LCIE
Laboratoire de Moirans
Z.I. Centr'Alp
170, Rue de Chatagnon
38430 MOIRANS-FRANCE

GENERAL INFORMATION

FCCID: **YWW-BLOL**

1.1. Product description

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BL-OL Automatic management of outdoor lighting, foutain...

ELECTRONIC MODULE DRIVEN FROM A SMARTPHONE OR A TABLET THANKS TO THE SOLEM "APP" AND BLUETOOTH LOW ENERGY.

Applications :

Automatic management of outdoor lighting, foutain...

Features :

- Bluetooth Low Energy communication
- Start/Stop/Automatic/Random function
- LED indicator for monitoring operation
- Indoor wall mounting, external transformer (230/24) supplied
- Barrier style terminal blocks
- Non volatile memory will save programming in case of power failure
- The internal clock will be maintained for 5 hours in case of power failure
- Programming will resume automatically in case of a power failure of less than 5 hours

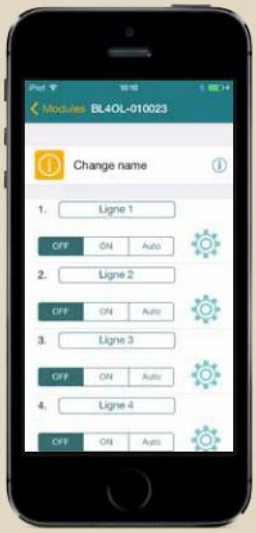
Specifications :

- 4 output relays
- Bluetooth range : about 10 meters
- Tested on :

- iPhone 4S, 5, 5S, 5C, iPad 3, 4, Mini, Air (iOS 7.0 minimun)
- Samsung Galaxy S3, S4, S5, Note 2 (android 4.3 minimum)
- Sony Xperia Z, Z1 Compact (Android 4.3 minimum)

Electrical Specifications :

- AC power
  Primary power: 230V-50Hz
  Secondary power: 24V-50Hz
- Maximum consumption 0.75 A on the secondary (18VA) maximum
- Outputs : 250V/16A relay NO type
- 4 outputs to drive 4000W (16A) total over all lines and up to only 3500W on one single line



Dimensions :

- Width : 11 cm
- Height : 14,5 cm
- Depth : 3,6 cm

Model :

- BL-OL : 4 Relays

SOLEM ELECTRONIQUE

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1.2. Tested System Details

Photography of EUT

Power supply:
During all the tests, EUT is supplied by V_{nom}: 24VAC
For measurement with different voltage, it will be presented in test method.

Name	Type	Rating	Reference / Sn	Comments
Supply1	☑ AC ☐ DC ☐ Battery			

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Inputs/outputs - Cable:

Access	Type	Length used (m)	Declared <3m	Shielded	Under test	Comments
Supply1	AC	3	☐	☐	☑	-
Access1	USB	1	☐	☐	☐	Temporary USB installed for the reception of different orders (power, choice of channel, modulation etc.)
Access2	I/O	0.5	☑	☐	☑	-
Access3	I/O	0.5	☑	☐	☑	-
Access4	I/O	0.5	☑	☐	☑	-
Access5	I/O	0.5	☑	☐	☑	-

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
Laptop	ThinkPad Tseries	L3-B746308/01	-

Equipment information:

Type:	**Bluetooth Low Energy v4.0**			
Frequency band:	[2400 – 2483.5] MHz			
Sub-band REC7003:	Annex 3 (a)			
Spectrum Modulation:	☑ DSSS (Tested like it)			
Number of Channel:	40			
Spacing channel:	2MHz			
Channel bandwidth:	1MHz			
Transmit chains:	☑ 1	☐ 2	☐ 3	☐ 4
	☑ Single antenna	☐ Symmetrical	☐ Asymmetrical	
	Gain 1: 3dBi	Gain 2: dBi	Gain 3: dBi	Gain 4: dBi
Beam forming gain:	☐ Yes: dB		☑ No	
Receiver chains	☑ 1	☐ 2	☐ 3	☐ 4
Type of equipment:	☑ Stand-alone	☐ Plug-in	☐ Combined	
Ad-Hoc mode:	☐ Yes		☑ No	
Adaptivity mode:	☐ Yes (Load Based)	☐ Off mode	☑ No	
	Clear Channel Assessment Time:		None	
	q value for Load Based Equipment:		None	
Duty cycle:	☑ Continuous duty	☐ Intermittent duty	☐ Continuous operation	
Equipment type:	☑ Production model		☐ Prototype	
Chip Reference:	nRF51822 By Nordic Semiconductor			

Temperature range:	Tmin:	☑ -20°C	☐ 0°C	☐ °C
	Tnom:	20°C		
	Tmax:	☐ 35°C	☑ 55°C	☐ °C
Test source voltage:	☑ AC: 24	☐ DC:	☐ Battery:	

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1.1. EUT CONFIGURATION

The EUT is set in the following modes during tests with simulator / software (v1.93b): "Terminal"
- Permanent emission with modulation on a fixed channel in the data rate that produced the highest power
- Permanent reception
- The Power order sent for the Module is set at 0dBm.

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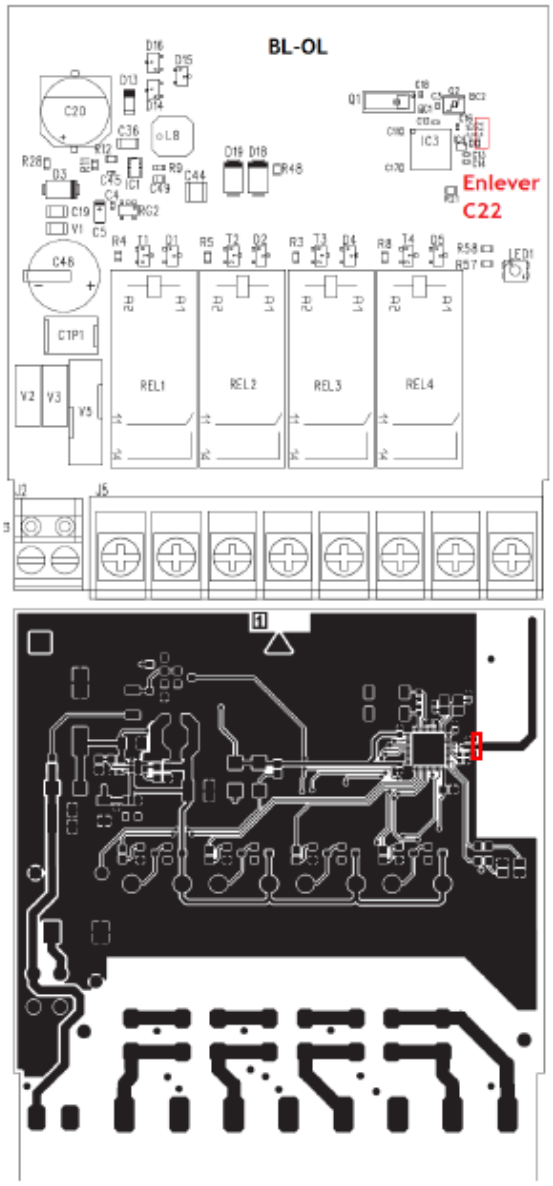
1.2. Equipment modification

☐ None ☑ Modification: The capacity C22 (1pF) between antenna and C15 (capacity) is removed, see following map:



1.3. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4-2003, FCC Part 15 Subpart C.
Radiated testing was performed at an antenna to EUT distance of 10 meters. During testing, all equipment's and cables were moved relative to each other in order to identify the worst case set-up.

1.4. Test facility

Tests have been performed on from November 17th to 26th, 2014.

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This test facility has been fully described in a report and accepted by FCC as compliant with the radiated and AC line conducted test site criteria in ANSI C63.4-2003 in a letter dated March 25th, 2008 (registration number 94821).
This test facility has also been accredited by COFRAC (French accreditation authority for European Union test lab accreditation organization) according to NF EN ISO/IEC 17025, accreditation number 1-1633 as compliant with test site criteria and competence in 47 CFR Part 15/ANSI C63.4 and EN55022/CISPR22 norms for 89/336/EEC European EMC Directive application. All pertinent data for this test facility remains unchanged.