VDU2501 UWB Anchor Datasheet

Document Information		
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Reversion History

Revision	Description	Producer	Approved	Date
V1.01	Initial Release	Benson	George	20180820
V1.02	Added internal interface instruction	Benson	George	20181220

Contents

1. General Description

VDU2501 is UWB Anchor solution based on DecaWave DW1000, adopting TDOA indoor location algorithm, can achieve high-precision positioning of tags which can be 10 cm. VDU2501 also support POE power supply, to shorten the installation time and reduce the difficulty of wiring.

Figure 1-1 VDU2501 Product Picture

2. Electrical Specification

Power Supply		
POE Power Supply	POE 48V	
DC Power Supply	2000mA@5V	
Power Consumption	150mA @5V	
Wireless Parameters		
Channel 2	3774~4243.2MHz	
Typical Transmit Power	41.3dBm/MHz	
Max Location Transmit Power	-17dBm/MHz	
Transmit Antenna	Matching different antenna according to customers' requirements	
Cover Area	30m~50m	

Report Method	100M Ethernet	
Anchor Clock Synchronization Method	UWB Wireless Synchronization	
Structure Parameters		
Weight	320g±10g (PCBA 60g±5g)	
Dimension	132mmX98mmX32mm (not include antenna size)	
Operating Environment		
Operation Temperature	-20℃~75℃	
Storage Temperature	-40℃~95℃	

Figure 2-1 Product Parameters

3 Applications Block Diagram

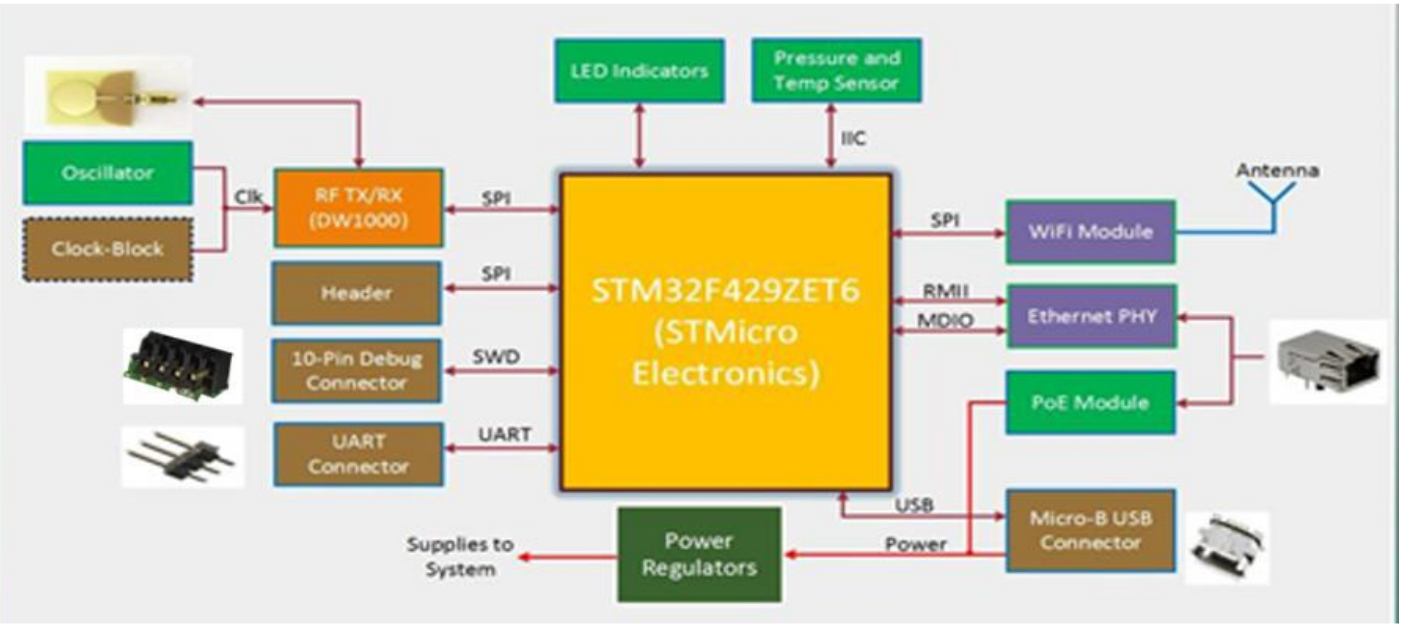


Figure 3-1 VDU2501 Applications Block Diagram

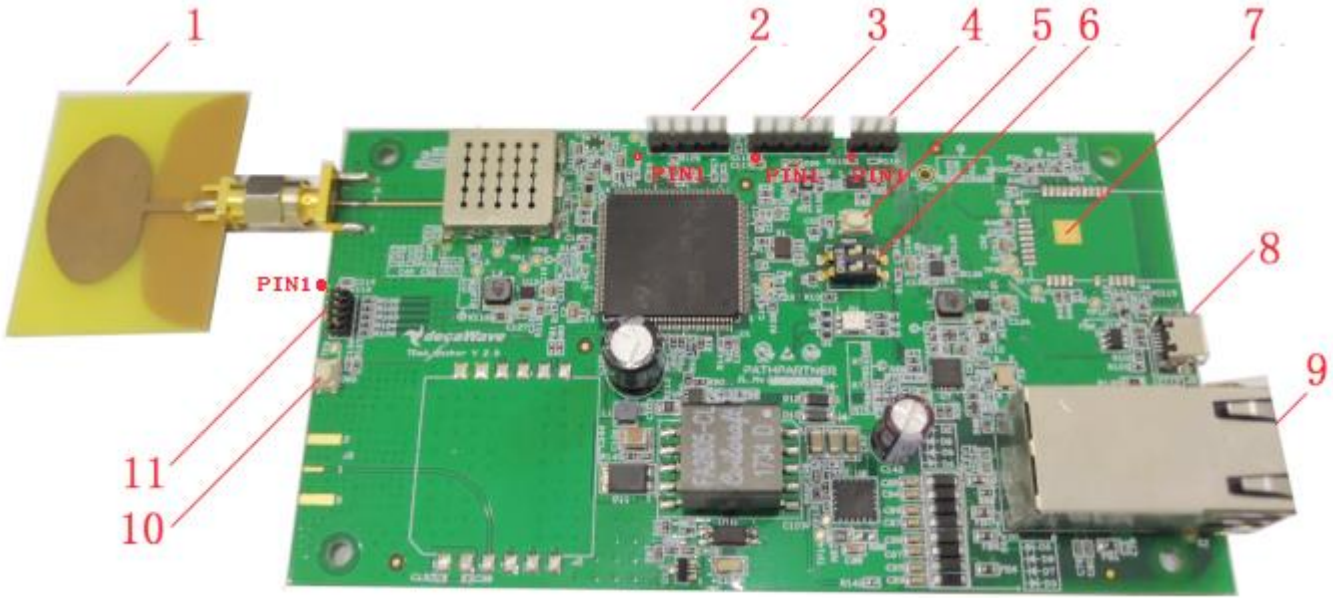
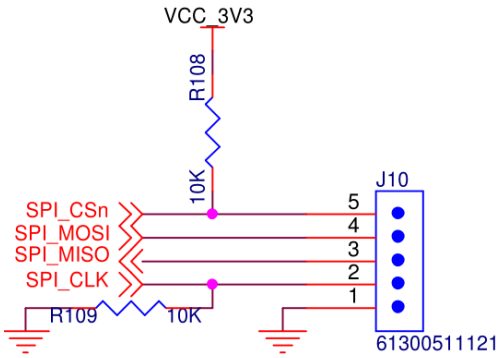
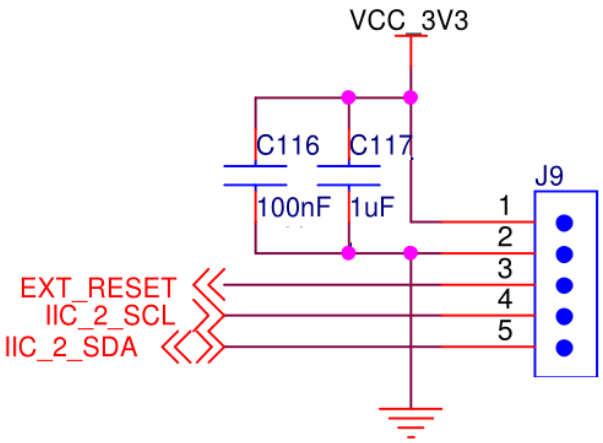


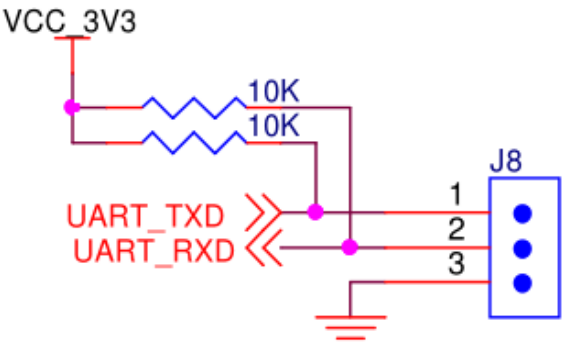
Figure 3-2 VD2501 PCBA Structure Diagram

NO.	Name	Description
1	UWB Antenna	Antenna type is matched according to customer's application
2	STM32 MCU SPI Interface	 J10 Pin / STM32 MCU 1 GND / GND 2 SPICLK / 1 PE2 3 SPIMISO / 4 PE5 4 SPIMOSI / 5 PE6 5 SPICSn / 3 PE4 Pin NO.1 please see Figure 3-2

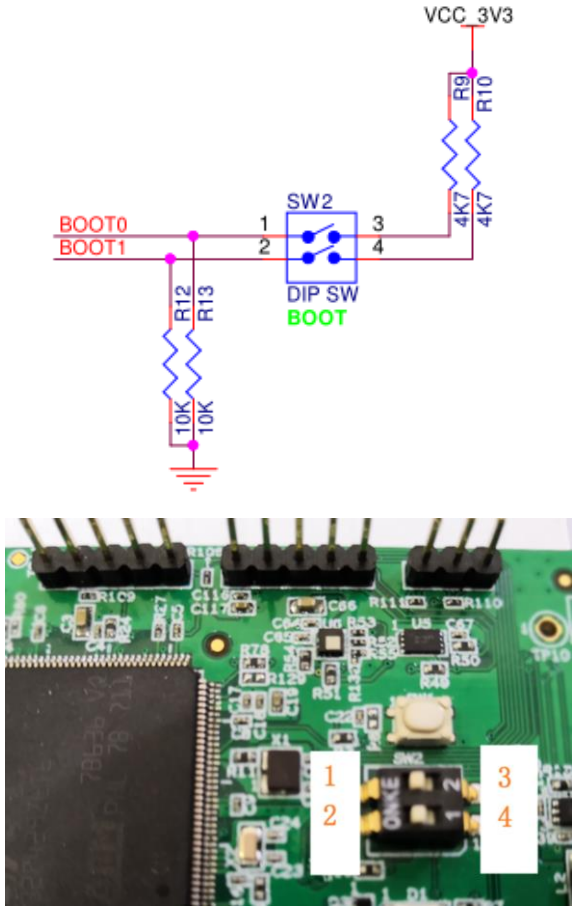
<table>
<tr>
<td>3</td>
<td>STM32 MCU

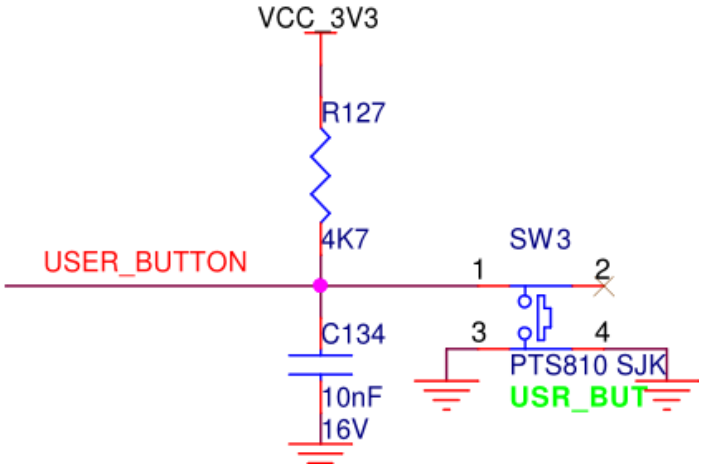
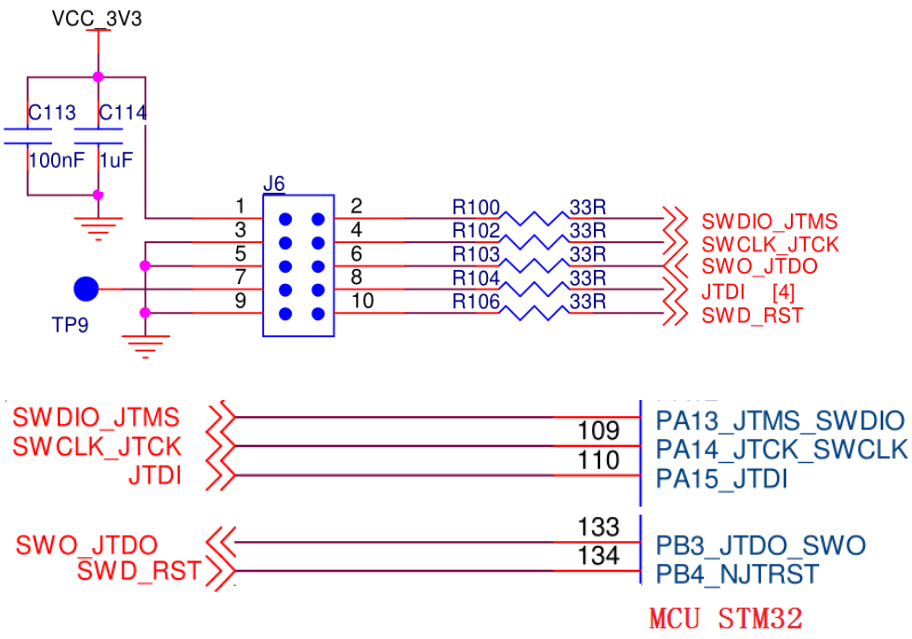
IIC Interface</td>
<td>


<table>
<tr><th>J9 Pin</th><th>STM32 MCU</th></tr>
<tr><td>1 VCC</td><td>VCC</td></tr>
<tr><td>2 EXT_REST</td><td>25 NRST</td></tr>
<tr><td>3 IIC_SCL</td><td>11 PF1</td></tr>
<tr><td>4 IIC_SDA</td><td>10 PF0</td></tr>
</table>
Pin NO.1 please see Figure 3-2
</td>
</tr>
<tr>
<td>4</td>
<td>STM32 MCU

UART Interface</td>
<td>


<table>
<tr><th>J9 Pin</th><th>STM32 MCU</th></tr>
<tr><td>1 UART_TXD</td><td>69 PB10</td></tr>
<tr><td>2 UART_RXD</td><td>70 PB11</td></tr>
<tr><td>3 GND</td><td>11 GND</td></tr>
</table>
Pin NO.1 please see Figure 3-2
</td>
</tr>
</table>

<table>
<tr><td>5</td><td>MCU Reset Button</td><td>Connect to P25 NREST Reset Pin of MCU</td></tr>
<tr><td>6</td><td>BOOT Configuration switch</td><td> 
</td></tr>
<tr><td>7</td><td>WIFI Module</td><td>Welding WiFi Module or not, depend on customer’s requirement, if need, the WiFi Module item No. is ATWILC1000-MR110PB</td></tr>
<tr><td>8</td><td>USB Interface</td><td>Can use for USB communication or 5V power supply of PCBA
<table>
<tr><td>USB Pin</td><td>STM32 MCU</td></tr>
<tr><td>VCC 5V</td><td>System 5V Power Supply</td></tr>
<tr><td>USB_DM</td><td>PIN103 PA11</td></tr>
<tr><td>USB_DP</td><td>PIN104 PA12</td></tr>
</table></td></tr>
</table>

9	Network Interface POE Power Supply Interface	System Network Communication, POE Power Supply Interface
10	User Button	 Link to STM32 MCU PIN7 PC13
11	STM32 MCU Program Download Interface	

4. Contact Information

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