

VDU1506 Datasheet

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设备清单/Product List

名称/Item	型号/Model Number	数量/Number	备注/Remark
超宽带 TWR 测距标签/ UWB TWR ranging tag	VDU1506	1 pcs	
吸合式充电线/ Pick-up charging cable		1 pcs	

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1. 产品介绍/Product Induction

VDU1506 内置高增益的 PA 和 LNA，是一款收发增强型支持 TWR 测距的测距/定位标签。主控芯片采用 NRF52832 实现低功耗的待机、定位包的收发控制，射频芯片采用 DW1000 来发送或者接收 UWB 的 TWR 数据包，进而在基站的解析下实现佩戴人员的高精度测距或者定位。

VDU1506 has built-in high gain PA and LNA, and is a transceiver enhanced ranging/positioning Tag with TWR ranging support. And the main control chip uses NRF52832 to realize the low power consumption of standby and location packet transceiver control, and the RF chip uses DW1000 to send or receive the UWB TWR data packet, so as to realize the high precision range measurement or positioning of the wearer under the analysis of Anc.

标签内部附带加速速度传感器，智能切换人员运动和静止时的定位频率，实现更低的功耗。

The tag is equipped with an accelerated speed sensor to intelligently switch the positioning frequency when the person is moving and stationary to achieve lower power consumption.

标签带有 SOS 按键可实现紧急求救功能，可用于安全监护场合如工厂、矿区等场所的人员定位和监护。另外标签内部附带马达，可以配合基站端的电子围栏，实现靠近/进入特定区域的安全告警功能或者人员社交距离告警功能，也可用于接收基站发出的紧急撤离信息，从而实现智慧工厂、工地的工人位置安全监控等。

The Tag is equipped with SOS button to realize the function of emergency call for help, which can be used for personnel positioning and monitoring in safety monitoring occasions such as factories and mining areas. In addition, The Tag is equipped with an internal motor, which can cooperate with the electronic fence of The Anc to realize the safety alarm function of approaching/entering a specific area or the social distance alarm function of personnel. It can also be used to receive the emergency evacuation information sent by The Anc, so as to realize the position safety monitoring of workers in smart factories and construction sites.

标签外壳使用简洁设计，采用超声压合技术，按键采用 3M 胶贴方式，实现 IP65 级别的防水设计，并且配备一个白色卡扣，方便人员佩戴。

The Tag shell uses simple design, using ultrasonic pressing technology, the button adopts 3M adhesive way, perfect IP65 level waterproof design, and equipped with a white buckle, easy to wear.



Figure 1-1 VDU1506 TAG

2. 工作参数/Working Parameter

Table 2.1 产品参数 Product Parameter

工作参数 /Working Parameter	描述/description
运动刷新频率/ Refreshing frequency when moving	1Hz
静止刷新频率/ Refreshing frequency when still	0.3Hz
功耗/ Power consumption	Standby: 50uA TX standard power: 300mA RX: 70mA
精度/ Precision	CEP90: 30cm
一次充满电使用时间/ General using time when fully charged	TWR4days (Max TX Power)
充满电时间/ Full charge time	About 3.5 hours
定位距离/ Positioning distance	TWR Ranging:1000m(Max TX power)
防护等级/ level of protection	IP66
电池容量/ Battery capacity	1000mAh
温度/ Temperature	Operational: -20~80℃ Charging: 0~45℃ Storeage: -20~40℃(<3month)
产品尺寸/ Dimension	57.4mm*38.8mm*21mm(±0.5mm)
UWB 参数/ UWB Parameter	
频率范围/ Frequency	Default 3.9936 ± 0.25GHz(with PA/LNA) support all channels ch1-5(Without PA)
协议标准/ Protocol	IEEE 802.15.4-2011 UW
BLE 参数/ BLE Parameter	默认开机只打开 30s Default off after 30 seconds.
存储/ RAM and ROM	512 kB flash/64 kB RAM
协议/ Protocol	Support BLE5.0 (No Longrange)
频率/ Frequency	2400MHz---2483.5MHz
充电适配器参数/ Power adapter parameter	
输出/ Output	DC 5V /1A

3. 产品使用 User Manual



Figure 3-1 VDU1506 Top View and Upward View

3.1 开机 Power On

长按标签按键，直到红色 LED 亮起和马达振动，松开按键，红灯会持续亮 3s 后熄灭，表示开机成功进入工作状态，之后红色 LED 开始闪烁（8S 一次）。

Long press the tag button, until the red LED lights up and the motor vibrates, release the button, the red LED will continue to be on for 3S and then off, Indicates successful startup and entry into working state, and then the red LED starts flashing (8S once).

3.2 SOS

标签在工作状态时，长按按键 3s 就会触发一次紧急呼救，此时蓝色 LED 会短暂闪烁，代表 SOS 触发成功。

When the tag is in the working state, press the button for 3S for a long time to trigger an emergency call. At this time, the blue LED will flash briefly, representing the success of SOS triggering.

3.3 接收报警 Receive Alerts

通过基站可以给标签发送紧急撤离信息，标签的 LED 会立刻闪烁（1S 一次），马达也会一直处于间隔振动状态。

An emergency evacuation message can be sent to the tag through the Anc., The LED of the tag will blink immediately (once every 1 second) and the motor will always vibrate at intervals.

3.4 关机 Power Off

在标签工作状态，连续按 4 下按键（短按 3 次长按 1 次，短按时间 1S 之内，长按时间达 3S），按键操作完，红色 LED 长亮 3S 后灭掉，表示关机成功。

When the tag is working, press the button 4 times continuously (short press 3 times and long press 1 time, short press time 1S, long press time up to 3S). After the operation of the button, the red LED will light up for 3S and turn off, indicating successful shutdown.

3.5 充电 Charging

将充电线的充电头通过磁力对准充电接口座吸住，标签进入充电状态，红色 LED 开始闪烁（1S 一次），充满时红色 LED 长亮。移除充电头后，红色 LED 熄灭，标签立刻进入关机状态。在进入充电状态时标签会重启并且之后处于开机状态。

The charging head of the charging line is aligned with the charging interface seat through magnetic force, The tag enters the charging state, the red LED starts to blink (once for 1S), and the red LED will be long bright when full. After removing the charging head, the red LED goes off and the tag immediately enters the shutdown state. The tag will be restarted when it enters the charging state and then turned on.

4. 产品安装 Product Setup

4.1 使用钻孔安装 Installation By Drilling

4.1.1 钻孔 Drill Hole

按照卡扣的孔间隔将安全帽打两个孔（M4<孔径<M10，推荐 M6；两孔中心 15MM±1MM）。

Punch two holes in the helmet according to the hole spacing of the buckle (M4 < aperture < M10, M6 is recommended; Center of two holes: 15MM±1MM).



Figure 4-1 打孔示意图 Diagram of Drilling



Figure 4-2 螺丝 screw

4.1.2 固定卡扣 Fixed Card Buckle

将标签的卡扣用螺丝固定在安全帽上。

Fix the label buckle on the helmet with screws.



Figure 4-3 固定卡扣 Fixed card buckle

4.1.3 固定标签 Fix The Tag

将标签的固定在卡扣上。

Fix the Tag on the buckle.



Figure 4-4 固定标签 Fix the tag

4.2 使用 3M 胶安装 Install With 3M Adhesive

4.2.1 使用 3M 胶布 Use 3M Tape

将 3M 胶布粘合到卡扣上，如下图：

Glue 3M tape to the buckle, as shown in the picture below:



Figure 4-5 固定 3M 胶 Fixed 3M tape

4.2.2 固定卡扣 Fixed Card Buckle

将标签的卡扣用螺丝固定在安全帽上。

Fix the label buckle on the helmet with screws.



Figure 4-6 固定卡扣 Fixed card buckle

4.2.3 固定标签 Fix The Tag

将标签的固定在卡扣上。

Fix the Tag on the buckle.



Figure 4-7 固定标签 Fix The Tag

5. 联系方式/Contact

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