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# Traveo II Starter Kit

# User Guide

Document Number: 002-25314 Rev. \*C

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# **Preface**



#### **Using the Product Safely**

This guide contains important information about using this product safely. Be sure to read this guide before using the product and to follow the directions given to use the product correctly. In particular, read "Product Caution" and perform a thorough safety check before using the product.

Store this guide in a safe location where it can easily be accessed at any time while you are using the product.

#### **Related Documents**

- Traveo™ II Automotive Body Controller Entry Family Architecture Technical Reference Manual (TRM), 002-19314
- Traveo™ II Automotive Body Controller Entry Registers Technical Reference Manual (TRM) for CYT2B7, 002-19567
- Traveo™ II Automotive Body Controller Entry Registers Technical Reference Manual (TRM) for CYT2B9, 002-27181
- CYT2B7 Datasheet 32-bit Arm<sup>®</sup> Cortex<sup>®</sup>-M4F Microcontroller Traveo<sup>™</sup> II Family, 002-18043
- CYT2B9 Datasheet 32-bit Arm<sup>®</sup> Cortex<sup>®</sup>-M4F Microcontroller Traveo<sup>™</sup> II Family, 002-22825

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All information included in this document is current as of the date it is issued. Such information is subject to change without any prior notice.

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## **Target Product**

The following product is the target for this evaluation board.

| Quantity | Description           | Part No.         |
|----------|-----------------------|------------------|
| 1        | Traveo II Starter Kit | CYTVII-B-E-1M-SK |

#### **Board Size**

124 x 53 mm.

### **Operating Temperature**

0 to 40 °C.



# **RoHS Compliance**

European RoHS.

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# 1. Introduction



This guide provides directions for using the Traveo™ II Starter Kit, which is the evaluation environment for Traveo II Body Entry devices of the Cypress Traveo II family 32-bit microcontroller.

Table 1-1. Contents - Traveo II Starter Kit Board

| Quantity | Description                  | Part No.         |
|----------|------------------------------|------------------|
| 1        | Traveo II Starter Kit Rev 03 | CYTVII-B-E-1M-SK |

Note: This user guide is meant for Rev 03 of the Traveo II Starter Kit.

### 1.1 Precautions and Warnings

The following precautions apply to the product described in this manual:

| Warning                   | Indicates a potentially hazardous situation which could result in death or serious injury and/or a fault in the user's system if the product is not used correctly.  |  |
|---------------------------|--|--|
|                           |  |  |
|                           | Before performing any operation described in this manual, turn OFF all the power supplies to the system.   |  |
| Electric shock,<br>Damage | Performing such an operation with the power ON may cause an electric shock or device fault.  |  |
|                           | Once the product has been turned ON, do not touch any metal part of it.  |  |
|                           | Doing so may cause an electric shock or device fault.  |  |
|                           |  |  |
| Caution                   | Indicates a hazardous situation that may cause a minor or moderate injury, damages to this product or devices connected to it, or loss of software resources and other properties such as data, if the device is not used appropriately.   |  |
|                           |  |  |
| Cuts, Damage              | Before moving the product, be sure to turn OFF all the power supplies and unplug the cables. Watch your step when carrying the product. Do not use the product in an unstable location such as a place exposed to strong vibration or with slopes.                                     |  |
|                           | Doing so may cause the product to fall, resulting in an injury or fault.   |  |
|                           | Do not place anything on the product or expose the product to physical shocks. Do not carry the product after the power has been turned ON.  |  |
|                           | Doing so may cause a malfunction due to overloading or shock.  |  |
| Damage                    | Since the product contains many electronic components, keep it away from direct sunlight, high temperature, and high humidity to prevent condensation. Do not use or store the product where it is exposed to much dust or a strong magnetic or electric field for an extended period. |  |
|                           | Inappropriate operating or storage environments may cause a fault.   |  |



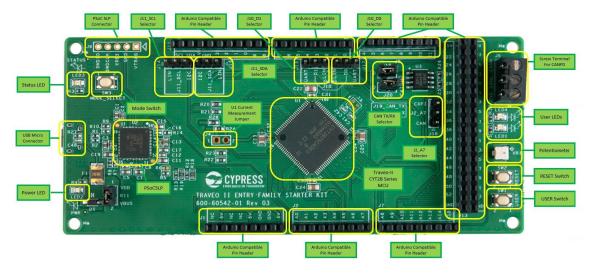
|        | Use the product within the ranges given in the specifications.  |
|--------|---|
|        | Operation over the specified ranges may cause a fault.  |
|        | To prevent electrostatic breakdown, do not let your finger or other object come in contact with the metal parts of any connectors. Before handling the product, touch a metal object (such as a door knob) to discharge any static electricity from your body.  |
| Damage | When installing the sub board, align the key positions of main board connector and sub board connector, and fix with the screw set before use. When removing, remove all screws of screw set, and then remove the sub board vertically from the main board. Otherwise, the product may be damaged, for example, the connector section might be corrupted. |
|        | The product has no casing, so it is recommended that it be stored in the original packaging. Transporting the product may cause a damage or fault. Therefore, keep the packaging materials and use them when re-shipping the product.   |

# 2. Overview



This evaluation board provides developers with the evaluation environment for the CYT2B75/95 MCU.

Figure 2-1. Traveo II Starter Kit Board - Top View





### 2.1 Functional Overview

This board can mount the CYT2B75/95 series MCU. The location of the main function is shown in Figure 2-2.

Figure 2-2. Traveo II Starter Kit Functional Overview

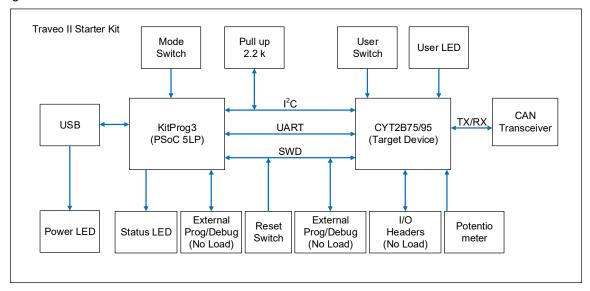




Table 2-1. Traveo II Starter Kit Functions

| Item                     | Function                            | Specification                            | Remarks                         |
|--------------------------|-------------------------------------|--|---------------------------------|
|                          | MCU                                 | CYT2B75xx                                | U1: QFP 100-pin (0.5-mm pitch)  |
|                          | INICO                               | CYT2B95xx                                | O1. QFP 100-pin (0.5-min pitch) |
|                          |                                     | Main clock 16 MHz                        |                                 |
|                          | Oscillator                          | Surface-mounted main crystal             | X1: ABM10-16.000MHZ-D30-T3      |
|                          | (optional)                          | oscillator and load capacitances (10 pF) | Not mounted by default          |
|                          | PSoC 5LP Kit-<br>Prog3              | CY8C5868LTI-LP039                        | U2: QFN 68-pin                  |
|                          | Reset SW                            | System reset switch                      | SW2                             |
|                          | User SW                             | User switch connects to MCU              | SW1                             |
|                          | Mode SW                             | Mode switch connects to PSoC 5LP         | SW3                             |
| Traveo II<br>Starter Kit | User LEDs                           | Two User LEDs connected to MCU           | LED1 Blue                       |
|                          |                                     |  | LED4 Blue                       |
|                          | Power LED                           | Power monitor LED                        | LED2 Green                      |
| Status LED               |                                     | KitProg3 status LED                      | LED3 Amber                      |
|                          | USB connector                       | USB micro connector                      | J8: 10118194-0001LF             |
|                          | CAN FD interface                    | CAN FD channel                           | J5: CAN0_1 (Screw Terminal)     |
|                          | CAN FD IIIlenace                    | CAN0_1                                   | U3: TJA1057GT                   |
|                          | Potentiometer                       | Potentiometer 10 kΩ                      | VR1: 3313J-1-103E               |
|                          |                                     | Header 2.54-mm pitch 8 x 1               | J1, J2, J7, J9, J10             |
|                          | Arduino compati-<br>ble pin headers | Header 2.54-mm pitch 10 x 1              | J11                             |
|                          | 2.5 piii fioddolo                   | Header 2.54-mm pitch 18 x 2              | J13                             |
|                          | Debug connector                     | MIPI-10/20 Arm JTAG                      | J3: FTSH-110-01-L-DV-K          |
|                          | (optional)                          | WIIF I- 10/20 AIIII J IAG                | Not mounted by default          |

# 3. Operation Points and Locations

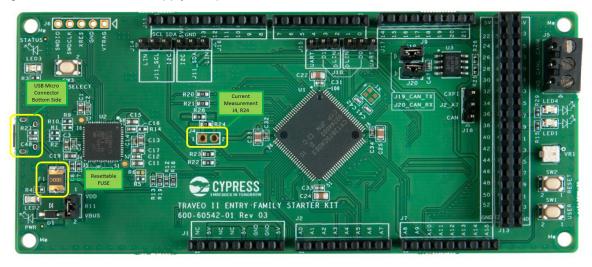


### 3.1 Power Supply

Power is supplied to this board from USB with a resettable fuse.

The current consumption can be measured at J4. J4 is not mounted by default, and instead R24 is mounted. To measure current consumption, remove R24 and mount J4.

Figure 3-1. MCU Power Supply Jumper Locations





### 3.2 Main Clock

The main clock (X1) location and details are shown in Figure 3-2 and Table 3-1.

The Starter Kit board and software are configured for the IMO (Internal Main Oscillator) clocked at 8 MHz. By default, the external crystal ECO is not mounted. It can be mounted on X1 with the load capacitance.

Figure 3-2. Main Clock Location

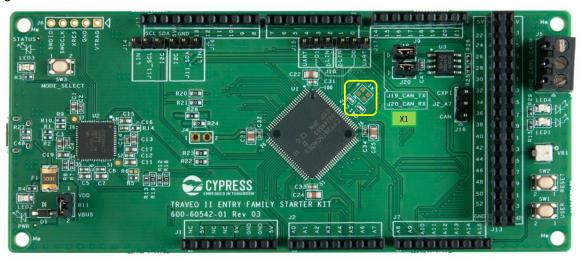


Table 3-1. Main Clock Oscillator

| Part No. | Model Number           | Remarks                           |
|----------|------------------------|-----------------------------------|
| X1       | ABM10-16.000MHZ-D30-T3 | ABRACON                           |
|          |                        | Surface-mounted 16-MHz oscillator |



## 3.3 Switches

This board has various switches for performing certain operations. The location and details of these switches are shown in Figure 3-3 and Table 3-2.

Figure 3-3. Switches Location

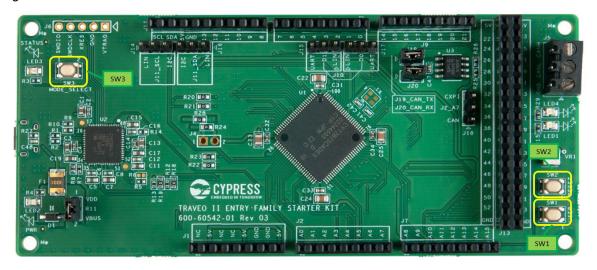


Table 3-2. Switches

| Part No. | Signal Name                                |  |
|----------|--|--|
| SW1      | User Switch: Connects to P7.0 of MCU       |  |
| SW2      | Reset Switch: System Reset                 |  |
| SW3      | Mode Switch: Connects to P1[2] of PSoC 5LP |  |



## 3.4 LEDs

This board has various LEDs for condition indication. The location and details of these LEDs are shown in Figure 3-4 and Table 3-3.

Figure 3-4. LED Location

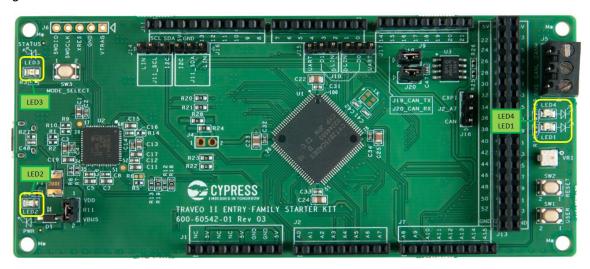


Table 3-3. LEDs

| Part No. | Description                                   |  |
|----------|---|--|
| LED 1    | User LED: Blue, Connects to P19.0 of DUT MCU  |  |
| LED 2    | Power LED: Green, Power monitor LED (VBUS)    |  |
| LED 3    | User LED: Amber, Connects to P1.4 of PSoC 5LP |  |
| LED 4    | User LED: Blue, Connects to P12.2 of MCU      |  |



#### 3.5 USB Interface Connector

This board has USB micro connector on the bottom side. The SWD protocol is implemented on the PSoC 5LP device over USB, and is connected to the MCU. The location and details of the USB micro connector are shown in Figure 3-5 and Table 3-4.

Figure 3-5. USB Interface Connector Location

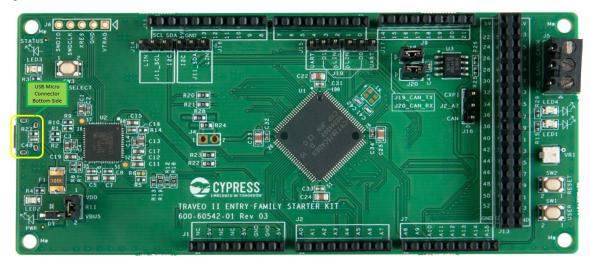


Table 3-4. USB Interface Connector

| Part No. | Description         | Remarks                                       |
|----------|---------------------|---|
| J8       | USB micro connector | FCI   |
| 100      | 10118194-0001LF     | This connector is mounted on the bottom side. |



#### 3.6 CAN FD Interface Connector

This board has a CAN FD interface. It is connected to a CAN FD channel of the DUT MCU.

The connector of CAN FD is 3-pin header. It is optional (not mounted by default). The CAN FD interface connector location and details are shown in Figure 3-6 and Table 3-5.

Figure 3-6. CAN FD Interface Connector Location

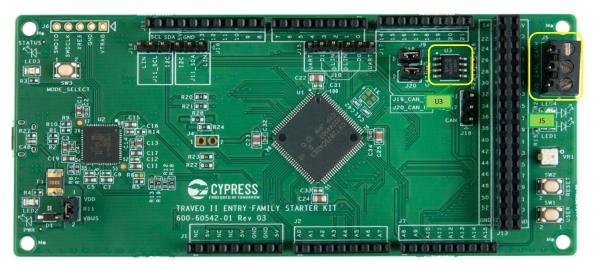


Table 3-5. CAN FD Interface

| Part No. | Description        | Remarks                                   |
|----------|--------------------|---|
| U3       | CAN FD Transceiver | NXP                                       |
| 03       | TJA1057GT          | Connects to P0.2 and P0.3 (CAN0_1) of MCU |
| J5       |                    | 1: GND Common ground                      |
|          |                    | 2: CANL CAN0_1 bus signal LOW             |
|          |                    | 3: CANH CAN0_1 bus signal HIGH            |



### 3.7 Potentiometer

This board has a potentiometer. It is connected to an ADC channel of the MCU.

The potentiometer location and details are shown in Figure 3-7 and Table 3-6.

Figure 3-7. Potentiometer Location

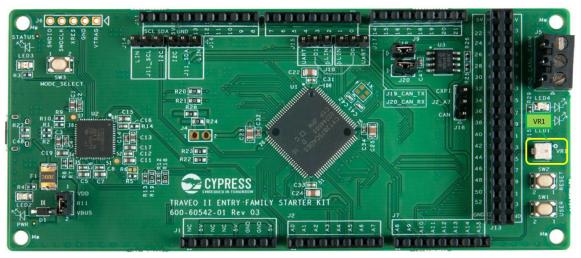


Table 3-6. Potentiometer

| Part No. | Description         | Remarks                            |
|----------|---------------------|------------------------------------|
| VR1      | Potentiometer 10 kΩ | BOURNS                             |
|          | 3313J-1-103E        | Connects to P6.0 (ADC[0]_0) of MCU |



## 3.8 Arduino Compatible Pin Headers

This board has Arduino compatible pin headers to monitor MCU signals.

The location and details of I/O headers are shown in Figure 3-8, Table 3-7, Table 3-8, Table 3-9, Table 3-11, Table 3-12 and Table 3-13.

Figure 3-8. Arduino Compatible Pin Headers Location

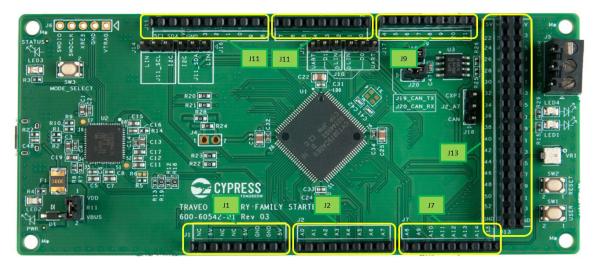


Table 3-7. Arduino Compatible Pin Header 1 (J1)

| Pin | Signal |
|-----|--------|
| 1   | NC     |
| 2   | 5V     |
| 3   | NC     |
| 4   | NC     |
| 5   | 5V     |
| 6   | GND    |
| 7   | GND    |
| 8   | 5V     |

Table 3-8. Arduino Compatible Pin Header 2 (J2)

| Pin | Signal     |
|-----|------------|
| 1   | A0 (P7_5)  |
| 2   | A1 (P7_4)  |
| 3   | A2 (P7_3)  |
| 4   | A3 (P6_5)  |
| 5   | A4 (P6_4)  |
| 6   | A5 (P13_2) |
| 7   | A6 (P12_1) |
| 8   | A7         |



Table 3-9. Arduino Compatible Pin Header 3 (J7)

| Pin | Signal      |
|-----|-------------|
| 1   | A8 (P7_0)   |
| 2   | A9 (P18_6)  |
| 3   | A10 (P18_7) |
| 4   | NC          |
| 5   | NC          |
| 6   | NC          |
| 7   | NC          |
| 8   | NC          |

Table 3-10. Arduino Compatible Pin Header 4 (J9)

| Pin | Signal     |
|-----|------------|
| 1   | 14 (P18_1) |
| 2   | 15 (P18_0) |
| 3   | 16 (17_2)  |
| 4   | 17 (17_1)  |
| 5   | 18 (14_1)  |
| 6   | 19 (14_0)  |
| 7   | 20 (P0_3)  |
| 8   | 21 (P0_2)  |

Table 3-11. Arduino Compatible Pin Header 5 (J10)

| Pin | Signal                 |
|-----|------------------------|
| 1   | 0                      |
| 2   | 1                      |
| 3   | 2 (P19_1)              |
| 4   | 3 (P19_2)              |
| 5   | 4 (P21_0)              |
| 6   | 5 (P21_1)              |
| 7   | 6 (P13_3)<br>7 (P13_5) |
| 8   | 7 (P13_5)              |



Table 3-12. Arduino Compatible Pin Header 6 (J11)

| Pin | Signal     |
|-----|------------|
| 1   | SCL        |
| 2   | SDA        |
| 3   | 5V         |
| 4   | GND        |
| 5   | 13 (P22_2) |
| 6   | 12 (P22_0) |
| 7   | 11 (P22_1) |
| 8   | 10 (P22_3) |
| 9   | 9 (P23_3)  |
| 10  | 8 (P21_5)  |

Table 3-13. Arduino Compatible Pin Header 7 (J13)

| Pin | Signal     | Pin | Signal     |
|-----|------------|-----|------------|
| 1   | 5V         | 2   | 5V         |
| 3   | 22 (P11_2) | 4   | 23 (P11_1) |
| 5   | 24 (P11_0) | 6   | 25 (P8_2)  |
| 7   | 26 (P8_1)  | 8   | 27 (P18_2) |
| 9   | 28 (P17_0) | 10  | 29 (P14_3) |
| 11  | 30 (P14_2) | 12  | 31 (P13_7) |
| 13  | 32 (P13_6) | 14  | 33 (P13_4) |
| 15  | 34 (P8_0)  | 16  | 35 (P3_0)  |
| 17  | 36 (P2_3)  | 18  | 37 (P12_4) |
| 19  | 38 (P12_3) | 20  | 39 (P12_2) |
| 21  | 40 (P19_0) | 22  | 41 (P3_1)  |
| 23  | 42 (P5_3)  | 24  | 43 (P2_0)  |
| 25  | 44 (P5_0)  | 26  | 45 (P5_1)  |
| 27  | 46 (P5_2)  | 28  | 47 (P18_3) |
| 29  | 48 (P18_4) | 30  | 49 (P18_5) |
| 31  | 50 (P6_0)  | 32  | 51 (P6_1)  |
| 33  | 52 (P6_2)  | 34  | 53 (P6_3)  |
| 35  | GND        | 36  | GND        |



## 3.9 Debug Interface (Optional)

This board has a MIPI-10/20 (Arm standard) connector as the debugging interface. This connector is not mounted by default.

The debug connector location and details are shown in Figure 3-9, Table 3-14 and Table 3-15.

Figure 3-9. Debug Interface

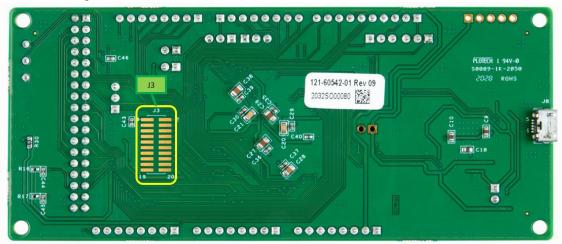


Table 3-14. Debug Interface Connector (J3)

| Part No. | Description                             | Remarks   |  |
|----------|---|---|--|
|          | MIPI-20 connector<br>FTSH-110-01-L-DV-K | SAMTEC  |  |
| J3       |   | Not mounted by default.                             |  |
|          |   | (The foot pattern is available on the bottom side). |  |

Table 3-15. MIPI-10/20 Connector

| Pin | Signal | Pin | Signal       |
|-----|--------|-----|--------------|
| 1   | Power  | 2   | TMS          |
| 3   | Ground | 4   | TCLK         |
| 5   | Ground | 6   | TDO          |
| 7   | NC     | 8   | TDI          |
| 9   | Ground | 10  | XRES         |
| 11  | Ground | 12  | TRACE_CLOCK  |
| 13  | Ground | 14  | TRACE_DATA_0 |
| 15  | Ground | 16  | TRACE_DATA_1 |
| 17  | Ground | 18  | TRACE_DATA_2 |
| 19  | Ground | 20  | TRACE_DATA_3 |

# 4. Known Limitations



#### 4.1 Known Limitations

This section lists the known limitations of the Traveo II Starter Kit.

Table 4-1. Limitation Information

| No. | Problem                         | Description   | Workaround  |
|-----|---------------------------------|---|---|
| 1   | CAN FD communication rate limit | The external oscillator is optional (not mounted by default) and the CAN FD communication rate is 500 kbps at the maximum with IMO. | To evaluate communication rates higher than that, install an external oscillator, or purchase an official evaluation board. |

# A. Connections and Settings



#### A.1 Traveo II Starter Kit Connections

#### A.1.1 User LED

The correspondence between the LEDs on the board and the CYT2B75xx/CYT2B95xx device pins and the port pins is shown in Table A-1.

Table A-1. User LED

| User     | Part Number |     | CYT2B75xx/CYT2B95xx |
|----------|-------------|-----|---------------------|
| LED      |             | Pin | Pin Name            |
| USER LED | LED1        | 77  | P19.0               |
| USER LED | LED4        | 47  | P12.2               |

#### A.1.2 User SW

The correspondence between the switch and the CYT2B75xx/CYT2B95xx device pin and the port pin is shown in Table A-2.

Table A-2. User Switch

| User    | CYT2B75XX/CYT2B95XX |     | CYT2B75XX/CYT2B95XX |
|---------|---------------------|-----|---------------------|
| SW      | Part Number         | Pin | Pin Name            |
| USER SW | SW1                 | 29  | P7.0                |

#### A.1.3 RESET SW

The correspondence between the RESET SW and the CYT2B75xx/CYT2B95xx device pin and the port pin is shown in Table A-3.

Table A-3. RESET Switch

| RESET<br>SW | Part Number | CYT2B75xx/CYT2B95xx |          |
|-------------|-------------|---------------------|----------|
|             |             | Pin                 | Pin Name |
| RESET SW    | SW2         | 85                  | XRES     |



#### A.1.4 MODE SW

The mode switch will change the mode of operation of the KitProg3 device. While communicating with the Traveo II device, make sure that the KitProg3 device should be in CMSIS DAP mode (LED3 is solid ON).

The correspondence between the MODE SW and the PSoC 5LP pin number is given in Table A-4.

Table A-4. MODE Switch

| RESET    | Part Number | PSoC 5LP |          |
|----------|-------------|----------|----------|
| sw       |             | Pin      | Pin Name |
| RESET SW | SW3         | 13       | P1[2]    |

## A.2 System Configuration

To work with Starter Kit, KitProg3 USB-UART driver must be installed in the system; see the KitProg3 User Guide.

For software and tool configuration, see Traveo II Entry Family Starter Kit - Getting Started.

# B. Schematics and Layouts



#### **B.1** Schematics

This section shows the schematics and layouts of the Traveo II Starter kit.

Figure B-1. Schematics Content

## TraveoII Entry Family Starter Kit Rev 03

| CONTENTS |                                      |  |
|----------|--------------------------------------|--|
| PAGE     | DESCRIPTION                          |  |
| 01       | Contents                             |  |
| 02       | Block Diagram                        |  |
| 03       | KitProg3                             |  |
| 04       | TVII Decaps, clock, reset, and debug |  |
| 05       | TVII-B-E-1M-100-CPU_P1               |  |
| 06       | TVII-B-E-1M-100-CPU_P2               |  |
| 07       | TVII-B-E-1M-100-CPU_P3               |  |
| 08       | TVII-B-E-1M-100-CPU_P4               |  |
| 09       | TVII-B-E-1M-100-CPU_P5               |  |
| 10       | Arduino compatible pin-headers       |  |
| 11       | CANFD, Potentiometer                 |  |
| 12       | Revision History                     |  |



Figure B-2. Block Diagram

#### **BLOCK DIAGRAM**

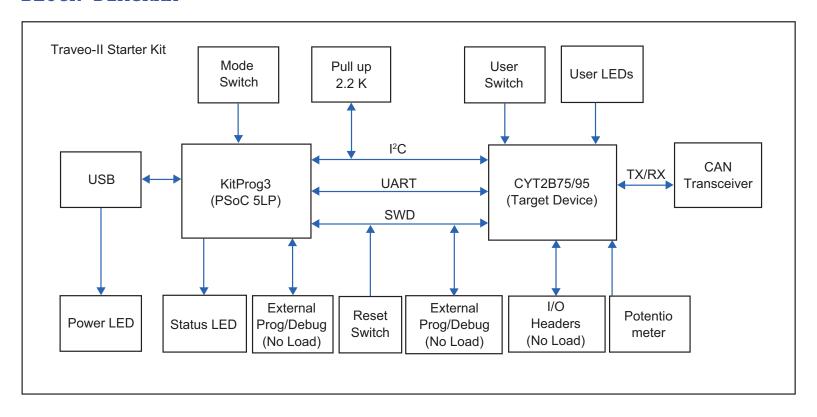




Figure B-3. KitProg3

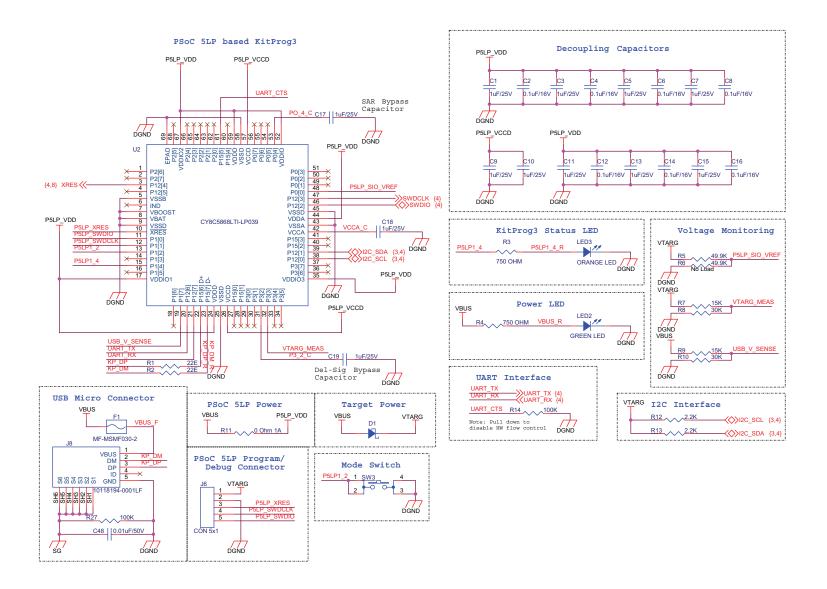




Figure B-4. TVII Decaps, Clock, Reset, and Debug

TVII Decaps, clock, reset, and debug

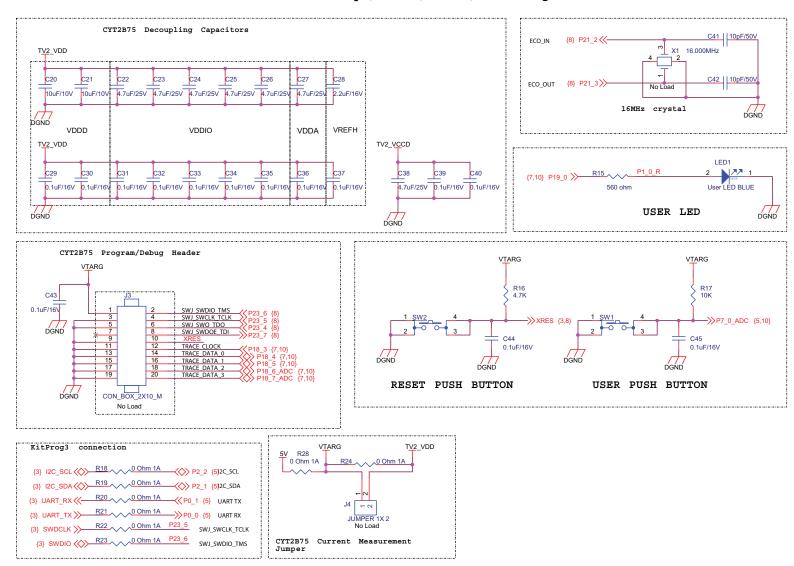




Figure B-5. TVII-B-E-1M-100-CPU\_P1

U1A

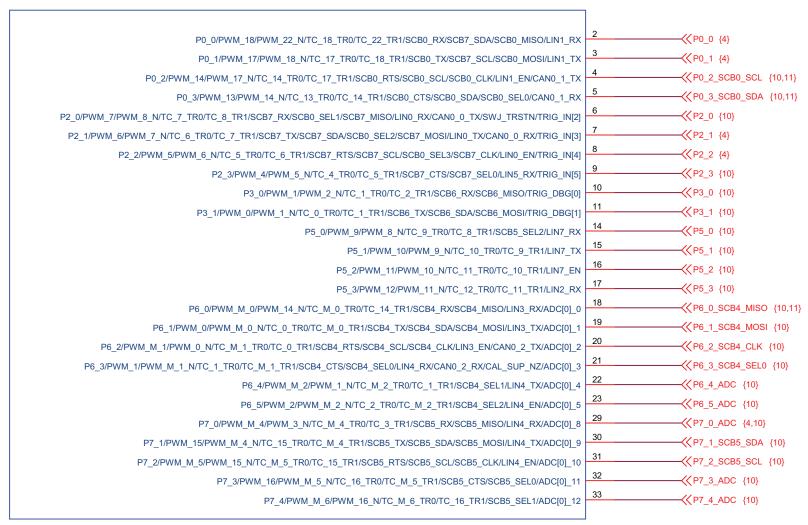




Figure B-6. TVII-B-E-1M-100-CPU\_P2

U1B

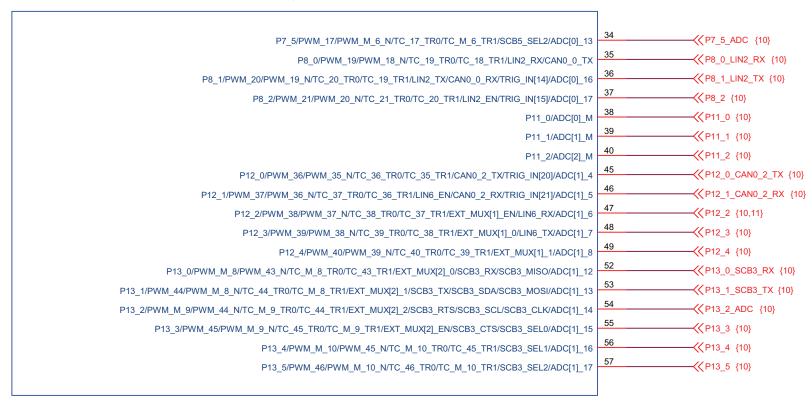




Figure B-7. TVII-B-E-1M-100-CPU\_P3

U1C

|   | 7   |
|---|---|
| P13_6/PWM_M_11/PWM_46_N/TC_M_11_TR0/TC_46_TR1/SCB3_SEL3/TRIG_IN[22]/ADC[1]_18                           | 58 < <p13_6 th="" {10}<=""></p13_6>   |
| P13_7/PWM_47/PWM_M_11_N/TC_47_TR0/TC_M_11_TR1/TRIG_IN[23]/ADC[1]_19                                     | 59 << P13_7 {10}  |
| P14_0/PWM_48/PWM_47_N/TC_48_TR0/TC_47_TR1/SCB2_RX/SCB2_MISO/CAN1_0_TX/ADC[1]_20                         | 60 <pre></pre>  |
| P14_1/PWM_49/PWM_48_N/TC_49_TR0/TC_48_TR1/SCB2_TX/SCB2_SDA/SCB2_MOSI/CAN1_0_RX/ADC[1]_21                | 61 <  |
| P14_2/PWM_50/PWM_49_N/TC_50_TR0/TC_49_TR1/SCB2_RTS/SCB2_SCL/SCB2_CLK/LIN6_RX/ADC[1]_22                  | 62 <> P14_2_LIN6_RX {10}  |
| P14_3/PWM_51/PWM_50_N/TC_51_TR0/TC_50_TR1/SCB2_CTS/SCB2_SEL0/LIN6_TX/ADC[1]_23                          | 63 <pre> </pre> <pre> 63 </pre> <pre> 63 </pre> <pre> 63 </pre> <pre> 63 </pre> <pre> 64 </pre> <pre> 65 </pre> <pre> 66 </pre> <pre> 67 </pre> <pre> 68 </pre> <pre> 69 </pre> <pre> 60 </pre> |
| P17_0/PWM_61/PWM_62_N/TC_61_TR0/TC_62_TR1/CAN1_1_TX   | 64 < <p>P17_0 {10}</p>  |
| P17_1/PWM_60/PWM_61_N/TC_60_TR0/TC_61_TR1/PWM_H_2/SCB3_RX/SCB3_MISO/CAN1_1_RX                           | 65 <pre></pre>  |
| P17_2/PWM_59/PWM_60_N/TC_59_TR0/TC_60_TR1/PWM_H_2_N/SCB3_TX/SCB3_SDA/SCB3_MOSI                          | 66 <pre> <pre> <pre> <pre></pre></pre></pre></pre>  |
| P18_0/PWM_M_6/PWM_M_5_N/TC_M_6_TR0/TC_M_5_TR1/PWM_H_0/SCB1_RX/SCB1_MISO/FAULT_OUT_0/ADC[2]_0            | 67  |
| P18_1/PWM_M_7/PWM_M_6_N/TC_M_7_TR0/TC_M_6_TR1/PWM_H_0_N/SCB1_TX/SCB1_SDA/SCB1_MOSI/FAULT_OUT_1/ADC[2]_1 | 68 <pre> <pre> <pre></pre></pre></pre>  |
| P18_2/PWM_55/PWM_M_7_N/TC_55_TR0/TC_M_7_TR1/PWM_H_1/SCB1_RTS/SCB1_SCL/SCB1_CLK/ADC[2]_2                 | 69  |
| P18_3/PWM_54/PWM_55_N/TC_54_TR0/TC_55_TR1/PWM_H_1_N/SCB1_CTS/SCB1_SEL0/TRACE_CLOCK/ADC[2]_3             | 70 < <p>P18_3 {4,10}</p>  |
| P18_4/PWM_53/PWM_54_N/TC_53_TR0/TC_54_TR1/PWM_H_2/SCB1_SEL1/TRACE_DATA_0/ADC[2]_4                       | 71 < <p>P18_4 {4,10}</p>  |
| P18_5/PWM_52/PWM_53_N/TC_52_TR0/TC_53_TR1/PWM_H_2_N/SCB1_SEL2/TRACE_DATA_1/ADC[2]_5                     | 72 << P18_5 {4,10}  |
| P18_6/PWM_51/PWM_52_N/TC_51_TR0/TC_52_TR1/PWM_H_3/SCB1_SEL3/CAN1_2_TX/TRACE_DATA_2/ADC[2]_6             | 73 <  |
| P18_7/PWM_50/PWM_51_N/TC_50_TR0/TC_51_TR1/PWM_H_3_N/CAN1_2_RX/TRACE_DATA_3/ADC[2]_7                     | 74 <> P18_7_ADC {4,10}  |
| P19_0/PWM_M_3/PWM_50_N/TC_M_3_TR0/TC_50_TR1/TC_H_0_TR0/SCB2_RX/SCB2_MISO/FAULT_OUT_2                    | 77 < <p>P19_0 {4,10}</p>  |
|   |   |



Figure B-8. TVII-B-E-1M-100-CPU\_P4

U1D





Figure B-9. TVII-B-E-1M-100-CPU\_P5

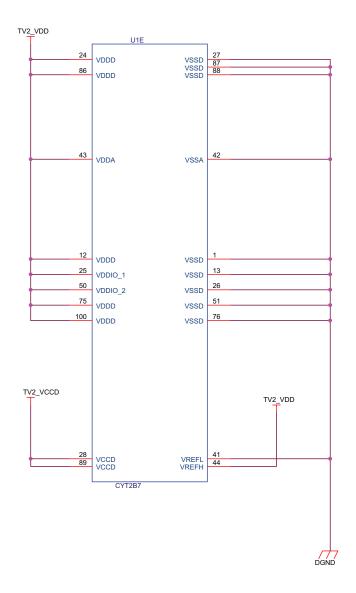




Figure B-10. Arduino Compatible Pin-Headers

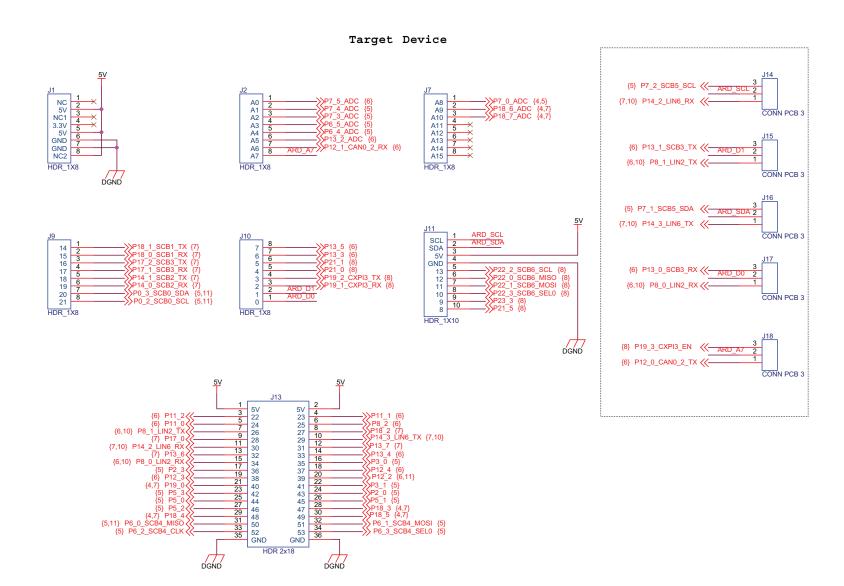
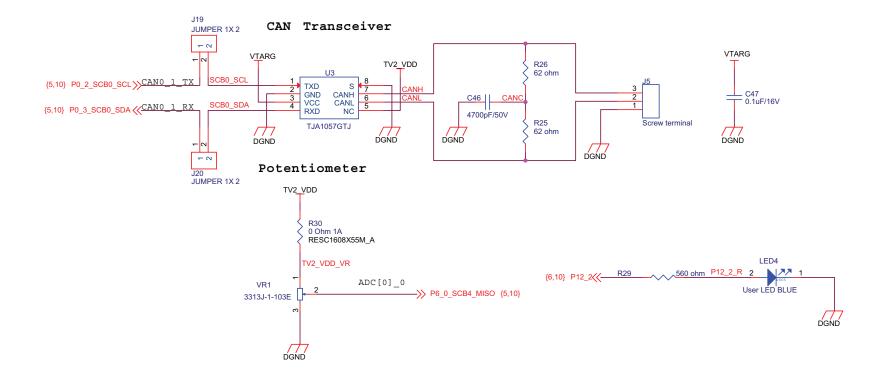




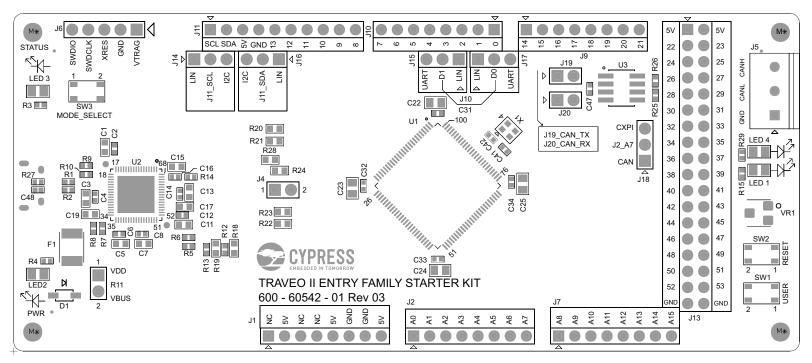
Figure B-11. CANFD, Potentiometer





### B.2 Layouts

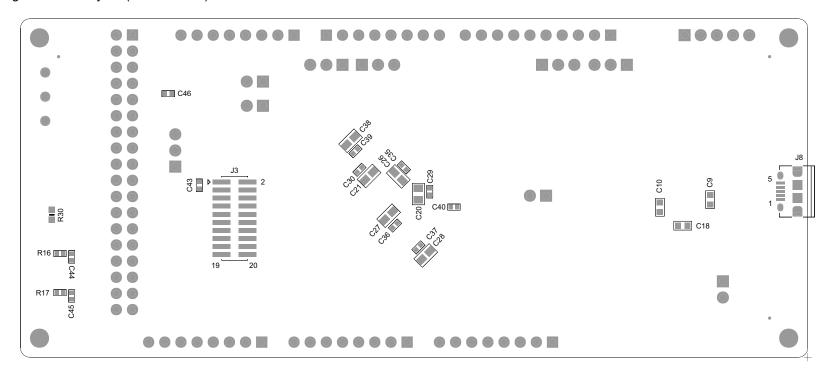
Figure B-12. Layout (Top View)



PRIMARY ASSEMBLY



Figure B-13. Layout (Bottom View)



SECONDARY ASSEMBLY

# **Revision History**



## **Document Revision History**

| Document Title: Traveo II Starter Kit User Guide |         |            |  |  |
|--|---------|------------|--|--|
| Document Number: 002-25314                       |         |            |  |  |
| Revision   | ECN#    | Issue Date | Description of Change  |  |
| **   | 6351876 | 10/16/2018 | New User Guide   |  |
|  | 6934769 | 07/27/2020 | Added Note in Introduction.  |  |
|  |         |            | Replaced Figure 2-1 and Figure 2-2   |  |
|  |         |            | Revised Table 2-1.   |  |
|  |         |            | Removed 2.1.1. Block Diagram because it is same as 2.1 Functional Overview.        |  |
|  |         |            | Replaced Figure 3-1 to Figure 3-8.   |  |
| *A   |         |            | Revised Table 3-1, Table 3-3, and Table 3-5.                                       |  |
|  | 030-703 |            | Changed Section 3.8 Arduino Compatible Pin Headers.                                |  |
|  |         |            | Revised Section 3.9 Debug Interface (Optional).                                    |  |
|  |         |            | Revised Table A-1.   |  |
|  |         |            | Added Section A.1.4 MODE SW.   |  |
|  |         |            | Replaced from "Figure B-1 to B-4" to "Figure B-1 to Figure B-11".                  |  |
|  |         |            | Replaced from "Figure B-5 to B-6" to "Figure B-12 to Figure B-13".                 |  |
| *B   | 6967760 | 09/18/2020 | Renamed "CYTVII-B-E-1M-SK Evaluation Board" to "Traveo II Starter Kit".            |  |
|  | 7106157 | 04/09/2021 | Renamed Rev 3.0 to Rev 03.   |  |
|  |         |            | Updated Board Size to 124 x 53 mm.   |  |
| *C   |         |            | Updated Board images Figure 2-1 and Figure 3-1 to Figure 3-8 and added Figure 3-9. |  |
|  |         |            | Updated remarks for oscillator in Table 2-1.                                       |  |
|  |         |            | Added text in 3.2 Main Clock.  |  |
|  |         |            | Added text in A.1.4 MODE SW.   |  |
|  |         |            | Added A.2 System Configuration.  |  |
|  |         |            | Updated Schematics in B. Schematics and Layouts.                                   |  |