FCC SAR Exclusion Report

Product name	: Quectel EG25-G Manager V4 2G/3G/4G
Applicant	: Inter-data Europe B.V.
FCC ID	: 2A9P2-EG25-G

Test report No. : P000134978 003 Ver 1.00

Laboratory information

Accreditation

Kiwa Nederland B.V. complies with the accreditation criteria for test laboratories as laid down in ISO/IEC 17025:2017. The accreditation covers the quality system of the laboratory as well as the specific activities as described in the authorized annex bearing the accreditation number L248 and is granted by the Dutch Council For Accreditation (RvA: Raad voor Accreditatie).

Kiwa Nederland B.V. is designated by the FCC as an Accredited Test Firm for compliance testing of equipment subject to Certification under Parts 15 & 18. The Designation number is: NL0001.

Kiwa Nederland B.V. is a Wireless Device Testing laboratory recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements.
The Industry Canada company number for Kiwa Nederland B.V. is: 4173A. The CABID is NL0001.

Kiwa Nederland B.V. is a registered Conformity Assessment body (CAB) under the Japan-EC MRA (Agreement on Mutual Recognition between Japan and the European Community). The registration number is: 201.

Documentation

The test report must always be reproduced in full; reproduction of an excerpt only is subject to written approval of the testing laboratory. The documentation of the testing performed on the tested devices is archived for 10 years at Kiwa Nederland B.V.

Testing Location

Test Site	Kiwa Nederland B.V.
Test Site location	Wilmersdorf 50 7327 AC Apeldoorn The Netherlands Tel. +31 88998 3393
Test Site FCC	NL0001
CABID	NL0001

Revision History

Version	Date	Remarks	By
v0.50	21-11-2022	Draft	KK
v1.00	21-02-2023	Final	KK

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1 General Description

1.1 Applicant

Client name:	Inter-data Europe B.V.
Address:	Wanraaij 4, Andelst, Netherlands
Telephone:	+31617518580
E-mail:	d.bouwens@inter-data.eu
Contact name:	Daniel Bouwens

1.2 Manufacturer

Manufacturer name:	Inter-data Europe B.V.
Address:	Wanraaij 4, Andelst, Netherlands
Telephone:	+31617518580
E-mail:	d.bouwens@inter-data.eu
Contact name:	Daniel Bouwens

1.3 Tested Equipment Under Test (EUT)

Product name:	Quectel EG25-G Manager V4 2G/3G/4G
Brand name:	Inter-data Europe B.V.
Product description:	GNSS hardware with the option to write own scripts and control all peripherals including CANbus
FCC ID:	2A9P2-EG25-G
Software version:	-
Hardware version:	XG3740 / XG3764

1.4 Applicable standards

47 CFR § 1.1307 (b)(1)(i)(A)

1.5 Conclusions

The sample of the product showed **NO NON-COMPLIANCES** to the specifications stated in paragraph 1.4 of this report.

The results of the test as stated in this report, are exclusively applicable to the product items as identified in this report. Kiwa Netherland B.V. accepts no responsibility for any properties of product items in this test report, which are not supported by the tests as specified in paragraph 1.4 *"Applicable standards".*

Assessment is performed by:

Name : Koray Korcum, MSc

Review of assessment methods and report by:

Name : ing. R. van Barneveld

The above conclusions have been verified by the following signatory:

Date : 24-02-2023

Name : ing. R. van Barneveld

Function : Test Engineer

Signature :

2 SAR exclusion Evaluation

Note: the transmitter power information taken from Quectel EG25-G module test report (report number HR/2019/1001601).

2.1 Transmitter specifications

Transmitter 1

Variable (unit)	Value	Symbol
Conducted time-averaged output power (mW)	1790.6	P
Time-averaged output power ERP (mW)	2177.7	PERP
Operating frequency range (MHz)	850	f
Separation distance (cm)	45	d
Separation distance (m)	0.45	R

Transmitter 1

Variable (unit)	Value	Symbol
Conducted time-averaged output power (mW)	924.7	P
Time-averaged output power ERP (mW)	3681.3	PERP
Operating frequency range (MHz)	1900	f
Separation distance (cm)	45	D
Separation distance (m)	0.45	R

Transmitter 1

Variable (unit)	Value	Symbol
Conducted time-averaged output power (mW)	243.2	P
Time-averaged output power ERP (mW)	295.8	PERP
Operating frequency range (MHz)	850	f
Separation distance (cm)	45	D
Separation distance (m)	0.45	R

Transmitter 1

Variable (unit)	Value	Symbol
Conducted time-averaged output power (mW)	244.3	P
Time-averaged output power ERP (mW)	972.7	PERP
Operating frequency range (MHz)	1900	f
Separation distance (cm)	45	D
Separation distance (m)	0.45	R

Transmitter 1

Variable (unit)	Value	Symbol
Conducted time-averaged output power (mW)	251.2	P
Time-averaged output power ERP (mW)	305.5	PERP
Operating frequency range (MHz)	850	f
Separation distance (cm)	45	d
Separation distance (m)	0.45	R

Transmitter 1

Variable (unit)	Value	Symbol
Conducted time-averaged output power (mW)	291.0	P
Time-averaged output power ERP (mW)	1158.8	PERP
Operating frequency range (MHz)	1900	f
Separation distance (cm)	45	d
Separation distance (m)	0.45	R

2.2 Evaluation calculations

Transmitter 1
Transmitter 1 is evaluated according to method C of KDB 447498 D04 v01

Method C:

Transmitter frequency (MHz)	Threshold ERP (mW)
0.3 – 1.34	$1920 * R^2 * 1000$
1.34 – 30	$3450 * R^2/f^2 * 1000$
30 – 300	$3830 * R^2$
300 – 1500	$12.8 * R^2 * f$
1500 – 100 GHz	$19200 * R^2$

Filling in the values of R (m) and f (MHz) as reported in clause 2.1 in the threshold calculation equations in the table above gives the result:

Frequency at 850 MHz
P_{th} = 2203.2 mW

Frequencies above 1900 MHz
P_{th} = 3888 mW

P or P_{ERP} = 2177.7 mW which is less than the calculated P_{th} so the EUT complies with the SAR based exemption requirement.

P or P_{ERP} = 3681.3 mW which is less than the calculated P_{th} so the EUT complies with the SAR based exemption requirement.

P or P_{ERP} = 295.8 mW which is less than the calculated P_{th} so the EUT complies with the SAR based exemption requirement.

P or P_{ERP} = 972.7 mW which is less than the calculated P_{th} so the EUT complies with the SAR based exemption requirement.

P or P_{ERP} = 305.5 mW which is less than the calculated P_{th} so the EUT complies with the SAR based exemption requirement.

P or P_{ERP} = 1158.8 mW which is less than the calculated P_{th} so the EUT complies with the SAR based exemption requirement.

2.3 Conclusion

Since the EUT does not cause exposure in excess of the general population limit, no additional mitigation actions are required.