n-Blocks

n-LP

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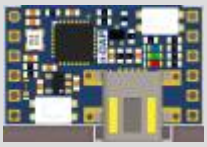
n-LP

page building in progress, based on n-DAP...
Form CP12 with 20 pins
Programmable via JTAG or DFU

- Small generic processor board, Low Power cortex M4

nblocks:n-dap
☐ [Nikos]add the code here

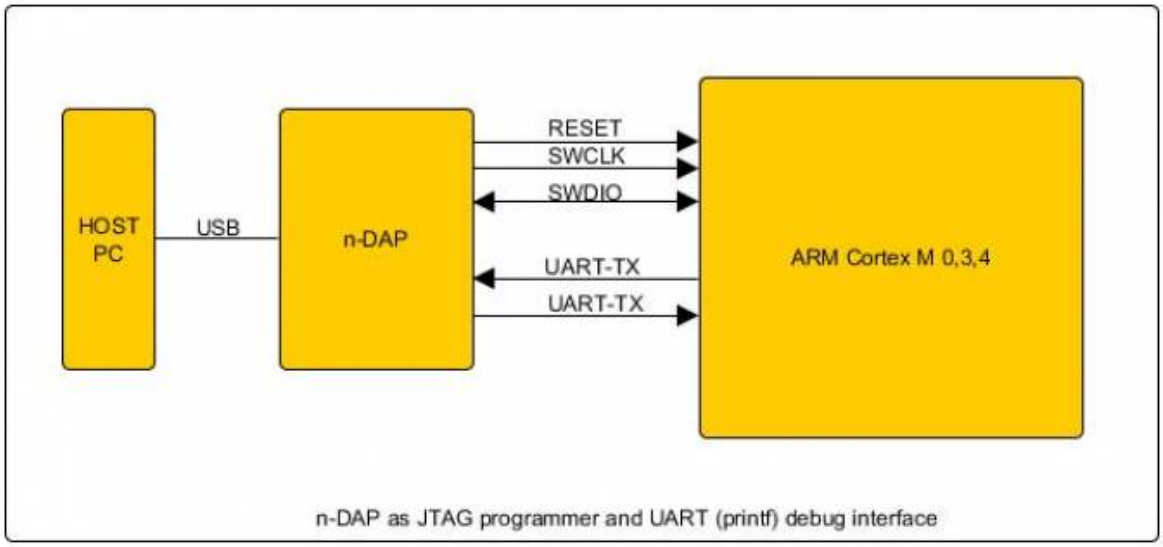
n-DAP



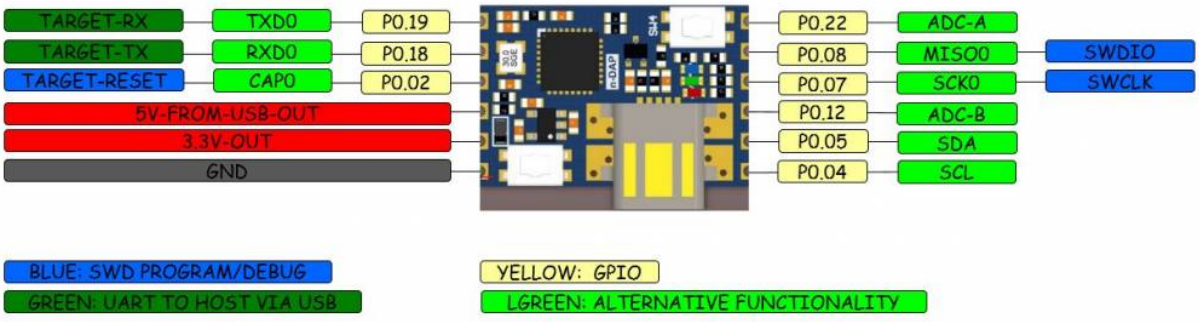
mbed enable board

License	GPL 2.0
Authors	NC
Contributors	MC
Based on	
Categories	
Repo	Bitbucket

Block Diagram, used as programming/debugging interface



Pinout



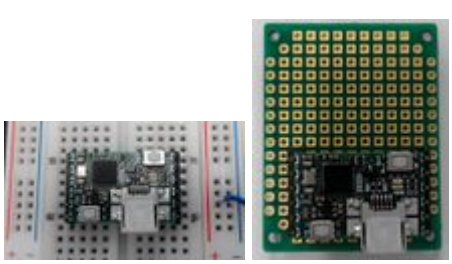
- The board has 12 pins, 6 for each side, If the board is used as SWD interface, only 3 pins for signals and 2 pins for power are needed

Background

`'LPC11U35'` based CMSIS-DAP programming of ARM Cortex devices via SWD. Appears as a Disk to PC. Tested with mbed firmware.
Provides `'mbed-enable'` capability and can be designed-in as an SMD component or

used as external programmer/debuger.
Deployed as main CPU in use cases like MODBUS host and client controller, Thermocouple and load-cell interface.

Features



- Breadboard-able: 1/10 inch connector pitch

- Robust USB mini connector:

n-DAP as small application processor board

Blink example with mbed-CLI

- Checking the working target setup

```
F:\opt\WORKSPACES\mbed\n-bed_LPC11U35_blinky>mbed target
[mbed] LPC11U35_501
```

- compile

```
F:\opt\WORKSPACES\mbed\n-bed_LPC11U35_blinky>mbed compile
Building project n-bed_LPC11U35_blinky (LPC11U35_501, GCC_ARM)
Scan: .
Scan: mbed
Scan: env
+------------+-------+-------+------+
| Module     | .text | .data | .bss |
+------------+-------+-------+------+
| Fill       |   275 |     0 |    0 |
| Misc       |  3725 |    16 |  112 |
| Subtotals  |  4000 |    16 |  112 |
+------------+-------+-------+------+
Allocated Heap: 128 bytes
Allocated Stack: 128 bytes
Total Static RAM memory (data + bss): 128 bytes
Total RAM memory (data + bss + heap + stack): 384 bytes
Total Flash memory (text + data + misc): 4016 bytes
Image: .\.build\LPC11U35_501\GCC_ARM\n-bed_LPC11U35_blinky.bin

F:\opt\WORKSPACES\mbed\n-bed_LPC11U35_blinky>
```

- After pressing [SW4+SW3], then [SW3 only], then [release SW3],CPU is in ISP mode and appears as Disk with name `'“CRP DISABLD”'`
- Remove previous firmware from CPU flash by deleting the file `'firmware.bin'`
- **The folder should be empty**, if not then the device can not be programmed
- Then just drag-drop the new compiled .bin to the mbed board. It should appear as **firmware.bin**

CMSIS-DAP Interface Firmware

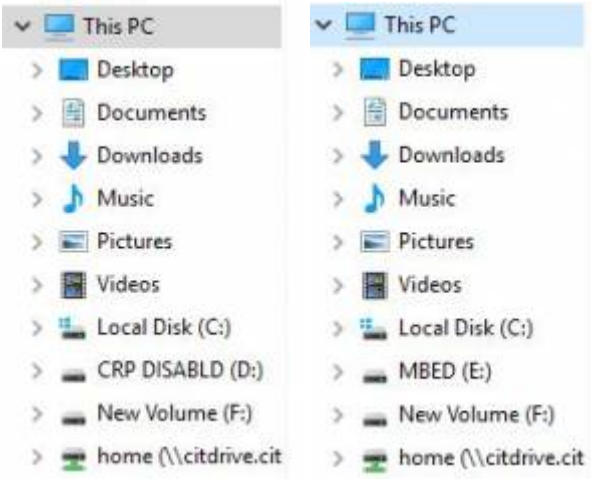
This is “mbed-enable Firmware”

- CMSIS-DAP Interface Firmware

The CMSIS-DAP Interface Firmware provides:

- **USB Mass Storage Device for drag and drop programming of the target chip**
- **USB Communications Device Class for Serial Communication with the target chip**
- **USB HID CMSIS-DAP for debugging**
- **USB bootloader for updating the interface firmware itself**

When n-DAP flash memory is empty or when in ISP mode it appears as a disk named `CRP DISABLD`
If the CMSIS-DAP (named also mbed_HDK) is programmed, then after reset n-DAP appears as a disk with the mame `MBED`



LPC1768

- LPC11U35-Firmware for communicating with LPC1768 Does not create virtual serial port
- SWDAP-LPC11U35 NXP LPC1768 PREBUILD IMAGE Does create a virtual serial port **Tested and worked!**

LPC812

The same as LPC1768 above

LPC1114FN28

- Firmware to use n-DAP with the non-SMD LPC1114FN28 DIP-28 Firmware LPC1114FN28

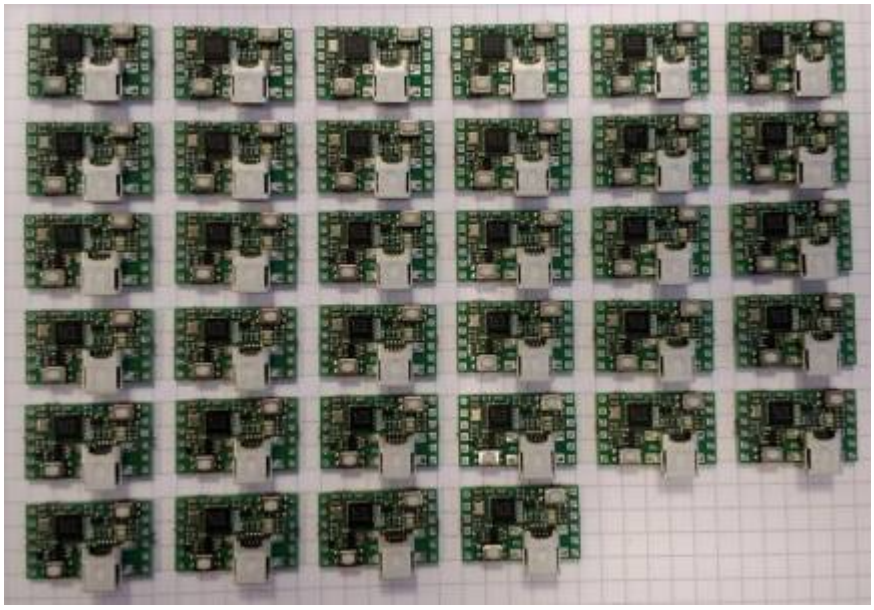
nRF51822

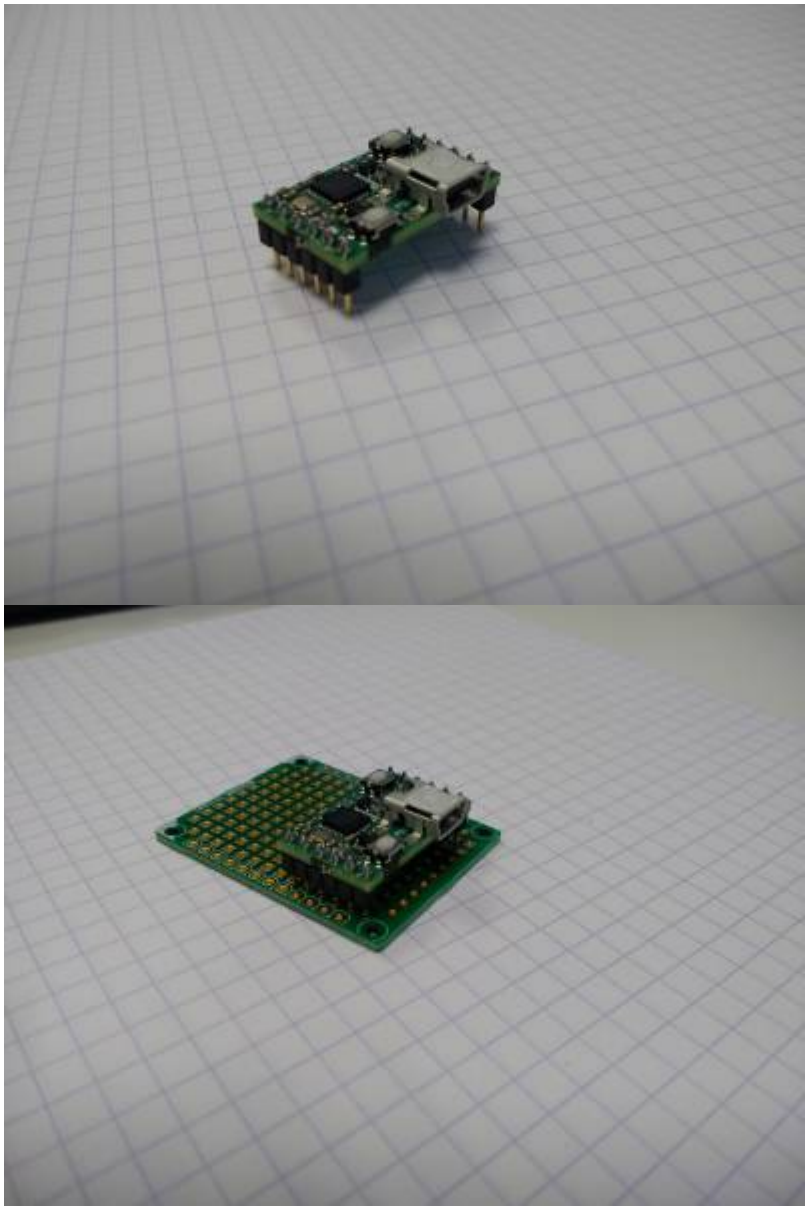
- Seeed studio wiki Arch BLE
- Seeed studio wiki File:Lpc11u35 nrf51822 if mbed.bin.zip
- Bootloader for BLE mbug **Tested and worked!**

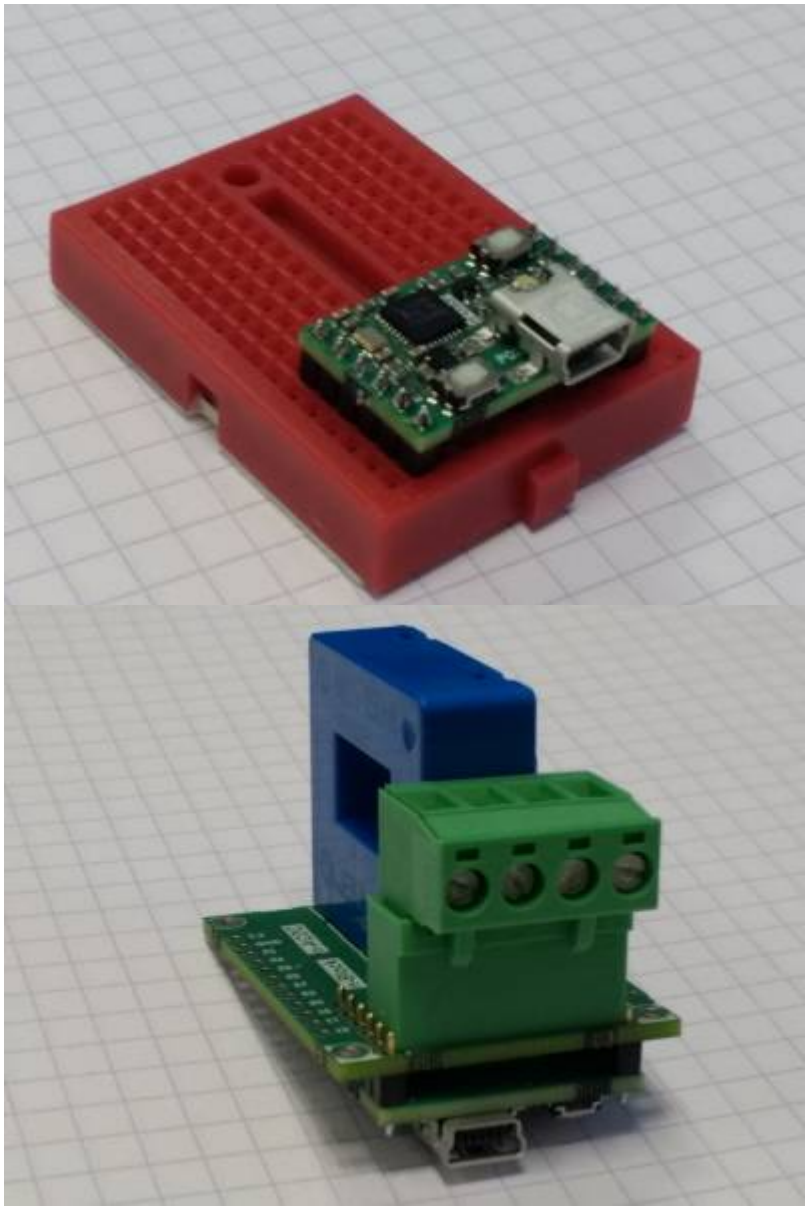
NXP K64F

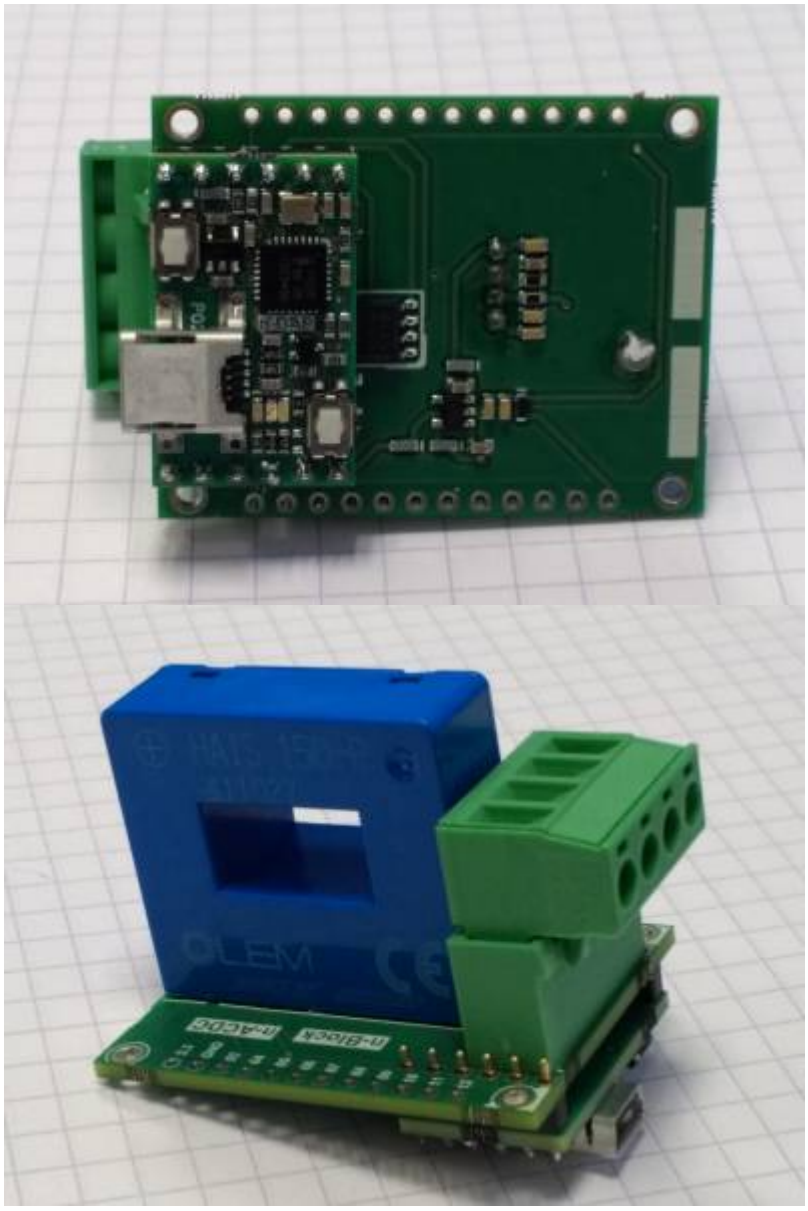
- https://os.mbed.com/platforms/SWDAP-LPC11U35/NXP K64F
    - https://os.mbed.com/media/uploads/chris/lpc11u35_swdap_k64f_if_crc.bin bin
- ???? CAN IT WORK FOR TEENSY K20???

Gallery









Related articles in this Wiki

- n-lp

- ☐ ~~Update n-DAP photo~~
- ☐ ~~Update n-DAP pinout photo: P0.17->P0.22 ADC0; P0.16->P0.12 ADC1; 3.3V->3.3V-OUT; PIN4->5V-FROM-USB-OUT~~

- ☐ ~~Move pinout spreadsheet to pcb repository~~
- ☐ ~~Add photo of assembled boards~~
- ☐ ~~Add block-diagram for CMSIS-DAP programming~~

nblock, CPU, modbus

Address: Cork Institute of Technology Campus, Bishopstown, Cork

Phone: (021) 433 5560