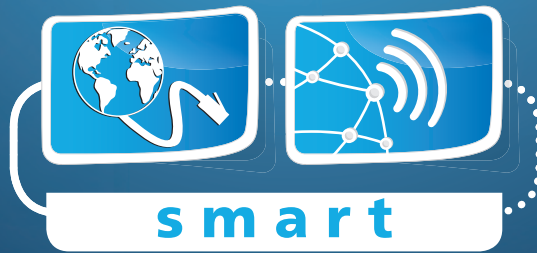




... experts in field controls



Smart Communication

Product Overview

INNOVATION • QUALITY • COMMITMENT • SUPPORT



Smart Communication – Protocols

... where intelligence meets technology, Smart Communication connects hardware with software

COMMUNICATION THROUGH SMART PROTOCOLS IS RAPIDLY INCREASING IN POPULARITY

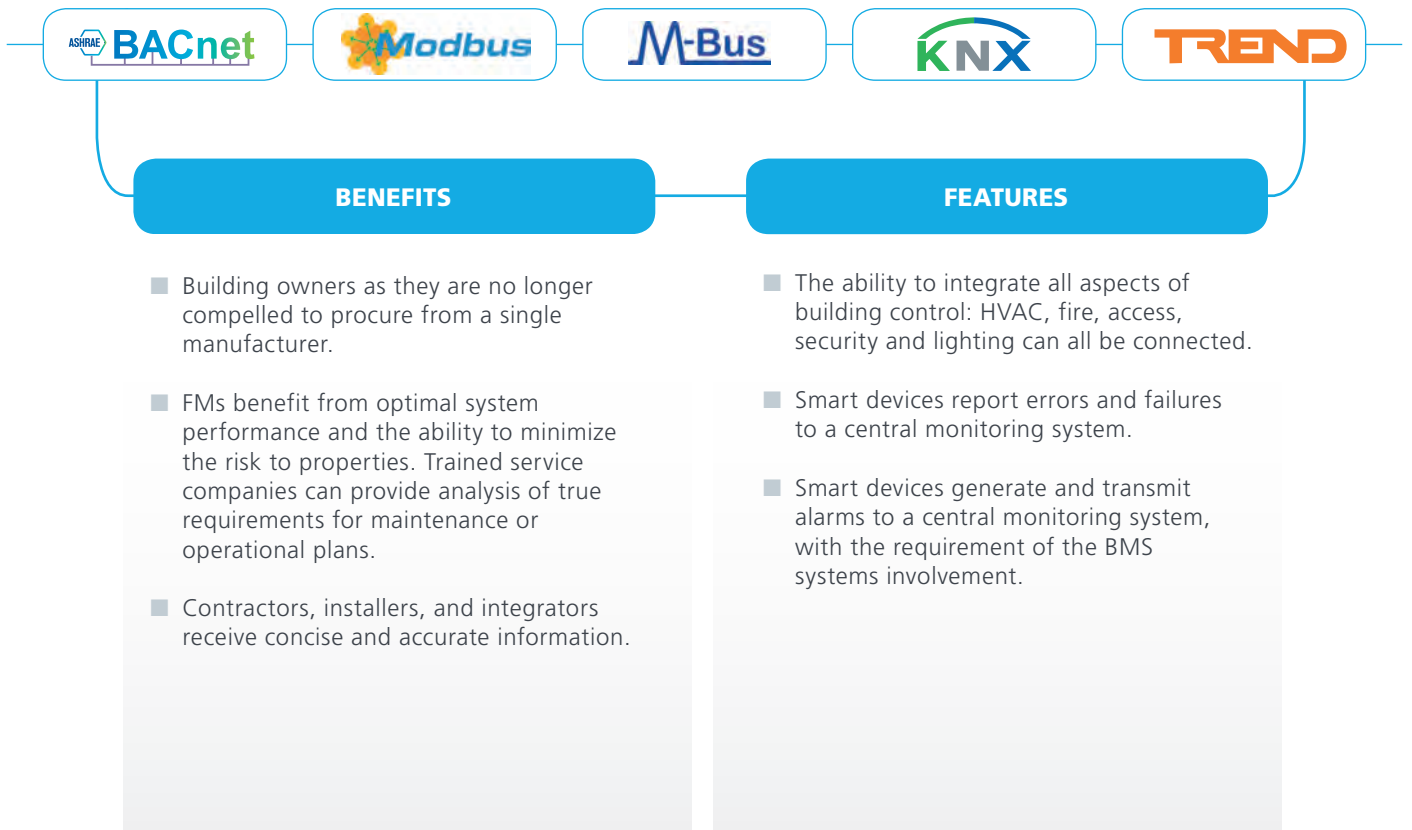
There are several transmission mediums available for this data, including:

- RS-485 - as used by BACnet MS/TP and ModBus RTU
- Twisted pair cable - as used by M-Bus and LonWorks
- Ethernet
- IP
- Wireless



“Smart” communicating products differ from conventional HVAC products in that they transfer measurement values as data, rather than as analogue signals.

There are many open protocols for smart communication available in the HVAC. The enhanced Smart Communication range from Sontay, offers a wide range of products that can communicate through BACnet, Modbus or Mbus protocols.





KNX to BACnet

KNX Interoperability: Connect with virtually any KNX-certified device out of the box.

ETS Support: Seamlessly import KNX Group addresses from ETS to lower commissioning time.

BACnet BBMD: Connect to remote BACnet networks and different subnets for easy configuration.



M-BUS Gateway

A single gateway powers and connects directly to the Meter Bus network:
No level converter needed.

Embedded Web-GUI interface select meter models from drop down list:
No software needed.

MDIX to use any Ethernet cable for commissioning & installation:
Saving on installation



Modbus to BACnet

Modbus Features and Interoperability: Connect with virtually any Modbus device out of the box.

Modbus to BACnet EZ Profiles: Lower commissioning time by uploading preconfigured verified profiles.

Dual RS-485 Ports improves response time: Connecting fewer devices per port or support more devices per gateway.



BACnet Router

BACnet Broadcast Management Device (BBMD):
Allow connection between different subnets.

DHCP automatically obtain IP settings from the network:
Saving on time.

MDIX to use any Ethernet cable for commissioning & installation:
Saving on installation.



SC-IO-24

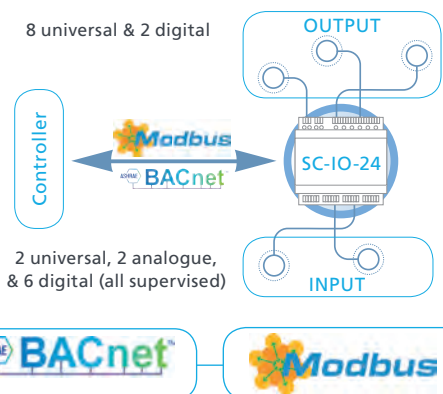
Smart IO Module



FEATURES

- 24Vac/dc supply
- Selectable MAC address via DIP switches or via network
- Selectable communication protocol (BACnet or ModBus) via DIP switch
- BACnet MS/TP at 9k6, 19k2, 38k4 or 76k8 bps
- ModBus RTU at 9k6, 19k2, 38k4 or 57k6 bps
- Automatic baud rate detection (BACnet)
- Automatic device instance configuration (BACnet)
- Copy & broadcast configuration to other Sontay I/O-Modules (BACnet)
- Configurable parity and stop bits (ModBus)

8 universal & 2 digital



2 universal, 2 analogue, & 6 digital (all supervised)

ST-TOUCH

Touchscreen Thermostat



FEATURES

- Auto fan speed with auto-off function
- Calendar/time programmable
- Sleeping mode
- Adjustable Switching Differential
- On/off memory function
- Anti-frost protection mode
- Lock-function
- Sleep mode
- Modbus RS-485 communication as standard

APPLICATION

- Hotels
- Offices
- Smart Homes
- Cooling
- Heating
- Ventilation



SC-ST-x

Smart Temperature Controller



FEATURES

- Inputs: Window contact or occupancy (PIR) detector, remote temperature sensor
- 2-wire RS-485 bus via BACnet MS/TP protocol
- Centralised supervision of HVAC systems, with defined local access into the control strategy (features lockable)
- High energy efficiency and smart user interface
- Sleep-mode, Countdown-timer and Auto-Fan off feature

APPLICATION

- Hotels
- Offices
- Smart Homes
- Cooling
- Heating
- Ventilation



PA-60-x-COM

Multi-Configurable Air DP Sensor



FEATURES

- User selectable measurement range and output type Re-zero
- Duct fixing kit included
- Snap-fit cover
- IP65 Housing

APPLICATION

- Filter condition in ventilation system
- Buildings, laboratories and clean room (non corrosive gases)



SC-PM-E23C6

Smart Power and Energy Meter



FEATURES

- Simplest possible installation, commissioning and operation
- Compatible with CTs from 5-5000A (requires 5A secondary from the CT)
- Native ModBus or BACnet communication for seamless into BMS
- Unidirectional or bidirectional
- Flexible CT configurations (1, 2 or 3- phase)

APPLICATION

- Energy monitoring and commercial sub metering
- Renewable energy
- Energy management
- Cost allocation in building





Case Studies

... our clients talk about experiences with Sontay

SONTAY PRESERVES HISTORY AT GUILDHALL ART GALLERY

"Installing SonNet was really easy and a great option for a historic building such as the Guildhall Art Gallery"

The Project

- Guildhall Art Gallery was established in 1886 and houses historic pieces including the Magna Carta
- The Art Gallery required temperature and humidity sensors to monitor the space conditions, control the energy being consumed and protect the artwork
- The team at the Guildhall Art Gallery were monitoring the temperature and humidity on hand held devices

The Requirements

- It was decided a room-based system could provide much more accurate, automatic readings
- It would also deliver a far more reliable, user-friendly and robust solution to the gallery



SONTAY'S WIRELESS SENSORS ARE TRIED, TESTED AND TIME-SAVERS AT FORD

"The representative from Sontay had a good knowledge of the equipment and gave good advice about how to site the equipment. The installation was simple and connection to the local BMS system was hassle free"

The Project

- Ford's Dunton Technical Centre, one of Europe's largest R&D centres
- Control the relative humidity in the testing bays whilst engineers are conducting emission tests

The Requirements

- The system needed to be reliable and accurate
- The sensors are required to be moved around to ensure the ambient RH readings are accurate so a wired solution was not possible



SONTAY'S SYSTEM IS A SUCCESS AT MALTESE SCHOOL

"The Sontay Smart Communication Sensor was the ideal choice for this project ... the sensor offers total environmental sensing in just one single product, which made the installation process simple."

The Project

- Primary School Malta
- The installation needed to be done throughout the building
- The school management team is using the project as a pilot scheme

The Requirements

- A BEMS that could accurately monitor performance and apply predefined operational rules automatically
- A fully connected system that is able to communicate across all platforms



SONTAY HELPS UNIVERSITY HOSPITAL SANT JOAN DE REUS MEET ENERGY EFFICIENCIES

"We use Sontay products for almost all the projects we carry out," comments Francisco Garcia, technical office at Controlli Delta Spain. "The sensors are extremely reliable and the level of technical support is consistently high. We have been customers of Sontay for many years and always feel confident specifying its products."

The Project

- The BACnet BMS system centralises information by integrating effortlessly into the computer network of the hospital
- The materials used are environmentally friendly, and the management systems ensure that the new hospital operates as efficiently as possible

The Requirements

- Contemporary management of energy needs
- Merge with the environment in terms of eco-efficiency
- Ensure maximum efficiency while maintaining optimum operating conditions and comfort

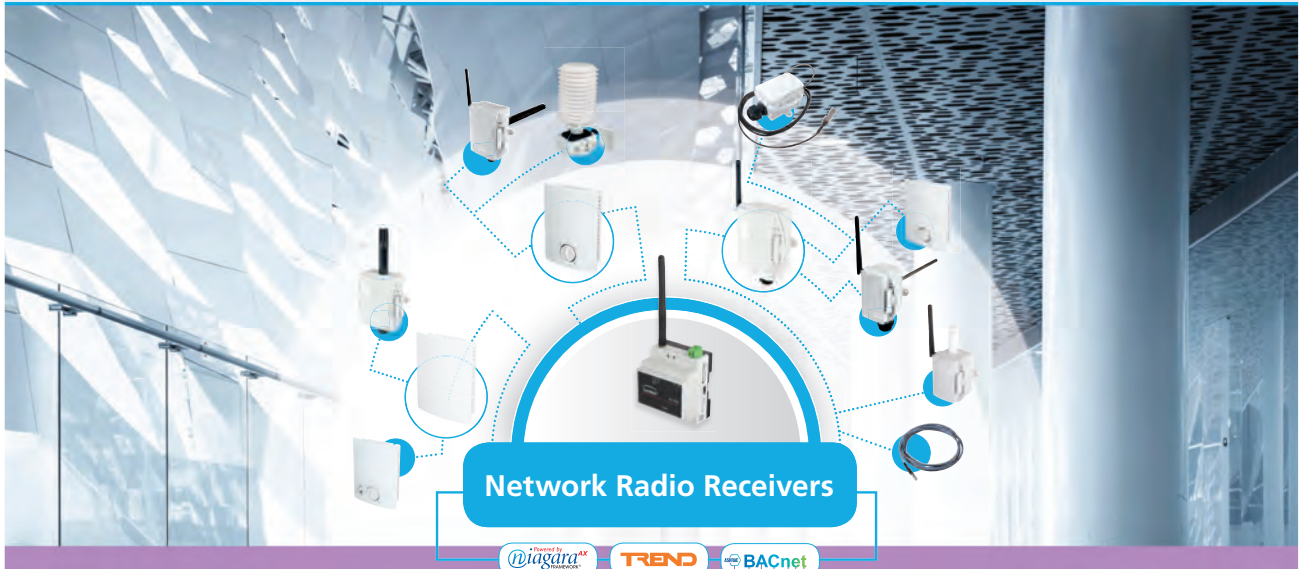




Smart Communication – Wireless

... an award winning sensing system, designed to be a viable alternative to wired systems.

SonNet is a complete wireless sensing system that offers several advantages to both the BMS installer and end user/occupier of the building.



BENEFITS

- Minimal downtime in operational buildings such as: [schools](#), [hospitals](#), [theatres](#), [museums](#), [manufactures](#)...
- Savings on installation costs of a traditional wired system: **- 30%**
- No need for structural cabling so it is suitable for listed buildings
- Ability to change layout easily as a building needs change
- Energy savings in buildings where it would not have been possible

FEATURES

- Simple integration to BMS controller via smart communication protocols
- Self-healing tree topology eliminates concerns with reception & reliability
- Assured network security
- Up to 5 year sensor battery life
- Site Survey Kit for proving signal strengths
- Temperature, RH and CO₂ sensing made wireless



Smart Communication – Wireless

... a revolutionary family of wireless sensing devices.

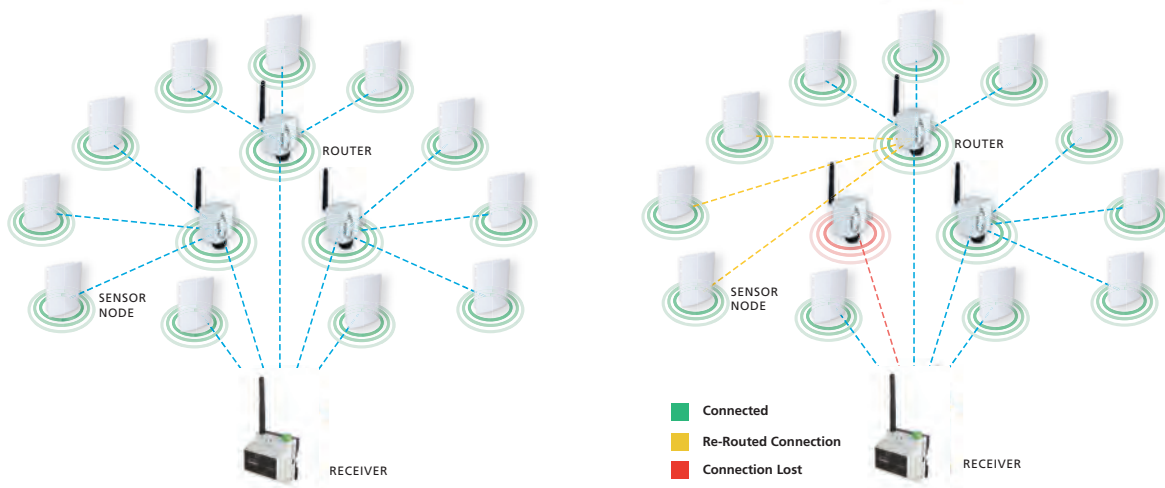


- Temperature, RH and CO2 sensing made wireless
- Increased connectivity with I/O module for standard wired devices
- Seamless integration to Niagara, Trend or BACnet system

HOW SONNET WORKS

SonNet employs the 802.15.4 wireless standard, and uses the 2.4GHz ISM band which features a choice of 16 channels and direct sequence spread spectrum techniques to reduce the effects of interference.

SELF-HEALING TREE TOPOLOGY



HOW SONNET WORKS

- The receiver and routers can each support a maximum of 16 directly connected 'child' devices.
- A router can support a maximum of 8 battery powered sensors, plus up to 8 routers.
- A receiver can have a maximum of 12 directly connected sensors, while a router can have a maximum of 8 directly connected sensors.
- If no EDs are directly connected a maximum of 16 routers can be directly connected.
- There can be a maximum depth of 8 'layers' of routers in a network.

NETWORK SECURITY

- All SonNet devices use unique network identifiers. Only devices with the correct network ID will be allowed to join the network.
- A SonNet system network once formed, can be 'locked' to prevent any unauthorised devices joining, even other SonNet devices.
- All data transmitted by SonNet devices is encrypted.

RF-SSK

Site Survey Kit (SSK)



A site survey kit was designed to prove signal strengths on installations and to specify the equipment needed for each application.

Once the survey is complete, the installer is provided with a floorplan of the building, showing the layout of the system and where each sensor and receiver should be located. The SonNet items are then delivered to site and an "out of the box" solution is ready to be installed.

It is comprised of a site survey receiver, a hand-held monitor, and site survey routers and nodes. Routers are used to route signals from battery powered nodes and other routers to the receiver module, where the signal strength of a direct path is not sufficient for reliable communications.

RF-SSK-HIRE

Hire of the RF-SSK SonNet Site Survey Kit for six working days.

RF-RR

Powered Routers



The Powered Routers are used to route signals from battery powered sensors and other routers to the receiver.

They can simply relay the information or can also monitor temperature, relative humidity and CO₂.

Routers automatically find the best path back to the receiver, which may be directly to the receiver or via other routers.

RF-RS

Battery Powered Sensors (EDs)



The Battery Powered Sensors communicate directly to the receiver or via powered routers. Data is transmitted at configurable time intervals, or upon changes in measured value.

The configuration is retained if the battery becomes discharged or requires replacement. The sensors automatically find the best path back to the receiver, which may be directly to the receiver or via routers.

RF-IOM-4A-4U

Radio Input/Output Module



The Input/Output Module widens the appeal and broadens the spectrum of applications that SonNet can be used in.

This intelligent device is used in conjunction with SonNet sensors and routers to act as local I/O with connectivity to typical HVAC equipment.

RF-RX

System Receiver



The SonNet receiver collects data from all devices on the radio network, including measurements from sensors, link quality for all links formed in the network, battery levels for all battery powered devices, hours run for all devices and the current status of all devices.

RF-RXS

Network Radio Receivers



The range of SonNet receivers allows quick and seamless integration of SonNet network into building management systems.

A brand new BACnet receiver automatically maps data from SonNet end devices into BACnet objects which are transmitted via the vendor independent BACnet IP communication protocol, using a simple web browser interface.

The SIP interfaces between SonNet and Trend systems presenting SonNet data as VIQs, or can write values directly into Trend-controllers via Ethernet.

For projects using the Tridium JACE platform, a receiver or an internally mountable card allows enable customers to benefit from wireless sensing and control.

FEATURES

- Sensing and controlling without the need of structural cabling
- Minimal downtime and costs for installation
- Seamless integration into BACnet IP over Ethernet
- Compatibility for Trend IQ3 and IQ4
- Internally mounted JACE option card





Smart Communication – Wireless

... How to make a SonNet installation in 3 easy steps.



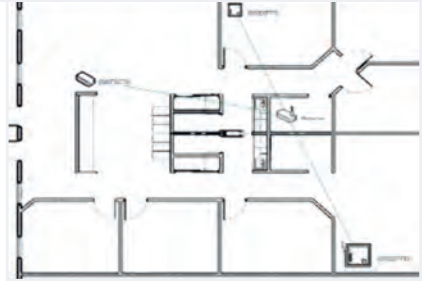
1 Make a Site Survey of your building using the RF-SSK Site Survey Kit.



RF-SSK Site Survey Kit



Checking signal strengths with hand held tool, Boost any poor signals with the router



Map your system on a floor plan using SonNet CMS software

2 Order the products required and make your final installation.

- RF-RXS-Receiver
- RF-RS-Sensor
- RF-RR-Router
- RF-IOM-IO-Module

List of sensors and routers selected on site survey

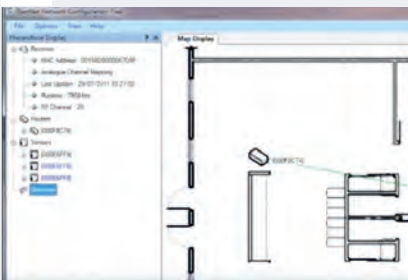


Your selected products should work straight out of the box



Place equipment around the building as outlined in the site survey

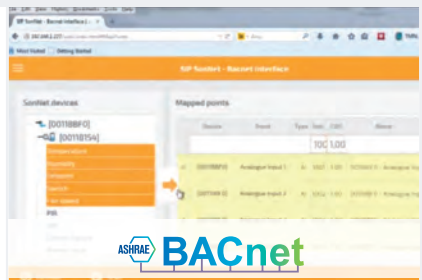
3 Commission your system using your chosen system or interface.



Through SonNet CMS software provided: Auto-commissioning mode instantly discovers all devices



Directly into Niagara AX framework using RF-RXS receiver or option card



Through Trend or BACnet systems using SonNet powered by SIP

WHAT IS IoT AND WHAT DOES IT MEAN FOR THE BUILDING CONTROLS INDUSTRY

By Stacey Lucas, Commercial Director at Sontay

The term, the Internet of Things (IoT) has been gaining prominence in the industry and beyond for a while now. However, it can sometimes be difficult to know what this term really means and what's more, how it can benefit a commercial building and those that manage it.

IoT can be defined as a network of physical devices that can connect and collect data. These 'things' could be anything from machinery equipment in a factory right through to a kettle in the office.

According to Gartner, the American information technology research and advisory company, approximately 6.4 billion connected 'things' will be in use worldwide during 2016, up 30% from 2015, and will reach 20.8 billion by 2020*.



The capabilities of smart devices are increasing all the time and this is due to the advancing internet connectivity of such products. By providing useful data from the Building Management System (BMS) to energy and facilities managers over the web to remote PCs, tablets and smartphones, these devices can be used to collate big data. This in turn can be stored in the cloud and made readily available for collation and analysis to improve energy management, facilitate better maintenance and repair regimes, and help endusers improve how they utilise their buildings.

Increased device-to-device communication is an important role within modern building management systems. Convergence is the hot topic at the moment and we are seeing a high number of devices and control systems using the internet protocol alongside traditional protocols for communication, such as BACnet and Modbus. Wireless variations of intelligent control devices are becoming much more readily available. This makes it easier to build, extend and increase the range and capabilities of a unified, integrated system.

Having said that, it is not just about devices working together, the 'Internet of Things' is also about the data that can be accessed. Here, sensors play the vital role. They are inherently smart, measuring, analysing and evaluating all sorts of building performance data and making this information available to the control system. By pulling together this information and using it to determine the actions of connected devices, we can create a truly 'smart' system. Cloud-based applications are key to using this data. The IoT does not function without the right collection and analytical tools to interpret and use the information intelligently.

This 'Internet of Things' is not going to go away, it is going to continue to grow and it is up to us, as an industry, to embrace it.

Stacey Lucas

Commercial Director at Sontay



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