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**TOP**

**ECO LIST**

**IMPORTANT NOTES ABOUT THIS SCHEMATIC**

1) **DESIGN NOTES** in grey are information notes.

2) **DESIGN NOTES** in red are critical, and must be understood and followed.

3) A red X indicates suppression of error checking on a pin/net. Commonly suppressed errors include: single-pin net, no driving source, etc.

4) All unique components in this schematic should have a manufacturer's part number displayed; exceptions to this rule are commodity passives such as resistors and capacitors.

5) Finally, population vs. non-population intent is indicated by adding "NP" next to the part. All parts with "NP" next to the part are intended to be unplaced during assembly.
DESIGN NOTE: This development kit is designed for use with the NIMBELE-SKYWIRE Nano, which is not connected to the Skywire Nano. This development kit is not compatible with any other Skywire modems.

DESIGN NOTE: The UART0 interface on the Skywire Nano is used as a transmit-only serial debug port for kernel messages, and will not accept modem AT commands.
DESIGN NOTE: J9, R29, J11, R31 are placed to allow for current measurements of the Skywire Nano's power rails.

DESIGN NOTE: J9, R29, J11, R31 are placed to allow for current measurements of the Skywire Nano's power rails.

DESIGN NOTE: R2 placed for auto modem power on.

DESIGN NOTE: The function of the Skywire Nano I/O pins in this design was chosen to match the default pin configurations for Nordic Semiconductor’s PPI and software examples and the nRF Connect SDK.

Reset Button

Skywire Nano Mounting Spacer

3FF SIM Socket
**LED's**

- **Grove Connectors**: Keying for SMT Grove connectors is reversed and requires the pin interface to be mirrored from grove standard.

**Accelerometer**

- **DESIGN NOTE**: 3-Axis Accelerometer 2g/4g/8g/16g 3-Axis Accelerometer

**User Button**

- **DESIGN NOTE**: User_Button should be pulled up to VCC_GPIO using an internal pull-up resistor on the nRF9160 module.

**LAYOUT NOTE**: C14 is used for switch debouncing and should be placed as close as possible to SW2.

**DESIGN NOTE**: User_Button should be pulled up to VCC_GPIO using an internal pull-up resistor on the nRF9160 module.
Interface MCU

DESIGN NOTE:
The Interface MCU, U5, serves two purposes:
Programming the Skywire Nano Application processor, and converting Skywire Nano UARTs to USB for easy connection to PC for development.

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Programming the Skywire Nano Application processor, and converting Skywire Nano UARTs to USB for easy connection to PC for development.

Design Note: J7 is used for allowing external Skywire Nano Programming. Remove R26, populate R40 and R45 if used.

Design Note: J4 can be populated to connect the SWD pin of the interface MCU to header J8.

Design Note: Flow control between the MCU and the modem is supported. To enable, make the following hardware modifications:

UART0: Solder a wire between the R32-1 pad and the R32-2 pad, and solder a wire between the R32-2 pad and the R32-1 pad.

UART1: Solder a wire between the R31-1 pad and the R31-2 pad, and solder a wire between the R31-2 pad and the R31-1 pad.

Note: Flow control between the modem and an external serial device via J4 and TP7 - TP10 is supported without hardware modifications.

Interface MCU SWD

Skywire Nano SWD
## Revision Control

<table>
<thead>
<tr>
<th>Assy Part Number</th>
<th>Rev</th>
<th>Description of Change</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>1002333</td>
<td>A</td>
<td>Changed J1-23 to be connected to VCC, GND, added pull-down to SWD2_SELECT, swapped SWD2_CLK and SWD2_ID in the Nano Interface, removed pull-up from VCC女性, and added it to VCC_MODEM, removed trace from connector J21-22, and added it to VCC_MODEM. Modified net labels to reflect changes made to the Skywire Nano modem design.</td>
<td>11/25/19</td>
</tr>
<tr>
<td>1002333</td>
<td>B</td>
<td>Added a note on the Interface_MCU page about hardware flow control being supported, and provided instructions on how to enable it.</td>
<td>03/20/20</td>
</tr>
<tr>
<td>1002333</td>
<td>B</td>
<td></td>
<td>07/17/20</td>
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