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RADIO TEST REPORT

Report No: STS2206166W01

Issued for

SIMCom Wireless Solutions Limited

Building 3, No.289 Linhong Road, Shanghai, China

Product Name:	LPWA MODULE
Brand Name:	SIMCom
Model Name:	SIM7070G
Series Model:	SIM7070G-PCIE
FCC ID:	2AJYU-8VC0001
Test Standard:	FCC Part 22H and 24E

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TEST RESULT CERTIFICATION

Applicant's Name: SIMCom Wireless Solutions Limited
 Address: Building 3, No.289 Linhong Road, Shanghai, China
 Manufacture's Name: SIMCom Wireless Solutions Limited
 Address: Building 3, No.289 Linhong Road, Shanghai, China

Product Description

Product Name: LPWA MODULE
 Brand Name: SIMCom
 Model Name: SIM7070G
 Series Model: SIM7070G-PCIE
 Test Standards: FCC Part 22H and 24E
 Test Procedure: KDB 971168 D01 v03r01,ANSI C63.26(2015)

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test:
 Date of receipt of test item: 22 June 2022
 Date (s) of performance of tests.: 22 June 2022 ~ 07 July 2022
 Date of Issue: 20 July 2022
 Test Result: Pass

Testing Engineer :

(Chris Chen)

Technical Manager :

(Sean she)

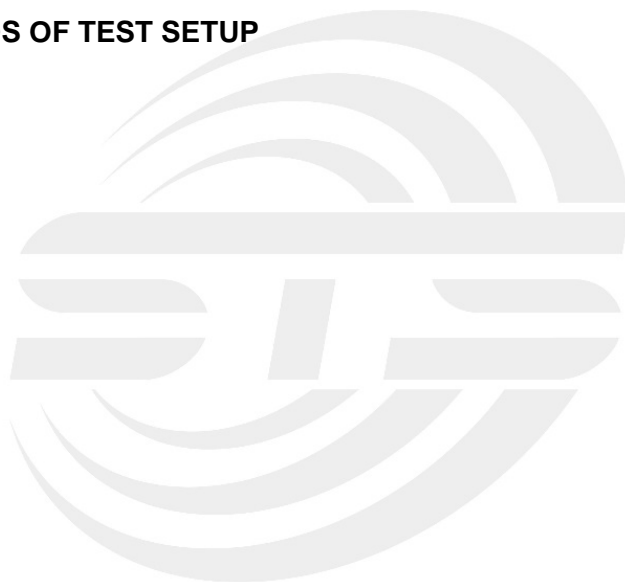
Authorized Signatory :

(Bovey Yang)





Table of Contents	Page
1 INTRODUCTION	6
1.1 TEST FACTORY	6
1.2 MEASUREMENT UNCERTAINTY	6
2 PRODUCT INFORMATION	7
3 TEST CONFIGURATION OF EQUIPMENT UNDER TEST	9
4 MEASUREMENT INSTRUMENTS	10
5 TEST ITEMS	11
5.1 TRANSMITTER RADIATED POWER (EIRP/ERP)	11
5.2 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT	14
APPENDIX-PHOTOS OF TEST SETUP	28





Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	07 July 2022	STS2206166W01	ALL	Initial Issue
01	20 July 2022	STS2206166W01	ALL	Update applicant address, manufacturer address, product name, software version number





SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

The radiated emission testing was performed according to the procedures of KDB 971168 D01 v03r01 and ANSI C63.26(2015)

FCC Rules	Test Description	Test Limit	Test Result	Reference
2.1046 22.913 24.232	Effective Radiated Power/Equivalent Isotropic Radiated Power	< 7 Watts max. ERP(Part 22) < 2 Watts max. EIRP(Part 24)	PASS	
2.1053 22.917 24.238	Field Strength of Spurious Radiation	< $43+10\log_{10}(P[\text{Watts}])$	PASS	





1 INTRODUCTION

1.1 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

1.2 MEASUREMENT UNCERTAINTY

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.4-2014. All measurement uncertainty values are shown with a coverage factor of $k = 2$ to indicate a 95% level of confidence. The measurement data shown herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and, thus, can be compared directly to specified limits to determine compliance.

No.	Item	Uncertainty
1	RF output power, conducted	± 0.87 dB
2	Unwanted Emissions, conducted	± 2.895 dB
3	All emissions, radiated 9K-30MHz	± 3.80 dB
4	All emissions, radiated 30M-1GHz	± 4.09 dB
5	All emissions, radiated 1G-6GHz	± 4.92 dB
6	All emissions, radiated >6G	± 5.49 dB
7	Conducted Emission (9KHz-30MHz)	± 2.73 dB

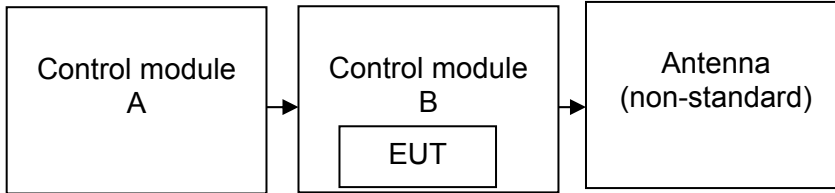


2 PRODUCT INFORMATION

Product Name	LPWA MODULE
Trade Name	SIMCom
Model Name	SIM7070G
Series Model	SIM7070G-PCIE
Model Difference	Only different in model name and appearance
Tx Frequency:	GSM/GPRS/EDGE: 850: 824 MHz ~ 849MHz 1900: 1850 MHz ~ 1910MHz
Rx Frequency:	GSM/GPRS/EDGE: 850: 869 MHz ~ 894 MHz 1900: 1930 MHz ~ 1990MHz
Max RF Output Power:	GSM 850:30.34dBm, GSM 1900:30.38dBm GPRS850(1-Slot):29.72dBm, GPRS1900(1-Slot):29.85dBm GPRS850(2-Slot):29.26dBm, GPRS1900(2-Slot):29.43dBm GPRS850(3-Slot):28.81dBm, GPRS1900(3-Slot):28.98dBm GPRS850(4-Slot):28.36dBm, GPRS1900(4-Slot):28.58dBm EDGE 850(1-Slot):28.71dBm, EDGE 1900(1-Slot):29.80dBm EDGE 850(2-Slot):27.98dBm, EDGE 1900(2-Slot):29.03dBm EDGE 850(3-Slot):27.23dBm, EDGE 1900(3-Slot):28.25dBm EDGE 850(4-Slot):26.48dBm, EDGE 1900(4-Slot):27.48dBm
Type of Emission:	GSM(850): 306KGXW; GSM(1900): 305KGXW GPRS(850): 323KGXW; GPRS(1900): 319KGXW EDGE(850): 318KG7W; EDGE(1900): 316KG7W
SIM Card:	SIM 1 and SIM 2 is a chipset unit and tested as single chipset, SIM 1 is used to tested.
Antenna:	External Antenna
Antenna gain:	GSM 850: 2.03dBi ,PCS 1900: 3.85dBi
Power Rating:	Input: DC 3.8V
GPRS/EDGE Class:	Multi-Class12
Extreme Vol. Limits:	DC 3.0 V to 4.6 V (Nominal DC3.8V)
Extreme Temp. Tolerance:	-30°C to +50°C
Hardware version number:	V1.03
Software version number:	R1951.04
** Note: The High Voltage 4.6V and Low Voltage 3.0V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.	

2.1 CONFIGURATION OF EUT SYSTEM

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



As shown in figure

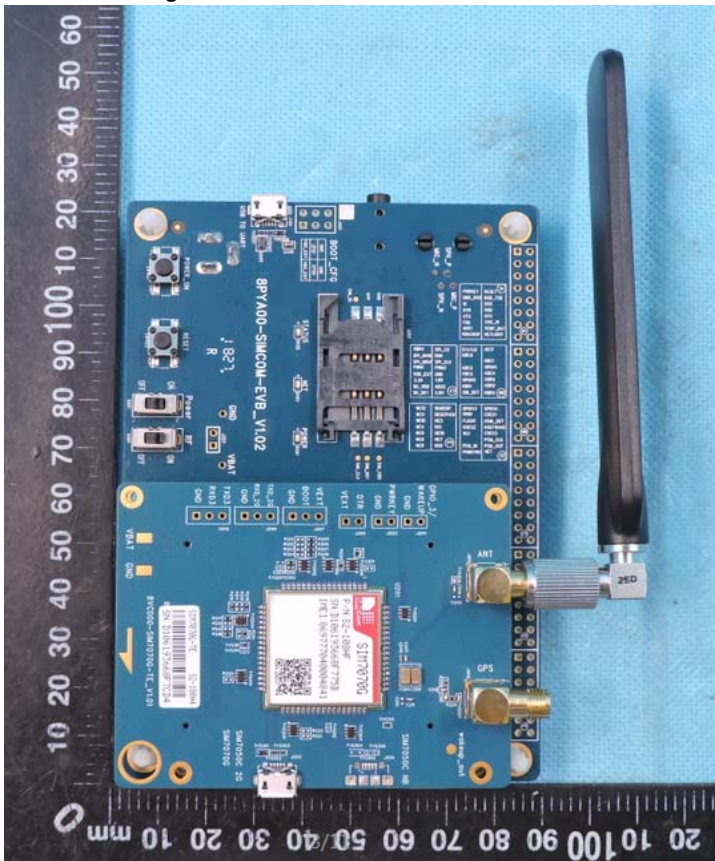


Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	Serial No.	Note
1	Control module A	8PYA00-SIMCOM-EVB_V1.02	N/A	N/A
2	Control module B	8VC000-SIM7070G-TE_V1.01	N/A	N/A

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.



3 TEST CONFIGURATION OF EQUIPMENT UNDER TEST

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 and ANSI C63.26 2015 Power Meas. License Digital Systems with maximum output power.

Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.

Radiated emissions were investigated as following frequency range:

1. 30 MHz to 10th harmonic for GSM850.
2. 30 MHz to 10th harmonic for GSM1900.

All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

BAND	TEST MODES	
	RADIATED TCS	CONDUCTED TCS
GSM 850	GSM LINK GPRS/EDGE CLASS 12 LINK	GSM LINK GPRS/EDGE CLASS 12 LINK
GSM 1900	GSM LINK GPRS/EDGE CLASS 12 LINK	GSM LINK GPRS/EDGE CLASS 12 LINK



4 MEASUREMENT INSTRUMENTS

Radiation Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2021.09.30	2022.09.29
Signal Analyzer	R&S	FSV 40-N	101823	2021.09.30	2022.09.29
Signal Generator	Agilent	83752A	3610A02740	2021.09.30	2022.09.29
Wireless Communications Test Set	R&S	CMW 500	131428	2022.03.01	2023.02.28
Bilog Antenna	TESEQ	CBL6111D	34678	2020.10.12	2022.10.11
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2021.10.11	2023.10.10
Bilog Antenna	TESEQ	CBL6111D	45873	2020.10.12	2022.10.11
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1343	2020.10.12	2022.10.11
SHF-EHF Horn Antenna (18G-40GHz)	A-INFO	LB-180400-KF	J211020657	2020.10.12	2022.10.11
Pre-Amplifier (0.1M-3GHz)	EM	EM330	060665	2021.10.08	2022.10.07
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2021.09.30	2022.09.29
Pre-Amplifier (18G-40GHz)	SKET	LNPA-1840-50	SK2018101801	2021.09.28	2022.09.27
Turn table	EM	SC100_1	60531	N/A	N/A
Antenna mast	EM	SC100	N/A	N/A	N/A
Temperature & Humidity	HH660	Mieo	N/A	2021.10.09	2022.10.08
Test SW	BALUN	BL410-E/18.905			

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Universal Radio communication tester	R&S	CMU200	111058	2021.09.29	2022.09.28
Wireless Communications Test Set	R&S	CMW 500	131428	2022.03.01	2023.02.28
Signal Analyzer	Agilent	N9020A	MY52440124	2022.03.01	2023.02.28
Temperature & Humidity test chamber	Safety test	AG80L	171200018	2022.03.01	2023.02.28
Programmable power supply	Agilent	E3642A	MY40002025	2021.10.08	2022.10.07
Temperature & Humidity	SW-108	SuWei	N/A	2022.03.02	2023.03.01
Test SW	FARAD	LZ-RF /LzRf-3A3			

Equipment with a calibration date of "NCR" shown in this list was not used to make direct calibrated measurements.



5 TEST ITEMS

5.1 TRANSMITTER RADIATED POWER (EIRP/ERP)

TEST OVERVIEW

Effective Radiated Power (ERP) and Equivalent Isotropic Radiated Power (EIRP) measurements are performed using the substitution method described in ANSI C63.26 2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically polarized broadband horn antennas. All measurements are performed as RMS average measurements while the EUT is operating at maximum power, and at the appropriate frequencies.

TEST PROCEDURE

1. The testing follows FCC KDB 971168 D01 Section 5.2.2 (for GSM/GPRS/EDGE) and ANSI C63.26-2015 Section 5.2.
2. The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.
3. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.
4. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
5. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a nonradiating cable. The absolute levels of the spurious emissions were measured by the substitution.
6. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to ANSI C63.26-2015. The EUT was replaced by the substitution antenna at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP/ERP was calculated with the correction factor,
$$\text{ERP/EIRP} = \text{P.SG} + \text{GT} - \text{LC}$$

ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as P_{Meas} as, typically dBW or dBm);
P_{Meas}(PK) = measured transmitter output power or PSD, in dBm or dBW;
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.



Note: Test is divided into three directions, X/Y/Z. X pattern for the worst

Radiated Power (ERP) for GSM 850 MHZ							
Mode	Frequency	Result					Conclusion
		S G.Level (dBm)	Cable loss	Gain(dBi)	PMeas E.R.P(dBm)	Polarization Of Max. ERP	
GSM850	824.2	21.44	0.44	6.5	27.50	Horizontal	Pass
	824.2	23.41	0.44	6.5	29.47	Vertical	Pass
	836.6	21.45	0.45	6.5	27.50	Horizontal	Pass
	836.6	23.68	0.45	6.5	29.73	Vertical	Pass
	848.8	21.93	0.46	6.5	27.97	Horizontal	Pass
	848.8	23.80	0.46	6.5	29.84	Vertical	Pass
GPRS850	824.2	20.60	0.44	6.5	26.66	Horizontal	Pass
	824.2	23.22	0.44	6.5	29.28	Vertical	Pass
	836.6	20.93	0.45	6.5	26.98	Horizontal	Pass
	836.6	23.14	0.45	6.5	29.19	Vertical	Pass
	848.8	20.85	0.46	6.5	26.89	Horizontal	Pass
	848.8	23.19	0.46	6.5	29.23	Vertical	Pass
EGPRS850	824.2	20.03	0.44	6.5	26.09	Horizontal	Pass
	824.2	22.20	0.44	6.5	28.26	Vertical	Pass
	836.6	19.96	0.45	6.5	26.01	Horizontal	Pass
	836.6	22.14	0.45	6.5	28.19	Vertical	Pass
	848.8	19.93	0.46	6.5	25.97	Horizontal	Pass
	848.8	22.06	0.46	6.5	28.10	Vertical	Pass
Limit	ERP<7W=38.45dBm						



Radiated Power (EIRP) for PCS 1900 MHZ							
Mode	Frequency	Result					Conclusion
		S G.Level (dBm)	Cable loss	Gain (dBi)	PMeas E.I.R.P.(dBm)	Polarization Of Max. ERP	
PCS1900	1850.2	19.63	2.41	10.35	27.57	Horizontal	Pass
	1850.2	21.57	2.41	10.35	29.51	Vertical	Pass
	1880	19.87	2.42	10.35	27.80	Horizontal	Pass
	1880	21.62	2.42	10.35	29.55	Vertical	Pass
	1909.8	20.07	2.43	10.35	27.99	Horizontal	Pass
	1909.8	21.89	2.43	10.35	29.81	Vertical	Pass
GPRS1900	1850.2	18.4	2.41	10.35	26.34	Horizontal	Pass
	1850.2	20.95	2.41	10.35	28.89	Vertical	Pass
	1880	18.93	2.42	10.35	26.86	Horizontal	Pass
	1880	21.17	2.42	10.35	29.10	Vertical	Pass
	1909.8	18.24	2.43	10.35	26.16	Horizontal	Pass
	1909.8	20.66	2.43	10.35	28.58	Vertical	Pass
EGPRS1900	1850.2	19.39	2.41	10.35	27.33	Horizontal	Pass
	1850.2	21.47	2.41	10.35	29.41	Vertical	Pass
	1880	18.99	2.42	10.35	26.92	Horizontal	Pass
	1880	21.23	2.42	10.35	29.16	Vertical	Pass
	1909.8	18.68	2.43	10.35	26.60	Horizontal	Pass
	1909.8	21.42	2.43	10.35	29.34	Vertical	Pass
Limit	EIRP<2W=33dBm						



5.2 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

Test overview

Radiated spurious emissions measurements are performed using the substitution method described in ANSI C63.26-2015 with the EUT transmitting into an integral antenna. Measurements on signals operating below 1GHz are performed using horizontally and vertically polarized tuned dipole antennas. Measurements on signals operating above 1GHz are performed using vertically and horizontally polarized horn antennas. All measurements are performed as peak measurements while the EUT is operating at maximum power and at the appropriate frequencies.

It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

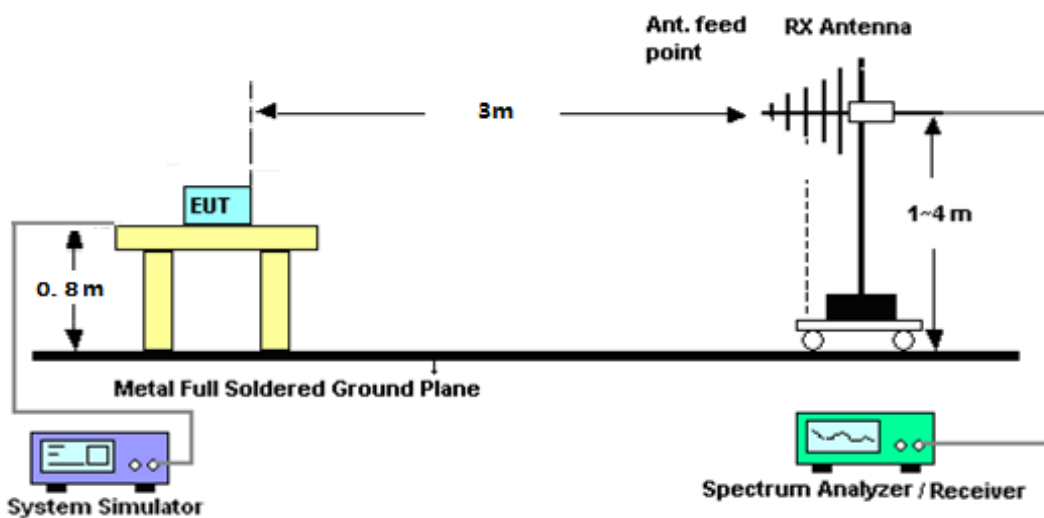
Test procedure

1. The testing FCC KDB 971168 D01 Section 5.8 and ANSI C63.26-2015-Section 5.5.
2. RBW = 100kHz for emissions below 1GHz and 1MHz for emissions above 1GHz
3. VBW $\geq 3 \times$ RBW
4. Span = 1.5 times the OBW
5. No. of sweep points $> 2 \times$ span/RBW
6. Detector = Peak
7. Trace mode = max hold
8. The trace was allowed to stabilize
9. Effective Isotropic Spurious Radiation was measured by substitution method according to TIA/EIA-603-D. The EUT was replaced by the substitution antenna at same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP/ERP was calculated with the correction factor,
$$\text{ERP/EIRP} = \text{P.SG} + \text{GT} - \text{LC}$$

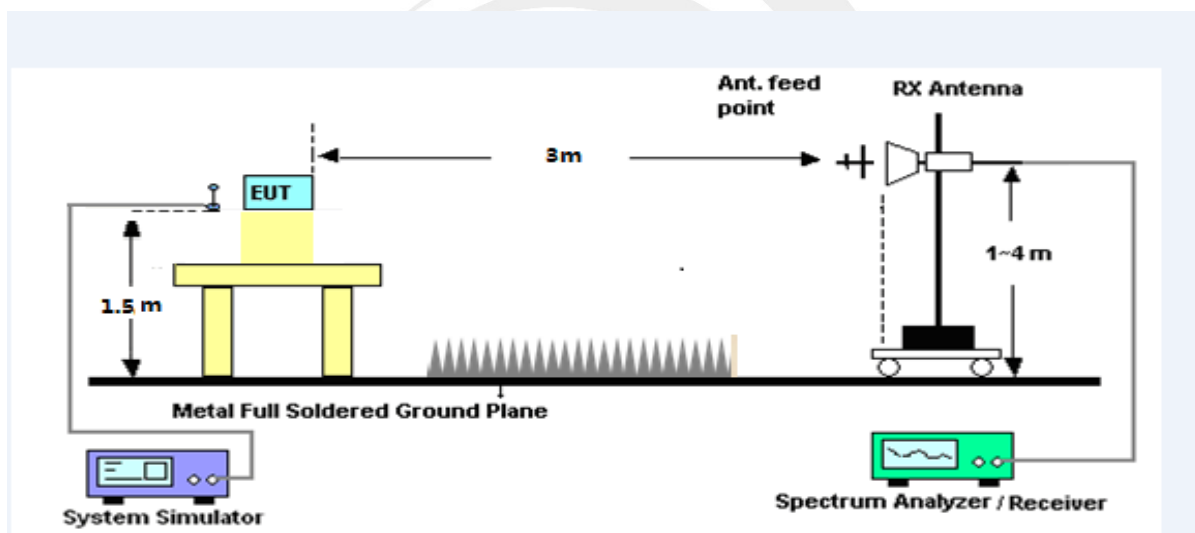
ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as P_{Meas}, typically dBW or dBm);
P.SG = measured transmitter output power or PSD, in dBm or dBW;
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

TEST SETUP

For radiated test from 30MHz to 1GHz



For radiated test from above 1GHz





- Note:** (1) Below 30MHz no Spurious found is the worst condition.
 (2) Above 3.5GHz amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value
 (3) Test is divided into three directions, X/Y/Z. X pattern for the worst.

GSM 850: (30-9000)MHz							
The Worst Test Results Channel 128/824.2 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1648.06	-40.55	9.40	4.75	-35.90	-13.00	-22.90	H
2472.38	-39.90	10.60	8.39	-37.69	-13.00	-24.69	H
3296.52	-31.16	12.00	11.79	-30.95	-13.00	-17.95	H
1648.32	-43.89	9.40	4.75	-39.24	-13.00	-26.24	V
2472.49	-44.77	10.60	8.39	-42.56	-13.00	-29.56	V
3296.58	-42.65	12.00	11.79	-42.44	-13.00	-29.44	V
The Worst Test Results Channel 190/836.6 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1672.90	-41.02	9.50	4.76	-36.28	-13.00	-23.28	H
2509.86	-39.60	10.70	8.40	-37.30	-13.00	-24.30	H
3345.99	-31.20	12.20	11.80	-30.80	-13.00	-17.80	H
1672.99	-43.68	9.40	4.75	-39.03	-13.00	-26.03	V
2509.57	-44.68	10.60	8.39	-42.47	-13.00	-29.47	V
3346.35	-43.29	12.20	11.82	-42.91	-13.00	-29.91	V
The Worst Test Results Channel 251/848.8 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1697.25	-40.83	9.60	4.77	-36.00	-13.00	-23.00	H
2546.33	-40.41	10.80	8.50	-38.11	-13.00	-25.11	H
3394.99	-31.93	12.50	11.90	-31.33	-13.00	-18.33	H
1697.56	-43.56	9.60	4.77	-38.73	-13.00	-25.73	V
2546.43	-44.07	10.80	8.50	-41.77	-13.00	-28.77	V
3395.30	-42.50	12.50	11.90	-41.90	-13.00	-28.90	V



GPRS 850: (30-9000)MHz							
The Worst Test Results Channel 128/824.2 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1648.17	-40.55	9.40	4.75	-35.90	-13.00	-22.90	H
2472.42	-40.29	10.60	8.39	-38.08	-13.00	-25.08	H
3296.66	-31.19	12.00	11.79	-30.98	-13.00	-17.98	H
1648.40	-43.37	9.40	4.75	-38.72	-13.00	-25.72	V
2472.39	-44.65	10.60	8.39	-42.44	-13.00	-29.44	V
3296.67	-42.57	12.00	11.79	-42.36	-13.00	-29.36	V
The Worst Test Results Channel 190/836.6 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1672.84	-41.14	9.50	4.76	-36.40	-13.00	-23.40	H
2509.56	-40.47	10.70	8.40	-38.17	-13.00	-25.17	H
3346.00	-31.99	12.20	11.80	-31.59	-13.00	-18.59	H
1673.04	-44.45	9.40	4.75	-39.80	-13.00	-26.80	V
2509.83	-43.97	10.60	8.39	-41.76	-13.00	-28.76	V
3346.01	-42.83	12.20	11.82	-42.45	-13.00	-29.45	V
The Worst Test Results Channel 251/848.8 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1697.25	-41.01	9.60	4.77	-36.18	-13.00	-23.18	H
2546.21	-40.21	10.80	8.50	-37.91	-13.00	-24.91	H
3394.96	-32.35	12.50	11.90	-31.75	-13.00	-18.75	H
1697.30	-43.67	9.60	4.77	-38.84	-13.00	-25.84	V
2546.19	-44.12	10.80	8.50	-41.82	-13.00	-28.82	V
3395.16	-43.89	12.50	11.90	-43.29	-13.00	-30.29	V



EGPRS 850: (30-9000)MHz							
The Worst Test Results Channel 128/824.2 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1648.15	-41.14	9.40	4.75	-36.49	-13.00	-23.49	H
2472.56	-39.31	10.60	8.39	-37.10	-13.00	-24.10	H
3296.52	-32.10	12.00	11.79	-31.89	-13.00	-18.89	H
1648.18	-44.36	9.40	4.75	-39.71	-13.00	-26.71	V
2472.32	-43.95	10.60	8.39	-41.74	-13.00	-28.74	V
3296.76	-43.16	12.00	11.79	-42.95	-13.00	-29.95	V
The Worst Test Results Channel 190/836.6 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1672.80	-40.86	9.50	4.76	-36.12	-13.00	-23.12	H
2509.77	-39.78	10.70	8.40	-37.48	-13.00	-24.48	H
3346.23	-30.92	12.20	11.80	-30.52	-13.00	-17.52	H
1672.78	-44.25	9.40	4.75	-39.60	-13.00	-26.60	V
2509.51	-44.47	10.60	8.39	-42.26	-13.00	-29.26	V
3346.15	-43.99	12.20	11.82	-43.61	-13.00	-30.61	V
The Worst Test Results Channel 251/848.8 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1697.37	-40.63	9.60	4.77	-35.80	-13.00	-22.80	H
2546.08	-39.28	10.80	8.50	-36.98	-13.00	-23.98	H
3395.00	-31.29	12.50	11.90	-30.69	-13.00	-17.69	H
1697.49	-43.32	9.60	4.77	-38.49	-13.00	-25.49	V
2546.52	-44.88	10.80	8.50	-42.58	-13.00	-29.58	V
3395.03	-43.28	12.50	11.90	-42.68	-13.00	-29.68	V



DCS 1900: (30-20000)MHz							
The Worst Test Results for Channel 512/1850.2MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3700.18	-34.50	12.60	12.93	-34.83	-13.00	-21.83	H
5550.55	-34.38	13.10	17.11	-38.39	-13.00	-25.39	H
7400.96	-33.29	11.50	22.20	-43.99	-13.00	-30.99	H
3700.05	-34.78	12.60	12.93	-35.11	-13.00	-22.11	V
5550.68	-34.11	13.10	17.11	-38.12	-13.00	-25.12	V
7400.70	-31.97	11.50	22.20	-42.67	-13.00	-29.67	V
The Worst Test Results for Channel 661/1880.0MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3759.83	-34.65	12.60	12.93	-34.98	-13.00	-21.98	H
5640.21	-35.26	13.10	17.11	-39.27	-13.00	-26.27	H
7520.12	-32.15	11.50	22.20	-42.85	-13.00	-29.85	H
3760.33	-34.76	12.60	12.93	-35.09	-13.00	-22.09	V
5640.04	-34.56	13.10	17.11	-38.57	-13.00	-25.57	V
7520.20	-32.80	11.50	22.20	-43.50	-13.00	-30.50	V
The Worst Test Results for Channel 810/1909.8MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3819.34	-33.48	12.60	12.93	-33.81	-13.00	-20.81	H
5729.40	-34.68	13.10	17.11	-38.69	-13.00	-25.69	H
7639.27	-32.41	11.50	22.20	-43.11	-13.00	-30.11	H
3819.81	-34.76	12.60	12.93	-35.09	-13.00	-22.09	V
5729.48	-34.62	13.10	17.11	-38.63	-13.00	-25.63	V
7639.19	-32.31	11.50	22.20	-43.01	-13.00	-30.01	V



GPRS1900: (30-20000)MHz							
The Worst Test Results for Channel 512/1850.2MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3700.27	-34.12	12.60	12.93	-34.45	-13.00	-21.45	H
5550.46	-35.41	13.10	17.11	-39.42	-13.00	-26.42	H
7400.57	-32.69	11.50	22.20	-43.39	-13.00	-30.39	H
3700.17	-35.40	12.60	12.93	-35.73	-13.00	-22.73	V
5550.32	-34.85	13.10	17.11	-38.86	-13.00	-25.86	V
7400.52	-32.47	11.50	22.20	-43.17	-13.00	-30.17	V
The Worst Test Results for Channel 661/1880.0MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3759.81	-34.58	12.60	12.93	-34.91	-13.00	-21.91	H
5640.04	-34.19	13.10	17.11	-38.20	-13.00	-25.20	H
7520.28	-32.42	11.50	22.20	-43.12	-13.00	-30.12	H
3759.87	-34.98	12.60	12.93	-35.31	-13.00	-22.31	V
5640.18	-33.94	13.10	17.11	-37.95	-13.00	-24.95	V
7520.13	-32.25	11.50	22.20	-42.95	-13.00	-29.95	V
The Worst Test Results for Channel 810/1909.8MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3819.51	-34.08	12.60	12.93	-34.41	-13.00	-21.41	H
5729.24	-34.73	13.10	17.11	-38.74	-13.00	-25.74	H
7639.24	-32.28	11.50	22.20	-42.98	-13.00	-29.98	H
3819.35	-35.18	12.60	12.93	-35.51	-13.00	-22.51	V
5729.48	-34.55	13.10	17.11	-38.56	-13.00	-25.56	V
7639.08	-32.91	11.50	22.20	-43.61	-13.00	-30.61	V



EGPRS 1900: (30-20000)MHz							
The Worst Test Results for Channel 512/1850.2MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3700.48	-34.39	12.60	12.93	-34.72	-13.00	-21.72	H
5550.62	-34.00	13.10	17.11	-38.01	-13.00	-25.01	H
7400.49	-32.51	11.50	22.20	-43.21	-13.00	-30.21	H
3700.32	-34.97	12.60	12.93	-35.30	-13.00	-22.30	V
5550.30	-34.52	13.10	17.11	-38.53	-13.00	-25.53	V
7400.63	-32.10	11.50	22.20	-42.80	-13.00	-29.80	V
The Worst Test Results for Channel 661/1880.0MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3760.15	-33.68	12.60	12.93	-34.01	-13.00	-21.01	H
5639.98	-34.39	13.10	17.11	-38.40	-13.00	-25.40	H
7520.10	-32.17	11.50	22.20	-42.87	-13.00	-29.87	H
3760.00	-35.40	12.60	12.93	-35.73	-13.00	-22.73	V
5640.17	-35.23	13.10	17.11	-39.24	-13.00	-26.24	V
7519.91	-32.82	11.50	22.20	-43.52	-13.00	-30.52	V
The Worst Test Results for Channel 810/1909.8MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3819.54	-33.45	12.60	12.93	-33.78	-13.00	-20.78	H
5729.46	-34.44	13.10	17.11	-38.45	-13.00	-25.45	H
7639.04	-32.59	11.50	22.20	-43.29	-13.00	-30.29	H
3819.72	-34.80	12.60	12.93	-35.13	-13.00	-22.13	V
5729.33	-34.07	13.10	17.11	-38.08	-13.00	-25.08	V
7639.17	-31.90	11.50	22.20	-42.60	-13.00	-29.60	V



WCDMA Band 2: (30-20000)MHz							
The Worst Test Results for Channel 9262/1852.4MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3704.46	-34.28	12.60	12.93	-34.61	-13.00	-21.61	H
5557.35	-35.01	13.10	17.11	-39.02	-13.00	-26.02	H
7409.49	-33.35	11.50	22.20	-44.05	-13.00	-31.05	H
3704.07	-35.35	12.60	12.93	-35.68	-13.00	-22.68	V
5557.64	-33.86	13.10	17.11	-37.87	-13.00	-24.87	V
7409.77	-31.81	11.50	22.20	-42.51	-13.00	-29.51	V
The Worst Test Results for Channel 9400/1880MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3759.84	-33.68	12.60	12.93	-34.01	-13.00	-21.01	H
5640.02	-34.33	13.10	17.11	-38.34	-13.00	-25.34	H
7520.03	-33.64	11.50	22.20	-44.34	-13.00	-31.34	H
3760.25	-34.70	12.60	12.93	-35.03	-13.00	-22.03	V
5640.18	-33.85	13.10	17.11	-37.86	-13.00	-24.86	V
7520.11	-32.13	11.50	22.20	-42.83	-13.00	-29.83	V
The Worst Test Results for Channel 9538/1907.6MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3815.60	-34.19	12.60	12.93	-34.52	-13.00	-21.52	H
5722.13	-34.36	13.10	17.11	-38.37	-13.00	-25.37	H
7630.14	-32.54	11.50	22.20	-43.24	-13.00	-30.24	H
3815.37	-34.72	12.60	12.93	-35.05	-13.00	-22.05	V
5722.16	-34.68	13.10	17.11	-38.69	-13.00	-25.69	V
7629.91	-31.73	11.50	22.20	-42.43	-13.00	-29.43	V



HSUPA Band 2: (30-20000)MHz							
The Worst Test Results for Channel 9262/1852.4MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3704.22	-33.69	12.60	12.93	-34.02	-13.00	-21.02	H
5557.37	-35.27	13.10	17.11	-39.28	-13.00	-26.28	H
7409.63	-33.40	11.50	22.20	-44.10	-13.00	-31.10	H
3704.37	-34.87	12.60	12.93	-35.20	-13.00	-22.20	V
5557.43	-33.95	13.10	17.11	-37.96	-13.00	-24.96	V
7409.93	-32.59	11.50	22.20	-43.29	-13.00	-30.29	V
The Worst Test Results for Channel 9400/1880MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3759.85	-34.04	12.60	12.93	-34.37	-13.00	-21.37	H
5640.20	-34.60	13.10	17.11	-38.61	-13.00	-25.61	H
7519.98	-33.21	11.50	22.20	-43.91	-13.00	-30.91	H
3760.04	-35.57	12.60	12.93	-35.90	-13.00	-22.90	V
5639.87	-34.40	13.10	17.11	-38.41	-13.00	-25.41	V
7519.87	-32.85	11.50	22.20	-43.55	-13.00	-30.55	V
The Worst Test Results for Channel 9538/1907.6MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3815.54	-34.90	12.60	12.93	-35.23	-13.00	-22.23	H
5722.42	-34.00	13.10	17.11	-38.01	-13.00	-25.01	H
7630.30	-32.94	11.50	22.20	-43.64	-13.00	-30.64	H
3815.58	-35.98	12.60	12.93	-36.31	-13.00	-23.31	V
5722.47	-34.62	13.10	17.11	-38.63	-13.00	-25.63	V
7629.83	-33.16	11.50	22.20	-43.86	-13.00	-30.86	V



HSDPA Band 2: (30-20000)MHz							
The Worst Test Results for Channel 9262/1852.4MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3704.33	-34.89	12.60	12.93	-35.22	-13.00	-22.22	H
5557.24	-35.18	13.10	17.11	-39.19	-13.00	-26.19	H
7409.66	-32.57	11.50	22.20	-43.27	-13.00	-30.27	H
3704.39	-35.16	12.60	12.93	-35.49	-13.00	-22.49	V
5557.38	-33.91	13.10	17.11	-37.92	-13.00	-24.92	V
7409.70	-32.09	11.50	22.20	-42.79	-13.00	-29.79	V
The Worst Test Results for Channel 9400/1880MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3760.04	-33.47	12.60	12.93	-33.80	-13.00	-20.80	H
5639.85	-34.51	13.10	17.11	-38.52	-13.00	-25.52	H
7520.03	-32.40	11.50	22.20	-43.10	-13.00	-30.10	H
3760.25	-35.12	12.60	12.93	-35.45	-13.00	-22.45	V
5640.16	-34.18	13.10	17.11	-38.19	-13.00	-25.19	V
7519.89	-32.74	11.50	22.20	-43.44	-13.00	-30.44	V
The Worst Test Results for Channel 9538/1907.6MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
3815.63	-34.74	12.60	12.93	-35.07	-13.00	-22.07	H
5722.46	-35.01	13.10	17.11	-39.02	-13.00	-26.02	H
7629.99	-32.91	11.50	22.20	-43.61	-13.00	-30.61	H
3815.48	-35.86	12.60	12.93	-36.19	-13.00	-23.19	V
5722.42	-34.10	13.10	17.11	-38.11	-13.00	-25.11	V
7629.97	-32.68	11.50	22.20	-43.38	-13.00	-30.38	V



WCDMA Band 5: (30-9000)MHz							
The most testresults channel 4132/826.4MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1652.22	-40.48	9.40	4.75	-35.83	-13.00	-22.83	H
2479.44	-40.14	10.60	8.39	-37.93	-13.00	-24.93	H
3305.90	-31.30	12.00	11.79	-31.09	-13.00	-18.09	H
1652.22	-43.90	9.40	4.75	-39.25	-13.00	-26.25	V
2479.33	-44.17	10.60	8.39	-41.96	-13.00	-28.96	V
3305.91	-43.30	12.00	11.79	-43.09	-13.00	-30.09	V
The Worst Test Results Channel 4183/836.6MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1672.91	-41.48	9.40	4.75	-36.83	-13.00	-23.83	H
2509.85	-39.74	10.60	8.39	-37.53	-13.00	-24.53	H
3346.13	-31.15	12.00	11.79	-30.94	-13.00	-17.94	H
1673.19	-43.86	9.40	4.75	-39.21	-13.00	-26.21	V
2509.43	-44.79	10.60	8.39	-42.58	-13.00	-29.58	V
3346.21	-43.07	12.00	11.79	-42.86	-13.00	-29.86	V
The Worst Test Results Channel 4233/846.6MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea	Limit	Margin	Polarity
				(dBm)	(dBm)	(dBm)	
1693.39	-40.84	9.40	4.75	-36.19	-13.00	-23.19	H
2539.08	-39.52	10.60	8.39	-37.31	-13.00	-24.31	H
3386.29	-31.48	12.00	11.79	-31.27	-13.00	-18.27	H
1693.43	-43.18	9.40	4.75	-38.53	-13.00	-25.53	V
2539.16	-44.01	10.60	8.39	-41.80	-13.00	-28.80	V
3386.01	-42.77	12.00	11.79	-42.56	-13.00	-29.56	V



HSUPA Band 5: (30-9000)MHz							
The most testresults channel 4132/826.4MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1652.37	-40.50	9.40	4.75	-35.85	-13.00	-22.85	H
2479.62	-39.26	10.60	8.39	-37.05	-13.00	-24.05	H
3305.54	-32.29	12.00	11.79	-32.08	-13.00	-19.08	H
1652.16	-43.19	9.40	4.75	-38.54	-13.00	-25.54	V
2479.56	-44.22	10.60	8.39	-42.01	-13.00	-29.01	V
3305.85	-42.70	12.00	11.79	-42.49	-13.00	-29.49	V
The Worst Test Results Channel 4183/836.6MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1672.87	-40.83	9.40	4.75	-36.18	-13.00	-23.18	H
2509.61	-39.17	10.60	8.39	-36.96	-13.00	-23.96	H
3346.27	-31.49	12.00	11.79	-31.28	-13.00	-18.28	H
1673.04	-44.45	9.40	4.75	-39.80	-13.00	-26.80	V
2509.57	-45.23	10.60	8.39	-43.02	-13.00	-30.02	V
3346.26	-42.70	12.00	11.79	-42.49	-13.00	-29.49	V
The Worst Test Results Channel 4233/846.6MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1693.18	-41.54	9.40	4.75	-36.89	-13.00	-23.89	H
2539.39	-40.31	10.60	8.39	-38.10	-13.00	-25.10	H
3386.24	-31.79	12.00	11.79	-31.58	-13.00	-18.58	H
1693.23	-44.03	9.40	4.75	-39.38	-13.00	-26.38	V
2539.46	-44.54	10.60	8.39	-42.33	-13.00	-29.33	V
3386.02	-43.24	12.00	11.79	-43.03	-13.00	-30.03	V



HSDPA Band 5: (30-9000)MHz							
The most testresults channel 4132/826.4MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1652.23	-41.28	9.40	4.75	-36.63	-13.00	-23.63	H
2479.71	-39.69	10.60	8.39	-37.48	-13.00	-24.48	H
3305.81	-31.11	12.00	11.79	-30.90	-13.00	-17.90	H
1652.45	-43.32	9.40	4.75	-38.67	-13.00	-25.67	V
2479.36	-44.57	10.60	8.39	-42.36	-13.00	-29.36	V
3305.74	-43.55	12.00	11.79	-43.34	-13.00	-30.34	V
The Worst Test Results Channel 4183/836.6MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1673.04	-40.65	9.40	4.75	-36.00	-13.00	-23.00	H
2509.44	-40.53	10.60	8.39	-38.32	-13.00	-25.32	H
3346.11	-32.04	12.00	11.79	-31.83	-13.00	-18.83	H
1673.05	-43.30	9.40	4.75	-38.65	-13.00	-25.65	V
2509.69	-44.60	10.60	8.39	-42.39	-13.00	-29.39	V
3346.05	-42.87	12.00	11.79	-42.66	-13.00	-29.66	V
The Worst Test Results Channel 4233/846.6MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1693.63	-41.40	9.40	4.75	-36.75	-13.00	-23.75	H
2539.40	-40.65	10.60	8.39	-38.44	-13.00	-25.44	H
3385.98	-32.05	12.00	11.79	-31.84	-13.00	-18.84	H
1693.31	-44.57	9.40	4.75	-39.92	-13.00	-26.92	V
2539.44	-45.05	10.60	8.39	-42.84	-13.00	-29.84	V
3385.91	-43.33	12.00	11.79	-43.12	-13.00	-30.12	V



APPENDIX-PHOTOS OF TEST SETUP

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

*****END OF THE REPORT*****

