VDU1506R规格书

VDU1506R datasheet

文档信息/Document Information	
标题/**Title**	VDU1506R 规格书 VDU1506R datasheet
文档类型/**Document Type**	规格书 Datasheet
文档编号/**Document No.**	WN-21070052
版本日期/**Version & Date**	V1.01　　　　　　16-June-2021
秘密等级/**Classification**	公开 Open

历史版本/Reversion History

版本号/Version	更新内容/Remark	制作人/Maker	日期
V1.01	起始版本/The initial version	Rowen	2021.6.16

设备清单/Product List

名称/Item	型号/Model Number	数量/Number	备注/Remark
超宽带双向测距标签 UWB TWR ranging tag	VDU1506R	1 pcs	
5V1A 电源适配器 5V 1A DC Power Adapter	A906-050100W-CN1	1pcs	

目录

1 产品介绍 Product Induction

VDU1506R 内置高增益的 PA 和 LNA，是一款收发增强型的测距/定位工卡标签。其主控芯片采用 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 TDOA/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。

VDU1506R has built-in high gain PA and LNA, which is a transceiver enhanced ranging/positioning work card label.Its main control chip uses NRF52832 to realize the low-power standby and location packet transceiver control, and the radio frequency chip uses DW1000 to send or receive UWB TDOA/TWR packets, so as to realize the high precision ranging or positioning of the wearer under the analysis of the base station.

安全帽标签内置加速速度传感器，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 safety helmet label has a built-in acceleration sensor, which can intelligently switch the positioning frequency when the person is moving and stationary to achieve lower power consumption.

安全帽标签带有 SOS 按键紧急求救功能，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。另外工卡内置马达，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。

Safety helmet label with SOS button emergency function, can be used for safety monitoring occasions such as factories, mining places and other personnel positioning and monitoring.In addition, the work card has a built-in motor, which can cooperate with the electronic fence of the base station terminal 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 emergency evacuation information, so as to realize the position safety monitoring of workers in smart factories and construction sites.

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

Safety helmet label shell uses simple design, using ultrasonic pressing technology, the key adopts FPC button 3M adhesive, perfect IP65 level of waterproof design.And equipped with a white buckle, easy to wear.

Figure 1.1 VDU1506R

2. 基本参数 Basic Parameter

Table 2.1 产品参数 Product Parameter

基本工作参数/Basic 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	0.33Hz
功耗 Power consumption	Standby: 20uA TX standard power: 335mA RX: 70mA
精度 Precision	CEP90：30cm
一次充电使用时间 General using time when fully charged	3 weeks@1Hz（Gain=0x4a @25℃）
定位距离 Positioning distance	1000m(Max TX power）
防护等级/level of protection	IP65
电池容量 Battery capacity	1000mAh
温度 Temperature	Operational: -20~80℃ Charging: 0~45℃ Storage: -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 256 KB flash/32 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	
输入 Input	AC 100~240V 50/60Hz 0.35A
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

长按按键，直到红色灯亮起和马达振动，松开按键，红灯会持续亮 3s 后熄灭，表示开机成功，红色指示灯进入呼吸灯模式，每 8s 闪一次。充电时工卡会重启并处于开机状态。

Long press the button until the red light is on and the motor vibrates. Then release the button, the red light will be on for 3 seconds and then go out, indicating that the power on is successful. The red indicator will enter the breathing light mode and flash once every 8 seconds. When charging, the card will restart and be in the power on state.

3.2 SOS

工卡开机成功后，长按按键 3s 就会触发一次紧急呼救，此时蓝色灯亮起，代表 SOS 触发成功。

After the card is turned on successfully, pressing the key for 3 seconds will trigger an emergency call for help.The blue light will be on indicating SOS is triggered successfully.

3.3 关机 Power off

开机后，连续按 4 下按键，每次间隔在 1s 以内，最后一下长按 3s 以上再松开，红灯常亮后灭掉表示关机成功。

After power on, press the key four times continuously, with an interval of less than 1 s, and at the last time, release the key after pressing more than 3 s. Then the red light will be on for a while and go out, it means that the power off is successful.

3.4 充电 Charging

将配套 5V 直流充电适配器接入市电 100~240V 交流电，另外一端通过磁力对准充电接口座吸住。红灯开始闪烁，当充满时候红灯长亮。移除充电器后，红灯熄灭，工卡会处于关机状态。充电完成时间约为 3.5 小时。

Connect the matching 5V DC charging adapter to the 100～240V AC power supply, and the other end is attracted by the magnetic force to the charging interface. The red light starts to flash. When it is fully charged, the red light will be on for a long time. After the charger is removed, the red light will go out and the card tag will be in the off state.The charging time is about 3.5 hours.

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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