Overview:

Introduction

This application demonstrates the class C Application using SAMR34. User will be able to send temperature data as uplink. User will be able to turn on/off Amber and Green LED's by sending downlink message.
This application has been tested on following boards:

- ATSAMR34 Xplained Pro PN: DM320111

Setup

This application requires user to have the following setup

- Internet
- Gateway
- Network Server (supporting Class C, senet for example)
- ATSAMR34 Xplained Pro
- Micro USB
- PC

Connect the EDBG USB port of ATSAMR34 XPLAINED PRO to PC using the micro usb.

Implementation Details

This application of SAMR34 uses SW0 button to send temperature data (uplink) to the network server. There are 2 LED's on board of ATSAMR34 XPLAINED PRO . As this application demonstrates Class C Application. User will be able to control LED's status on board at anytime after a join to network server. User can send downlink messages
"0x55" – "Amber LED ON"
"0x50" – "Amber LED OFF"
"0xAA" – "Green LED ON"
"0xA0" – "GREEN LED OFF"
User can OTAA/ ABP join procedure. By default the demo is configured to communicate on NA915 Band. User can modify this Application to work for other regions like EU868, AU915, THAI923, JPN923, KR920, IND865 etc., To configure the demo parameters user needs to modify config_app.h
For ease of debugging logs can be displayed. While connected to the PC using EDBG USB use a terminal emulator like TeraTerm. Find the com port on Terminal Emulator and use the following serial settings 115200 bps, 8 bits, no parity, 1 Stop bit, no flow control. After a successful programming and join to network, each reset on board or a power cycle, the application will restore its configuration due to the presence of a persistent data storage (PDS) unit active. After a reset/power cycle of board if the user wants to rejoin the network to avoid using PDS configuration user can enter any key on TeraTerm to rejoin the network and continue the demo.

Compilation Info

This software was written for the GNU GCC and IAR for ARM. Other compilers may or may not work.

Contact Information

For further information, visit http://www.microchip.com.

References

- ATSAMR34 Xplained Pro User Guide
- SAM R34 Datasheet
- SAMR34-R35 Microchip LoRaWAN Stack Software API Reference Manual
- SAMR34 MLS Getting Started Guide