USER GUIDE

LoRa® SPY

Part nbr 11819 O

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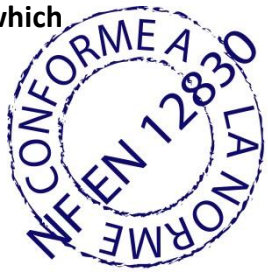
I. INTRODUCTION

The LoRa® SPY is a recorder capable of measuring 1 or 2 physical quantities (T / TH or other quantity depending on the model) and transmitting by radio to monitoring software hosted on a platform. The radio transmission uses the LoRa® long-distance network.

The LoRa® SPY (T0, T1 and T2) comply with EN 12830 and compatible with EN 13486 which defines procedures for periodic verification.



a) Product contents

- 1 LoRa® SPY
- 1 User guide

b) Symbols

	RECYCLING: do not dispose of in a refuse dump or waste disposal bin. Comply with existing legislation for disposal.
	Power source: this device is powered by a 3.6VDC type AA lithium battery (§ ch. V).
	CE LABELING: this device is certified to conform to European regulations for electrical safety, flammability, disruptive electromagnetic emissions, and immunity to environmental electrical disturbances.
	Opens www.jri-mysirius.com.
	*FCC ID: W4512267* *This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation* *In accordance with FCC requirements, changes or modifications not expressly approved by JRI could void the user's authority to operate this product.* *NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.*

Do not use the device under conditions other than those described in the technical specifications (Risk of fire or explosion).

For any other use than the one mentioned, please get in touch with JRI.

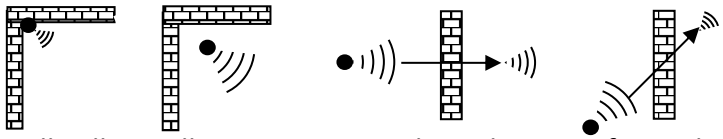
II. INSTALLATION RECOMMENDATIONS

The LoRa® SPY is a recorder which communicates by radio with software hosted on a Web platform via the LoRa® long-distance public network or private network using a LoRa® Gateway. To ensure optimal radio transmission, a certain number of recommendations must be respected, as any wireless transmission is subject to disturbances.

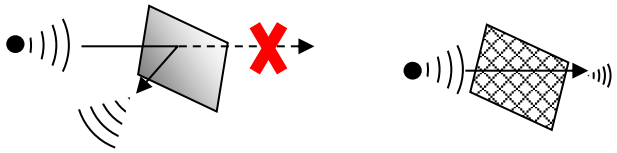
a) Sources of disturbances or attenuation

- The presence of obstacles in the wave path around the LoRa® SPY or between the LoRa® SPY and the Gateway in case of use (wall, furniture, people…) or near the antenna.

- The thickness of an obstacle in the wave path. The attenuation is greater diagonally than perpendicularly



- A solid metal wall will not allow transmission by radio. A perforated metal wall will allow waves to pass while attenuating them.



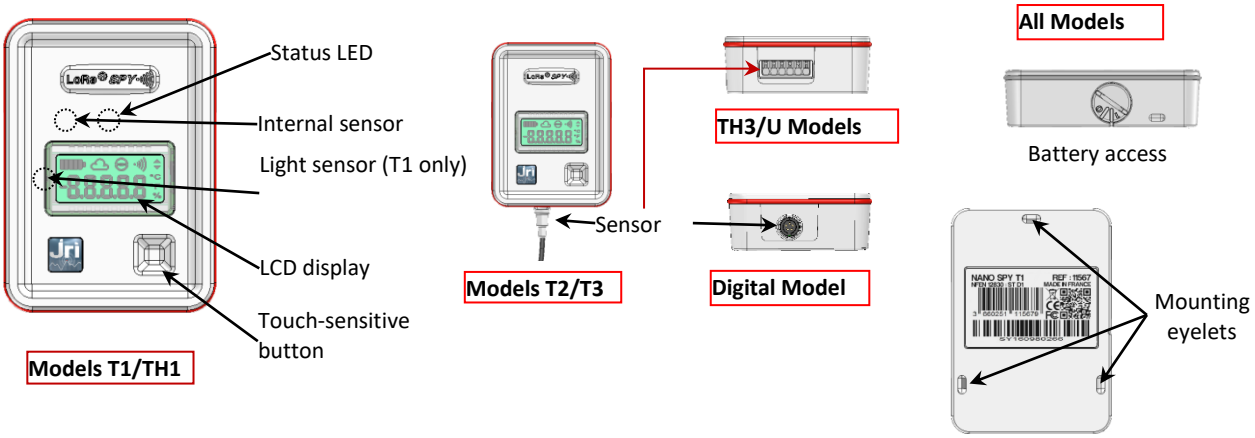
b) Positioning

- The LoRa® SPY units can be placed either inside or outside the enclosures.
- For installations outside the enclosure, mount the units sufficiently high on the walls to avoid interference with obstacles and foot traffic.
- The LoRa® SPY uses the LoRa® public network.
- Never place the LoRa® SPY unit horizontally.
- If difficulties persist use the LoRa® SPY with remote probe in order to position it in a zone of radio coverage.
- Also, some specific recommendations for exposure to magnetic fields must be followed: This equipment complies with FCC's radiation exposure limits set forth for an uncontrolled environment under the following conditions:"
    - This equipment must be installed and operated such that a minimum separation distance of 20cm is maintained between the radiator (antenna) and user's/nearby person's body at all time.
    - This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter

To ensure your safety during installation or an intervention on a device placed in a high position, use proper equipment which is in good condition and provides adequate stability, wear appropriate, non-slip shoes and install warning signs around the work area if the intervention takes place in an area of foot traffic.

lll. PRESENTATION

a) Control unit



Le LoRa®SPY T1 is equipped with a detector of presence or absence of light.
When the LoRa®SPY unit is enclosed (in the dark) the measurements are no longer displayed (wheaeas the battery level, the RSSI and the network indicators still are) and its status LED continues to flash.

b) LCD display


Battery level indicator


MySirius connection indicator


LoRa® network connection indicator


Searching factory network


Blinking: Searching for LoRa® network
Fixed: LoRa® network found
Empty: LoRa® Network not found


Connected to MySirius

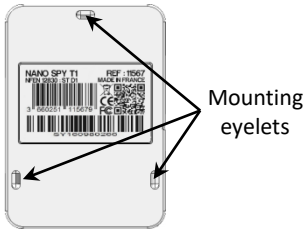

RSSI radio reception level indicator


Threshold overrun indicator ( High,  Low)

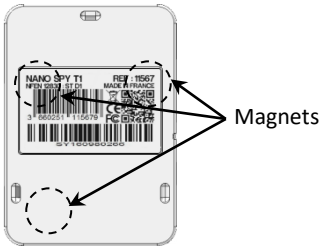
c) Mounting

The LoRa® SPY can be mounted in 2 different ways

- *Using a tie wrap to attach it to the monitored product*



- *Magnetically*
The LoRa® SPY has 3 internal magnets for mounting on magnetic metal walls.



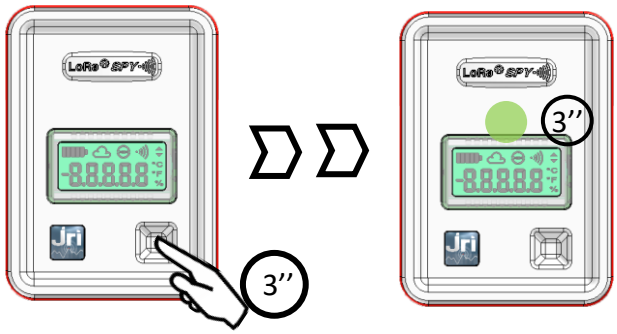
IV. USE

The LoRa® SPY can only be used with the My Sirius software hosted on a Web platform.

a) OFF state

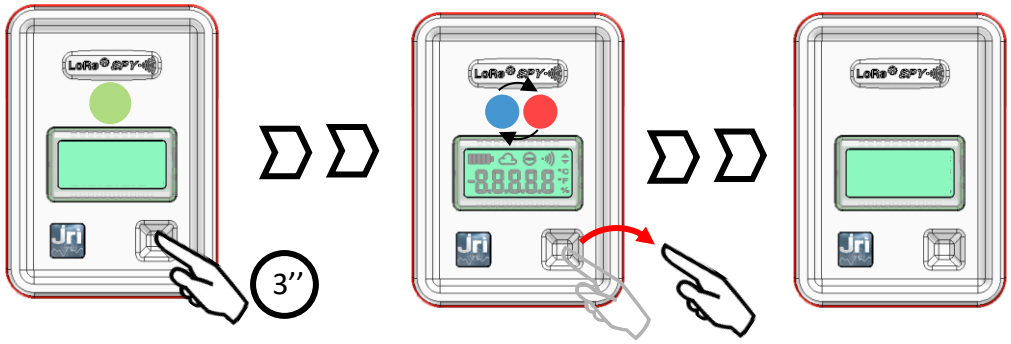
As delivered, the LoRa® SPY is turned off. It can neither emit nor receive signals.

b) Activation



Once activated, the LoRa® SPY measures and transmits its measurements to My Sirius, at the frequency defined in MySirius, then flashes regularly as a function of its status.

c) Turning Off



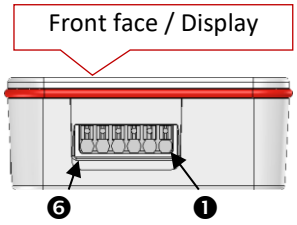
d) Actions on the touch-sensitive button

Mode \ Touch duration	< 3s	> 3s	>8s
Activation	-	during 3s	during 3s The LoRa SPY remains activated
Measurement	1s = OK 1s = Technical alarm 3x1s = OK but paused 1s = In alarm state	Off	
Off	-	Off	

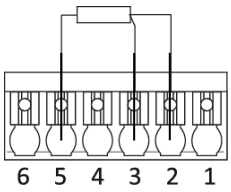
Using active, corrosive or flammable products or solutions (e.g. acid or petroleum) on JRI equipment is prohibited.
The JRI equipment is designed for mapping and monitoring the temperature and humidity of thermal or climatic enclosures within limits described in their technical data sheet.
For the maintenance of these devices, please refer to the dedicated section.
For any other use than the one mentioned, please get in touch with JRI.

V. PROBE CONNECTIONS

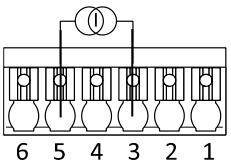
The Universal LoRa® SPY has a quick connector facilitating the installation of different types of sensors. The sensors can be disconnected from the recorder for their replacement or for changing the recorder itself



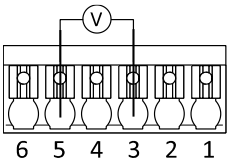
❶ NC
❷ Resistive sensor power
❸ Analog input (Resistance Current Voltage)
❹ Logic, count or frequency input
❺ GND (0V)
❻ NV



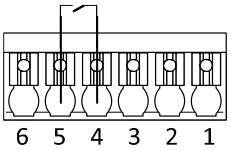
Resistive sensor input



4-20mA input



0-1V input



Logic, count input

/!\ Connect only sensors which are compatible with the technical characteristics of the devices
Sensor default detection is not possible in 0-20mA and 0-1V.

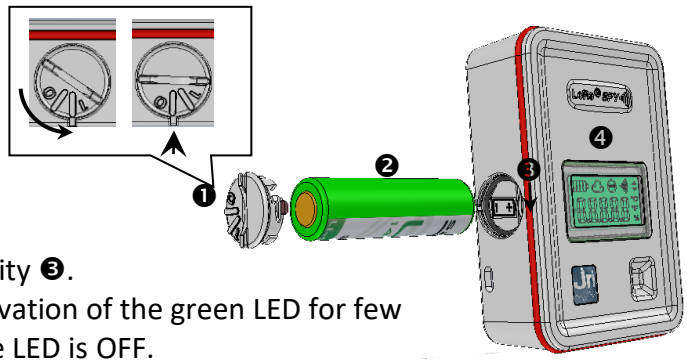
VI. BATTERY REPLACEMENT

Removing the battery

- Open the battery cover ❶ with a suitable object (2cts coin) to align the marks (/!\0 = Open ; 1= Closed)
- Remove the battery ❷ from its lodging

Replacing the battery

- Insert the new battery ❷ respecting the polarity ❸.
  The Battery detection is confirmed by the activation of the green LED for few seconds ❹.The device can be started after the LED is OFF.



KEEP THE BATTERY AWAY FROM FIRE, DO NOT ATTEMPT TO RECHARGE IT OR SHORT-CIRCUIT IT
THE BATTERY MUST BE A LITHIUM 3.6V TYPE AA BATTERY.
USE PREFERABLY THE BATTERIES* SUPPLIED BY JRI (PART NBR: 11596)

*Recommended battery: Saft LS14500 type AA 3.6V 2250mAh

VII. CHARACTERISTICS

LoRa® SPY T0 - Temperature (internal probe)

HIM	: 1 LED RGB + 1 touch-sensitive button
Communication	: LoRa® 868MHz or 915MHz*
Memory	: 10 000 time-stamped measurements
Sensor	: PT100 sensitive element inside unit
Operating range	: from -35°C to +85°C
Measurement range	: from -35°C to +85°C
Accuracy, standard version	: ±0.5°C from -20°C to +30°C / ± 0.8°C outside this range
Resolution	: 0.01
IP rating	: IP 68
Frequency of recording and transmission	: adjustable from 1 min to 24h
Frequency of measurement	: adjustable from 1 to 5 min
Response time	: ~ 15 min. to 90% of the variation
Power source	: 3,6V Lithium battery– 2 years autonomy depending on use
Case	: Polycarbonate – Food safe – Without magnets
Dimensions	: 87 mm x 64 mm x 25 mm
Weight	: ~ 100g
Standard calibration points	: -18°C/+5°C

LoRa® SPY T1 - Temperature (internal probe)

HIM	: 1 LED RGB + 1 touch-sensitive button + 1 LED Display
Communication	: LoRa® 868MHz or 915MHz*
Memory	: 10 000 time-stamped measurements
Sensors	: PT100 sensitive element inside unit Light presence sensor
Operating range	: from -30°C to +70°C
Measurement range	: from -30°C to +70°C
Accuracy, standard version	: ±0.4°C from -20°C to +40°C / ± 0.5°C outside this range
Resolution	: 0.01
IP rating	: IP 68
Frequency of recording and transmission	: adjustable from 1min to 24h (15 min in standard use)
Frequency of measurement	: adjustable from 1 to 5 min
Response time	: ~ 15 min. to 90% of the variation
Power source	: 3,6V Lithium battery– 2 years autonomy depending on use
Case	: Polycarbonate – Food safe
Dimensions	: 87 mm x 64 mm x 25 mm
Weight	: ~ 100g
Standard calibration points	: -18°C/+5°C/+25°C

LoRa® SPY TH1 - Thermo-Hygro Internal

HIM	: 1 RGB LED + 1 touch-sensitive button + 1 LCD display
Communication	: LoRa® 868MHz or 915MHz*
Memory	: 10 000 time-stamped measurements
Sensor	: Inside control unit
Operating range	: from -30°C to +70°C
Measurement range	: from -30°C to +70°C and 0 – 100% RH
Accuracy,	
Temperature	: ±0.4°C from +15C° to +25°C / ±0.5°C outside this range
Humidity at T° between 15 and 25°C	±4% HR from 20% to 80% / ±5% HR outside this range
Resolution	: 0.01
IP rating	: IP 40
Frequency of recording and transmission	: adjustable from 1 min to 24h (15 min in standard use)
Frequency of measurement	: adjustable from 1 to 5 min
Response time	: ~ 5 min. to 90% of the variation
Power source	: 3,6V Lithium battery– 2 years autonomy depending on use
Case	: Polycarbonate – Food safe
Dimensions	: 87 mm x 64 mm x 25 mm
Weight	: ~ 100g
Standard calibration points	: +2°C/+25°C/+38°C and 20%HR/50%HR/80%HR at 23°C

LoRa® SPY N Digital

HIM	: 1 RGB LED + 1 touch-sensitive button + 1 LCD display
Communication	: LoRa® 868MHz or 915MHz*
Memory	: 10 000 time-stamped measurements
Sensor	: External to control unit
Operating range	: from -30°C to +70°C
Measurement range	: According to the type of JRI digital probe
Accuracy, standard version	: Accuracy of the JRI digital probes
Resolution	: 0.01
IP rating	: IP 40
Frequency of recording and transmission	: adjustable from 1min to 24h (5min in standard use)
Frequency of measurement	: adjustable from 1 to 5 min
Response time	: Depending of the digital probe used
Power source	: 3,6V Lithium battery– 2 years autonomy depending on use
Case	: Polycarbonate – Food safe
Dimensions	: 87 mm x 64 mm x 25 mm
Weight	: ~ 100g (without probe)
Standard calibration points	: Depending of the digital probe used

LoRa® SPY T2 – Remote temperature

HIM	: 1 RGB LED + 1 touch-sensitive button + 1 LCD display
Communication	: LoRa® 868MHz or 915MHz*
Memory	: 10 000 time-stamped measurements
Sensor	: PT100 external probe, non-withdrawable, flat cable Ø5x20mm
Operating range	: from -30°C to +70°C
Measurement range, standard version	: from -50°C to +105°C
Measurement range, incubator version	: from -50°C to +105°C
Accuracy, standard version	: ±0.3°C from -20°C to +30°C / ± 0.5°C outside this range
Accuracy, incubator version	: ±0.2°C from +30°C to +50°C/± 0.5°C outside this range
IP rating	: IP 67
Cable length	: 30 cm, 3 m
PT100 probe resolution	: 0.01
Frequency of recording and transmission	: adjustable from 1 min to 24h
Frequency of measurement	: adjustable from 1 to 5 min
Response time	: ~ 2 min. to 90% of the variation
Power source	: 3,6V Lithium battery– 2 years autonomy depending on use
Case	: Polycarbonate – Food safe
Dimensions	: 87 mm x 64 mm x 25 mm
Weight	: ~ 100g (without probe)
Standard calibration points, standard version	: -18°C/+5°C/+25°C
Standard calibration points, incubator version	: +36°C/+38°C/+50°C

LoRa® SPY T3 - Low temperature

HIM	: 1 RGB LED + 1 touch-sensitive button + 1 LCD display
Communication	: LoRa® 868MHz or 915MHz
Memory	: 10 000 time-stamped measurements
Sensor	: External PT100 non-withdrawable ø2,9mm
Operating range	: from -30°C to +70°C
Measurement range	: from -200°C to +0°C
Accuracy, standard version	: ±0.2°C from -20°C to +0°C and ±0.5°C outside this range
PT100 probe Resolution	: 0.01
IP rating	: IP 65
Cable length	: 50 cm and 6 m
Frequency of recording and transmission	: adjustable from 1 min to 24h
Frequency of measurement	: adjustable from 1 to 5 min
Response time	: ~ 2 min. to 90% of the variation
Power source	: 3,6V Lithium battery– 2 years autonomy depending on use
Case	: Polycarbonate – Food safe
Dimensions	: 87 mm x 64 mm x 25 mm
Weight	: ~ 100g (without probe)
Standard calibration points	: -80°C/-10°C

LoRa® SPY T4 Hygitherm (Calibrated for Hot Water Network)

A reflector to isolate the sensor from ambient conditions is available as an option

HIM	: 1 RGB LED + 1 touch-sensitive button + 1 LCD display
Communication	: LoRa® 868MHz or 915MHz
Memory	: 10 000 time-stamped measurements
Sensor (with over-molded support)	: PT100 non-withdrawable
Operating range	: from -30°C to +70°C
Measurement range	: from -40°C to +85°C
Accuracy from 15°C to 25°C & 50°C to 60°C	: ±1°C on copper tube network ±1°C on HTA tube network
Resolution	: 0.01
IP rating	: IP 65
Cable length	: 2m
Frequency of recording and transmission	: adjustable from 1 min to 24h
Frequency of measurement	: adjustable from 1 to 5 min
Response time	: <2min. to 90% of the variation
Power source	: 3,6V Lithium battery– 2 years autonomy depending on use
Case	: Polycarbonate – food
Dimensions	: 87 mm x 63 mm x 25 mm
Weight	: ~ 100g (excluding probe and wire)
Standard calibration points	: +55°C

LoRa® SPY U - Universel

HIM	: 1 RGB LED + 1 touch-sensitive button + 1 LCD display
Communication	: LoRa® 868MHz or 915MHz*
Memory	: 10 000 time-stamped measurements
Input type:	
PT100 input	
measurement range:	From -200°C to +300°C (*)
resolution:	0,01°C
accuracy (not including probe) :	± 0,2°C from -20°C to +50°C ±0,3°C from -80°C to -20°C and from +50°C to +140°C ± 0,5°C beyond these ranges
Current input	(No detection of probe failure for 0-20 mA input)
measurement range:	From 0 to 20 mA or 4-20mA
resolution:	0,001 mA
accuracy (control unit only):	± 0,01 mA
Voltage input	(No detection of probe failure for 0-1 V input)
measurement range:	From 0 to 1V
resolution:	0,1 mV
accuracy (control unit only)	±0.5 mV
On/Off or Count input	(factory configuration)
Type of input	Dry contact or 0-3,3V max
measurement range:	From 0 to 65535 – signal from 0 to 200Hz
resolution:	1
accuracy	±1
Operating range	: from 0°C to 50°C
Resolution	: 0.01
IP rating	: IP 34
Frequency of recording and transmission	: adjustable from 1 min to 24h
Frequency of measurement	: adjustable from 1 to 5 min
Response time	: Depending of the probe used
Power source	: 3,6V Lithium battery– 2 years autonomy depending on use
Case	: Polycarbonate – Food safe
Dimensions	: 87 mm x 64 mm x 25 mm
Weight	: ~ 100g (without probe)

LoRa® SPY Reference	
HIM	: 1 RGB LED + 1 touch-sensitive button + 1 LCD display
Communication	: LoRa® 868MHz or 915MHz*
Memory	: 10 000 data points
Sensor	: External Class A PT 100 - stainless steel Ø2,9mm
Operating range	: from -30°C to +70°C
Measurement range	: from -196°C to +200°C
Accuracy	: ±0,12°C from 0 to +50°C ±0,20°C from -30°C to 0°C and from +50°C to +150°C ±0,50°C out of this range
IP rating	: IP 65
Cable length	: 3 m
PT100 probe resolution	: 0.01
Frequency of recording and transmission	: Adjustable from 1 min to 24h
Frequency of measurement	: Adjustable from 1 to 5min
Response time	: ~ 2 min
Power source	: 3,6V Lithium battery– 2 years autonomy depending on use
Case	: Polycarbonate – Food safe
Dimensions	: 87 mm x 64 mm x 25 mm
Weight	: ~ 100g (without probe)
Standard calibration points	: 0°C/+30°C/+60°C

a) Compliance

All our products follow the standards:

EN 12830	Yes, for T0, T1, T2 and Digital models: these devices must be verified regularly according to EN 13486 (recommendation is once per year)
FCC	FCC ID: W4512267 This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation In accordance with FCC requirements, changes or modifications not expressly approved by JRI could void the user's authority to operate this product. NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
CE ERM	EN 301 489 / EN 61000 / EN 61010 / EN 55022 / EN 300 220
IC CANADA	This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) This device must accept any interference, including interference that may cause undesired operation of the device. This equipment should be installed and operated such that a minimum separation distance of 20 cm is maintained between the radiator (antenna) and user's/nearby person's body at all times.
RCM	This device is RCM compliant. This means that the device complies with the Australian and New Zealand requirements for electrical and electronic devices, described in the standard by AS/NZS 4417 and AS/NZS 3820.

VIII. MAINTENANCE

Clean the device with a soft cloth, either dry or slightly moistened with water. To remove stubborn dust, use a cloth soaked in a diluted, non-abrasive detergent. Then wipe carefully with a soft dry cloth.

Never use benzene, thinner, alcohol or any type of solvent, which can cause discoloration or deformation of the surfaces.

FICHE D'APTITUDE A L'EMPLOI SELON LA NORME NF 12830 VERSION 1999

Capacity of compliance to EN12830 norm (version 1999)

Modèle / *model*: **LORA SPY T0**
Type de matériel / *equipment type* : **enregistreur de température** / *temperature recorder*
Utilisation / *application* : **Stockage** / *storage*
Environnement climatique / *climatic environment*: **C**
Classe d'exactitude / *accuracy class*: **1**

Tableaux des essais / *Test table*

Essais	§ norme	Exigences	Caract.	Documents ou rapports d'essais
Détermination de l'erreur de la mesure de la température	5.3	±1°C	±0,5°C	Procès-verbal d'essais JRI QUALIF18007
Détermination du temps de réponse	5.4	<60 minutes	~15 minutes	Procès-verbal d'essais JRI QUALIF18006
Détermination de l'erreur relative de l'enregistrement du temps	5.5	0,1%	0,007%	Procès-verbal d'essais JRI RQCC17002
Variation de la tension d'alimentation	5.6.2	3,2V à 3,6V -30°C à +30°C	3,0 V à 3,7V -40°C à +85°C	Procès-verbal d'essais JRI RQCC17002
Influence de la température ambiante	5.6.3.3	-40°C à +50°C	-40°C à +85°C	Procès-verbal d'essais JRI QUALIF18003
Essai de température avec l'enregistreur en condition de stockage et de transport	5.6.4	-40°C à +60°C	-40°C à +85°C	Procès-verbal d'essais JRI QUALIF18005
Résistance aux chocs	5.6.5	EN 60068-2-27	N/A	Non requis pour stockage
Vibrations mécaniques	5.6.6	EN 60068-2-27	N/A	Non requis pour stockage
Degrés de protection procurés par l'enveloppe	5.6.7	IP 55	IP68 avec résistance à la condensation selon EN 60529	Procès-verbal d'essais JRI RQCC17002
Sécurité électrique	5.6.8	IEC 61010-1 : 2010 (troisième édition)		Rapport d'essai EMITECH RS-300-PTC-16-105739-1-A
Rigidité diélectrique	5.6.9	N.A.	N.A.	
Compatibilité électromagnétique	-	Draft ETSI 301489-3 V2.1.0 : 2016 Draft ETSI 301489-1 V2.1.1 : 2016 EN 61326-1 : 2013 EN62479 : 2010		Rapport d'essai EMITECH RC-300-PTC-16-105739-1-A

Pour JRI
Le Responsable Qualité & Projects :
Projects & Quality manager :

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FICHE D'APTITUDE A L'EMPLOI SELON LA NORME NF 12830 VERSION 1999

Capacity of compliance to EN12830 norm (version 1999)

Modèle / *model*: **LORA SPY T1**
Type de matériel / *equipment type* : **enregistreur de température** / *temperature recorder*
Utilisation / *application* : **Stockage** / *storage*
Environnement climatique / *climatic environment*: **C**
Classe d'exactitude / *accuracy class*: **1**

Tableaux des essais / *Test table*

Essais	§ norme	Exigences	Caract.	Documents ou rapports d'essais
Détermination de l'erreur de la mesure de la température	5.3	±1°C	±0,5°C	Procès-verbal d'essais JRI QUALIF18007
Détermination du temps de réponse	5.4	<60 minutes	~15 minutes	Procès-verbal d'essais JRI QUALIF18006
Détermination de l'erreur relative de l'enregistrement du temps	5.5	0,1%	0,007%	Procès-verbal d'essais JRI RQCC17002
Variation de la tension d'alimentation	5.6.2	3,2V à 3,6V -30°C à +30°C	3,0 V à 3,7V -40°C à +85°C	Procès-verbal d'essais JRI RQCC17002
Influence de la température ambiante	5.6.3.3	-40°C à +50°C	-40°C à +85°C	Procès-verbal d'essais JRI QUALIF18003
Essai de température avec l'enregistreur en condition de stockage et de transport	5.6.4	-40°C à +60°C	-40°C à +85°C	Procès-verbal d'essais JRI QUALIF18005
Résistance aux chocs	5.6.5	EN 60068-2-27	N/A	Non requis pour stockage
Vibrations mécaniques	5.6.6	EN 60068-2-27	N/A	Non requis pour stockage
Degrés de protection procurés par l'enveloppe	5.6.7	IP 55	IP68 avec résistance à la condensation selon EN 60529	Procès-verbal d'essais JRI RQCC17002
Sécurité électrique	5.6.8	IEC 61010-1 : 2010 (troisième édition)		Rapport d'essai EMITECH RS-300-PTC-16-105739-1-A
Rigidité diélectrique	5.6.9	N.A.	N.A.	
Compatibilité électromagnétique	-	Draft ETSI 301489-3 V2.1.0 : 2016 Draft ETSI 301489-1 V2.1.1 : 2016 EN 61326-1 : 2013 EN62479 : 2010		Rapport d'essai EMITECH RC-300-PTC-16-105739-1-A

Pour JRI
Le Responsable Qualité & Projects :
Projects & Quality manager :

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FICHE D'APTITUDE A L'EMPLOI SELON LA NORME NF 12830 VERSION 1999

Capacity of compliance to EN12830 norm (version 1999)

Modèle / *model*: **LORA SPY T2**
Type de matériel / *equipment type* : **enregistreur de température** / *temperature recorder*
Utilisation / *application* : **Stockage** / *storage*
Environnement climatique / *climatic environment*: **A / C**
Classe d'exactitude / *accuracy class*: **1**

Tableaux des essais / *Test table*

Essais	§ norme	Exigences	Caract.	Documents ou rapports d'essais
Détermination de l'erreur de la mesure de la température	5.3	±1°C	±0,25°C	Procès-verbal d'essais JRI QUALIF18007
Détermination du temps de réponse	5.4	<20 minutes	~2 minutes	Procès-verbal d'essais JRI QUALIF18002
Détermination de l'erreur relative de l'enregistrement du temps	5.5	0,1%	0,007%	Procès-verbal d'essais JRI RQCC17002
Variation de la tension d'alimentation	5.6.2	3,2V à 3,6V A : +5°C/+40°C C : -30°C/+30°C	3,0 V à 3,7V -40°C à +85°C	Procès-verbal d'essais JRI RQCC17002
Influence de la température ambiante	5.6.3.3	A : 0°C/+50°C C : -40°C/+50°C	-40°C à +85°C	Procès-verbal d'essais JRI QUALIF18004
Essai de température avec l'enregistreur en condition de stockage et de transport	5.6.4	A : -20°C/+60°C C : -40°C/+60°C	-40°C à +85°C	Procès-verbal d'essais JRI QUALIF18005
Résistance aux chocs	5.6.5	EN 60068-2-27	N/A	Non requis pour stockage
Vibrations mécaniques	5.6.6	EN 60068-2-27	N/A	Non requis pour stockage
Degrés de protection procurés par l'enveloppe	5.6.7	IP 65	IP65 selon EN 60529	Procès-verbal d'essais JRI RQCC17002
Sécurité électrique	5.6.8	IEC 61010-1 : 2010 (troisième édition)		Rapport d'essai EMITECH RS-300-PTC-16-105739-1-A
Rigidité diélectrique	5.6.9	N.A.	N.A.	
Compatibilité électromagnétique	-	Draft ETSI 301489-3 V2.1.0 : 2016 Draft ETSI 301489-1 V2.1.1 : 2016 EN 61326-1 : 2013 EN62479 : 2010		Rapport d'essai EMITECH RC-300-PTC-16-105739-1-A

Pour JRI
Le Responsable Qualité & Projects :
Projects & Quality manager :

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X. GUARANTEE

Our material is guaranteed for one year, parts and labor, against any manufacturing defect, functional failure or abnormal wear. This guarantee covers only the replacement of parts recognized to be defective as well as the repair of the material in question returned shipping paid to our workshops, and excludes all damages and interest or incidental expenses.
The starting point of the guarantee is the date of invoice of the concerned product. The invoice must be provided for any request for application of the guarantee. Repairs under guarantee in no way extend the guarantee period accorded to the product at the time of sale. Deterioration due to any abnormal usage or to storage under adverse environmental conditions is excluded from our guarantee.

XI. MAINTENANCE CONTRACT

How best to optimize your radiofrequency installation?

Radiofrequency measurement systems communicate through Hertzian waves. Many factors (change in installation, moving, supplemental wall, interference with another radio system…) can nonetheless modify the radio pathway previously defined. The use of radiofrequency thus requires periodic monitoring by recognized specialists.

It is for this reason that JRI has developed for you the maintenance contract. We simplify your procedures by offering you a fully-integrated solution. This global service offer includes both maintenance and a metrological service, ensuring the optimum functioning of your devices or of your installation.

You'll no longer have to worry about the maintenance of your devices!

This maintenance contract allows you to benefit, for a minimum period of 2 years, from a variety of services such as:

- annual or biannual verification of the material
- an extension of the guarantee
- remote maintenance
- phone assistance +**33 (0) 892 680 933** **(0,282 € HT/min)**
- replacement of the material onsite or by a return to the factory
- verification of measurement accuracy (metrological certificate)
- battery replacement
- access to new software versions
- intervention within 48 working hours following identification of the fault by our experts

XII. ENVIRONMENTAL PROTECTION

JRI recommends to its customers the disposal of their unusable and/or irreparable measurement and recording materials in a manner compatible with the protection of the environment. As the production of waste materials cannot be avoided, these should be reused through the recycling process best adapted to the considered materials and to the protection of the environment.

RoHS Directive

The RoHS European directive regulates and limits the presence of dangerous substances in electronic and electric equipment (EEE).
All new electronic equipment designed, developed and manufactured by JRI are in compliance with the aforementioned Directive 2002/95/CE.