ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 22 SUBPART H, PART 24 SUBPART E CLASS II PC REPORT

For

Product Name:	**Notebook**
Brand Name:	acer
Marketing Name:	**TRAVELMATE P633; TRAVELMATE P633-V; TRAVELMATE P633-MG; TRAVELMATE P633-M**
Model Name of Host:	**MS2362, TravelMate P633**
Model Difference of Host:	**Different model for different market segmentation**
Model No. for WWAN Module:	**EM820W**
FCC ID:	**HLZEM820W**
Report No.:	**EH/2013/90028**
Issue Date:	**Oct. 08, 2013**
FCC Rule Part:	**2, 22H & 24E**
Prepared for:	**Acer Incorporated** **8F,88, Sec. 1, Hsin Tai Wu Rd. Hsichih Taipei Hsien 221**
Prepared by:	**SGS Taiwan Ltd.** **Electronics & Communication Laboratory** **No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan 24803**

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CERTIFICATION OF COMPLIANCE

Applicant:	Acer Incorporated 8F,88, Sec. 1, Hsin Tai Wu Rd. Hsichih Taipei Hsien 221
Product Description:	Notebook
Brand Name:	acer
Marketing Name:	TRAVELMATE P633; TRAVELMATE P633-V; TRAVELMATE P633-MG; TRAVELMATE P633-M
FCC ID:	HLZEM820W
Model No of the host	MS2362, TravelMate P633
Model Difference of Host:	Different model for different market segmentation
Model No. for WWAN Modular:	EM820W
File Number:	EH/2013/90028
Date of test:	Oct. 01, 2013 ~ Oct. 07, 2013
Date of EUT Received:	Oct. 01, 2013

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-C-2004 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rule PART 22 subpart H, PART 24 subpart E.
The test results of this report relate only to the tested sample identified in this report.

Test By:	Nick Lin	***Date:***	Oct. 08, 2013
	Nick Lin / Engineer		
Prepared By:	Tiffany Kao	***Date:***	Oct. 08, 2013
	Tiffany Kao / Clerk		
Approved By:	Jim Chang	***Date:***	Oct. 08, 2013
	Jim Chang / Supervisor		

Version

Version No.	Date	Description
00	Oct. 08, 2013	Initial creation of document

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1. GENERAL INFORMATION

1.1 Host Description

General Information of Notebook

WWAN Module Name:	HSPA+ Module	
WWAN Module Model No.:	EM820W	
Host Name:	Notebook	
Brand Name:	acer	
Marketing Name:	TRAVELMATE P633; TRAVELMATE P633-V; TRAVELMATE P633-MG; TRAVELMATE P633-M	
Host Model Name:	MS2362, TravelMate P633	
Model Difference of Host:	Different model for different market segmentation	
Hardware Version:	55.4VT01.001G	
Software Version:	V2.04	
Power Supply:	14.8Vdc Rechargeable Li-ion battery or 19Vdc from adapter	
	Battery:	Model No.: AS09B3E, Supplier: N/A
	Adapter:	Model No.: HP-A0904A3,Supplier: HIPRO

GSM / WCDMA:

	Operating Frequency		Operating Frequency
Cellular Phone Standards Frequency Range:	GSM / GPRS 850, Class 10	824.2 MHz– 848.8 MHz	33 dBm
	EDGE 850, Class 10	824.2 MHz– 848.8 MHz	27 dBm
	GSM / GPRS 1900, Class 10	1850.2MHz – 1909.8MHz	30 dBm
	EDGE 1900, Class 10	1850.2MHz – 1909.8MHz	26 dBm
	WCDMA/HSUPA/HSDPA Band II	1852.4MHz – 1907.6MHz	24 dBm
	WCDMA/HSUPA/HSDPA Band V	826.4MHz - 846.6MHz	24 dBm
IMEI:	866274010063208		
Hardware Version for WWAN Modular:	MD1EM820WM		
Software Version for WWAN Modular:	11.810.09.XX.00		
WWAN module FCC ID:	HLZEM820W		
Class II Permissive change:	HSPA+ Module (EM820W) card INSTALLED IN AN MS2362, TravelMate P633 Notebook		
Type of Emission:	22H(GMSK): 824.2 - 848.8 MHz: 300KGXW 24E(GMSK): 1850.2 – 1909.8 MHz: 300KGXW 22H(8PSK): 824.2 - 848.8 MHz: 300KG7W 24E(8PSK): 1850.2 – 1909.8 MHz: 300KG7W 22H(WCDMA): 826.4 - 846.6 MHz: 4M20F9W 24E(WCDMA): 1852.4 – 1907.5 MHz: 4M20F9W		
Transmit power (Conducted Power) Listed in Test Report/Original Grant:	22H(GMSK): 824.2 - 848.8 MHz: 1.8W 24E(GMSK): 1850.2 – 1909.8 MHz: 0.79W 22H(8PSK): 824.2 - 848.8 MHz: 0.5W 24E(8PSK): 1850.2 – 1909.8 MHz: 0.36W 22H(WCDMA): 826.4 - 846.6 MHz: 0.19W 24E(WCDMA): 1852.4 – 1907.5 MHz: 0.22W		

This test report applies for GPRS/EDGE 850, GPRS/EDGE 1900, WCDMA/HSUPA/HSDPA Band II/V bands.

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: HLZEM820W** filing to comply with Section Part 22 subpart H, Part 24 subpart E of the FCC CFR 47 Rules.

1.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures document of TIA/EIA 603C and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057.

TS 151 010-1 is used to set, and measure the output power.

The Output power Procedure of KDB941225 (SAR Measurement Procedures for 3G devices,WCDMA / HSPA) was used for EUT and Base station setting.
KDB971168 D01 Power Meas license Digital System v01 as the supplemental guideline to conduct the measurement, including Peak to Power Average Ratio, Average Power over the fundamental signal BW (EIRP/ERP) and Signal Bandwidth.

1.4 Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2009. FCC Registration Number are: 990257, Canada Registration Number: 4620A-4

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 29, Pau-Tou-Tsuo Valley Chia-Pau Tsuen, Linkou Hsiang, Taipei county, which is constructed and calibrated to meet the CISPR 22/EN 55022 requirements. SGS Site No. 1(3 &10 meters) and FCC Registration Number: 94644.

1.5 Special Accessories

No special accessories were used during testing.

1.6 Equipment Modifications

There were no modifications incorporated into the EUT.

2. SYSTEM TEST CONFIGURATION

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT (Transmitter) was operated in the continuous transmission mode employed with the simulator of the Base Station that fixates at test default channels to fix the Tx frequency which was for the purpose of the measurements.

2.3 Test Procedure

2.3.1 Conducted Measurement at Antenna Port:

According to measurement procured TIA/EIA 603C, the EUT is placed on a turn table which is 0.8 m above ground plane. A low loss of RF cable was used to connect the antenna port of EUT to measurement equipment.

2.3.2 Radiated Emissions (ERP/EIRP):

According to measurement procured TIA/EIA 603C and RSS-Gen Issue 3, The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both Horizontal and Vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made “while keeping the antenna in the ‘cone of radiation’ from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.” is still within the 3dB illumination BW of the measurement antenna according to the requirements in Section 8 and 13 of ANSI C63.4:2009.

2.4 Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	Agilent	E4446A	MY51100003	05/30/2013	05/29/2014
Spectrum Analyzer	Agilent	E4440A	US41160416	03/15/2013	03/14/2014
Radio Communication Analyzer	R & S	CMU200	102189	06/17/2013	06/16/2014
Radio Communication Analyzer	Anritsu	MT8820C	6200995019	10/17/2012	10/16/2013
Temperature Chamber	TERCHY	MHG-120LF	911009	05/06/2013	05/05/2014
DC Block	Mini-Circuits	BLK-18-S+	1	02/28/2013	02/27/2014
Attenuator	Mini-Circuit	BW-S10W2+	002	02/28/2013	02/27/2014
Splitter	Agilent	11636B	N/A	02/28/2013	02/27/2014
DC Power Supply	Agilent	E3640A	KR93300208	07/24/2013	07/23/2014

ERP, EIRP MEASUREMENT EQUIPMENT List 966 Chamber					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	Agilent	E4446A	MY51100003	05/30/2013	05/29/2014
EXA Spectrum Analyzer	Agilent	N9010A	MY50420195	02/06/2013	02/07/2014
Spectrum Analyzer	R&S	FSV-30	101398	10/18/2011	10/17/2013
Bilog Antenna	SCHWAZBECK	VULB9168	378	01/10/2012	01/09/2014
Bilog Antenna	SCHWAZBECK	VULB9160	3158	11/24/2011	11/23/2013
Horn antenna	ETS.LINDGREN	3117	123995	05/31/2013	05/30/2014
Horn antenna	ETS.LINDGREN	3117	123991	01/21/2013	01/20/2015
Horn Antenna	Schwarzbeck	BBHA9170	184	01/17/2012	01/16/2014
Horn Antenna	Schwarzbeck	BBHA9170	185	07/19/2013	07/18/2014
RF amplifier	Miteq	AMF-6F-2600 400-40-8P	971576	01/29/2013	01/28/2014
Signal Generator	R&S	SMR40	100210	02/02/2012	02/01/2014
Signal Generator	Agilent	E4438C	MY45093613	07/30/2013	07/29/2014
Pre-Amplifier	Agilent	8447D	1937A02834	01/04/2013	01/03/2014
Pre-Amplifier	EMC Instruments Corp.	EMC0126530	980038	01/04/2013	01/03/2014
Attenuator	Mini-Circuit	BW-S10W2+	004	02/28/2013	02/27/2014
Radio Communication Analyzer	R & S	CMU200	102189	06/17/2013	06/16/2014
Radio Communication Analyzer	Anritsu	MT8820C	6200995019	10/17/2012	10/16/2013
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Low Loss Cable	HUBER+SUHNER	966_Tx	10m	01/04/2013	01/03/2014
Low Loss Cable	HUBER+SUHNER	966_Rx	3m	01/04/2013	01/03/2014
Filter 800-1000	Micro-Tronics	EWT	M2	02/28/2013	02/28/2014
Filter 1800-2000	Micro-Tronics	EWT	M2	02/28/2013	02/28/2014
Filter 1700-1800	Micro-Tronics	BRC15751	001	02/28/2013	02/28/2014
1GHz High Pass Filter	Micro-Tronics	HPM50108	32	02/28/2013	02/28/2014
2GHz High Pass Filter	Micro-Tronics	HPM50110	36	02/28/2013	02/28/2014
3m Site NSA	SGS	966 chamber	N/A	07/15/2013	07/14/2014

2.5 Configuration of Tested System

Fig. 2-1 Configuration for Radiated Emission

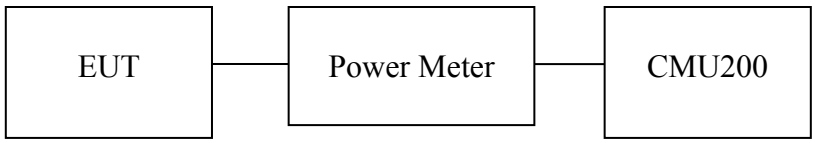


Fig. 2-2 Configuration of Tested System (Fixed Channel-Radiated)

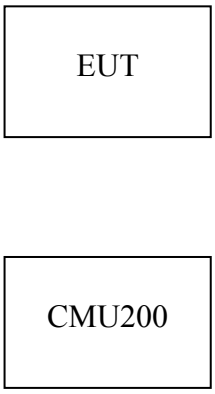


Table 2-1 Equipment Used in

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	Universal Radio Communication Tester	R&S	CMU200	102189	shielded	Un-shielded
2.	Power Meter	Anritsu	ML2495A	1005007	shielded	Un-shielded

3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1046(a)	RF Power output	Compliant
§2.1046(a) §22.913(a)(2) §24.232(c)	ERP/ EIRP measurement	Compliant
§2.1053 §22.917(a) §24.238(a)	Field Strength of Spurious Radiation	Compliant

Max ERP/EIRP measurement result:

	dBm		W
GPRS 850 Band	26.19	ERP	0.416
GPRS 1900 Band	31.21	EIRP	1.321
EDGE 850 Band	24.80	ERP	0.302
EDGE 1900 Band	30.83	EIRP	1.211
WCDMA Band II	31.07	EIRP	1.279
HSUPA Band II	31.00	EIRP	1.259
HSDPA Band II	31.27	EIRP	1.340
WCDMA Band V	20.62	ERP	0.115
HSUPA Band V	20.13	ERP	0.103
HSDPA Band V	20.61	ERP	0.115

4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

Set EUT power control “all up bits” for all test modes through base station.

GPRS/EDGE 850:

Channel Low: AFRCN 128 at 824.2MHz, Channel Mid: AFRCN 190 at 836.6MHz, Channel High: AFRCN 251 at 848.8MHz.

GPRS/EDGE 1900:

Channel Low: AFRCN 512 at 1850.2MHz, Channel Mid: AFRCN 661 at 1880.0MHz, Channel High AFRCN 810 at 1909.8MHz

WCDMA/HSPA Band II:

Channel Low: UAFRCN 9262 at 1852.4MHz, Channel Mid: UAFRCN 9400 at 1880.0MHz, Channel High: UAFRCN 9538 at 1907.6MHz.

WCDMA/HSPA Band V:

Channel Low: UAFRCN 4132 at 826.4MHz, Channel Mid: UAFRCN 4183 at 836.6MHz, Channel High: UAFRCN 4233 at 846.6MHz.

The field strength of spurious radiation emission was measured as EUT stand-up position (H mode)and lie down position (E1, E2 mode) for GSM/EDGE 850/1900 and WCDMA/HSUPA/HSDPA Band II V with power adaptor. The worst-case is E2 mode for each type of bands.

5. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
RF Power Output	+/- 1.42 dB
ERP/ EIRP measurement	Vertical Polarization = +/- 4.74dB Horizontal Polarization =+/- 4.62dB
Out of Band Emissions at Antenna Terminals and Band Edge	+/- 1.55 dB
Temperature	+/- 0.8 °C
Humidity	+/- 4.7 %
DC / AC Power Source	DC= +/- 1%, AC=+/- 0.2%

Radiated Spurious Emission:

Measurement uncertainty (Polarization : **Vertical**)	30MHz - 180MHz: +/- 3.37dB
	180MHz -417MHz: +/- 3.19dB
	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

Measurement uncertainty (Polarization : **Horizontal**)	30MHz - 167MHz: +/- 4.22dB
	167MHz -500MHz: +/- 3.44dB
	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

6. RF POWER OUTPUT/ MAXMUM POWER REDUCTION MEASUREMENT

6.1 Standard Applicable:

FCC 22.913(a) Mobile station are limited to 7W.
FCC 24.232(c) Peak Power Measurement limited to 2W

FCC 24.232(c) Equipment must employ means to limit the power to the minimum necessary for successful communication.

3GPP Power limitation for HSDPA and HSUPA

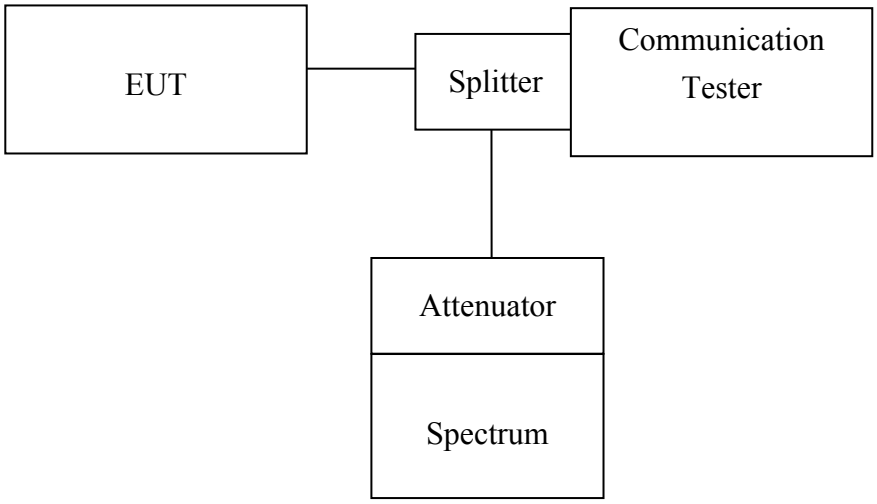
Maximum Output Powers for HSDPA

Sub-test in table C.10.1.4	Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
1	+24	+1.7/-3.7	+21	+2.7/-2.7
2	+24	+1.7/-3.7	+21	+2.7/-2.7
3	+23.5	+2.2/-3.7	+20.5	+3.2/-2.7
4	+23.5	+2.2/-3.7	+20.5	+3.2/-2.7

Maximum Output Powers for HSUPA

Sub-test in table C.11.1.3	Power Class 3		Power Class 4	
	Power (dBm)	Tol (dB)	Power (dBm)	Tol (dB)
1	+24	+1.7/-6.7	+21	+2.7/-5.7
2	+22	+3.7/-5.2	+19	+4.7/-4.2
3	+23	+2.7/-5.2	+20	+3.7/-4.2
4	+22	+3.7/-5.2	+19	+4.7/-4.2
5	+24	+1.7/-6.7	+21	+2.7/-5.7

6.2 Test Set-up:



Note: *Measurement setup for testing on Antenna connector*

6.3 Measurement Procedure:

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power meter in dBm. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the power meter reading. TS 151 010-1 is reference to conduct the test measurement of output power.

The Procedure of KDB941225 (SAR Measurement Procedures for 3G devices, (WCDMA/HSPA) was used for EUT and Base station setting. RMC 12.2kps is used for this testing, and KDB 971168 D01 Power Meas License Digital System as the supplemental test methodology to adjust the proper setting obtaining the measurement results

Necessary Communication complying with 24.232 (c) and 27.5(d)(4)

Set CMU200 (base-station simulator) MS Signal with packet data submenu; SLOT Configuration

Set appropriate level to verify if or not power on mobile station's link with simulator still exists.

6.4 Measurement Equipment Used:

Refer to section 2.4 in this report

6.5 Measurement Result:

6.5.1 RF Conducted Output Power

6.5.1.1.: GSM/GPRS/EDGE (GMSK; 8-PSK)

Result:

EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 1UP) Class 8 (dBm)	Average Burst Power (4DN 1UP) Class 8 (dBm)	Peak Power (4DN 2UP) Class 10 (dBm)	Average Burst Power (4DN 2UP) Class 10 (dBm)
GPRS 850	824.2	128	32.50	32.40	30.60	30.50
	836.6	190	32.60	32.50	30.70	30.50
	848.8	251	32.60	32.50	30.60	30.50

EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 3UP) Class 12 (dBm)	Average Burst Power (4DN 3UP) Class 12 (dBm)	Peak Power (4DN 4UP) Class 12 (dBm)	Average Burst Power (4DN 4UP) Class 12 (dBm)
GPRS 850	824.2	128	29.50	29.40	27.40	27.30
	836.6	190	29.60	29.40	27.50	27.40
	848.8	251	29.60	29.40	27.50	27.40

EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 1UP) Class 8 (dBm)	Average Burst Power (4DN 1UP) Class 8 (dBm)	Peak Power (4DN 2UP) Class 10 (dBm)	Average Burst Power (4DN 2UP) Class 10 (dBm)
GPRS 1900	1850.2	512	29.70	29.50	28.10	28.00
	1880.0	661	29.50	29.40	27.90	27.80
	1909.8	810	29.30	29.20	27.70	27.60

EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 3UP) Class 12 (dBm)	Average Burst Power (4DN 3UP) Class 12 (dBm)	Peak Power (4DN 4UP) Class 12 (dBm)	Average Burst Power (4DN 4UP) Class 12 (dBm)
GPRS 1900	1850.2	512	26.90	26.80	25.90	25.80
	1880.0	661	26.80	26.70	25.80	25.70
	1909.8	810	26.60	26.50	25.70	25.50

EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 1UP) Class 8 (dBm)	Average Burst Power (4DN 1UP) Class 8 (dBm)	Peak Power (4DN 2UP) Class 10 (dBm)	Average Burst Power (4DN 2UP) Class 10 (dBm)
EDGE 850	824.2	128	30.30	27.10	28.20	25.10
	836.6	190	30.50	27.20	28.40	25.20
	848.8	251	30.50	27.20	28.30	25.20

EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 3UP) Class 12 (dBm)	Average Burst Power (4DN 3UP) Class 12 (dBm)	Peak Power (4DN 4UP) Class 12 (dBm)	Average Burst Power (4DN 4UP) Class 12 (dBm)
EDGE 850	824.2	128	27.20	24.10	26.20	23.00
	836.6	190	27.30	24.10	26.30	23.10
	848.8	251	27.30	24.10	26.30	23.10

EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 1UP) Class 8 (dBm)	Average Burst Power (4DN 1UP) Class 8 (dBm)	Peak Power (1DN 2UP) Class 10 (dBm)	Average Burst Power (1DN 2UP) Class 10 (dBm)
EDGE 1900	1850.2	512	29.40	26.20	27.20	24.00
	1880.0	661	29.20	26.00	27.20	23.90
	1909.8	810	29.10	25.80	27.00	23.70

EUT Mode	Frequency (MHz)	CH	Peak Power (1DN 3UP) Class 12 (dBm)	Average Burst Power (1DN 3UP) Class 12 (dBm)	Peak Power (1DN 4UP) Class 12 (dBm)	Average Burst Power (1DN 4UP) Class 12 (dBm)
EDGE 1900	1850.2	512	26.20	23.00	25.20	21.90
	1880.0	661	26.10	22.80	25.10	21.80
	1909.8	810	25.90	22.70	24.90	21.70

Cable loss offset Low Band: 0.5dB

Cable loss offset High Band: 0.8dB

6.5.1.2: WCDMA mode

The following tests were completed according to the test requirements outlined in section 5.2 of the 3GPP TS34.121-1 V8.4.0 specification. The EUT supports power Class 3, which has a nominal maximum output power of 24 dBm (+1.7/-3.7). RMC 12.2kps is used for this testing.

Results:

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	Avg. Power (dBm)
WCDMA Band II	1852.4	9262	26.21	23.15
	1880.0	9400	26.40	22.98
	1907.6	9538	26.28	23.02

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	Avg. Power (dBm)
WCDMA Band V	826.4	4132	26.80	23.62
	836.6	4183	27.04	23.55
	846.6	4233	26.72	23.50

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	Avg. Power (dBm)
HSDPA Band II	1852.4	9262	24.87	20.30
	1880.0	9400	24.72	20.16
	1907.6	9538	25.42	20.01

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	Avg. Power (dBm)
HSDPA Band V	826.4	4132	25.14	20.23
	836.6	4183	25.07	20.11
	846.6	4233	24.97	20.16

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	Avg. Power (dBm)
HSUPA Band II	1852.4	9262	25.12	20.24
	1880.0	9400	25.02	20.13
	1907.6	9538	25.31	20.14

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	Avg. Power (dBm)
HSUPA Band V	826.4	4132	25.62	19.77
	836.6	4183	25.31	20.22
	846.6	4233	25.52	20.58

Note: The results above reflect max power with all up bits.
Cable loss offset Low Band: 0.5dB
Cable loss offset High Band: 0.8dB

5.5.13: HSDPA Release 6 mode

The following 4 Sub-Tests were completed according to the test requirements outlined in section 5.2A of the 3GPP TS34.121-1 V8.4.0 specification. All TX RMS power requirements for Power Class 3 were met according to table 5.2AA.5 and 5.2B.5 All UE channels and power ratio's are set according to table C10.1.4 & C11.1.3 in the 3GPP TS34.121-1 V8.4.0. RMC 12.2kps is used for this testing.

HSDPA SUB-TEST Setting

Table C.10.1.4: β values for transmitter characteristics tests with HS-DPCCH(FOR HSDPA)

Sub-test	β_c	β_d	β_d *(SF)*	β_c/β_d	β_{HS} (*Note1, Note 2*)	CM (dB) *(Note 3)*	MPR (dB) *(Note 3)*	RMC (Kbps)
1	2/15	15/15	64	2/15	4/15	0.0	0.0	12.2
2	12/15 *(Note 4)*	15/15 *(Note 4)*	64	12/15 *(Note 4)*	24/15	1.0	0.0	12.2
3	15/15	8/15	64	15/8	30/15	1.5	0.5	12.2
4	15/15	4/15	64	15/4	30/15	1.5	0.5	12.2

Note: The recommended HSDPA MPRs are implemented as per following sub-tests.

Results:

Mode	Sub-test	Avg. Power (dBm) Channel			Power Class 3 Limitation (dBm)	Comments
		9262	9400	9538		
HSDPA (B2)	1	23.32	22.87	22.88	20.3dBm – 25.7dBm	Pass
	2	23.32	22.87	22.88	20.3dBm – 25.7dBm	Pass
	3	23.32	22.87	22.88	19.8dBm – 25.7dBm	Pass
	4	23.32	22.87	22.88	19.8dBm – 25.7dBm	Pass

Mode	Sub-test	Avg. Power (dBm) Channel			Power Class 3 Limitation (dBm)	Comments
		4132	4183	4233		
HSDPA (B5)	1	23.41	23.41	23.62	20.3dBm – 25.7dBm	Pass
	2	23.41	23.41	23.62	20.3dBm – 25.7dBm	Pass
	3	23.41	23.41	23.62	19.8dBm – 25.7dBm	Pass
	4	23.41	23.41	23.62	19.8dBm – 25.7dBm	Pass

5.5.1.4: HSPA (HSDPA & HSUPA) Release 6 mode

The following 5 Sub-Tests were completed according to the test requirements outlined in section 5.2A of the 3GPP TS34.121-1 V8.4.0 specification. All TX RMS power requirements for Power Class 3 were met according to table 5.2AA.5 and 5.2B.5 All UE channels and power ratio's are set according to table C11.1.3 in the 3GPP TS34.121-1 V8.4.0. RMC 12.2kps is used for this testing

HSPA SUB-TEST Setting

Table C.11.1.3: β values for transmitter characteristics tests with HS-DPCCH and E-DCH(FOR HSUPA)

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS}	β_{ec}	β_{ed}	β_{ed} (SF)	β_{ed} (Codes)	CM (dB)	MPR (dB)	AG Index	E-TFCI	RMC (Kbps)
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75	12.2
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67	12.2
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 47/15	4 4	2	2.0	1.0	15	92	12.2
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71	12.2
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81	12.2

Note: The recommended HSUPA MPRs are implemented as per following sub-tests.

Results:

Mode	Sub-test	Avg. Power (dBm) Channel			Power Class 3 Limitation (dBm)	Comments
		9262	9400	9538		
HSUPA(B2)	1	23.07	22.96	22.96	18.8dBm – 25.7dBm	Pass
	2	23.07	22.96	22.96	16.8dBm – 25.7dBm	Pass
	3	23.07	22.96	22.96	17.8dBm – 25.7dBm	Pass
	4	23.07	22.96	22.96	16.8dBm – 25.7dBm	Pass
	5	23.07	22.96	22.96	18.8dBm – 25.7dBm	Pass

Mode	Sub-test	Avg. Power (dBm) Channel			Power Class 3 Limitation (dBm)	Comments
		4132	4183	4233		
HSUPA(B5)	1	23.58	23.48	23.42	18.8dBm – 25.7dBm	Pass
	2	23.58	23.48	23.42	16.8dBm – 25.7dBm	Pass
	3	23.58	23.48	23.42	17.8dBm – 25.7dBm	Pass
	4	23.58	23.48	23.42	16.8dBm – 25.7dBm	Pass
	5	23.58	23.48	23.42	18.8dBm – 25.7dBm	Pass

5.5.2 Maximum Power Reduction:

PCS1900 band

PCL	0	1	2	3	4	5	6	7	8
Output power (dBm)	29.6	29.7	29.7	29.7	28.2	26.1	24.1	22.1	20.1
PCL	**9**	**10**	**11**	**12**	**13**	**14**	**15**		
Output power (dBm)	18.1	16.1	14	11.9	9.8	7.7	5.6		

Note: The EUT output power was controlled by simulator. Set Communication Tester CMU200 PCL as above, and get the mobile phone output power reading.

WCDMA/HSDPA band II / V

The EUT output power was controlled by simulator. Set Communication Tester CMU200 function key "UE Power Control" and enter max rated power 24dBm. The EUT is going to be set to max output power to 24dBm. then record the read(see page 18 for measurement data) . The min. power was measures by a function key "minimum power" then record the read. It is -52.5dBm. The power variation can be 0.1dB step by setting.

7. ERP/EIRP MEASUREMENT

7.1 Standard Applicable

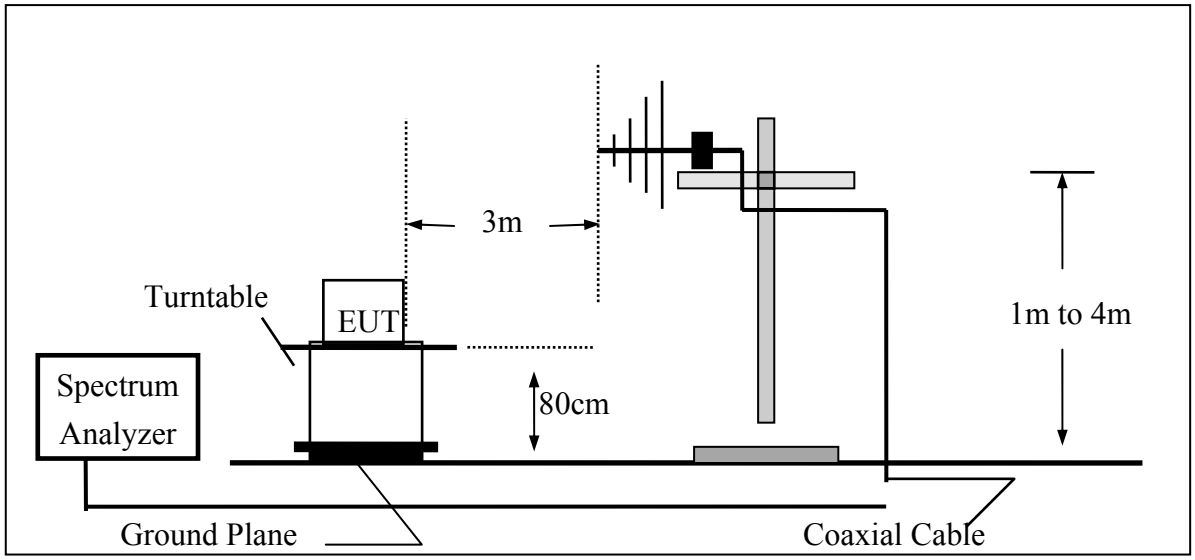
According to FCC §2.1046

FCC 22.913(a)(2) Mobile station are limited to 7W ERP.

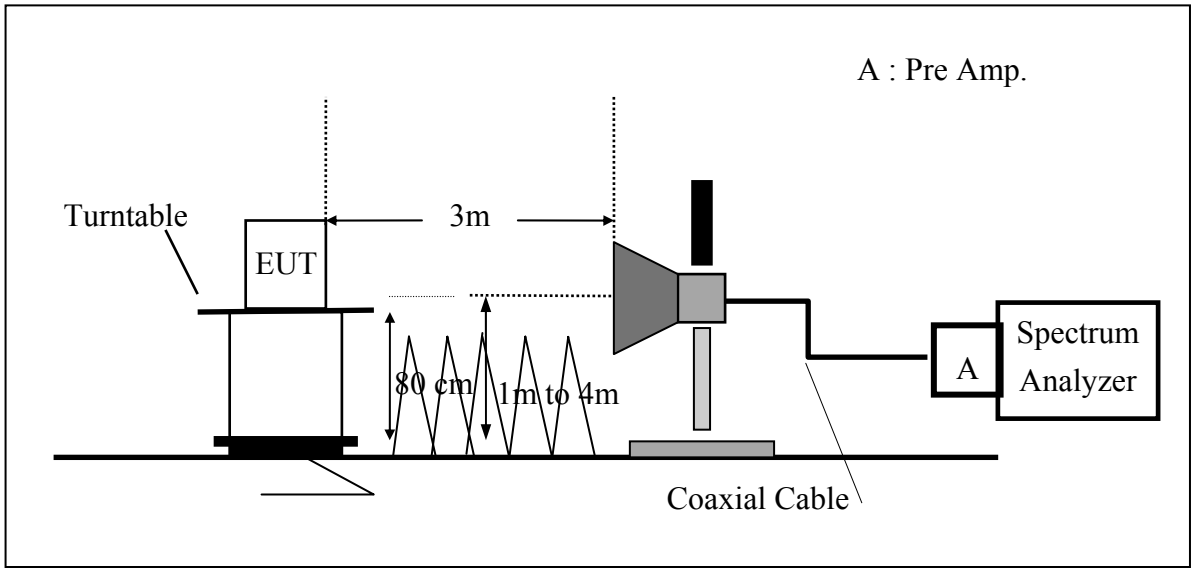
FCC 24.232(c) Mobile station are limited to 2W EIRP.

7.2 Test SET-UP (Block Diagram of Configuration)

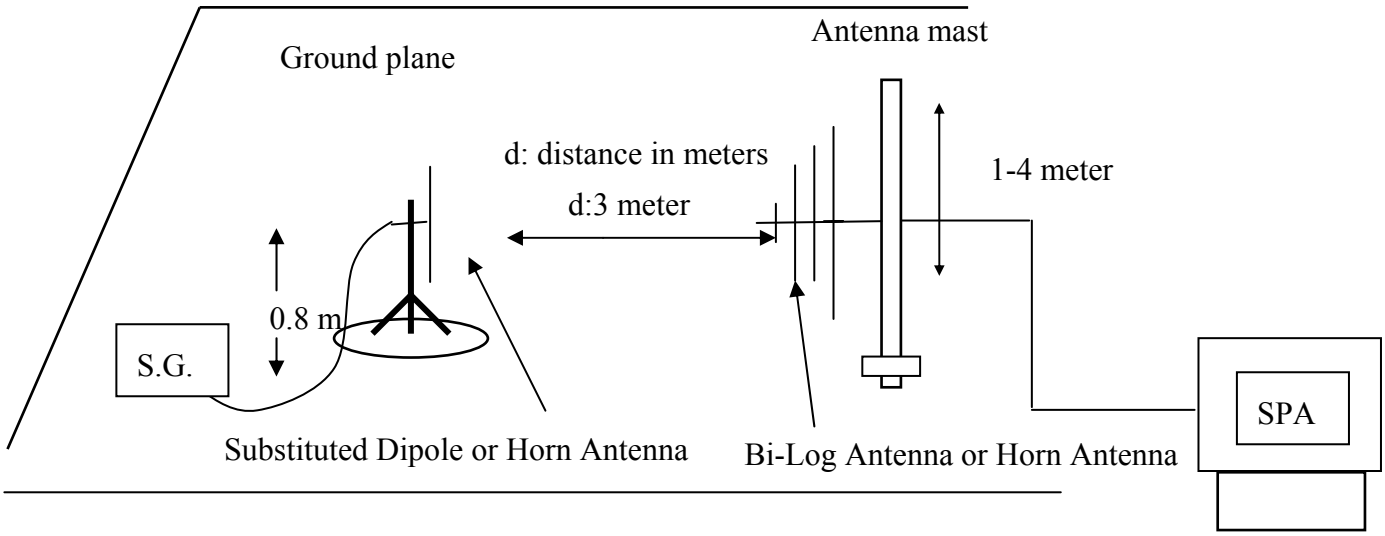
(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Power Test Set-UP Frequency Over 1 GHz



(C) Substituted Method Test Set-UP



7.3 Measurement Procedure

The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.

During the measurement, the EUT was communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824.2 –848.80MHz were measured using a substitution method. The EUT was replaced by dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:

EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by a horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)

EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable Loss (dB)

Spectrum setting:

1. Detector = Peak, marker the highest value of the detector by maximum hold, set RBW wide enough to capture the entire signal of emission, and VBW > =3xRBW.

Or,

2. KDB 971168 D01 Power Meas License Digital Systems v01 is adopted, and the procedure as lists under item 4, Measurement of the Average Power over the Fundamental Signal Bandwidth, is followed to set correspondingly for the acquisition of proper measurement data.

Set frequency = nominal signal center frequency;

Set span = 2 X occupied BW;

Set RBW ≈ 1~5% of the span, not to exceed 1 MHz

Set VBW = 3 x RBW;

Select average power (RMS) detector

Set sweep time and number of measurement points to achieve a minimum of 1 millisecond/pt integration time (ex. Point = 601points, then sweet time = 601*10^-3 = 6s

Activate trace averaging routine over a minimum of 10 sweeps;
Activate marker/span pair and set span = signal or channel bandwidth;
Activate the band/interval power marker function;
Record the band power level;

Record adjusted value as the average signal power level. Then activate the occupied band width measurement function.

7.4 Measurement Equipment Used:

Refer to section 2.4 in this report

7.5 Measurement Result

Refer to following pages for detail.

7.6 Measurement Result:

EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
GPRS 850	E2	824.2	128	V	24.62	3.96	-2.80	25.78	38.45
				H	24.19	3.96	-2.80	25.35	38.45
		836.6	190	V	24.87	4.00	-2.82	26.05	38.45
				H	23.61	4.00	-2.82	24.78	38.45
		848.8	251	V	25.01	4.03	-2.84	**26.19**	38.45
				H	23.84	4.03	-2.84	25.03	38.45

EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
GPRS 1900	E2	1850.2	512	V	30.98	4.51	-4.29	31.20	33.00
				H	29.49	4.17	-4.29	29.37	33.00
		1880.0	661	V	29.82	4.13	-4.33	29.62	33.00
				H	30.34	4.44	-4.33	30.44	33.00
		1909.8	810	V	28.26	4.09	-4.37	27.99	33.00
				H	31.21	4.36	-4.37	**31.21**	33.00

Remark：

(1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz

EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
EDGE 850	E2	824.2	128	V	22.97	3.96	-2.80	24.14	38.45
				H	22.21	3.96	-2.80	23.37	38.45
		836.6	190	V	23.57	4.00	-2.82	24.75	38.45
				H	22.48	4.00	-2.82	23.66	38.45
		848.8	251	V	23.61	4.03	-2.84	**24.80**	38.45
				H	21.84	4.03	-2.84	23.03	38.45

EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
EDGE 1900	E2	1850.2	512	V	29.13	4.17	-4.29	29.01	33.00
				H	30.60	4.51	-4.29	30.82	33.00
		1880.0	661	V	28.39	4.13	-4.33	28.19	33.00
				H	29.82	4.44	-4.33	29.93	33.00
		1909.8	810	V	28.98	4.09	-4.37	28.70	33.00
				H	30.83	4.36	-4.37	**30.83**	33.00

Remark：

(1) The RBW,VBW of SPA for frequency

RBW=300 KHz, VBW=1MHz

EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
WCDMA Band II	E2	1852.4	9262	V	26.27	4.17	-4.3	26.14	33.00
				H	30.86	4.51	-4.3	**31.07**	33.00
		1880.0	9400	V	26.70	4.13	-4.33	26.50	33.00
				H	30.72	4.44	-4.33	30.83	33.00
		1907.6	9538	V	27.51	4.1	-4.36	27.24	33.00
				H	30.71	4.37	-4.36	30.71	33.00

EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
WCDMA Band V	E2	826.4	4132	V	18.59	3.97	-2.80	19.75	38.45
				H	17.82	3.97	-2.80	18.98	38.45
		836.6	4183	V	19.44	4.00	-2.82	**20.62**	38.45
				H	17.93	4.00	-2.82	19.10	38.45
		846.6	4233	V	18.88	4.02	-2.84	20.07	38.45
				H	17.62	4.02	-2.84	18.80	38.45

Remark：

(1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
HSDPA Band II	E2	1852.4	9262	V	26.10	4.17	-4.29	25.98	33.00
				H	30.91	4.51	-4.30	31.12	33.00
		1880.0	9400	V	26.79	4.13	-4.33	26.59	33.00
				H	30.44	4.44	-4.33	30.54	33.00
		1907.6	9538	V	27.35	4.10	-4.36	27.08	33.00
				H	31.26	4.37	-4.36	**31.27**	33.00

EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
HSDPA Band V	E2	826.4	4132	V	18.69	3.97	-2.80	19.85	38.45
				H	17.97	3.97	-2.80	19.14	38.45
		836.6	4183	V	19.17	4.00	-2.82	20.35	38.45
				H	18.11	4.00	-2.82	19.28	38.45
		846.6	4233	V	19.43	4.02	-2.84	**20.61**	38.45
				H	18.11	4.02	-2.84	19.29	38.45

Remark：

(1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
HSUPA Band II	E2	1852.4	9262	V	26.23	4.17	-4.30	26.10	33.00
				H	30.79	4.51	-4.30	**31.00**	33.00
		1880.0	9400	V	27.16	4.14	-4.33	26.96	33.00
				H	30.48	4.44	-4.33	30.59	33.00
		1907.6	9538	V	27.22	4.10	-4.36	26.96	33.00
				H	30.73	4.37	-4.36	30.74	33.00

EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
HSUPA Band V	E2	826.4	4132	V	18.05	3.97	-2.80	19.22	38.45
				H	17.20	3.97	-2.80	18.36	38.45
		836.6	4183	V	18.66	4.00	-2.82	19.83	38.45
				H	17.7	4.00	-2.82	18.88	38.45
		846.6	4233	V	18.94	4.02	-2.83	**20.13**	38.45
				H	17.53	4.02	-2.83	18.71	38.45

Remark：

(1) The RBW,VBW of SPA for frequency

RBW= 5MHz , VBW= 8MHz

8. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

8.1 Standard Applicable

According to FCC §2.1053,

FCC §22.917(a),§24.238(a) the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than 43 + 10 log (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm)

8.2 EUT Setup (Block Diagram of Configuration)

Refer to section 5.2 for details

8.3 Measurement Procedure

The EUT was placed on a non-conductive; the measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequencies (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

ERP = S.G. output (dBm) + Antenna Gain(dBd) – Cable Loss (dB)

EIRP = S.G. output (dBm) + Antenna Gain(dBi) – Cable Loss (dB)

The setting of the measurement spectrum is set as follows: Detector = Peak, RBW/VBW = 100K for below 1GHz, and RBW/VBW = 1MHz for above 1GHz.

8.4 Measurement Equipment Used:

Refer to section 2.4 for details

8.5 Measurement Result

Refer to attach tabular data sheets.

Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Band	:GPRS 850	Test Date	:2013-08-29
ARFCN	:CH 128	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:824.2 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
138.64	S	-75.35	-72.89	-1.26	-1.20	-13.00	-62.35
277.35	S	-72.77	-75.58	4.46	-1.65	-13.00	-59.77
447.10	S	-70.12	-72.56	4.48	-2.05	-13.00	-57.12
620.73	S	-75.13	-76.78	4.07	-2.42	-13.00	-62.13
664.38	S	-73.98	-75.61	4.13	-2.50	-13.00	-60.98
692.51	S	-74.22	-75.82	4.15	-2.55	-13.00	-61.22
1648.40	H	-55.00	-52.98	2.40	-4.42	-13.00	-42.00
2472.60	H	-51.76	-49.44	3.14	-5.45	-13.00	-38.76
3296.80	H	---					
4121.00	H	---					
4945.20	H	---					
5769.40	H	---					
6593.60	H	---					
7417.80	H	---					
8242.00	H	---					

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Band	:GPRS 850	Test Date	:2013-08-29
ARFCN	:CH 128	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:824.2 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
166.77	S	-80.03	-79.14	0.41	-1.30	-13.00	-67.03
233.70	S	-76.91	-79.93	4.53	-1.51	-13.00	-63.91
277.35	S	-76.63	-79.44	4.46	-1.65	-13.00	-63.63
414.12	S	-73.11	-75.80	4.67	-1.97	-13.00	-60.11
663.41	S	-72.08	-73.71	4.13	-2.50	-13.00	-59.08
692.51	S	-76.67	-78.27	4.15	-2.55	-13.00	-63.67
1648.40	H	-51.41	-49.67	2.68	-4.42	-13.00	-38.41
2472.60	H	-44.29	-42.36	3.52	-5.45	-13.00	-31.29
3296.80	H	---					
4121.00	H	---					
4945.20	H	---					
5769.40	H	---					
6593.60	H	---					
7417.80	H	---					
8242.00	H	---					

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Band	:GPRS 850	Test Date	:2013-08-29
ARFCN	:CH 190	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:836.6 MHz	Engineer	:Allen
Operation Mode	:TX MID		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
137.67	S	-75.31	-72.91	-1.20	-1.20	-13.00	-62.31
277.35	S	-74.70	-77.51	4.46	-1.65	-13.00	-61.70
437.40	S	-71.29	-73.78	4.52	-2.03	-13.00	-58.29
551.86	S	-74.92	-77.21	4.56	-2.26	-13.00	-61.92
657.59	S	-72.88	-74.52	4.12	-2.49	-13.00	-59.88
775.93	S	-75.51	-76.53	3.72	-2.71	-13.00	-62.51
1673.20	H	-53.95	-51.84	2.34	-4.45	-13.00	-40.95
2509.80	H	-42.61	-40.31	3.19	-5.49	-13.00	-29.61
3346.40	H	---					
4183.00	H	---					
5019.60	H	---					
5856.20	H	---					
6692.80	H	---					
7529.40	H	---					
8366.00	H	---					

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Band	:GPRS 850	Test Date	:2013-08-29
ARFCN	:CH 190	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:836.6 MHz	Engineer	:Allen
Operation Mode	:TX MID		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
166.77	S	-80.44	-79.56	0.41	-1.30	-13.00	-67.44
232.73	S	-75.99	-79.04	4.56	-1.51	-13.00	-62.99
276.38	S	-74.76	-77.59	4.47	-1.64	-13.00	-61.76
415.09	S	-73.77	-76.45	4.66	-1.98	-13.00	-60.77
664.38	S	-74.00	-75.63	4.13	-2.50	-13.00	-61.00
783.69	S	-77.77	-78.82	3.78	-2.73	-13.00	-64.77
1673.20	H	-51.32	-49.53	2.66	-4.45	-13.00	-38.32
2509.80	H	-40.62	-38.68	3.56	-5.49	-13.00	-27.62
3346.40	H	---					
4183.00	H	---					
5019.60	H	---					
5856.20	H	---					
6692.80	H	---					
7529.40	H	---					
8366.00	H	---					

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Band	:GPRS 850	Test Date	:2013-08-29
ARFCN	:CH 251	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:848.8 MHz	Engineer	:Allen
Operation Mode	:TX HIGH		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
138.64	S	-72.96	-70.50	-1.26	-1.20	-13.00	-59.96
276.38	S	-74.02	-76.85	4.47	-1.64	-13.00	-61.02
451.95	S	-69.52	-71.94	4.48	-2.06	-13.00	-56.52
553.80	S	-74.29	-76.56	4.54	-2.27	-13.00	-61.29
663.41	S	-71.72	-73.35	4.13	-2.50	-13.00	-58.72
773.02	S	-75.74	-76.74	3.70	-2.70	-13.00	-62.74
1697.60	H	-56.12	-53.92	2.28	-4.48	-13.00	-43.12
2546.40	H	-45.81	-43.57	3.30	-5.54	-13.00	-32.81
3395.20	H	---					
4244.00	H	---					
5092.80	H	---					
5941.60	H	---					
6790.40	H	---					
7639.20	H	---					
8488.00	H	---					

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: GPRS 850 Mode

Operation Band	:GPRS 850	Test Date	:2013-08-29
ARFCN	:CH 251	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:848.8 MHz	Engineer	:Allen
Operation Mode	:TX HIGH		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
99.84	S	-83.23	-81.18	-0.99	-1.05	-13.00	-70.23
166.77	S	-80.09	-79.20	0.41	-1.30	-13.00	-67.09
232.73	S	-77.15	-80.20	4.56	-1.51	-13.00	-64.15
276.38	S	-74.13	-76.96	4.47	-1.64	-13.00	-61.13
415.09	S	-74.23	-76.91	4.66	-1.98	-13.00	-61.23
666.32	S	-73.51	-75.14	4.13	-2.50	-13.00	-60.51
1697.60	H	-53.66	-51.83	2.65	-4.48	-13.00	-40.66
2546.40	H	-39.47	-37.59	3.66	-5.54	-13.00	-26.47
3395.20	H	---					
4244.00	H	---					
5092.80	H	---					
5941.60	H	---					
6790.40	H	---					
7639.20	H	---					
8488.00	H	---					

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Band	:GPRS 1900	Test Date	:2013-08-29
ARFCN	:CH 512	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:1850.2 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
137.67	S	-73.80	-71.40	-1.20	-1.20	-13.00	-60.80
276.38	S	-75.67	-78.49	4.47	-1.64	-13.00	-62.67
445.16	S	-70.39	-72.84	4.49	-2.05	-13.00	-57.39
663.41	S	-71.68	-73.31	4.13	-2.50	-13.00	-58.68
758.47	S	-71.17	-72.09	3.59	-2.67	-13.00	-58.17
902.03	S	-69.88	-70.58	3.65	-2.94	-13.00	-56.88
3700.40	H	-56.52	-57.13	7.40	-6.80	-13.00	-43.52
5550.60	H	---					
7400.80	H	---					
9251.00	H	---					
11101.20	H	---					
12951.40	H	---					
14801.60	H	---					
16651.80	H	---					
18502.00	H	---					

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Band	:GPRS 1900	Test Date	:2013-08-29
ARFCN	:CH 512	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:1850.2 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
165.80	S	-81.02	-80.00	0.27	-1.29	-13.00	-68.02
232.73	S	-76.31	-79.36	4.56	-1.51	-13.00	-63.31
276.38	S	-78.12	-80.94	4.47	-1.64	-13.00	-65.12
415.09	S	-73.62	-76.30	4.66	-1.98	-13.00	-60.62
663.41	S	-73.15	-74.78	4.13	-2.50	-13.00	-60.15
906.88	S	-74.27	-74.97	3.65	-2.96	-13.00	-61.27
3700.40	H	-57.89	-58.01	6.91	-6.80	-13.00	-44.89
5550.60	H	---					
7400.80	H	---					
9251.00	H	---					
11101.20	H	---					
12951.40	H	---					
14801.60	H	---					
16651.80	H	---					
18502.00	H	---					

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Band	:GPRS 1900	Test Date	:2013-08-29
ARFCN	:CH 661	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:1880.0 MHz	Engineer	:Allen
Operation Mode	:TX MID		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
138.64	S	-76.29	-73.83	-1.26	-1.20	-13.00	-63.29
276.38	S	-76.24	-79.06	4.47	-1.64	-13.00	-63.24
441.28	S	-70.48	-72.95	4.51	-2.04	-13.00	-57.48
663.41	S	-71.06	-72.69	4.13	-2.50	-13.00	-58.06
762.35	S	-72.24	-73.18	3.62	-2.68	-13.00	-59.24
904.94	S	-71.81	-72.51	3.65	-2.95	-13.00	-58.81
3760.00	H	-56.86	-57.42	7.42	-6.85	-13.00	-43.86
5640.00	H	---					
7520.00	H	---					
9400.00	H	---					
11280.00	H	---					
13160.00	H	---					
15040.00	H	---					
16920.00	H	---					
18800.00	H	---					

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Band	:GPRS 1900	Test Date	:2013-08-29
ARFCN	:CH 661	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:1880.0 MHz	Engineer	:Allen
Operation Mode	:TX MID		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
165.80	S	-80.71	-79.69	0.27	-1.29	-13.00	-67.71
233.70	S	-77.22	-80.24	4.53	-1.51	-13.00	-64.22
277.35	S	-78.50	-81.31	4.46	-1.65	-13.00	-65.50
415.09	S	-72.18	-74.86	4.66	-1.98	-13.00	-59.18
666.32	S	-73.35	-74.98	4.13	-2.50	-13.00	-60.35
827.34	S	-73.43	-74.59	3.97	-2.81	-13.00	-60.43
3760.00	H	-58.38	-58.38	6.85	-6.85	-13.00	-45.38
5640.00	H	---					
7520.00	H	---					
9400.00	H	---					
11280.00	H	---					
13160.00	H	---					
15040.00	H	---					
16920.00	H	---					
18800.00	H	---					

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Band	:GPRS 1900	Test Date	:2013-08-29
ARFCN	:CH 810	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:1909.8 MHz	Engineer	:Allen
Operation Mode	:TX HIGH		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
138.64	S	-75.40	-72.94	-1.26	-1.20	-13.00	-62.40
277.35	S	-76.44	-79.25	4.46	-1.65	-13.00	-63.44
442.25	S	-70.16	-72.62	4.50	-2.04	-13.00	-57.16
655.65	S	-72.21	-73.85	4.12	-2.49	-13.00	-59.21
758.47	S	-73.06	-73.99	3.59	-2.67	-13.00	-60.06
870.99	S	-75.08	-76.07	3.87	-2.88	-13.00	-62.08
3819.60	H	-57.42	-58.03	7.51	-6.90	-13.00	-44.42
5729.40	H	---					
7639.20	H	---					
9549.00	H	---					
11458.80	H	---					
13368.60	H	---					
15278.40	H	---					
17188.20	H	---					
19098.00	H	---					

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: GPRS 1900 Mode

Operation Band	:GPRS 1900	Test Date	:2013-08-29
ARFCN	:CH 810	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:1909.8 MHz	Engineer	:Allen
Operation Mode	:TX HIGH		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
165.80	S	-80.37	-79.35	0.27	-1.29	-13.00	-67.37
232.73	S	-77.48	-80.53	4.56	-1.51	-13.00	-64.48
416.06	S	-76.19	-78.87	4.65	-1.98	-13.00	-63.19
663.41	S	-72.92	-74.54	4.13	-2.50	-13.00	-59.92
800.18	S	-72.99	-74.13	3.90	-2.76	-13.00	-59.99
943.74	S	-74.85	-75.44	3.63	-3.04	-13.00	-61.85
3819.60	H	-59.06	-59.20	7.05	-6.90	-13.00	-46.06
5729.40	H	---					
7639.20	H	---					
9549.00	H	---					
11458.80	H	---					
13368.60	H	---					
15278.40	H	---					
17188.20	H	---					
19098.00	H	---					

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: HSDPA B2 Mode

Operation Band	:HSDPA B2	Test Date	:2013-08-29
ARFCN	:CH 9262	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:1852.4 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
138.64	S	-74.60	-72.13	-1.26	-1.20	-13.00	-61.60
277.35	S	-76.94	-79.75	4.46	-1.65	-13.00	-63.94
345.25	S	-76.91	-79.85	4.76	-1.82	-13.00	-63.91
450.98	S	-71.21	-73.63	4.47	-2.06	-13.00	-58.21
601.33	S	-73.18	-74.84	4.03	-2.38	-13.00	-60.18
762.35	S	-72.02	-72.97	3.62	-2.68	-13.00	-59.02
3704.80	H	-57.22	-57.82	7.40	-6.80	-13.00	-44.22
5557.20	H	-54.88	-55.47	8.99	-8.41	-13.00	-41.88
5557.20	H	---					
7409.60	H	---					
9262.00	H	---					
11114.40	H	---					
12966.80	H	---					
14819.20	H	---					
16671.60	H	---					
18524.00	H	---					

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: HSDPA B2 Mode

Operation Band	:HSDPA B2	Test Date	:2013-08-29
ARFCN	:CH 9262	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:1852.4 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
165.80	S	-80.92	-79.90	0.27	-1.29	-13.00	-67.92
232.73	S	-76.29	-79.33	4.56	-1.51	-13.00	-63.29
346.22	S	-79.30	-82.24	4.77	-1.82	-13.00	-66.30
414.12	S	-75.81	-78.50	4.67	-1.97	-13.00	-62.81
663.41	S	-72.49	-74.12	4.13	-2.50	-13.00	-59.49
836.07	S	-73.65	-74.83	3.99	-2.82	-13.00	-60.65
3704.80	H	-59.11	-59.20	6.90	-6.80	-13.00	-46.11
5557.20	H	-55.05	-54.92	8.28	-8.41	-13.00	-42.05
5557.20	H	---					
7409.60	H	---					
9262.00	H	---					
11114.40	H	---					
12966.80	H	---					
14819.20	H	---					
16671.60	H	---					
18524.00	H	---					

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: HSDPA B2 Mode

Operation Band	:HSDPA B2	Test Date	:2013-08-29
ARFCN	:CH 9400	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:1880.0 MHz	Engineer	:Allen
Operation Mode	:TX MID		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
138.64	S	-74.28	-71.82	-1.26	-1.20	-13.00	-61.28
276.38	S	-76.80	-79.63	4.47	-1.64	-13.00	-63.80
346.22	S	-75.98	-78.92	4.77	-1.82	-13.00	-62.98
438.37	S	-70.14	-72.63	4.52	-2.03	-13.00	-57.14
664.38	S	-71.38	-73.01	4.13	-2.50	-13.00	-58.38
758.47	S	-71.64	-72.56	3.59	-2.67	-13.00	-58.64
3760.00	H	-56.18	-56.74	7.42	-6.85	-13.00	-43.18
5640.00	H	-54.71	-55.24	9.01	-8.47	-13.00	-41.71
5640.00	H	---					
7520.00	H	---					
9400.00	H	---					
11280.00	H	---					
13160.00	H	---					
15040.00	H	---					
16920.00	H	---					
18800.00	H	---					

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: HSDPA B2 Mode

Operation Band	:HSDPA B2	Test Date	:2013-08-29
ARFCN	:CH 9400	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:1880.0 MHz	Engineer	:Allen
Operation Mode	:TX MID		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
165.80	S	-80.41	-79.39	0.27	-1.29	-13.00	-67.41
233.70	S	-76.81	-79.83	4.53	-1.51	-13.00	-63.81
276.38	S	-77.47	-80.30	4.47	-1.64	-13.00	-64.47
414.12	S	-74.18	-76.87	4.67	-1.97	-13.00	-61.18
663.41	S	-72.13	-73.76	4.13	-2.50	-13.00	-59.13
831.22	S	-74.51	-75.68	3.98	-2.81	-13.00	-61.51
3760.00	H	-58.13	-58.13	6.85	-6.85	-13.00	-45.13
5640.00	H	-53.96	-53.78	8.30	-8.47	-13.00	-40.96
5640.00	H	---					
7520.00	H	---					
9400.00	H	---					
11280.00	H	---					
13160.00	H	---					
15040.00	H	---					
16920.00	H	---					
18800.00	H	---					

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: HSDPA B2 Mode

Operation Band	:HSDPA B2	Test Date	:2013-08-29
ARFCN	:CH 9538	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:1907.6 MHz	Engineer	:Allen
Operation Mode	:TX HIGH		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
138.64	S	-74.92	-72.46	-1.26	-1.20	-13.00	-61.92
276.38	S	-75.14	-77.97	4.47	-1.64	-13.00	-62.14
439.34	S	-71.25	-73.73	4.52	-2.03	-13.00	-58.25
551.86	S	-76.38	-78.68	4.56	-2.26	-13.00	-63.38
663.41	S	-71.27	-72.90	4.13	-2.50	-13.00	-58.27
758.47	S	-71.04	-71.96	3.59	-2.67	-13.00	-58.04
3815.20	H	-54.47	-55.08	7.50	-6.90	-13.00	-41.47
5722.80	H	-54.94	-55.42	9.03	-8.54	-13.00	-41.94
5722.80	H	---					
7630.40	H	---					
9538.00	H	---					
11445.60	H	---					
13353.20	H	---					
15260.80	H	---					
17168.40	H	---					
19076.00	H	---					

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: HSDPA B2 Mode

Operation Band	:HSDPA B2	Test Date	:2013-08-29
ARFCN	:CH 9538	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:1907.6 MHz	Engineer	:Allen
Operation Mode	:TX HIGH		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	EIRP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBi	dB	dBm	dB
232.73	S	-76.23	-79.27	4.56	-1.51	-13.00	-63.23
277.35	S	-78.03	-80.84	4.46	-1.65	-13.00	-65.03
415.09	S	-76.32	-79.00	4.66	-1.98	-13.00	-63.32
664.38	S	-72.58	-74.21	4.13	-2.50	-13.00	-59.58
828.31	S	-72.00	-73.17	3.97	-2.81	-13.00	-59.00
878.75	S	-68.17	-69.09	3.81	-2.89	-13.00	-55.17
3815.20	H	-52.84	-52.97	7.03	-6.90	-13.00	-39.84
5722.80	H	-54.94	-54.72	8.32	-8.54	-13.00	-41.94
5722.80	H	---					
7630.40	H	---					
9538.00	H	---					
11445.60	H	---					
13353.20	H	---					
15260.80	H	---					
17168.40	H	---					
19076.00	H	---					

EIRP(dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: WCDMA B5 Mode

Operation Band	:WCDMA B5	Test Date	:2013-08-29
ARFCN	:CH 4132	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:826.4 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
138.64	S	-73.71	-71.25	-1.26	-1.20	-13.00	-60.71
277.35	S	-73.33	-76.14	4.46	-1.65	-13.00	-60.33
441.28	S	-69.71	-72.18	4.51	-2.04	-13.00	-56.71
551.86	S	-74.41	-76.71	4.56	-2.26	-13.00	-61.41
620.73	S	-72.44	-74.09	4.07	-2.42	-13.00	-59.44
771.08	S	-75.37	-76.36	3.69	-2.70	-13.00	-62.37
1652.80	H	-57.84	-55.81	2.39	-4.42	-13.00	-44.84
2479.20	H	-60.85	-58.54	3.14	-5.46	-13.00	-47.85
3305.60	H	---					
4132.00	H	---					
4958.40	H	---					
5784.80	H	---					
6611.20	H	---					
7437.60	H	---					
8264.00	H	---					

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: WCDMA B5 Mode

Operation Band	:WCDMA B5	Test Date	:2013-08-29
ARFCN	:CH 4132	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:826.4 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
165.80	S	-80.32	-79.29	0.27	-1.29	-13.00	-67.32
232.73	S	-76.77	-79.81	4.56	-1.51	-13.00	-63.77
277.35	S	-72.52	-75.33	4.46	-1.65	-13.00	-59.52
346.22	S	-78.74	-81.68	4.77	-1.82	-13.00	-65.74
455.83	S	-75.34	-77.77	4.50	-2.07	-13.00	-62.34
666.32	S	-73.83	-75.46	4.13	-2.50	-13.00	-60.83
1652.80	H	-52.31	-50.56	2.67	-4.42	-13.00	-39.31
2479.20	H	-61.68	-59.75	3.52	-5.46	-13.00	-48.68
3305.60	H	---					
4132.00	H	---					
4958.40	H	---					
5784.80	H	---					
6611.20	H	---					
7437.60	H	---					
8264.00	H	---					

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: WCDMA B5 Mode

Operation Band	:WCDMA B5	Test Date	:2013-08-29
ARFCN	:CH 4183	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:836.6 MHz	Engineer	:Allen
Operation Mode	:TX MID		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
138.64	S	-75.53	-73.07	-1.26	-1.20	-13.00	-62.53
277.35	S	-72.71	-75.52	4.46	-1.65	-13.00	-59.71
445.16	S	-69.97	-72.42	4.49	-2.05	-13.00	-56.97
592.60	S	-76.46	-78.21	4.11	-2.36	-13.00	-63.46
664.38	S	-72.35	-73.98	4.13	-2.50	-13.00	-59.35
760.41	S	-75.94	-76.88	3.61	-2.68	-13.00	-62.94
1673.20	H	-60.00	-57.89	2.34	-4.45	-13.00	-47.00
2509.80	H	-60.49	-58.19	3.19	-5.49	-13.00	-47.49
3346.40	H	---					
4183.00	H	---					
5019.60	H	---					
5856.20	H	---					
6692.80	H	---					
7529.40	H	---					
8366.00	H	---					

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: WCDMA B5 Mode

Operation Band	:WCDMA B5	Test Date	:2013-08-29
ARFCN	:CH 4183	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:836.6 MHz	Engineer	:Allen
Operation Mode	:TX MID		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
165.80	S	-80.57	-79.55	0.27	-1.29	-13.00	-67.57
233.70	S	-76.59	-79.61	4.53	-1.51	-13.00	-63.59
277.35	S	-73.69	-76.50	4.46	-1.65	-13.00	-60.69
414.12	S	-72.11	-74.80	4.67	-1.97	-13.00	-59.11
464.56	S	-73.97	-76.42	4.54	-2.09	-13.00	-60.97
666.32	S	-73.25	-74.88	4.13	-2.50	-13.00	-60.25
1673.20	H	-57.24	-55.45	2.66	-4.45	-13.00	-44.24
2509.80	H	-59.27	-57.33	3.56	-5.49	-13.00	-46.27
3346.40	H	---					
4183.00	H	---					
5019.60	H	---					
5856.20	H	---					
6692.80	H	---					
7529.40	H	---					
8366.00	H	---					

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: WCDMA B5 Mode

Operation Band	:WCDMA B5	Test Date	:2013-08-29
ARFCN	:CH 4233	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:846.6 MHz	Engineer	:Allen
Operation Mode	:TX HIGH		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
138.64	S	-75.13	-72.67	-1.26	-1.20	-13.00	-62.13
276.38	S	-74.64	-77.46	4.47	-1.64	-13.00	-61.64
441.28	S	-70.58	-73.05	4.51	-2.04	-13.00	-57.58
553.80	S	-74.07	-76.34	4.54	-2.27	-13.00	-61.07
689.60	S	-74.01	-75.61	4.14	-2.54	-13.00	-61.01
759.44	S	-74.62	-75.54	3.60	-2.68	-13.00	-61.62
1693.20	H	-59.20	-57.02	2.29	-4.48	-13.00	-46.20
2539.80	H	-61.36	-59.11	3.28	-5.53	-13.00	-48.36
3386.40	H	---					
4233.00	H	---					
5079.60	H	---					
5926.20	H	---					
6772.80	H	---					
7619.40	H	---					
8466.00	H	---					

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

Radiated Spurious Emission Measurement Result: WCDMA B5 Mode

Operation Band	:WCDMA B5	Test Date	:2013-08-29
ARFCN	:CH 4233	Temp./Humi.	:25.6 deg_C / 64 RH
Fundamental Frequency	:846.6 MHz	Engineer	:Allen
Operation Mode	:TX HIGH		
EUT Pol.	:E2 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	ERP	SG Output Level	Antenna Gain	Cable Loss	Limit	Safe Margin
MHz	F/H/E/S	dBm	dBm	dBd	dB	dBm	dB
165.80	S	-80.59	-79.57	0.27	-1.29	-13.00	-67.59
233.70	S	-77.22	-80.24	4.53	-1.51	-13.00	-64.22
276.38	S	-72.45	-75.27	4.47	-1.64	-13.00	-59.45
415.09	S	-73.91	-76.59	4.66	-1.98	-13.00	-60.91
451.95	S	-76.66	-79.08	4.48	-2.06	-13.00	-63.66
666.32	S	-74.05	-75.68	4.13	-2.50	-13.00	-61.05
1693.20	H	-57.78	-55.96	2.65	-4.48	-13.00	-44.78
2539.80	H	-59.54	-57.64	3.64	-5.53	-13.00	-46.54
3386.40	H	---					
4233.00	H	---					
5079.60	H	---					
5926.20	H	---					
6772.80	H	---					
7619.40	H	---					
8466.00	H	---					

ERP(dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.
"E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.
"---" : denotes Noise Floor.

9. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

9.1 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended to comply with Section Part 22, subpart H and Part 24, subpart E of the FCC CFR 47 Rules. And RSS-102 issue 4 For 47 CFR 1.1310 Radio frequency Radiation Exposure requirement.

9.2 Special Accessories

Not available for this EUT intended for grant.

9.3 Equipment Modifications

Not available for this EUT intended for grant.

9.4 Limitation

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	F/1500	30
1500-15000	/	/	1.0	30

F = frequency in MHz

* = Plane-wave equipment power density

Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m^2)	Averaging Time (minutes)
0.003-1	280	2.19	-	6
1-10	$280/f$	$2.19/f$	-	6
10-30	28	$2.19/f$	-	6
30-300	28	0.073	2^*	6
300-1500	$1.585\ f^{0.5}$	$0.0042\ f^{0.5}$	$f/150$	6
1500-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	$616000/f^{1.2}$
150000-300000	$0.158\ f^{0.5}$	$4.21 \times 10^{-4}\ f^{0.5}$	$6.67 \times 10^{-5}\ f$	$616000/f^{1.2}$

Note: f is frequency in MHz.

* Power density limit is applicable at frequencies greater than 100 MHz.

9.5 Maximum Permissible Exposure (MPE) Evaluation

In this application we seek approval to the MS2362, TravelMate P633. Based on the FCC OET Bulletin 65 Supplement C and 47 CFR §2.1091, we have concluded MS2362, TravelMate P633 will comply with the FCC rules on RF exposure for mobile devices in cellular band and PCS band. The following analysis will demonstrate such compliance. The analysis will be done in two US bands.

Operation in cellular band (824 – 849 MHz) (First Antenna)

The ERP of MS2362, TravelMate P633 in cellular band is 26.19dBm max at GPRS 850 mode. The resulted power density at a distance of 20 cm can be deducted as follows:

EUT				Measurement					
Operation Band	**Pol.**	**Fundamental Frequency**	**CH**	**Antenna Pol.**	**S.G. Output**	**Antenna Gain**	**Cable Loss**	**ERP**	**Limit**
		MHz		**V/H**	**dBm**	**dBd**	**dB**	**dBm**	**dBm**
GPRS 850	E2	824.2	128	V	24.62	3.96	-2.80	25.78	38.45
				H	24.19	3.96	-2.80	25.35	38.45
		836.6	190	V	24.87	4.00	-2.82	26.05	38.45
				H	23.61	4.00	-2.82	24.78	38.45
		848.8	251	V	25.01	4.03	-2.84	**26.19**	38.45
				H	23.84	4.03	-2.84	25.03	38.45

ERP = 26.19 dBm =415.91 mW

Power Density = ERP*Duty Cycle/$(4\pi R^2)$

$= 415.91*0.25/(4*\pi*20^2) = 0.020685 mW/cm^2$

where Duty Cycle is 0.25 for GPRS operation (class 10) and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

MPE limit = 848.8/1500 = 0.56 mW/cm^2

As we can see the resulted power density is below the MPE limit, therefore MS2362, TravelMate P633 in cellular band is compliant with the FCC rules on RF exposure

Operation in PCS band (1850 – 1910 MHz) (First Antenna)

The EIRP of MS2362, TravelMate P633 in PCS band is 31.21dBm max at GPRS 1900 mode. The resulted power density at a distance of 20 cm can be deducted as follows:

EUT				Measurement					
Operation Band	**Pol.**	**Fundamental Frequency**	**CH**	**Antenna Pol.**	**S.G. Output**	**Antenna Gain**	**Cable Loss**	**EIRP**	**Limit**
		MHz		**V/H**	**dBm**	**dBd**	**dB**	**dBm**	**dBm**
GPRS 1900	E2	1850.2	512	V	30.98	4.51	-4.29	31.20	33.00
				H	29.49	4.17	-4.29	29.37	33.00
		1880.0	661	V	29.82	4.13	-4.33	29.62	33.00
				H	30.34	4.44	-4.33	30.44	33.00
		1909.8	810	V	28.26	4.09	-4.37	27.99	33.00
				H	31.21	4.36	-4.37	**31.21**	33.00

EIRP = 31.21 dBm = 1321.296 mW
Power Density = EIRP*Duty Cycle/($4\pi R^2$)
=1321.296*0.25/($4*\pi*20^2$) =0.0657 mW/cm^2
where Duty Cycle is 0. 25 for GPRS operation (class 10) and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

MPE limit = 1.0 mW/cm^2

As we can see the resulted power density is below the MPE limit, therefore MS2362, TravelMate P633 in PCS band is compliant with the FCC rules on RF exposure.

Operation in WCDMA band II (1850 – 1910 MHz) (First Antenna)

The EIRP of MS2362, TravelMate P633 in PCS band is 31.07dBm max at WCDMA II mode. The resulted power density at a distance of 20 cm can be deducted as follows:

EUT				Measurement					
Operation Band	**Pol.**	**Fundamental Frequency**	**CH**	**Antenna Pol.**	**S.G. Output**	**Antenna Gain**	**Cable Loss**	**EIRP**	**Limit**
		MHz		**V/H**	**dBm**	**dBd**	**dB**	**dBm**	**dBm**
WCDMA Band II	E2	1852.4	9262	V	26.27	4.17	-4.3	26.14	33.00
				H	30.86	4.51	-4.3	**31.07**	33.00
		1880.0	9400	V	26.70	4.13	-4.33	26.50	33.00
				H	30.72	4.44	-4.33	30.83	33.00
		1907.6	9538	V	27.51	4.1	-4.36	27.24	33.00
				H	30.71	4.37	-4.36	30.71	33.00

ERP = 31.07 dBm = 1279.381 mW

Power Density = ERP*Duty Cycle/($4\pi R^2$)

= $1279.381*1/(4*\pi*20^2) = 0.2545 mW/cm^2$

where Duty Cycle is 1 for WCDMA band II mode and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

MPE limit = $1.0 mW/cm^2$

As we can see the resulted power density is below the MPE limit, therefore MS2362, TravelMate P633 in cellular band is compliant with the FCC rules on RF exposure.

Operation in WCDMA band V (826 – 849 MHz) (First Antenna)

The EIRP of MS2362, TravelMate P633 in cellular band is 20.62dBm max at WCDMA V mode. The resulted power density at a distance of 20 cm can be deducted as follows:

EUT				Measurement					
Operation Band	**Pol.**	**Fundamental Frequency**	**CH**	**Antenna Pol.**	**S.G. Output**	**Antenna Gain**	**Cable Loss**	**ERP**	**Limit**
		MHz		**V/H**	**dBm**	**dBd**	**dB**	**dBm**	**dBm**
WCDMA Band V	E2	826.4	4132	V	18.59	3.97	-2.80	19.75	38.45
				H	17.82	3.97	-2.80	18.98	38.45
		836.6	4183	V	19.44	4.00	-2.82	**20.62**	38.45
				H	17.93	4.00	-2.82	19.10	38.45
		846.6	4233	V	18.88	4.02	-2.84	20.07	38.45
				H	17.62	4.02	-2.84	18.80	38.45

EIRP = 20.62 dBm = 115.3453 mW
Power Density = EIRP*Duty Cycle/($4\pi R^2$)
= 115.3453*1/($4*\pi*20^2$) = 0.0229 mW/cm^2
where Duty Cycle is 1 for WCDMA band V mode and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

MPE limit = 836.6/1500 = 0.56 mW/cm^2

As we can see the resulted power density is below the MPE limit, therefore MS2362, TravelMate P633 in PCS band is compliant with the FCC rules on RF exposure.

Operation in cellular band (824 – 849 MHz) (Second Antenna)

The ERP of MS2362, TravelMate P633 in cellular band is 24.80dBm max at EDGE 850 mode. The resulted power density at a distance of 20 cm can be deducted as follows:

EUT				Measurement					
Operation Band	**Pol.**	**Fundamental Frequency**	**CH**	**Antenna Pol.**	**S.G. Output**	**Antenna Gain**	**Cable Loss**	**ERP**	**Limit**
		MHz		**V/H**	**dBm**	**dBd**	**dB**	**dBm**	**dBm**
EDGE 850	E2	824.2	128	V	22.97	3.96	-2.80	24.14	38.45
				H	22.21	3.96	-2.80	23.37	38.45
		836.6	190	V	23.57	4.00	-2.82	24.75	38.45
				H	22.48	4.00	-2.82	23.66	38.45
		848.8	251	V	23.61	4.03	-2.84	**24.80**	38.45
				H	21.84	4.03	-2.84	23.03	38.45

ERP = 24.80 dBm = 301.995 mW
Power Density = ERP*Duty Cycle/($4\pi R^2$)
= 301.995*0.25/($4*\pi*20^2$) = 0.015 mW/cm^2
where Duty Cycle is 0.25 for EDGE operation (class 10) and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

MPE limit = 848.8/1500 = 0.57 mW/cm^2

As we can see the resulted power density is below the MPE limit, therefore MS2362, TravelMate P633 in cellular band is compliant with the FCC rules on RF exposure

Operation in PCS band (1850 – 1910 MHz) (Second Antenna)

The EIRP of MS2362, TravelMate P633 in PCS band is 30.83dBm max at EDGE 1900 mode. The resulted power density at a distance of 20 cm can be deducted as follows:

EUT				Measurement					
Operation Band	**Pol.**	**Fundamental Frequency**	**CH**	**Antenna Pol.**	**S.G. Output**	**Antenna Gain**	**Cable Loss**	**EIRP**	**Limit**
		MHz		**V/H**	**dBm**	**dBd**	**dB**	**dBm**	**dBm**
EDGE 1900	E2	1850.2	512	V	29.13	4.17	-4.29	29.01	33.00
				H	30.60	4.51	-4.29	30.82	33.00
		1880.0	661	V	28.39	4.13	-4.33	28.19	33.00
				H	29.82	4.44	-4.33	29.93	33.00
		1909.8	810	V	28.98	4.09	-4.37	28.70	33.00
				H	30.83	4.36	-4.37	**30.83**	33.00

EIRP = 30.83 dBm = 1210.598 mW

Power Density = EIRP*Duty Cycle/($4\pi R^2$)

= 1210.598*0.25/($4*\pi*20^2$) =0.2408 mW/cm^2

where Duty Cycle is 0. 25 for EDGE operation (class 10) and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

MPE limit = 1.0 mW/cm^2

As we can see the resulted power density is below the MPE limit, therefore MS2362 in PCS band is compliant with the FCC rules on RF exposure.

Operation in HSDPA band II (1850 – 1910 MHz) (Second Antenna)

The EIRP of MS2362, TravelMate P633 in PCS band is 31.27dBm max at HSDPA II mode. The resulted power density at a distance of 20 cm can be deducted as follows:

EUT				Measurement					
Operation Band	**Pol.**	**Fundamental Frequency**	**CH**	**Antenna Pol.**	**S.G. Output**	**Antenna Gain**	**Cable Loss**	**EIRP**	**Limit**
		MHz		**V/H**	**dBm**	**dBd**	**dB**	**dBm**	**dBm**
HSDPA Band II	E2	1852.4	9262	V	26.10	4.17	-4.29	25.98	33.00
				H	30.91	4.51	-4.30	31.12	33.00
		1880.0	9400	V	26.79	4.13	-4.33	26.59	33.00
				H	30.44	4.44	-4.33	30.54	33.00
		1907.6	9538	V	27.35	4.10	-4.36	27.08	33.00
				H	31.26	4.37	-4.36	**31.27**	33.00

EIRP = 31.27 dBm = 1339.677 mW
Power Density = ERP*Duty Cycle/($4\pi R^2$)
= 1339.677*1/($4*\pi*20^2$) = 0.2665 mW/cm^2
where Duty Cycle is 1 for HSDPA band II mode and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

MPE limit = 1.0 mW/cm^2

As we can see the resulted power density is below the MPE limit, therefore MS2362, TravelMate P633 in cellular band is compliant with the FCC rules on RF exposure.

Operation in HSDPA band V (826 – 849 MHz) (Second Antenna)

The EIRP of MS2362, TravelMate P633 in cellular band is 20.61dBm max at HSDPA V mode. The resulted power density at a distance of 20 cm can be deducted as follows:

EUT				Measurement					
Operation Band	**Pol.**	**Fundamental Frequency**	**CH**	**Antenna Pol.**	**S.G. Output**	**Antenna Gain**	**Cable Loss**	**ERP**	**Limit**
		MHz		**V/H**	**dBm**	**dBd**	**dB**	**dBm**	**dBm**
HSDPA Band V	E2	826.4	4132	V	18.69	3.97	-2.80	19.85	38.45
				H	17.97	3.97	-2.80	19.14	38.45
		836.6	4183	V	19.17	4.00	-2.82	20.35	38.45
				H	18.11	4.00	-2.82	19.28	38.45
		846.6	4233	V	19.43	4.02	-2.84	**20.61**	38.45
				H	18.11	4.02	-2.84	19.29	38.45

EIRP = 20.61 dBm = 115.08 mW
Power Density = EIRP*Duty Cycle/($4\pi R^2$)
= 115.08*1/($4*\pi*20^2$) = 0.0057 mW/cm^2
where Duty Cycle is 1 for HSDPA band V mode and R is 20 cm.

The MPE limit for General Population/Uncontrolled Exposure is shown in the FCC OET Bulletin 65 Supplement C and can be calculated as follows:

MPE limit = 846.6/1500 = 0.56 mW/cm^2

As we can see the resulted power density is below the MPE limit, therefore MS2362, TravelMate P633 in PCS band is compliant with the FCC rules on RF exposure.

- End of Report -