data is reported.

7.4.2 RADIATED SPURIOUS EMISSIONS - CDMA 1x EVDO(Rev. A)

Channel (ERP)	Freq. (MHz)	EUT Position (Axis)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBd)	Correct Generator Level (dBm)	Result (dBc)	Limit (dBc)
1013 (0.246 W)	1649.44	X	V	- 50.78	5.89	- 44.89	68.80	36.91
	2474.62	X	V	- 46.26	7.30	- 38.96	62.87	
	-	-	-	-	-	-	-	
384 (0.237 W)	1673.30	X	V	- 50.82	5.96	- 44.86	68.60	36.74
	2509.69	X	V	- 46.23	7.33	- 38.90	62.64	
	-	-	-	-	-	-	-	
777 (0.281 W)	1696.83	X	V	- 51.35	6.02	- 45.33	69.81	37.48
	2545.20	X	V	- 45.58	7.36	- 38.22	62.70	
	-	-	-	-	-	-	-	

- Limit Calculation = 43 + 10 $\log_{10}$(ERP [W]) [dBc]

- No other spurious and harmonic emissions were reported greater than listed emissions above table.

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT is placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation is adjusted for the highest reading on the receive spectrum analyzer.

A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

The worst case data is reported.

7.4.3 RADIATED SPURIOUS EMISSIONS(PCS CDMA)

Channel (EIRP)	Freq. (MHz)	EUT Position (Axis)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBi)	Correct Generator Level (dBm)	Result (dBc)	Limit (dBc)
25 (0.283W)	3702.74	X	V	- 44.61	9.90	- 34.71	59.23	37.52
	5553.91	X	V	- 48.29	11.35	- 36.94	61.45	
	-	-	-	-	-	-	-	
600 (0.277W)	3760.20	X	V	- 45.74	9.90	- 35.84	60.25	37.42
	5640.29	X	V	- 48.48	11.42	- 37.06	61.48	
	-	-	-	-	-	-	-	
1175 (0.309W)	3817.82	X	V	- 43.98	9.91	- 34.07	58.97	37.90
	5726.13	X	V	- 49.30	11.48	- 37.82	62.72	
	-	-	-	-	-	-	-	

- Limit Calculation = 43 + 10 $\log_{10}$(EIRP [W]) [dBc]

- No other spurious and harmonic emissions were reported greater than listed emissions above table.

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT is placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation is adjusted for the highest reading on the receive spectrum analyzer.

A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

The worst case data is reported.

7.4.4 RADIATED SPURIOUS EMISSIONS (PCS CDMA EVDO)

Channel (EIRP)	Freq. (MHz)	EUT Position (Axis)	Pol. (H/V)	Level at Substitute Antenna Terminal (dBm)	Substitute Antenna Gain (dBi)	Correct Generator Level (dBm)	Result (dBc)	Limit (dBc)
25 (0.287 W)	3702.65	X	V	- 44.40	9.90	- 34.50	59.08	37.58
	5553.82	X	V	- 48.20	11.35	- 36.85	61.42	
	-	-	-	-	-	-	-	
600 (0.282 W)	3760.32	X	V	- 45.61	9.90	- 35.71	60.20	37.50
	5640.13	X	V	- 48.29	11.42	- 36.87	61.37	
	-	-	-	-	-	-	-	
1175 (0.318 W)	3817.62	X	V	- 43.84	9.91	- 33.93	58.95	38.02
	5726.40	X	V	- 49.41	11.48	- 37.93	62.95	
	-	-	-	-	-	-	-	

- Limit Calculation = 43 + 10 $\log_{10}$(ERP [W]) [dBc]

- No other spurious and harmonic emissions were reported greater than listed emissions above table.

NOTES:

Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT is placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation is adjusted for the highest reading on the receive spectrum analyzer.

A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

The worst case data is reported.