Product Service

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Report On

FCC CFR 47 Parts 22 and 24 Testing of the
Option NV
GE0421

COMMERCIAL-IN-CONFIDENCE

FCC ID: NCMOGE0421

Document 75903886 Report 04 Issue 1 **July 2008**

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REPORT ON

FCC CFR 47 Parts 22 and 24 Testing of the
Option NV
GE0421

Document 75903886 Report 04 Issue 1

July 2008

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DATED

08 July 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: Parts 22 and 24. The sample tested was found to comply with the requirements defined in the applied rules.

Test Engineer(s);

S Hartley

Product Service

CONTENTS

Product Service

SECTION 1

REPORT SUMMARY

FCC CFR 47 Parts 22 and 24 Testing of the
Option NV
GE0421

1.1 INTRODUCTION

The information contained in this report is intended to show verification of the Option NV GE0421 to the requirements of FCC CFR 47 Part 22 2006 and FCC CFR 47 Part 24 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	Option bv sa
Model Number(s)	GE0421
Serial Number(s)	IMEI: 004401440982508
Software Version	1.2.4.0
Hardware Version	3.1
Number of Samples Tested	1
Test Specification/Issue/Date	FCC CFR 47 Part 22 2006 FCC CFR 47 Part 24 2006
Incoming Release Date	Declaration of Build Status 04 July 2008
Disposal Reference Number Date	Held Pending Disposal Not Applicable Not Applicable
Order Number Date	PDME085063 16 May 2008
Start of Test	25 June 2008
Finish of Test	03 July 2008
Name of Engineer(s)	S Hartley

Product Service

1.2 BRIEF SUMMARY OF RESULTS

A brief summary of results for each configuration, in accordance with FCC CFR 47 Part 22 2006, is shown below.

Configuration 1 - GPRS						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	22.917	Emission limitations for Cellular Equipment	824.2MHz		N/R	FCC CFR 47 Part 22: 2006
			836.4MHz		N/R	
			848.2MHz		N/R	
2.1	22.913	Effective Radiated Power	824.2MHz	0	Pass	FCC CFR 47 Part 22: 2006
			836.4MHz	0	Pass	
			848.2MHz	0	Pass	

Configuration 2 - EGPRS						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	22.917	Emission limitations for Cellular Equipment	824.2MHz		N/R	FCC CFR 47 Part 22: 2006
			836.4MHz		N/R	
			848.2MHz		N/R	
2.1	22.913	Effective Radiated Power	824.2MHz	0	Pass	FCC CFR 47 Part 22: 2006
			836.4MHz		N/R	
			848.2MHz		N/R	

Product Service

A brief summary of results for each configuration, in accordance with FCC CFR 47 Part 24 2006, is shown below.

Configuration 1 - GPRS						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	24.238	Emissions for Broadband PCS Equipment	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz		N/R	
			1909.8MHz		N/R	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	
2.2	24.232 (c)	EIRP Peak Power	1850.2MHz	0	Pass	FCC CFR 47 Part 24: 2006
			1880.0MHz	0	Pass	
			1909.8MHz	0	Pass	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	

Configuration 2 - EGPRS						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	24.238	Emissions for Broadband PCS Equipment	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz		N/R	
			1909.8MHz		N/R	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	
2.2	24.232 (c)	EIRP Peak Power	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz		N/R	
			1909.8MHz	0	Pass	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	

Product Service

Configuration 3 - CS						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	24.238	Emissions for Broadband PCS Equipment	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz		N/R	
			1909.8MHz		N/R	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	
2.2	24.232 (c)	EIRP Peak Power	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz	0	Pass	
			1909.8MHz		N/R	
			1852.4 MHz	0	Pass	
			1907.6 MHz	0	Pass	

Configuration 4 - HSDPA 1						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	24.238	Emissions for Broadband PCS Equipment	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz		N/R	
			1909.8MHz		N/R	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	
2.2	24.232 (c)	EIRP Peak Power	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz	0	Pass	
			1909.8MHz		N/R	
			1852.4 MHz	0	Pass	
			1907.6 MHz	0	Pass	

Product Service

Configuration 5 - HSDPA 2						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	24.238	Emissions for Broadband PCS Equipment	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz		N/R	
			1909.8MHz		N/R	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	
2.2	24.232 (c)	EIRP Peak Power	1850.2MHz	0	N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz	0	Pass	
			1909.8MHz		N/R	
			1852.4 MHz	0	Pass	
			1907.6 MHz	0	Pass	

Configuration 6 - HSDPA 3						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	24.238	Emissions for Broadband PCS Equipment	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz		N/R	
			1909.8MHz		N/R	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	
2.2	24.232 (c)	EIRP Peak Power	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz	0	Pass	
			1909.8MHz		N/R	
			1852.4 MHz	0	Pass	
			1907.6 MHz	0	Pass	

Product Service

Configuration 7 – HSDPA 4						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	24.238	Emissions for Broadband PCS Equipment	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz		N/R	
			1909.8MHz		N/R	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	
2.2	24.232 (c)	EIRP Peak Power	1850.2MHz	0	N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz	0	Pass	
			1909.8MHz		N/R	
			1852.4 MHz	0	Pass	
			1907.6 MHz	0	Pass	

Configuration 8 - HSUPA 1						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	24.238	Emissions for Broadband PCS Equipment	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz		N/R	
			1909.8MHz		N/R	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	
2.2	24.232 (c)	EIRP Peak Power	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz	0	Pass	
			1909.8MHz		N/R	
			1852.4 MHz	0	Pass	
			1907.6 MHz	0	Pass	

Product Service

Configuration 9 - HSUPA 2						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	24.238	Emissions for Broadband PCS Equipment	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz		N/R	
			1909.8MHz		N/R	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	
2.2	24.232 (c)	EIRP Peak Power	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz	0	Pass	
			1909.8MHz		N/R	
			1852.4 MHz	0	Pass	
			1907.6 MHz	0	Pass	

Configuration 10 - HSUPA 3						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	24.238	Emissions for Broadband PCS Equipment	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz		N/R	
			1909.8MHz		N/R	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	
2.2	24.232 (c)	EIRP Peak Power	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz	0	Pass	
			1909.8MHz		N/R	
			1852.4 MHz	0	Pass	
			1907.6 MHz	0	Pass	

Product Service

Configuration 11 - HSUPA 4						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	24.238	Emissions for Broadband PCS Equipment	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz		N/R	
			1909.8MHz		N/R	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	
2.2	24.232 (c)	EIRP Peak Power	1850.2MHz	0	N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz	0	Pass	
			1909.8MHz		N/R	
			1852.4 MHz	0	Pass	
			1907.6 MHz	0	Pass	

Configuration 12 – HSUPA 5						
Section	Spec Clause	Test Description	Mode	Mod State	Result	Base Standard
	24.238	Emissions for Broadband PCS Equipment	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz		N/R	
			1909.8MHz		N/R	
			1852.4 MHz		N/R	
			1907.6 MHz		N/R	
2.2	24.232 (c)	EIRP Peak Power	1850.2MHz		N/R	FCC CFR 47 Part 24: 2006
			1880.0MHz	0	Pass	
			1909.8MHz		N/R	
			1852.4 MHz	0	Pass	
			1907.6 MHz	0	Pass	

N/R – Not Requested

Product Service

1.3 DECLARATION OF BUILD STATUS

MAIN EUT	
MANUFACTURING DESCRIPTION	PCI Express datacard
MANUFACTURER	Option NV
TYPE	PCI Express datacard
PART NUMBER	GE0421
SERIAL NUMBER	004401440982508
HARDWARE VERSION	3.1
SOFTWARE VERSION	1.2.4.0
TRANSMITTER OPERATING RANGE	824 MHz – 1980 MHz
RECEIVER OPERATING RANGE	869 MHz – 2170 MHz
COUNTRY OF ORIGIN	Belgium
INTERMEDIATE FREQUENCIES	Zero-IF
ITU DESIGNATION OF EMISSION	850, 1900, 900, 1800: 300KGXW 850Edge, 1900Edge, 1800Edge, 900Edge: 300KG7W FDDII, FDDI, FDDVIII: 4M20F9W
HIGHEST INTERNALLY GENERATED FREQUENCY	1980 MHz
OUTPUT POWER (W or dBm)	Low bands 2G: 2W; High bands 2G: 1W; 3G: 0,25W
FCC ID	NCMOGE0421
INDUSTRY CANADA ID	Not Applicable
TECHNICAL DESCRIPTION (a brief description of the intended use and operation)	PCI Express datacard implementing HSUPA / HSDPA / UMTS on 2100 / 1900 / 900 and EDGE / GPRS on 1900 / 1800 / 900 / 850 bands
BATTERY/POWER SUPPLY	
MANUFACTURING DESCRIPTION	
MANUFACTURER	
TYPE	
PART NUMBER	
VOLTAGE	
COUNTRY OF ORIGIN	

Date 04 July 2008
Declaration of Build Status Serial Number 75903886/01

1.4 PRODUCT INFORMATION

1.4.1 Technical Description

The Equipment Under Test (EUT) was an Option NV GE0421 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: GPRS

The EUT was configured in accordance with FCC CFR 47 Part 22 2006

Configuration 2: EGPRS

The EUT was configured in accordance with FCC CFR 47 Part 22 2006

Configuration 3: CS

The EUT was configured in accordance with FCC CFR 47 Part 24 2006.

Configuration 4: HSDPA 1

The EUT was configured in accordance with FCC CFR 47 Part 24 2006.

Configuration 5: HSDPA 2

The EUT was configured in accordance with FCC CFR 47 Part 24 2006.

Configuration 6: HSDPA 3

The EUT was configured in accordance with FCC CFR 47 Part 24 2006.

Configuration 7: HSDPA 4

The EUT was configured in accordance with FCC CFR 47 Part 24 2006.

Configuration 8: HSUPA 1

The EUT was configured in accordance with FCC CFR 47 Part 24 2006.

Configuration 9: HSUPA 2

The EUT was configured in accordance with FCC CFR 47 Part 24 2006.

Configuration 10: HSUPA 3

The EUT was configured in accordance with FCC CFR 47 Part 24 2006.

Configuration 11: HSUPA 4

The EUT was configured in accordance with FCC CFR 47 Part 24 2006.

Configuration 12: HSUPA 5

The EUT was configured in accordance with FCC CFR 47 Part 24 2006.

Product Service

1.4.3 Modes of Operation

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

Mode 1 - 824.2MHz

Mode 2 - 836.4MHz

Mode 3 - 848.2MHz

Mode 4 - 1850.2MHz

Mode 5 – 1880.0MHz

Mode 6 - 1909.8MHz

Mode 7 – 1852.4MHz

Mode 8 - 1907.6MHz

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

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 by a laptop PC which was powered from a 110V, 60Hz supply.

FCC Accreditation
90987 Octagon House, Fareham Test Laboratory

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.

Product Service

SECTION 2

TEST DETAILS

FCC CFR 47 Parts 22 and 24 Testing of the
Option NV
GE0421

Product Service

2.1 EFFECTIVE RADIATED POWER

2.1.1 Specification Reference

FCC CFR 47 Part 22: 2006, Clause 22.913

2.1.2 Equipment Under Test

GE0421, IMEI: 004401440982508

2.1.3 Date of Test and Modification State

03 July 2008, Modification State 0

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 FCC CFR 47 Part 22: 2006.

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

Configuration 1 - Mode 1
- Mode 2
- Mode 3

Configuration 2 - Mode 1

2.1.6 Environmental Conditions

	03 July 2008
Ambient Temperature	18°C
Relative Humidity	46%
Atmospheric Pressure	1006mbar

Product Service

2.1.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 22: 2006 for Effective Radiated Power.

The test results are shown below.

Configuration 1 - Mode 1

Frequency (MHz)	Polarisation	Pos(degrees)	Result (dBm)	Result (W)
824.2	Horizontal	44	29.7	0.93

Configuration 1 - Mode 2

Frequency (MHz)	Polarisation	Pos(degrees)	Result (dBm)	Result (W)
836.4	Horizontal	44	27.9	0.62

Configuration 1 - Mode 3

Frequency (MHz)	Polarisation	Pos(degrees)	Result (dBm)	Result (W)
848.8	Horizontal	45	27.3	0.54

Configuration 2 - Mode 1

Frequency (MHz)	Polarisation	Pos(degrees)	Result (dBm)	Result (W)
824.2	Horizontal	44	27.6	0.58

2.2 EIRP PEAK POWER

2.2.1 Specification Reference

FCC CFR 47 Part 24: 2006, Clause 24.232 (c)

2.2.2 Equipment Under Test

GE0421, IMEI: 004401440982508

2.2.3 Date of Test and Modification State

25 June and 03 July 2008, Modification Sate 0

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 FCC CFR 47 Part 24: 2006.

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

Configuration 1	- Mode 4
	- Mode 5
	- Mode 6
Configuration 2	- Mode 6
Configuration 3	- Mode 7
	- Mode 5
	- Mode 8
Configuration 4	- Mode 7
	- Mode 5
	- Mode 8
Configuration 5	- Mode 7
	- Mode 5
	- Mode 8
Configuration 6	- Mode 7
	- Mode 5
	- Mode 8
Configuration 7	- Mode 7
	- Mode 5
	- Mode 8
Configuration 8	- Mode 7
	- Mode 5
	- Mode 8
Configuration 9	- Mode 7
	- Mode 5
	- Mode 8
Configuration 10	- Mode 7
	- Mode 5
	- Mode 8

Product Service

Configuration 11	- Mode 7
	- Mode 5
	- Mode 8
Configuration 12	- Mode 7
	- Mode 5
	- Mode 8

2.2.6 Environmental Conditions

	25 June 2008	03 July 2008
Ambient Temperature	18°C	18°C
Relative Humidity	43%	46%
Atmospheric Pressure	1012mbar	1006mbar

Product Service

2.2.7 Test Results

For the period of test the EUT met the requirements of FCC CFR 47 Part 24: 2006 for EIRP Peak Power.

The test results are shown below.

Configuration 1 - Mode 4

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1850.2	V	192	25.9	0.39

Configuration 1 - Mode 5

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1880.0	V	189	26.2	0.42

Configuration 1 - Mode 6

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1909.8	V	170	26.7	0.47

Configuration 2 - Mode 6

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1909.8	V	170	24.6	0.29

Configuration 3 - Mode 4

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1852.4	Vertical	184	23.9	0.25

Configuration 3 - Mode 5

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1880.0	Vertical	180	22.8	0.19

Configuration 3 - Mode 6

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1907.6	Vertical	183	24.0	0.25

Configuration 4 - Mode 4

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1852.4	Vertical	182	24.3	0.27

Configuration 4 - Mode 5

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1880.0	Vertical	179	25.1	0.32

Configuration 4 - Mode 6

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1907.6	Vertical	177	24.4	0.28

Configuration 5 - Mode 4

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1852.4	Vertical	184	25.1	0.32

Configuration 5 - Mode 5

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1880.0	Vertical	184	25.6	0.36

Configuration 5 - Mode 6

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1907.6	Vertical	184	24.4	0.28

Configuration 6 - Mode 4

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1852.4	Vertical	183	25.4	0.35

Configuration 6 - Mode 5

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1880.0	Vertical	184	25.2	0.33

Configuration 6 - Mode 6

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1907.6	Vertical	176	24.7	0.30

Configuration 7- Mode 4

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1852.4	Vertical	185	25.2	0.33

Configuration 7 - Mode 5

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1880.0	Vertical	183	25.5	0.35

Configuration 7 - Mode 6

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1907.6	Vertical	180	25.0	0.32

Configuration 8 - Mode 7

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1852.4	Vertical	185	25.4	0.35

Configuration 8 - Mode 5

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1880.0	Vertical	182	25.8	0.38

Configuration 8 - Mode 8

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1907.6	Vertical	183	24.7	0.30

Configuration 9 - Mode 7

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1852.4	Vertical	185	25.2	0.33

Configuration 9 - Mode 5

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1880.0	Vertical	182	25.6	0.36

Configuration 9 - Mode 8

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1907.6	Vertical	180	25.0	0.32

Configuration 10 - Mode 7

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1852.4	Vertical	185	25.5	0.35

Configuration 10 - Mode 5

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1880.0	Vertical	182	26.0	0.40

Configuration 10 - Mode 8

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1907.6	Vertical	182	24.8	0.30

Configuration 11 - Mode 7

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1852.4	Vertical	184	24.6	0.29

Configuration 11 - Mode 5

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1880.0	Vertical	184	26.0	0.40

Configuration 11 - Mode 8

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1907.6	Vertical	183	24.4	0.28

Configuration 12 - Mode 7

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1852.4	Vertical	185	25.3	0.34

Configuration 12 - Mode 5

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1880.0	Vertical	184	26.4	0.44

Configuration 12 - Mode 8

Frequency (MHz)	Polarisation	Pos (degrees)	Result (dBm)	Result (W)
1907.6	Vertical	182	24.3	0.27

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 No.	Calibration Period (months)	Calibration Due
Section 2.2 EMC - Maximum Output Power					
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	234	12	2-Sep-2008
Antenna (Double Ridge Guide, 1GHz-18GHz)	EMCO	3115	235	12	2-Sep-2008
Communications Tester	Rohde & Schwarz	CMU 200	442	12	21-Jul-2008
Screened Room (5)	Rainford	Rainford	1545	36	11-Feb-2011
Mast Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Turntable/Mast Controller	EMCO	2090	1607	-	TU
GSM Test Set	Rohde & Schwarz	CMU 200	2809	12	21-Apr-2009
Antenna (Bilog)	Chase	CBL6143	2904	24	28-Nov-2009
Antenna (Log Periodic)	Schaffner	UPA6108	3108	12	27-Mar-2009
Signal Generator (10MHz to 40GHz)	Rohde & Schwarz	SMR40	3171	12	11-Jul-2008
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	15-Mar-2009
Section 2.2 Radio (Tx) - Effective Radiated Power					
Turntable Controller	Heinrich Diesel	HD050	22	-	TU
Antenna (Double Ridge Guide)	EMCO	3115	34	12	29-Jun-2008
Power Meter	Hewlett Packard	436A	94	12	10-Oct-2008
Communications Tester	Rohde & Schwarz	CMU 200	442	12	21-Jul-2008
Sensor	Hewlett Packard	11792A	1325		7-Jan-2009
Antenna (Biconnical)	Schaffner	VBA6106A	3107	12	26-Mar-2009
Antenna (Log Periodic)	Schaffner	UPA6108	3108	12	27-Mar-2009
Signal Generator: 10MHz to 20GHz	Rohde & Schwarz	SMR20	3475	12	27-Nov-2008
Signal Analyser	Rohde & Schwarz	FSQ 26	3545	12	21-May-2009

TU – Traceability Unscheduled

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†
DC Input Ripple Immunity	Current Voltage	0.45% 0.91%
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

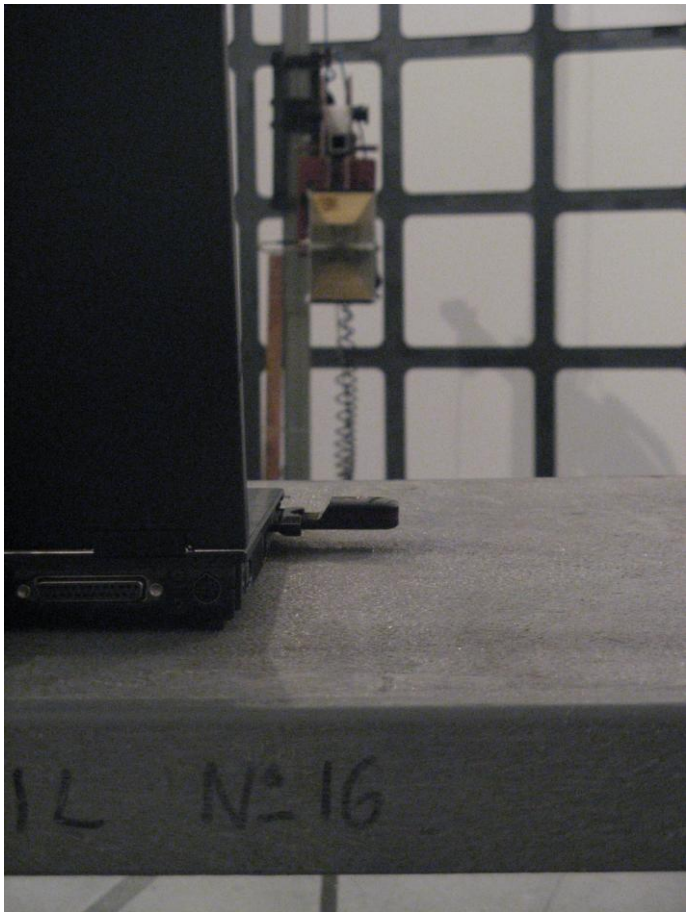
PHOTOGRAPHS

Product Service

4.1 PHOTOGRAPHS OF EQUIPMENT UNDER TEST (EUT)

GE0421 and Adaptor Card in Laptop

4.2 TEST SET UP PHOTOGRAPHS



GE0421 Set Up Radiated Output Power

Product Service

SECTION 5

ACCREDITATION, DISCLAIMERS AND COPYRIGHT

5.1 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).