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TEST REPORT

N°: 821760-R4-E JDE : 133546

Subject	**Electromagnetic compatibility and Radio spectrum Matters (ERM) tests according to standards: EN 50364 (2010) EN 62369-1 (2009)**
Issued to	**LEGRAND** 128 Avenue de Lattre de Tassigny 87045 LIMOGES
Apparatus under test	
Product	**Dalle tactile KNX / KNX Touch Command**
Trade mark	**LEGRAND**
Manufacturer	**LEGRAND**
Model under test	**Touch Command KNX (6 Touch)**
Serial number	**#2**
Test date	Le 17 Février 2015
Test location	Moirans
Test performed by	J
Composition of document	9 pages
Modification of the last version	None
Document issued on	March 20th, 2015

Written by :
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SUMMARY

1. TEST PROGRAM

References

- ✓ **EN 50364 (2010)**
- ✓ **EN 62369-1 (2009)**
- ✓ **Reference level: Recommendation N° 1999/519/CE**

General conclusion:

Measures performed on the sample of the product Touch Command KNX (6 Touch), SN: #2, in configuration and description presented in this test report, show compliance levels with EN 50364 (2010) and EN 62369-1 (2009).

2. EQUIPMENT DESCRIPTION

2.1. JUSTIFICATION

The system was configured for testing in a typical fashion (as a customer would normally use it).

2.2. HARDWARE IDENTIFICATION

Touch Command KNX (6 Touch) **Serial Number: #2**

B002375AA	PCBA TACTILES 6 TOUCHES	PCB : HS01181AC
B002374AA	PCBA NOEUD KNX 6T	PCB : HS01180AB

Equipment Under Test

Power supply:
During all the tests, EUT is supplied by through NFC field provided by Tagsys
For measurement with different voltage, it will be presented in test method.

Name	Type	Rating	Reference / Sn	Comments
Supply NFC	NFC power supply	NFC power supply From TAGSYS NFC Reader	/	/
Supply KNX	☐ AC ☑ DC ☐ Battery	29Vdc	/	/

Inputs/outputs - Cable:

Access	Type	Length used (m)	Declared <3m	Shielded	Under test	Comments
Supply KNX	KNX bus connector (power & data)	2m	☐	☑	☑	Shield not connected (both side)
Maintenance Access	Maintenance Factory connector	/	☐	☐	☐	/

Auxiliary equipment used during test:

Type	Reference	Sn	Comments
RFID NFC reader	TAGSYS MEDIO P213	M1442055B0	_/

Equipment information:

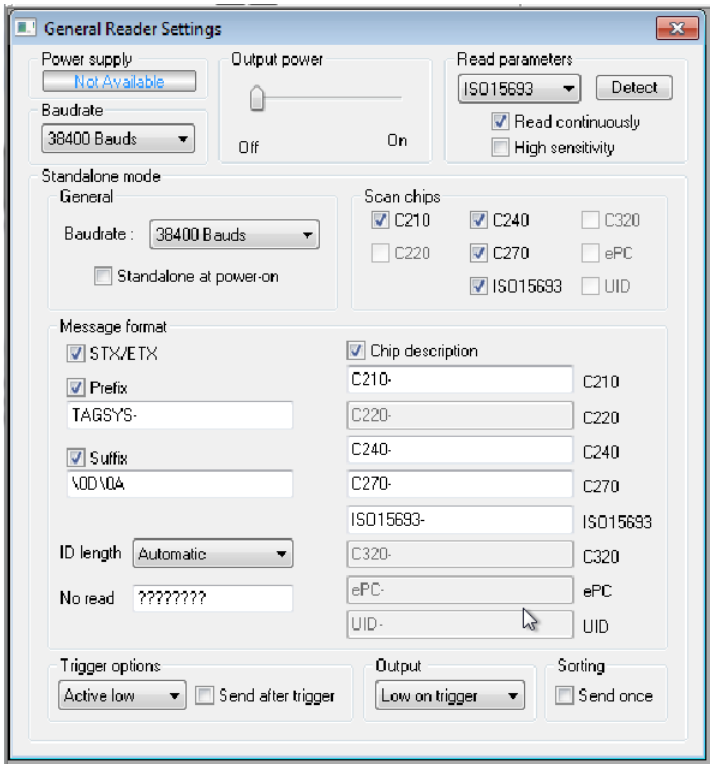
RF module:	None			
Frequency band:	[13.554–13.567] MHz			
Sub-band REC7003:	Annex 9 (f)			
RF mode:	☐Transmitter	☑Transceiver	☐Receiver	☐Standby
Product class § 7.1.4	☑1	☐2	☐3	
Receiver classification § 4.1.1	☐1	☑2	☐3	
Antenna type:	☐External:		☑Internal:	
Antenna gain:	NC			
Extreme temperature range:	☐Category I (General) -20°C to +55°C	☐Category II (Portable) -10°C to +55°C	☑Category III (Indoor) +5°C to +35°C	
Extreme test source voltage:	NA			

NC : Not communicated by customer
NA : Not applicable

2.3. RUNNING MODE

Firmware / Software version of EUT: V1.4
RFID Reader software : Px Explorer 2.1.0

RFID reader is set on EUT (RF power set as 10dBm), a continuous reading of data from EUT to RFID reader is performed, EUT is powered from RFID field



3. EVALUATION OF MAGNETIC FIELD

3.1. TEST CONDITIONS

Date of test	:February 17th , 2015
Test performed by	:J.PAUC
Atmospheric pressure (hPa)	:1011
Relative humidity (%)	:25
Ambient temperature (°C)	:23

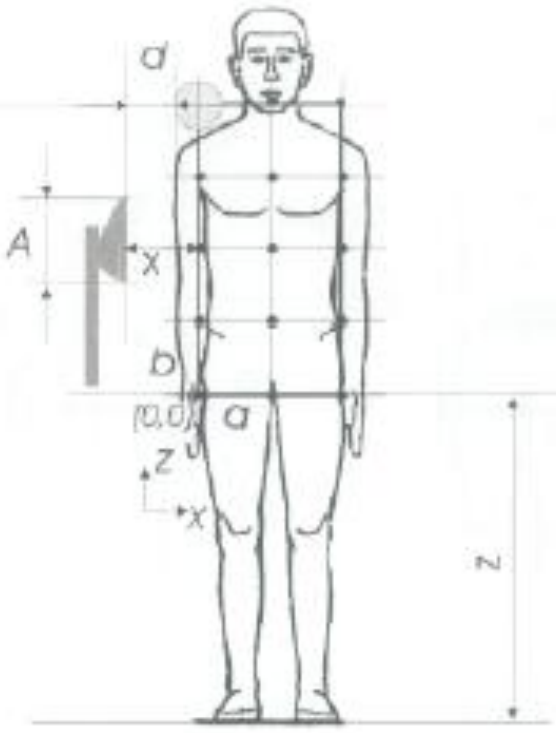
3.2. TEST SETUP

Measures are performed in order to check the conformity to reference level. Measure is performed for each frequency used for RFID system and for which a level is higher than 1/1000 of the limit value stated by the European Council Recommendation from July 12th, 1999.

For the EUT antenna, the dimensions are:

- a, b, c: 15cm
- Z = 85cm
- X = 10cm
- Height = 120cm

The antenna is set on an insulating support 120cm above the ground in vertical position.
Measure is performed at 10cm.



vue de face

Figure: 3

3.3. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE
Passive loop antenna	ELECTROMETRIC	EM6993	C2040210
Spectrum Analyzer 9kHz - 6GHz	ROHDE & SCHWARZ	FSL6	A2642049
Cable	-	-	A5329045
Thermo-hygrometer (PM2)	OREGON	BAR916HG-G	B4206011
Amplifier 0.1MHz – 1300 MHz	HEWLETT PACKARD	8447D	A7085009

3.4. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

3.5. TEST SEQUENCE AND RESULTS

Results for the magnetic field measured with a loop probe at 13.56MHz:

Measures at 10cm:

Position z ↓	**Measure (A/m)**	**Measure (A/m)**	**Measure (A/m)**	**Mean (A/m)**
E	0.0001	0.0004	0.0005	0.00048A/m
D	0.0003	0.0010	0.0016	
C	0.0003	0.0008	0.0005	
B	0.0003	0.0008	0.0002	
A	0.0001	0.0002	0.0001	
Position x →	1	2	3	

Total arithmetic mean:

Frequency (MHz)	**Magnetic field (A/m)**	**Limit value (A/m)**	**Limit / Magnetic field**
13.56	**0.00048**	**0.073**	**152 times lower**

4. EVALUATION OF BODY TO GROUND CURRENT AND TOUCH CURRENT

4.1. TEST CONDITIONS

Date of test :February 17th , 2015
Test performed by :J.PAUC
Atmospheric pressure (hPa) :1011
Relative humidity (%) :25
Ambient temperature (°C) :23

4.2. TEST SETUP

The antenna is set on an insulating table 80cm above the ground in horizontal position.
Measure is performed at 10cm.

4.3. TEST EQUIPMENT LIST

DESCRIPTION	MANUFACTURER	MODEL	N° LCIE
Current Probe	FCC	F-80-1	A4069010
Spectrum Analyzer 9kHz - 6GHz	ROHDE & SCHWARZ	FSL6	A2642049
Cable	-	-	A5329045

4.4. DIVERGENCE, ADDITION OR SUPPRESSION ON THE TEST SPECIFICATION

None

4.5. Measurement results: body to ground current

Measured current (mA)	Limit (mA)	Measured level / Limit
0.219	20.0	**91 times lower**

4.6. Measurement results: TOUCH current

Measured current (mA)	Limit (mA)	Measured level / Limit
0.281	20.0	**71 times lower**