# SN173 ProtoBoard
Prototyping Board

With the SN173 ProtoBoard, Synapse makes it even easier to put the SNAP Engine to work in your application. Whether you're developing rapid prototypes or building a sophisticated finished assembly, the ProtoBoard provides a solid platform for embedded SNAP wireless applications.

Our intent with the ProtoBoard is to not get in your way. To that end, the ProtoBoard has jumpers that allow all peripherals to be fully disabled – freeing all pins on the SNAP Engine for complete access by your application. Like all SNAP Nodes, a SNAP Engine on the ProtoBoard may serve as the SNAP Bridge for connection to Portal or SNAPconnect.

It is also capable of true low-power operation, achieving sleep states as low as 0.3 µA.
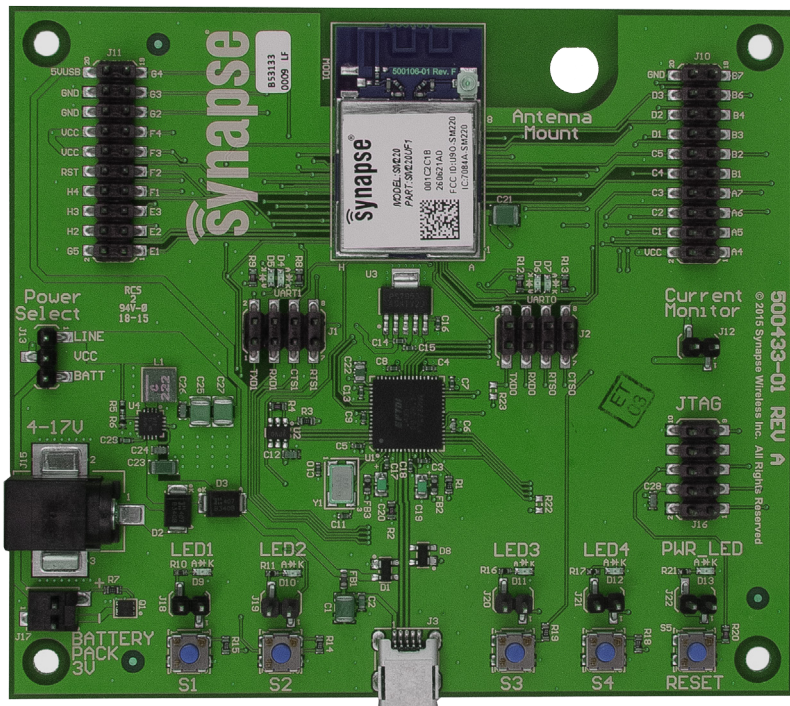
Features

- SM220 surface mount SNAP Engine on the board.

- 4 status LEDs and 1 power indicator LED - can be disabled by jumper.

- 4 GPIO push-button switches and a RESET push-button switch.

- 3 powering options – 2.0 - 3.6V battery pack, USB, or 4 - 17V barrel connector.

- 32 GPIOs brought out to two 20 pin headers.

- Header access to measure current draw of the module.

- Serial interface (UART 0 and UART1) through mini-B USB connector. Jumpers to disconnect the serial interface for power saving applications.

- Mount for external antenna connection to u.FL.

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Pin Headers

Pin #	J10 Header	Desc
1	J10-1	GPIO_A4
2	J10-2	VCC
3	J10-3	GPIO_A5
4	J10-4	GPIO_C1
5	J10-5	GPIO_A6
6	J10-6	GPIO_C2
7	J10-7	GPIO_A7
8	J10-8	GPIO_C3
9	J10-9	GPIO_B1
10	J10-10	GPIO_C4
11	J10-11	GPIO_B2
12	J10-12	GPIO_C5
13	J10-13	GPIO_B3
14	J10-14	GPIO_D1
15	J10-15	GPIO_B4
16	J10-16	GPIO_D2
17	J10-17	GPIO_B6
18	J10-18	GPIO_D3
19	J10-19	GPIO_B7
20	J10-20	GND

Pin #	J11 Header	Desc
1	J11-1	GPIO_E1
2	J11-2	GPIO_G5
3	J11-3	GPIO_E2
4	J11-4	GPIO_H2
5	J11-5	GPIO_E3
6	J11-6	GPIO_H3
7	J11-7	GPIO_F1
8	J11-8	GPIO_H4
9	J11-9	GPIO_F2
10	J11-10	RESET
11	J11-11	GPIO_F3
12	J11-12	VCC
13	J11-13	GPIO_F4
14	J11-14	VCC
15	J11-15	GPIO_G2
16	J11-16	GND
17	J11-17	GPIO_G3
18	J11-18	GND
19	J11-19	GPIO_G4
20	J11-20	5VUSB

Recommended Power Supply

Manufacturer	Part Number	Description
Artesyn Embedded Technologies	DA12-120MP-M2.1	AC/DC WALL MOUNT ADAPTER 12V 12W
Artesyn Embedded Technologies	DA-US	PLUG AC US 2 PRONG

ProtoBoard Jumpers

USB Serial Interface (UART0)

J2 (1-2) TXD (GPIO_C1)
J2 (3-4) RXD (GPIO_C2)
J2 (5-6) RTS (GPIO_B3)
J2 (7-8) CTS (GPIO_C3)

USB Serial Interface (UART1)

J1 (1-2) TXD (GPIO_G4)
J1 (3-4) RXD (GPIO_H4)
J1 (5-6) RTS (GPIO_C5)
J1 (7-8) CTS (GPIO_G3)

Power Select

LINE Powered using either external supply (4–17V) via external DC power jack (2.1mm) or Mini-USB (5V).

BATT Powered using battery pack (2.0 - 3.6V)

positive polarity

Note: The SN173 does not include a power supply.

LEDs

J18 Enable LED1 (GPIO_D2)
J19 Enable LED2 (GPIO_D1)
J20 Enable LED3 (GPIO_B2)
J21 Enable LED4 (GPIO_F4)
J22 Enable Power Indicator LED

Current Measurement

J12 Jumper to monitor current

Buttons

S1 GPIO_C3
S2 GPIO_F1
S3 GPIO_F2
S4 GPIO_F3