

SW-1-X

Peripheral Board

Technical Manual

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SW-1-X Peripheral Board Technical Manual. No part of this work may be reproduced in any manner without written permission of BiPOM Electronics.

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WARRANTY:

BiPOM Electronics warrants SW-1-X for a period of 3 years. If the board becomes defective during this period, BiPOM will, at its option, replace or repair the board. This warranty is voided if the product is subjected to physical abuse or operated outside stated electrical limits. BiPOM Electronics will not be responsible for damage to any external devices connected to SW-1-X. BiPOM Electronics disclaims all the expressed warranties or the implied warranties of merchantability and fitness for a particular purpose. In no event shall BiPOM Electronics be liable for any indirect, special, incidental or consequential damages in connection with or arising from the use of this product. BiPOM Electronics' liability is limited to the purchase price of this product.

1. Overview

SW-1-X is a wireless communication expanding peripheral board for the MINI-MAX series of micro-controller systems. SW-1-X has a socket for connecting Digi[™] XBee[™], Nimbelink[™] Skywire[™] and many other socket compatible wireless communications devices to a host microcontroller.

SW-1-X is powered from 5 Volts DC of external power source through the 20-pin expansion connector.

BiPOM software development systems provide examples for SW-1-X. Please download any of these development systems from:

<http://www.bipom.com/software.php>

2. Specifications

SW-1-X board has the following configuration:

- Wireless module socket – Compatible with Skywire[™], XBee[™] and similar wireless modules
- (Wireless module not included, to be supplied separately)
- 3.8 Volts regulator
- 3.3 Volts regulator
- Wireless module power supply jumper selectable between 3.3V and 3.8 Volts
- Voltage level translator
- UART connection to wireless module
- Reset and on/off control of wireless module
- 20-pin Expansion connector for a host micro-controller board
(<http://www.bipom.com/boards.php>)
- Single operating voltage: 5 VDC, current consumption depends on the wireless module
- Dimensions are 2.35 X 2.40 inches (5.97 X 6.10 centimeters).
- Mounting holes of 0.125 inches (3.5 millimeters) are on four corners.
- -40° - 85° C operating and storage temperature range.

3. Functional Blocks

Figure 1 shows the block diagram of the SW-1-X peripheral board

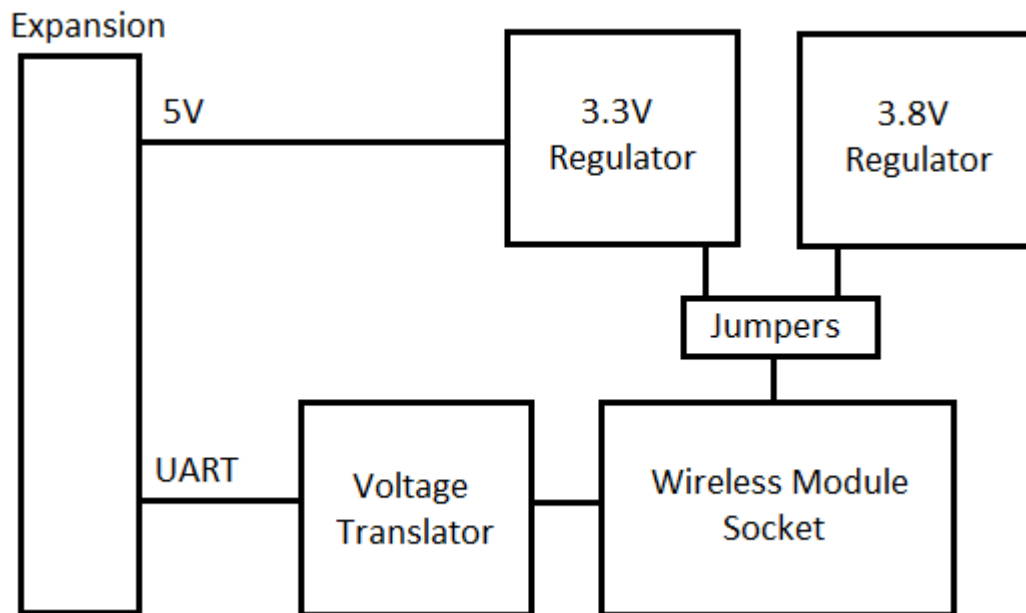


Figure 1

Expansion connector

Control pins and 5-Volt power supply pins are available on the 20-pin connector (X1) for interfacing to micro-controller boards. Table 1 shows the pin assignments for the connector:

Table 1: Connector X1

Signal	Pin	Pin	Signal
RXD of host microcontroller	20	19	TXD of host microcontroller
READY line of wireless module	18	17	Unused
Unused	16	15	Unused
Unused	14	13	Unused
Regulator Enable	12	11	Power Good indicator from regulator
Wireless module Reset	10	9	Unused
CTS output from wireless module	8	7	RTS input to wireless module
Unused	6	5	Unused
Unused	4	3	GND
VCC (+5V)	2	1	Unused

Jumpers

Table 2 shows the jumpers assignments:

Table 2: Jumpers JP1 ... JP10

Name	Signal	If removed	If installed
JP1	3.3V/3.8V select	Voltage is 3.8V	Voltage is 3.3V
JP2	Permanently Disable Regulator	Enabled	Disabled, if not controlled by host microcontroller
JP3	Disconnect CTS	CTS disconnected	CTS connected
JP4	Disconnect RTS	RTS disconnected	RTS connected
JP5	Permanently Disable Wireless Module	Enabled	Disabled, if not controlled by host microcontroller

4. Application Notes

SW-1-X board can either be stacked on top of MINI-MAX single board computer using stand-offs or connected in a chain configuration using flat ribbon cable (Part #: EXPCABLE-6). Figure 2 shows how SW-1-X can be connected to a microcontroller board in a stacked fashion. Figure 3 shows the chain connection. Two SW-1-X boards can be stacked on top of a microcontroller board.

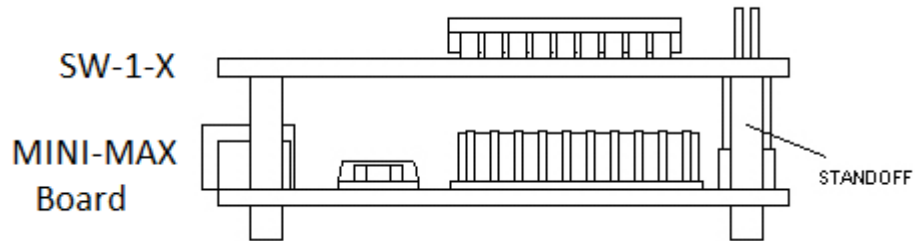


Figure 2

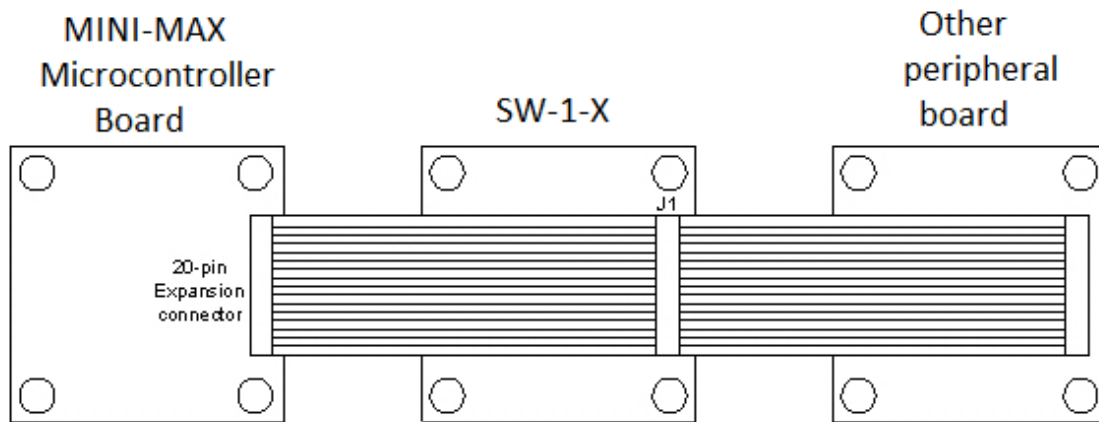
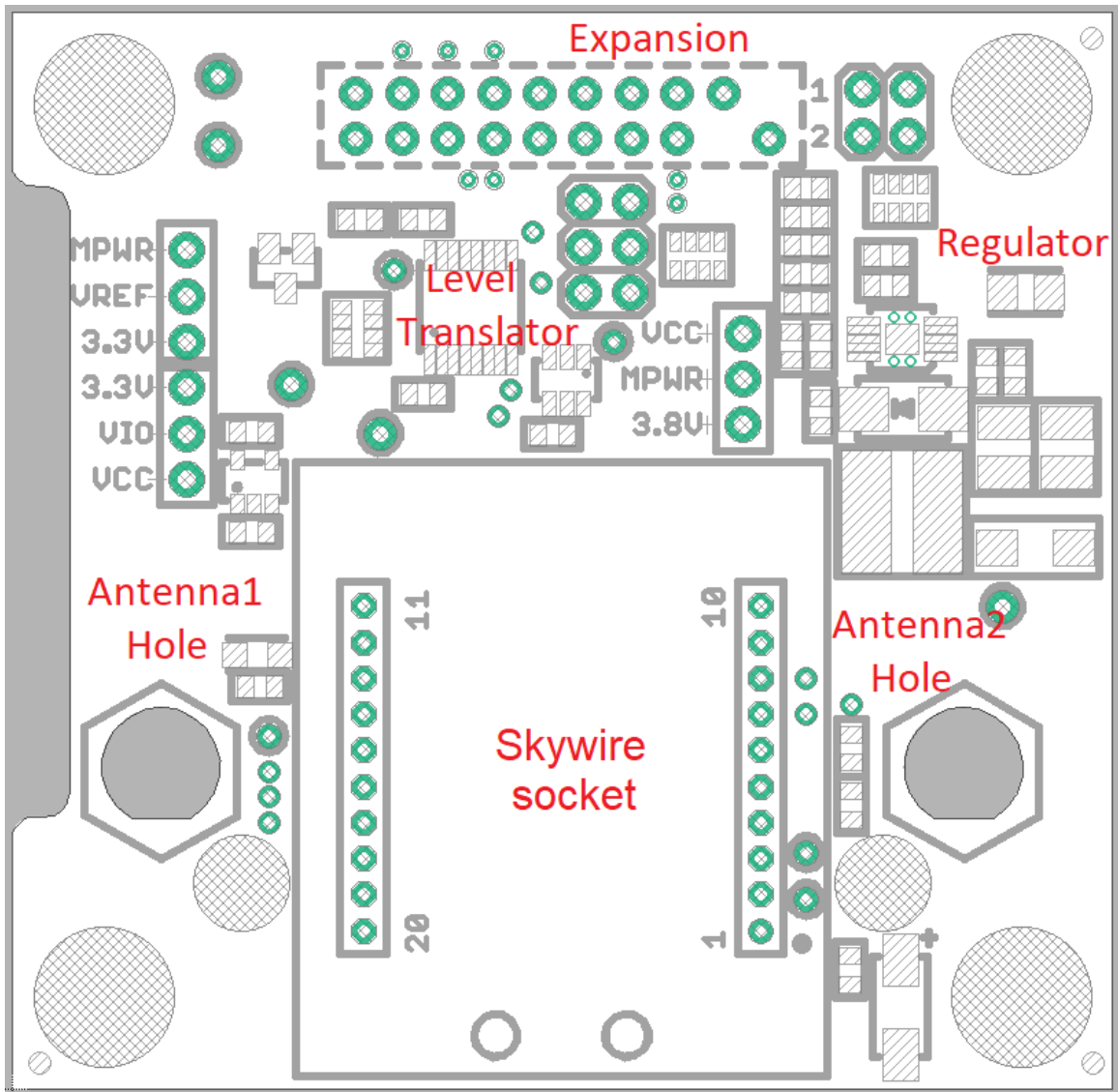


Figure 3

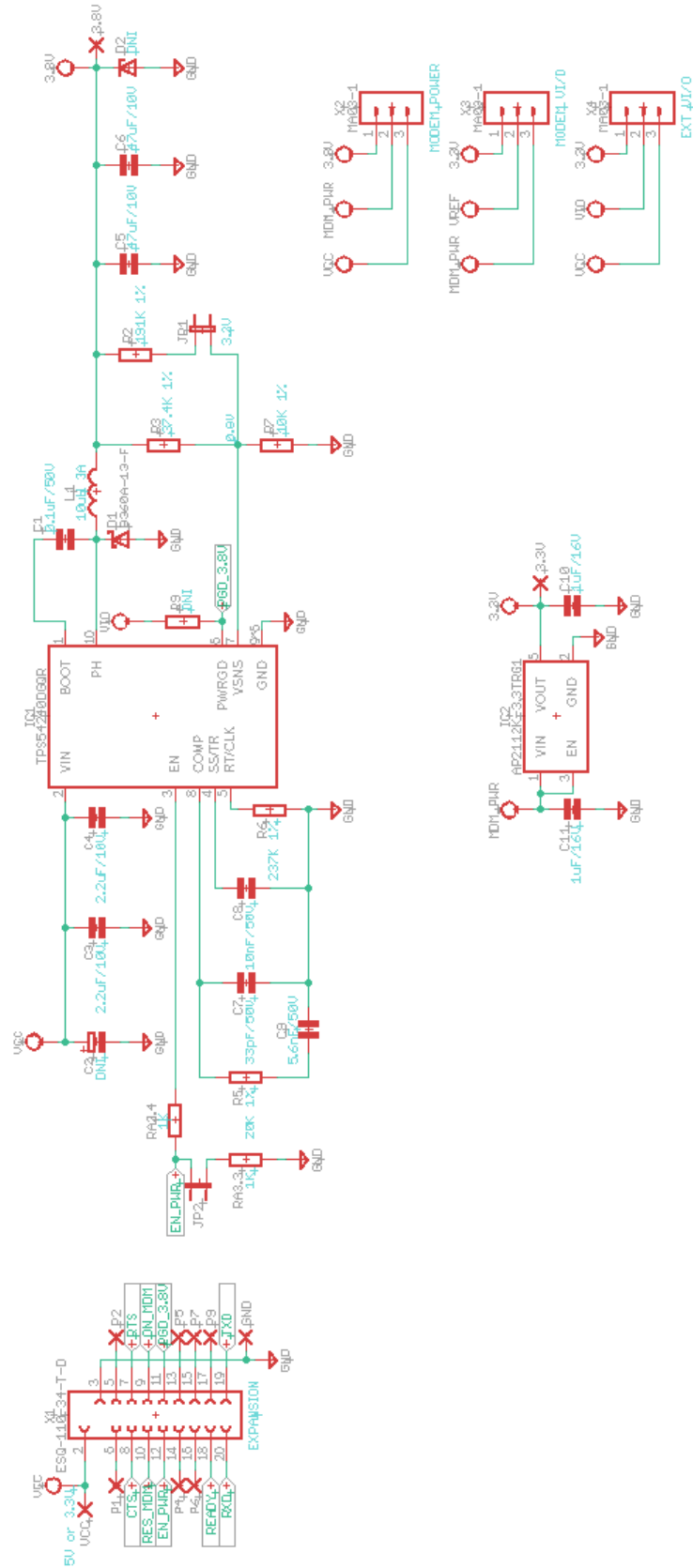
More details on BiPOM Peripheral boards are available from the link below:
http://www.bipom.com/periph_boards.php

5. Board Layout

Layout of SW-1-X board is shown below:



6. Schematics



SW-1-X peripheral board

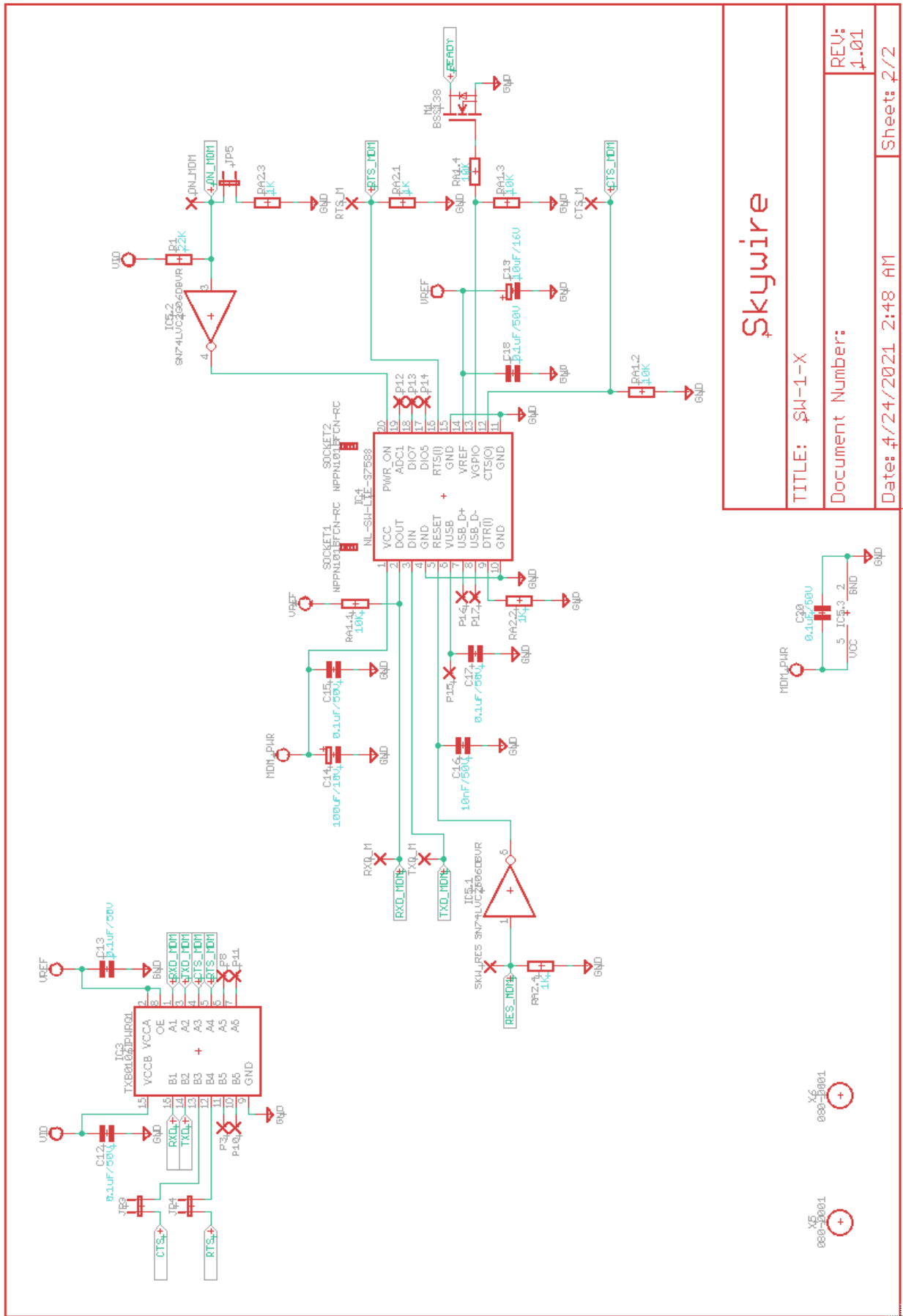
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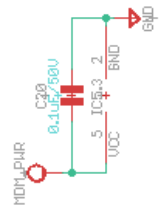
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