ADAPTIVE NETWORK SOLUTIONS

. . . smarter wireless connectivity

@ANY900-2 RF MODULE

Made in Germany

868/915 MHz Modules for IEEE 802.15.4/ZigBee® Wireless Mesh Networking Applications

@ANY900-2 is an ultra-low power 802.15.4/ZigBee RF module for Sub-1 GHz ISM band. The tiny module features an exceptional sensitivity of -110 dBm, which combined with the scalable output power of up to +10dBm, results in the line-of-sight range of up to 5,000m.* **@ANY900-2** module's U.FL antenna connector enables rapid design-in, using a different external antenna for every application and thus providing greater flexibility for developers. Adjustable software supports 783, 868 and 915 MHz ISM band applications. **@ANY900-2** module eliminates the need for costly and time-consuming RF development and shortens time to market for a wide range of standards based wireless applications.

Key Features	Benefits
Outdoor range: up to 5 km*	Scalable range optimization according to application
Support of 783 MHz, 868 MHz and 915 MHz ISM bands	Excellent wall penetration and propagation performance in noisy environment
Battery lifetime: up to 10 years**	HW & SW architecture optimized for low power
Data rate: up to 1 Mbit/s	Avoid data rate penalty for Sub-1 GHz band operation
Scalable network topology: Point-to-Point, Star, Tree, Mesh	Flexible network options for every application
Serial AT-commands for easy prototyping and quick setup	No need to program the module
U.FL antenna connector	Flexible external antenna options
256 kByte data storage capacity with built-in flash memory	Hardware features Over-The-Air functionality and supports mobile data storage/capturing

* Line of sight (LOS), based on simulation and range measurements. Actual range varies, depending on selected antenna, environmental conditions and regulation requirements

** TX/RX every 5 minutes with 2500 mAh battery

Development Tools

@ANY DESIGN Development Kit is a comprehensive toolset enabling easy design, prototyping and deployment of wireless IEEE802.15.4/ZigBee solutions, using Adaptive Network Solutions' @ANY product platform. The development kit provides the developers with everything they need to create market-ready wireless systems and applications, while mastering the intricacies of WSN technology. The kit contains three @ANY900-2-based BRICK development boards, a USB dongle, a JTAG programming adaptor and a set of external antennas, as well as software and documentation CD-ROM.

Building Automation

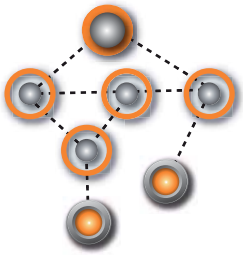
Automated Meter Reading

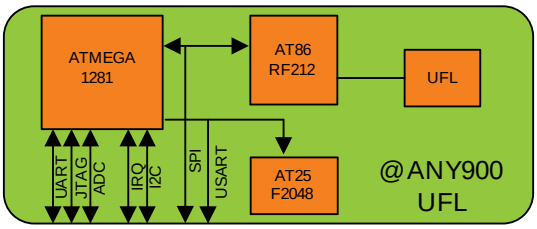
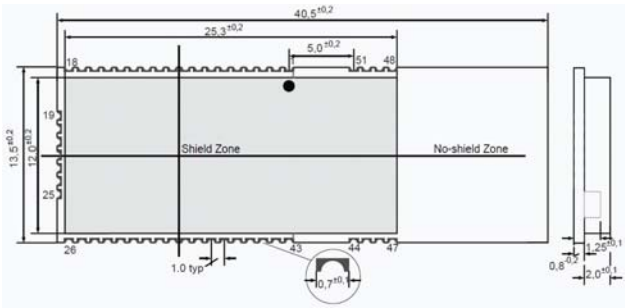
Industrial Automation

Embedded Software

A.N. Solutions applies the same modular approach in software, as it does in hardware. The various embedded software components are designed to interoperate seamlessly and can be easily mixed-and-matched depending on the exact needs of a client. The following @ANY software components are available:

- **@ANY Smart MAC Suite ("SMS")** offers easy control of @ANY platform's functionality via AT commands supporting all IEEE 802.15.4-based functions, as well as facilitates the addition of numerous custom features. The software suite is provided in two different versions, **SMS Base** and **SMS Pro:**
  - **@ANY SMS Base** version provides some basic functionality designed for simple network topologies and evaluation purposes. It can be used to set up Coordinator - End device (star, peer-to-peer) topologies.
  - **@ANY SMS Pro** version facilitates development of complex applications and supports additional Tree topologies with static routing, based on IEEE 802.15.4 MAC layer. This allows a large number of versatile example applications. **SMS Pro** also provides additional features like data broadcasting and full function device functionality. The data redirect feature enables users to set up tree network topologies. Finally, **SMS Pro** is designated to be a code base for customer requested extensions.
  - Both version will be complemented by **@ANY SMS Monitor**, a simple, user-friendly GUI for network monitoring and application-driven extensions.
- Mesh networking topologies supporting dynamic routing schemes, based on IEEE 802.15.4 that are compliant to **ZigBee® PRO** , **6LoWPAN** , as well as **Wireless HART**, can be implemented and customized on request.



Module Operating Conditions	
Supply Voltage (Vcc)	1.8 V to 3.6 V
Current Consumption: RX/TX Mode	11 mA / 26 mA
Current Consumption:	< 11 µA
RF Characteristics	
Max Output Power	up to +10 dBm (at antenna connector)
Receiver Sensitivity (PER 1%)	up to - 110 dBm
Data Rate	up to 1 Mbit/s
Frequency	779-787 MHz / 863-870 MHz / 902-928 MHz
Data Encryption	AES 128 bit
Microcontroller Characteristics (AVR Atmega)	
On-Chip Flash Memory Size	128 kBytes
On-Chip RAM Size	8 kBytes
On-Chip EEPROM Size	4 kBytes
On-Module Data Memory	256 kByte
Physical/Environmental Characteristics	
Size	40 x 13.5 x 2 mm
Weight	2 g
Operating Temperature Range	-40°C to +85°C
Block Diagrams	
Mechanical Drawing	
Availability	In production. Fully certifiable.

IMPORTANT NOTE: All data contained herewith are preliminary data only.

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