

# AT-ANY2400-SC USB Dongles

A plug-and-play USB-hosted gateway for IEEE 802.15.4 wireless networks. Using versatile AT-ANY2400-SC modules for international 2.4 GHz ISM band, these dongles combine exceptional transmission characteristics and out-of-the-box connectivity to IEEE 802.15.4-based networks.

Based on the robust AT-ANY2400-SC modules, the AT-ANY2400-SC USB Dongles are reliable, host-powered gateway solutions in a compact size form factor. Optimal RF characteristics are achieved using on-chip ceramic antenna (AT-ANY2400-SC-1) or U.FL connector (AT-ANY2400-SC-2) option, thus providing maximum flexibility of external antenna adaptations. The on-board UART chip allows for an easy setup of a serial connection via USB interface.

Supported with off-the-shelf drivers by the commercially maintained FTDI Driver Suite, the USB 2.0 compliant interface ensures a seamless integration to various operating systems. Upgrades can be performed via an on-board bootloader or an integrated JTAG interface. White plastic enclosures are available as accessories, on demand.

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.



Mechanical module size 53.5 x 17 x 5 mm

## Key Features

- USB 2.0 compliant IEEE 802.15.4 -2006 based hardware platform within compact USB dongle format
- Supports international 2.4 GHz ISM band
- Commercially maintained FTDI Driver Suite ensures a seamless OS integration and support
- Outdoor range (line of sight)  $\leq 250$  m (AT-ANY2400-SC-1 USB Dongle) and  $\leq 500$  m (AT-ANY2400-SC-2 USB Dongle)
- Network topology:
  - P2P, P2MP, Star, Tree, Mesh (IEEE802.15.4 and Zigbee PRO)
- Other IEEE 802.15.4-based stacks are applicable
- Smart MAC Suite is provided for easy prototyping and quick setup
- Integrated JTAG interface enables OTAU and serial flashing
- Data rate: up to 2 Mbps, e.g. Zigbee: 250 kbps gross

## Benefits

- ✓ Self-contained, host-powered infrastructure solution to accelerate bring up, testing, monitoring and controlling of your IEEE 802.15.4 based wireless network
- ✓ Easy development with ready-to-use AT-command-based Smart MAC Suite firmware, app examples, Development Kits and full technical support
- ✓ Full EN300328, FCC CFR Part 15, RoHS and REACH compliance
- ✓ USB connectivity is in line with maintained commercial driver suite by FTDI to ensure seamless infrastructure bring up and customization
- ✓ Fast prototyping with preprogrammed firmware (SMS or other common stacks specifically preconfigured for modules, e.g. Zigbee)
- ✓ Simple data exchange via human readable console output is available to speed-up the system design
- ✓ Upgradeable via on-board bootloader or integrated JTAG interface

## Applications



Smart Buildings



Smart Energy & Metering



Industrial Automation



Healthcare & Fitness



Agriculture



Automotive & Transport



Smart Cities & Environment



Event Management

# Specifications

## RF Characteristics

<b>Max. Transceiver Output Power</b>	≤ 1.0 dBm EIRP for AT-ANY2400-SC-1 ≤ 3.5 dBm for AT-ANY2400-SC-2
<b>Receiver Sensitivity (per 1%)</b>	≤ -101 dBm
<b>Data Rate</b>	≤ 2 Mbps (proprietary), e.g. 250 kbps @ Zigbee
<b>Frequency</b>	international 2.4 GHz ISM band, 16 channels
<b>Data Encryption</b>	AES 128 supported
<b>Modulation</b>	O-QPSK (IEEE 802.15.4 compliant)
<b>Applicable Network Topologies</b>	P2P, P2MP, Tree, Star, Mesh and other IEEE 802.15.4 based topologies

## Hardware Characteristics

<b>Operating Temperature Range</b>	-40°C to +85°C
<b>Platform</b>	ATmega128RFA1 or ATmega256RFR2*
<b>On-Chip Flash</b>	128 kB (256 kB*)
<b>On-Chip RAM</b>	16 kB (32 kB*)
<b>On-Chip EEPROM</b>	4 kB (8 kB*)
<b>Interfaces</b>	JTAG, USB 2.0

\*customization option on request

## Extensions

<b>USB Interface</b>	FT234 USB
<b>Optical Elements</b>	Status LED (programmable)
<b>Connectivity</b>	USB Type-A plug

## Electrical Characteristics

<b>Voltage</b>	5.0 V USB-powered
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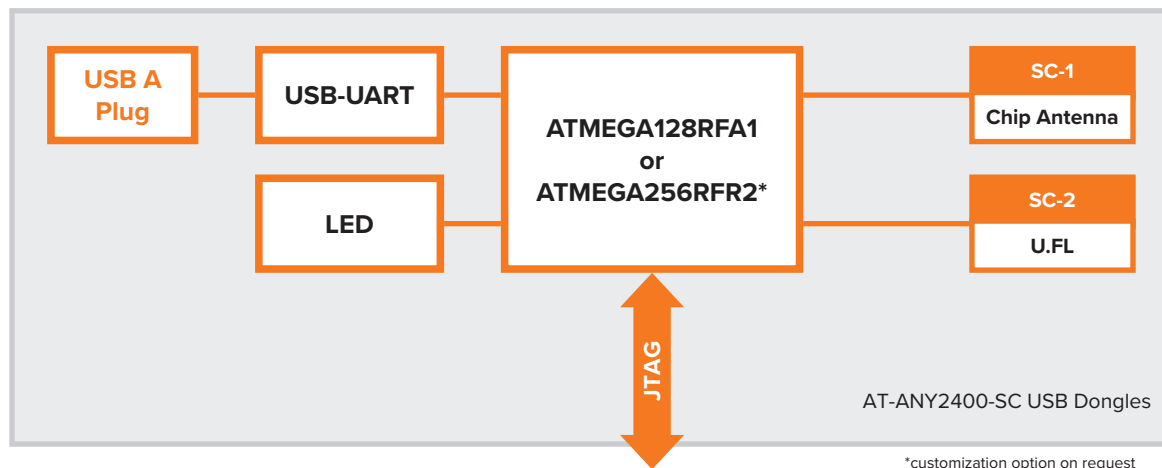
## Certification

<b>Radio Compliance</b>	EN300328, FCC CFR Part 15
<b>Manufacturing</b>	RoHS & REACH

## Ordering Information

<b>Order Number</b>	AT-ANY2400-SC-1 USB Dongle
	AT-ANY2400-SC-2 USB Dongle
	AT-ANY2400-SC-USB Enclosure Pack (white enclosure and cap)

## 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.

