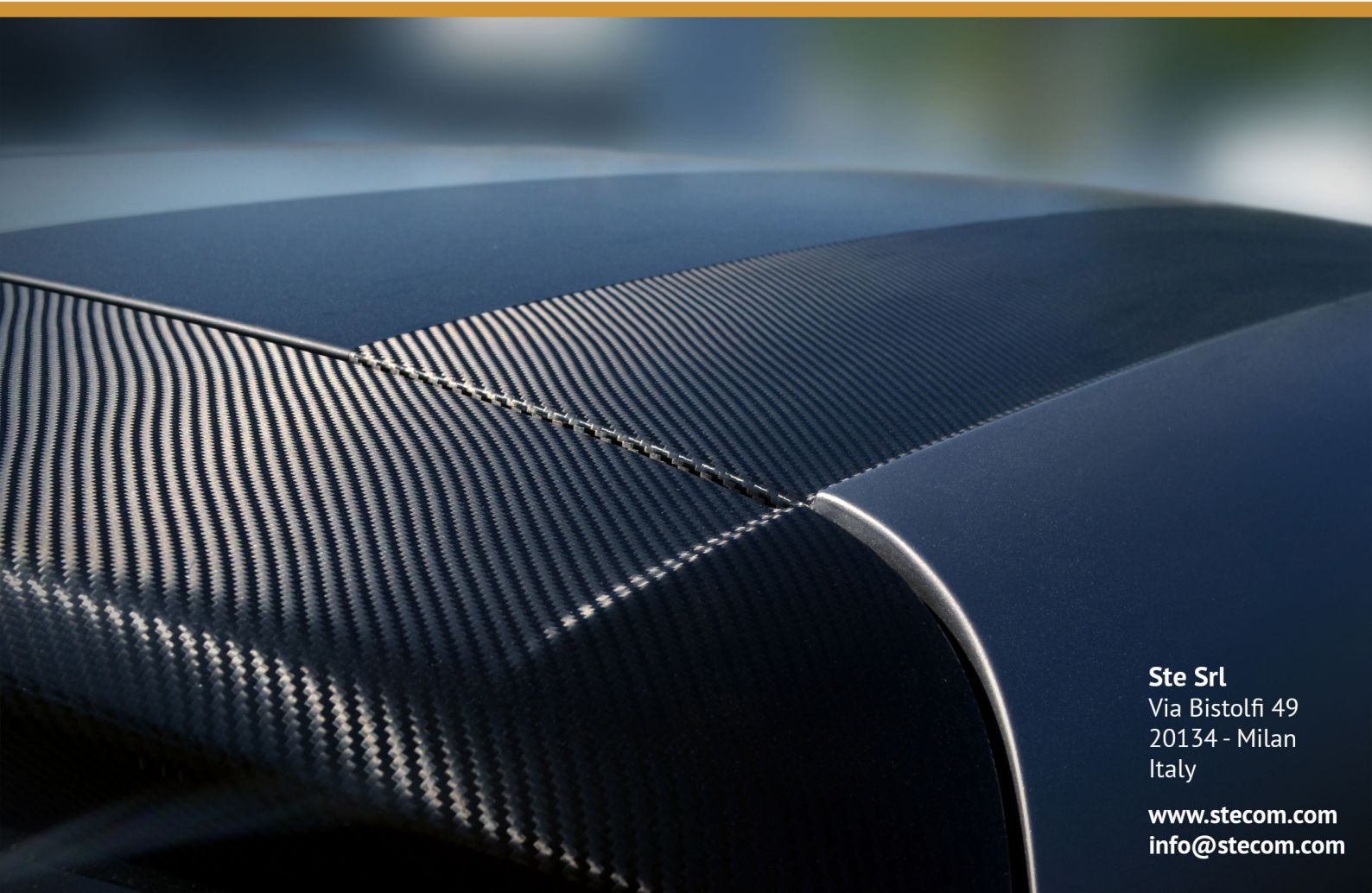




casehistory



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Vehicle to Infrastructure

Wireless system for communication between vehicle to infrastructure

“CONNECTING INNOVATION FOR INTELLIGENT WIRELESS”

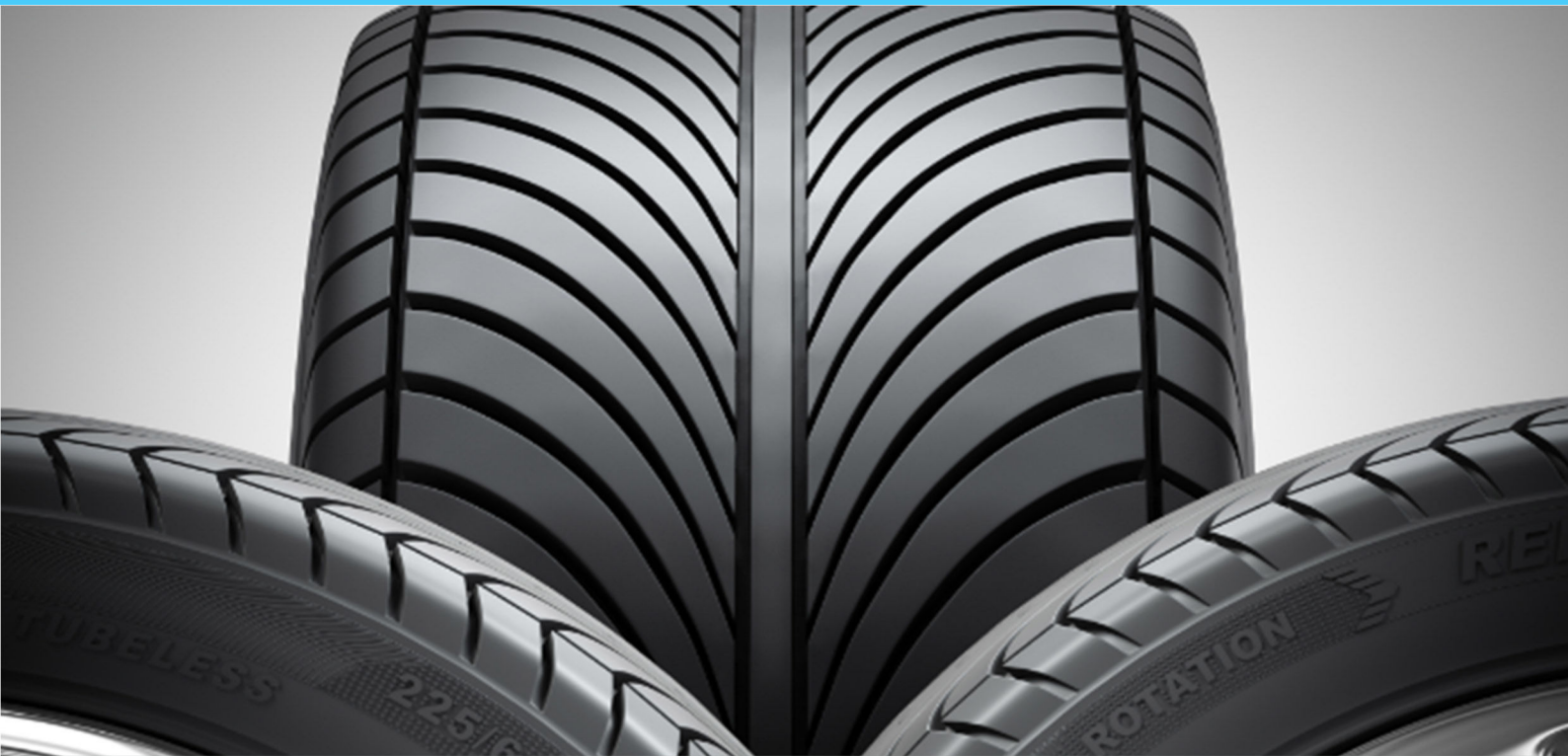
Ste

Engineering Department

2014



the technology



A new way to thinking wireless

The new wireless Micro.sp® technology for its robustness, flexibility, economy and for the intrinsic ultralow energy absorption. It is particularly proved to be valuable for products related to areas of application such as Internet Of Things applications, Automotive, Home appliances sensors, Wireless sensors network, Smart City, Home building automation and many other. Micro.sp® opens up an innovative and previously unthinkable approach to wireless energy efficient low power sensor devices.

RF pulses

Short (2-3 μ s) RF pulses can be employed to transmit data in applications where an ultralow energy consumption is of paramount importance. The data are modulated into the transmitted message employing PPM (Pulse Position Modulation) techniques. One of the major limitations of current active wireless sensor devices is that they are battery powered. This means that they either have to be recharged or replaced periodically and that the energy delivered to the system could be relatively low. With an extraordinary high RF peak power and the extremely low mean current consumption, which are necessary conditions to design a reliable and robust RF link margin budget, the SPX machine contributes to the technology development across a multitude of areas of applications such as automotive, medical, security and logistic. And naturally leading to ubiquitous and energy efficient wireless sensors anywhere.

The Key concepts of Micro.Sp® Technology:

- > Ultralow energy consumption.
- > Low economic impact.
- > High flexibility enabling remote monitoring of any type of sensors.
- > Active RF remote detection.

Micro.sp® approach

EEWS as Energy Efficient Wireless Sensors

The enabling technology that could bring IOT to PERVASIVENESS must comply to:

- > Energy efficiency
- > Miniaturization
- > Cost



Cuby: a new gateway concept

01 cuby

Cuby is a new STE proprietary multi-technology concept. With just few easy steps CUBY is able to create an effective sensors network at high energetic efficiency. A wide range of different sensors can be mounted within the same system: low consumption MicroSp, 169Mhz Systems, Wireless M-Bus, Zig-Bee sensors as well as Bluetooth. Thanks to wi-fi connection Cuby becomes a hub of the internet network. Registered Trademark Patent Pending



02 multi-technology

Cuby has on-board all technologies needed for the accomplishment of typical wireless infrastructure focused on a wireless sensors network. The system is able to simultaneously handle all on-board peripherals thanks to an extremely performant firmware. In this regard, either managing monodirectional low-consumption sensors or controlling data collecting hubs within an urban environment it becomes simply possible and real. User friendliness and the expansion capability turn the CUBY into an essential choice should you wish to realise an highly professional product.

03 a new concept

Cuby it's a new way of thinking wireless. Thanks to Cuby we can today focus on the application itself better than thinking how to technically achieve it. Cuby is able to autonomously all the data exchange process among devices. Thinking about new solutions and applications both B2C and B2B will be just a piece of cake. The system is supplied along with a web-server software which enables final user to manage all linked devices. You can also constantly check-up sensors status as well as manage alarms and events. Cuby is an outstanding starting point to kick off your idea!

04 it's easy to use

"Between two explanations go for the clearer one
Between two shapes pick the the most basic one
Between two words....the shortest."

Cuby is meant to make things easier. The developing team has mainly focused on creating an extremely performant and innovative product which could be massively easy and user friendly device. Trying to realize a complete product aiming to reduce the developing time was quite a complex goal to achieve. Eventually we think that Cuby is the result of our success.

05 all in one

Cuby is an all-in-one platform including:

- Last generation radio receiving Micro-SP
- RTX Radio 169Mhz Wireless M-Bus
- Wi-Fi Module
- Bluetooth module
- RJ45 Interface
- USB connector
- GSM Module



CLOUD SENSORS

There are many parameters that can be measured and wirelessly delivered to the receiver. The Sensors become integral part a wide range of object and appliances. They are extremely compact and powered by small batteries or energy harvester.



APPLIANCES SENSORS



SWITCH SENSORS



3 AXIS SENSORS



SOCIAL ALARMS



LEVEL SENSORS



LOGISTICS SENSORS



HUMIDITY SENSORS



PARKING SENSORS



LAMP SENSORS



AUTOMOTIVE SENSORS



HOME SENSORS



POWER SENSORS



METER READING



LIGHTNESS SENSORS



TEMPERATURE SENSORS



sp.net
wireless sensors



WSN

WIRELESS SENSORS NETWORK is a particular kind of network, characterized by a distributed architecture. It consists of a autonomous electronic devices that collects data from the environment and to communicate to another device. This device is the "Gateway".



GATEWAY CUBY

Cuby collects data from multi-technology sensors and manages them individually at the same time. It can be used both indoors and outdoors. It is a scalable solution and usable in different contexts. It can be powered by a solar panel, both by a battery or directly connected to the power line.



INTERNET

Cuby uses a Wifi technology and/or GSM to post to Internet the data collection and make them easily to access.

WEB APPLICATION

Thanks to the Web server interface it's easy to access to the data . Thus you can manage the sensors of your wireless sensors network from any devices commonly used such as smartphone or tablet.



sp.net for V2I



tyre pressure sensors

underground tank level measurement



Fuel pump wireless sensors



rf receiver Gateway



Wireless 169MHz RF Probes
 Intrinsically safe version battery operated
 Wireless transmission to the RF receiver up to 2 Km..
 RF repeater for difficult environmental application.
 Wake up on radio function.
 Power up 500 mW adjustable.
 RF signal measurement and display.
 See details on www.startitaliana.com



Micro.Sp 3 Axis Inclinometer wireless Sensors
 Thanks to the Micro.Sp technology is possible to create a Tiny wireless sensors alarm are placed inside the fuel pumps to check for malfunction and anti-theft alarms.

TYRE PRESSURE MONITORING SYSTEM
 The electronic valve
 The RF pulse MICRO.SP technology made possible implementing a new "Standard" of transmission in order to realize measuring and monitoring systems for pressure and temperature in Tyre.



Veichle postion tracker Wireless Sensor
 Disk sensor suitable for street surface installation.
 The magnetometer reads the magnetic field change which is triggered by a car driving over the sensor. The disk is easy to install. The magnetometer reads the magnetic field change which is triggered by a car driving over the sensor.
 The 169Mhz technology allows the system to keep track of free/engaged status and to communicate the data within a long distance range.



The Sp.Net Network
 Sp.net is the new multi-technology sensors network produced by STE. Thanks to sp.net you will be able to create your own wireless infrastructure with just few easy steps while saving your money. Sp.net can include different solutions such as low-consumption MicroSp systems, ZigBee sensors, Bluetooth and WiFi which can be managed just by one fully integrated Gateway perfectly equipped to handle everything at its best. With sp.net you will be able to control any kind of sensor within any environment. A wide range of applications which go from small home sensors to bigger urban systems as well as more sophisticated use such as checking wheel pressure through a sensor placed into the tyre which sends data directly to your smartphone. Any object, no matter whether big or small, can be part of your sp.net network.

Multi Technology Gateway
 The Gateway is able to create an effective sensors network at high energetic efficiency. A wide range of different sensors can be mounted within the same system: low consumption MicroSp, 169Mhz Systems, Wireless M-Bus, Zig-Bee sensors as well as Bluetooth.

