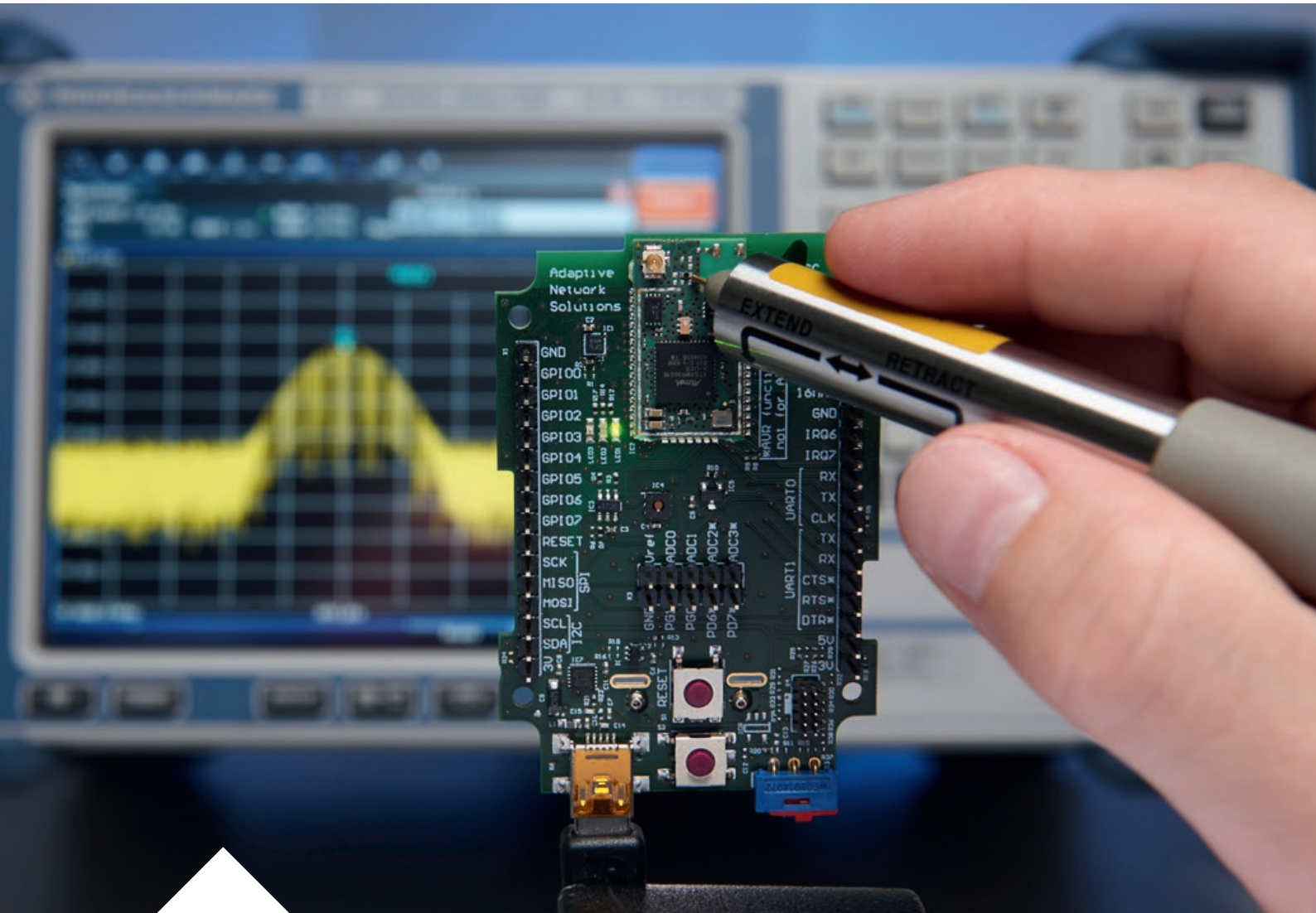# A.N.Solutions

INDUSTRIAL GRADE WIRELESS

Wireless Designs of the Future

We Bring Your Ideas to Market
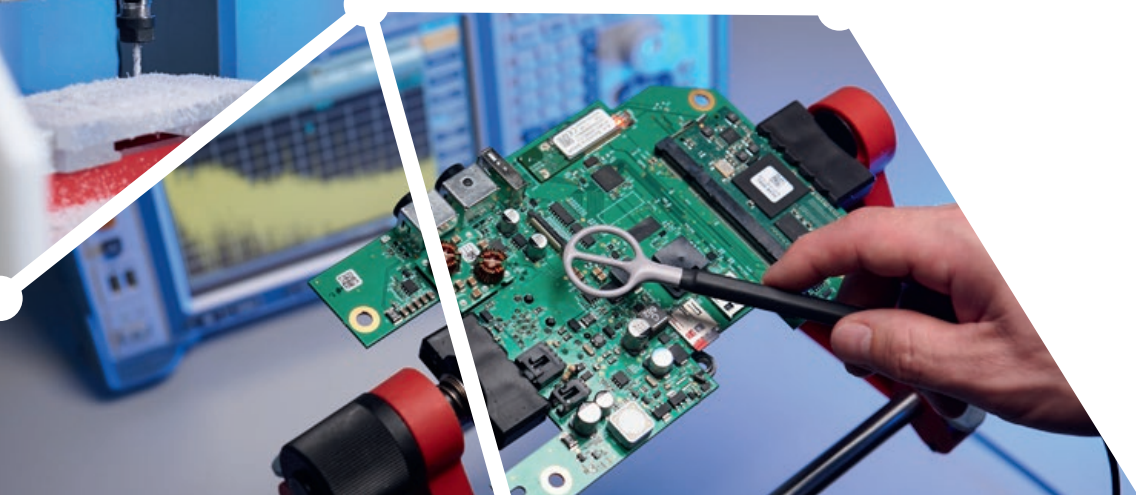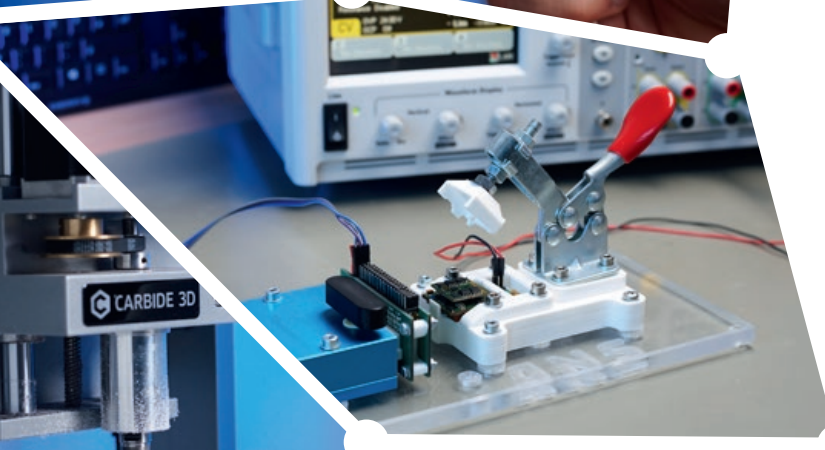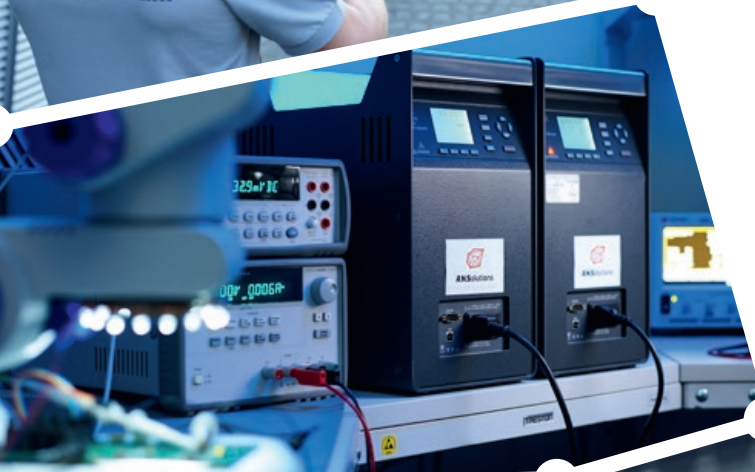
Contents

Wireless Design by Experts

For over 10 years, A.N. Solutions, a full cycle system design house, has been providing concept-to-market solutions using wireless sensing technologies. We help to bring intelligent wireless connectivity to new products by providing system concept architecture, development, bring-up, manufacturing and certification for a wide range of application areas. Our solutions and concepts cover standardized and proprietary wireless technologies within the 169 MHz up to 2.4 GHz ISM frequency band, various integration form factors, as well as application-driven customization.

Specializing in IEEE802.15.4-based low power wireless technologies, such as 6LowPAN, Zigbee, Thread and more, A.N. Solutions developed a range of RF modules, embedded software and development tools for both Sub-1 GHz and 2.4 GHz license-free ISM bands to empower quick and seamless technology implementation and customization. Thanks to a modular platform strategy, A.N. Solutions helps OEMs and system integrators with no in-house RF expertise to roll out new products on time and on budget by offering reusable, highly adaptable solutions, including hardware and software. The extensive development tools portfolio and platform extension to other existing infrastructures, and wired and wireless interfaces, including LTE, GNSS, Bluetooth, LoRa, WLAN and Bluetooth, support fast and seamless technology adaption and integration, while shortening the time-to-market phase significantly.

Headquartered in Dresden, Germany, the A.N. Solutions team boasts years of wireless experience, adhering to the spirit of innovation and "Made in Germany" quality.

Thomas Lerm, CEO

Industries and Solutions

A.N. Solutions will support you at every stage of designing, testing and deploying a robust wireless sensing or IoT solution for a wide range of industries and application areas by helping to choose the right technology, and providing the building blocks and engineering services.

Smart Buildings

Bring intelligent control and monitoring systems into residential homes and commercial buildings, and cut operational costs, by introducing smart wireless connectivity.

Smart Energy and Metering

Optimize energy consumption by introducing smart energy management and climate control systems using wirelessly connected electricity, heat, and water meters.

Industrial Automation

Automate your mission critical industrial processes using industrial-grade rugged and reliable wireless sensing systems designed and powered by A.N. Solutions.werden.

Healthcare & Fitness

From smart medical equipment to individual health monitoring devices to fitness trackers, A.N. Solutions has all the necessary expertise and wireless sensor technology.

A.N.Solutions

Retail

Improve your customer experience, streamline operations and cut costs by introducing intelligent wireless sensor technology and IoT solutions for your retail outlets.

Agriculture

Tackle the challenges of modern agriculture and farming by designing and deploying smart wireless systems for monitoring and control of crops and livestock.

Automotive and Transport

Optimize warehouse processes, improve automotive manufacturing, locate and monitor shipping containers and their contents globally with WSN and IoT technologies.

Smart Cities and Environment

Make the Smart City vision a reality by creating and implementing smart wireless and IoT solutions for connected mobility, parking automation, traffic control, and more.

Event Management

Reinvent the stage performances, sporting events, and trade shows with the use of smart wireless and IoT solutions that significantly increase safety and efficiency.

Industrial Grade Wireless

Distilling years of experience in wireless design, A.N. Solutions developed a comprehensive line of reliable Sub-1 GHz and 2.4 GHz products to enable your IoT applications. They come in different form factors, and greatly simplify the application development and customization.

2.4 GHz Wireless Hardware Components

@ANY2400-SC Modules

A cutting-edge IEEE 802.15.4 wireless networking module for international 2.4 GHz ISM band.

@ANY2400-SC USB Dongles

A plug-and-play USB-hosted gateway for IEEE 802.15.4 wireless networks using versatile @ANY2400-SC modules.

@ANY2400-SC BRICK Boards

Extended development board for easy application development using IEEE 802.15.4 2.4 GHz @ANY2400-SC modules.

@ANY2400-SC-3 Modules

A sophisticated IEEE 802.15.4 wireless networking module for worldwide 2.4 GHz ISM band.
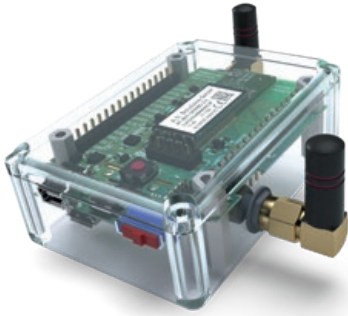

@ANY2400-SC-Pro USB Dongle

An advanced plug-and-play USB-hosted gateway for IEEE 802.15.4 2.4 GHz wireless networks.

@ANY2400-SC-3 BRICK Boards

Extended development board for easy application development using IEEE 802.15.4 2.4 GHz @ANY2400-SC-3 modules.

A.N.Solutions

@ANY DESIGN Development Kits and @ANY NODES for Easy Prototyping

@ANY DESIGN Development Kit is a combination of three BRICK development boards, a USB dongle and the downloadable WSN software. Pick and choose the components or order additional components to match your unique design requirements. @ANY NODES, the preassembled self-contained units consisting of BRICK boards in plastic enclosures with optional external antennas, are available.

Contact us at support@an-solutions.de and we will help you select the right components.

Sub-1 GHz Wireless Hardware Components

@ANY900 Modules

A ruggedized IEEE 802.15.4 wireless networking module for Sub-1 GHz ISM band.

@ANY900 USB Dongles

A plug-and-play USB-hosted gateway to enable IEEE 802.15.4-based Sub-1 GHz wireless network.

@ANY900 BRICK Boards

Extended development board for easy application development using IEEE 802.15.4 Sub-1-GHz @ANY900 modules.
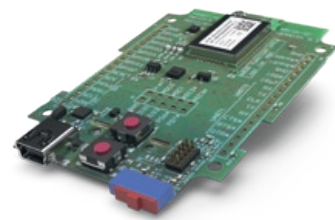

@ANY900ARM-SC Modules

A cutting-edge IEEE 802.15.4 wireless networking module for European, Chinese, Japanese, and North American Sub-1 GHz ISM bands.

@ANY900ARM-SC USB Dongle

A high security USB gateway for IEEE 802.15.4 wireless networks for European, Chinese, Japanese, and North American Sub-1 GHz band.


@ANY900ARM-SC BRICK Board

Extended development board for easy application development using IEEE 802.15.4 Sub-1-GHz @ANY900ARM-SC modules.

Embedded Software for IoT

A.N. Solutions applies the same modular approach in software, as it does in hardware. Various embedded software components are designed to interoperate seamlessly and can be easily mixed and matched depending on the exact needs of each client. @ANY SMS is an easy-to-use embedded software suite for the control of @ANY platform's functionality via AT commands, and flexible commissioning.

Possible Network Configurations

Peer-to-Peer Network

Star Network

Tree Network

Mesh Network
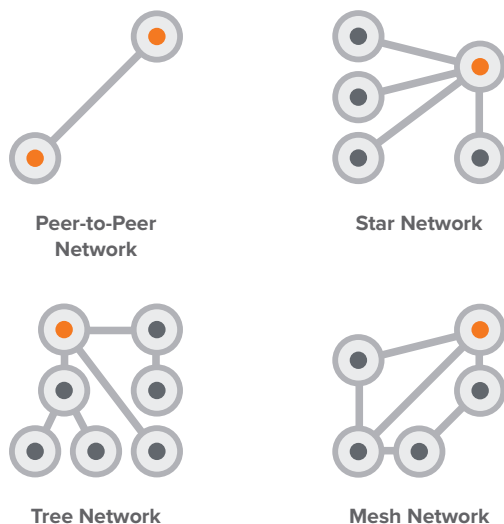
Feature	SMS Base free	SMS Pro subscription
Peer-to-peer Network	✓	✓
Star Network	✓	✓
Tree Network	–	✓
Frame Redirection	–	✓
Dedicated Sensor Support	✓	✓
GPIOs (8 in/output lines, 2 lines for input and event trigger)	✓	✓
Sleep Mode	✓	✓
Data Transmission (direct/indirect)	✓	✓
Data Transmission (acknowledged)	✓	✓
Data Transmission (unacknowledged, broadcast)	–	✓
Bootloader	✓	✓
Library Version	–	✓
Vendor Support	–	✓

Software Customization Services

Many projects have non-standard requirements for various parameters, as well as defined system constraints, such as network size, data throughput, latency, range, power consumption, and a number and type of sensors. When existing standard solutions cannot address the specific application scenarios, a custom approach is the way forward. A.N. Solutions has an extensive in-house expertise, complemented by a large partner network. It allows us to determine, design, and implement a tailored wireless network system solution that fits perfectly even the most challenging of scenarios.

A.N.Solutions

From Idea to Market

A wide-scale adoption of Wireless Sensor Network (WSN) technology continues across the industry verticals, accelerated by the advent of the Internet of Things (IoT) and Industry 4.0.

A large number of new standards and proprietary technologies have sprung up. This dazzling array of wireless standards includes IEEE 802.15.4, Zigbee, Thread, 6LoWPAN, IEEE 802.15.1 BT/BLE, LoRa as well as proprietary technologies such as ANT, Z-Wave and more. The amount of information covering characteristics, use cases, benefits and shortcomings of all these WSN technologies is tremendous.

No wonder, a potential adopter may get easily confused. Nobody has in-house capabilities to

address all of the technology challenges. This is not something that you can learn quickly by attending a one-hour webinar. So how can a developer navigate through these treacherous straits and find the technology that is just right for the task at hand?

A.N. Solutions provides consulting and dedicated services, covering a complete design cycle - from concept to market. We also offer on-demand expert services that can be tapped at any stage of the product development cycle. A.N. Solutions can fully meet a client's needs and requirements, drawing on our in-house expertise and leveraging our eco-system partners' capabilities.

Our Goal Is Your Success

Do you want to create a new wireless product that will revolutionize your industry? We can help you start from the very beginning, conceptualize your idea, and guide you through the entire process, so that you avoid known pitfalls and get the product to market on time and on budget.

Stay focused on your core competency, and let A.N. Solutions handle the design of your wireless hardware. We have the knowledge and experience, as well as the stellar team of engineers, to bring a fully tested and certified product to the market quickly and efficiently, providing full-cycle development services, from idea to mass production.

When you introduce a new product in different regions of the world, you need to make sure your

wireless device is fully compliant with all applicable local regulations. This is a rather challenging task. Partner with A.N. Solutions early on, and we will guide through the entire process, assisting at every step, until you receive all required documents.

At Adaptive Network Solutions, we begin our client engagement with a careful evaluation of which wireless technology will best suit a client's needs. We make sure that a client clearly understands that the differences in technologies and respective implementations using different vendors' platforms are quite significant. Our near-decade experience allows us to find a perfect fit for customer's needs. With our Solution Engineering approach, we are able to find the easiest way to build a reliable solution.

A.N.Solutions

1 Concept Engineering

We can help you start from the very beginning, conceptualize your idea, and guide you through the entire process, so that you avoid known pitfalls and get the product to market on time and on budget.

2 Hardware Development

We have the knowledge and experience, as well as the stellar team of engineers, to bring a fully tested and certified product to the market quickly and efficiently, providing full-cycle development services, from idea to mass production.

3 Software Development

Embedded software is what powers every wireless sensor device. In parallel to hardware development, we will design and implement the required device firmware and related frontend software, all tailored to your needs. We use established tools and support all systems that are currently popular on the market.

4 Product Certification

When you introduce a new product in different regions of the world, you need to make sure your wireless device is fully compliant with all applicable local regulations. We will guide through the entire process, assisting at every step, until you receive all required documents.

5 Sensor-Actuator Integration

The value of any WSN network is in its control and monitoring capabilities, which depend on the sensors and actuators. A.N. Solutions will help you find the right components, integrate them into your devices, and ensure their optimal performance.

A.N.Solutions

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