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# USB radio stick deRFusb 23E00 | 23E06 JTAG

## Datasheet

- The compact designed USB radio sticks deRFusb-23E00 | 23E06 JTAG contain a powerful Cortex-M3 microcontroller with 256 Kb High-Speed Flash and a 2.4 GHz ISM band transceiver.
- The transceiver AT86RF231 is intended for ZigBee, IEEE 802.15.4, 6LoWPAN, RF4CE and proprietary ISM applications. It uses a 128-Bit AES encryption.
- With the integrated chip antenna distances of more than 200 m can be reached for line of sight conditions.
- The radio stick is equipped with 3 LEDs for status indication and a 10 pin connector for development purposes (JTAG and Debug).
- The stick comes optionally with a 2 Gb NAND on board that can be used as mass storage for user defined data.

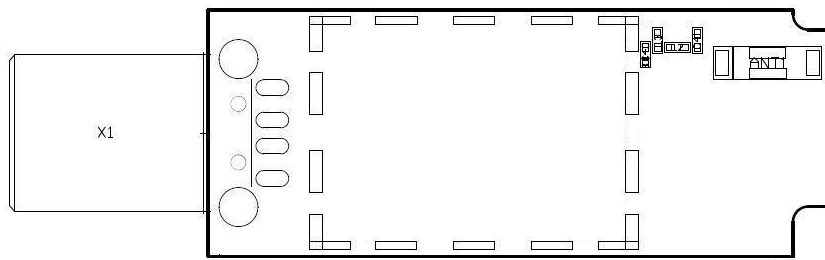


### Technical Data

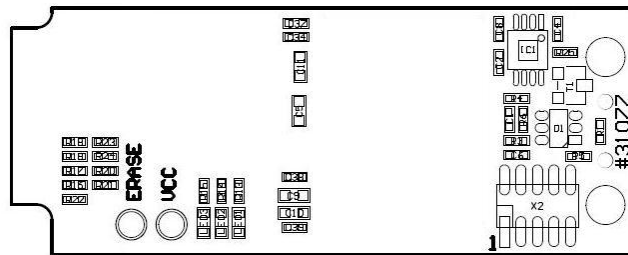
<b>Dimensions</b>	63.5 x 19.0 x 9.5 mm
<b>Operating temperature</b>	-20°C to 70°C
<b>Control and display elements</b>	3x LED (red, yellow, green)
<b>Power supply</b>	USB powered
<b>Power consumption</b>	TX: 65 mA   RX: 65 mA   Idle: 45 mA
<b>Connections</b>	USB connector type A 10 pin connector
<b>Antenna</b>	Chip ceramic antenna
<b>Antenna gain</b>	+1.3 dBi (peak)   -0.5 dBi (average)
<b>Antenna diversity</b>	No
<b>Range</b>	> 200 m (line of sight)
<b>Frequency range</b>	2.4 GHz
<b>Transmitting power</b>	+3 dBm
<b>Receiver sensitivity</b>	-101 dBm
<b>Communication standard</b>	IEEE 802.15.4
<b>Data rate</b>	250 kBit/s, 500 kBit/s, 1 MBit/s, 2 MBit/s
<b>Microcontroller</b>	ATSAM3S4B
<b>Transceiver</b>	AT86RF231
<b>Additional non-volatile memory</b>	None (deRFusb-23E00 JTAG) 2 Gb NAND flash (deRFusb-23E06 JTAG)
<b>Interfaces</b>	USB, JTAG and Debug
<b>Certification</b>	CE, ETSI, FCC, IC pending

### Technical Data

**Board Overlay**



(Top view)



(Bottom view – with 10pin connector)

**Overlay**

**Scope of delivery**

USB stick deRFusb-23E00 JTAG (with 10pin connector)  
 USB stick deRFusb-23E06 JTAG (with 10pin and NAND)

**Order No.**

BN-033202  
 BN-033203

**Accessories (optional)**

SAM-ICE adapter

BN-028337

**Development kits**

An analyzer version of deRFusb-23E00 JTAG is included in the following kits:

deRFdevelopmentKit ZigBee 2.4 GHz  
 deRFdevelopmentKit 6LoWPAN 2.4 GHz

BN-032515  
 BN-032518

**Board versions**

USB stick deRFusb-13E00 JTAG (with 10pin connector)  
 USB stick deRFusb-13E06 JTAG (with 10pin and NAND)  
 USB stick deRFusb-13E00 (with case)  
 USB stick deRFusb-13E06 (with case and NAND)  
 USB stick deRFusb-23E00 (with case)  
 USB stick deRFusb-23E06 (with case and NAND)  
 Analyzer stick BitCatcher sub-GHz  
 Analyzer stick BitCatcher 2.4 GHz  
 Analyzer stick Perytons 2.4 GHz

BN-033206  
 BN-033207  
 BN-031807  
 BN-031539  
 BN-031805  
 BN-031075  
 BN-600035  
 BN-600034  
 BN-028636

**Order Information**

**Variants**

More information about the variants is described in detail in the user manual.

Order online: <https://shop.dresden-elektronik.de>