A.N.Solutions
INDUSTRIAL GRADE WIRELESS

WIRELESS
MICROCHIP
DESIGN PARTNER

MADE
IN
GERMANY

@ANY900 USB Dongles

A plug-and-play USB-hosted gateway to enable IEEE 802.15.4-based Sub-1 GHz wireless network. A versatile dongle can also serve as a regular node or a network sniffer. Supported by the commercially maintained driver suites, the robust USB dongle design allows seamless OS integration. @ANY900 modules provide stable operation for various Sub-1 GHz bands.

Based on the @ANY900 modules, the host-powered @ANY900 USB dongles are reliable gateway solutions that come in a compact sized form factor. Optimal RF characteristics are achieved using on-chip ceramic antenna (@ANY900-1) or U.FL connector (@ANY900-2) option providing maximum flexibility of external antenna adaptations. The on-board UART chip allows for 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.

Combined with Peryton S analyzer software, the dongle can serve as a single channel protocol analyzer. Firmware upgrades are performed via on-board bootloader or integrated JTAG interface.

Ensure 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 80 x 17 x 5 mm

Key Features

- USB 2.0 compliant IEEE 802.15.4 -2006 based hardware platform within compact USB dongle format
- Software adjustable support of European, US, Japanese, and Chinese Sub-1 GHz ISM bands
- Commercially maintained FTDI Driver Suite ensures a seamless OS integration and support
- Outdoor range (line of sight): ≤ 250 m (@ANY900-1 USB Dongle) and ≤ 2.5 km (@ANY900-2 USB Dongle)
- Network topology:
  - P2P, P2MP, Star, Tree, Mesh (IEEE802.15.4 and Zigbee PRO)
- Extra 256 kB on-board DataFlash for storing firmware images, application data and OTAU support
- Data rate: ≤ 1 Mbps, e.g. Zigbee: 250 kbps gross
- Upgradeable via on-board bootloader or integrated JTAG interface

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 EN300220, 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

✓ Simple data exchange via human readable console output is available to speed-up the system design

✓ Best-in-class range and excellent wall penetration for indoor usage

✓ Easy firmware management using off-the-shelf tools and JTAG interface, including OTAU or serial flashing via bootloader

✓ Can be used as a single channel protocol analyzer for 802.15.4 Sub-1-GHz based networks utilizing Peryton S analyzer software

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	≤ 2.0 dBm EIRP for @ ANY900-1 (with ceramic chip antenna optimized 868/915MHz) ≤ 10 dBm for @ANY900-2 (U.FL antenna connector)
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), BPSK
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	ATmega1281V AT86RF212B
On-Chip Flash	128 kB
On-Board DataFlash	256 kB
On-Chip RAM	8 kB
On-Chip EEPROM	4 kB
Interfaces	JTAG, USB 2.0

Extensions

USB Interface	FT234 USB
Optical Elements	Status LED (programmable)
Connectivity	USB Type-A plug

Electrical Characteristics

Voltage	5.0 V USB-powered

Certification

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

Ordering Information

Order Number	ANY900-1 USB Dongle
	ANY900-2 USB Dongle
	ANY900-USB Enclosure Pack (white enclosure and cap)

Block Diagram

@ANY900 USB Dongles
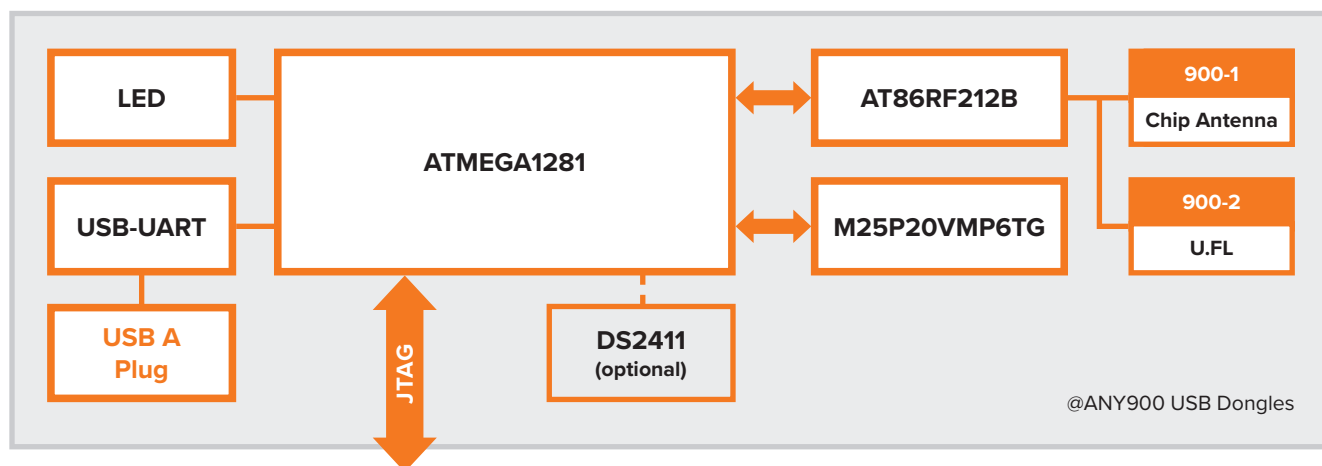
Further Information

For additional information or support, see **www.an-solutions.de** or contact us at **support@an-solutions.de**.
For more product details and ordering information, see the product data sheet.

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