

# @ANY900ARM-SC Modules

A cutting-edge high security IEEE 802.15.4 wireless networking module for European, Chinese, Japanese, and North American Sub-1 GHz ISM bands. It combines exceptional transmission characteristics and industry leading low power consumption in an ultra-small form factor.

@ANY900ARM-SC modules are fully integrated ultra low power solutions that contain all the digital and analog circuitry required for easily establishing secure Sub-1-GHz wireless connectivity. Based on Microchip's innovative ARM Cortex SoC SAMR30G platform, the module combines optimized RF performance with maximum computing power. Either a standard U.FL connector (@ANY900ARM-SC-2) or RF-Pads (@ANY900ARM-SC-3) ensure utmost flexibility of external antenna adaptations and design-ins. Available as an option, a special ECDH crypto chip can be added, adapting asymmetric key agreement and ensuring highly secured data encryption.

Ensure the quick setup by ordering the product preprogrammed with either our AT-command-based Smart MAC Suite firmware, your own firmware, or common stacks such as 6LoWPAN, Zigbee PRO or Lightweight Mesh.

Thanks to @ANY modules' impressive feature set, creating ambitious wireless IoT designs becomes a breeze.



Mechanical module size 24 x 13.5 x 3 mm

## Key Features

- Full compliance to IEEE 802.15.4-2006, Zigbee PRO and more
- Outdoor range (line of sight):  $\leq 2.5$  km (@ANY900ARM-SC)
- Leading-edge Microchip SAMR30G platform with excellent receiver sensitivity ( $-110$  dBm) and transmitter output power ( $\leq +11$  dBm)
- Software adjustable support of European, US, Japanese and Chinese Sub-1 GHz ISM bands
- Network topology:
  - P2P, P2MP, Star, Tree, Mesh (IEEE802.15.4 and Zigbee PRO)
- Extra 512 kB on-board DataFlash for storing firmware images, application data and OTA support
- Fully matched 50 $\Omega$  U.FL connector (@ANY900ARM-SC-2) or RF-Pads (@ANY900ARM-SC-3)
- Optional ECDH crypto chip support adapting asymmetric key agreement on demand
- Data rate:  $\leq 1$  Mbps, e.g. Zigbee: 250 kbps gross

## Benefits

- ✓ Stamp-shaped soldering pattern, visually controllable, high mechanical strengths
- ✓ Full EN300220, FCC CFR Part 15, RoHS and REACH compliance
- ✓ Easy development with ready-to-use AT-command-based Smart MAC Suite firmware, app examples, Development Kits and full technical support
- ✓ Fast prototyping with preprogrammed firmware (SMS or other common stacks especially preconfigured for modules, e.g. Zigbee)
- ✓ Accelerated project bring-up and testing using @ANY900ARM-SC out-of-the-box devices (see @ANY900ARM-SC-2 BRICK, @ANY900ARM-SC-3 USB Dongle or DESIGN Development Kit)
- ✓ Best-in-class range and excellent wall penetration for indoor usage
- ✓ Self-contained structure perfected for extremely low energy consumption, ideal for battery operated devices
- ✓ Easy firmware management using off-the-shelf tools and SWD interface, OTA or serial flashing via bootloader

## Applications



Smart Buildings



Smart Energy & Metering



Industrial Automation



Healthcare & Fitness



Retail



Agriculture



Automotive & Transport



Smart Cities & Environment



Event Management

# Specifications

## RF Characteristics

Max. Transceiver Output Power	≤ 11 dBm for @ANY900ARM-SC
Receiver Sensitivity (per 1%)	≤ -110 dBm
Data Rate	≤ 1 Mbps (proprietary), e.g. 250 kbps @ Zigbee
Frequency	European SRD band (868 MHz), North American ISM band (915 MHz), Japanese band (928 MHz), Chinese WPAN band (780 MHz)
Data Encryption	AES 128 supported
Modulation	O-QPSK (IEEE 802.15.4 compliant)
Applicable Network Topologies	P2P, P2MP, Tree, Star, Mesh and other IEEE 802.15.4 based topologies

## Hardware Characteristics

Operating Temperature Range	-40°C to +85°C
Platform	SAMR30G18 SoC (ARM Cortex μC/AT86RF212B)
On-Chip Flash	256 kB
On-Board DataFlash	512 kB
On-Chip RAM	40 kB
On-Chip EEPROM	8 kB

## Interfaces

ADC	2 ADC lines
GPIOs	≤ 12 configurable GPIOs
IRQs	2 IRQ lines
Options	SWD, SPI, TWI/I2C, UART, 1-Wire

## Electrical Characteristics

Voltage	1.8 V up to 3.6 V
Current Consumption at 25°C	TX: < 32 mA @ 10 dBm RX: < 14 mA Idle: 5 mA Sleep: < 2 μA

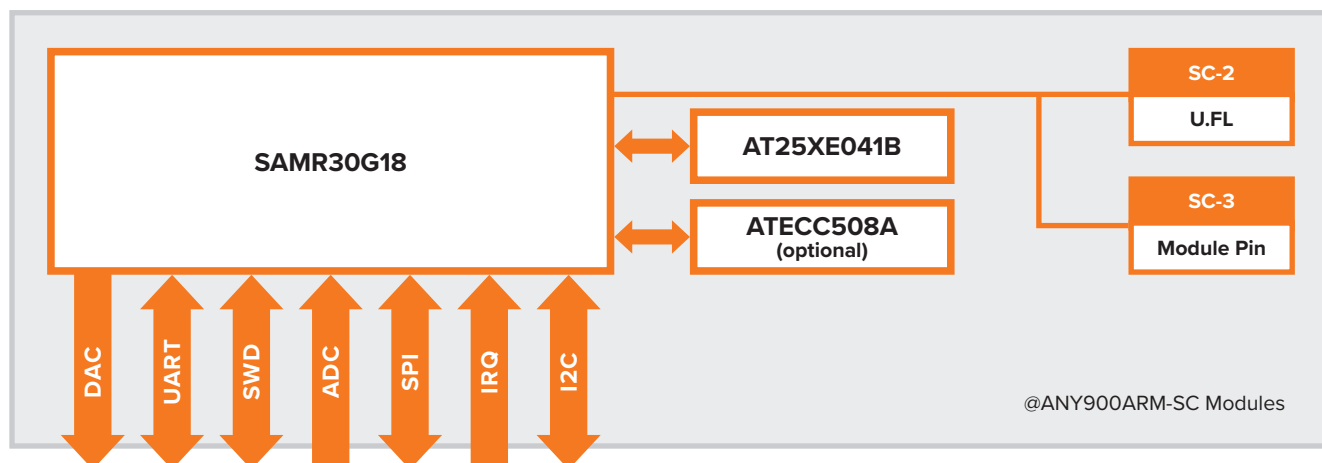
## Certification

Radio Compliance	EN300220, FCC CFR Part 15
Manufacturing	RoHS & REACH

## Ordering Options

Packing	Tray and Tape & Reel 13" (Dry pack)
MOQ	300 pcs. @Trays/ 500 pcs. @ T&R 13"

## Block Diagram



## Further Information

For additional information or support, see [www.an-solutions.de](http://www.an-solutions.de) or contact us at [support@an-solutions.de](mailto:support@an-solutions.de).  
For more product details and ordering information, see the product data sheet.

