Report On

EMC Testing of the
Philips
CT9A9j

COMMERCIAL-IN-CONFIDENCE

FCC ID: RXXCT9A9J

Document 75902829 Report 02 Issue 2 March 2008

Product Service

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REPORT ON EMC Testing of the
Philips CT9A9j

Document 75902829 Report 02 Issue 2

March 2008

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Authorised Signatory

DATED 19 March 2008

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC CFR 47: Part 15 C. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

M Iqbal

This report has been up-issued to Issue 2 to correct the FCC ID.

UKAS TESTING 0141

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SECTION 1

REPORT SUMMARY

EMC Testing of the
Philips CT9A9j

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1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Philips CT9A9j to the requirements FCC Part 15C: 2006.

Objective	To perform Electromagnetic Compatibility (EMC) Qualification Approval Testing to determine the Equipment Under Test's (EUT's) compliance with the Test Specification, for the series of tests carried out.
Manufacturer	Philips
Model Number(s)	867000038409
Serial Number(s)	IMEI: 82380000118296 75902829_12 (IMEI UNKNOWN)
Software Version	64604
Hardware Version	PR3
FCC ID	RXXCT9A9J
Number of Samples Tested	Two
Test Specification/Issue/Date	FCC Part 15C: 2006
Incoming Release Date	Not Formally Released 11 January 2007
Disposal Reference Number Date	Packing Note 75902829 24 January 2008
Order Number Date	07/0000001670 20 December 2008
Start of Test	31 January 2008
Finish of Test	08 February 2008
Name of Engineer(s)	PJ Harrison M Iqbal
Related Document(s)	Part 15 2006

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1.2 BRIEF SUMMARY OF RESULTS

A brief summary of results for each configuration, in accordance with FCC Part 15C: 2006, is shown below.

Configuration 1 - Bluetooth				
Section	Spec Clause	Test Description	Mode	Result
2.1	15.247(d)	Conducted Emissions	1, 2 & 3	Pass
2.2	15.209, 15.247(d), 15.205	Radiated Emissions (Enclosure Port)	1, 2 & 3	Pass
2.3	15.247(a)(1)	20dB Bandwidth	1, 2 & 3	Pass
2.4	15.247(a)(1)(iii)	Channel Dwell Time (DH1)	2	Pass
2.5	15.247(a)(1)(iii)	Channel Dwell Time (DH3)	2	Pass
2.6	15.247(a)(1)(iii)	Channel Dwell Time (DH5)	2	Pass
2.7	15.247(a)(1)	Channel Separation	4	Pass
2.8	15.247(a)(1)(iii)	Number of Hopping Channels	4	Pass
2.9	15.247(b)(1)	Maximum Peak Output Power	1, 2 & 3	Pass

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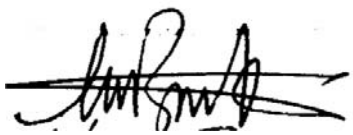
1.3 DECLARATION OF BUILD STATUS

MAIN EUT			
MANUFACTURING DESCRIPTION	Cellular Mobile Phone		
MANUFACTURER	Phillips		
TYPE	Cellular Mobile Phone		
PART NUMBER	867000038409		
SERIAL NUMBER			
HARDWARE VERSION	PR3		
SOFTWARE VERSION	64604		
TRANSMITTER OPERATING RANGE	Part 22(824.2-848.8 MHz) Part 24 (1850.2-1909.8 MHz)		
RECEIVER OPERATING RANGE	Part 22(869.2-893.8 MHz) Part 24 (1930.2-1989.8 MHz)		
COUNTRY OF ORIGIN	China		
INTERMEDIATE FREQUENCIES	Direct conversion		
ITU DESIGNATION OF EMISSION	300KGXW		
HIGHEST INTERNALLY GENERATED FREQUENCY			
OUTPUT POWER (W or dBm)	32dBm		
FCC ID	RXXCT9A9J		
INDUSTRY CANADA ID	Not Applicable		
TECHNICAL DESCRIPTION (a brief description of the intended use and operation)			
BATTERY/POWER SUPPLY			
MANUFACTURING DESCRIPTION	Battery		
MANUFACTURER	XWODA		
TYPE	Lithium Ion		
PART NUMBER	AB0950AWM		
VOLTAGE	3.7V		
COUNTRY OF ORIGIN	China		
MODULES (if applicable)			
MANUFACTURING DESCRIPTION			
MANUFACTURER			
TYPE			
POWER			
FCC ID			
COUNTRY OF ORIGIN			
INDUSTRY CANADA ID			
EMISSION DESIGNATOR			
DHSS/FHSS/COMBINED OR OTHER			
ANCILLARIES (if applicable)			
MANUFACTURING DESCRIPTION			
MANUFACTURER			
TYPE			
PART NUMBER			
SERIAL NUMBER			
COUNTRY OF ORIGIN			

Signature 

Date

Product Service

1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) was a Philips CT9A9j Cellular Mobile Phone as shown in the photograph below. A full technical description can be found in the Manufacturers documentation.

Equipment Under Test

Product Service

1.4.2 Test Configuration

Configuration 1: Bluetooth

The EUT was configured in accordance with FCC Part 15C: 2006.

1.4.3 Modes of Operation

Modes of operation of each EUT during testing were as follows:

Mode 1 - 2402MHz Tx

Mode 2 - 2441MHz Tx

Mode 3 - 2480MHz Tx

Mode 4 - Hopping on all channels

Information on the specific test modes utilised are detailed in the test procedure for each individual test.

Product Service

1.5 TEST CONDITIONS

For all tests the EUT was set up in accordance with the relevant test standard and to represent typical operating conditions. Tests were applied with the EUT situated in a shielded enclosure, test laboratories or an open test area as appropriate.

The EUT was powered from a battery supply.

1.6 DEVIATIONS FROM THE STANDARD

No deviations from the applicable test standards or test plan were made during testing.

1.7 MODIFICATION RECORD

No modifications were made to the EUT during testing.

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SECTION 2

TEST DETAILS

EMC Testing of the
Philips CT9A9j

Product Service

2.1 SPURIOUS CONDUCTED EMISSIONS

2.1.1 Specification Reference

FCC Part 15C: 2006, Clause 15.247(d)

2.1.2 Equipment Under Test

CT9A9j, S/N: 75902829_12

2.1.3 Date of Test

01 February 2008

2.1.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.1.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of Part 15: 2006.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1
- Mode 2
- Mode 3

2.1.6 Environmental Conditions

	01 February 2008
Ambient Temperature	23.9°C
Relative Humidity	21.5%

Product Service

2.1.7 Test Procedure

In accordance with Part 15.247(d), the Spurious Conducted Emissions from the antenna terminal were measured. The transmitter output power was attenuated using a combination of filters and attenuators and the frequency spectrum investigated from 9kHz to 25 GHz. The EUT was set to transmit on full power and frequency hopping on all channels. The resolution and video bandwidths were set to 100kHz in accordance with Part 15.247. The spectrum analyser detector was set to Max Hold.

With the EUT transmitting at maximum power, the Spectrum Analyser was set to Max Hold and the fundamental peak measured in a RBW and VBW of 100kHz. This level was used to determine the limit line as displayed on the plots of -20dBc.

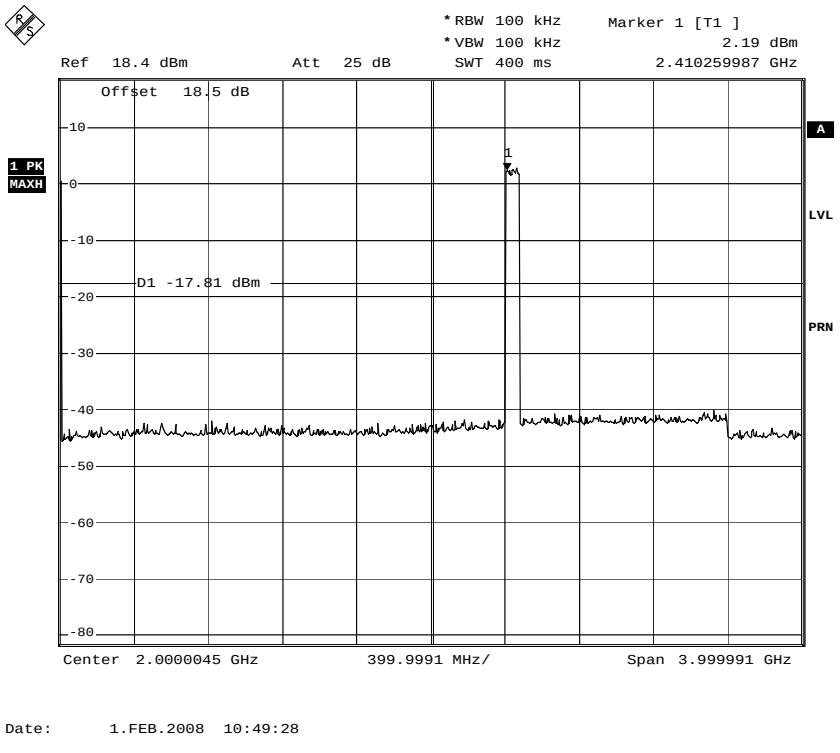
The maximum path loss across each measurement band was used as the reference level offset to ensure worst case results.

2.1.8 Test Results

For the period of test the EUT met the requirements of FCC Part 15C: 2006 for Spurious Conducted Emissions.

The test results are shown below.

Spurious Conducted Emissions (9kHz – 4GHz)
Frequency Hopping On All Channels – Maximum Power DH1



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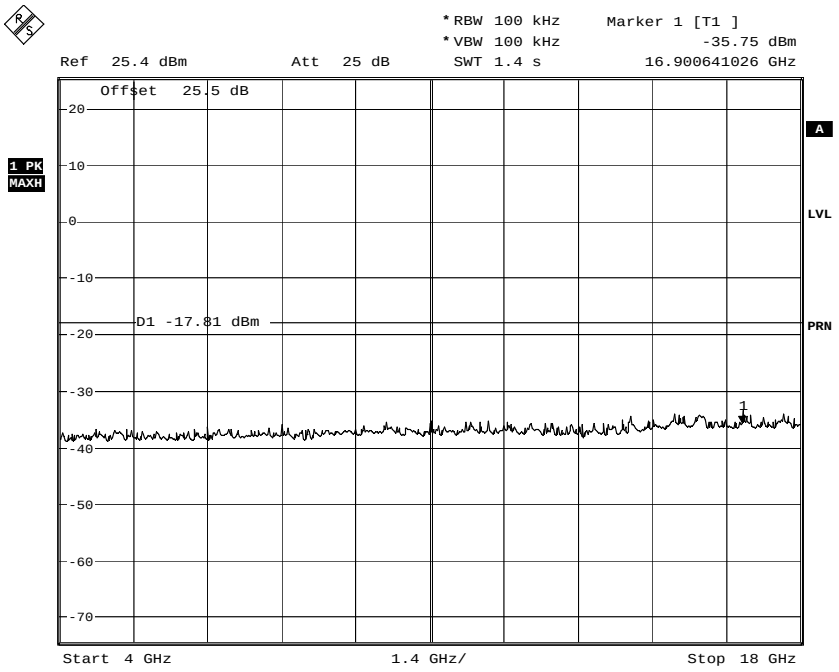
Spurious Conducted Emissions (4GHz – 18GHz)
Frequency Hopping On All Channels – Maximum Power DH1



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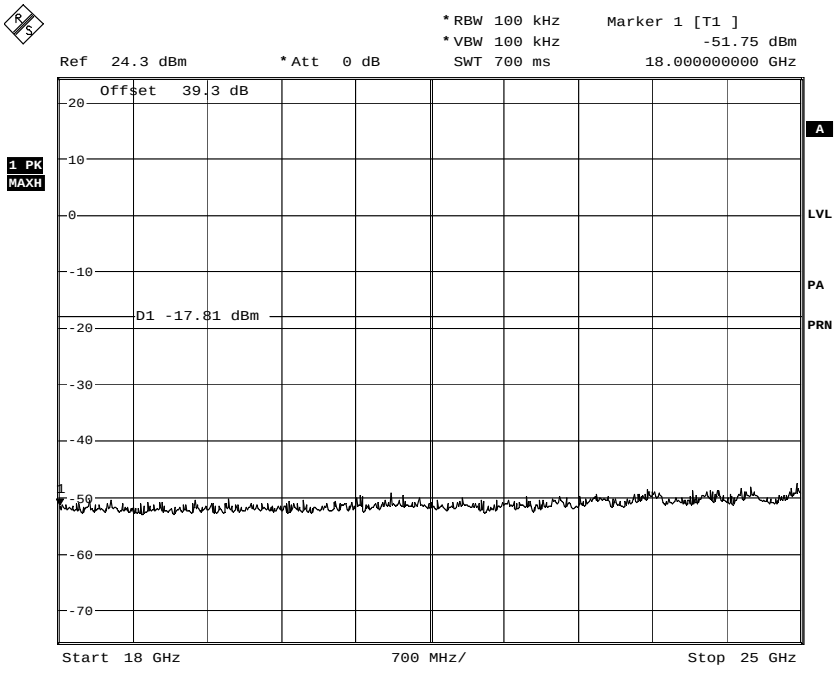
Spurious Conducted Emissions (18GHz – 25GHz)
Frequency Hopping On All Channels – Maximum Power DH1



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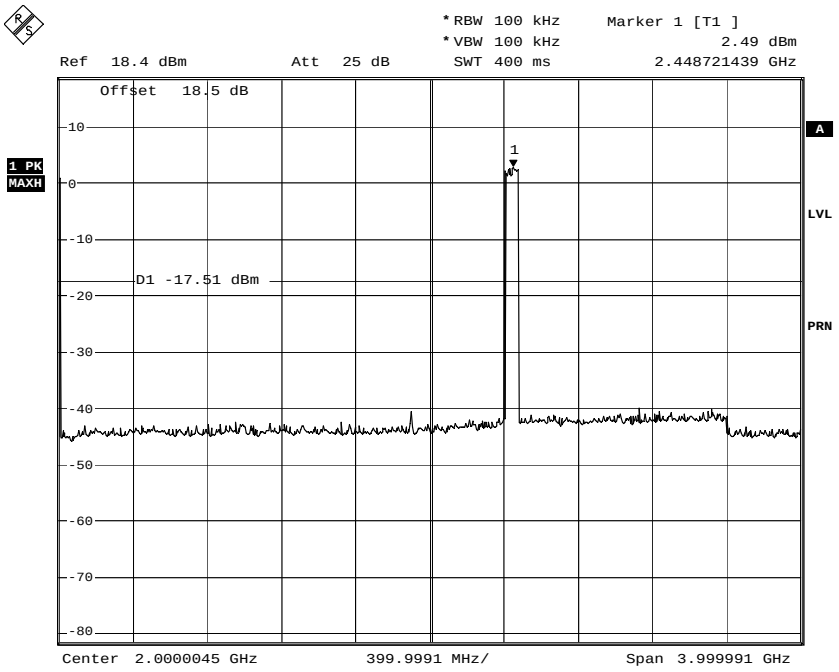
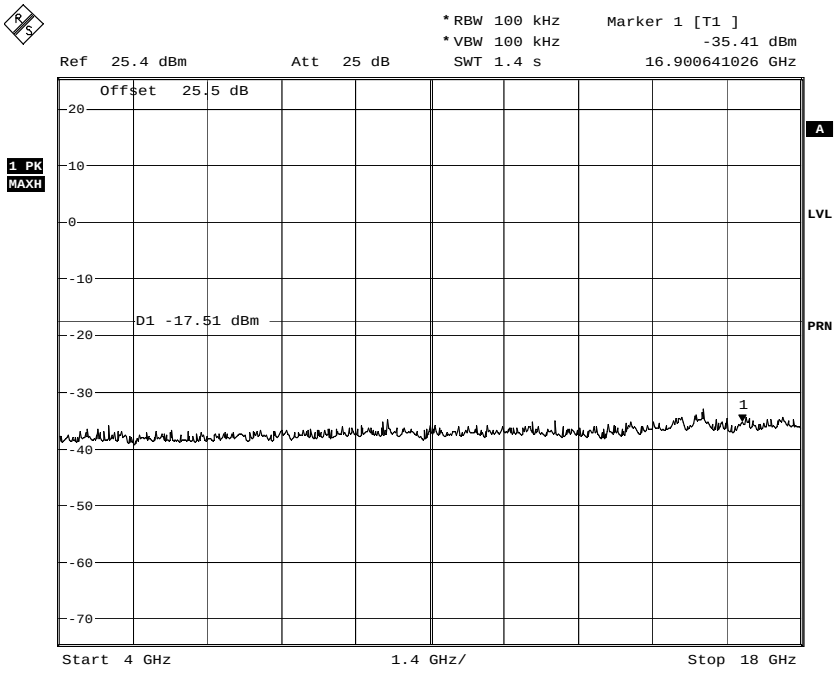
Product Service

Spurious Conducted Emissions (9kHz – 4GHz)
Frequency Hopping On All Channels – Maximum Power DH3



Date: 1.FEB.2008 10:53:00

Spurious Conducted Emissions (4GHz – 18GHz)
Frequency Hopping On All Channels – Maximum Power DH3



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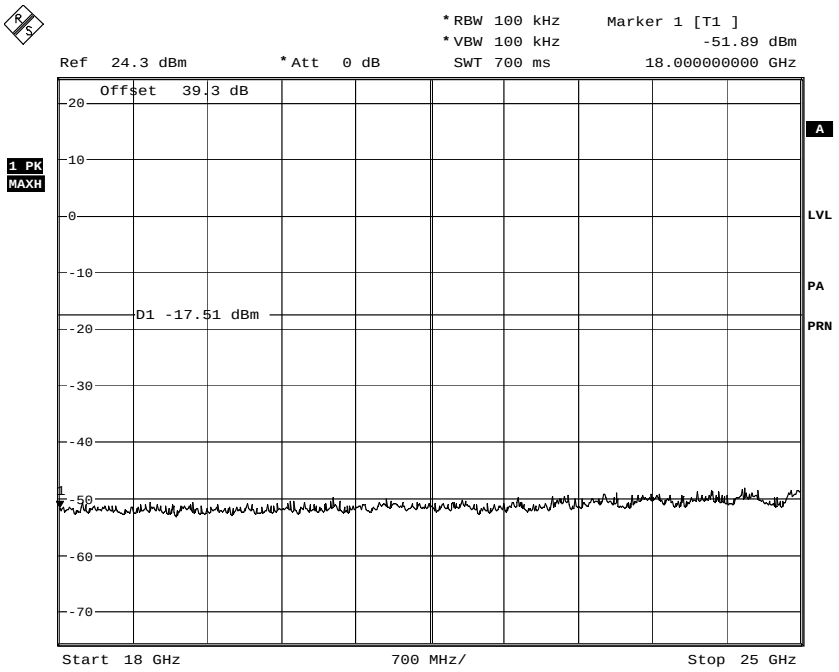
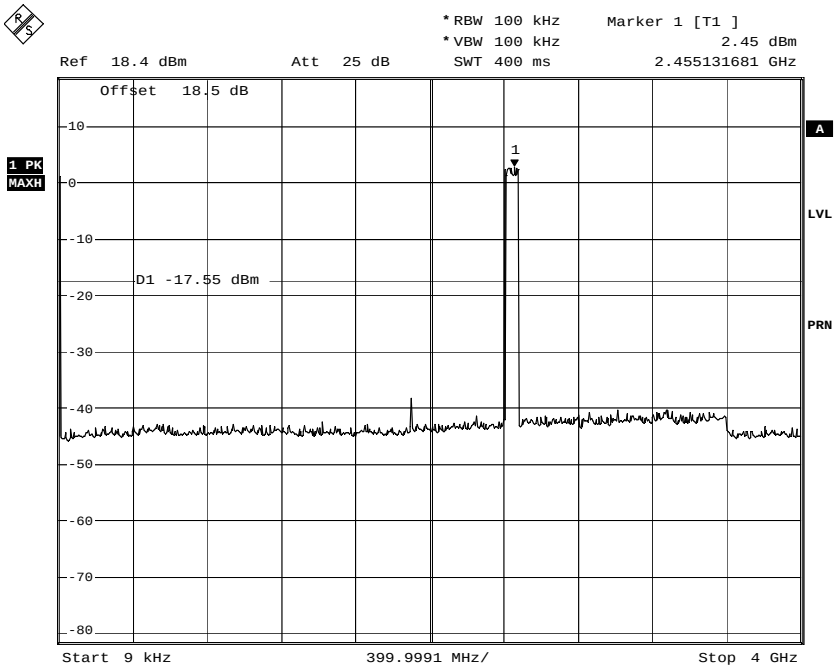
Product Service

Spurious Conducted Emissions (18GHz – 25GHz)
Frequency Hopping On All Channels – Maximum Power DH3



Date: 1.FEB.2008 11:25:28

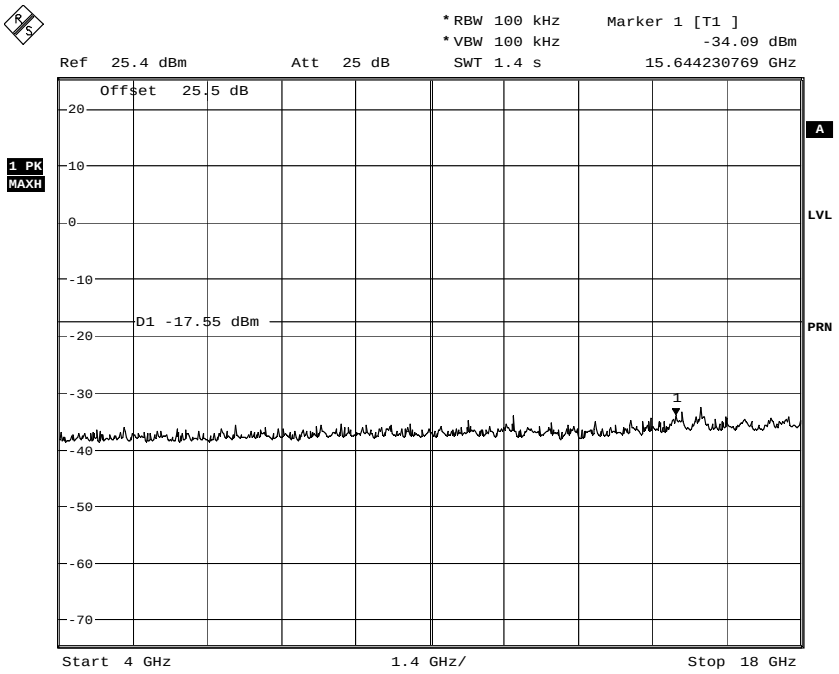
Spurious Conducted Emissions (9kHz – 4GHz)
Frequency Hopping On All Channels – Maximum Power DH5



Date: 1.FEB.2008 10:55:40

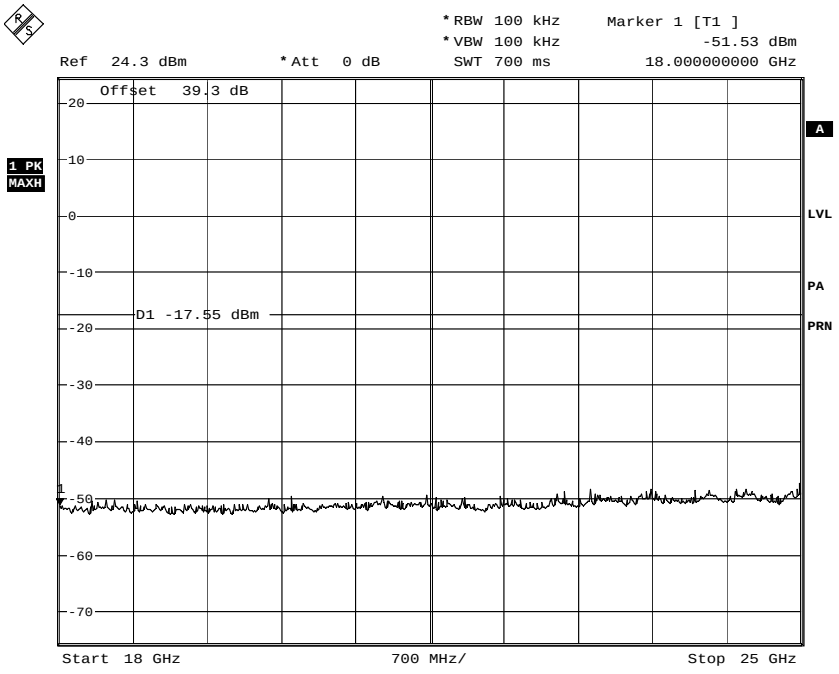
Product Service

Spurious Conducted Emissions (4GHz – 18GHz)
Frequency Hopping On All Channels – Maximum Power DH5



Date: 1.FEB.2008 11:16:56

Spurious Conducted Emissions (18GHz – 25GHz)
Frequency Hopping On All Channels – Maximum Power DH5



Date: 1.FEB.2008 11:22:36

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2.2 RADIATED EMISSIONS (ENCLOSURE PORT)

2.2.1 Specification Reference

FCC Part 15C: 2006, Clause 15.209, 15.247(d), 15.205

2.2.2 Equipment Under Test

CT9A9j, S/N: IMEI: 82380000118296

2.2.3 Date of Test

08 February 2008

2.2.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.2.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of Part 15: 2006.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1
- Mode 2
- Mode 3

2.2.6 Environmental Conditions

	08 February 2008
Ambient Temperature	19.2°C
Relative Humidity	34%
Atmospheric Pressure	1025mbar

Product Service

2.2.7 Test Results

For the period of test the EUT met the requirements of FCC Part 15C: 2006 for Radiated Emissions (Enclosure Port).

The test results are shown below.

Configuration 1 - Mode 1

No emissions were detected. Therefore no plot is presented.

Configuration 1 - Mode 2

No emissions were detected. Therefore no plot is presented.

Configuration 1 - Mode 3

No emissions were detected. Therefore no plot is presented.

Product Service

2.3 20DB BANDWIDTH

2.3.1 Specification Reference

FCC Part 15C: 2006, Clause 15.247(a)(1)

2.3.2 Equipment Under Test

CT9A9j, S/N: 75902829_12

2.3.3 Date of Test

04 February 2008

2.3.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.3.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of Part 15: 2006.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1
- Mode 2
- Mode 3

2.3.6 Environmental Conditions

	04 February 2008
Ambient Temperature	23.7°C
Relative Humidity	25.1%

Product Service

2.3.7 Test Results

For the period of test the EUT met the requirements of FCC Part 15C: 2006 for 20dB Bandwidth.

The test results are shown below.

Configuration 1 - Mode 1

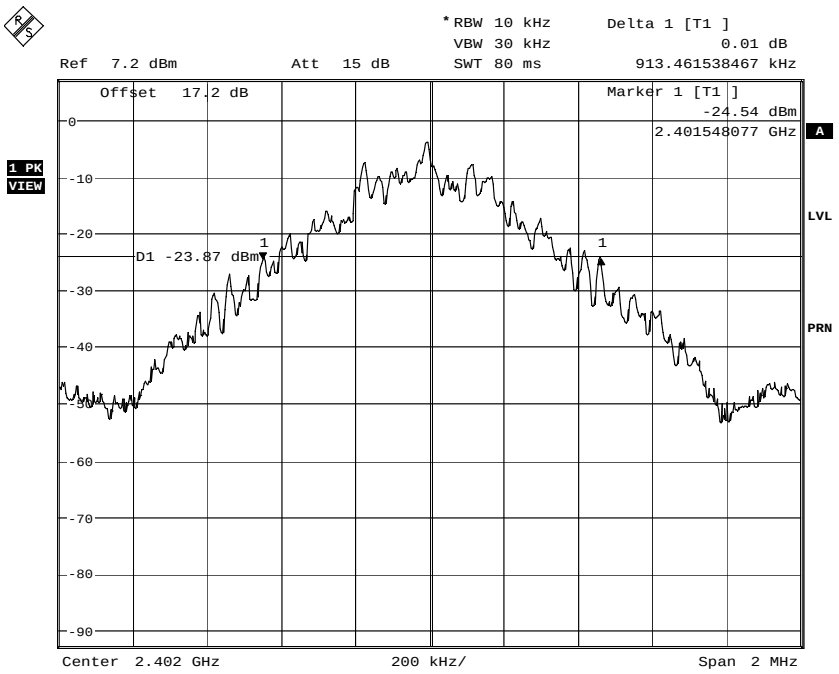
Frequency (MHz)	Data Rate (Mbps)	20dB Bandwidth (kHz)
2402	DH1	913
2441	DH1	913
2480	DH1	913

Frequency (MHz)	Data Rate (Mbps)	20dB Bandwidth (kHz)
2402	DH3	923
2441	DH3	923
2480	DH3	923

Frequency (MHz)	Data Rate (Mbps)	20dB Bandwidth (kHz)
2402	DH5	923
2441	DH5	923
2480	DH5	923

Product Service

2402.0MHz – Maximum Power DH1



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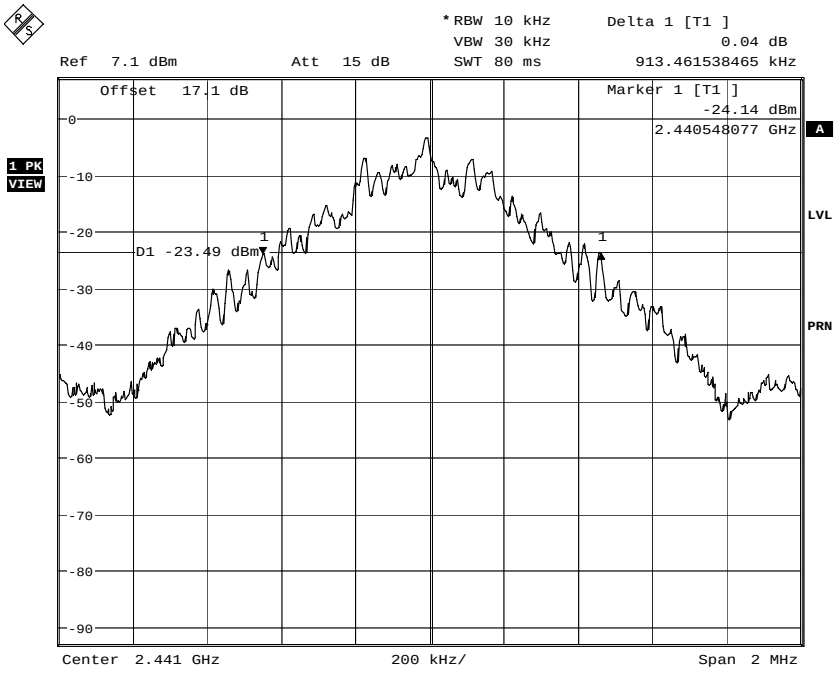
2441.0MHz – Maximum Power DH1



Date: 4.FEB.2008 11:40:26

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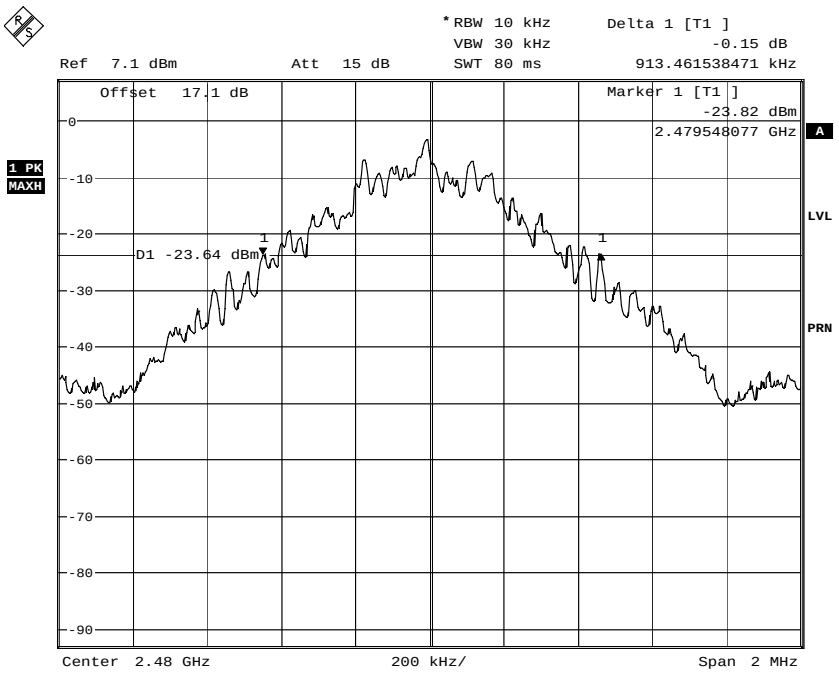
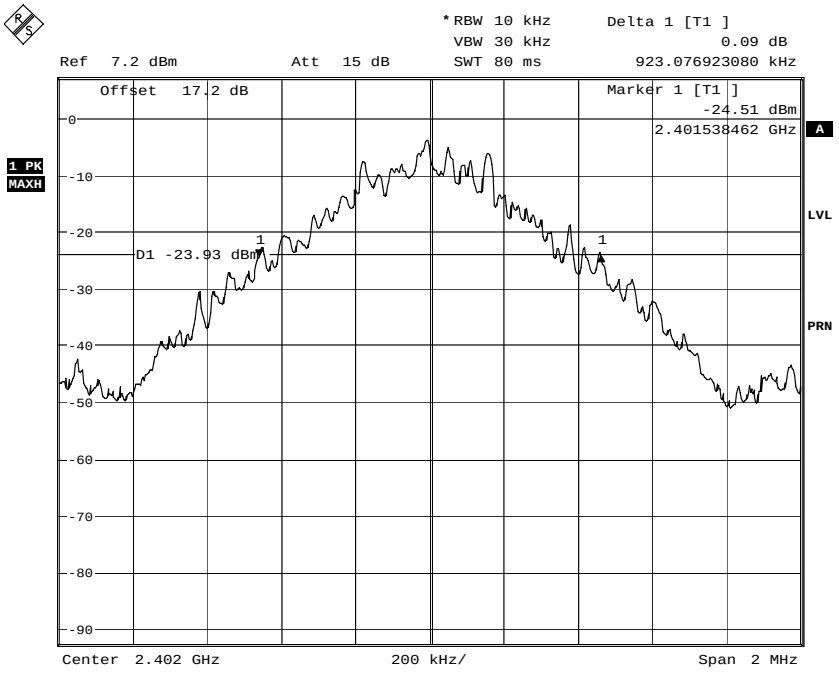
2480.0MHz – Maximum Power DH1



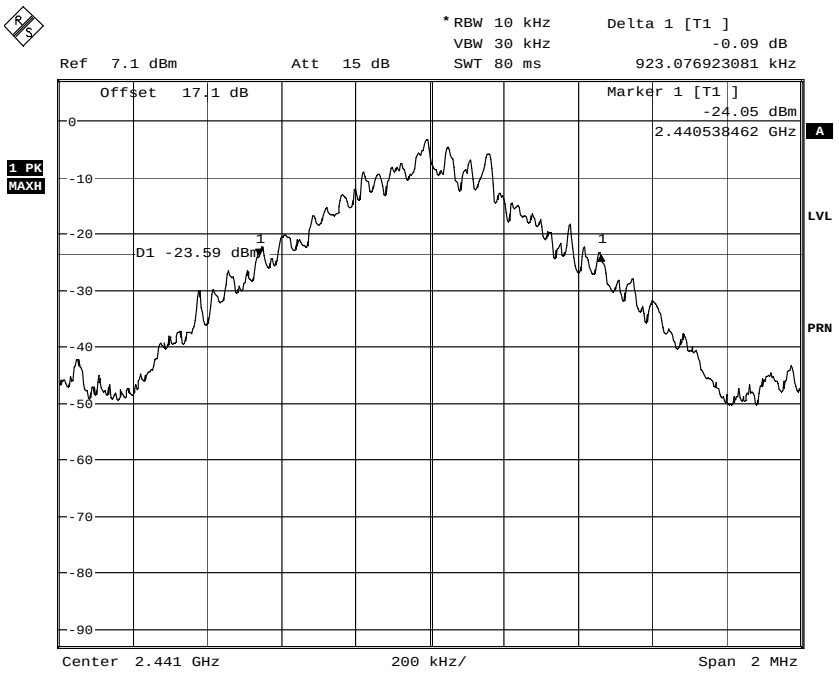
Date: 4.FEB.2008 11:37:04

2402.0MHz – Maximum Power DH3



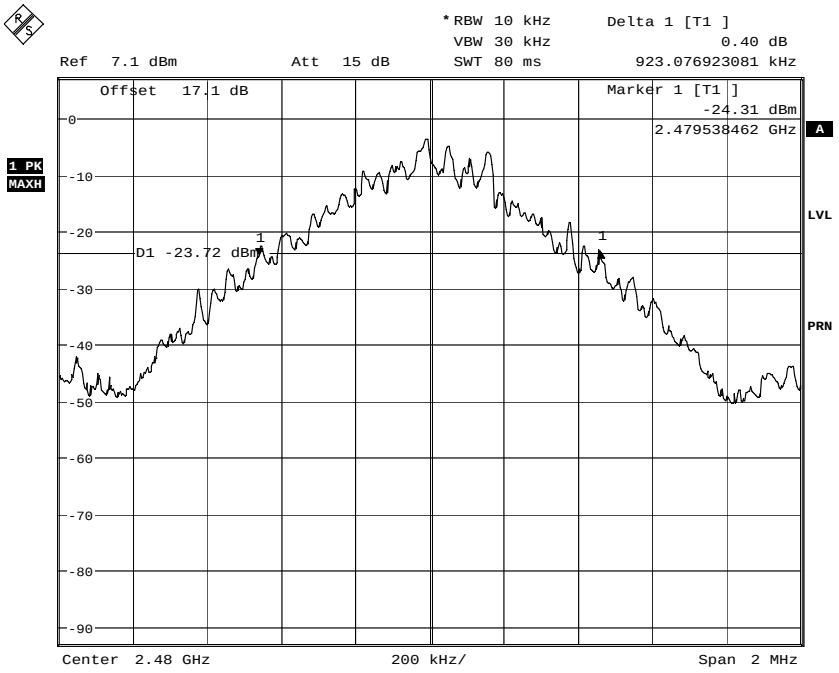
Date: 4.FEB.2008 11:18:09

2441.0MHz – Maximum Power DH3



Date: 4.FEB.2008 11:19:41

2480.0MHz – Maximum Power DH3



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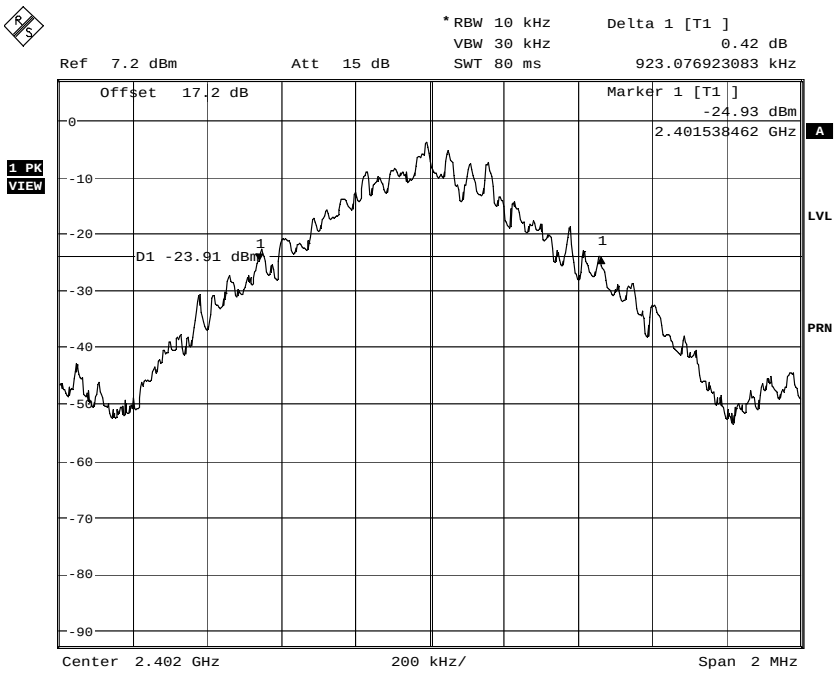
2402.0MHz – Maximum Power DH5



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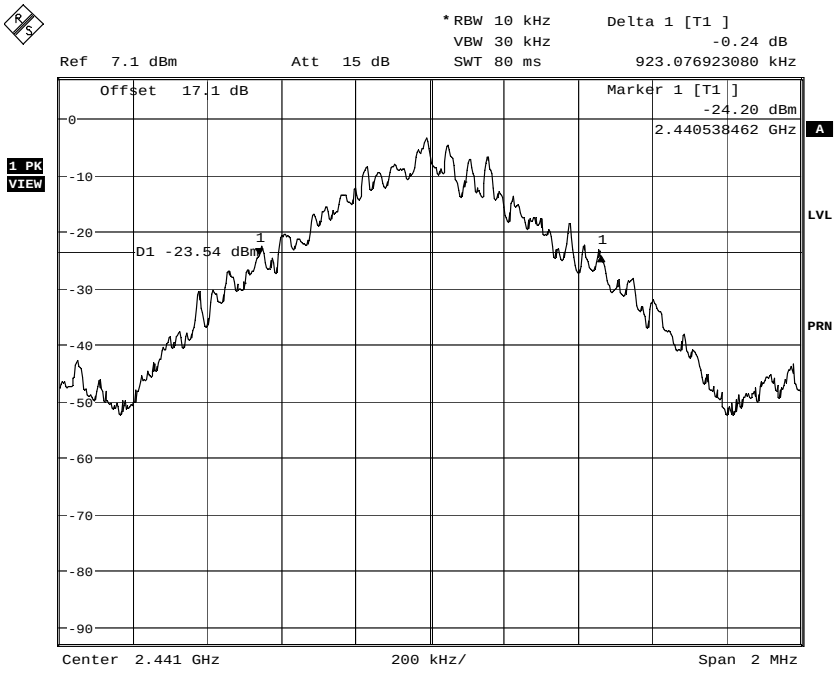
2441.0MHz – Maximum Power DH5



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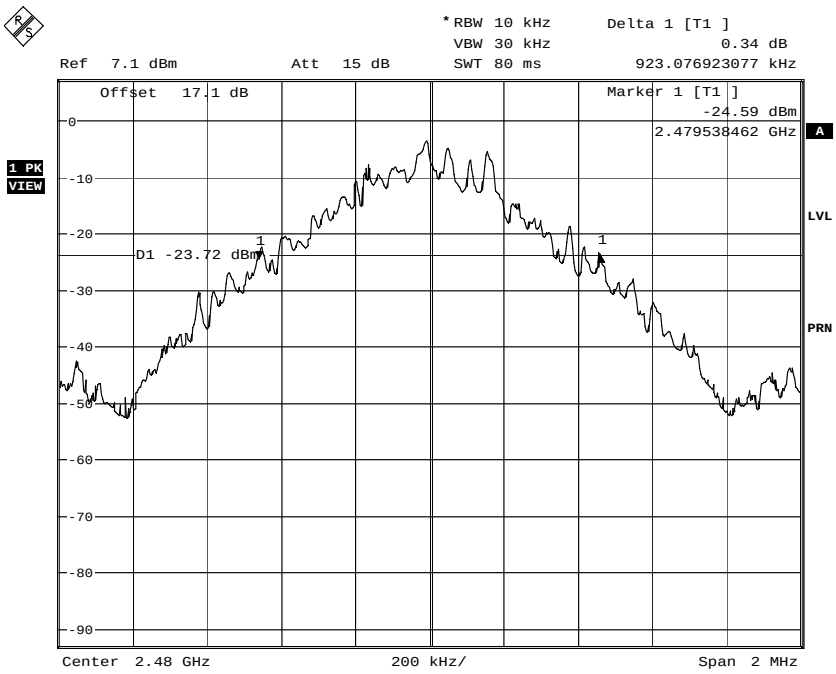
Product Service

2480.0MHz – Maximum Power DH5



Date: 4.FEB.2008 11:23:04

Product Service

2.4 CHANNEL DWELL TIME (DH1)

2.4.1 Specification Reference

FCC Part 15C: 2006, Clause 15.247(a)(1)(iii)

2.4.2 Equipment Under Test

CT9A9j, S/N: 75902829_12

2.4.3 Date of Test

04 February 2008

2.4.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.4.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of Part 15: 2006.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 2

2.4.6 Environmental Conditions

	04 February 2008
Ambient Temperature	21.2°C
Relative Humidity	28.8%

Product Service

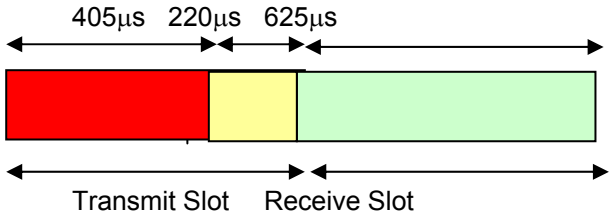
2.4.7 Test Procedure

The Bluetooth system hops at a rate of 1600 times per second. Thus, this equates to 1600 timeslots in 1 second. The DH1 data rate operates on a Transmit on 1 timeslot and Receive on 1 timeslot basis. Thus, in 1 second, there are 800 Transmit timeslots and 800 Receive timeslots.

Thus:

$$1 \text{ Timeslot} = \frac{1}{1600} = 625\mu s$$

In 1 transmit timeslot, the transmit on time is only 405μs. 220μs is reserved as off time for the synthesizer to re-tune ready for the next transmit frequency. The following timeslot is a receive slot. This process continues assuming the data rate remains the same.



DH1 Timeslot Arrangement Showing One Complete Transmit and Receive Cycle

So, with 800 Tx and 800 Rx timelsots, the transmitter is on for 800 x 405μs = 0.324 seconds.

$$\therefore \frac{\text{Total Tx Time On}}{\text{No of Channels}} = \frac{0.324}{79} = 4.10\text{ms}$$

So, in 31.6 seconds, the transmitter dwell time per channel is:

31.6 x 4.10ms = 0.1296 seconds

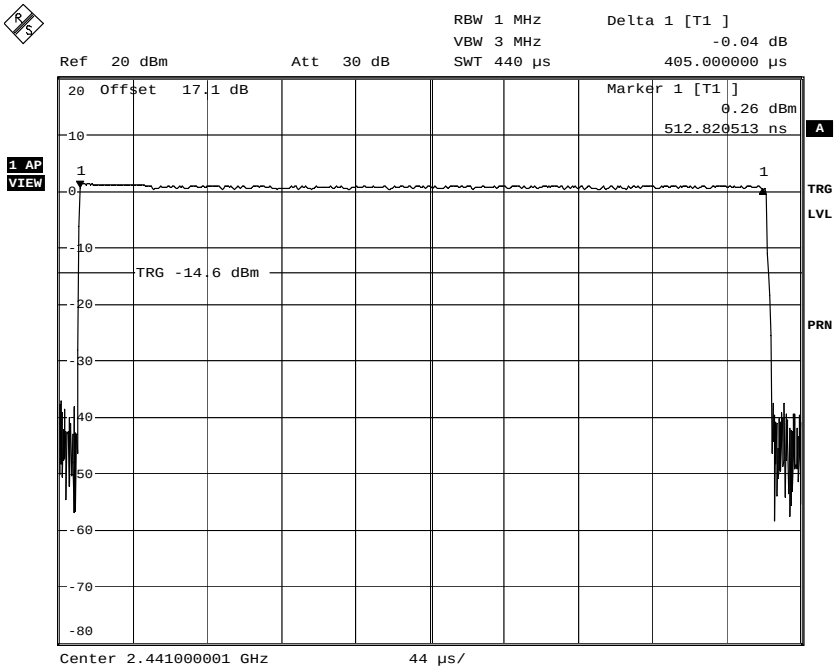
Product Service

2.4.8 Test Results

For the period of test the EUT met the requirements of FCC Part 15C: 2006 for Channel Dwell Time (DH1).

The test results are shown below.

DH1 Time slot



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2.5 CHANNEL DWELL TIME (DH3)

2.5.1 Specification Reference

FCC Part 15C: 2006, Clause 15.247(a)(1)(iii)

2.5.2 Equipment Under Test

CT9A9j, S/N: 75902829_12

2.5.3 Date of Test

04 February 2008

2.5.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.5.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of Part 15: 2006.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 2

2.5.6 Environmental Conditions

	04 February 2008
Ambient Temperature	21.2°C
Relative Humidity	28.8%

Product Service

2.5.7 Test Procedure

Test Performed in accordance with 15.247.

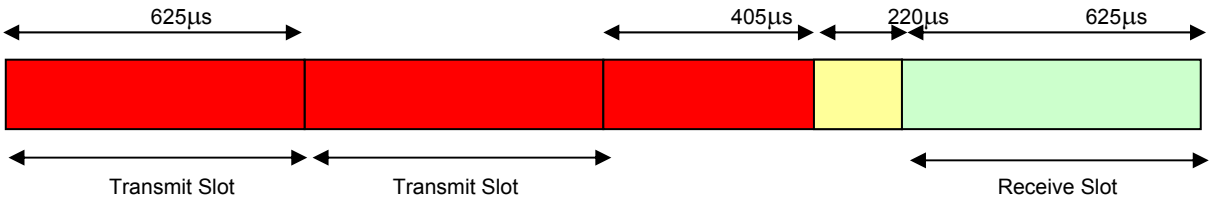
The Bluetooth system hops at a rate of 1600 times per second. Thus, this equates to 1600 timeslots in 1 second. With data rate DH3, the data payload is higher and can use up to 3 timeslots. When more than one timeslot is used, the frequency does not hop and transmission is continuous on all 3 slots, (ie. no receive slot in-between the 3 transmit slots). The 220μs off time for synthesizer re-tuning at the end of a slot is only used on the final slot. Thus, for one cycle, there are 3 transmit timeslots. 2 are 625μs long and the final slot is transmitting for 405μs.

The DH3 data rate operates on a Transmit on 3 timeslots and Receives on 1 timeslot basis, (assuming maximum data payload). The frequency-hopping rate is the same. Thus, in 1 second, there are 1200 Transmit timeslots and 400 Receive timeslots.

Thus:

$$1 \text{ Timeslot} = \frac{1}{1600} = 625\mu s$$

The first 2 Transmit timeslots are transmitting for the complete 625μs. In the third transmit slot, the transmit on time is only 405μs. 220μs is reserved as off time for the synthesizer to re-tune ready for the next transmit frequency. The following timeslot is a receive slot. This process continues assuming the data rate remains the same.



DH3 Timeslot Arrangement Showing One Complete Transmit and Receive Cycle, (Maximum Payload)

Thus, the transmitter for one complete transmit and receive cycle would be on for:

Tx (2 x 625μs) + (1 x 405μs) = 1.655ms

So:

800 x 625μs = 0.5 seconds
400 x 405μs = 0.162 seconds

Thus: 0.5 + 0.162 = 0.662 seconds

$$\therefore \quad \frac{\text{Total Tx Time On}}{\text{No Of Channels}} = \frac{0.662}{79} = 8.379\text{ms}$$

So, in 31.6 seconds, the transmitter dwell time per channel is:

31.6 x 8.379ms = 0.2648 seconds

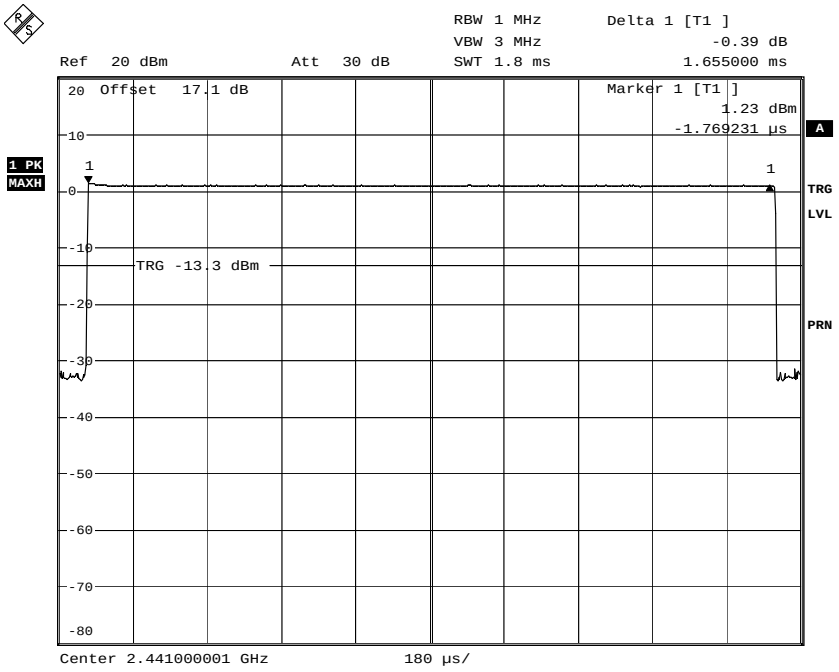
Product Service

2.5.8 Test Results

For the period of test the EUT met the requirements of FCC Part 15C: 2006 for Channel Dwell Time (DH3).

The test results are shown below.

DH3 Time slot



Product Service

2.6 CHANNEL DWELL TIME (DH5)

2.6.1 Specification Reference

FCC Part 15C: 2006, Clause 15.247(a)(1)(iii)

2.6.2 Equipment Under Test

CT9A9j, S/N: 75902829_12

2.6.3 Date of Test

04 February 2008

2.6.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.6.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of Part 15: 2006.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 2

2.6.6 Environmental Conditions

	04 February 2008
Ambient Temperature	21.2°C
Relative Humidity	28.8%

Product Service

2.6.7 Test Procedure

Test Performed in accordance with 15.247.

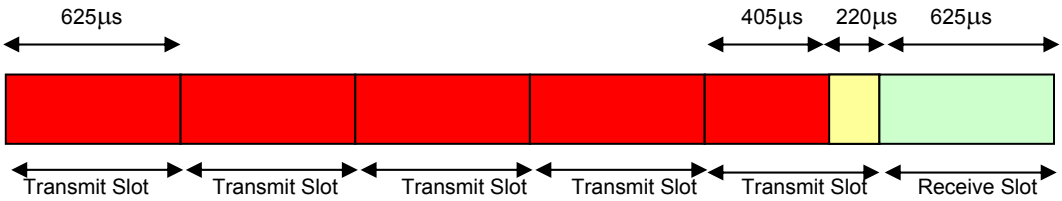
The Bluetooth system hops at a rate of 1600 times per second. Thus, this equates to 1600 timeslots in 1 second. With data rate DH5, the data payload is higher and can use up to 5 timeslots. When more than one timeslot is used, the frequency does not hop and transmission is continuous on all 5 slots, (ie. no receive slot in-between the 5 transmit slots). The 220μs off time for synthesizer re-tuning at the end of a slot is only used on the final slot. Thus, for one cycle, there are 5 transmit timeslots. 4 are 625μs long and the final slot is transmitting for 405μs.

The DH5 data rate operates on a Transmit on 5 timeslots and Receives on 1 timeslot basis, (assuming maximum data payload). The frequency-hopping rate is the same. Thus, in 1 second, there are 1333.3 Transmit timeslots and 266.7 Receive timeslots.

Thus:

$$1 \text{ Timeslot} = \frac{1}{1600} = 625\mu s$$

The first 4 Transmit timeslots are transmitting for the complete 625μs. In the fifth transmit slot, the transmit on time is only 405μs. 220μs is reserved as off time for the synthesizer to re-tune ready for the next transmit frequency. The following timeslot is a receive slot. This process continues assuming the data rate remains the same.



DH5 Timeslot Arrangement Showing One Complete Transmit and Receive Cycle, (Maximum Payload)

Thus, the transmitter for one complete transmit and receive cycle would be on for:

Tx (2 x 625μs) + (1 x 405μs) = 2.905ms

So:

1066.7 x 625μs = 0.666 seconds
266.7 x 405μs = 0.108 seconds

Thus: 0.666 + 0.108 = 0.774 seconds

$$\therefore \quad \frac{\text{Total Tx Time On}}{\text{No Of Channels}} = \frac{0.774}{79} = 9.797ms$$

So, in 31.6 seconds, the transmitter dwell time per channel is:

31.6 x 9.797ms = 0.31 seconds

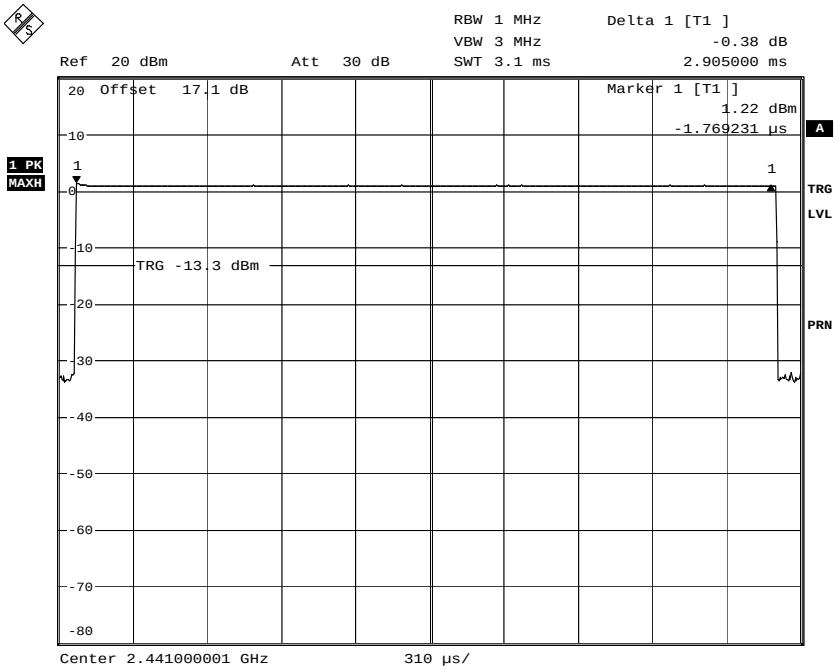
Product Service

2.6.8 Test Results

For the period of test the EUT met the requirements of FCC Part 15C: 2006 for Channel Dwell Time (DH5).

The test results are shown below.

DH3 Time slot



Product Service

2.7 CHANNEL SEPARATION

2.7.1 Specification Reference

FCC Part 15C: 2006, Clause 15.247(a)(1)

2.7.2 Equipment Under Test

CT9A9j, S/N: 75902829_12

2.7.3 Date of Test

01 February 2008

2.7.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.7.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of Part 15: 2006.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 4

2.7.6 Environmental Conditions

	01 February 2008
Ambient Temperature	25.2°C
Relative Humidity	17.4%

Product Service

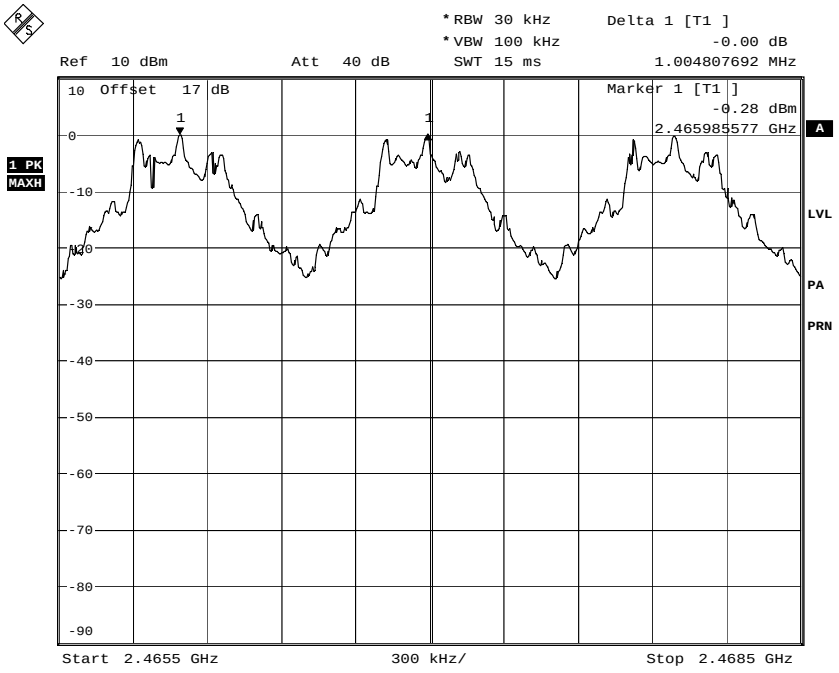
2.7.7 Test Procedure

The EUT was transmitted at maximum power into a Spectrum Analyser. The trace was set to Max Hold to store several adjacent channels on screen. Using the marker delta function, the markers were positioned to show the separation between adjacent channels.

2.7.8 Test Results

For the period of test the EUT met the requirements of FCC Part 15C: 2006 for Channel Seperation.

The test results are shown below.



Date: 1.FEB.2008 14:59:55

The system channel separation is specified as being 1MHz. The measured channel separation from the plot above is: 1MHz.

Limit	>25kHz

Product Service

2.8 NUMBER OF HOPPING CHANNELS

2.8.1 Specification Reference

FCC Part 15C: 2006, Clause 15.247(a)(1)(iii)

2.8.2 Equipment Under Test

CT9A9j, S/N: 75902829_12

2.8.3 Date of Test

01 February 2008

2.8.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.8.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of Part 15: 2006.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 4

2.8.6 Environmental Conditions

	01 February 2008
Ambient Temperature	24.5°C
Relative Humidity	20.8%

Product Service

2.8.7 Test Procedure

Test Performed in accordance with 15.247.

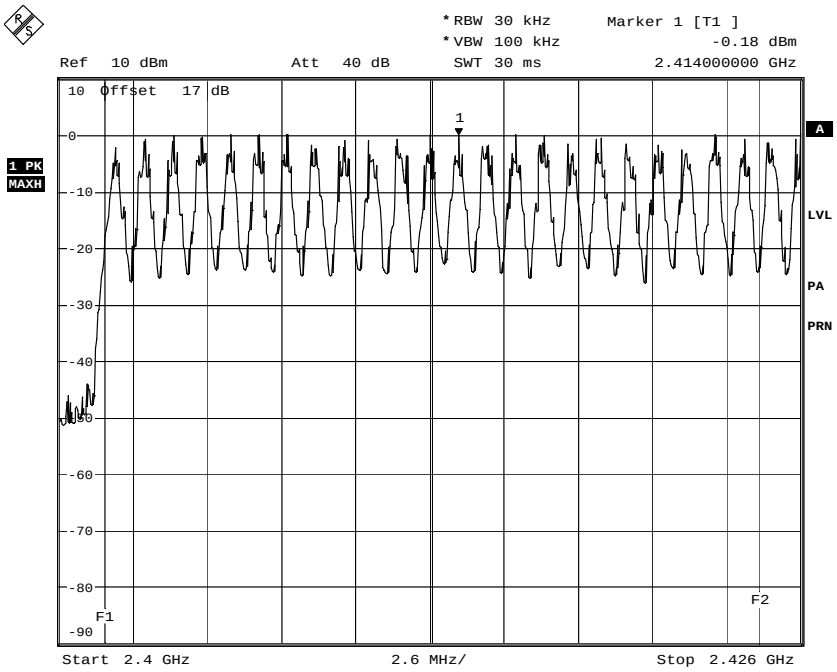
The EUT was connected to a Spectrum Analyser via a cable. The EUT was set to transmit on maximum power and hopping on all channels. The span was adjusted to show the individual channels. To reasonably display the number of channels, the occupied band was split into four traces. The display trace was set to Max Hold and the plots recorded.

2.8.8 Test Results

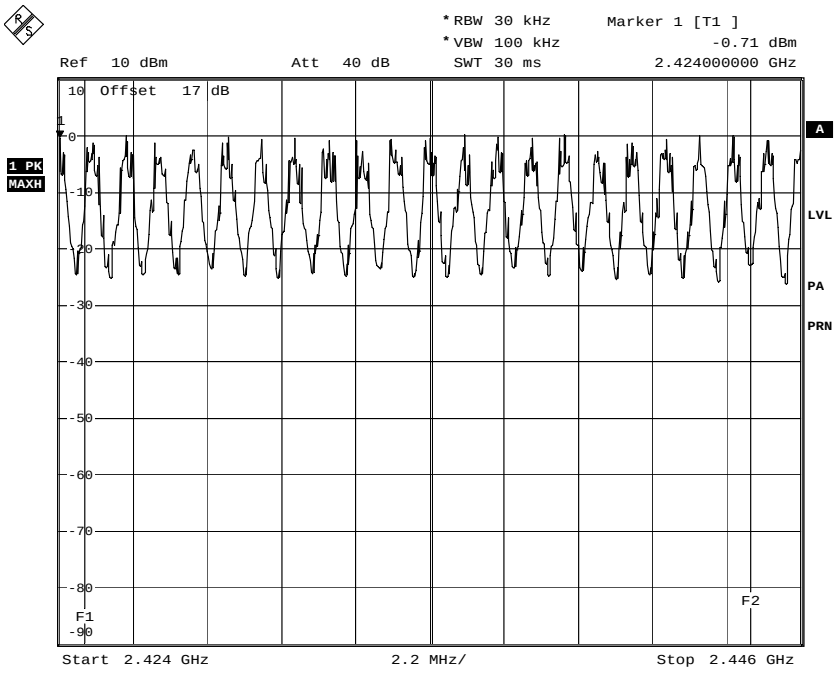
For the period of test the EUT met the requirements of FCC Part 15C: 2006 for Number of Hopping Channels.

The test results are shown below.

Trace Showing Channels 0-22

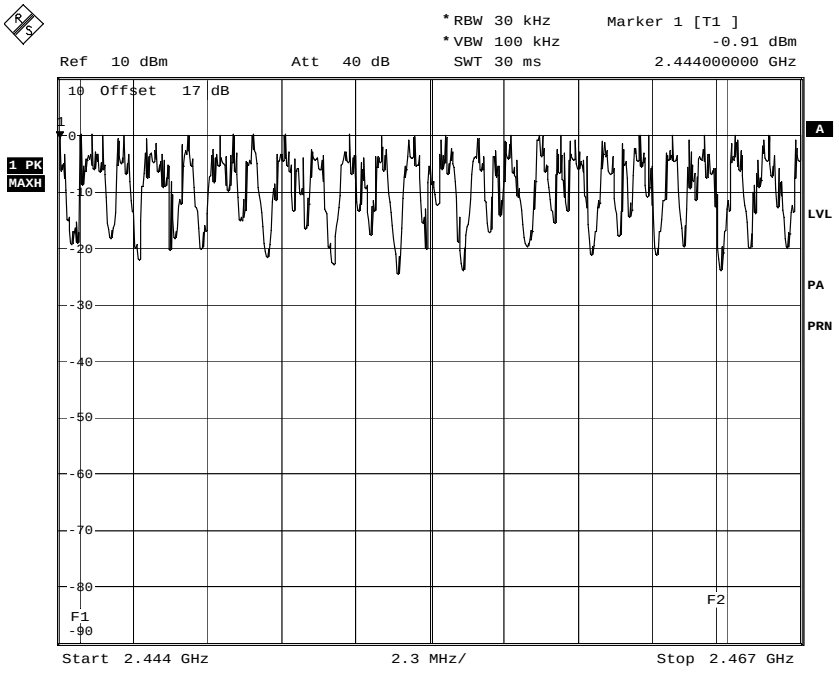


Trace Showing Channels 22-42



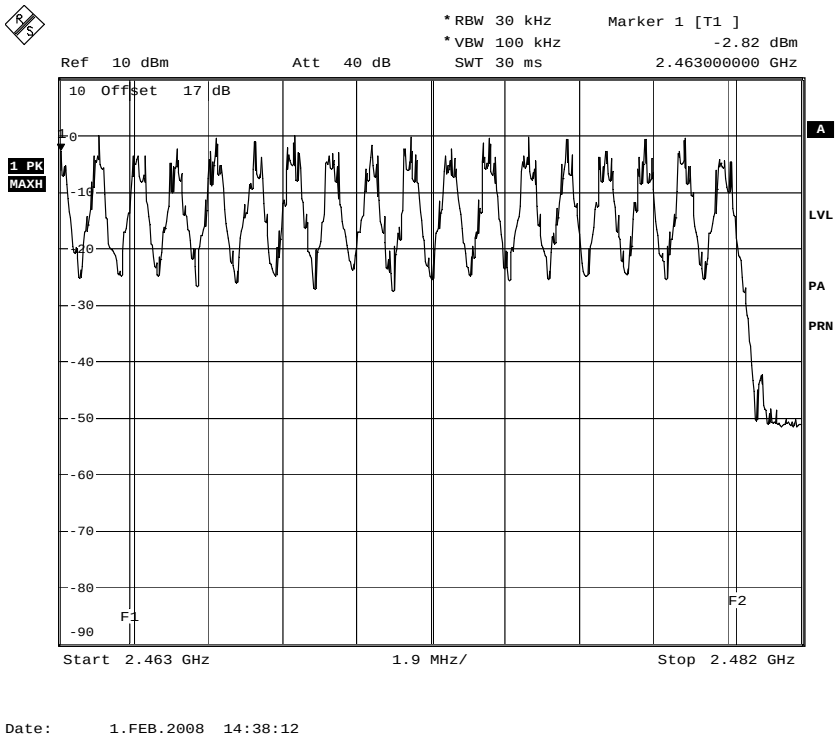
Date: 1.FEB.2008 13:05:41

Trace Showing Channels 43-62



Date: 1.FEB.2008 14:33:47

Trace Showing Channels 63-78



Date: 1.FEB.2008 14:38:12

Limit	≥ 75 channels

Product Service

2.9 MAXIMUM PEAK OUTPUT POWER (CONDUCTED)

2.9.1 Specification Reference

FCC Part 15C: 2006, Clause 15.247(b)(1)

2.9.2 Equipment Under Test

CT9A9j, S/N: 75902829_12

2.9.3 Date of Test

31 January 2008

2.9.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.9.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of Part 15: 2006.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1
- Mode 2
- Mode 3

2.9.6 Environmental Conditions

	31 January 2008
Ambient Temperature	23.0°C
Relative Humidity	26.2%

Product Service

2.9.7 Test Procedure

Test Performed in accordance with 15.247.

The EUT was connected to a Peak Power Analyser, (8990A), via an RF cable. Using a Signal Generator and the 8990A, the path loss of the cable was measured and entered as an offset adjustment into the 8990A. The peak level was recorded and compared with the test limits.

2.9.8 Test Results

For the period of test the EUT met the requirements of FCC Part 15C: 2006 for Maximum Peak Output Power.

The test results are shown below.

DH1 Results

Frequency (MHz)	Path Loss (dB)	Output Power (dBm)	Result (mW)
2402.0	17.2	1.05	1.27
2441.0	17.1	1.26	1.34
2480.0	17.1	0.93	1.24

DH3 Results

Frequency (MHz)	Path Loss (dB)	Output Power (dBm)	Result (mW)
2402.0	17.2	1.05	1.27
2441.0	17.1	1.26	1.34
2480.0	17.1	0.96	1.25

DH5 Results

Frequency (MHz)	Path Loss (dB)	Output Power (dBm)	Result (mW)
2402.0	17.2	1.0	1.26
2441.0	17.1	1.22	1.32
2480.0	17.1	0.96	1.25

Limit	<1W or <+30dBm

2.10 MAXIMUM PEAK OUTPUT POWER (RADIATED)

2.10.1 Specification Reference

FCC Part 15C: 2006, Clause 15.247(b)(1)

2.10.2 Equipment Under Test

CT9A9j, S/N: IMEI 8230000118296

2.10.3 Date of Test

08 February 2008

2.10.4 Test Equipment Used

The major items of test equipment used for the above tests are identified in Section 3.1.

2.10.5 Test Method and Operating Modes

The test was applied in accordance with the test method requirements of Part 15: 2006.

The test was performed with the EUT in the following configurations and modes of operation:

Configuration 1 - Mode 1
- Mode 2
- Mode 3

2.10.6 Environmental Conditions

	08 February 2008
Ambient Temperature	19.2°C
Relative Humidity	34.0%

2.10.7 Test Results

For the period of test the EUT met the requirements of FCC Part 15C: 2006 for Maximum Peak Output Power (Radiated).

The test results are shown below.

Frequency (MHz)	Result (dBm)	Limit (dBm)	Result (W)	Limit (W)
2402	-4.34	38.45	0.000368	7
2441	-2.51	38.45	0.000561	7
2480	-3.56	38.45	0.000441	7

Product Service

SECTION 3

TEST EQUIPMENT USED

Product Service

3.1 TEST EQUIPMENT USED

List of absolute measuring and other principal items of test equipment.

Instrument	Manufacturer	Type No	TE Number	Calibration Due
Sections 2.2 and 2.10 EMC - Radiated Emissions				
Signal Generator 10kHz to 2.7GHz	Marconi	2031	19	17-Jan-2009
Radiocommunications Tester	Rohde & Schwarz	CMU 200	39	27-Oct-2008
Signal Generator	Hewlett Packard	8672A	223	22-Feb-2008
Antenna (Double Ridge Guide)	Link Microtek Ltd	AM180HA-K-TU2	230	22-Jun-2008
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	234	29-Jun-2008
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	235	29-Jun-2008
Pre-Amplifier	Phase One	PS04-0086	1533	TU
Pre-Amplifier	Phase One	PSO4-0087	1534	TU
Mast Controller	Inn-Co GmbH	CO 1000	1606	TU
Turntable/Mast Controller	EMCO	2090	1607	TU
High Pass Filter (4GHz)	RLC Electronics	F-100-4000-5-R	2773	21-May-2008
Antenna (Bilog)	Chase	CBL6143	2904	28-Nov-2009
Antenna (Log Periodic)	Schaffner	UPA6108	3108	31-Mar-2008
Compliance 3 Emissions	Schaffner	C3e Software V.4.00.00	3274	N/A - Software
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	28-Jan-2009
Section 2.7 Radio (Tx) - Channel Bandwidth				
Attenuator 10dB 25W	Weinschel	46-10-43	400	13-Apr-2008
Power Splitter	Weinschel	1506A	606	29-Nov-2008
Hygromer	Rotronic	A1	1945	22-Jun-2008
Spectrum Analyser	Rohde & Schwarz	FSU26	2747	24-Jul-2008
Attenuator (10dB, 50W)	Aeroflex / Weinschel	47-10-34	3166	29-May-2008
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	3171	11-Jul-2008
Sections 2.4, 2.5 and 2.6 Radio (Tx) - Channel Dwell Time				
Attenuator 10dB 25W	Weinschel	46-10-43	400	13-Apr-2008
Power Splitter	Weinschel	1506A	606	29-Nov-2008
Hygromer	Rotronic	A1	1945	22-Jun-2008
Spectrum Analyser	Rohde & Schwarz	FSU26	2747	24-Jul-2008
Attenuator (10dB, 50W)	Aeroflex / Weinschel	47-10-34	3166	29-May-2008
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	3171	11-Jul-2008

Product Service

Instrument	Manufacturer	Type No	TE Number	Calibration Due
Section 2.1 Radio (Tx) - Conducted Spurious Emissions				
Attenuator 10dB 25W	Weinschel	46-10-43	400	13-Apr-2008
Communications Tester	Rohde & Schwarz	CMU 200	442	21-Jun-2008
Filter (High Pass, 4GHz)	RLC Electronics	F-100-4000-5-R	564	21-May-2008
Broadband Resistive Power Divider	Weinschel	1506A	601	18-Aug-2008
Power Splitter	Weinschel	1506A	606	29-Nov-2008
Hygromer	Rotronic	A1	1945	22-Jun-2008
Spectrum Analyser	Rohde & Schwarz	FSU26	2747	24-Jul-2008
Filter (Hi Pass)	RLC Electronics	F-100-1500-5-R	2777	21-May-2008
Attenuator (10dB, 50W)	Aeroflex / Weinschel	47-10-34	3166	29-May-2008
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	3171	11-Jul-2008
Section 2.9 Radio (Tx) - Maximum Peak Output Power				
Radiocommunications Tester	Rohde & Schwarz	CMU 200	39	27-Oct-2008
Attenuator 10dB 25W	Weinschel	46-10-43	400	13-Apr-2008
Communications Tester	Rohde & Schwarz	CMU 200	442	21-Jun-2008
Broadband Resistive Power Divider	Weinschel	1506A	601	18-Aug-2008
Power Splitter	Weinschel	1506A	606	29-Nov-2008
Hygromer	Rotronic	A1	1945	22-Jun-2008
Spectrum Analyser	Rohde & Schwarz	FSU26	2747	24-Jul-2008
Attenuator (10dB, 50W)	Aeroflex / Weinschel	47-10-34	3166	29-May-2008
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	3171	11-Jul-2008
Section 2.8 Radio (Tx) - Number of Channels				
Attenuator 10dB 25W	Weinschel	46-10-43	400	13-Apr-2008
Power Splitter	Weinschel	1506A	606	29-Nov-2008
Hygromer	Rotronic	A1	1945	22-Jun-2008
Spectrum Analyser	Rohde & Schwarz	FSU26	2747	24-Jul-2008
Attenuator (10dB, 50W)	Aeroflex / Weinschel	47-10-34	3166	29-May-2008
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	3171	11-Jul-2008

Instrument	Manufacturer	Type No	TE Number	Calibration Due
Section 2.3 Radio (Tx) - Occupied Bandwidth				
Radiocommunications Tester	Rohde & Schwarz	CMU 200	39	27-Oct-2008
Attenuator 10dB 25W	Weinschel	46-10-43	400	13-Apr-2008
Communications Tester	Rohde & Schwarz	CMU 200	442	21-Jun-2008
Broadband Resistive Power Divider	Weinschel	1506A	601	18-Aug-2008
Power Splitter	Weinschel	1506A	606	29-Nov-2008
Hygromer	Rotronic	A1	1945	22-Jun-2008
Spectrum Analyser	Rohde & Schwarz	FSU26	2747	24-Jul-2008
Attenuator (10dB, 50W)	Aeroflex / Weinschel	47-10-34	3166	29-May-2008
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	3171	11-Jul-2008

TU – Traceability Unscheduled

Product Service

3.2 MEASUREMENT UNCERTAINTY

For a 95% confidence level, the measurement uncertainties for defined systems are:-

Test Discipline	Frequency / Parameter	MU
Radiated Emissions, Bilog Antenna, AOATS	30MHz to 1GHz Amplitude	5.1dB*
Radiated Emissions, Horn Antenna, AOATS	1GHz to 40GHz Amplitude	6.3dB*
Conducted Emissions, LISN	150kHz to 30MHz Amplitude	3.2dB*
Conducted Emissions, ISN	150kHz to 30MHz Amplitude	2.1dB
Substitution Antenna, Radiated Field	30MHz to 18GHz Amplitude	2.6dB
Discontinuous Interference	150kHz to 30MHz Amplitude	3.0dB*
Interference Power	30MHz to 300MHz Amplitude	3.0dB*
Radiated E-Field Susceptibility	26MHz to 2.5GHz Test Amplitude	1.4dB†
Conducted Susceptibility	100kHz to 250MHz Amplitude	1.8dB†
Power Frequency Magnetic Field	50Hz/60Hz Amplitude	0.45%
Magnetic Emissions	9kHz to 30MHz Amplitude	3.4dB*
Magnetic Field/Flux iaw EN 50366	10Hz to 400kHz	2.64%
Harmonics and Flicker	The test was applied using proprietary equipment that meets the requirements of EN 61000-3-2 and EN 61000-3-3	—
Mains Voltage Variations and Interrupts	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-11	—
Fast Transient Burst	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-4	—
Electrostatic Discharge	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-2	—
Surge	The test was applied using proprietary equipment that meets the requirements of EN 61000-4-5	—
Vehicle Transients	The test was applied using proprietary equipment that meets the requirements of ISO 7637-1 and 2	—
Compass Safe Distance	Azimuth Accuracy	0.10°

Worst case error for both Time and Frequency measurement 12 parts in 10^6.

* In accordance with CISPR 16-4
† In accordance with UKAS Lab 34

Product Service

SECTION 4

ACCREDITATION, DISCLAIMERS AND COPYRIGHT

Product Service

4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT

This report relates only to the actual item/items tested.

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation.

Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).