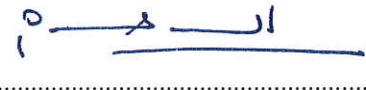
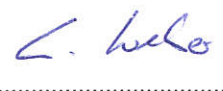


FCC TEST REPORT	
Co-Location	
Report Reference No	G0M-2001-8775-TFCCOLOC-V01
Testing Laboratory	Eurofins Product Service GmbH
Address	Storkower Str. 38c 15526 Reichenwalde Germany
Accreditation	    DAKKS - Registration number : D-PL-12092-01-03 (ISED) ISED Testing Laboratory site: 3470A-2 DAKKS - Registration number : D-PL-12092-01-04 (FCC) FCC Filed Test Laboratory, Reg.-No.: 96970
Applicant	Webfleet Solutions B.V.
Address	De Ruijterkade 154 1011 ac Amsterdam The Netherlands
Test Specification	47 CFR Part 22H, 47 CFR Part 24E RSS-132, Issue 3: 2013-01, RSS-133, Issue 6:2013-01 47 CFR Part 15C RSS-247, Issue 2, 2017-02
Non-Standard Test Method	None
Equipment under Test (EUT):	
Product Description	Telematic Device with GSM+LTE+GNSS+BT
Model(s)	L0740
Additional Model(s)	None
Brand Name(s)	Not specified
Hardware Version(s)	46/2019
Software Version(s)	8.1
FCC-ID	2AGPAL0740
IC	20911-L0740
Test Result	PASSED

Possible test case verdicts:		
Required by standard but not tested	N/T	
Not required by standard	N/R	
Not applicable to EUT	N/A	
Test object does meet the requirement	P(PASS)	
Test object does not meet the requirement	F(FAIL)	
Testing:		
Test Lab Temperature	20 - 23 °C	
Test Lab Humidity	32 – 38 %	
Date of receipt of test item	2020-02-11	Test Sample ID 27954
Report:		
Compiled by	Abdullah Al Jamal	
Tested by (+ signature) (Responsible for Test)	Abdullah Al Jamal	
Approved by (+ signature) (Head of Lab)	Christian Weber	
Date of Issue	2020-04-29	
Total number of pages	36	
General Remarks:		
The test results presented in this report relate only to the object tested. The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.		
Additional Comments:		
None.		

VERSION HISTORY

Version History			
Version	Issue Date	Remarks	Revised By
01	2020-04-29	Initial Release	

ABBREVIATIONS AND ACRONYMS

Acronyms	
Acronym	Description
EUT	Equipment Under Test
FCC	Federal Communications Commission
ISED	Innovation, Science and Economic Development Canada
RBW	Resolution bandwidth
RMS	Root mean square
VBW	Video bandwidth
V _{NOM}	Nominal supply voltage

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1 Equipment (Test Item) Under Test

Description	Telematic Device with GSM+LTE+GNSS+BT	
Model	L0740	
Additional Model(s)	None	
Brand Name(s)	Not specified	
Serial Number(s)	MW6020I00087	Test Sample ID 27954 (IMEI 004401083557948)
Hardware Version(s)	46/2019	
Software Version(s)	8.1	
PMN	LINK 740	
HVIN	L0740	
FVIN	8.1	
HMN	n/a	
FCC-ID	2AGPAL0740	
IC	20911-L0740	
Equipment type	End Product	
Radio type	Transceiver	
Bluetooth BR/EDR frequency bands	2400.0 MHz - 2483.5 MHz	
Bluetooth BR/EDR Modulations	GFSK, PI/4-DQPSK, 8-DPSK	
GSM frequency bands	GSM 850 = UL : 824 - 849 MHz DL : 869 – 894 MHz GSM 1900 = UL : 1850 – 1910 MHz DL : 1930 – 1990 MHz	
GSM Modulations	GMSK, 8-PSK	
LTE-BL/CE (LTE-M1) frequency bands	LTE FDD2 = UL = 1850 - 1910 MHz, DL = 1930 - 1990 MHz LTE FDD4 = UL = 1710 - 1755 MHz, DL = 2110 - 2155 MHz LTE FDD12 = UL = 699 - 716 MHz, DL = 729 - 746 MHz LTE FDD13 = UL = 777 - 787 MHz, DL = 746 - 756 MHz	
LTE-BL/CE (LTE-M1) Modulations	QPSK, 16-QAM	
Multislot class	10	
Radio technologies	Bluetooth BR/EDR + GSM + LTE-BL/CE (LTE-M1) - Narrowband	
Operating modes	Bluetooth BR/EDR + GSM 850	
Number of modules	1	
Number of chipsets	1	
Antenna – Bluetooth BR/EDR	Type	Integrated antenna
	Model	PCB trace
	Manufacturer	Webfleet Solutions
	Gain	0 dBi (declared by applicant)
Radio Module – GSM 850	Type	Cinterion® EXS82 Wireless Module – EXS82-W Global MTC (LTE Cat.M/NB/2G)
	Model	EXS82
	Manufacturer	Gemalto
	HW Version	A100
	SW Version	01.000
	FCC-ID	QIPEXS82-W
	IC	7830A-EXS82W
Antenna – GSM 850	Type	Internal antenna
	Model	SR4L002
	Manufacturer	antenova
	Gain	2.5 dBi (declared by applicant)
Supply Voltage	V _{NOM}	24.0 VDC and 12.0 VDC (internal battery)

Test Report No.: G0M-2001-8775-TFCCOLOC-V01

Eurofins Product Service GmbH
Storkower Str. 38c, D-15526 Reichenwalde, Germany

AC/DC-Adaptor	Model	N/A
	Vendor	N/A
	Input	N/A
	Output	N/A
Manufacturer	Webfleet Solutions B.V. De Ruijterkade 154 1011 ac Amsterdam The Netherlands	

1.1 Photos – Equipment External



¹EUT measurement position VERTICAL

²EUT measurement position HORIZONTAL

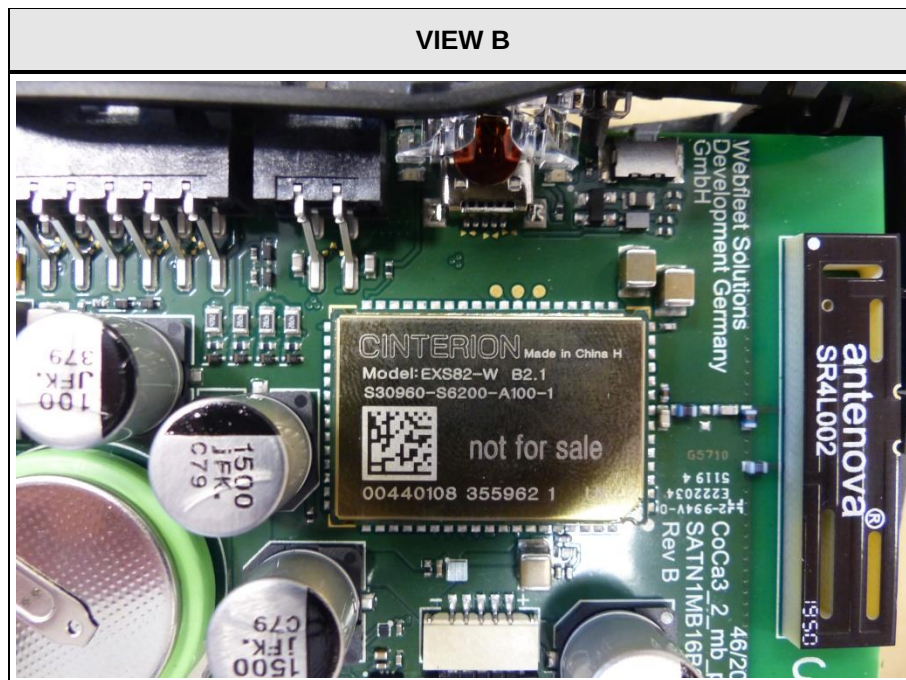
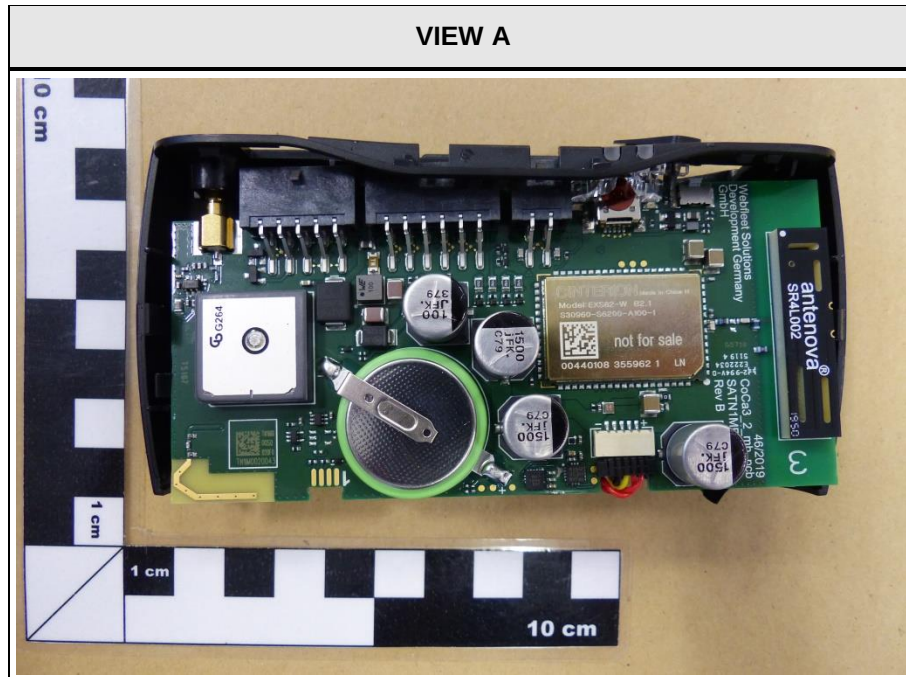
VIEW C



VIEW D



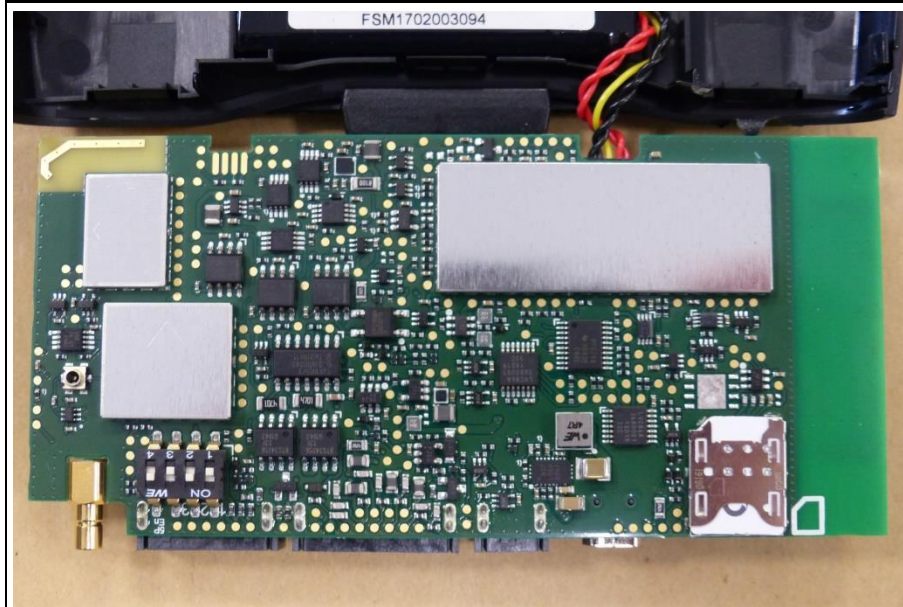
1.2 Photos – Equipment Internal



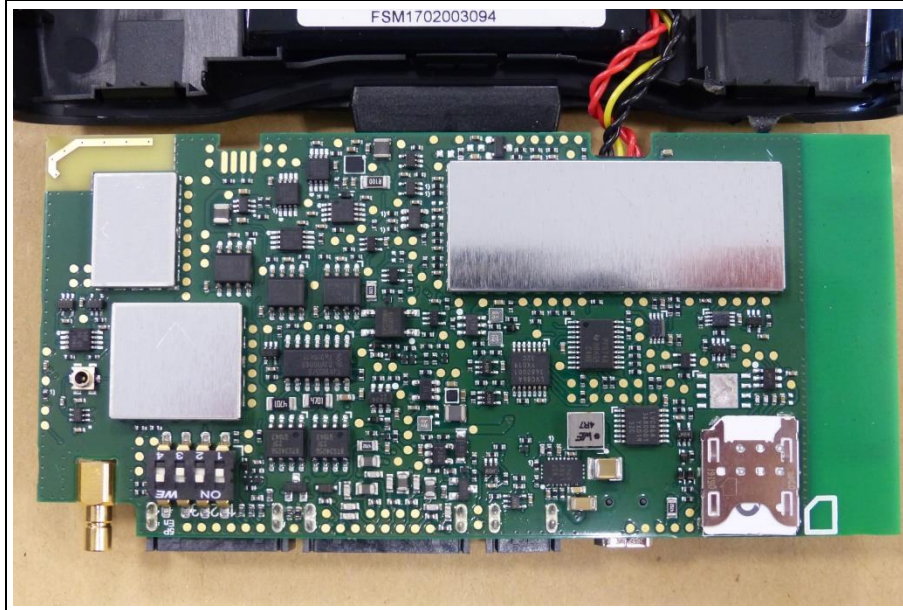
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VIEW D



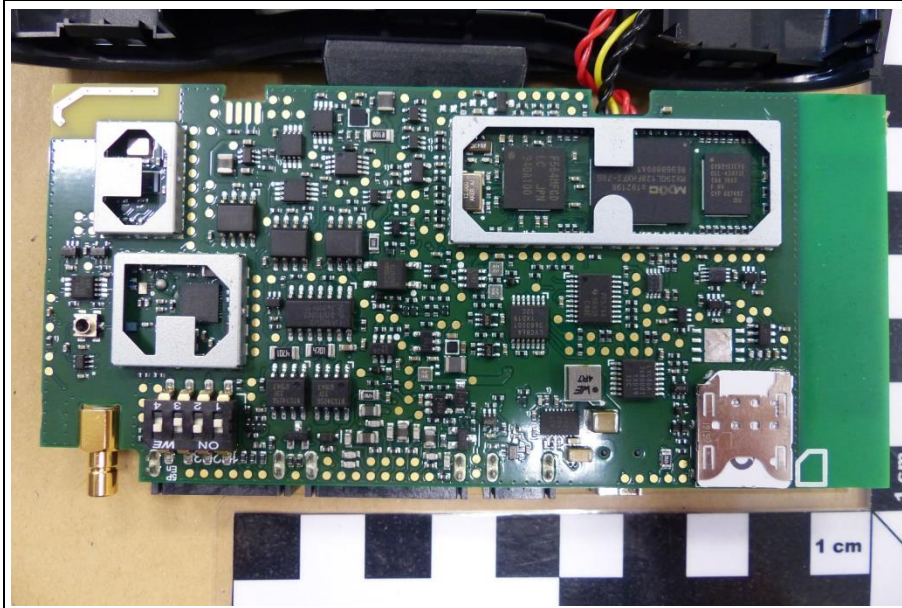
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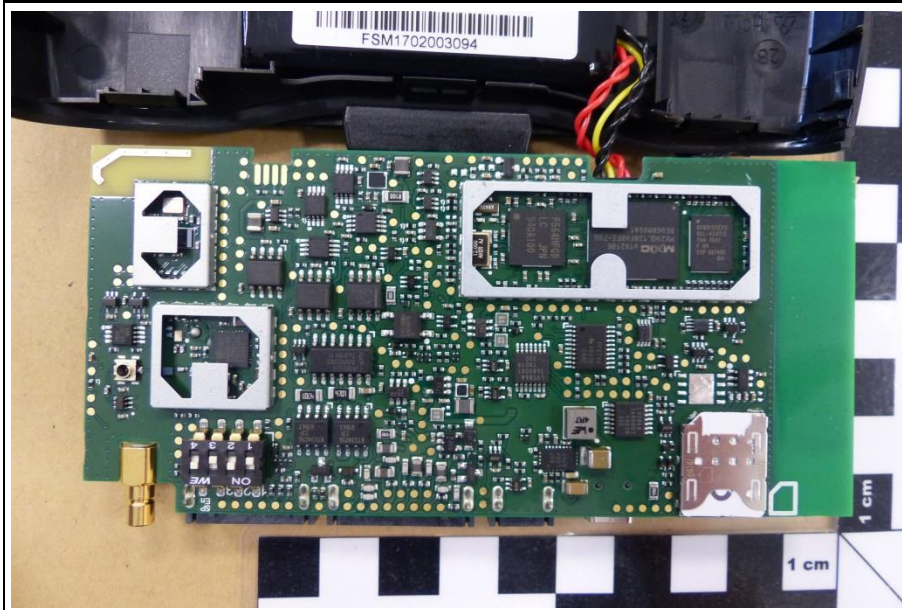
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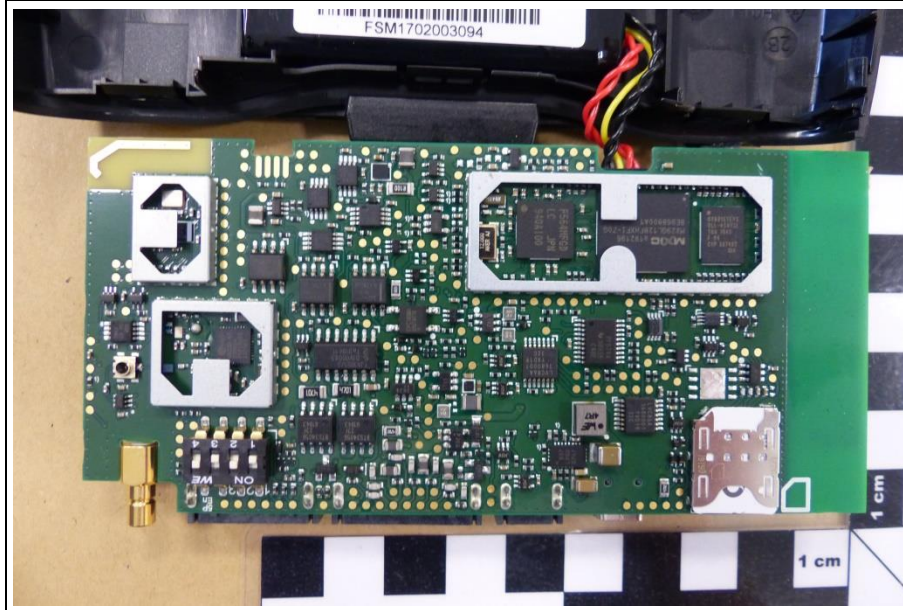
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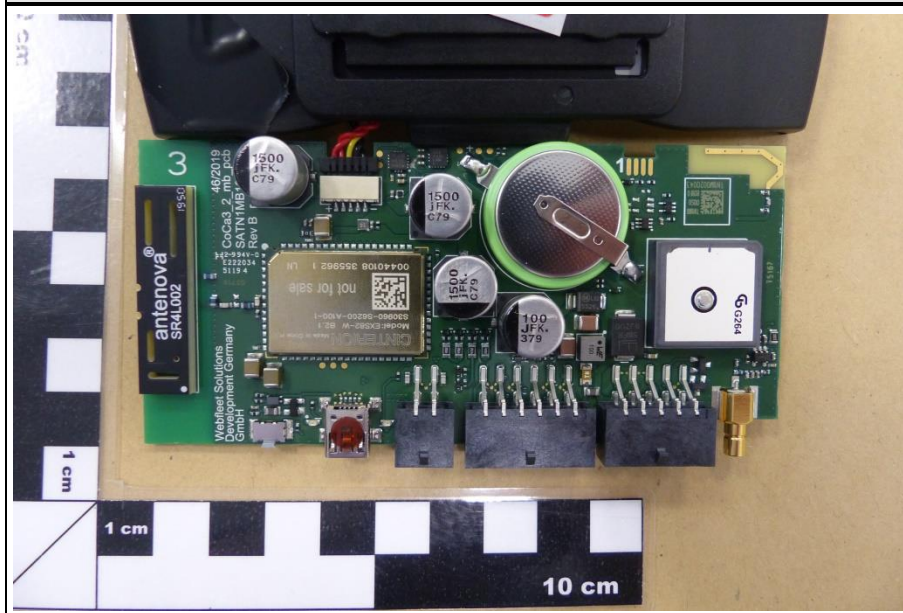
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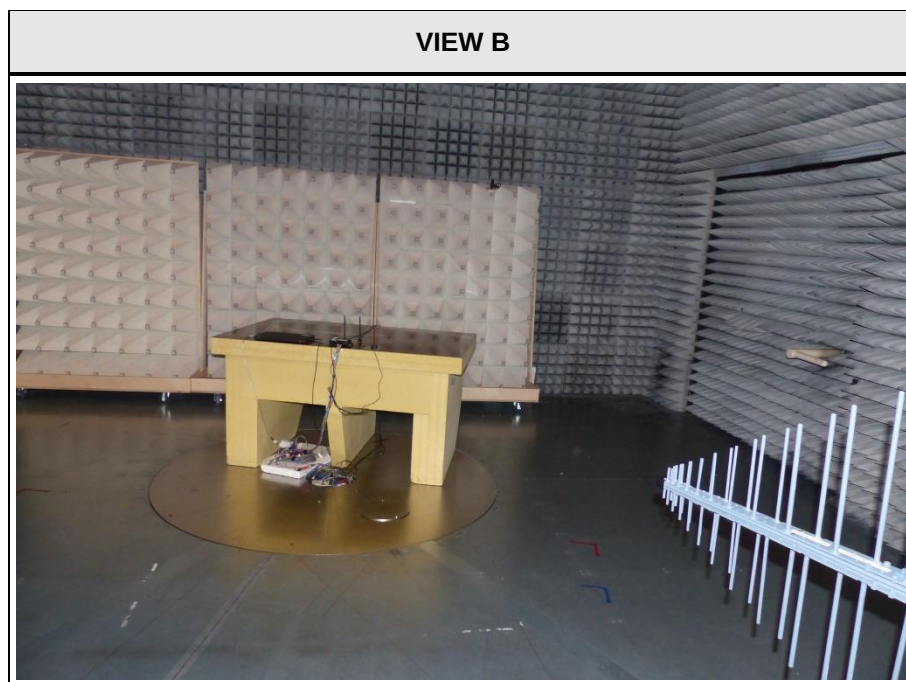
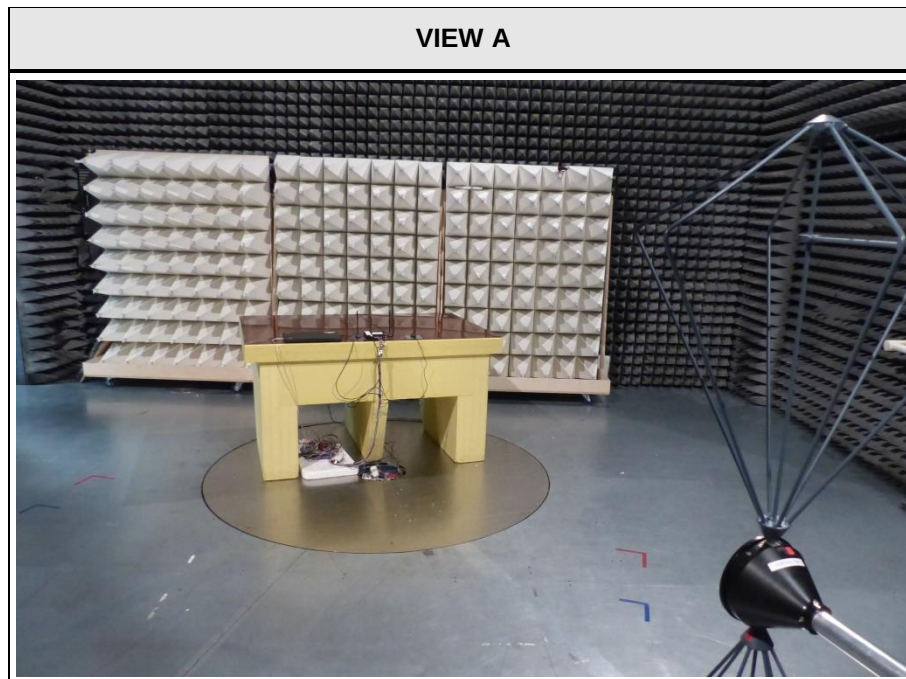
VIEW I



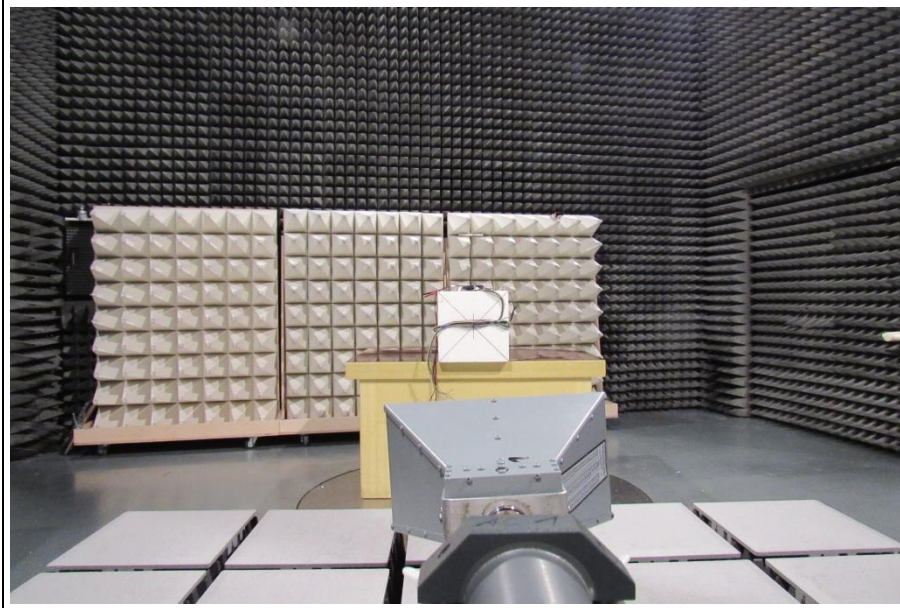
VIEW J



1.3 Photos – Test Setup



VIEW C



1.4 Support Equipment

Product Type	Device	Manufacturer	Model	Comment
SIM1	Communication Tester	R&S	CMU200	EF00304 – in combination with SIM2
SIM2	UICC/USIM test card for UMTS (mini)	COMPRION GmbH	Plug-In, Mini-UICC, 4FF	EF01557 – in combination with SIM1
SIM3	Communication Tester	R&S	CBT	Signalling
AE1	Notebook	Lenovo	L470	Serial number PF0VH6SK
AE2	Power Supply AC Adapter	Lenovo	ADLX65NCC3A	2015/07
AE3	GPS / Glonass / Galileo antenna	2J Antenna	2JD01MPG	Test Sample ID 27960
CBL	Standard IO Interface cable	Not specified	Not specified	length = 3 m – Test Sample ID 27959
Description:				
AE1 – AE3	Auxiliary Equipment			
SIM1 – SIM3	Simulator			
CBL	Connecting Cable			
SFT	Software			
Comment: None.				

1.5 Test Modes

Mode	Description
GPRS	Channel = 189 Mode = Transmit Power = Maximum Modulation = GMSK Number of time slots = 1 Duty cycle = 12.5 %
DH5 Single	Mode = Transmit Modulation = GFSK Spreading = None Packet type = DH5 Duty cycle = 78%

1.6 Test Frequencies

Designator	Mode	Channel	Frequency [MHz]
F1	Bluetooth BR/EDR, Tx	128	2480.0
F2	GSM 850, Tx	189	836.4

1.7 Sample emission level calculation

The following is a description of terms and a sample calculation, as appears in the radiated emissions data table. The numbers used in the calculation are for example only. There is no direct correlation to the specific data taken for the product described in this document:

Reading:

This is the reading obtained on the spectrum analyzer in dBμV. Any external preamplifiers used are taken into account through internal analyzer settings.

A.F.:

This is the antenna factor for the receiving antenna. It is a conversion factor, which converts electric fields strengths to voltages, which can be measured directly on the spectrum analyzer. It is treated as a loss in dB. Cable losses have been included with the A.F. to simplify the calculations. The antenna factor is used in calculations as follows:

$$\text{Reading on Analyzer (dB}\mu\text{V)} + \text{A.F. (dB/m)} = \text{Net field strength (dB}\mu\text{V/m)}$$

Net:

This is the net field strength measurement (as shown above).

Limit:

This is the FCC Class B radiated emission limit (in units of dBμV/m). The FCC limits are given in units of μV/m. The following formula is used to convert the units of μV/m to dBμV/m:

$$\text{Limit (dB}\mu\text{V/m)} = 20 \cdot \log(\mu\text{V/m})$$

Margin:

This is the margin of compliance below the FCC limit. The units are given in dB. A negative margin indicates the emission was below the limit. A positive margin indicates that the emission exceeds the limit.

Example only:

Reading + AF	= Net Reading	:	Net reading - FCC limit	= Margin
+21.5 dBμV + 26 dB/m	= 47.5 dBμV/m	:	47.5 dBμV/m - 57.0 dBμV/m	= -9.5 dB

2 Result Summary

FCC 47 CFR Part 15C, 22H, 24E ISED RSS-132, 133, 247				
Product Standard Reference	Requirement	Reference Method	Result	Remarks
FCC § 15.247(d) FCC § 15.209 FCC § 22.917(a) FCC § 24.238(a) ISED RSS-132 § 4.5 Issue 3 ISED RSS-133 § 6.5 Issue 6 ISED RSS-247 § 5.5 Issue 2	Transmitter radiated spurious emissions	ANSI C63.10-2013 ANSI/TIA-603-D-2016 KDB 971168 ANSI C63.26-2015 5.5	PASS	
Comment: None.				

Possible Test Case Verdicts	
PASS	Test object does meet the requirements
FAIL	Test object does not meet the requirements
N/T	Required by standard but not tested
N/R	Not required by standard for the test object

3 Test Conditions and Results

3.1 Test Conditions and Results - Transmitter radiated emissions

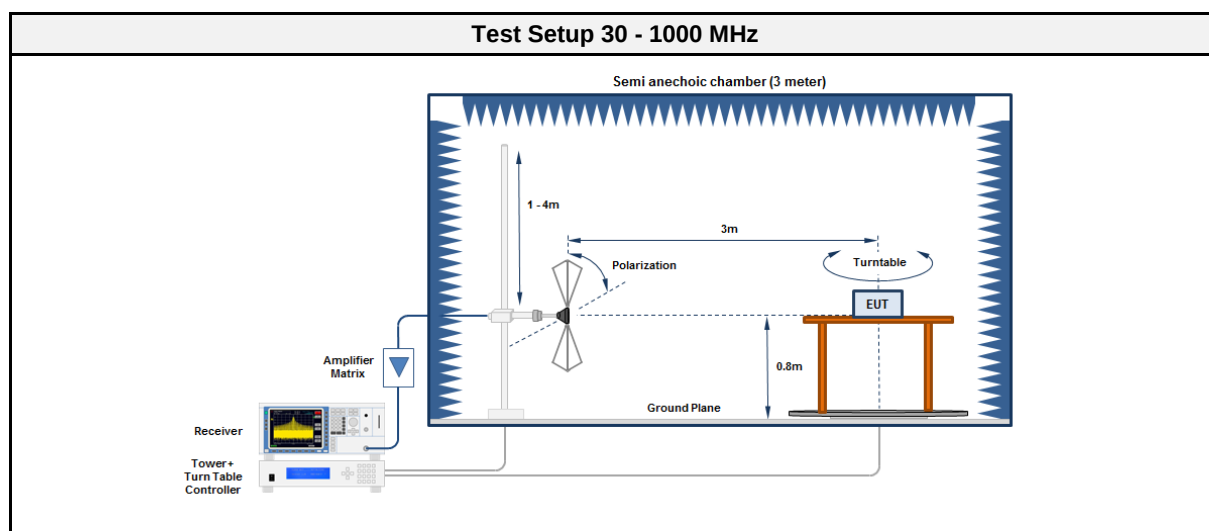
3.1.1 Information

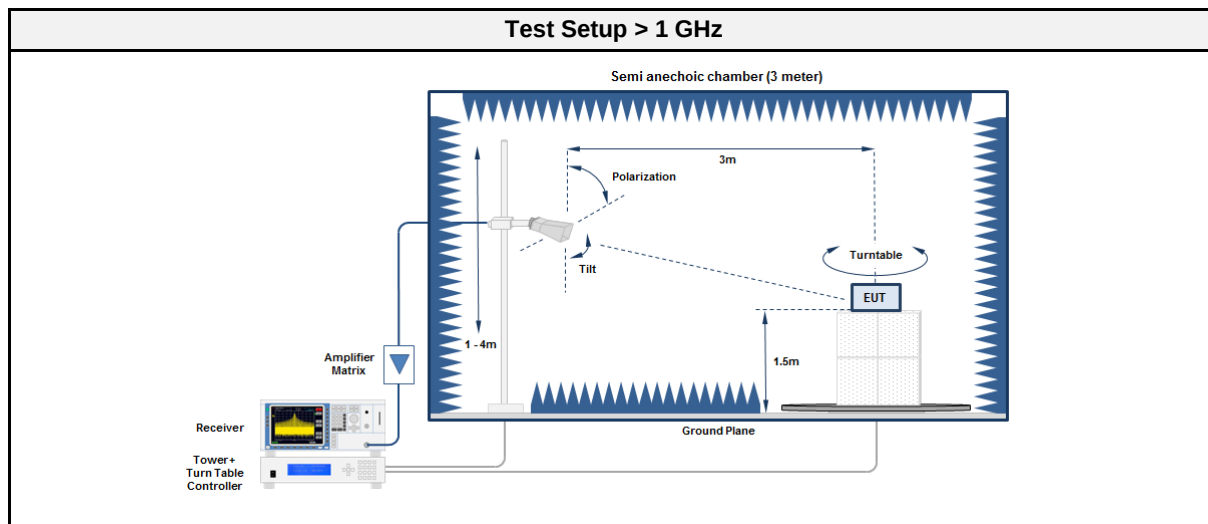
Test Information	
Reference	FCC § 22.917(a) / FCC § 24.238(a) ISED RSS-132 § 4.5 / ISED RSS-133 § 6.5
Measurement Method	ANSI/TIA-603-D / ANSI C63.26-2015 5.5
Operator	Abdullah Al Jamal
Date	2020-03-20
Measured modes	Worst-case Tx scenario (radiated measurements) of all possible simultaneous transmitting technologies determined: BR/EDR + GSM 850. BR/EDR – 2480 MHz, mode DH5 determined as worst-case Tx scenario (radiated measurements, according to the test report). GSM 850 – FCC - OET TCB Form 731 Grant of Equipment Authorization, certification issued under the authority of the Federal Communications Commission.
Additional information	Measurement plots not listed in the test report contain plots with a measured noise floor only.

3.1.2 Limits

Limits	
Carrier frequency range [MHz]	Limit
824-849	Attenuation below transmitter power $\geq 43 + 10 \cdot \log_{10}(P)$ [dB] = -13 dBm

3.1.3 Setup





3.1.4 Equipment

Test Software			
Description	Manufacturer	Name	Version
EMC Software	DARE Instruments	RadiMation	2016.1.10

Test Equipment 30 - 1000 MHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2019-09	2020-09
Antenna	R&S	VULB 9162	EF00978	2019-10	2022-10

Test Equipment > 1 GHz					
Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
Anechoic Chamber	Frankonia	AC1	EF00062	2018-07	2021-07
Measurement Receiver	Agilent	N9038A-526/WXP	EF01070	2019-09	2020-09
Antenna	Schwarzbeck	BBHA 9120D	EF00018	2019-10	2022-10
Antenna	Amplifier Research	AT4560	EF01152	2018-10	2020-10

3.1.5 Procedure

Test Procedure 30 - 1000 MHz
1. EUT is placed on a non conducting support at the center of a turn table 0.8 m above the ground 2. EUT set to test mode 3. The receiver is set to peak detection with max hold 4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m 5. All significant emissions are measured again using the corresponding final detector

Test Procedure > 1 GHz
1. EUT is placed on a non conducting support at the center of a turn table 1.5 m above the ground 2. EUT set to test mode 3. The receiver is set to peak detection with max hold 4. The EUT is rotated through 360° and the height of the antenna is varied from 1 m to 4 m 5. All significant emissions are measured again using the corresponding final detector

3.1.6 Results

Test Results - GSM850						
Frequency [MHz]	Mode	Emission [MHz]	Level [dBm]	Pol.	Limit [dBm]	Margin [dB]
836.4 MHz + 2480.0 MHz	GSM850 + BR/EDR	No significant emission detected.				

ANNEX A Transmitter sprurious emissions

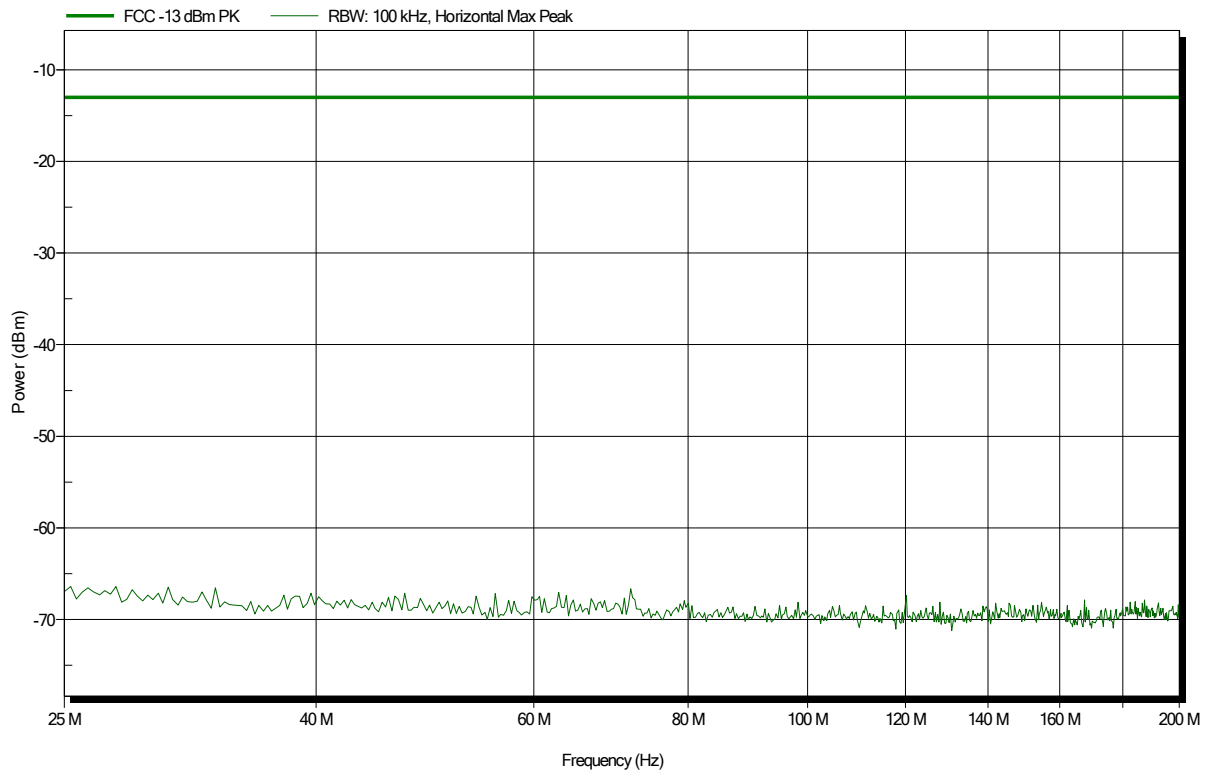
Spurious emissions according to FCC

Project number: G0M-2001-8775

Applicant: Webfleet Solutions B.V.
EUT Name: Telematic Device with GSM+LTE+GNSS+BT
Model: L0740
Test Site: Eurofins Product Service GmbH
Operator: Abdullah Al Jamal
Measurement software: RadiMation, version 2016.1.10
Test Conditions: Tnom: 23.3°C, Vnom: 24.0 VDC
Antenna: Rohde & Schwarz HK 116, Horizontal
Measurement distance: 3 m
Mode: TX; Multi Tx – EUT horizontal –
GSM 850 (G3, 1 Tx slot, CH189) +
BR/EDR (1-DH5, CH78) – Test Sample ID 27954

Test Date: 2020-03-20
Note:

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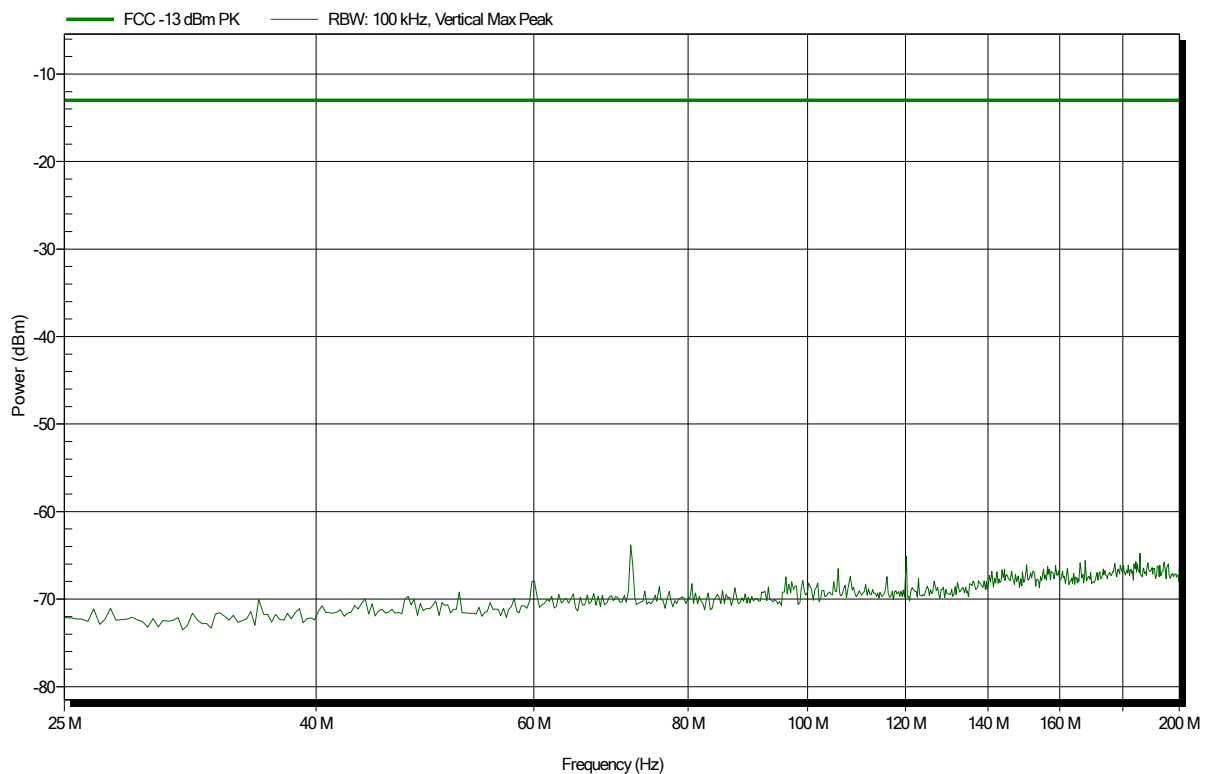
Spurious emissions according to FCC

Project number: G0M-2001-8775

Applicant: Webfleet Solutions B.V.
EUT Name: Telematic Device with GSM+LTE+GNSS+BT
Model: L0740
Test Site: Eurofins Product Service GmbH
Operator: Abdullah Al Jamal
Measurement software: RadiMation, version 2016.1.10
Test Conditions: Tnom: 23.3°C, Vnom: 24.0 VDC
Antenna: Rohde & Schwarz HK 116, Vertical
Measurement distance: 3 m
Mode: TX; Multi Tx – EUT horizontal –
GSM 850 (G3, 1 Tx slot, CH189) +
BR/EDR (1-DH5, CH78) – Test Sample ID 27954

Test Date: 2020-03-20
Note:

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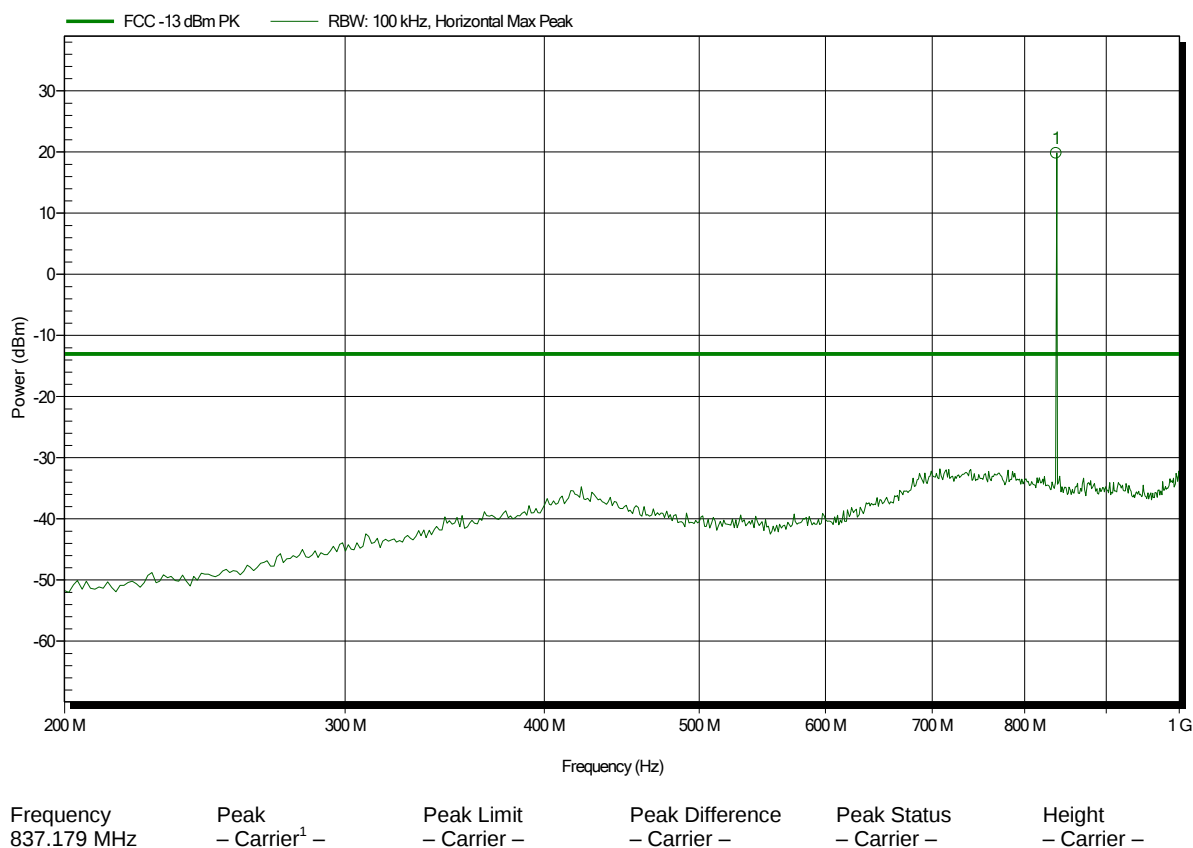
Spurious emissions according to FCC

Project number: G0M-2001-8775

Applicant: Webfleet Solutions B.V.
EUT Name: Telematic Device with GSM+LTE+GNSS+BT
Model: L0740
Test Site: Eurofins Product Service GmbH
Operator: Abdullah Al Jamal
Measurement software: RadiMation, version 2016.1.10
Test Conditions: Tnom: 23.3°C, Vnom: 24.0 VDC
Antenna: Rohde & Schwarz HL 223, Horizontal
Measurement distance: 3 m
Mode: TX; Multi Tx – EUT horizontal –
GSM 850 (G3, 1 Tx slot, CH189) +
BR/EDR (1-DH5, CH78) – Test Sample ID 27954

Test Date: 2020-03-20
Note:

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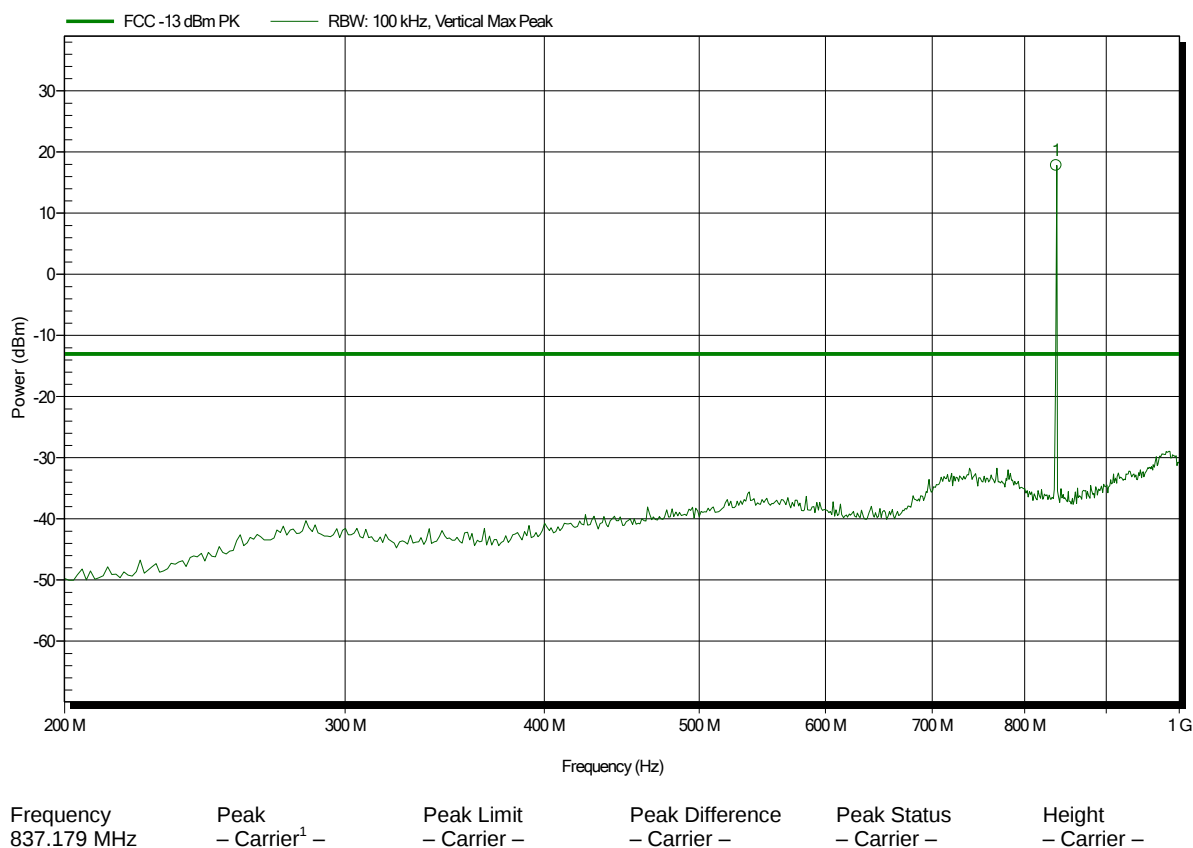
Spurious emissions according to FCC

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EUT Name: Telematic Device with GSM+LTE+GNSS+BT
Model: L0740
Test Site: Eurofins Product Service GmbH
Operator: Abdullah Al Jamal
Measurement software: RadiMation, version 2016.1.10
Test Conditions: Tnom: 23.3°C, Vnom: 24.0 VDC
Antenna: Rohde & Schwarz HL 223, Vertical
Measurement distance: 3 m
Mode: TX; Multi Tx – EUT horizontal –
GSM 850 (G3, 1 Tx slot, CH189) +
BR/EDR (1-DH5, CH78) – Test Sample ID 27954

Test Date: 2020-03-20
Note:

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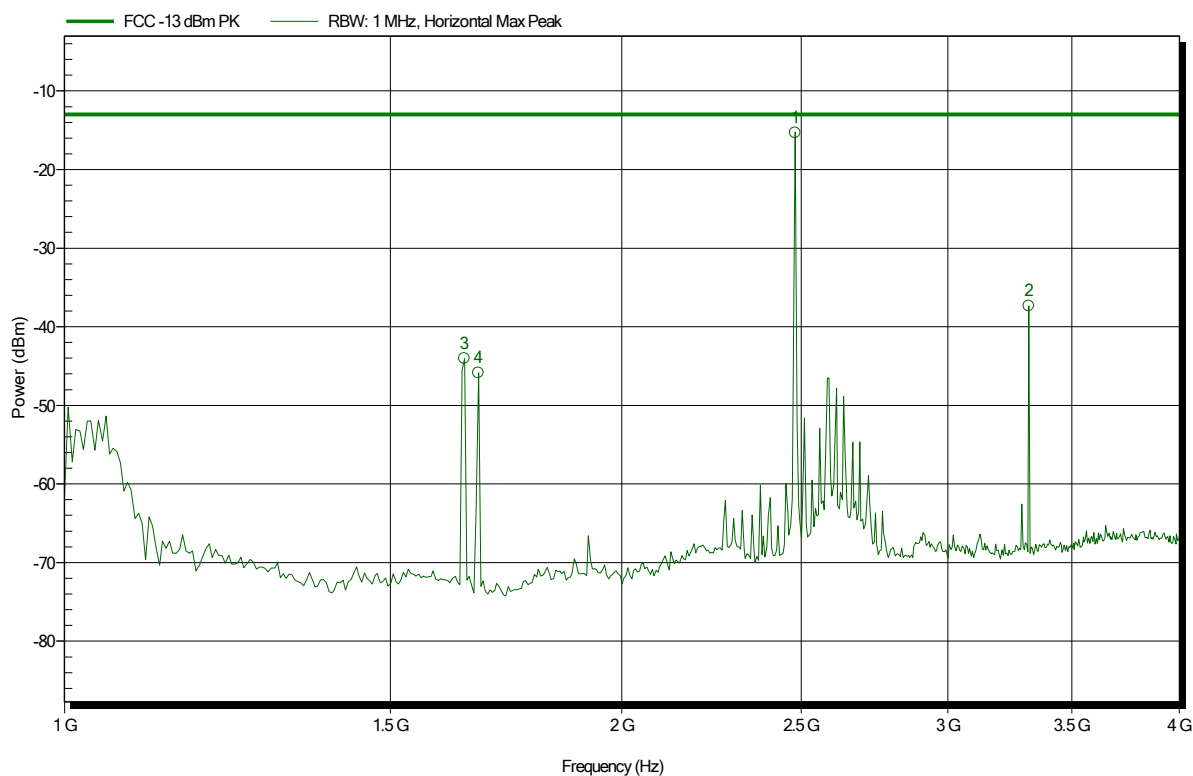


Spurious emissions according to FCC

Project number: G0M-2001-8775

Applicant: Webfleet Solutions B.V.
EUT Name: Telematic Device with GSM+LTE+GNSS+BT
Model: L0740
Test Site: Eurofins Product Service GmbH
Operator: Abdullah Al Jamal
Measurement software: RadiMation, version 2016.1.10
Test Conditions: Tnom: 23.3°C, Vnom: 24.0 VDC
Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m
Mode: TX; Multi Tx – EUT horizontal –
GSM 850 (G3, 1 Tx slot, CH189) +
BR/EDR (1-DH5, CH78) – Test Sample ID 27954
Test Date: 2020-03-20
Note:

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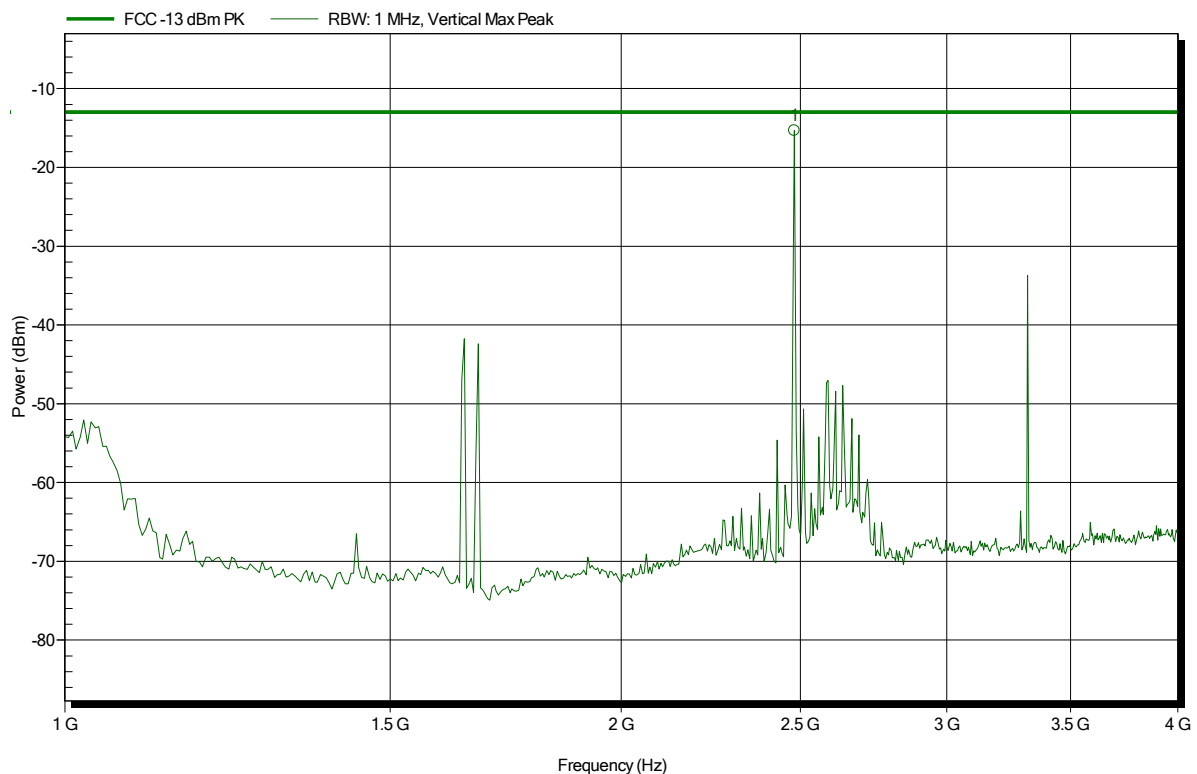
Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Height
1.644 GHz	-44 dBm	-13 dBm	-31.05 dB	Pass	1.3 m
1.673 GHz	-45.9 dBm	-13 dBm	-32.87 dB	Pass	1.3 m
2.481 GHz	– Carrier –	– Carrier –	– Carrier –	– Carrier –	– Carrier –
3.317 GHz	-37.3 dBm	-13 dBm	-24.34 dB	Pass	1.3 m

Spurious emissions according to FCC

Project number: G0M-2001-8775

Applicant: Webfleet Solutions B.V.
EUT Name: Telematic Device with GSM+LTE+GNSS+BT
Model: L0740
Test Site: Eurofins Product Service GmbH
Operator: Abdullah Al Jamal
Measurement software: RadiMation, version 2016.1.10
Test Conditions: Tnom: 23.3°C, Vnom: 24.0 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m
Mode: TX; Multi Tx – EUT horizontal –
GSM 850 (G3, 1 Tx slot, CH189) +
BR/EDR (1-DH5, CH78) – Test Sample ID 27954
Test Date: 2020-03-20
Note:

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Frequency	Peak	Peak Limit	Peak Difference	Peak Status	Height
2.481 GHz	– Carrier ² –	– Carrier –	– Carrier –	– Carrier –	– Carrier –

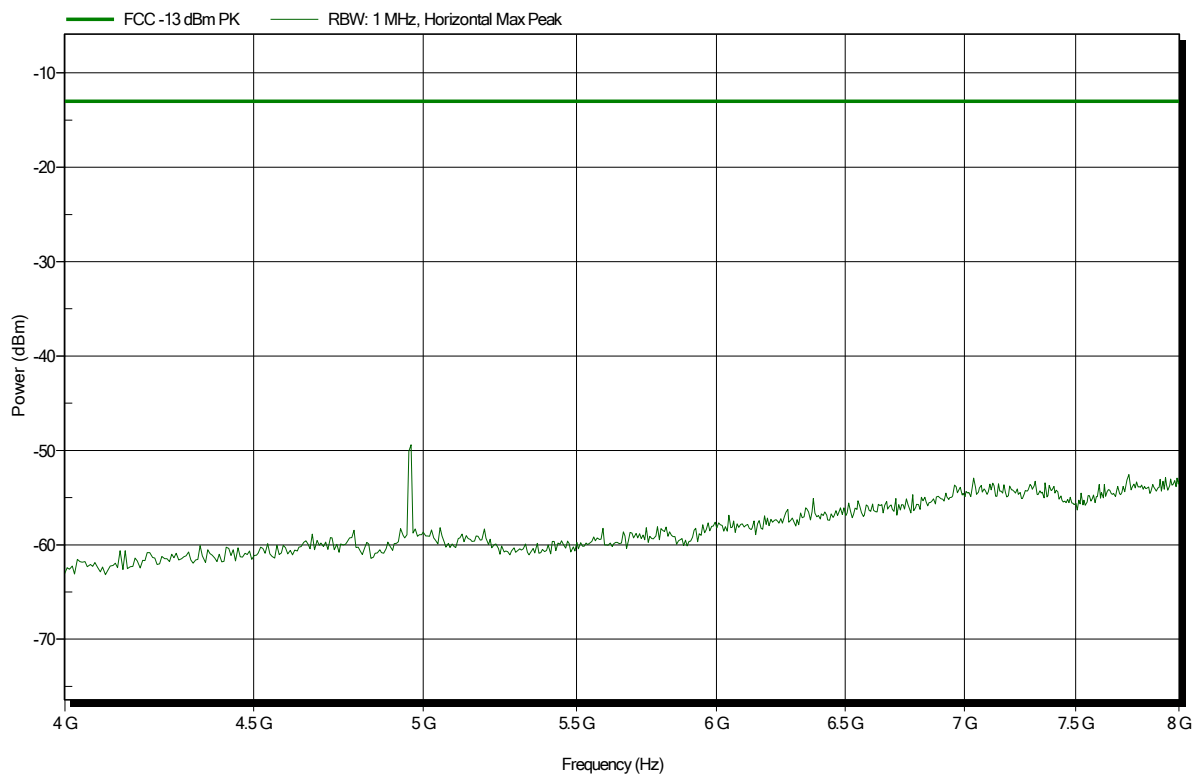
Spurious emissions according to FCC

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Antenna: Schwarzbeck BBHA 9120D, Horizontal
Measurement distance: 1 m
Mode: TX; Multi Tx – EUT horizontal –
GSM 850 (G3, 1 Tx slot, CH189) +
BR/EDR (1-DH5, CH78) – Test Sample ID 27954

Test Date: 2020-03-20
Note:

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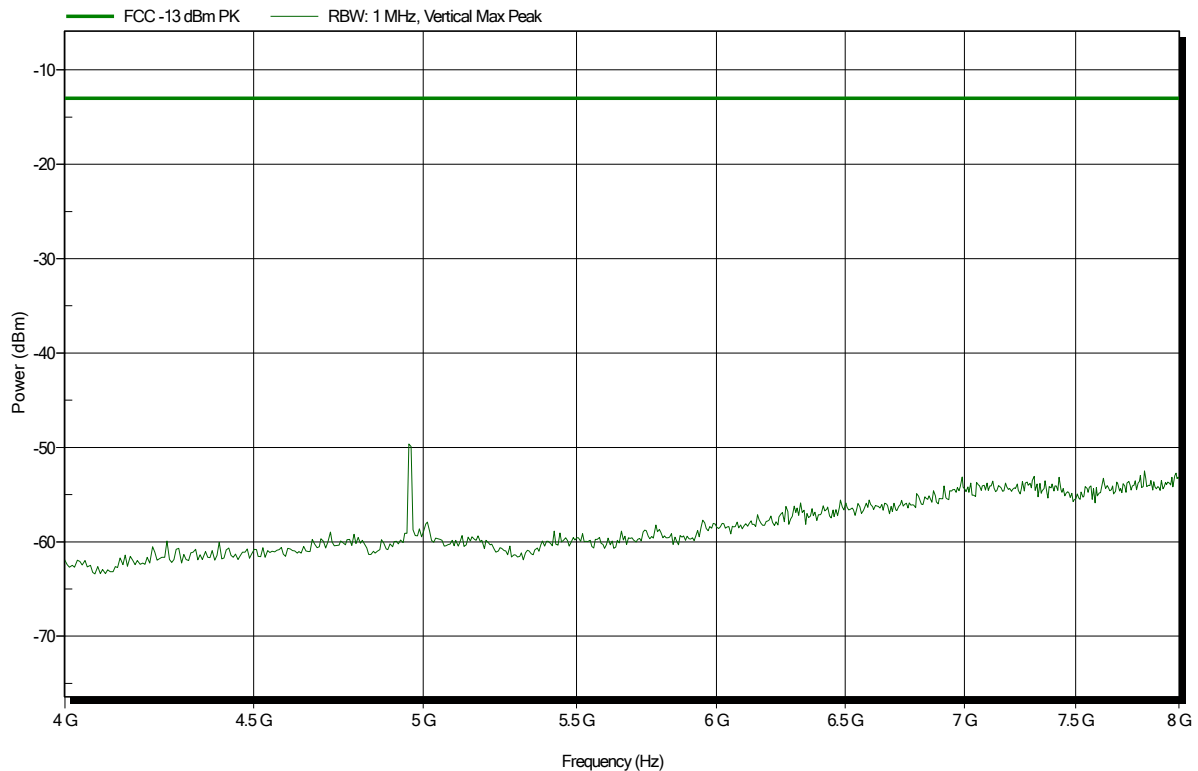


Spurious emissions according to FCC

Project number: G0M-2001-8775

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Model: L0740
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Test Conditions: Tnom: 23.3°C, Vnom: 24.0 VDC
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GSM 850 (G3, 1 Tx slot, CH189) +
BR/EDR (1-DH5, CH78) – Test Sample ID 27954
Test Date: 2020-03-20
Note:

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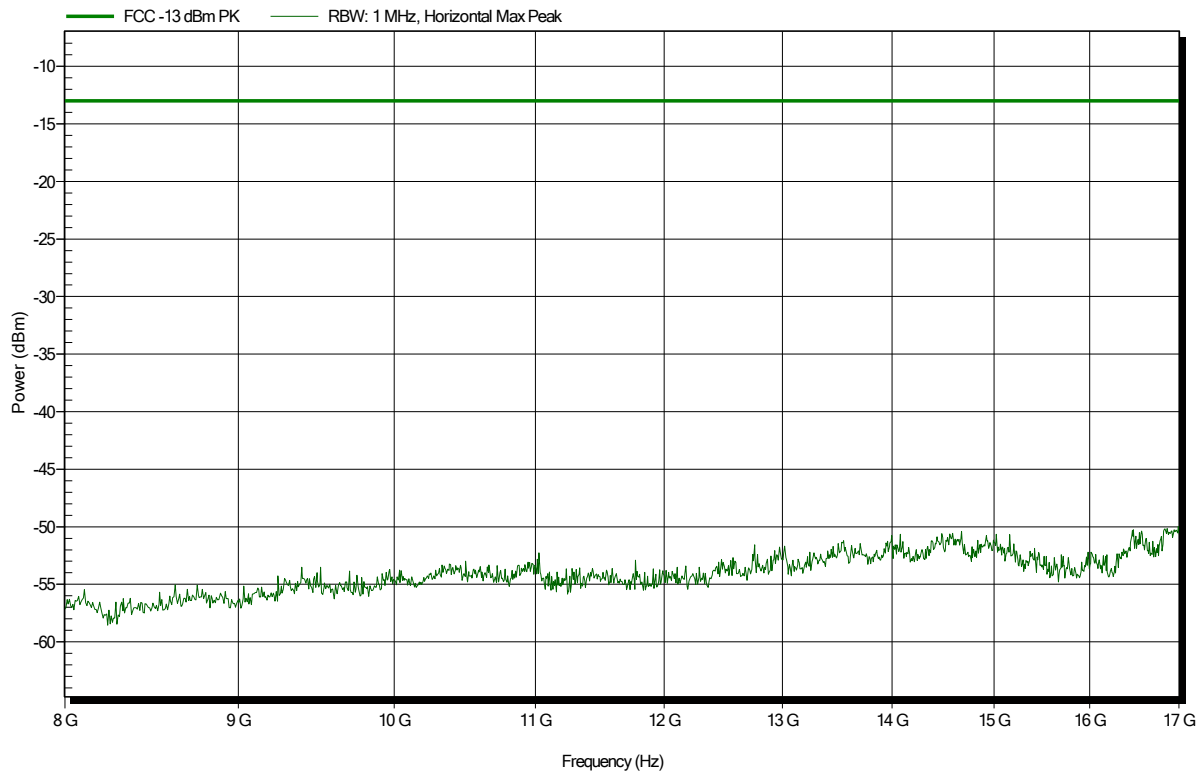


Spurious emissions according to FCC

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GSM 850 (G3, 1 Tx slot, CH189) +
BR/EDR (1-DH5, CH78) – Test Sample ID 27954
Test Date: 2020-03-20
Note:

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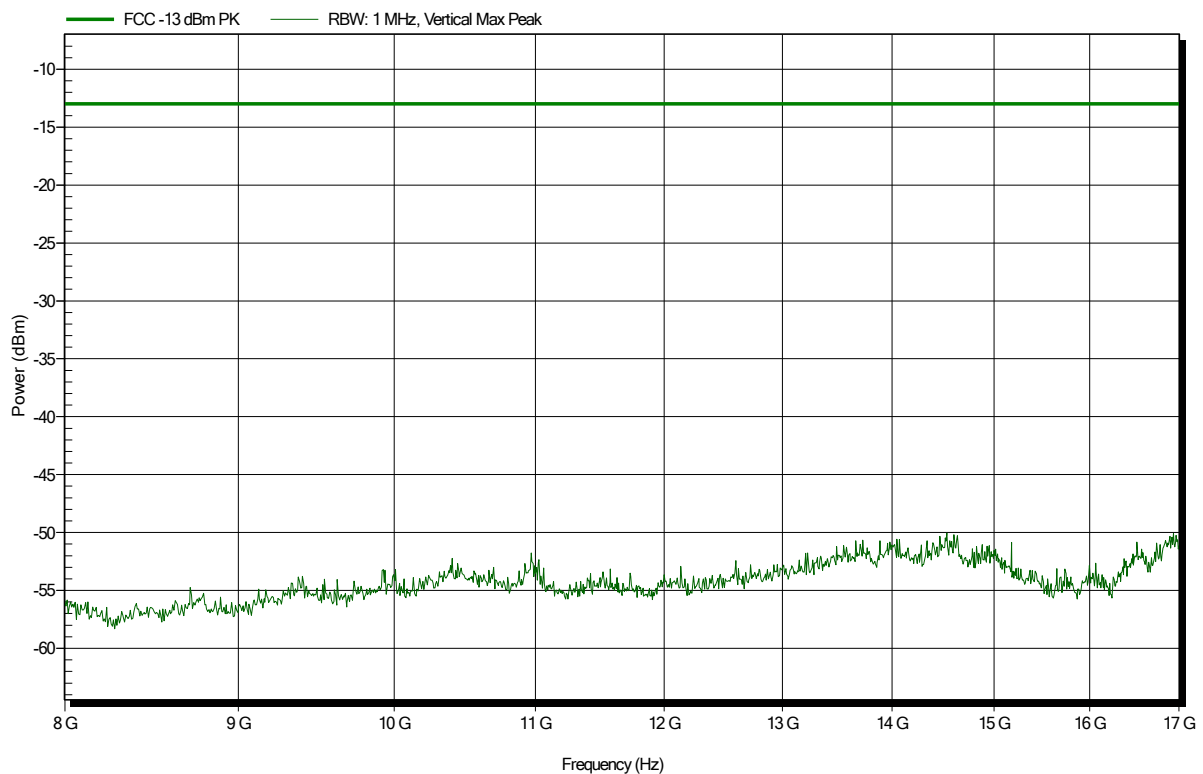
Spurious emissions according to FCC

Project number: G0M-2001-8775

Applicant: Webfleet Solutions B.V.
EUT Name: Telematic Device with GSM+LTE+GNSS+BT
Model: L0740
Test Site: Eurofins Product Service GmbH
Operator: Abdullah Al Jamal
Measurement software: RadiMation, version 2016.1.10
Test Conditions: Tnom: 23.3°C, Vnom: 24.0 VDC
Antenna: Schwarzbeck BBHA 9120D, Vertical
Measurement distance: 1 m
Mode: TX; Multi Tx – EUT horizontal –
GSM 850 (G3, 1 Tx slot, CH189) +
BR/EDR (1-DH5, CH78) – Test Sample ID 27954

Test Date: 2020-03-20
Note:

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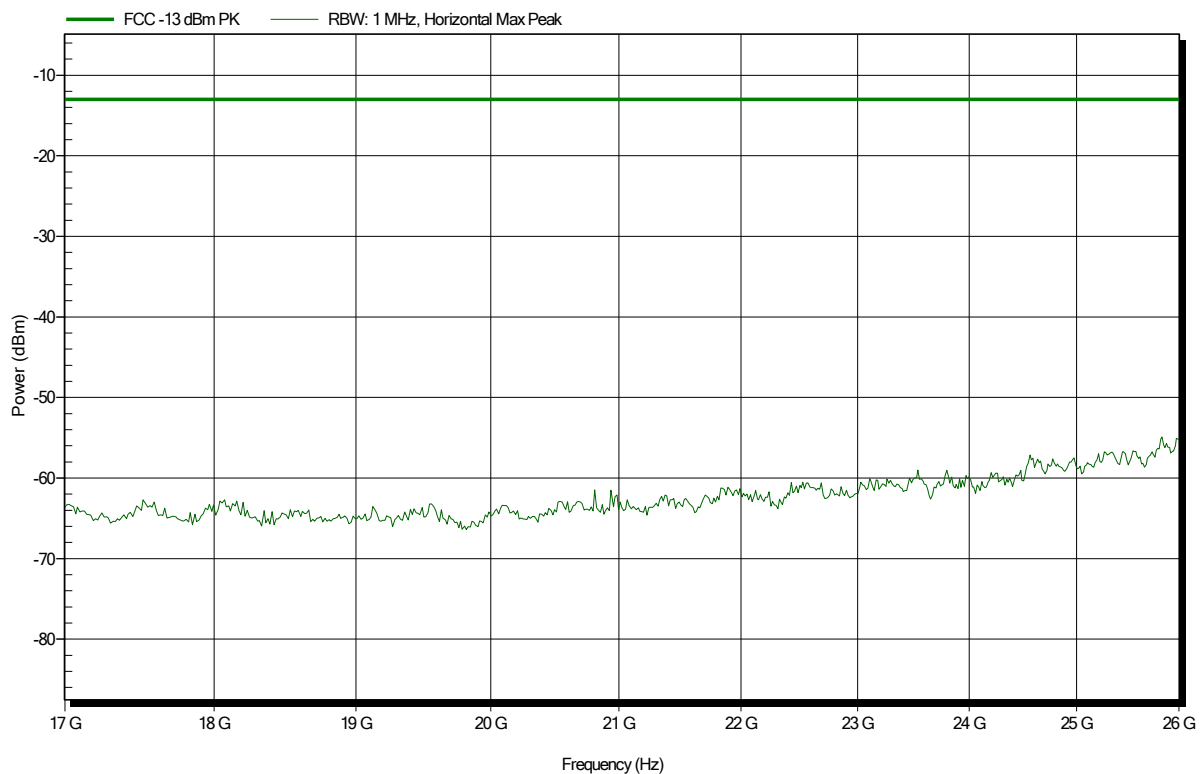
Spurious emissions according to FCC

Project number: G0M-2001-8775

Applicant: Webfleet Solutions B.V.
EUT Name: Telematic Device with GSM+LTE+GNSS+BT
Model: L0740
Test Site: Eurofins Product Service GmbH
Operator: Abdullah Al Jamal
Measurement software: RadiMation, version 2016.1.10
Test Conditions: Tnom: 23.3°C, Vnom: 24.0 VDC
Antenna: Amplifier Research AT4560, Horizontal
Measurement distance: 1 m
Mode: TX; Multi Tx – EUT horizontal –
GSM 850 (G3, 1 Tx slot, CH189) +
BR/EDR (1-DH5, CH78) – Test Sample ID 27954

Test Date: 2020-03-20
Note:

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Spurious emissions according to FCC

Project number: G0M-2001-8775

Applicant: Webfleet Solutions B.V.
EUT Name: Telematic Device with GSM+LTE+GNSS+BT
Model: L0740
Test Site: Eurofins Product Service GmbH
Operator: Abdullah Al Jamal
Measurement software: RadiMation, version 2016.1.10
Test Conditions: Tnom: 23.3°C, Vnom: 24.0 VDC
Antenna: Amplifier Research AT4560, Vertical
Measurement distance: 1 m
Mode: TX; Multi Tx – EUT horizontal –
GSM 850 (G3, 1 Tx slot, CH189) +
BR/EDR (1-DH5, CH78) – Test Sample ID 27954

Test Date: 2020-03-20
Note:

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