



WRAP THOR 2022-1-B2B Evaluation Kit

Data Sheet

Version 1.0

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1. VERSION HISTORY

| Version: | Author: | Comments: |
|-----------------|----------------|------------------|
| 1.0 | TR | First release |

2. TERMS & ABBREVIATIONS

| Term or Abbreviation: | Explanation: |
|------------------------------|--|
| <i>ASCII</i> | American Standard Code for Information Interchange |
| <i>B2B</i> | Short for WRAP THOR 2202-1-b2b Bluetooth module. |
| <i>Bluetooth</i> | Set of technologies providing audio and data transfer over short-range radio connections |
| <i>DTE</i> | Data Terminal Equipment |
| <i>SPI</i> | Serial Peripheral Interface |
| <i>UART</i> | Universal Asynchronous Receiver / Transmitter |

3. INTRODUCTION

FEATURES

- Evaluation Kit for WRAP THOR 2022-1-B2B *Bluetooth* wireless communication modules
- Unregulated power supply input (5-9V).
- Regulated power supply to B2B module (3.3V) or unregulated power supply to B2B module (5-9V).
- RS-232 serial interface (D9, DTE)
- SPI for upgrading the firmware and parameters
- BlueGiga ASCII interface as the default firmware

TARGET APPLICATIONS

Evaluation of WRAP THOR 2022-1-B2B *Bluetooth* modules. Prototype and pilot *Bluetooth* systems utilized with WRAP THOR 2022-1-B2B module.

ELECTRICAL FUNCTIONALITY

Please, refer the details of WRAP THOR 2022-1-B2B *Bluetooth* module from the respective data sheet (WRAP THOR 2022-1/2022-1-B2B, Data Sheet). The physical outlook, schematics, assembly and the PIN configurations of the interfaces of WRAP THOR 2022-1-B2B Evaluation Kit are described in this document.

4. PHYSICAL OUTLOOK

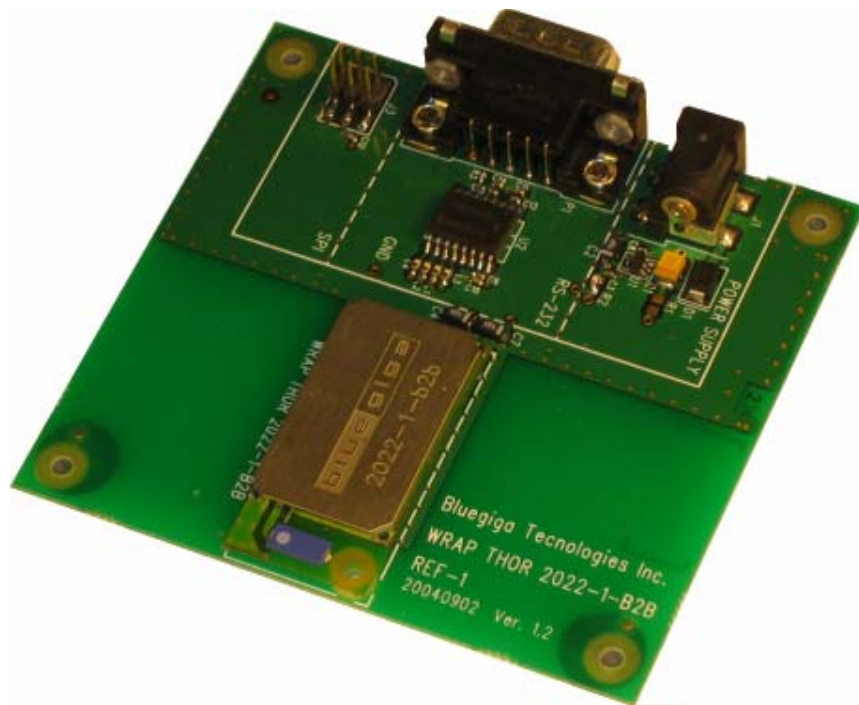


Figure 1: WRAP THOR 2022-1-B2B Evaluation Kit

5. SCHEMATICS

WRAP THOR 2022-1-B2B REFERENCE DESIGN 1 ver 1.3

- Power Supply (Unregulated / Regulated)
- RS-232 Interface (PC)
- UART Interface (BT)
- SPI Interface (PC/BT)

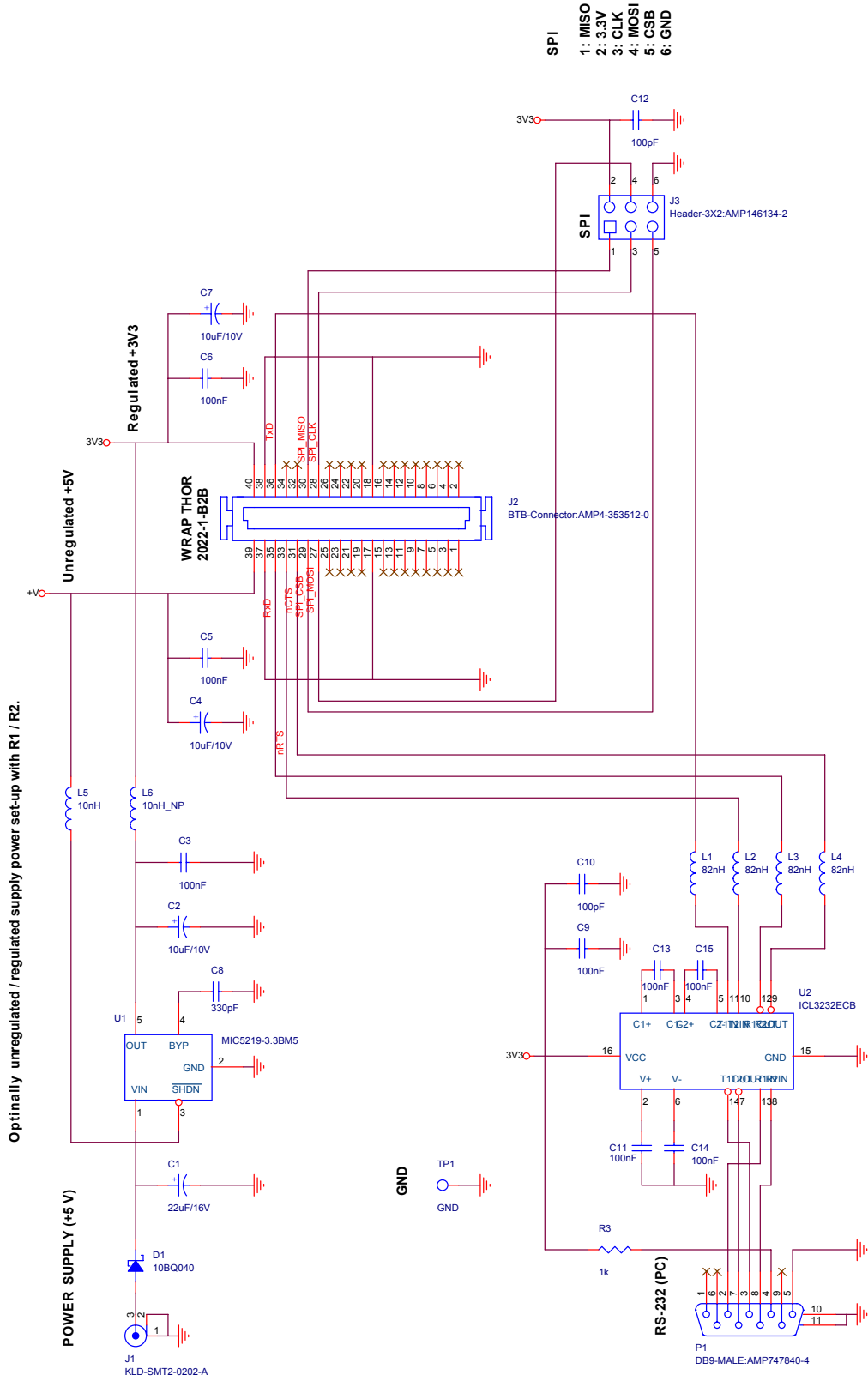


Figure 2: WRAP THOR B2B Evaluation Kit Schematics

6. ASSEMBLY

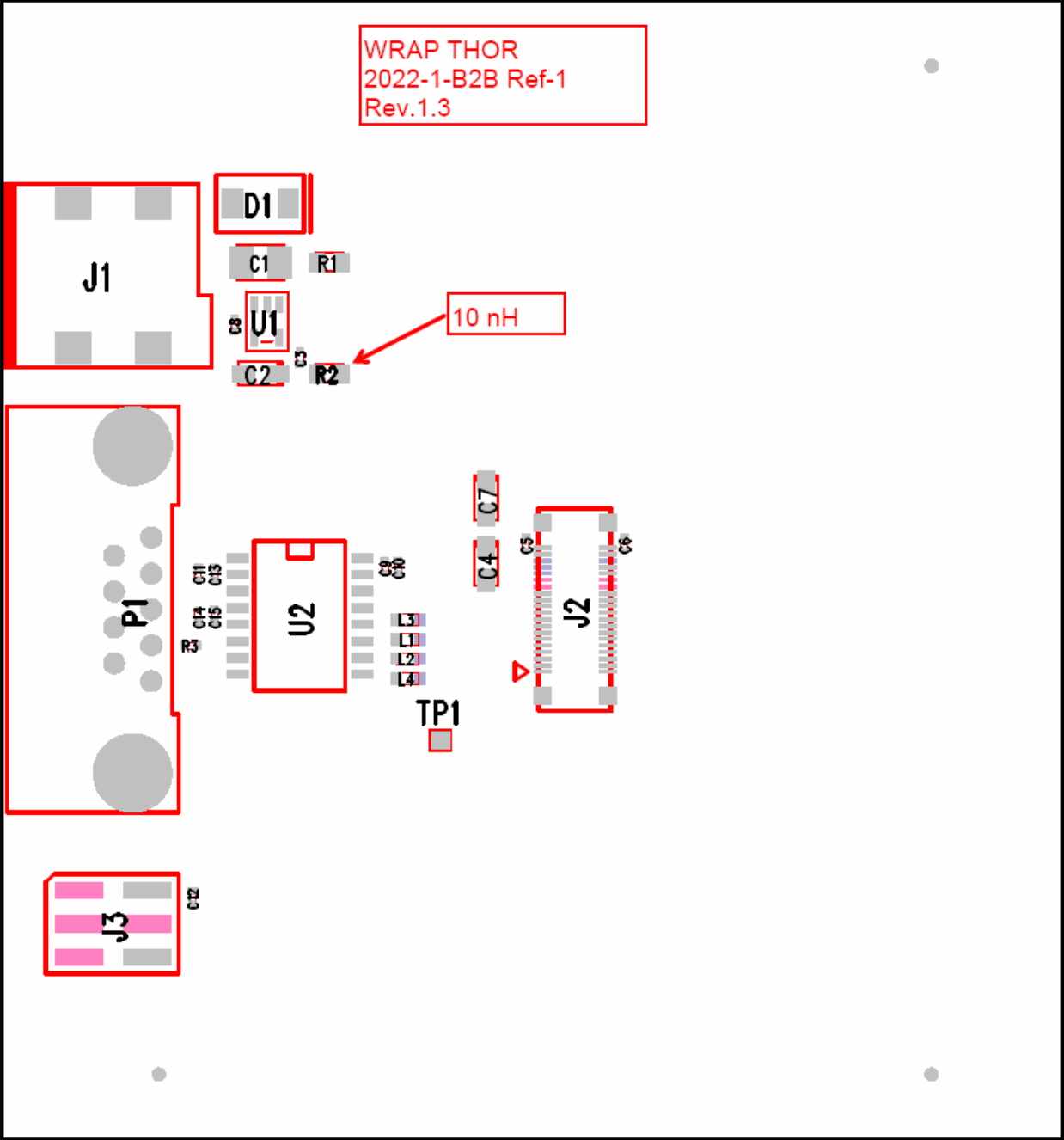


Figure 3: WRAP THOR B2B Evaluation Kit Assembly

7. RS-232 (D9) DTE INTERFACE

RS-232 interface PIN configuration is shown in Table 1. The physical interface is D9-male connector (AMP747840-4).

| PIN Name: | No.: | I/O: | Description: |
|-----------|------|------|---------------|
| NC | 1 | NC | Not connected |
| RxD | 2 | I | RxD |
| TxD | 3 | O | TxD |
| DTR | 4 | O | DTR on |
| GND | 5 | GND | Ground |
| NC | 6 | NC | Not connected |
| RTS | 7 | O | RTS |
| CTS | 8 | I | CTS |
| NC | 9 | NC | Not connected |

Table 1: RS232 PIN configuration

8. SPI (J3) INTERFACE

SPI interface pin configuration is show in Table 2. The physical interface is 2X3 pin header (AMP146134-2).

| PIN Name: | No.: | I/O: | Description: |
|-----------|------|-------|--------------------------|
| MISO | 1 | O | MISO |
| 3.3 V | 2 | POWER | 3.3 V power supply input |
| CLK | 3 | I | CLK |
| MOSI | 4 | I | MOSI |
| CSB | 5 | I | CSB |
| GND | 6 | GND | GND |

Table 2: SPI Interface PIN description

9. BOARD-TO-BOARD (J2) INTERFACE

The board-to-board connector type is *AMP 4-353512-0* on the Evaluation Kit side and *AMP 4-353515-0* on the module side. The board-to-board connector pin description (*AMP 4-353515-0*) is shown in Table 3. Please, refer the connector data sheet for the relating detailed technical information.

| PIN Name: | No.: | I/O: | Description: |
|-----------|------|------|--|
| RESET_IN | 1 | I | Reset if high. (Internal 1 kohm pull-down resistor.) |
| NC | 2 | NC | Not connected. |
| PIO(2) | 3 | I/O | Programmable I/O number 2 |
| NC | 4 | NC | Not connected. |
| PIO(3) | 5 | I/O | Programmable I/O number 3 |
| PIO(4) | 6 | I/O | Programmable I/O number 4 |
| PIO(6) | 7 | I/O | Programmable I/O number 6 |
| PIO(5) | 8 | I/O | Programmable I/O number 5 |
| PIO(7) | 9 | I/O | Programmable I/O number 7 |
| NC | 10 | NC | Not connected. |
| NC | 11 | NC | Not connected. |
| NC | 12 | NC | Not connected. |
| NC | 13 | NC | Not connected. |
| NC | 14 | NC | Not connected. |
| NC | 15 | NC | Not connected. |
| NC | 16 | NC | Not connected. |
| GND | 17 | GND | Ground. |
| GND | 18 | GND | Ground. |
| PCM_SYNC | 19 | I/O | Synchronous data strobe (pull-down). |

| | | | |
|----------|----|-----|--|
| PCM_CLK | 20 | I/O | Synchronous data clock (pull-down) |
| PCM_IN | 21 | I | Synchronous 8 kbps data input (pull-down) |
| PCM_OUT | 22 | O | Synchronous 8 kbps data output (pull-down) |
| NC | 23 | NC | Not connected. |
| NC | 24 | NC | Not connected. |
| NC | 25 | NC | Not connected. |
| NC | 26 | NC | Not connected. |
| SPI_MOSI | 27 | I | SPI data input (pull-down) |
| SPI_CLK | 28 | I | SPI clock (pull-down) |
| SPI_CSB | 29 | I | SPI chip select (pull-up). Active low. |
| SPI_MISO | 30 | O | SPI data output (pull-down). |
| UART_CTS | 31 | I | UART CTS (internal pull-down). Active low. |
| USB_D- | 32 | A | USB Data - |
| UART_RTS | 33 | O | UART RTS (internal pull-up). Active low. |
| USB_D+ | 34 | A | USB Data + |
| UART_RX | 35 | I | Asynchronous serial data in. |
| UART_TX | 36 | O | Asynchronous serial data out. |
| GND | 37 | GND | Ground. |
| GND | 38 | GND | Ground. |
| 5V0 | 39 | VDD | Power supply connection. (Unregulated power input) |
| 3V3 | 40 | VDD | Power supply connection. (Regulated power input) |

Table 3: AMP Connector PIN Description