



Application Note

Shipping firmware of deRF radio modules and USB sticks

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Introduction

Each deRF radio module or USB stick is shipped with a certain pre-flashed firmware. The following table provides an overview:

category	concerned devices	application firmware variant	used communication channel	additionally required HW
AVR Evaluation radio modules	deRFmega128-22A00 deRFmega128-22A02 deRFmega128-22C00 deRFmega128-22C02	Wireless UART	FTDI USB	deRFtoRCB adapter and Sensor Terminal Board
AVR OEM radio modules (plain)	deRFmega128-22M00 deRFmega128-22M10 deRFmega128-22M12 deRFmega256-23M00 deRFmega256-23M10 deRFmega256-23M12	none	N/A	N/A
AVR OEM radio modules (on adapter board)	deRFmega128-22T00 deRFmega128-22T02 deRFmega128-22T13 deRFmega256-23T00 deRFmega256-23T02 deRFmega256-23T13	Wireless UART	FTDI USB	deRFnode AVR
ARM7 Evaluation radio modules	deRFarm7-15A02 deRFarm7-25A00 deRFarm7-25A02	Wireless UART	native USB	deRFnode ARM
SAM3 OEM radio modules (plain)	deRFsam3-13M10 deRFsam3-23M10-2 deRFsam3-23M10-3R	none	N/A	N/A
SAM3 OEM radio modules (on adapter board)	deRFsam3-13T02 deRFsam3-23T02-2 deRFsam3-23T09-3	Wireless UART	native USB	deRFnode ARM
deRFusb for custom firmware (in case)	deRFusb-13E00 deRFusb-13E06 deRFusb-23E00 deRFusb-23E06	none (ROM bootloader activated)	native USB	N/A
deRFusb JTAG for software development (no case)	deRFusb-13E00 JTAG deRFusb-13E06 JTAG*) deRFusb-23E00 JTAG deRFusb-23E06 JTAG*)	Wireless UART	native USB	N/A
deRFusb Analyzer sticks	deRFusb BitCatcher 2,4 GHz deRFusb BitCatcher Sub-GHz deRFusb Analyzer 2.4 GHz	Packet Sniffer	native USB	N/A

*) mass storage additionally activated



Wireless UART firmware

The “Wireless UART” is the predominant shipping firmware. Basically this is a UART replacement where a part of the wire has been replaced by a point to point radio connection. In similarity to a wire which has two ends, only two network nodes could be operated together. Adding extra nodes to the network will result in unpredictable behavior. Please note, that it is sufficient to have a device within wireless network range powered on to violate this precondition.

All nodes flashed with the “Wireless UART” firmware use the following settings:

Parameter	Value
Radio channel	20 (2.4 GHz) 1 (Sub-GHz)
PAN Id	0xCAFE
short address (source and destination)	0x0001

USB driver installation

When plugging the devices to your PC for the first time, you are asked for a driver. Suitable drivers can be found in our USB driver package [1]. For further details please refer to the user manuals of the respective devices which can be found on our website.

Virtual COM port

To operate the devices, use your preferred terminal program, i.e. Hyperterminal or putty. Set up the virtual COM port as follows:

Parameter	Value
baud rate	115200
data bits	8
stop bits	1
parity	none

Conclusion

If there is any open issue or question, our experts are available to answer your questions via the following e-mail address: support@dresden.elektronik.de.

References

- [1] dresden elektronik USB driver package; URL: http://www.dresden-elektronik.de/funktechnik/service/downloads/software/?eID=dam_frontend_push&docID=2327



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