TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: SoftBank 002P

FCC ID: UCE210036A

To: FCC Part 24: 2010 Subpart E

Test Report Serial No:
RFI-RPT-RP79867JD05A

This Test Report Is Issued Under The Authority Of Chris Guy, Head of Global Approvals: 	
Checked By:	A. Henriques
Signature: 	
Date of Issue:	02 December 2010

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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:	25 November 2010 to 28 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 Effective Isotropic Radiated Power (EIRP)	✓
Part 2.1046	Transmitter Conducted Output Power	Note 1
Parts 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 002P
Model Name or Number:	EB-3228
IMEI:	004401221024082 *(Radiated sample)*
Hardware Version Number:	Rev. D
Software Version Number:	002PVA12
FCC ID:	UCE210036A

Brand Name:	SoftBank 002P
Model Name or Number:	EB-3228
IMEI:	004401221024090 *(Conducted RF port sample)*
Hardware Version Number:	Rev. D
Software Version Number:	002PVA12
FCC ID:	UCE210036A

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 (W-CDMA FDDI/GSM900/1800/1900MHz) Cellular Mobile Telephone.

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	32.0 dBm	
	GPRS	31.3 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 started
Description:	Micro SD Memory Card
Model Name or Number:	2 GB

Brand Name:	Not marked or started
Description:	Dummy Battery
Model Name or Number:	Not marked or started

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

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 004401221024090 was used for frequency stability and conducted power measurements. The sample with IMEI 004401221024082 was used for all other measurements.
- The SDRAM card was present in the EUT during all testing.
- 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:**	28 November 2010
Test Sample IMEI:	004401221024082		

FCC Part:	15.107(a)
Test Method Used:	As detailed in ANSI C63.4 Section 7

Environmental Conditions:

Temperature (°C):	21
Relative Humidity (%):	22

Results: Quasi Peak

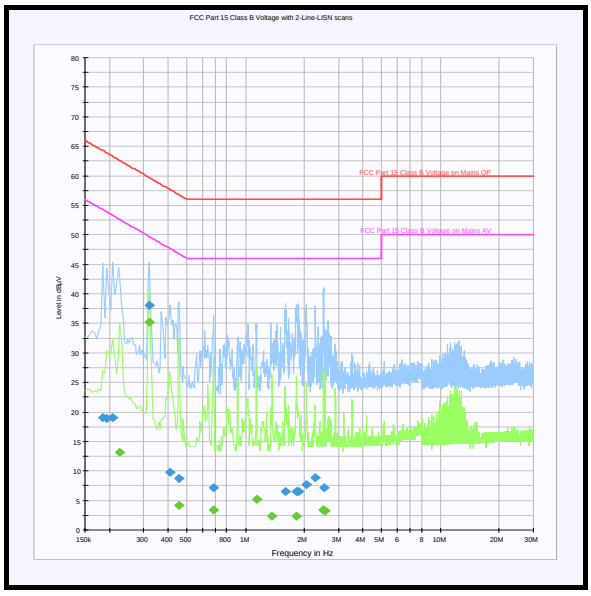
Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.321000	Neutral	38.1	59.7	21.6	Complied

Results: Average

Frequency (MHz)	Line	Level (dBµV)	Limit (dBµV)	Margin (dB)	Result
0.321000	Neutral	35.2	49.7	14.5	Complied

Note(s):

1. All other quasi peak and average emissions were >30 dB below the applicable limits.



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

5.2.2. Receiver/Idle Mode Radiated Spurious Emissions

Test Summary:

Test Engineer:	Ian Watch	**Test Date:**	28 November 2010
Test Sample IMEI:	004401221024082		

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):	22
Relative Humidity (%):	21

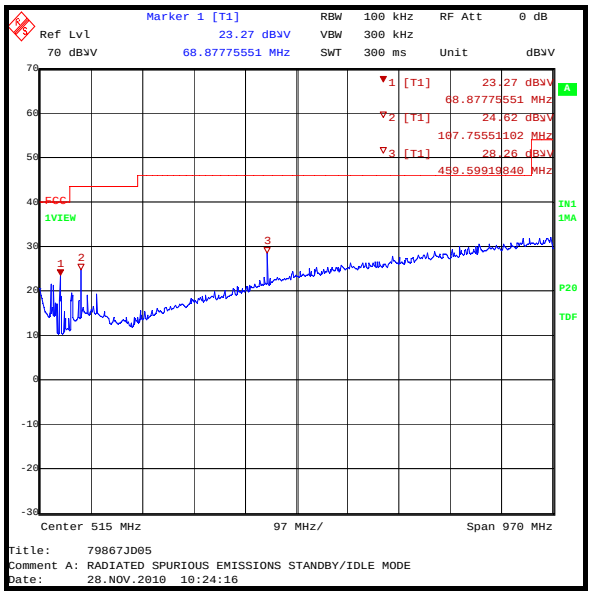
Results:

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
49.583	Vertical	19.6	40.0	20.4	Complied
107.573	Vertical	24.1	43.5	19.4	Complied
138.041	Vertical	21.7	43.5	21.8	Complied
458.744	Vertical	28.0	46.0	18.0	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)



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:**	28 November 2010
Test Sample IMEI:	004401221024082		

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):	22
Relative Humidity (%):	21

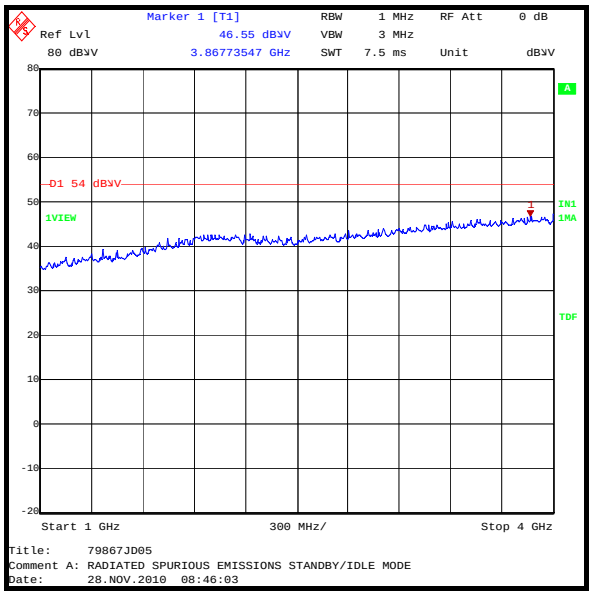
Results:

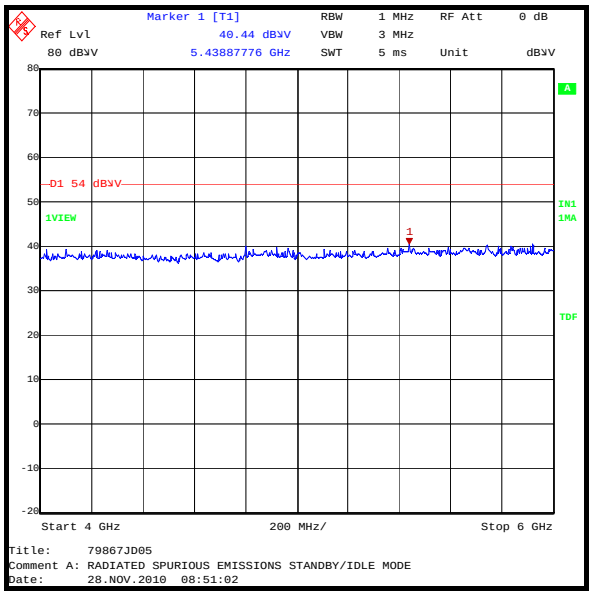
Frequency (MHz)	Antenna Polarity	Peak Level (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
3867.735	Vertical	46.6	54.0	7.4	Complied

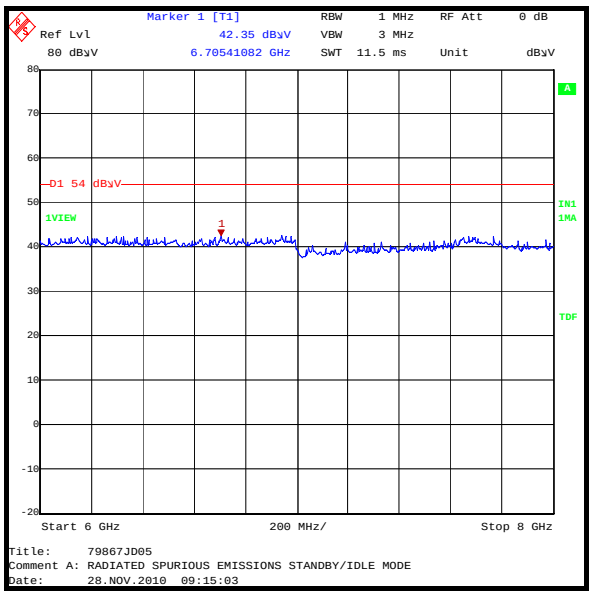
Note(s):

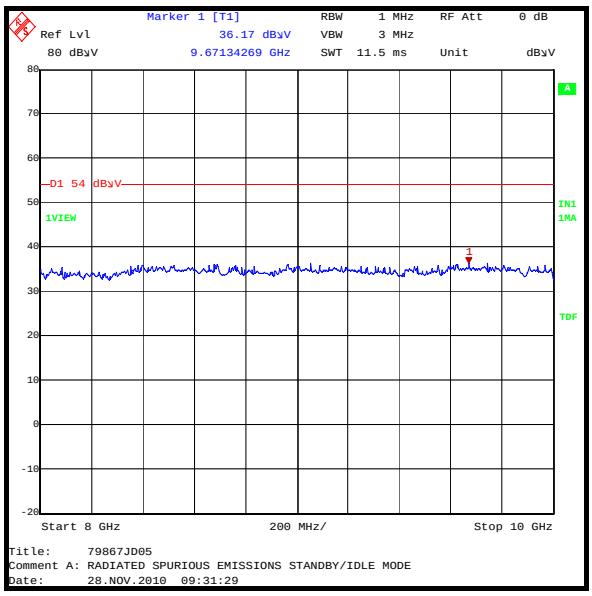
1. The final measured value, for the given emission, in the table above incorporates the calibrated antenna factor and cable loss.
2. No spurious emissions were detected above the noise floor of the measuring receiver therefore the highest peak noise floor reading of the measuring receiver was recorded 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 Effective Isotropic Radiated Power (EIRP)

Test Summary:

Test Engineer:	Ben Mercer	**Test Date:**	26 November 2010
Test Sample IMEI:	004401221024082		

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

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	21

Results: GSM Circuit Switched

Channel	Frequency (MHz)	Antenna Polarity	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	1850.2	Horizontal	32.0	33.0	1.0	Pass
Middle	1879.8	Horizontal	31.0	33.0	2.0	Pass
Top	1909.8	Horizontal	32.2	33.0	0.8	Pass

Results: GPRS

Channel	Frequency (MHz)	Antenna Polarity	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	1850.2	Horizontal	31.3	33.0	1.7	Pass
Middle	1879.8	Horizontal	29.7	33.0	3.3	Pass
Top	1909.8	Horizontal	30.5	33.0	2.5	Pass

5.2.4. Transmitter Conducted Output Power

Test Engineer:	Ian Watch	**Test Date:**	28 November 2010
Test Sample IMEI:	004401221024090		

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):	22
Relative Humidity (%):	21

Results: GSM Circuit Switched

Channel	Frequency (MHz)	Maximum Peak Conducted Power (dBm)	Maximum Average Conducted Power (dBm)
Bottom	1850.2	28.6	28.5
Middle	1879.8	28.7	28.9
Top	1909.8	29.1	29.0

Results: GPRS

Channel	Frequency (MHz)	Maximum Peak Conducted Power (dBm)	Maximum Average Conducted Power (dBm)
Bottom	1850.2	26.5	26.3
Middle	1879.8	26.6	26.5
Top	1909.8	26.9	26.8

Note(s):

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

5.2.5. Transmitter Frequency Stability (Temperature Variation)

Test Summary:

Test Engineer:	Ben Mercer	**Test Date:**	25 November 2010
Test Sample IMEI:	004401221024090		

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 (%):	23

Results: Bottom Channel (1850.2 MHz)

Temperature (°C)	Frequency Error (Hz)	Measured Frequency (MHz)	Lower Band Edge Limit (MHz)	Margin (MHz)	Result
-30	38	1850.199962	1850.0	0.199962	Complied
-20	43	1850.199957	1850.0	0.199957	Complied
-10	46	1850.199954	1850.0	0.199954	Complied
0	49	1850.199951	1850.0	0.199951	Complied
10	32	1850.199968	1850.0	0.199968	Complied
20	42	1850.199958	1850.0	0.199958	Complied
30	50	1850.199950	1850.0	0.199950	Complied
40	37	1850.199963	1850.0	0.199963	Complied
50	66	1850.199934	1850.0	0.199934	Complied

Results: Top Channel (1909.8 MHz)

Temperature (°C)	Frequency Error (Hz)	Measured Frequency (MHz)	Upper Band Edge Limit (MHz)	Margin (MHz)	Result
-30	46	1909.799954	1910.0	0.200046	Complied
-20	46	1909.800046	1910.0	0.199954	Complied
-10	43	1909.800043	1910.0	0.199957	Complied
0	81	1909.800081	1910.0	0.199919	Complied
10	34	1909.800034	1910.0	0.199966	Complied
20	49	1909.800049	1910.0	0.199951	Complied
30	54	1909.800054	1910.0	0.199946	Complied
40	39	1909.800039	1910.0	0.199961	Complied
50	52	1909.800052	1910.0	0.199948	Complied

Note(s)

1. A dummy battery was placed on the EUT and the dummy battery cables connected to a bench power supply.
2. Temperature was monitored throughout the test with a calibrated digital thermometer.

5.2.6. Transmitter Frequency Stability (Voltage Variation)

Test Summary:

Test Engineer:	Ben Mercer	**Test Date:**	25 November 2010
Test Sample IMEI:	004401221024090		

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):	24
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	37	1850.199963	1850.0	0.199963	Complied
4.2	39	1850.199961	1850.0	0.199961	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	47	1909.800047	1910.0	0.199953	Complied
4.2	46	1909.800046	1910.0	0.199954	Complied

Note(s):

1. A dummy battery was placed on the EUT and the dummy battery cables connected to a bench power supply.
2. 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:**	28 November 2010
Test Sample IMEI:	004401221024082		

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):	22
Relative Humidity (%):	21

Results: GSM Circuit Switched

Channel	Frequency (MHz)	Occupied Bandwidth (kHz)
Middle	1879.8	244.088

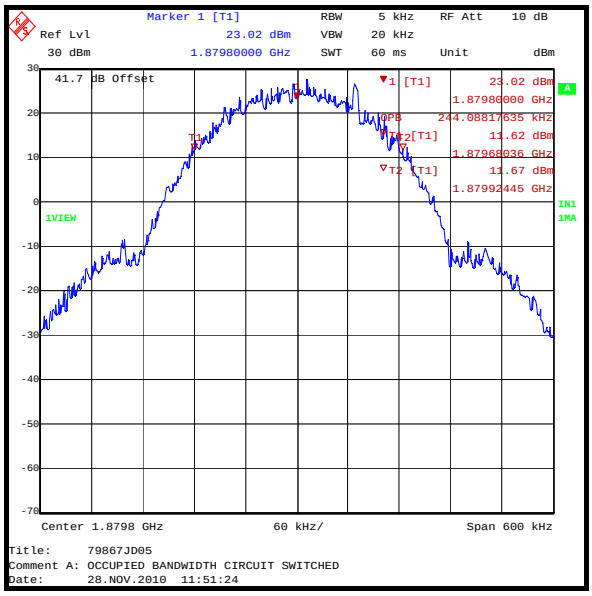
Results: GPRS

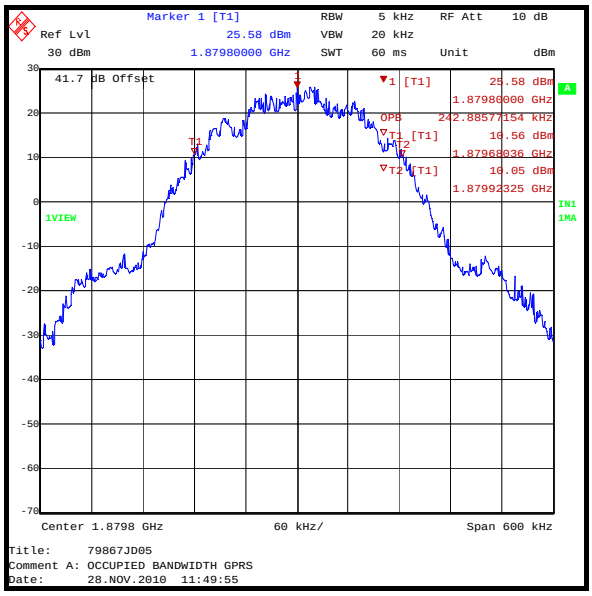
Channel	Frequency (MHz)	Occupied Bandwidth (kHz)
Middle	1879.8	242.886

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 the spectrum analyser.

Transmitter Occupied Bandwidth (continued)





5.2.8. Transmitter Out of Band Radiated Emissions

Test Summary:

Test Engineer:	Ian Watch	**Test Date:**	28 November 2010
Test Sample IMEI:	004401221024082		

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):	21
Relative Humidity (%):	22

Results: Bottom Channel

Frequency (MHz)	Peak Level (dBm)	Limit (dBm)	Margin (dB)	Result
3700.291	-46.7	-13.0	33.7	Complied

Results: Middle Channel

Frequency (MHz)	Peak Level (dBm)	Limit (dBm)	Margin (dB)	Result
3759.471	-43.2	-13.0	30.2	Complied

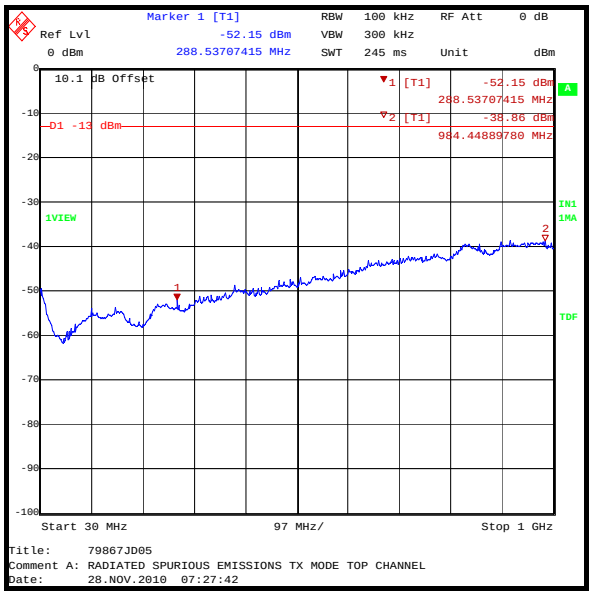
Results: Top Channel

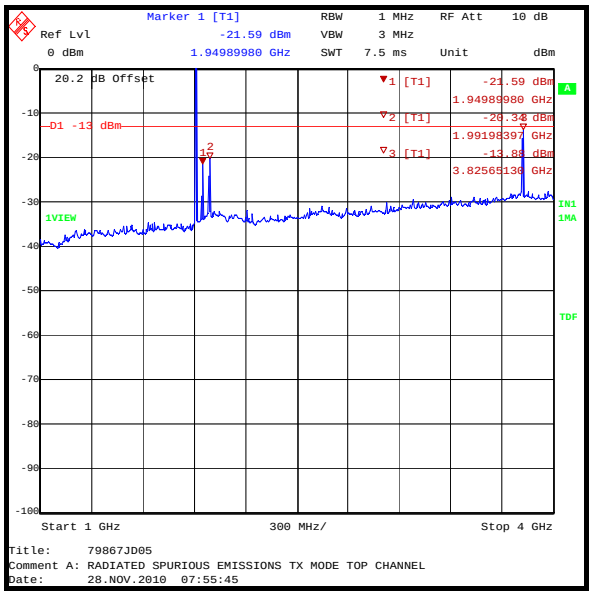
Frequency (MHz)	Peak Level (dBm)	Limit (dBm)	Margin (dB)	Result
3819.709	-45.4	-13.0	32.4	Complied

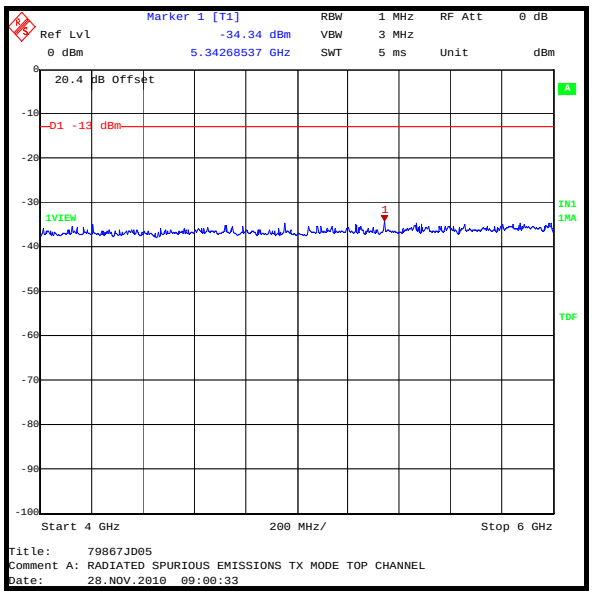
Note(s):

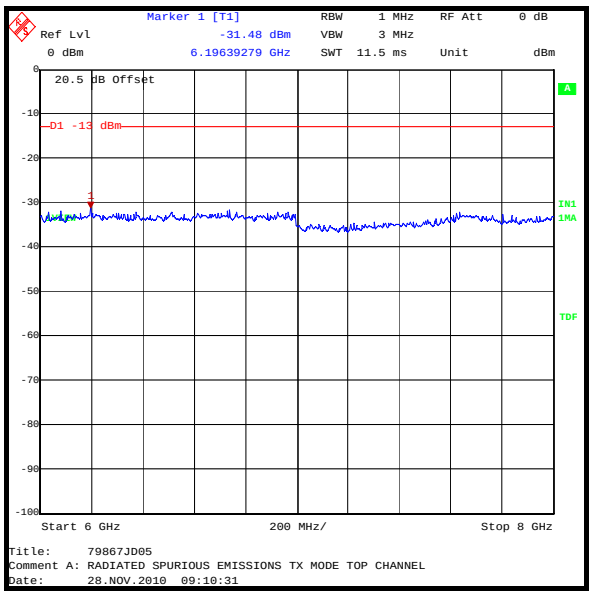
1. The uplink and downlink traffic channels are shown on the 1 GHz to 4 GHz plot at approximately 1909 MHz and 1992 MHz.
2. Final measurements were made using appropriate RF filters and attenuators where required.
3. All other emissions shown on the pre-scan plots were investigated and found to be >20 dB below the applicable limits or below the noise floor of the measurement system.

Transmitter Out of Band Radiated Emissions (continued)

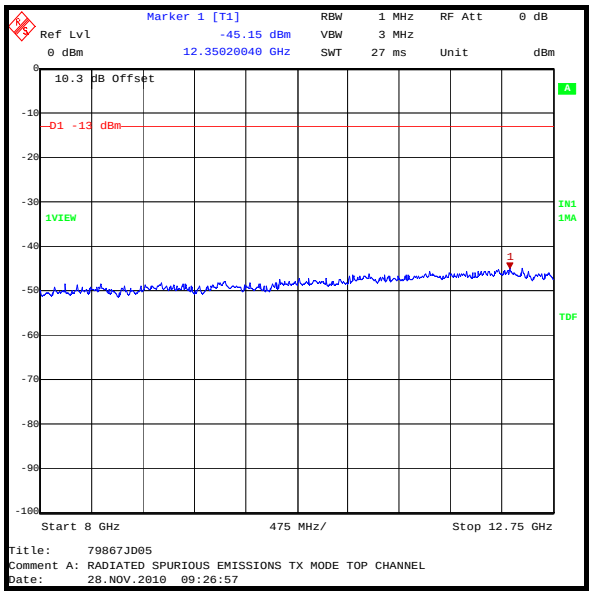


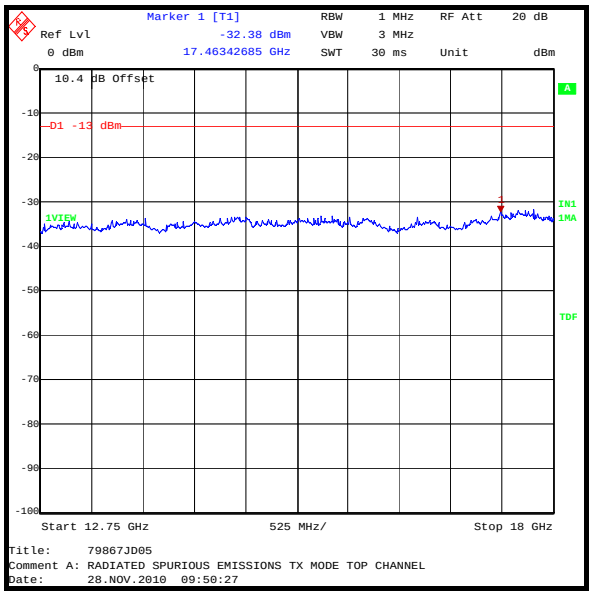


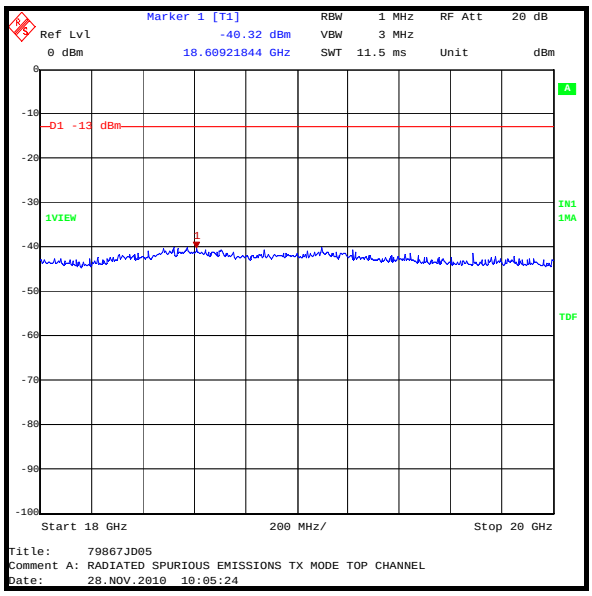




Transmitter Out of Band Radiated Emissions (continued)







5.2.9. Transmitter Band Edge Radiated Emissions

Test Summary:

Test Engineer:	Ian Watch	**Test Date:**	28 November 2010
Test Sample IMEI:	004401221024082		

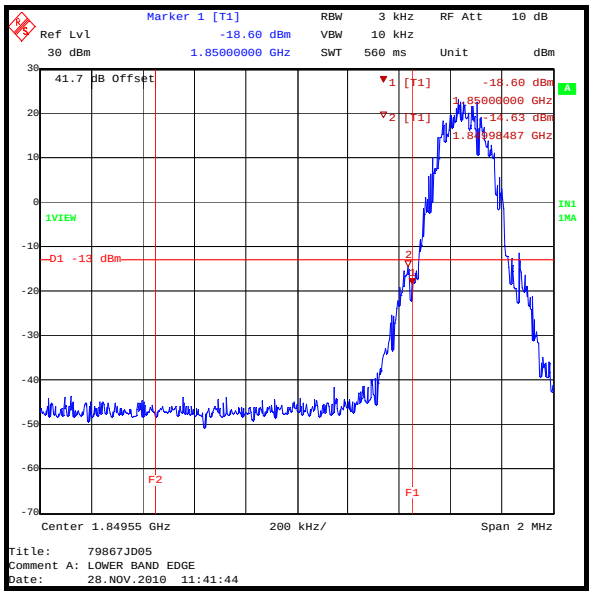
FCC Part:	2.1053 & 24.238
Test Method Used:	As detailed in ANSI TIA-603-C-2004 Section 2.2.12 referencing FCC CFR Parts 2.1053 and 24.238

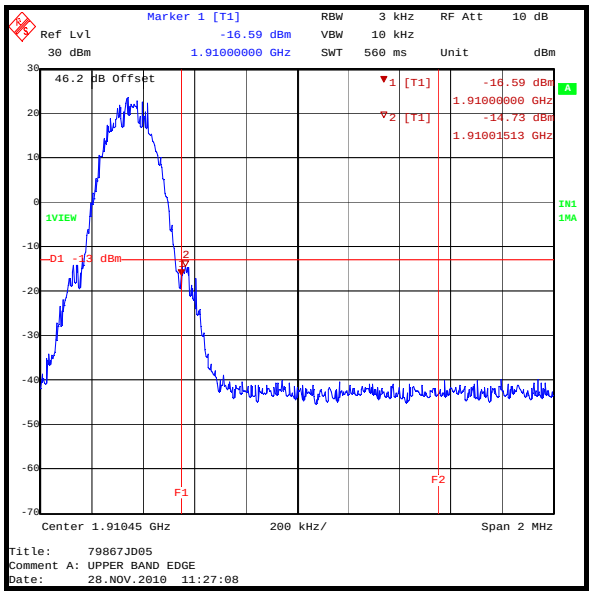
Environmental Conditions:

Temperature (°C):	22
Relative Humidity (%):	21

Results: GSM Circuit Switched

Frequency (MHz)	Peak Level (dBm)	Limit (dBm)	Margin (dB)	Result
1849.98487	-14.6	-13.0	1.6	Complied
1850	-18.6	-13.0	5.6	Complied
1910	-16.6	-13.0	3.6	Complied
1910.01513	-14.7	-13.0	1.7	Complied

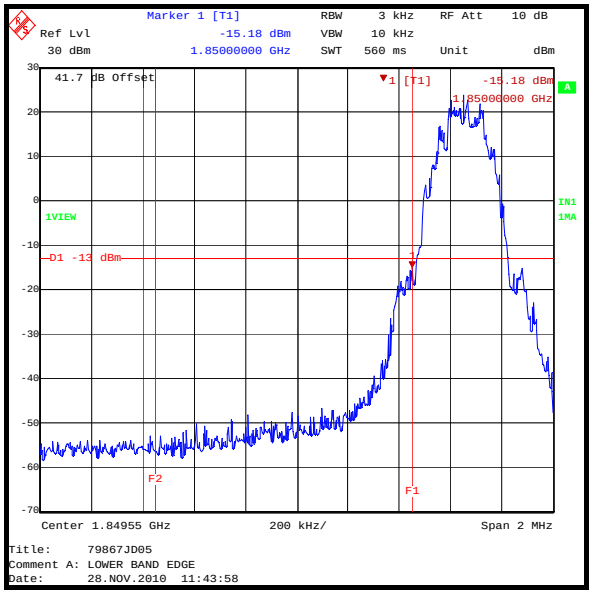


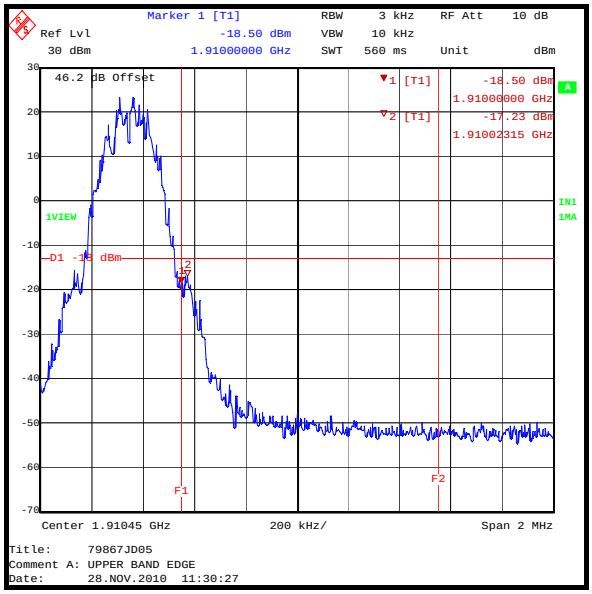


Transmitter Band Edge Radiated Emissions (continued)

Results: GPRS

Frequency (MHz)	Peak Level (dBm)	Limit (dBm)	Margin (dB)	Result
1850	-15.2	-13.0	2.2	Complied
1910	-18.5	-13.0	5.5	Complied
1910.02315	-17.2	-13.0	4.2	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
A1376	Attenuator	Pasternack Enterprises	PE7046-20	None	Calibrated before use	-
A1393	Attenuator	Huber + Suhner	757456	6820.17.B	06 Jul 2011	12
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
A2001	Attenuator	Huber + Suhner	6830.17.B	07031	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	20240-20	330	05 Sep 2011	12
E013	Environmental Chamber	Sanyo	ATMOS chamber	None	Calibrated before use	-
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	05 Sep 2011	12
L1005	Comms Test Set	Schwarz	CMU200	116284	29 Jan 2011	12
M1124	Test Receiver	Rohde & Schwarz	ESI26	100046K	22 Apr 2011	12
M122	Digital Voltmeter	Fluke	77	64910017	14 Jul 2011	12
M1249	Thermometer	Fluke	52II	88800049	05 Jul 2011	12
M1379	Test Receiver	Rohde & Schwarz	ESIB7	100330	26 Aug 2011	12
S0537	Power Supply	TTI	EL302D	249928	Calibrated before use	-

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