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The Netherlands
Chamber of Commerce
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FCC MPE calculation Report

Product name : Luminaire controller

Applicant : Flashnet SA

FCC ID : XMR2021BG770AGL

Test report No. : P000191762 03 Ver 1.00

Laboratory information

Accreditation

Telefication 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 L021 and is granted on 30 November 1990 by the Dutch Council For Accreditation (RvA: Raad voor Accreditatie).

Telefication 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.

Telefication 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 Telefication is: 4173A.

Telefication 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 Telefication Netherlands.

Testing Location

Test Site	Kiwa Telefication BV
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
V0.5	19-09-2022	Draft	PS
V1.0	20-09-2022	Initial release	PS

Table of Contents

1 General Description

1.1 Applicant

Client name:	Flashnet SA
Address:	Fundatura Harmanului 4A
Zip code:	500240 Brasov Romania
Telephone:	004 0735 206 031
E-mail:	mihaly.aniko@flasshnet.ro
Contact name:	Ms Aniko MIHALY

1.2 Manufacturer

Manufacturer name:	Flashnet SA
Address:	Fundatura Harmanului 4A
Zip code:	500240 Brasov Romania
Telephone:	004 0735 206 031
E-mail:	mihaly.aniko@flasshnet.ro
Contact name:	Ms Aniko MIHALY

1.3 Tested Equipment Under Test (EUT)

Product name:	Luminaire controller
Brand name:	inteliLIGHT
Product type:	Lighting controller
Model(s)	FRE-220-NEMA-NB1-M1-G
Batch and/or serial No.	0001
FCC ID:	XMR2021BG770AGL
Software version:	4226
Hardware version:	7V4

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. Telefication 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 : ing P.A. Suringa

Review of assessment methods and report by:

Name : ing r. van Barneveld

The above conclusions have been verified by the following signatory:

Date : 20-09-2022

Name : ing R. van Barneveld

Function : Test Engineer

Signature :

2 SAR exclusion Evaluation

2.1 Transmitter specifications

Transmitter 1 (LTE)

Variable (unit)	Value	Symbol
Conducted time-averaged output power (mW)	200	P
Time-averaged output power ERP (mW)	263	P_{ERP}
Operating frequency range (MHz)	835.225	f
Separation distance (cm)	20	d
Separation distance (m)	0.2	R

Transmitter 2 (NBiOT)

Variable (unit)	Value	Symbol
Conducted time-averaged output power (mW)	200	P
Time-averaged output power ERP (mW)	282	P_{ERP}
Operating frequency range (MHz)	1731	f
Separation distance (cm)	20	d
Separation distance (m)	0.2	R

2.2 Evaluation calculations

Transmitter 1 (LTE)
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:

P_{th} = 427.5 mW
P_{ERP} = 263 mW which is less than the calculated P_{th} so the EUT complies with the MPE-based exemption requirement.

Transmitter 2 (NBiOT)
Transmitter 2 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:

P_{th} = 768 mW
P_{ERP} =282 mW which is less than the calculated P_{th} so the EUT complies with the MPE-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.