ADAPTIVE NETWORK SOLUTIONS

. . . smarter wireless connectivity

@ANY2400 SC RF Modules

Made in Germany

2.4 GHz Modules for IEEE 802.15.4/ZigBee® Wireless Mesh Networking Applications

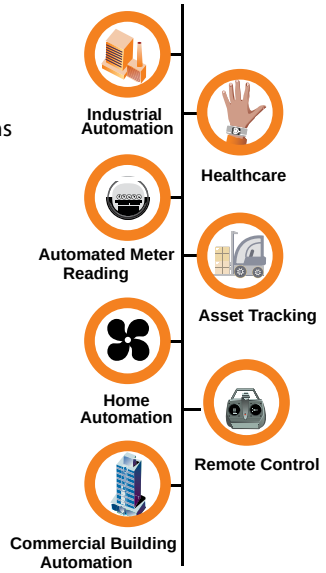
@ANY2400 SC is an ultra-compact IEEE802.15.4/ZigBee RF module for worldwide 2.4 GHz ISM band. The @ANY2400SC modules are based on Atmel's new single-chip that combines the industry-leading AVR microcontroller and best-in-class 2.4GHz RF transceiver. The @ANY2400SC modules come with two antenna options: an integrated chip antenna and a U.FL connector for use with a variety of external antennas. The @ANY2400SC modules are fully compatible and interoperable with all other 2.4 GHz modules available from A.N. Solutions. A new version of the popular complementary Smart MAC Suite development tool chain for @ANY2400SC is coming soon.

Key Features	Benefits
Outdoor range: up to 500 m* for AT-ANY 2400 SC-1 >> 500 m for AT-ANY 2400 SC-2 (depending on selected external antenna)	Unique combination of ultra-small size and industry-leading performance
Battery lifetime: up to 10 years**	HW & SW architecture optimized for low power
Software-controlled RF output power	Optimum balance between range and current consumption
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 embedded programming skills required
Fully matched built-in ceramic chip antenna***	Rapid design-in using minimal PCB real estate

* Line of sight (LOS), based on simulation and onsite range measurements
** TX/RX every 5 minutes with 2500 mAh battery
*** AT-ANY 2400 SC-1 only

Development Tools

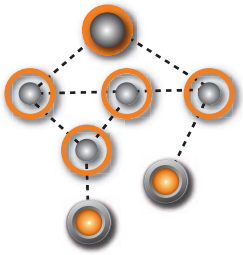
We plan to provide a development kit containing 3 AT-ANY 2400 SC-based BRICK boards in Q1/2011. The Kit is goung to include the BRICK development boards with on-board USB interface, debugger, JTAG programming interface, as well as reference application for a temperature/humidity sensor and 3D acceleration sensor. Additional collaterals and embedded software suite with SMB Base will be also provided. The development environment will be fully interoperable with ANY 2400-1 modules as well as 2.4 GHz based solutions powered by Atmel wireless MCU chipset family.

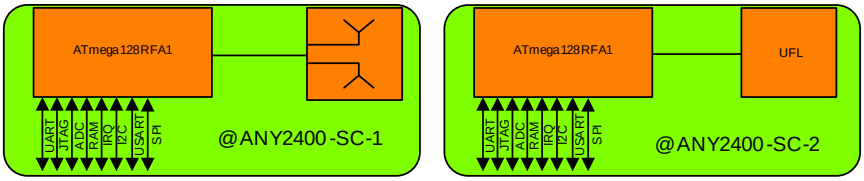
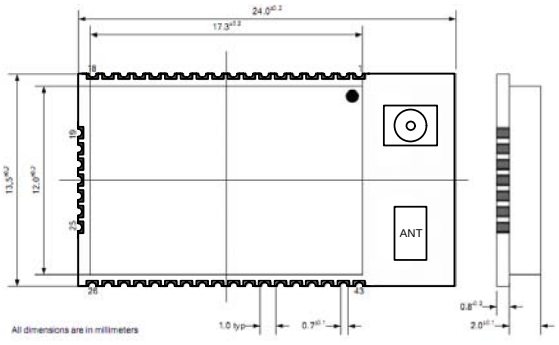


Embedded Software

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	< 13mA/<15mA
Current Consumption	< 1µA
RF Characteristics	
Max Output Power	up to 3.5 dBm (SW scalable) up to 2.5 dBm (EIRP for AT-ANY 2400 SC-1)
Receiver Sensitivity (PER 1%)	up to - 101 dBm
Data Rate / Frequency	up to 2 MBit/s
Data Encryption	AES 128
On-Chip Flash Memory Size	128 kBytes
On-Chip RAM Size	16 kBytes
On-Chip EEPROM Size	4 kBytes
Physical/Environmental Characteristics	
Size	24 x 13.5 x 2 mm
Weight	< 1.5 g
Operating Temperature Range	-40°C to +85°C
Block Diagram	
Mechanical Drawing	
Part Number	AT-ANY 2400 SC-1 (with integrated chip antenna), AT-ANY 2400 SC-2 (with UFL connector)
Availability	Samples available on request

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

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