



Measurement, monitoring and metrology



**CONNECTED SENSORS FOR A SIMPLE, CONTINUOUS
QUALITY CONTROL**

www.jri-corp.com

Next generation of connected sensors

Our new generation of connected temperature sensors monitors sensitive products stored in fixed and mobile cabinets.
It enables you to meet the requirements of ISO 17025 and ISO EN 15189 standards with reliable and accurate measurements.



Measuring of various parameters

Temperature, Humidity, Parcel opening, etc...



Real-time Alarms

The sensors have operating and warning **light indicators**. Alerts are sent by **SMS text message, e-mail and voice message** according to your alerts planning.



Easy installation and use

Miniaturized, the sensors can be placed **as close as possible to your products** or wall-fixed with their **integrated magnet**. They are detected automatically on the JRI MySirius platform. Color rings allow to quickly determine the configuration of each sensor



10 000 data points recording

The sensors are equipped with an **internal memory** able to record up to 10 000 data points.



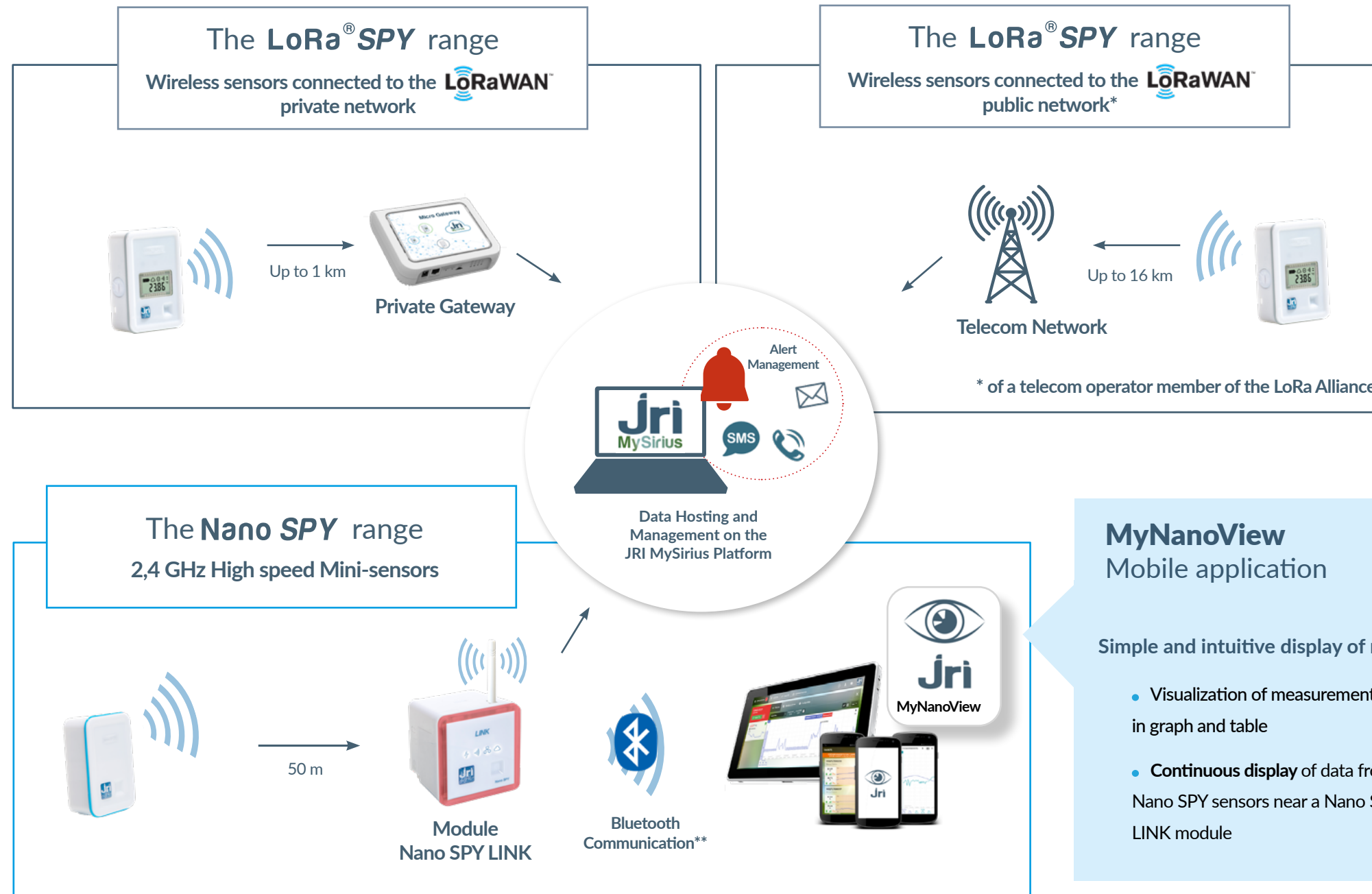
Simplified Metrology

Calibration of the temperature sensor can be realized through **replacement by a newly calibrated one**.



Compatibility with SPY RF range

The thousands of SPY RF recorders deployed in recent years are supported by the JRI MySirius solution. Existing systems can be expanded with Nano SPY and LoRa SPY connected sensors.



Automated monitoring of fixed and mobile units with performance and adaptability

- Refrigerators, Freezers
- Incubators, Ovens
- Climatic cabinets
- Cryo-preserved
- Cold rooms
- Storage warehouses
- Insulated cases
- Refrigerated vehicles



- Automation
- Real-time alerts
- Centralized supervision
- Compliance with the regulations



Simple and intuitive display of measurements transmitted by all Nano SPY mini-sensors

- Visualization of measurements in graph and table
- Continuous display of data from Nano SPY sensors near a Nano SPY LINK module
- Operation without Internet connection to ensure the monitoring of your site even in case of network failure
- Use in remote screen mode to dedicate to an area or in travelling mode to perform spot checks

**Only compatible with a Nano SPY LINK BLE option







Dimensions : 63x42x25mm

The Nano SPY range




High speed mini wireless sensors


- Temperature and humidity monitoring
- Real wireless sensor suitable for the monitoring of units and transport cases
- Battery life up to 6 years
- Visual alerts via the warning light indicator of the Nano SPY LINK, in case of alarm
- Bluetooth communication between the Nano SPY LINK and a smartphone or tablet equipped with the MyNano-View mobile app
- Particularly suitable for critical cabinets that require high measurement frequency



	Nano SPY T1 Mini temperature sensor that can be placed directly inside the refrigerator or the freezer (IP 68) <u>Measurement range</u> : -40°C to +85°C <u>Accuracy</u> : ±0.4°C from -20°C to +40°C and ±0.5°C out of this range
	Nano SPY T2 Mini temperature sensor with external flat probe cable to be placed through the door seal, designed for refrigerators and freezers <u>Measurement range</u> : -50°C to +105°C <u>Accuracy</u> : <i>Standard</i> ±0.3°C from -20°C to +30°C and ±0.5°C out of this range <i>Incubator</i> ±0.2°C from +30°C to +50°C and ±0.5°C out of this range
	Nano SPY Twin Mini temperature sensor measuring at 2 different points in a cabinet <u>Measurement range</u> : -40°C to +85°C <u>External probe</u> -50°C to +105°C <u>Accuracy</u> : ±0.4°C from -20°C à +40°C and ±0.5°C out of this range <u>External probe</u> ±0.2°C from +30°C to +50°C and ±0.5°C out of this range
	Nano SPY U Universal analog input sensor recording data coming from analog probes for monitoring temperature, humidity, CO ₂ ... <u>Type of input</u> : PT100, 0-20mA / 4-20 mA, 0-1 V, On/Off or counting <u>Measurement range and Accuracy</u> : depending on the model probe



	Nano SPY TH Mini temperature & humidity (ambient) sensor particularly adapted for HVAC applications <u>Measurement range</u> : 30°C to +70°C and 0 -100% RH <u>Accuracy</u> : ±0.4°C from -20°C to +40°C and ±0.5°C out of this range ±3% RH from 20% to 80% ±5% RH from 0% to 20% and from 80% to 100%				
	Nano SPY T3 Mini extreme temperature sensor that can be fixed outside of the cabinets thanks to its magnet <table><tr><th>Low temperature</th><th>High temperature</th></tr><tr><td><u>Measurement range</u> : -200°C to 0°C <u>Accuracy</u> : ±0.2°C from -20°C to 0°C and ±0.5°C out this range</td><td><u>Measurement range</u> : 0°C to 100°C <u>Accuracy</u> : ±0.3°C from 0°C to +100°C and ±0.5°C out this range</td></tr></table>	Low temperature	High temperature	<u>Measurement range</u> : -200°C to 0°C <u>Accuracy</u> : ±0.2°C from -20°C to 0°C and ±0.5°C out this range	<u>Measurement range</u> : 0°C to 100°C <u>Accuracy</u> : ±0.3°C from 0°C to +100°C and ±0.5°C out this range
Low temperature	High temperature				
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	Nano SPY Reference Mini temperature sensor with high precision and reference device for Nano SPY sensors calibration suitable for monitoring equipments with very restricted MPE <u>Measurement range</u> : -196°C to +150°C <u>Accuracy</u> : ±0.15°C from 0°C to +40 °C ±0.2°C from -30°C to 0°C and from +40°C to +150°C ±0.5°C out this range ±0.6°C at -196°C				




Nano SPY LINK


- Transmission module of measurements collected by the Nano SPY sensors to the JRI MySirius platform via a Wifi or Ethernet network (or BLE)

The Bluetooth BLE option allows to communicate with a tablet equipped with the MyNanoView app to:

- View the status of all monitored units on a screen
- Monitor even in case of Internet failure



MyNanoView



Nano SPY ALARM

- Local alerts module : visual and audible alerts
- Quadruples the communication distance with a Nano SPY LINK and then allows to multiply the radio range between the Nano SPY sensors and a Nano SPY LINK module
- An external monitoring module can be connected to the dry contact output

The LoRa® SPY range

Wireless long range sensors connected to the LoRaWAN™ network








Dimensions : 87x64x25mm





- Data transmission via the LoRaWAN™ network :
 - via the network of a private gateway
 - via the network of a telecom operator member of LoRa Alliance™ (if available)
- Radio range up to 16 km in open field
- Very low power consumption (battery life up to 2 years)
- Direct reading on the LCD display
- Particularly suitable for monitoring :
 - Sites with low sensor concentration
 - Storage areas spread on a wide territory
 - A need of real-time* transportation




LoRa means «Long Range».
It is a technology that allows the Internet of things to transmit small-sized data measurements on a long distance, using a low power consumption.



	LoRa® SPY T1 Temperature and parcel opening sensor suitable for transportation/logistics and storage areas monitoring <u>Measurement range</u> : -30°C to +70°C <u>Accuracy</u> : ±0.4°C from -20°C to +40°C and ±0.5°C out of this range
	LoRa® SPY T2 Standard Temperature sensor with external flat cable probe to be placed through the door seal, designed for refrigerators and freezers <u>Measurement range</u> : -50°C to +105°C <u>Accuracy</u> : ±0.3°C from -20°C to +30°C ±0.5°C out of this range
	LoRa® SPY T2 Incubator Temperature sensor with external flat cable probe to be placed through the door seal, designed to measure the range dedicated to incubators <u>Measurement range</u> : -50°C to +105°C <u>Accuracy</u> : ±0.2°C from +30°C to +50°C and ±0.5°C out of this range
	LoRa® SPY T0 Temperature sensor without display designed for cold chain monitoring during transport <u>Measurement range</u> : -35°C to +85°C <u>Accuracy</u> : ±0.5°C from -20°C to +30°C and ±0.8°C out of this range
	LoRa® SPY Digital Sensor with external digital temperature and humidity probe designed to simplify calibration operations by replacing the probe with a newly calibrated one <u>Measurement range and Accuracy</u> : -200°C to +85°C depending on the JRI digital probe

	LoRa® SPY U Universal analog input sensor Recording of data coming from analog probes for monitoring temperature, humidity, CO ₂ , O ₂ , pressure... <u>Type of entry</u> : PT100, 4-20 mA/0-20mA, 0-1V, On/Off or counting <u>Measurement range and Accuracy</u> : depending on the probe model
	LoRa® SPY TH Temperature and humidity sensor suitable for HVAC applications and warehouse storage <u>Measurement range</u> : -30°C to +70°C and 0 - 100% RH <u>Accuracy</u> : ±0.4°C from -20°C to +40°C and ±0.5°C out of this range ±3% RH from 20% to 80% and ±5% RH outside
	LoRa® SPY Reference Temperature sensor with high precision and reference device to perform calibrations of LoRa® SPY sensors perfectly suitable for monitoring equipments with very restricted MPE <u>Measurement range</u> : -196°C to +150°C <u>Accuracy</u> : ±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 these ranges
	LoRa® SPY T3 Extreme temperature sensor designed to monitor low temperature freezers <u>Measurement range</u> : -200°C to 0°C <u>Accuracy</u> : ±0.2°C from -20°C to 0°C ±0.5°C out of this range

Gateway



Micro Gateway LoRa™

- Allows to set up a private LoRa network for transferring the data recorded by the LoRa® SPY sensors to the JRI MySirius platform.



*subject to coverage by the telecom network

A modular and customizable overview



Measurements are automatically uploaded on the secure JRI Cloud and data are managed via the userfriendly JRI MySirius web application. The application can also be installed on your servers, in local mode.

Wide range of alarm options management
Multi-cascades, snooze, temporary inhibition...

Simplified configuration
of the sensors



Data integration
in third party software
(via web API)

- Customized interface
- Different indicators and favorites
 - Optional modules adapted to different users' needs: Maintenance, Metrology, Map, Active Directory, etc...

- Customized user profile management
- Unlimited number of users
 - Different rights to assign per profile: Managers, Supervisors, Users, Metrologists, etc.

Intuitive and user-friendly software for occasional users

Access to data 24/7
Visualize your data form any PC, tablet, smartphone and share it with your colleagues form anywhere.



View in «Plan» mode
to easily locate all your equipments on a map and obtain information on every monitored units.

Programmed updates to give you more time to prepare your partial qualifications and training of your teams. (JRI cloud-based version only)

- Metrology management of your sensor fleet
- Consultation and metrology management of your sensor fleet: calibration, checking, mapping...
 - Nano SPY and LoRa SPY sensors can be adjusted in the Maintenance module.

Document space dedicated to metrology reports and all other JRI documents concerning your system.

We ensure the protection of the data hosted on the JRI MySirius platform with Microsoft's Azure solution, ISO 27 001 certified and approved for Health data storage.



Three services levels are proposed to manage the collected data by our connected sensors.

		INITIAL	SERENITY	ADVANCED
SERVICES	Data reading (maximum) measurements, graphs, history	The last 2 months	The last 18 months	The last 5 years
	Data archives Data reading period included	The last 12 months	The last 3 years	The last 10 years
	Technical support Online help, tutorial	✓	✓	✓
	Number of user accounts	2	Unlimited	Unlimited with customizable profiles
	21 CFR Part 11 Compliance			✓
FEATURES	Audit trail		Alarm audit trail	Full trail
	Core Temperature Simulation		✓	✓
	Metrology Fleet view and management		✓	✓
	Adjustment	✓	✓	✓
	Documents Reports, metrology documents	✓	✓	✓
	Update delay			✓
OPTIONAL MODULES	Connectivity module (Web API)	✓	✓	✓
	Active Directory Synchronisation		✓	✓
	Maps		✓	✓
	Maintenance	✓	✓	✓

Related services

We supply the JRI MySirius solution with a wide range of services realized by our distribution network: installation, commissioning, qualification, training, metrology services and maintenance operations.

Metrology

- Our in-house metrology laboratory is accredited by Cofrac in temperature for :
- calibration and verification in temperature from -80°C to +200°C and at point -196°C in the laboratory, and from -90°C to +140°C on site (accreditation N°2.1943 - scope available on www.cofrac.fr)
 - characterization and verification test of the thermostatic chambers according to FD X 15140, NF EN 60068 and FDV 08 601 and of the water-bath systems over the temperature range from -80°C to +140°C (accreditation N°1.2471- scope available at www.cofrac.fr)



Mobile unit in our Cofrac accredited laboratory, the Lab'express works on site to perform several metrology services simultaneously during an intervention: mapping and probe calibrations.

Maintenance

- Our maintenance contracts provide the necessary interventions to maintain your installation in operational conditions and are carried out by our team of experienced distributors:
- Technical hotline access,
 - Extension of guarantee on hardware and software,
 - Remote maintenance of your application,
 - On-site maintenance and support

SIMPLIFIED METROLOGY MAINTENANCE

The exclusive properties of our digital temperature probes and Nano SPY mini-sensors make it possible to perform the calibration by simple exchange with a probe newly calibrated in our laboratory, without stopping the monitoring of your equipment.



SIMPLICITY
Remove the old and replace with a calibrated one



COMPLIANCE
Compliance with the obligation of calibration



SAVING TIME
No interruption of the monitoring



ECONOMY
No travel expenses

Trainings

The JRI Academy is a certified training organization and proposes training for all levels in monitoring systems and metrology.





Play the JRI MySirius
solution video !



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Our partnerships

