TEST REPORT
FROM
RFI GLOBAL SERVICES LTD

Test of: NTT docomo P-02B

To: FCC Part 15.247: 2009 Subpart C

Test Report Serial No:
RFI/RPT1/RP76606JD07A

This Test Report Is Issued Under The Authority Of Brian Watson, Operations Director: 	
Checked By:	Nigel Davison
Signature: 	
Date of Issue:	07 January 2010

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1. Customer Information

Company Name:	Panasonic Mobile Comms Dev of Europe Ltd
Address:	Panasonic House Willoughby Road Bracknell Berkshire RG12 8FP

2. Summary of Testing

2.1. General Information

Specification Reference:	47CFR15.247
Specification Title:	Code of Federal Regulations Volume 47 (Telecommunications) 2009: Part 15 Subpart C (Radio Frequency Devices) - Section 15.247
Site Registration:	FCC: 209735
Location of Testing:	RFI Global Services Ltd, Wade Road, Basingstoke, Hampshire, RG24 8AH.
Test Dates:	01 December 2009 to 24 December 2009

2.2. Summary of Test Results

FCC Reference (47CFR)	Measurement	Port Type	Result
FCC Part 15.107	Idle Mode AC Conducted Emissions	AC Mains	✓
FCC Part 15.109	Idle Mode Radiated Spurious Emissions	Antenna	✓
FCC Part 15.207	Transmitter AC Conducted Emissions	AC Mains	✓
FCC Part 15.247(a)(1)	Transmitter 20 dB Bandwidth	Antenna	✓
FCC Part 15.247(a)(1)	Transmitter Carrier Frequency Separation	Antenna	✓
FCC Part 15.247(a)(1)(iii)	Transmitter Average Time of Occupancy	Antenna	✓
FCC Part 15.247(b)(3)	Transmitter Maximum Peak Output Power	Antenna	✓
FCC Part 15.247(d) & 15.209(a)	Transmitter Radiated Emissions	Antenna	✓
FCC Part 15.247(d) & 15.209(a)	Transmitter Band Edge Radiated Emissions	Antenna	✓

Key to Results

✓ = Complied ✗ = Did not comply

2.3. Methods and Procedures

Reference:	ANSI C63.4 (2003)
Title:	American National Standard Methods of Measurement of Electromagnetic Emissions from Low Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz.
Reference:	DA00-705 (2000)
Title:	Filing and Frequency Measurement Guidelines for Frequency Hopping Spread Spectrum Systems.

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)

Description:	Dual mode UMTS/GSM cellular handset with *Bluetooth* and RFID
Brand Name:	NTT docomo
Model Name or Number:	P-02B
Serial Number:	None Stated (Sample C6)
IMEI Number:	353155030017714
Hardware Version Number:	Rev C
Software Version Number:	B-D92SL1-01.01.003.srec D92WP1_Cv18181911_nand.srec
FCC ID Number:	UCE209022A

Description:	Dual mode UMTS/GSM cellular handset with *Bluetooth* and RFID
Brand Name:	NTT docomo
Model Name or Number:	P-02B
Serial Number:	None Stated (Sample C3)
IMEI Number:	353155030017177
Hardware Version Number:	Rev C
Software Version Number:	B-D92SL1-01.01.003.srec D92WP1_Cv18181911_nand.srec
FCC ID Number:	UCE209022A

Description:	AC Charger
Brand Name:	NTT docomo
Model Name or Number:	FOMA AC Adapter 01 for Global use / MAS-BH0008-A 002

Description:	DC Charger
Brand Name:	NTT docomo
Model Name or Number:	FOMA DC Adapter 02

Description:	USB Data Cable
Brand Name:	NTT docomo
Model Name or Number:	FOMA USB Cable with Charge Function 02

Description:	Personal Hands-free
Brand Name:	NTT docomo
Model Name or Number:	Stereo Earphone Set 01

Description:	Battery
Brand Name:	NTT docomo
Model Name or Number:	P20

Description:	Micro SD memory card

3.2. Description of EUT

The equipment under test was a dual mode cellular mobile telephone with PCS, UMTS FDD V with UMTS Release 5 HSDPA capabilities, incorporating *Bluetooth* and RFID. The Cellular Mobile Telephone also operates on RFID 13.5 MHz Band.

3.3. Modifications Incorporated in the EUT

No modifications were applied to the EUT during testing.

3.4. Additional Information Related to Testing

Tested Technology:	*Bluetooth*		
Power Supply Requirement:	Nominal	3.7 V	
Type of Unit:	Transceiver		
Channel Spacing:	1 MHz		
Mode:	Basic Rate	Enhanced Data Rate	
Modulation:	GFSK	π/4-DQPSK	8DQPSK
Packet Type: (Maximum Payload)	DH5	2DH5	3DH5
Data Rate (Mbit/s):	1	2	3
Maximum Transmit EIRP:	-1.3 dBm		
Transmit Frequency Range:	2402 MHz to 2480 MHz		
Transmit Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	0	2402
	Middle	39	2441
	Top	78	2480
Receive Frequency Range:	2402 MHz to 2480 MHz		
Receive Channels Tested:	**Channel ID**	**Channel Number**	**Channel Frequency (MHz)**
	Bottom	0	2402
	Middle	39	2441
	Top	78	2480

3.5. Support Equipment

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

Description:	Laptop
Brand Name:	Sony Vaio
Model Name or Number:	PCG-VX7/BD
Serial Number:	None Stated

Description:	Test USIM
Brand Name:	Rohde & Schwarz
Model Name or Number:	R&S CRT-Z3 V2.0.0
Serial Number:	8952535250010000346F

Description:	Dummy battery
Model Name or Number:	Not stated
Serial Number:	Not stated

4. Operation and Monitoring of the EUT during Testing

4.1. Operating Modes

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

- Receive / Idle Mode.
- Transmit Mode with Basic Rate (DH5 packets) or EDR (2DH5 or 3DH5 packets) as required.

4.2. Configuration and Peripherals

The EUT was tested in the following configuration:

- For Transmit tests: Standalone, connected via a radio link to a Bluetooth tester in order to place the EUT into Bluetooth test mode. The laptop PC with the Client's bespoke application was used to place the EUT into Bluetooth test mode.
- For Receive/Idle mode tests: Standalone, with the Bluetooth mode active but not transmitting.
- Both EDR and Basic rate modes were tested in order to identify the mode that presented the worse case result with regards to amplitude and modulation bandwidth. All tests were performed on the mode that exhibited the highest output power and bandwidth except for output power, bandwidth, band edge and channel separation where all modes were tested.
- Idle mode and transmitter mode radiated spurious emissions tests were performed with the AC charger connected to the EUT, with the TV antenna extended as this was found to be the worst case during prescans. All accessories were individually connected with the TV antenna extended and retracted during prescan measurements to determine the worst case combination.

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. Idle Mode AC Conducted Spurious Emissions

Test Summary:

FCC Part:	15.107
Test Method Used:	As detailed in ANSI C63.4 Section 7 and relevant annexes

Environmental Conditions:

Temperature Range (°C):	26
Relative Humidity Range (%):	29

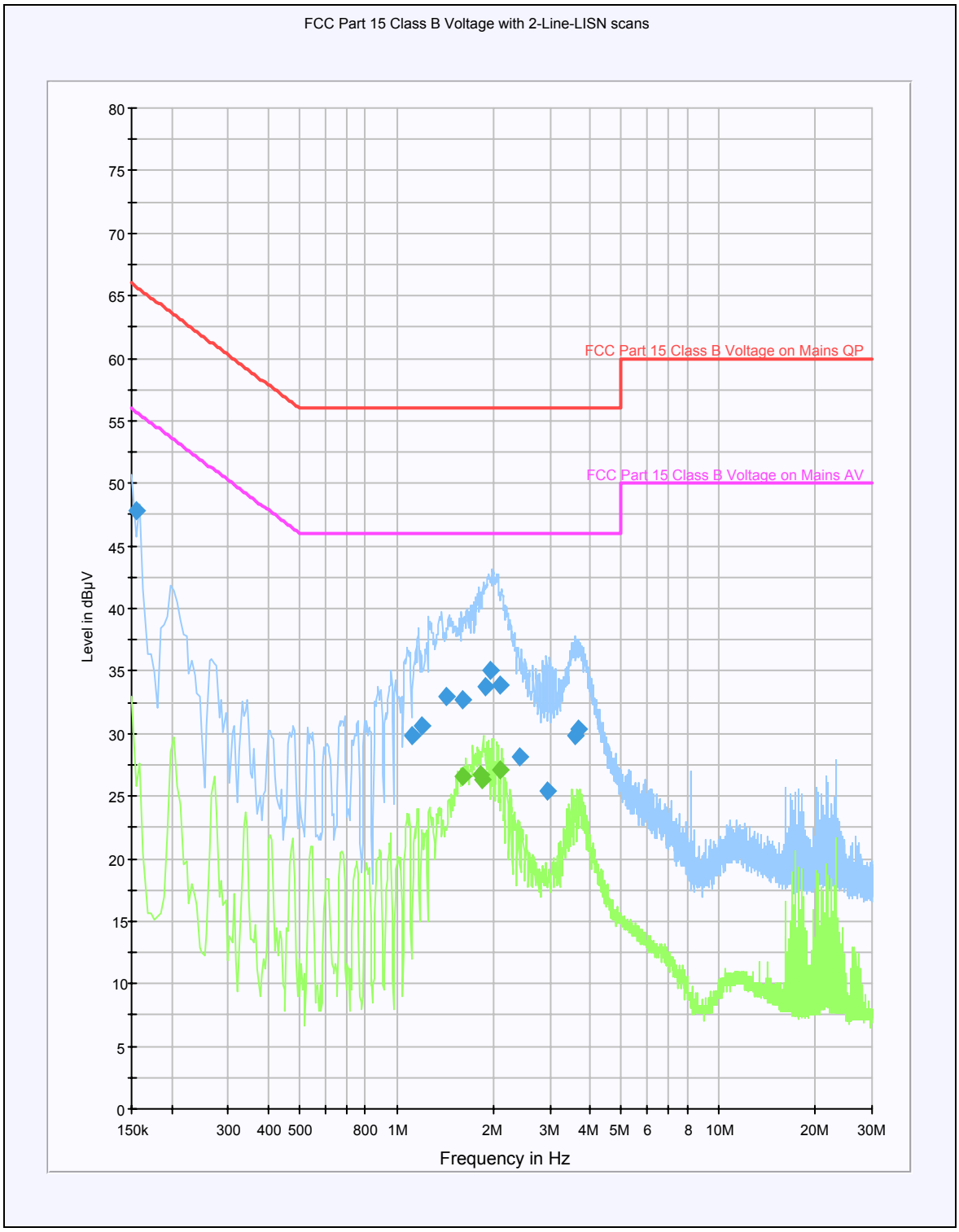
Results: Quasi Peak Detector Measurements

Frequency (MHz)	Line	Quasi Peak Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
0.154500	Neutral	47.8	65.8	18.0	Complied
1.113000	Live 1	29.8	56.0	26.2	Complied
1.203000	Live 1	30.6	56.0	25.4	Complied
1.428000	Live 1	33.0	56.0	23.0	Complied
1.612500	Neutral	32.7	56.0	23.3	Complied
1.887000	Neutral	33.8	56.0	22.2	Complied
1.945500	Live 1	35.0	56.0	21.0	Complied
2.085000	Live 1	33.9	56.0	22.1	Complied
2.418000	Live 1	28.1	56.0	27.9	Complied
2.958000	Live 1	25.4	56.0	30.6	Complied
3.601500	Live 1	29.9	56.0	26.1	Complied
3.673500	Live 1	30.3	56.0	25.7	Complied

Results: Average Detector Measurements

Frequency (MHz)	Line	Average Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
1.594500	Neutral	26.5	46.0	19.5	Complied
1.833000	Neutral	26.8	46.0	19.2	Complied
1.846500	Neutral	26.3	46.0	19.7	Complied
2.089500	Live 1	27.1	46.0	18.9	Complied

Idle Mode AC Conducted Spurious Emissions (continued)



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

5.2.2. Idle Mode Radiated Spurious Emissions

Test Summary:

FCC Part:	15.109
Frequency Range:	30 MHz to 1000 MHz
Test Method Used:	As detailed in ANSI C63.4 Section 8 and relevant annexes

Environmental Conditions:

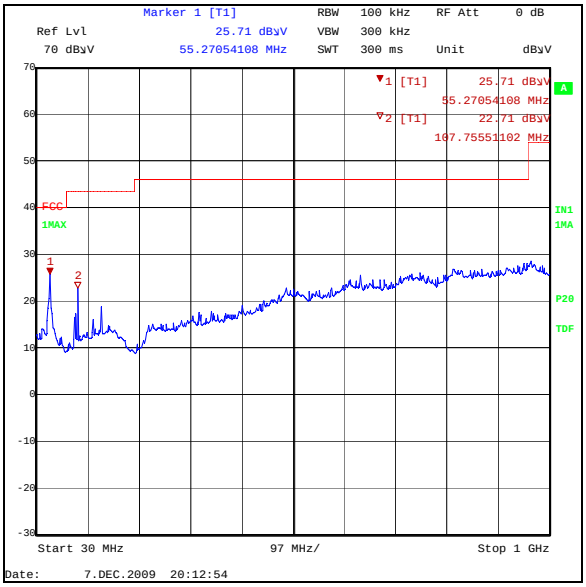
Temperature (°C):	24
Relative Humidity (%):	31

Results:

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
55.269	Vertical	26.0	40.0	14.0	Complied
108.042	Vertical	24.9	43.5	18.6	Complied

Note(s):

1. 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.



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

Idle Mode Radiated Spurious Emissions (continued)

Test Summary:

FCC Part:	15.109
Frequency Range:	1 GHz to 12.75 GHz
Test Method Used:	As detailed in ANSI C63.4 Section 8 and relevant annexes

Environmental Conditions:

Temperature (°C):	24
Relative Humidity (%):	31

Results Peak Detector :

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
12531.062	Vertical	53.1	74.0	20.9	Complied

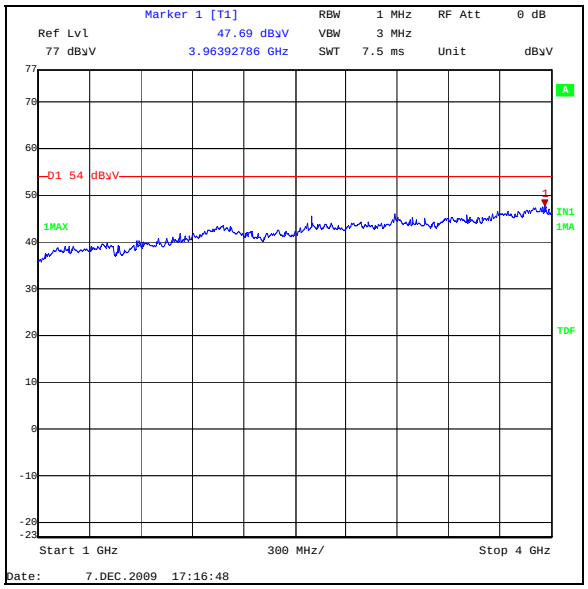
Results Average Detector:

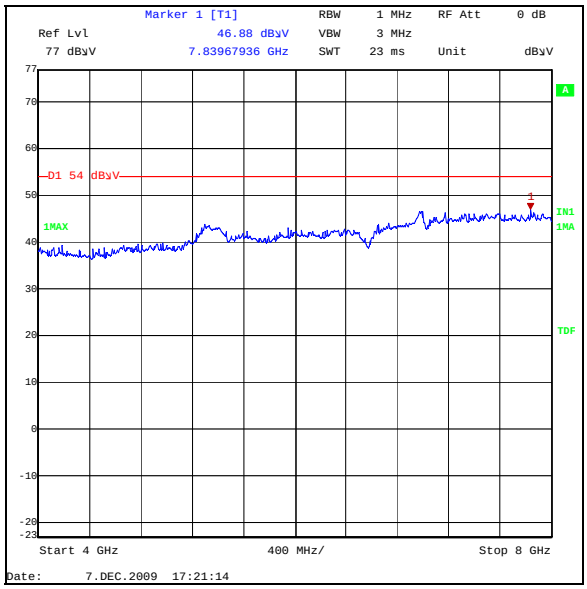
Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
12531.062	Vertical	41.2	54.0	12.8	Complied

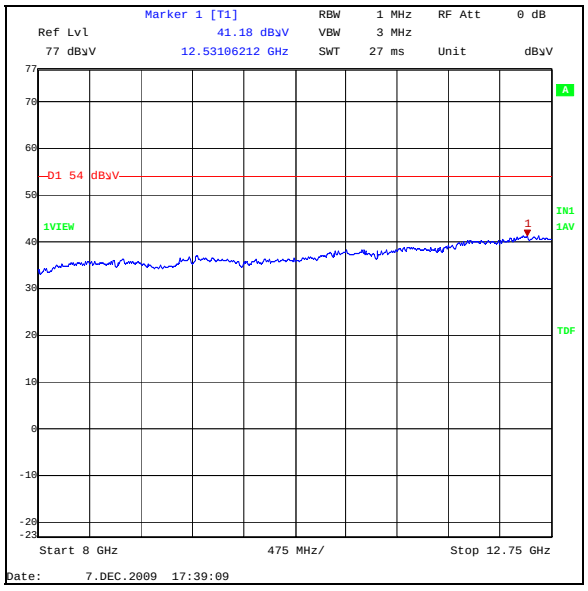
Note(s):

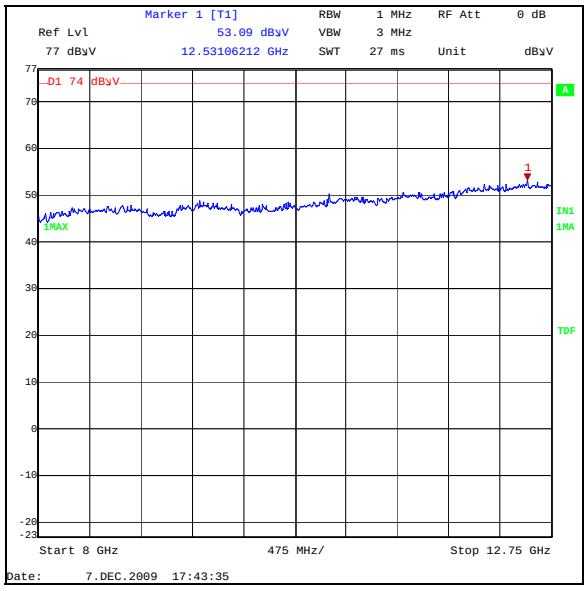
1. No spurious emissions were detected above the noise floor of the measuring receiver; therefore, the highest peak noise and average noise floor reading of the measuring receiver were recorded as shown in the tables above. The peak level was compared to the average limit as opposed to being compared to the peak limit because this is the more onerous limit, if the peak noise floor was above the average level the plot was saved and compared to the peak limit. The plot was then repeated with the average detector and compared to the average limit.

Idle Mode Radiated Spurious Emissions (continued)









Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

5.2.3. Transmitter AC Conducted Spurious Emissions

Test Summary:

FCC Part:	15.207
Test Method Used:	As detailed in ANSI C63.4 Section 7 and relevant annexes

Environmental Conditions:

Temperature Range (°C):	23
Relative Humidity Range (%):	36

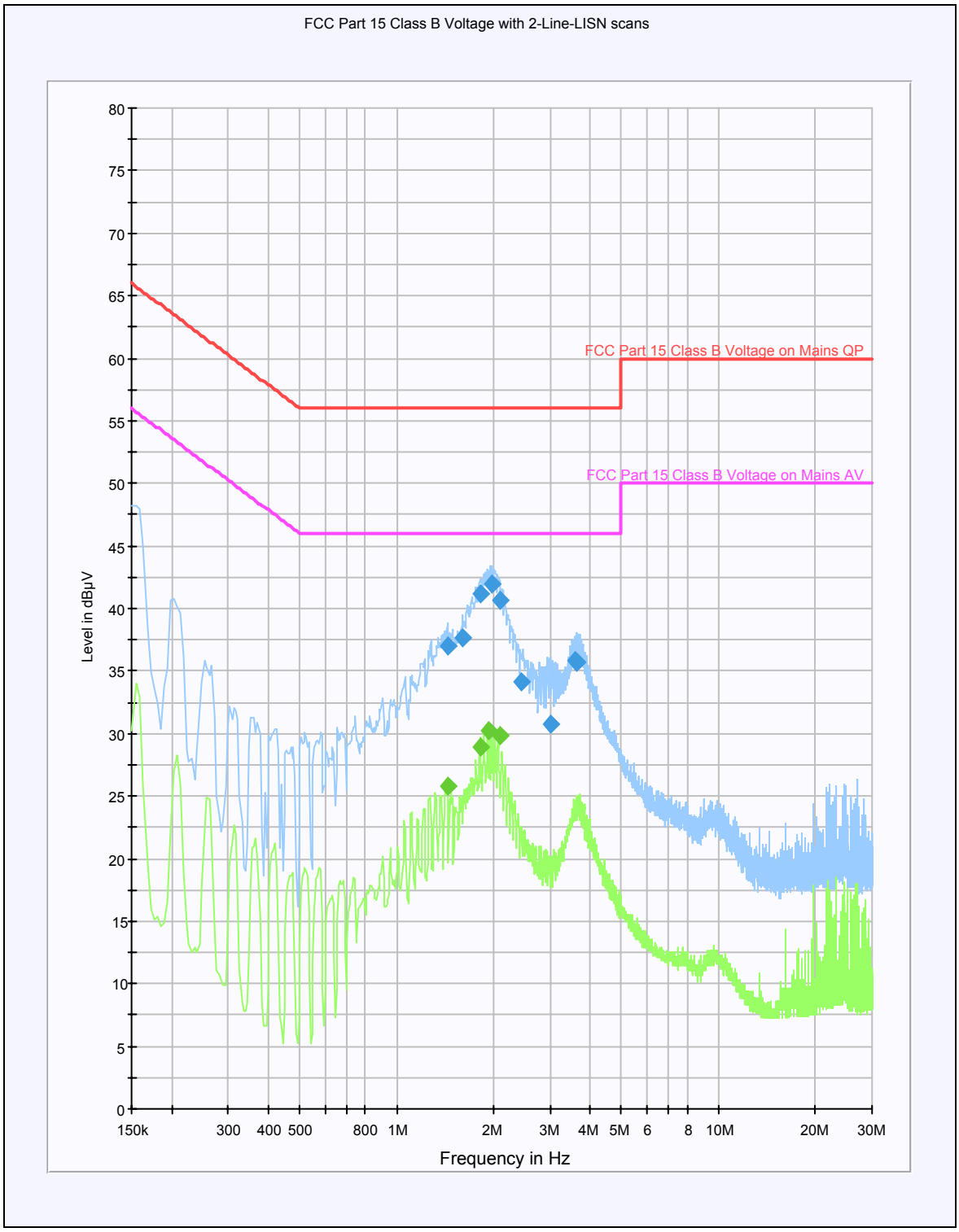
Results: Quasi Peak Detector Measurements

Frequency (MHz)	Line	Quasi Peak Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
1.441500	Live 1	37.0	56.0	19.0	Complied
1.603500	Neutral	37.6	56.0	18.4	Complied
1.819500	Neutral	41.1	56.0	14.9	Complied
1.977000	Live 1	41.9	56.0	14.1	Complied
2.085000	Live 1	40.7	56.0	15.3	Complied
2.427000	Live 1	34.1	56.0	21.9	Complied
3.012000	Live 1	30.7	56.0	25.3	Complied
3.588000	Live 1	35.8	56.0	20.2	Complied
3.633000	Live 1	35.8	56.0	20.2	Complied

Results: Average Detector Measurements

Frequency (MHz)	Line	Average Level (dBμV)	Limit (dBμV)	Margin (dB)	Result
1.437000	Live 1	25.8	46.0	20.2	Complied
1.819500	Neutral	28.9	46.0	17.1	Complied
1.923000	Live 1	30.2	46.0	15.8	Complied
2.085000	Live 1	29.8	46.0	16.2	Complied

Transmitter AC Conducted Spurious Emissions (continued)



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

5.2.4. Transmitter -20 dBc Bandwidth

Test Summary:

FCC Part:	15.247(a)(1)
Test Method Used:	As detailed in Public Notice DA 00-705 (March 30, 2000) and ANSI C63.4 Section 13.1.7 and relevant annexes (see notes below)

Environmental Conditions:

Temperature (°C):	25
Relative Humidity (%):	31

Results: DH5

Channel	Fl (MHz)	Fh (MHz)	Transmitter 20 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	2401.558	2402.423	865.731K	83.5	82.634	Complied
Middle	2440.558	2441.436	877.755K	83.5	82.622	Complied
Top	2479.558	2480.436	877.755K	83.5	82.622	Complied

Results: 2DH5

Channel	Fl (MHz)	Fh (MHz)	Transmitter 20 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	2401.407	2402.568	1.160321	83.5	82.340	Complied
Middle	2440.408	2441.568	1.160321	83.5	82.340	Complied
Top	2479.408	2480.568	1.160321	83.5	82.340	Complied

Results: 3DH5

Channel	Fl (MHz)	Fh (MHz)	Transmitter 20 dB Bandwidth (MHz)	Limit (MHz)	Margin (MHz)	Result
Bottom	2401.414	2402.574	1.160321	83.5	82.3	Complied
Middle	2440.414	2441.574	1.160321	83.5	82.3	Complied
Top	2479.408	2480.574	1.166332	83.5	82.4	Complied

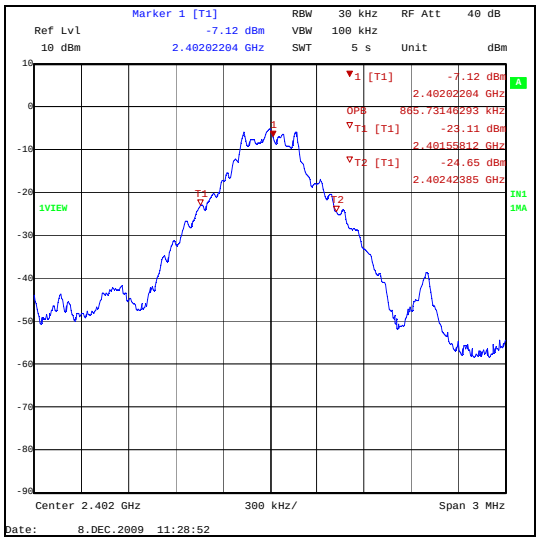
Designated Frequency Band	
Band (MHz)	Bandwidth (MHz)
902-928	26.0
2400 to 2483.5	83.5
5725 to 5850	175.0

Transmitter -20 dBc Bandwidth (continued)

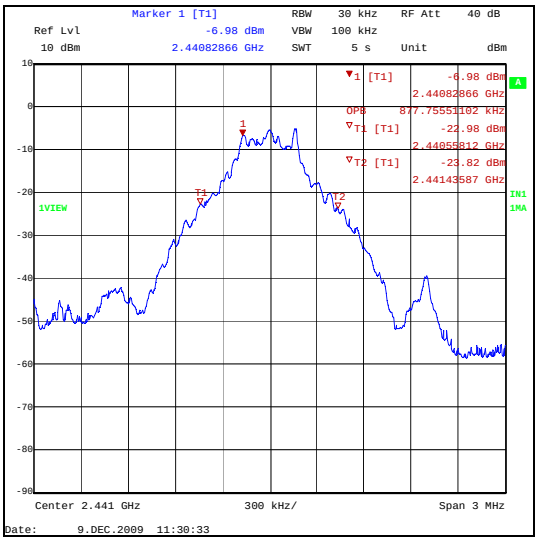
Note(s):

1. In lieu of the test method detailed in ANSI C63.4 Section 13.1.7 the -20 dBc bandwidth was measured using the Occupied Bandwidth function of the spectrum analyser.
2. Fl is the lowest measured frequency measured at -20 dBc.
3. Fh is the highest measured frequency measured at -20 dBc.
4. The Occupied bandwidth is calculated as Fh – Fl.
5. The total bandwidth of the emission for single channel or the total operating bandwidth for multi-channel devices must remain within the designated frequency band, as specified in 47CFR15.215.

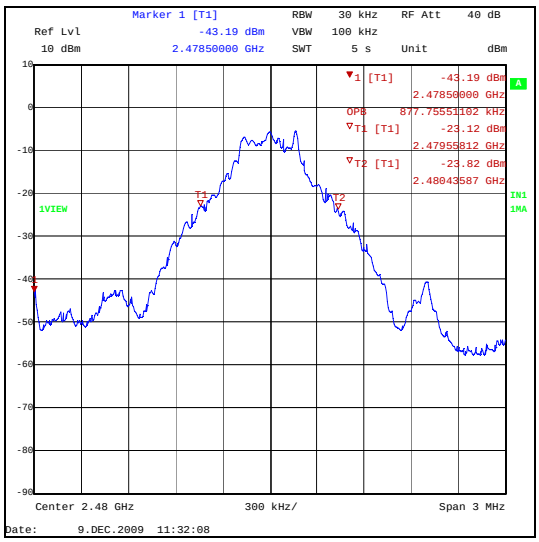
Transmitter -20 dBc Bandwidth (continued)



DH5 at bottom channel

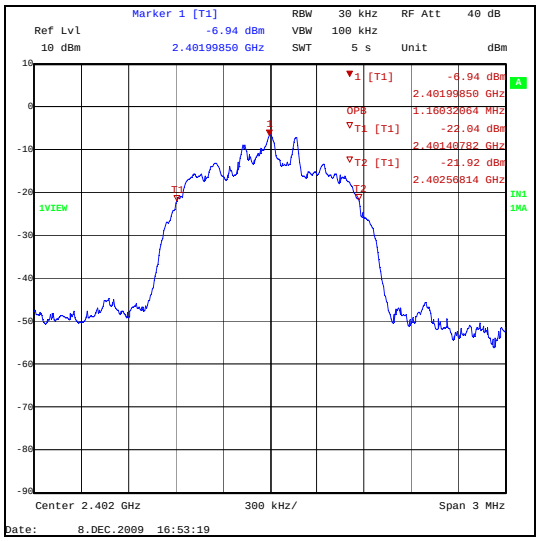


DH5 at Middle channel

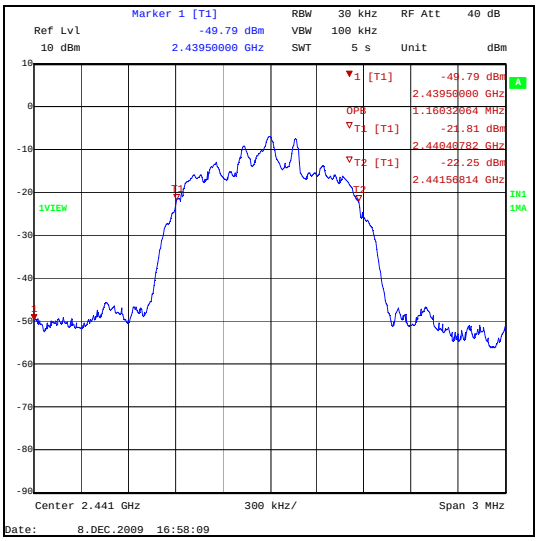


DH5 at Top channel

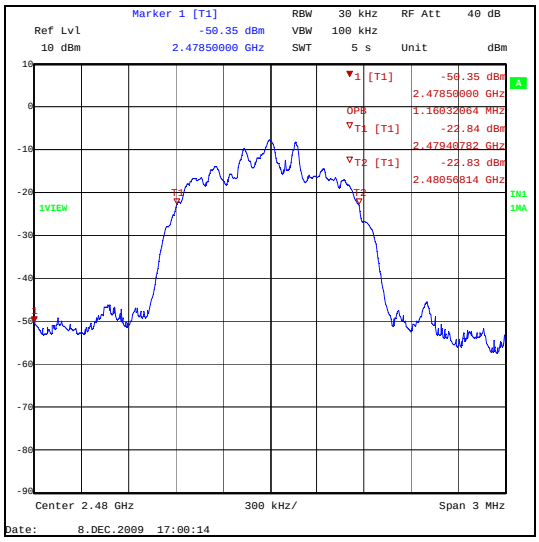
Transmitter -20 dBc Bandwidth (continued)



2DH5 bottom channel

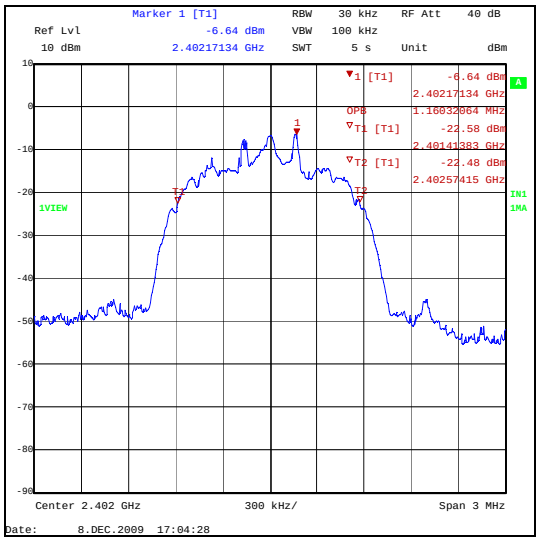


2DH5 middle channel

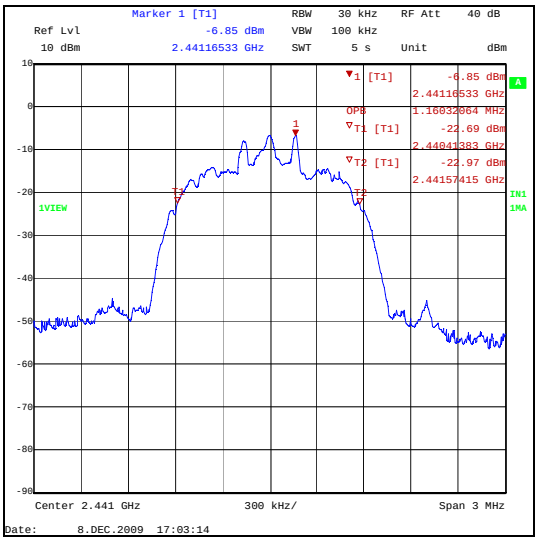


2DH5 Top Channel

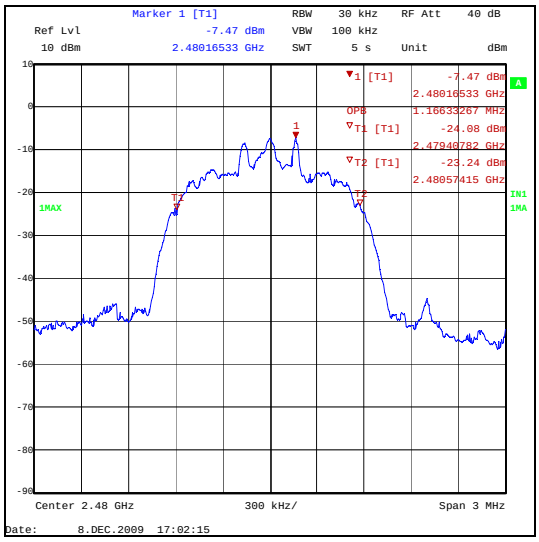
Transmitter -20 dBc Bandwidth (continued)



3DH5 bottom channel



3DH5 Middle channel



3DH5 Top Channel

5.2.5. Transmitter Carrier Frequency Separation

Test Summary:

FCC Part:	15.247(a)(1)
Test Method Used:	As detailed in Public Notice DA 00-705 (March 30, 2000)

Environmental Conditions:

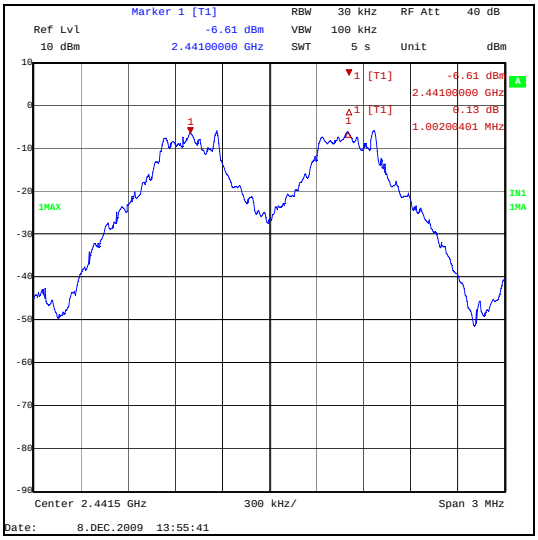
Temperature (°C):	26
Relative Humidity (%):	30

Results:

Transmitter Carrier Frequency Separation (kHz)	Limit ($^2/_3$ of 20 dB BW) (kHz)	Margin (kHz)	Result
1002.004	573.146	428.858	Complied

Note(s):

1. The 20 db bandwidth measured for the middle channel operating at 2441 was used to calculate the limit



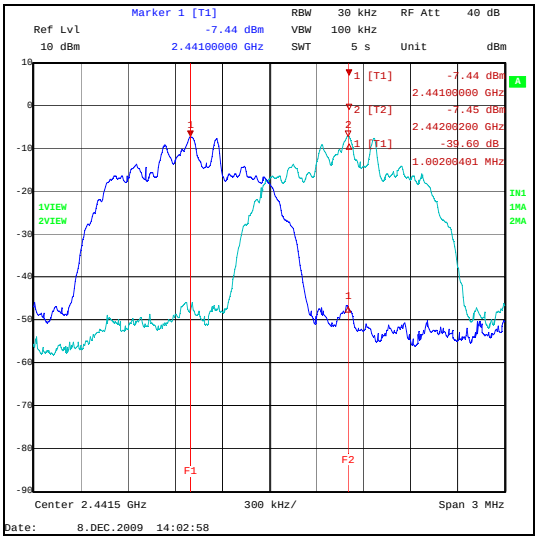
Transmitter Carrier Frequency Separation (continued)

Results: 2DH5

Transmitter Carrier Frequency Separation (kHz)	Limit ($^2/_3$ of 20 dB BW) (kHz)	Margin (kHz)	Result
1002.004	773.547	228.457	Complied

Note(s):

1. The 20 db bandwidth measured for the middle channel operating at 2441 was used to calculate the limit.



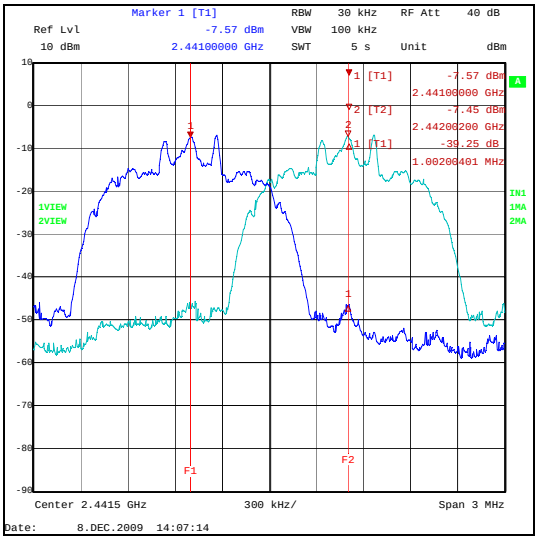
Transmitter Carrier Frequency Separation (continued)

Results: 3DH5

Transmitter Carrier Frequency Separation (kHz)	Limit ($^2/_3$ of 20 dB BW) (kHz)	Margin (kHz)	Result
1002.004	773.547	228.457	Complied

Note(s):

1. The 20 db bandwidth measured for the middle channel operating at 2441 was used to calculate the limit.



5.2.6. Transmitter Average Time of Occupancy

Test Summary:

FCC Part:	15.247(a)(1)(iii)
Test Method Used:	As detailed in Public Notice DA 00-705 (March 30, 2000)

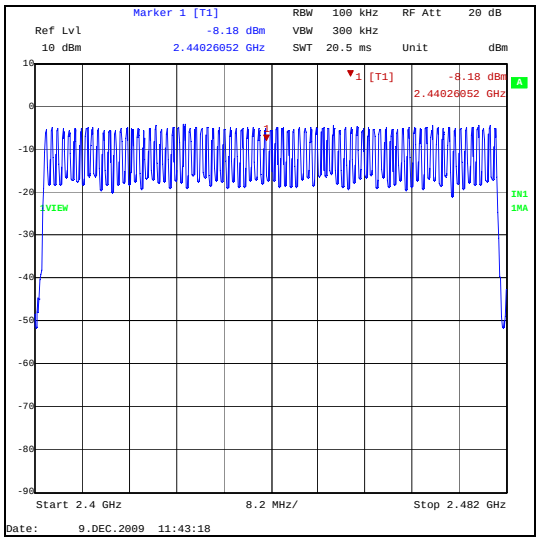
Environmental Conditions:

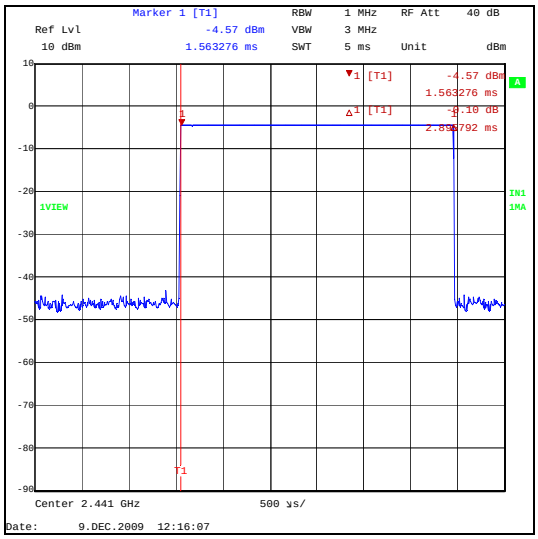
Temperature (°C):	26
Relative Humidity (%):	30

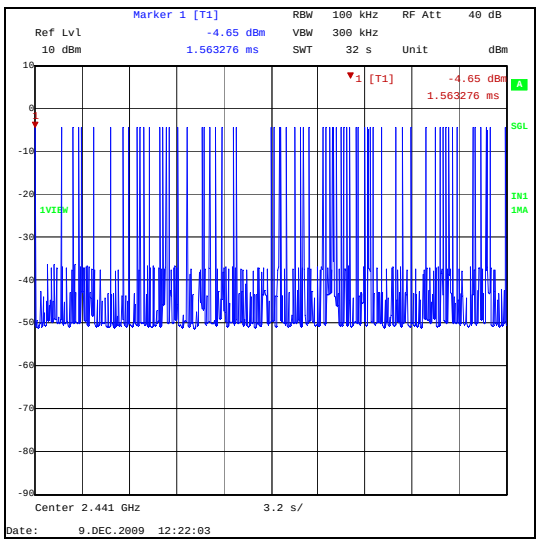
Results:

Emission Width (μs)	Number of Hops in 31.6 Seconds	Average Time of Occupancy (s)	Limit (s)	Margin (s)	Result
2895.792	69	0.200	0.4	0.2	Complied

Note(s):







5.2.7. Transmitter Maximum Peak Output Power (EIRP)

Test Summary:

FCC Part:	15.247(b)(3)
Test Method Used:	As detailed in Public Notice DA 00-705 (March 30, 2000), ANSI TIA-603-C-2004 and FCC CFR Part 2

Environmental Conditions:

Temperature (°C):	22
Relative Humidity (%):	34

DH5 Results: Battery Powered Devices

Channel	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	-1.0	30.0	31	Complied
Middle	-1.5	30.0	31.5	Complied
Top	-3.0	30.0	33	Complied

2DH5 Results: Battery Powered Devices

Channel	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	-3.6	20.0	23.6	Complied
Middle	-4.0	20.0	24.0	Complied
Top	-4.9	20.0	24.9	Complied

3DH5 Results: Battery Powered Devices

Channel	EIRP (dBm)	Limit (dBm)	Margin (dB)	Result
Bottom	-3.4	20.0	23.4	Complied
Middle	-4.1	20.0	24.1	Complied
Top	-4.8	20.0	24.8	Complied

Note(s):

1. These tests were performed radiated; therefore the EUT antenna gain is encompassed in the final result and not measurable.

5.2.8. Transmitter Radiated Emissions

Test Summary:

FCC Part:	15.247(d) & 15.209(a)
Test Method Used:	As detailed in ANSI C63.4 Section 8 and Public Notice DA 00-705 (March 30, 2000)
Frequency Range	30MHz to 1000MHz

Environmental Conditions:

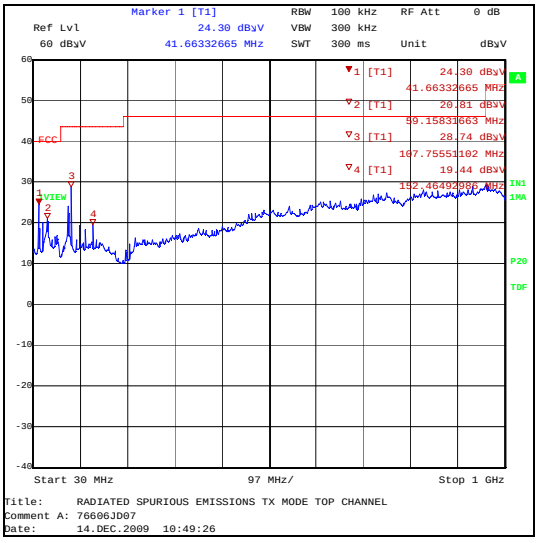
Temperature (°C):	23
Relative Humidity (%):	25

Results: Top Channel - Emissions Occurring in the Restricted Bands

Frequency (MHz)	Antenna Polarity	Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
44.097	Horizontal	21.2	40.0	18.8	Complied
107.574	Horizontal	27.4	40.0	12.6	Complied
153.301	Horizontal	23.5	43.0	19.5	Complied

Note(s):

1. The preliminary scans showed similar emission levels below 1 GHz, for each channel of operation. Therefore final radiated emissions measurements were performed with the EUT set to the top channel only.



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

5.2.9. Transmitter Radiated Emissions

Test Summary:

FCC Part:	15.247(d) & 15.209(a)
Test Method Used:	As detailed in ANSI C63.4 Section 8 and Public Notice DA 00-705 (March 30, 2000)
Frequency Range	1GHz to 26.5GHz

Environmental Conditions:

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

Results: Highest Peak Level

Frequency (GHz)	Antenna Polarity	Detector Level (dBµV)	Transducer Factor (dB)	Actual Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
259719.439	Vertical	95.39	37	58.39	74.0	15.61	Complied

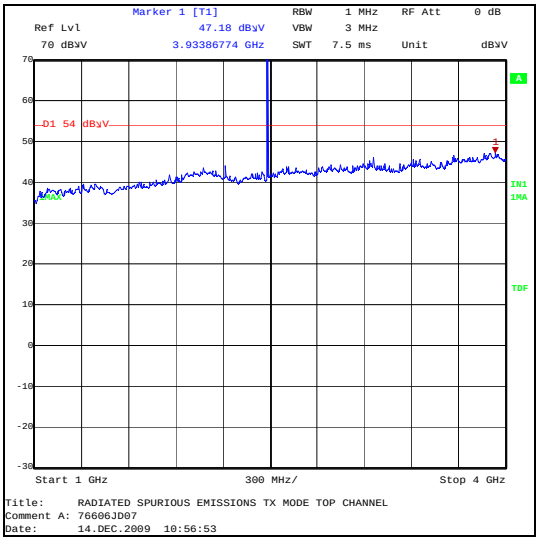
Results: Highest Average Level

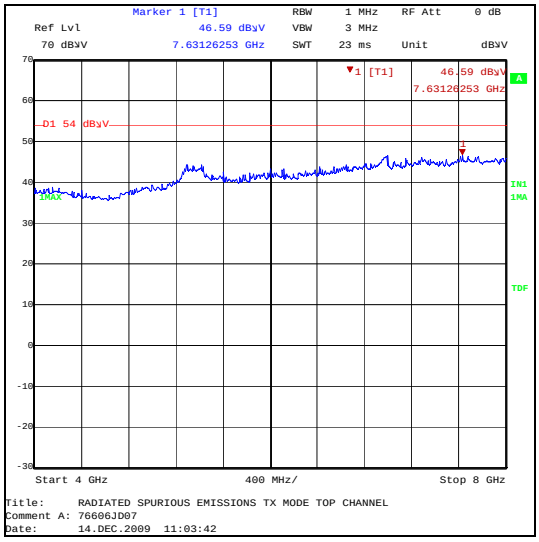
Frequency (GHz)	Antenna Polarity	Detector Level (dBµV)	Transducer Factor (dB)	Actual Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
259889.779	Vertical	83.62	37	46.62	54	7.38	Complied

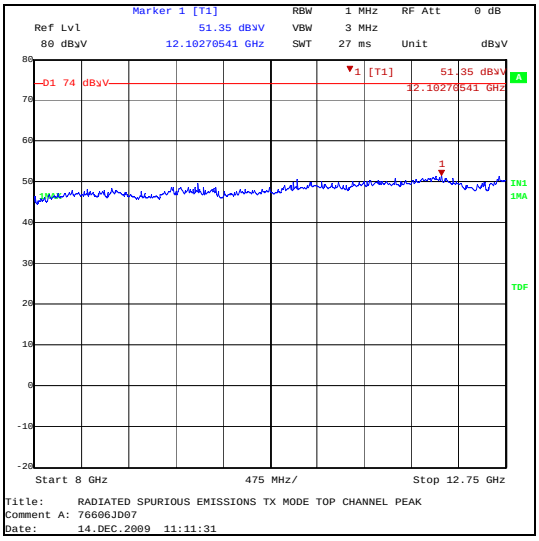
Note(s):

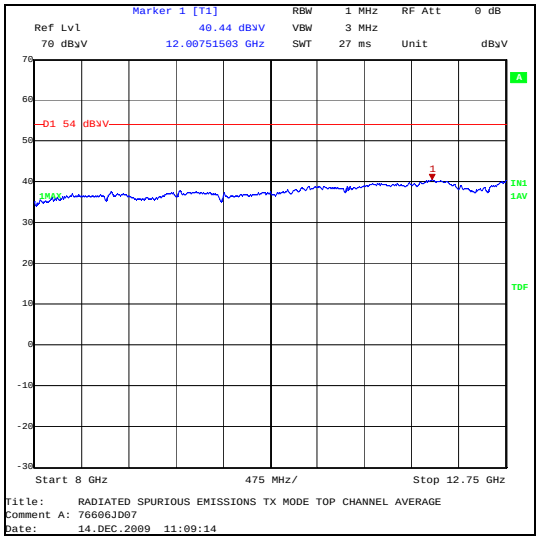
1. The preliminary scans showed similar emission levels below 1 GHz, for each channel of operation. Therefore final radiated emissions measurements were performed with the EUT set to the top channel only.

Transmitter Radiated Emissions (continued)



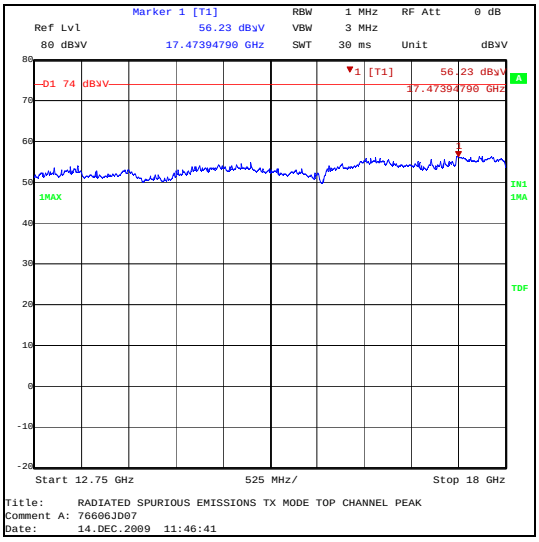


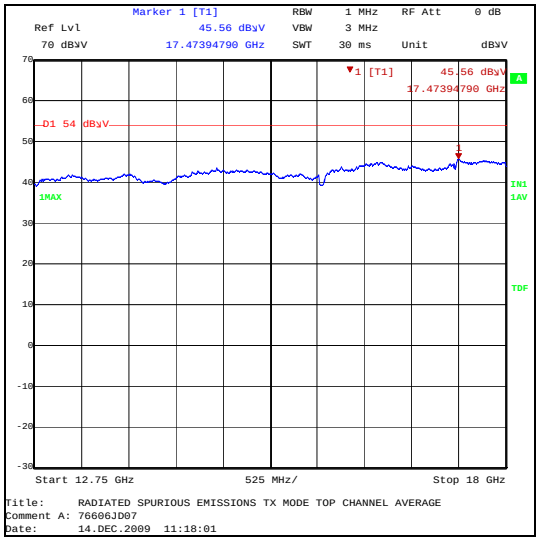


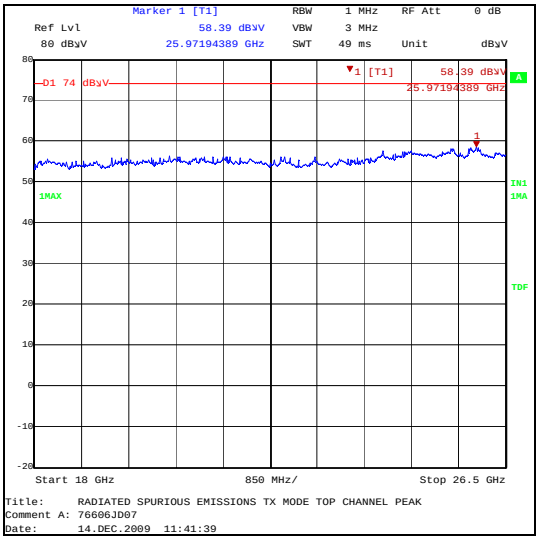


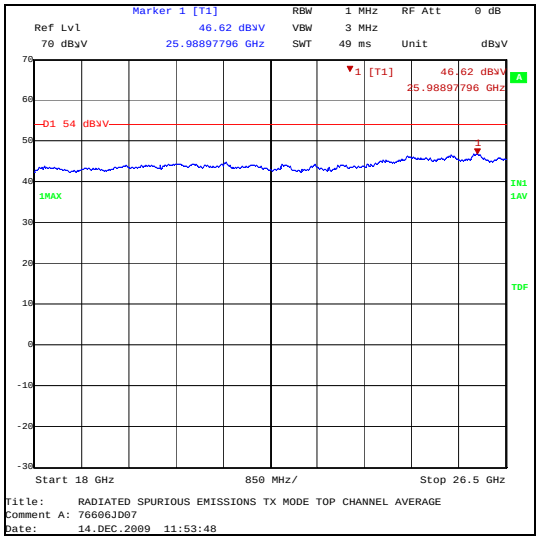
Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Transmitter Radiated Emissions (continued)









Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

5.2.10. Transmitter Band Edge Radiated Emissions

Test Summary:

FCC Part:	15.247(d) & 15.209(a)
Test Method Used:	As detailed in ANSI C63.4 Section 8 and Public Notice DA 00-705 (March 30, 2000)

Environmental Conditions:

Temperature (°C):	27
Relative Humidity (%):	31

Peak Power Level Hopping Mode DH5:

Frequency (MHz)	Antenna Polarity	Detector Level (dBµV)	Transducer Factor (dB)	Actual Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2400.0	Horizontal	53.8	-0.2	53.6	73.7*	19.9	Complied
2483.5	Horizontal	51.5	-0.3	51.2	74.0	22.8	Complied

Average Power Level Hopping Mode DH5

Frequency (MHz)	Antenna Polarity	Detector Level (dBµV)	Transducer Factor (dB)	Actual Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2483.5	Horizontal	32.6	-0.3	32.3	54.0	21.7	Complied

Peak Power Level Hopping Mode 2DH5:

Frequency (MHz)	Antenna Polarity	Detector Level (dBµV)	Transducer Factor (dB)	Actual Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2400.0	Horizontal	43.2	-0.2	43.0	73.8*	30.8	Complied
2483.5	Horizontal	56.4	-0.3	56.1	74.0	17.9	Complied

Average Power Level Hopping Mode 2DH5

Frequency (MHz)	Antenna Polarity	Detector Level (dBµV)	Transducer Factor (dB)	Actual Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2483.5	Horizontal	33.6	-0.3	33.3	54.0	20.7	Complied

Peak Power Level Hopping Mode DH5:

Frequency (MHz)	Antenna Polarity	Detector Level (dBµV)	Transducer Factor (dB)	Actual Level (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Result
2400.0	Horizontal	43.6	-0.2	43.4	70.0*	26.6	Complied
2483.5	Horizontal	54.2	-0.3	53.9	74.0	20.1	Complied

Transmitter Band Edge Radiated Emissions (continued)

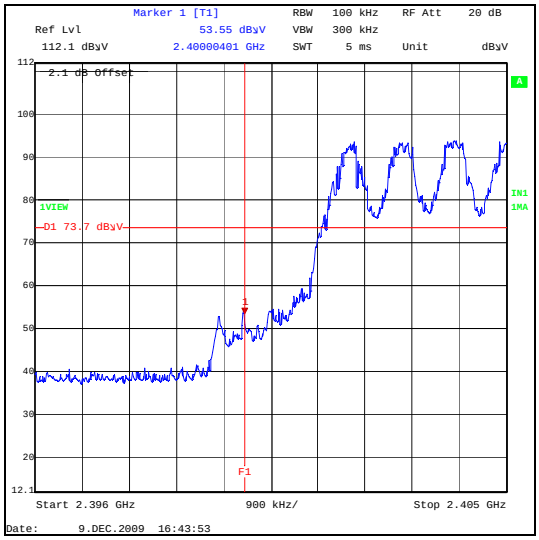
Average Power Level Hopping Mode DH5

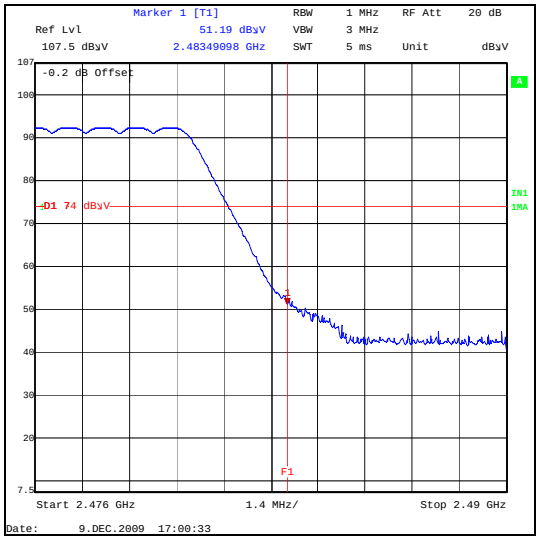
Frequency (MHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	30.1	-0.3	29.8	54.0	24.2	Complied

Note(s):

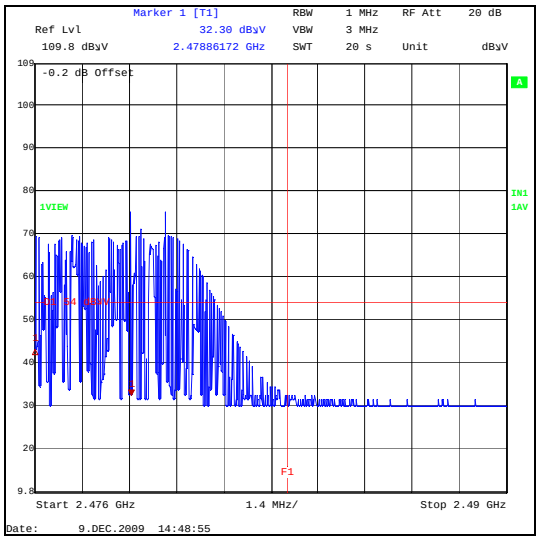
1. * -20 dBc limit

Transmitter Radiated Emissions (continued)



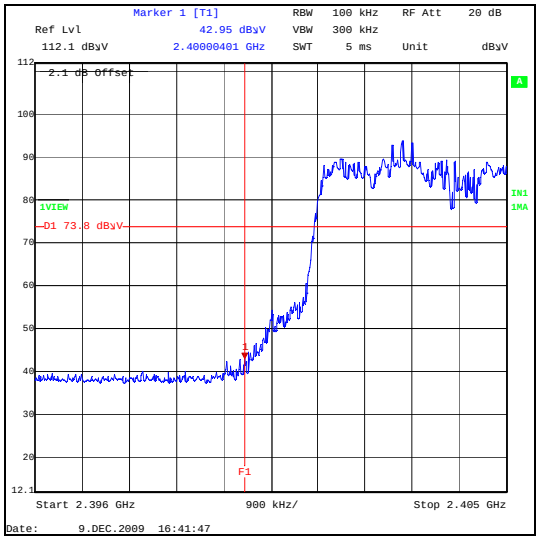


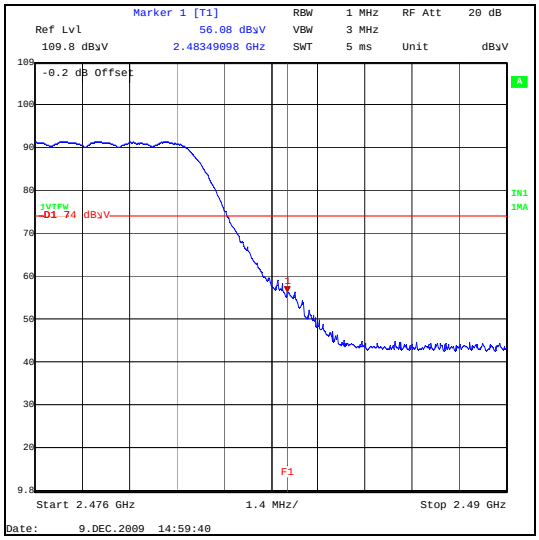
DH5 Hopping

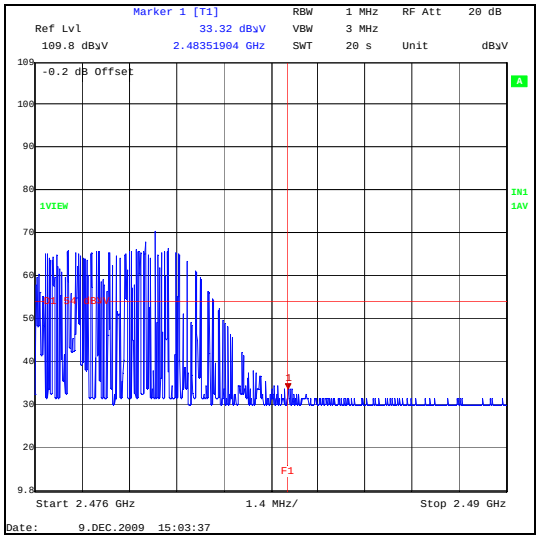


Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Transmitter Radiated Emissions (continued)



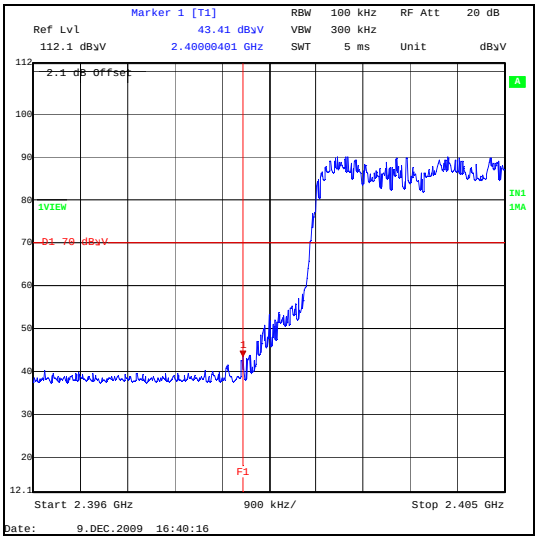


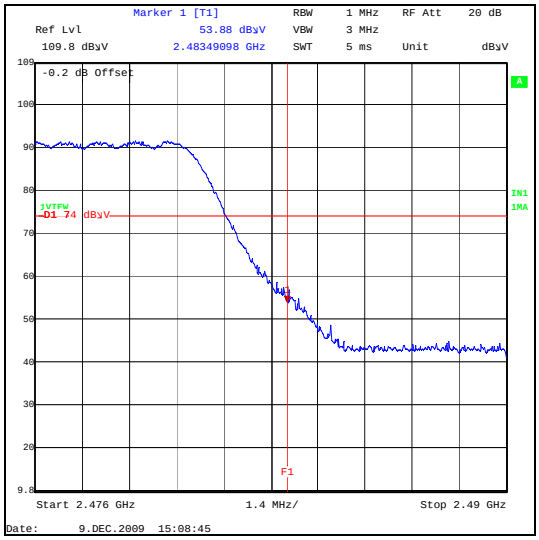


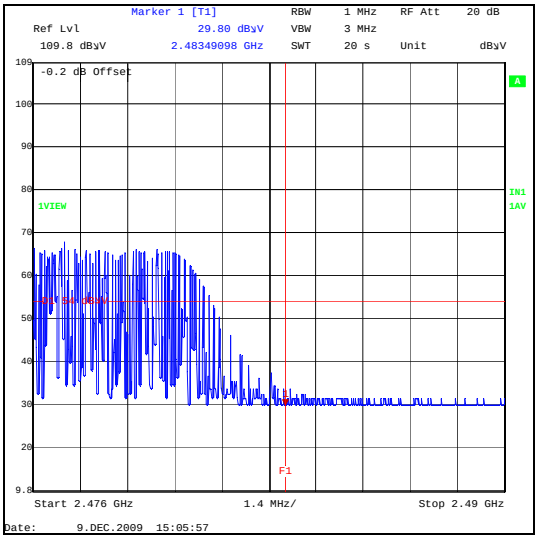
2DH5 Hopping

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Transmitter Radiated Emissions (continued)







3DH5 Hopping

Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Transmitter Radiated Emissions (continued)

Peak Power Level Static Mode DH5:

Frequency (MHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400.0	Horizontal	53.6	-0.2	53.4	74.3*	20.9	Complied
2483.5	Horizontal	54.3	-0.3	54	74.0	20.0	Complied

Average Power Level Static Mode DH5:

Frequency (MHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	39.6	-0.3	39.3	54.0	14.7	Complied

Peak Power Level Static Mode 2DH5:

Frequency (MHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400.0	Horizontal	46.5	-0.2	46.3	74.0*	27.7	Complied
2483.5	Horizontal	57.2	-0.3	57.9	74.0	16.1	Complied

Average Power Level Static Mode 2DH5:

Frequency (MHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	41.4	-0.3	41.1	54.0	12.9	Complied

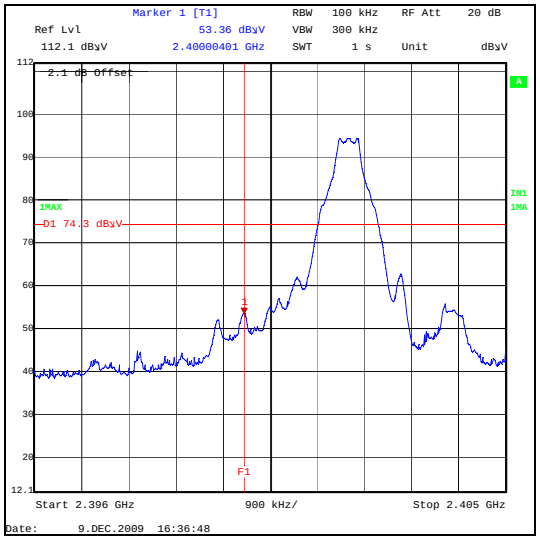
Peak Power Level Static Mode 3DH5:

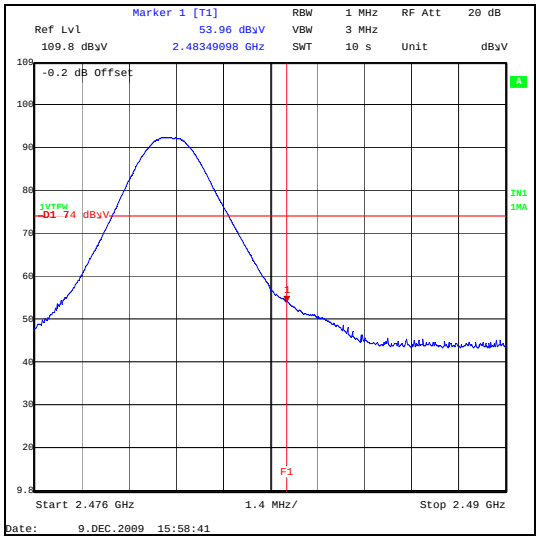
Frequency (MHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2400.0	Horizontal	46.9	-0.2	46.7	74.0*	27.3	Complied
2483.5	Horizontal	58.2	-0.3	57.9	74.0	16.1	Complied

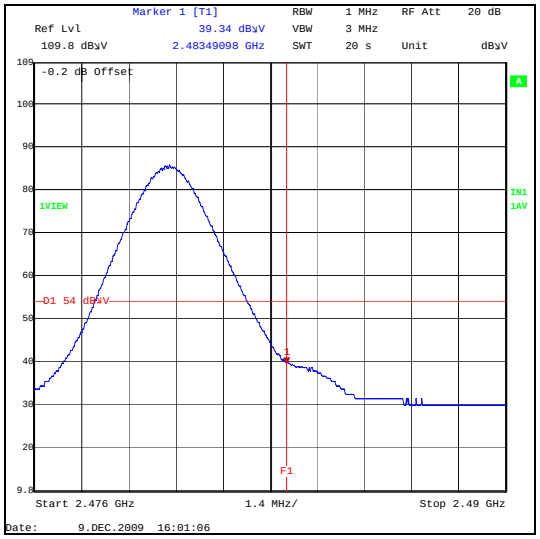
Average Power Level Static Mode 3DH5:

Frequency (MHz)	Antenna Polarity	Detector Level (dBμV)	Transducer Factor (dB)	Actual Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Result
2483.5	Horizontal	40.6	-0.3	40.3	54.0	13.7	Complied

Transmitter Radiated Emissions (continued)



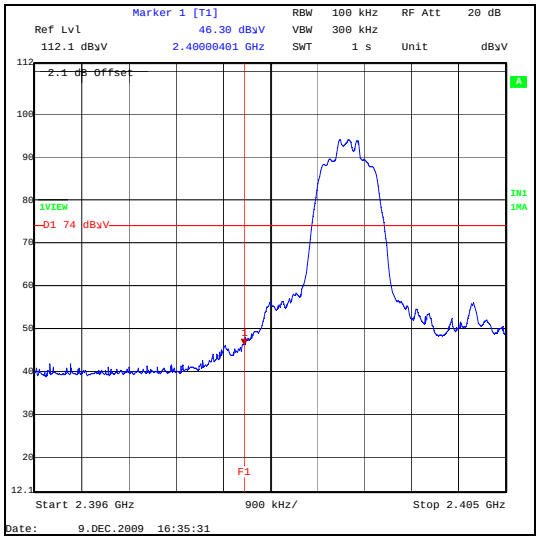


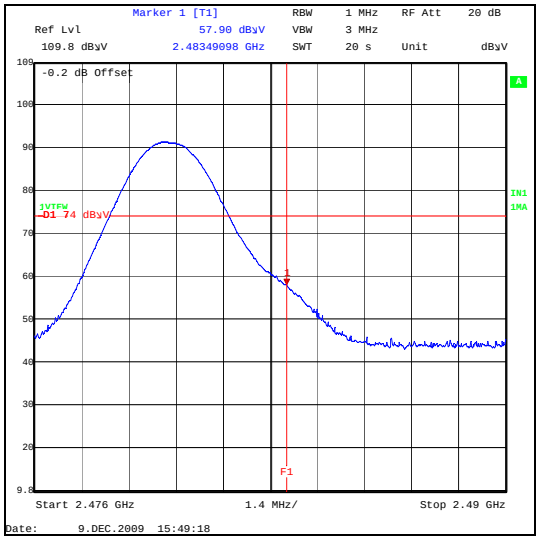


DH5 Static

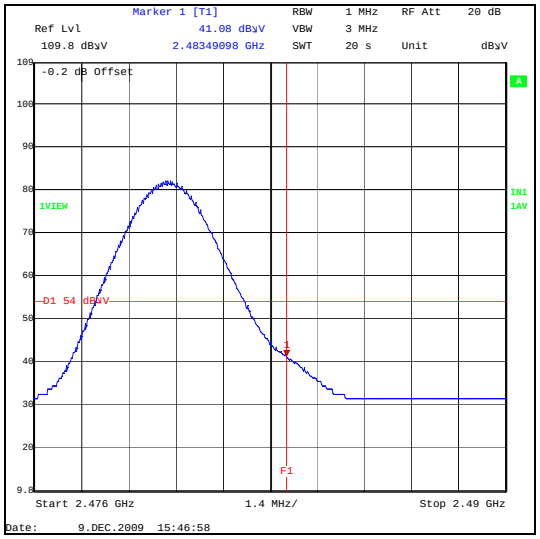
Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Transmitter Radiated Emissions (continued)



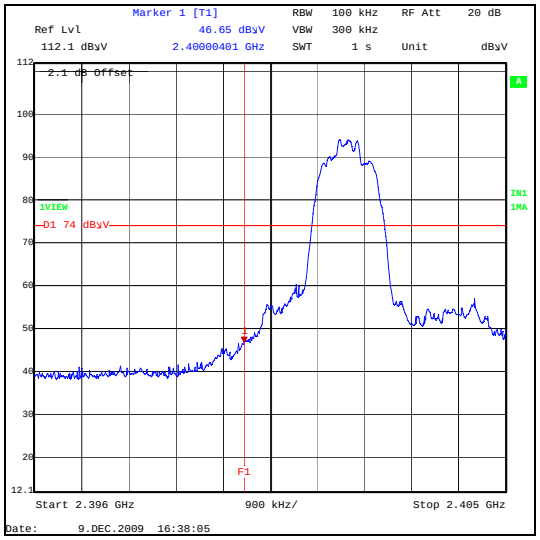


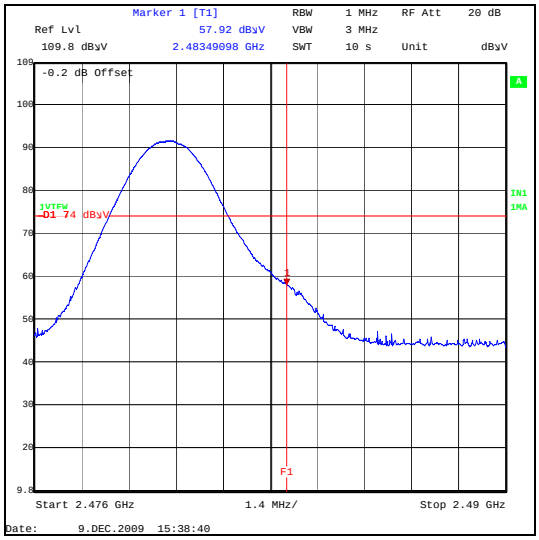
2DH5 Static



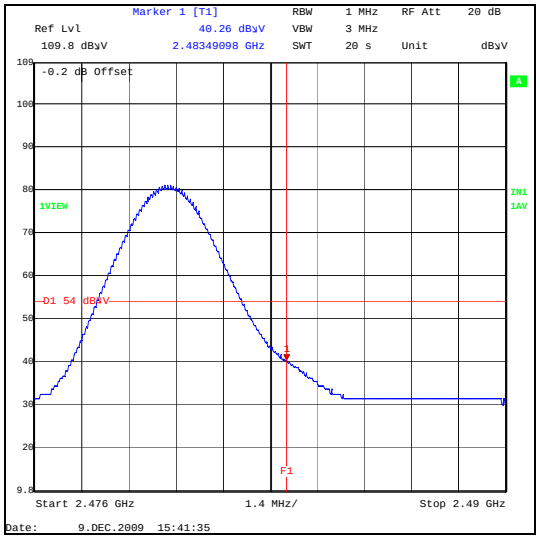
Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

Transmitter Radiated Emissions (continued)





3DH5 Static



Note: These plots are pre-scans and for indication purposes only. For final measurements, see accompanying tables.

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%	±3.72 dB
Transmitter Maximum Peak Output Power	Not Applicable	95%	±2.94 dB
Transmitter Carrier Frequency Separation	Not Applicable	95%	±0.92 ppm
Transmitter Average Time of Occupancy	Not Applicable	95%	±0.3 ns
20 dB Bandwidth	Not Applicable	95%	±11.4 ppm
Radiated Spurious Emissions	30 MHz to 1000 MHz	95%	±4.64 dB
Radiated Spurious Emissions	1 GHz to 40 GHz	95%	±2.94 dB
AC Conducted Spurious Emissions	0.15 MHz to 30 MHz	95%	±3.72 dB
Transmitter Fundamental Field Strength	30 MHz to 1000 MHz	95%	±4.64 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 Last Calibrated	Cal. Interval
A1396	Attenuator	HUBER + SUHNER AG	757987	6810.17.B	Calibrated before use	-
A1534	Pre Amplifier	Hewlett Packard	8449B OPT H02	3008A00405	Calibrated before use	-
A1830	Pulse Limiter	Rhode & Schwarz	ESH3-Z2	100668	05 Jan 2009	12
A1975	High Pass Filter	AtlanTecRF	AFH-03000	090424010	Calibrated before use	-
A288	Antenna	Chase	CBL6111A	1589	13 Mar 2009	12
A649	Single Phase LISN	Rohde & Schwarz	ESH3-Z5	825562/008	19 Mar 2009	12
C363	Cable	Rosenberger	RG142	None	29 Mar 2009	12
K0002	3m RSE Chamber	Rainford EMC	N/A	N/A	01 Sep 2009	12
K0004	Bench Test Site	RFI Global Services Ltd	N/A	N/A	Calibration not required	-
K0008	Site Reference 4422	RFI Global Services Ltd	N/A	N/A	Calibration not required	-
M1124	Spectrum Analyser	Rohde & Schwarz	ESIB26	100046K	09 Mar 2009	12
M1147	Power Sensor	Hewlett Packard	8485A	2238A00928	01 Sep 2009	12
M1239	N4010A	Agilent	N4010A	GB45140361	Calibration not required	-
M1263	Test Receiver	Rohde & Schwarz	ESIB7	100265	22 Apr 2009	12
M1379	Test Receiver	Rohde and Schwarz	ESIB7	100330	20 Aug 2009	12
M1447	Bluetooth Tester	Rohde and Schwarz	CBT	100329	19 Jan 2009	12
M208	Thermometer/Hygrometer	RS Components Ltd	RS212-124	M208-RS212-124	30 Apr 2009	12
S012	DC Power Supply Unit	INSTEK	PS-6010	9564304	Calibration not required	-
S013	HovAir Turntable	HovAir	None	None	Calibration not required	-

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