EMC TEST REPORT

No. 200672E

Emission of electromagnetic disturbances

EQUIPMENT UNDER TEST

Equipment:	BLUESPOON
Type / model:	V 3.0
Manufacturer:	NEXTLINK.TO A/S
Tested by request of:	NEXTLINK.TO A/S

SUMMARY

The equipment complies with the requirements according to the following standard:

FCC part 15 (2001), Radio frequency devices - Subpart B:
Unintentional radiators, Class B

Date of issue: September 13, 2002

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CONTENTS

Page

1. Client information 3

2. Equipment under test (EUT) 3
- 2.1 Identification of the EUT 3
- 2.2 Additional information about the EUT 3
- 2.3 Peripheral equipment 3

3. Test specifications 4
- 3.1 Standards 4
- 3.2 Additions, deviations and exclusions from standards 4
- 3.3 Mode of operation during the tests 4

4. Test summary 4

5.Mains terminal continuous disturbance voltage in the frequency range 0,45 MHz to 30 MHz 5
- 5.1 Operating environment 5
- 5.2 Test set-up and test procedure 5
- 5.3 Measurement uncertainty 5
- 5.4 Test equipment and software 5
- 5.5 Test protocol 5

6.Radiated electromagnetic field in the frequency range 30 MHz to 1000 MHz 6
- 6.1 Operating environment 6
- 6.2 Test set-up and test procedure 6
- 6.3 Measurement uncertainty 6
- 6.4 Test equipment 7
- 6.5 Test protocol 8

Appendix - Test set-up photos 9

1. CLIENT INFORMATION

The EUT has been tested by request of

Company:	NEXTLINK.TO A/S Sandtoften 10 DK-2820 Gentofte DENMARK
Name of contact:	Jon Hein-Magnussen
E-mail:	Phone : + 45 45 96 20 13 E-mail: jon.magnussen@nextlink.to

2. EQUIPMENT UNDER TEST (EUT)

2.1 Identification of the EUT

Equipment:	BLUESPOON
Type/Model:	V 3.0
Brand name:	Bluespoon
Manufacturer:	NEXTLINK.TO A/S
Rating:	3,6 V DC (2,7 … 5,5 V DC)
Rating RF output power:	Power class 2
Frequency range:	2400 – 2483,5 MHz

2.2 Additional information about the EUT

The EUT consists of the following units:

Unit	Type	Serial number
BLUESPOON	V 3.0	-

2.3 Peripheral equipment

Peripheral equipment is defined as equipment needed for correct operation of the EUT, but not included as a part of the testing and evaluation of the EUT.

Equipment	Type	Serial number
AC/DC Power Adapter	WCAA05050002W02R Input: 100-240 V 50/60 Hz, 0.15 A; Output: 5.25 V DC, 500 mA	-
Charging Cradle	Bluespoon	-

3. TEST SPECIFICATIONS

3.1 Standards

FCC (2001) Part 15 - Radio frequency devices:

Subpart B - Unintentional radiators

	Frequency range, MHz	Limit
Conducted emission:	0.45 – 30	48 dBµV
Radiated emission (3 m distance):	30 – 88	40.0 dBµV/m
	88 – 216	43.5 dBµV/m
	216 – 960	46.0 dBµV/m
	960 – 1000	54.0 dBµV/m

3.2 Additions, deviations and exclusions from standards

No additions, deviations or exclusions have been made from the standard.

3.3 Mode of operation during the tests

The EUT was fixed in the Charging Cradle, supplied with 5,25 V DC through its power adapter (see 2.3), and was set into the stand by mode.

4. TEST SUMMARY

The results in this report apply only to sample tested:

Test	Result	Note
Conducted emission, 0,45 – 30 MHz	Pass	
Radiated emission, 30 MHz – 1000 MHz	Pass	

5. MAINS TERMINAL CONTINUOUS DISTURBANCE VOLTAGE IN THE FREQUENCY RANGE 0,45 MHZ TO 30 MHZ

5.1 Operating environment

Temperature: 24 °C
Relative Humidity: 35 %

5.2 Test set-up and test procedure

The mains terminal disturbance voltage was measured with the equipment under test (EUT) 0,8 m above the ground plane and 0,4 m from the vertical ground plane. The EUT was connected to an artificial mains network (AMN). The AMN was placed on a metallic, grounded floor. Amplitude measurements were performed with a quasi-peak detector. The test set-up photo is given in Appendix.

5.3 Measurement uncertainty

Mains terminal disturbance voltage, quasi-peak detection: ±2,0 dB

The measurement uncertainty describes the overall uncertainty of the given measured value during the operation of the EUT in the above-mentioned way. Measurement uncertainty is calculated in accordance with EA-4/02-1997. The measurement uncertainty is given with a confidence of 95%.

5.4 Test equipment and software

Test site: FCC

Equipment	Manufacturer	Type	SEMKO No.
Measurement receiver	Rohde & Schwarz	ESHS 30	4946
Artificial mains network	Rohde & Schwarz	ESH3-Z5	2727
Transformer	TUFVASSONS	AFM-1500	375

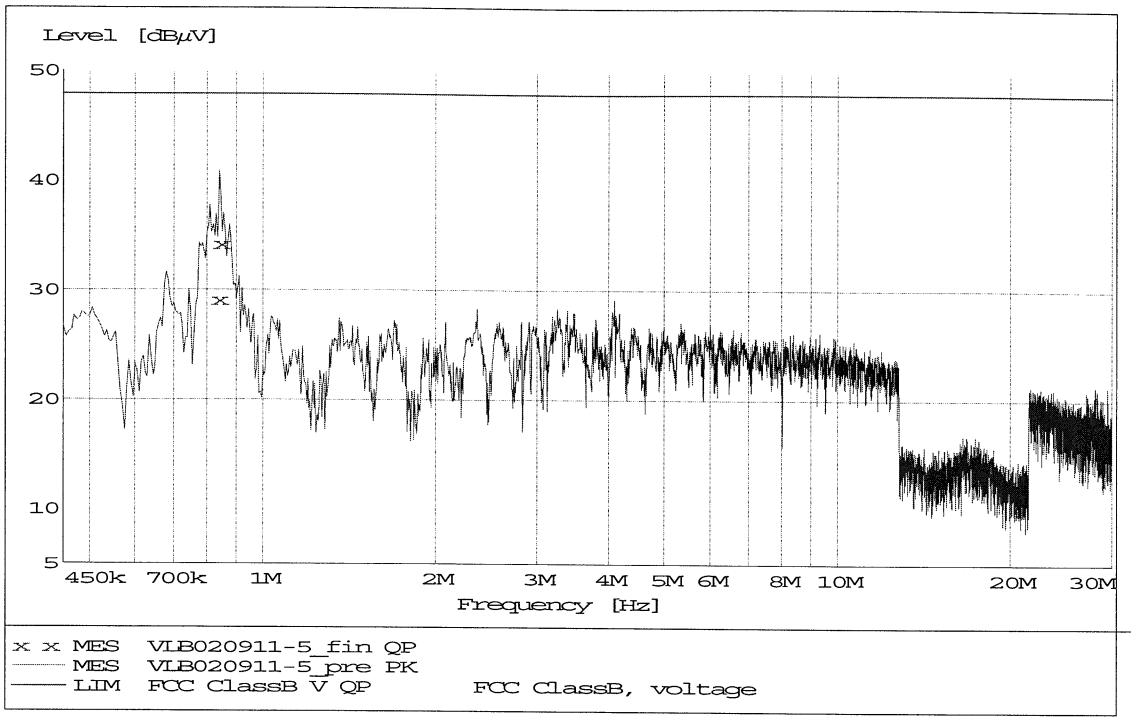
Software: ES-K1 V1.60

5.5 Test protocol

Date of test: April 25, 2002

Frequency /MHz	Quasi-Peak Disturbance Level /dB(µV)	Quasi-Peak Permitted limit /dB(µV)
0,835	29	48
0,840	34	48

An overview sweep performed with a peak detector is shown below.



6. RADIATED ELECTROMAGNETIC FIELD IN THE FREQUENCY RANGE 30 MHZ TO 1000 MHZ

6.1 Operating environment

Temperature: 22 °C
Relative Humidity: 40 %

6.2 Test set-up and test procedure

The radiated disturbance electric field intensity was measured in a semi-anechoic chamber at a distance of 3 m and the EUT was placed on a non-metallic table, 0,8 m above the reference ground plane.

The EUT was positioned in order to emit maximum disturbance. The set-up photo is included in Appendix.

An overview sweep with peak detection of the electric field intensity was performed with the measurement receiver in max-hold and with the antenna placed 1,5 m, 2,5 m and 3,5 m above the floor. The polarisation was horizontal and vertical. The measurements were repeated with the EUT rotated in 90-degree steps. The peak overview sweep is shown in Section 6.5.

For frequencies where high disturbance levels were found a search for max disturbance level was performed. With the EUT and antenna in the worst-case configuration quasi-peak measurements were carried out. These measurement results are found in the test protocol.

6.3 Measurement uncertainty

The measurement uncertainty describing the overall uncertainty of the radiated disturbance electric field intensity during operation of the EUT in the way specified in Section 3.3 is ±4,6 dB.

Measurement uncertainty is calculated in accordance with EA-4/02-1997. The measurement uncertainty is given with a confidence of 95%.

6.4 Test equipment

Test site:	Semi-anechoic shielded chamber. 10 x 20 x 8,5 m (W x L x H).		
Equipment	Manufacturer	Type	SEMKO No.
Software:	Rohde & Schwarz	ES-K1, version 1.60	
Spectrum analyzer/ Measurement receiver:	Rohde & Schwarz	ESAI	2973/2974
Antenna amplifier:	SEMKO		7992/7993
Antenna, bilog:	Chase	CBL6111B	12474

6.5 Test protocol

Date of test: September 11, 2002

Frequency /MHz	Quasi-Peak Disturbance Level /dB(µV/m)	Quasi-Peak Permitted limit /dB(µV/m)
31,84	20,9	40,0
38,96	23,1	40,0
45,20	27,6	40,0
49,36	30,2	40,0
53,76	26,5	40,0
102,32	23,1	43,5

Overview sweep: MaxPeak at a distance of 3 m (30 – 1000 MHz)