TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: SoftBank 001P

FCC ID: UCE210035A

To: FCC Part 24: 2010 Subpart E

Test Report Serial No:
RFI-RPT-RP79566JD07A

This Test Report Is Issued Under The Authority Of Chris Guy, Head of Global Approvals:	
Checked By:	A. Henriques
Signature:	
Date of Issue:	24 November 2010

This report is issued in Adobe Acrobat portable document format (PDF). It is only a valid copy of the report if it is being viewed in PDF format with the following security options not allowed: Changing the document, Selecting text and graphics, Adding or changing notes and form fields.

This report may not be reproduced other than in full, except with the prior written approval of RFI Global Services Ltd. The results in this report apply only to the sample(s) tested.

This page has been left intentionally blank.

Table of Contents

1. Customer Information

Company Name:	Panasonic Mobile Communications Development of Europe Ltd.
Address:	Panasonic House Willoughby Road Bracknell Berkshire RG12 8FP United Kingdom

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR24
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2010: Part 24 Subpart E (Personal Communication Services)
Specification Reference:	47CFR15.107 and 47CFR15.109
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2010: Part 15 Subpart B (Unintentional Radiators) - Sections 15.107 and 15.109
Site Registration:	209735
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	13 November 2010 to 18 November 2010

2.2. Summary of Test Results

FCC Reference (47CFR)	Measurement	Result
Part 15.107(a)	Receiver/Idle Mode AC Conducted Spurious Emissions	✅
Part 15.109	Receiver/Idle Mode Radiated Spurious Emissions	✅
Part 24.232	Transmitter Output Power (EIRP)	✅
Part 2.1046	Transmitter Conducted Output Power	Note 1
Part 2.1055/24.235	Transmitter Frequency Stability (Temperature and Voltage Variation)	✅
Part 2.1049	Transmitter Occupied Bandwidth	✅
Part 2.1053/24.238	Transmitter Out of Band Radiated Emissions	✅
Part 2.1053/24.238	Transmitter Band Edge Radiated Emissions	✅
Key to Results ✅ = Complied ❌ = Did not comply		

Note 1: The measurement was performed to support SAR tests.

2.3. Methods and Procedures

Reference:	ANSI/TIA-603-C-2004
Title:	Land Mobile Communications Equipment, Measurements and performance Standards
Reference:	ANSI C63.4 (2009)
Title:	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.

2.4. Deviations from the Test Specification

For the measurements contained within this test report, there were no deviations from, additions to, or exclusions from the test specification identified above.

3. Equipment Under Test (EUT)

3.1. Identification of Equipment Under Test (EUT)

Brand Name:	SoftBank
Model Name or Number:	001P
IMEI:	004401221005610 *(Radiated sample)*
Hardware Version Number:	Rev C
Software Version Number:	001PVA13
FCC ID:	UCE210035A

Brand Name:	SoftBank
Model Name or Number:	001P
IMEI:	004401221005552 *(Conducted RF port sample)*
Hardware Version Number:	Rev C
Software Version Number:	001PVA13
FCC ID:	UCE210035A

Brand Name:	SoftBank
Description:	Battery
Model Name or Number:	PMBAS1

Brand Name:	SoftBank
Description:	AC Charger
Model Name or Number:	ZTDAA1

Brand Name:	SoftBank
Description:	DC Charger
Model Name or Number:	PMJAA1

Brand Name:	SoftBank
Description:	USB Data cable
Model Name or Number:	ZTFE01

Brand Name:	SoftBank
Description:	Personal Hands-free
Model Name or Number:	ZTCK01

Brand Name:	SoftBank
Description:	Personal Hands-free Converter
Model Name or Number:	PMLAJ1

3.2. Description of EUT

The equipment under test was a dual mode Cellular Mobile Telephone with Bluetooth, WLAN and RFID.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing

Technology Tested:	PCS1900		
Type of Radio Device:	Transceiver		
Mode:	GSM/GPRS		
Modulation Type:	GMSK		
Channel Spacing:	200 kHz		
Power Supply Requirement(s):	Nominal	3.7 V	
	Minimum	3.4 V	
	Maximum	4.2 V	
Maximum Output Power (EIRP):	GSM	27.8 dBm	
	GPRS	26.1 dBm	
Transmit Frequency Range:	1850 to 1910 MHz		
Transmit Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	512	1850.2
	Middle	660	1879.8
	Top	810	1909.8
Receive Frequency Range:	1930 to 1990 MHz		
Receive Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	512	1930.2
	Middle	660	1959.8
	Top	810	1989.8

3.5. Support Equipment

The following support equipment was used to exercise the EUT during testing:

Brand Name:	Not marked or stated
Description:	Micro SD Memory Card
Model Name or Number:	128 MB

Brand Name:	Buffalo
Description:	USB Hub
Model Name or Number:	BSH3U01

Brand Name:	Not marked or stated
Description:	Dummy battery
Model Name or Number:	Not marked or stated

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

The EUT was tested in the following operating mode(s):

- Receiver/Idle mode.

- Constantly transmitting at full power on bottom, middle and top channels as required.

- Occupied bandwidth, EIRP and band edge tests were performed with the EUT in GSM single timeslot circuit switched and GPRS Multislot Class 10 with the unit transmitting on two timeslots in the uplink.

- Transmitter radiated spurious emissions were checked in all modes during pre-scans. Circuit switched voice was found to be the worst case and all final measurements were performed with the EUT in this mode.

4.2. Configuration and Peripherals

The EUT was tested in the following configuration(s):

- The sample with IMEI 004401221005552 was used for frequency stability, occupied bandwidth and conducted power measurements. The sample with IMEI 004401221005610 was used for all other measurements.

- The SDRAM card was present in the EUT during all tests.

- The dummy battery was fitted for frequency stability measurements.

- Idle mode and transmitter mode radiated spurious emissions tests were performed with the AC charger connected to the EUT as this was found to be the worst case during pre-scans. All accessories were individually connected and measurements made during pre-scans to determine the worst case combination.

- Connected to a GSM/GPRS system simulator, operating in transceiver mode

5. Measurements, Examinations and Derived Results

5.1. General Comments

Measurement uncertainties are evaluated in accordance with current best practice. Our reported expanded uncertainties are based on standard uncertainties, which are multiplied by an appropriate coverage factor to provide a statistical confidence level of approximately 95%. Please refer to *Section 6. Measurement Uncertainty* for details.

5.2. Test Results

5.2.1. Receiver/Idle Mode AC Conducted Spurious Emissions

Test Summary:

Test Engineer:	Ian Watch	**Test Date:**	13 November 2010
Test Sample IMEI:	004401221005610		

FCC Part:	15.107(a)
Test Method Used:	As detailed in ANSI C63.10 Section 6.2 referencing ANSI C63.4

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	25

Results: Quasi Peak

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.258000	Neutral	35.8	61.5	25.7	Complied

Note(s):

1. All other emissions were >30 dB below the applicable limits.

2. All average emissions were >20 dB below the applicable limits
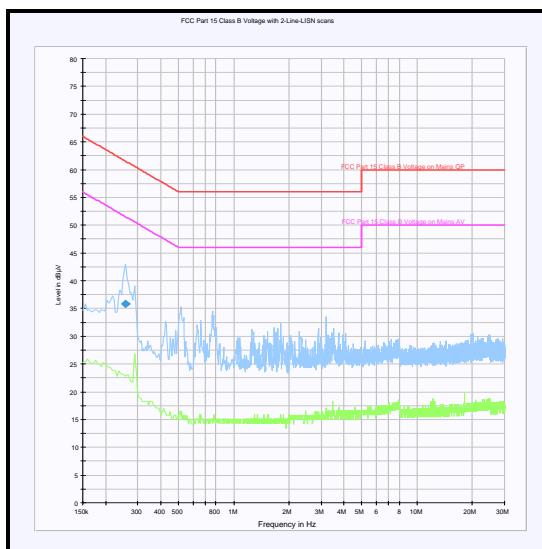
Note: This plot is a pre-scan and for indication purposes only. For final measurements, see accompanying table.

5.2.2. Receiver/Idle Mode Radiated Spurious Emissions

Test Summary:

Test Engineer:	Ian Watch	Test Date:	14 November 2010
Test Sample IMEI:	004401221005610		

FCC Part:	15.109
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3 and 6.5 referencing ANSI C63.4
Frequency Range:	30 MHz to 1000 MHz

Environmental Conditions:

Temperature (°C):	27
Relative Humidity (%):	24

Results: Quasi Peak

Frequency (MHz)	Antenna Polarity	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
50.369	Vertical	26.1	40.0	13.9	Complied
107.592	Vertical	24.5	43.5	19.0	Complied
458.795	Vertical	28.1	46.0	17.9	Complied

Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.

2. All other emissions shown on the pre-scan plot were investigated and found to be ambient or >20 dB below the applicable limit or below the measurement system noise floor.

Receiver/Idle Mode Radiated Spurious Emissions (continued)
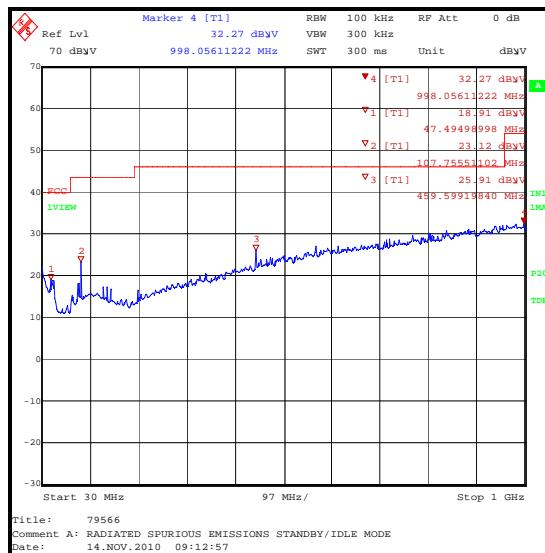
	Marker 4 [T1]		RBW	100 kHz	RF Att	0 dB		
Ref Lvl	32.27 dBµV		VBW	300 kHz				
70 dBµV	998.05611222 MHz		SWT	300 ms	Unit	dBµV		

4 [T1]   32.27 dBµV
                 998.05611222 MHz
1 [T1]   18.91 dBµV
                 47.49498998 MHz
2 [T1]   23.12 dBµV
                 107.75551102 MHz
3 [T1]   25.91 dBµV
                 459.59919840 MHz

Start 30 MHz   97 MHz/   Stop 1 GHz

Title: 79566
Comment A: RADIATED SPURIOUS EMISSIONS STANDBY/IDLE MODE
Date: 14.NOV.2010 09:12:57

Note: This plot is a pre-scan and for indication purposes only. For final measurements, see accompanying table.

Receiver/Idle Mode Radiated Spurious Emissions (continued)

Test Summary:

Test Engineer:	Ian Watch	Test Date:	14 November 2010
Test Sample IMEI:	004401221005610		

| FCC Part:	15.109
Test Method Used:	As detailed in ANSI C63.10 Sections 6.3 and 6.6 referencing ANSI C63.4
Frequency Range:	1 GHz to 10 GHz

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	25

Results:

Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
3933.868	Vertical	47.5	54.0	6.5	Complied

Note(s):

1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.

2. No spurious emissions were detected above the noise floor of the measuring receiver therefore the highest peak noise floor reading of the measuring receiver was recorded as shown in the table above. The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit.

Receiver/Idle Mode Radiated Spurious Emissions (continued)
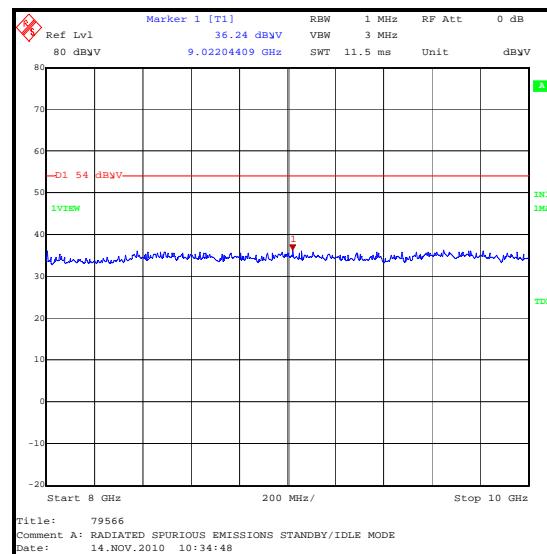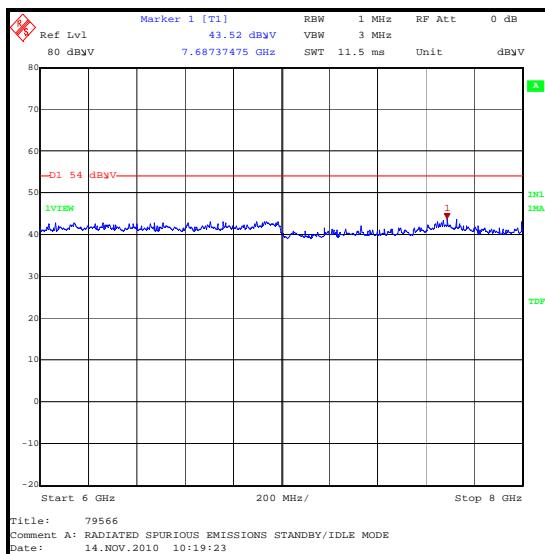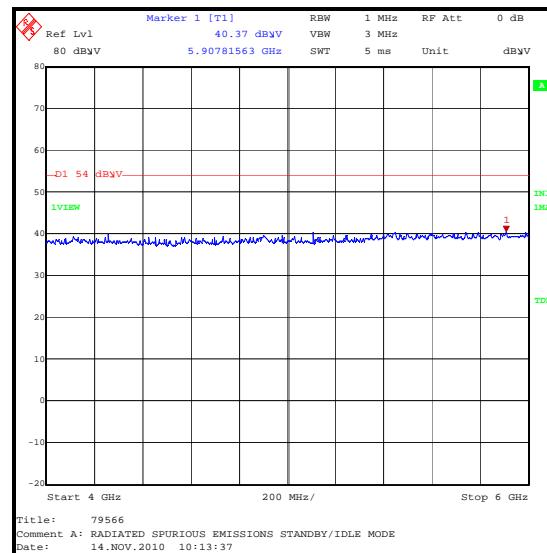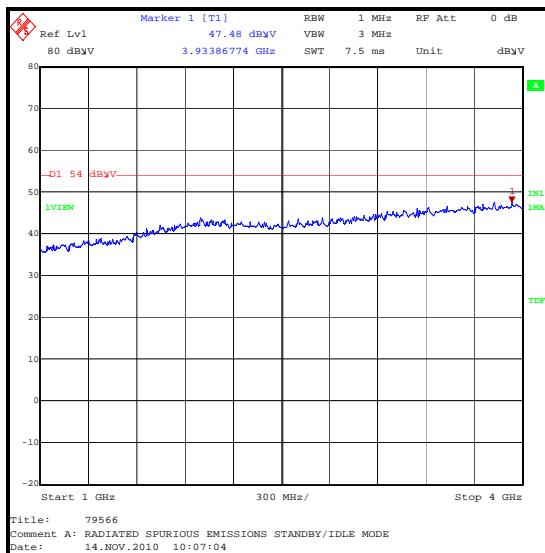
5.2.3. Transmitter Output Power (EIRP)

Test Summary:

Test Engineer:	Ian Watch	Test Date:	14 November 2010
Test Sample IMEI:	004401221005610		

FCC Part:	24.232
Test Method Used:	As detailed in ANSI TIA-603-C-2004 Section 2.2.17.2

Environmental Conditions:

Temperature (°C):	23
Relative Humidity (%):	25

Results: GSM Circuit Switched

Channel	Frequency (MHz)	Antenna Polarity	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	1850.2	Vertical	19.5	33.0	13.5	Complied
Middle	1879.8	Vertical	23.0	33.0	10.0	Complied
Top	1909.8	Vertical	27.8	33.0	5.2	Complied

Results: GPRS

Channel	Frequency (MHz)	Antenna Polarity	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	1850.2	Vertical	17.2	33.0	15.8	Complied
Middle	1879.8	Vertical	20.9	33.0	12.1	Complied
Top	1909.8	Vertical	26.1	33.0	6.9	Complied

5.2.4. Transmitter Conducted Output Power

Test Engineer:	Ian Watch	Test Date:	16 November 2010
Test Sample IMEI:	004401221005552		

FCC Part:	2.1046
Test Method Used:	As detailed in ANSI TIA-603-C-2004 Section 2.2.1 referencing FCC CFR Part 2.1046(a)

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	23

Results: GSM Circuit Switched

Channel	Frequency (MHz)	Maximum Peak Conducted Power (dBm)	Maximum Average Conducted Power (dBm)
Bottom	1850.2	29.4	29.3
Middle	1879.8	29.7	29.5
Top	1909.8	29.9	29.8

Results: GPRS

Channel	Frequency (MHz)	Maximum Peak Conducted Power (dBm)	Maximum Average Conducted Power (dBm)
Bottom	1850.2	27.4	27.3
Middle	1879.8	27.6	27.5
Top	1909.8	27.8	27.7

Note(s):

1. Conducted power tests were performed to support SAR tests.

5.2.5. Transmitter Frequency Stability (Temperature Variation)

Test Summary:

Test Engineer:	Ian Watch	Test Date:	16 November 2010
Test Sample IMEI:	004401221005552		

FCC Part:	2.1055 & 24.235
Test Method Used:	As detailed in ANSI TIA-603-C-2004 Section 2.2.2 referencing FCC CFR Part 2.1055

Environmental Conditions:

Ambient Temperature (°C):	24
Ambient Relative Humidity (%):	25

Results: Bottom Channel (1850.2 MHz)

Temperature (°C)	Frequency Error (Hz)	Measured Frequency (MHz)	Lower Band Edge Limit (MHz)	Margin (MHz)	Result
-30	22	1850.199978	1850.0	0.199978	Complied
-20	8	1850.200008	1850.0	0.200008	Complied
-10	20	1850.200020	1850.0	0.200020	Complied
0	14	1850.200014	1850.0	0.200014	Complied
10	17	1850.199983	1850.0	0.199983	Complied
20	9	1850.199991	1850.0	0.199991	Complied
30	24	1850.199976	1850.0	0.199976	Complied
40	17	1850.199983	1850.0	0.199983	Complied
50	9	1850.199991	1850.0	0.199991	Complied

Results: Top Channel (1909.8 MHz)

Temperature (°C)	Frequency Error (Hz)	Measured Frequency (MHz)	Upper Band Edge Limit (MHz)	Margin (MHz)	Result
-30	33	1909.799967	1910.0	0.200033	Complied
-20	17	1909.800017	1910.0	0.199983	Complied
-10	27	1909.800027	1910.0	0.199973	Complied
0	17	1909.800017	1910.0	0.199983	Complied
10	16	1909.799984	1910.0	0.200016	Complied
20	19	1909.799981	1910.0	0.200019	Complied
30	28	1909.799972	1910.0	0.200028	Complied
40	29	1909.799971	1910.0	0.200029	Complied
50	20	1909.800020	1910.0	0.199980	Complied

Transmitter Frequency Stability (Temperature Variation) (continued)

Note(s):

1. Temperature was monitored throughout the test with a calibrated digital thermometer.

5.2.6. Transmitter Frequency Stability (Voltage Variation)

Test Summary:

Test Engineer:	Ian Watch	Test Date:	16 November 2010
Test Sample IMEI:	004401221005552		

FCC Part:	2.1055 & 24.235
Test Method Used:	As detailed in ANSI TIA-603-C-2004 Section 2.2.2 referencing FCC CFR Part 2.1055

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	23

Results: Bottom Channel (1850.2 MHz)

Supply Voltage (V)	Frequency Error (Hz)	Measured Frequency (MHz)	Lower Band Edge Limit (MHz)	Margin (MHz)	Result
3.4	14	1850.199986	1850.0	0.199986	Complied
4.2	18	1850.199982	1850.0	0.199982	Complied

Results: Top Channel (1909.8 MHz)

Supply Voltage (V)	Frequency Error (Hz)	Measured Frequency (MHz)	Upper Band Edge Limit (MHz)	Margin (MHz)	Result
3.4	26	1909.799974	1910.0	0.200026	Complied
4.2	17	1909.799983	1910.0	0.200017	Complied

Note(s):

1. Voltage was monitored throughout the test with a calibrated digital voltmeter.

5.2.7. Transmitter Occupied Bandwidth

Test Summary:

Test Engineer:	Ian Watch	Test Date:	18 November 2010
Test Sample IMEI:	004401221005552		

FCC Part:	2.1049
Test Method Used:	As detailed in ANSI C63.4 Section 13.7 referencing FCC CFR Part 2.1049

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	34

Results: GSM Circuit Switched

Channel	Frequency (MHz)	Occupied Bandwidth (kHz)
Middle	1879.8	241.683

Results: GPRS

Channel	Frequency (MHz)	Occupied Bandwidth (kHz)
Middle	1879.8	239.279

Note(s):

1. In lieu of the test method detailed in ANSI C63.4 Section 13.7, the 99% occupied bandwidth was measured using the Occupied Bandwidth function of a spectrum analyser.

Transmitter Occupied Bandwidth (continued)
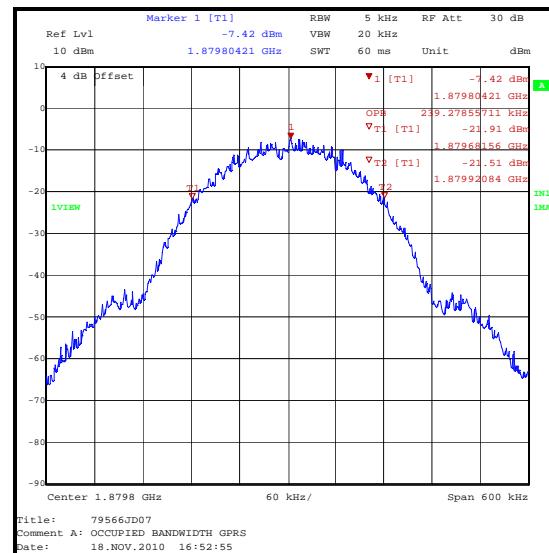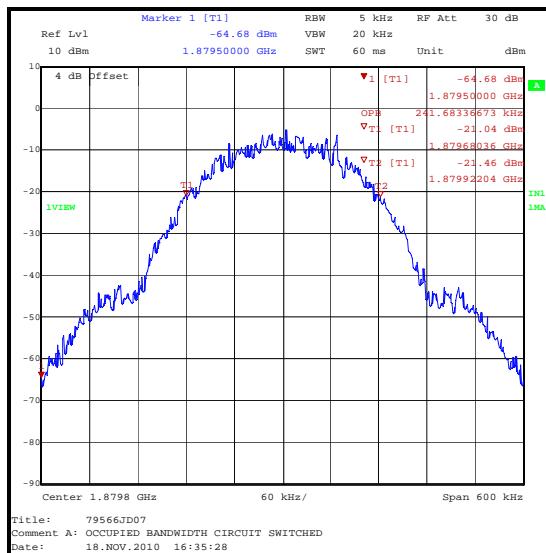
5.2.8. Transmitter Out of Band Radiated Emissions

Test Summary:

Test Engineer:	Ian Watch	Test Date:	17 November 2010
Test Sample IMEI:	004401221005610		

FCC Part:	2.1053 & 24.238
Test Method Used:	As detailed in ANSI TIA-603-C-2004 Section 2.2.12 referencing FCC CFR Parts 2.1053 and 24.238
Frequency Range:	30 MHz to 20 GHz
Configuration:	GSM Circuit Switched

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	22

Results: Bottom Channel

Frequency (MHz)	Peak Level (dBm)	Limit (dBm)	Margin (dB)	Result
3700.466	-27.8	-13.0	14.8	Complied
9250.990	-31.4	-13.0	18.4	Complied

Results: Middle Channel

Frequency (MHz)	Peak Level (dBm)	Limit (dBm)	Margin (dB)	Result
3759.604	-28.8	-13.0	15.8	Complied
9399.010	-26.3	-13.0	13.3	Complied

Results: Top Channel

Frequency (MHz)	Peak Level (dBm)	Limit (dBm)	Margin (dB)	Result
3819.639	-26.8	-13.0	13.8	Complied
9549.108	-30.5	-13.0	17.5	Complied

Note(s):

1. The uplink and downlink traffic channels are shown on the 1 GHz to 4 GHz plot at approximately 1909 MHz and 1992 MHz.

2. Final measurements were made using appropriate RF filters and attenuators where required.

Transmitter Out of Band Radiated Emissions (continued)
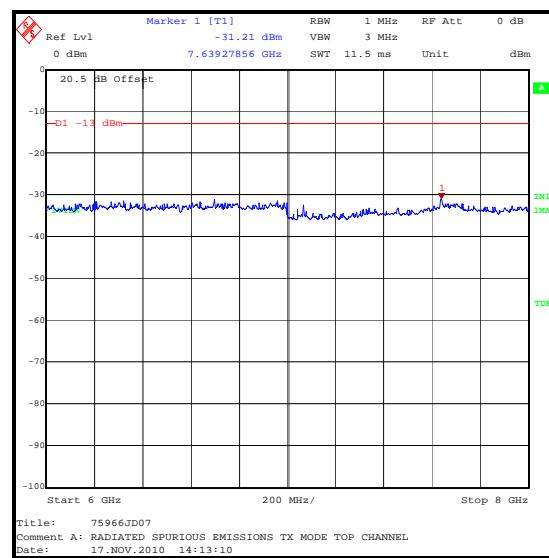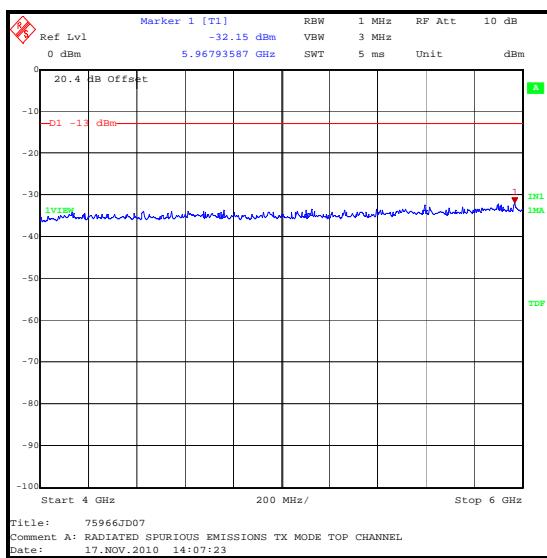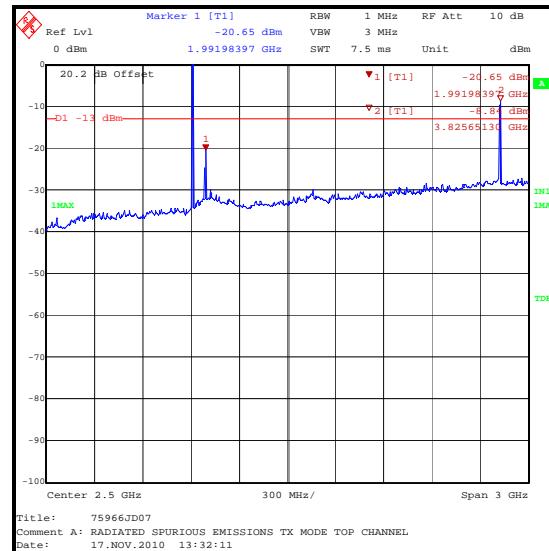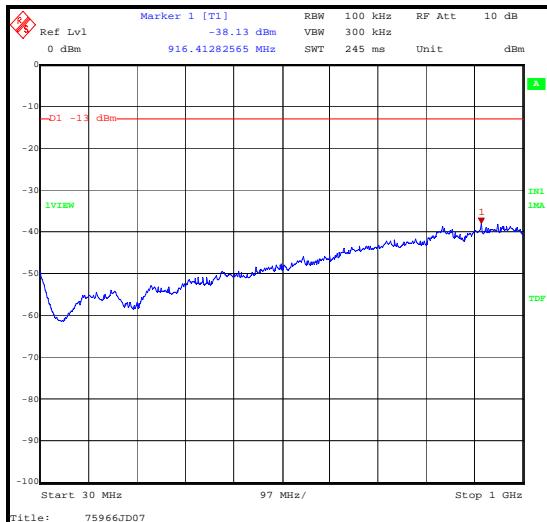
Transmitter Out of Band Radiated Emissions (continued)

5.2.9. Transmitter Band Edge Radiated Emissions

Test Summary:

| Test Engineer:	Ian Watch	Test Date:	18 November 2010
Test Sample IMEI:	004401221005610		

FCC Part:	2.1053 & 24.238
Test Method Used:	As detailed in ANSI TIA-603-C-2004 Section 2.2.12 referencing FCC CFR Parts 2.1053 and 24.238

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	33

Results: GSM Circuit Switched

Frequency (MHz)	Peak Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	-24.2	-13.0	11.2	Complied
1910	-18.3	-13.0	5.3	Complied
1910.01523	-17.0	-13.0	4.0	Complied
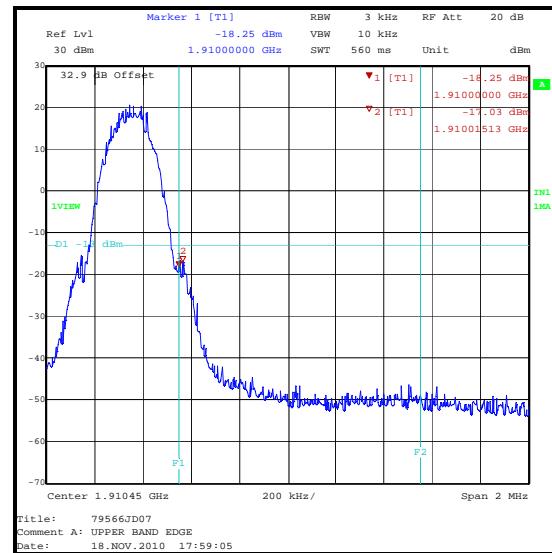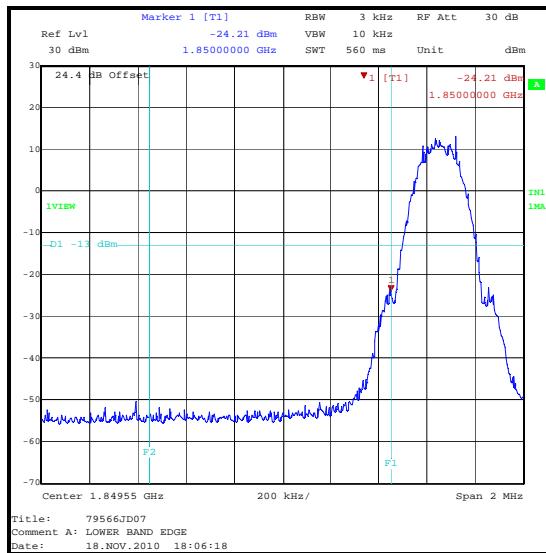
Transmitter Band Edge Radiated Emissions (continued)

Results: GPRS

Frequency (MHz)	Peak Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	-27.2	-13.0	14.2	Complied
1910	-20.8	-13.0	7.8	Complied
1910.01914	-19.0	-13.0	6.0	Complied
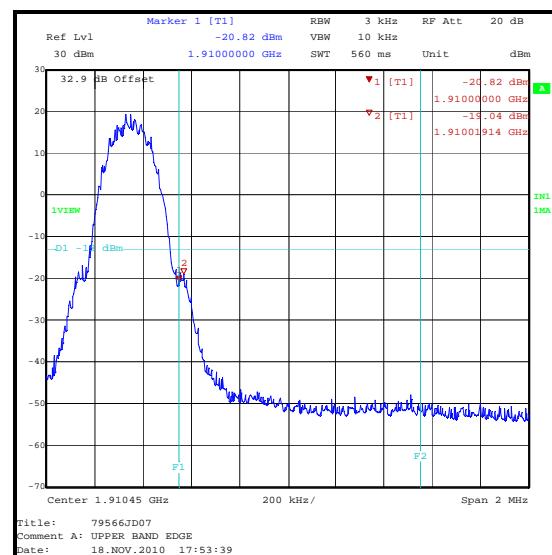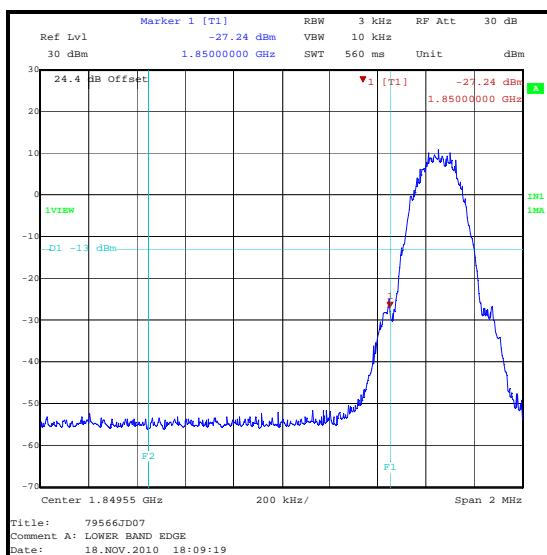
6. Measurement Uncertainty

No measurement or test can ever be perfect and the imperfections give rise to error of measurement in the results. Consequently the result of a measurement is only an approximation to the value of the measurand (the specific quantity subject to measurement) and is only complete when accompanied by a statement of the uncertainty of the approximation.

The expression of uncertainty of a measurement result allows realistic comparison of results with reference values and limits given in specifications and standards.

The uncertainty of the result may need to be taken into account when interpreting the measurement results.

The reported expanded uncertainties below are based on a standard uncertainty multiplied by an appropriate coverage factor such that a confidence level of approximately 95% is maintained. For the purposes of this document "approximately" is interpreted as meaning "effectively" or "for most practical purposes".

Measurement Type	Range	Confidence Level (%)	Calculated Uncertainty
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	±3.25 dB
Effective Isotropic Radiated Power (EIRP)	1850 to 1910 MHz	95%	±2.94 dB
Conducted Output Power	1850 to 1910 MHz	95%	±0.27 dB
Frequency Stability	1850 to 1910 MHz	95%	±0.92 ppm
Occupied Bandwidth	1850 to 1910 MHz	95%	±0.92 ppm
Radiated Spurious Emissions	30 MHz to 20 GHz	95%	±2.94 dB

The methods used to calculate the above uncertainties are in line with those recommended within the various measurement specifications. Where measurement specifications do not include guidelines for the evaluation of measurement uncertainty the published guidance of the appropriate accreditation body is followed.

Appendix 1. Test Equipment Used

RFI No.	Instrument	Manufacturer	Type No.	Serial No.	Date Calibration Due	Cal. Interval (Months)
A1069	LISN	Rohde & Schwarz	ESH3-Z5	837469/012	13 Apr 2011	12
A1396	Attenuator	Huber + Suhner	757987	6810.17.B	06 Jul 2011	12
A1415	Directional Coupler	Atlantic	422057-1	306	Calibrated before use	-
A1534	Pre Amplifier	Hewlett Packard	8449B	3008A00405	06 Jun 2011	12
A1818	Antenna	EMCO	3115	00075692	05 Sep 2011	12
A1830	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100668	01 Mar 2011	12
A1975	High Pass Filter	AtlanTecRF	AFH-03000	090424010	22 Jan 2011	12
A244	Attenuator	Schaffner	6820-17-B	None	Calibrated before use	-
A253	Antenna	Flann Microwave	12240-20	128	05 Sep 2011	12
A254	Antenna	Flann Microwave	14240-20	139	05 Sep 2011	12
A255	Antenna	Flann Microwave	16240-20	519	05 Sep 2011	12
A256	Antenna	Flann Microwave	18240-20	400	05 Sep 2011	12
A288	Antenna	Chase	CBL6111A	1589	05 Sep 2011	12
A436	Antenna	Flann Microwave	20240-20	330	05 Sep 2011	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	05 Sep 2011	12
L1005	Comms Test Set	Rohde & Schwarz	CMU200	116284	29 Jan 2011	12
M1068	Thermometer	Iso-Tech	RS55	93102884	10 Nov 2011	12
M1124	Test Receiver	Rohde & Schwarz	ESI26	100046K	22 Apr 2011	12
M1229	Digital Multimeter	Fluke	179	87640015	15 Jul 2011	12
M1263	Test Receiver	Rohde & Schwarz	ESIB7	100265	28 Jun 2011	12
S0520	Power Supply	GW instek	GPC-3030	E835141	Calibrated before use	-

NB In accordance with UKAS requirements all the measurement equipment is on a calibration schedule.