Nanoshield$_{M}RF Documentation$

Release latest

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This is our new Arduino library to use the 2.4GHz MRF24J40 wireless radio from Microchip. It supports communication using the 802.15.4 wireless protocol at the MAC level, and enables use of the MRF24J40MA/B/C/D/E wireless modules from Microchip.

The reference board to use this library is the MRF24J40 Nanoshield from Circuitar.

The following features are provided:

- Basic transmission and reception
- Packet assembly/disassembly with different data types: byte, signed/unsigned integer, signed/unsigned long integer, floating point, character string and byte array
- PAN ID selection
- Set/unset module as network coordinator
- External PA/LNA control to use MRF24J40B/C/D/E modules from Microchip
- Channel frequency selection
- Automatic acknowledgement and packet retransmission
- Measurement of received power
- Sleep mode to reduce power consumption

To install, just copy it under `<Arduino sketch folder>/libraries/`

The following examples are provided:

- SendInteger + ReceiveInteger: transfer a packet over the air containing one integer number.
- SendString + ReceiveString or ReceiveStringIntoBuffer: transfer a packet over the air containing one character string.
- SendPacket + ReceivePacket: transfer an assembled packet over the air containing multiple types of data together.
- ReceiveBytes: receives wireless packets, printing their content as a raw byte string. It also prints received signal strength and link quality indicators (RSSI and LQI). It can be used along with any of the `Send*` examples above.
- ReceiveWithInterrupt: similar to ReceiveBytes, but reception is done using an interrupt signal.
- ChannelScanner: scans all channels (11 to 26) and plots the average received power on each one. It is useful to assess the clearest channel to use.
- SleepWakeup: how to put the module to sleep and wake it up.
