



Product Name : Pudu Watch
Model Name : PW1

快速指南 V1.0

QuickGuide

CN 1-12

EN 16-28

声明

Copyright © 2019 深圳普渡科技有限公司版权所有，保留所有权利。

未经深圳普渡科技有限公司明确书面许可，任何单位或者个人不得擅自仿制、复制、誊抄或转译本说明书部分或者全部内容，且不得以营利为目的进行任何方式（电子、影印、录制等）的传播。本说明书所提到的产品规格和资讯仅供参考，如果内容更新，恕不另行通知。除非有特殊规定，本说明书仅作为使用指导，所作陈述均不构成任何形式的担保。

使用者快速指南

目录

产品介绍	1
设备部署	3
售后服务	13

产品介绍

感谢您选择普渡科技产品。

本产品需配合普渡科技好啦机器人与 LoRa 通信调度中控使用。LoRa 呼叫通知手环（下文简称“手环”）是机器人与 LoRa 通信调度中控（下文简称“中控”）的通信消息发起与接收终端设备。好啦机器人的整套呼叫业务通信系统基于自组网的 LoRa 通信方案，在整套方案运行期间，手环发起所有任务请求，发送至中控做任务分配与决策中继，再转接任务至机器人，由机器人返回执行结果至中控，再行返回执行状态到手环，因此，为避免呼叫系统不稳定，我们建议您在完成设备部署后，如非必须，不要轻易切断网关的供电，也不要轻易移动网关的位置。

期望好啦机器人可以更好的为您提供服务。

产品特性

产品特性	描述
工作频段	470-510MHz, 默认工作频段 490MHz 863-870MHz, 默认工作频段 868MHz(H8) 902-928MHz, 默认工作频段 915MHz(H9) 917-923.5MHz, 默认工作频段 920MHz(H9K)
NFC 读写卡	支持
液晶显示	1.3 寸 TFT 液晶屏, RGB 全彩色, 分辨率 240×240
电池容量	≥300mAh
理论续航时长	24H [Ⓞ]
待机电流消耗	1.1mA
通信距离	≥400m [Ⓞ]

Ⓞ 理论续航时间按照每 30 分钟发起一次呼叫，在实验室中测试所得

Ⓞ 测试条件：晴朗、空旷、最大功率、天线增益 5dBi、高度大于 2m、2.4Kbps 空中速率

产品特性

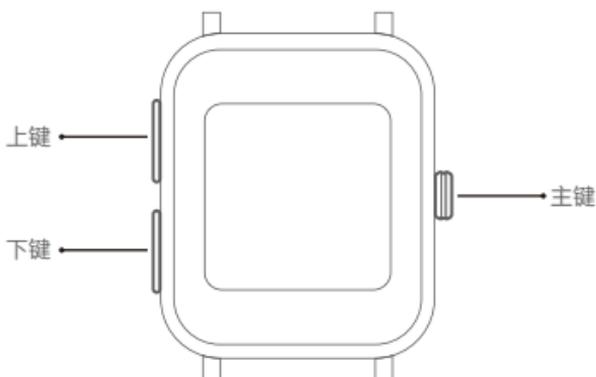
产品特性	数量
LoRa 呼叫通知手环 (型号 PW1)	1
手环充电座	1
USB-A 充电数据线	1
保修卡	1
用户手册	1
出厂合格证	1

注意：在安装网关之前，请确保包装盒中应有的配件齐全，如果发现包装中任何东西缺失或损坏，请立即联系您的卖家

使用须知

1. 呼叫通知手环既可以表带形式戴在手腕，也可固定在充电座，粘在需呼叫的地方；
2. 手环有一定的防水能力，可以适当沾水，不影响产品性能，但产品不接受任何暴力形式的冲水或泡水处理，也无法避免在水蒸气环境下的防水；
3. 手环表面有 Led 状态灯，当手环处于呼叫（蓝色），充电（绿色），低电量（红色）状态下，状态灯有不同显示；
4. 请勿在环境温度低于 -20°C 或者高于 40°C 环境中使用手表，请勿将任何液体洒入手表内部；
5. 对于有些环境，因为存在较多包厢墙壁，导致边缘地区中控信号不佳，此时需要调整中控位置，使其尽可能覆盖环境，如果多次调试仍然无法覆盖，则证明此类环境已达到中控的性能极限，不应强求。

手环按键使用说明



设备部署

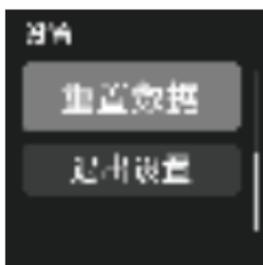
硬件部署流程

1. 充电座底部有一次性黏贴片，撕下覆膜即可暴露黏贴面，充电座支持粘贴在桌面与墙壁，当手环作为呼叫器使用时，请重点考虑充电线长度与充电座位置以部署充电座。
2. 充电座完成部署后，只需取下手环的表带，以磁吸形式吸附在充电座即可。
3. 如果手环作为移动呼叫手表所用，则需配备呼叫卡片，呼叫卡片配附在中控中，每一个中控默认配置 100 片呼叫卡片。
4. 手环在执行刷卡呼叫时，需先按下屏幕右侧主键，点亮屏幕，再行触碰呼叫卡片以发起呼叫。

手环接入系统流程

手环接入系统流程

1. 好啦机器人完成环境部署，建图，添加各类元素后，即可启动连接中控流程。
2. 请按照中控说明书，完成中控连接。
3. 完成中控连接后，需长按主键启动手环，选择当前中控对应选择信道。（如左图）
4. 首次启动手环，设备自动进入信道选择界面，如果手误选择了信道，则可通过重置数据再次刷新手表，进入信道选择界面，操作流程如下：
 - a) 长按上键 3 秒，进入设置界面
 - b) 按下键，选中重置数据



c) 按主键，进入重置数据二次确认界面



d) 按上键，选中重置按钮，在此按主键确认重置数据



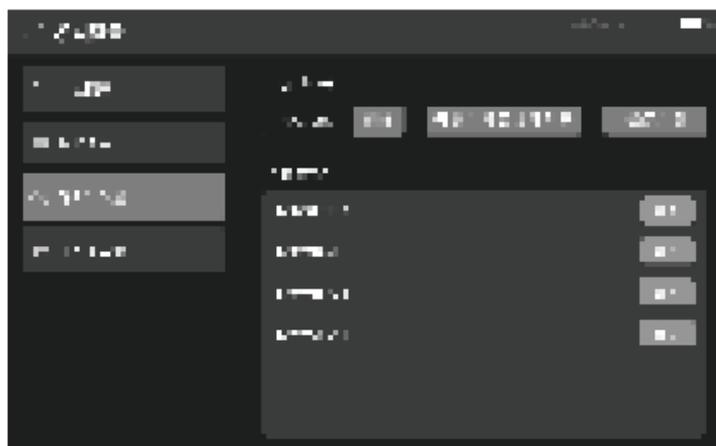
e) 设备重置完成后自动重启，即进入信道选择界面

f) 在信道选择界面可按上键或者下键选中信道，按主键选择信道

g) 完成信道选择后，设备进入等待中控广播界面



5. 在机器人的呼叫设置 → 呼叫器设置界面，点击 ，随机一个呼叫码，并点击 ，启动呼叫广播。



6. 处于等待中控广播的手环界面即可接收到对应呼叫码的接入消息，点击接入，手表即弹出接受结果。

(如果添加失败，请检查手表的与中控的通信距离，建议在添加期间，手表，网关与机器人相距不要超过 10 米；另如果多次添加失败，建议重置手表，并关闭添加广播，刷新呼叫码，再次广播尝试添加)



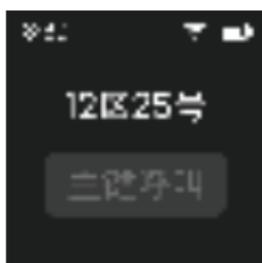
7. 完成匹配后，请点击 ，关闭呼叫器添加广播【非常重要】。

8. 完成匹配后，手环即启动地图版本校验



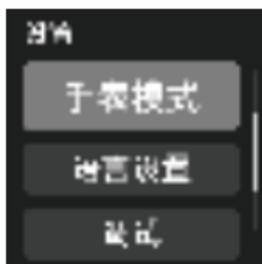
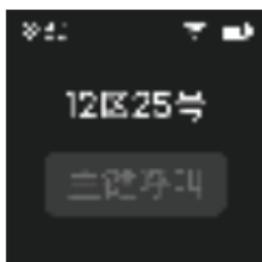
9. 对于首次添加的手环，或者地图发生变更，手环都需要更新地图（同步地图时间较长，建议耐心等待，一般耗时 3-5 分钟不等，取决于机器人地图的面积与对应的餐桌数量）。

10. 完成地图同步后，手环进入呼叫主界面，手环会默认选中第一个餐桌号码

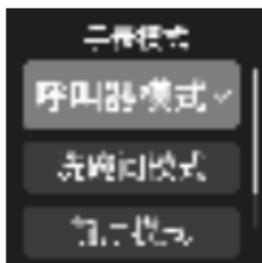


手环模式设置流程

1. 在此界面长按上键 3 秒，即可进入设置界面
2. 按下键，在设置界面中选中手表模式，点击主键进入



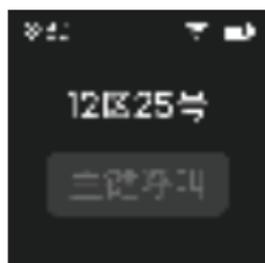
3. 手环提供三种模式，分别是：
 - a) 呼叫器模式：只可按下主键发起任务呼叫，不可刷卡发起呼叫
 - b) 洗碗间模式：机器人抵达洗碗间后，此模式下的手环可收到机器人抵达洗碗间的消息通知
 - c) 前厅模式：不可按下主键发起任务呼叫，可通过接触呼叫卡，发起刷卡呼叫请您按照需求选择手表的模式。



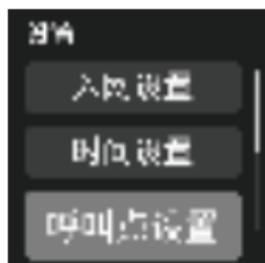
4. 完成模式选择后，手表会重启进入主界面。

手环呼叫点设置流程

1. 在此界面长按上键3秒，即可进入设置界面。



2. 选中呼叫点设置，按主键进入。



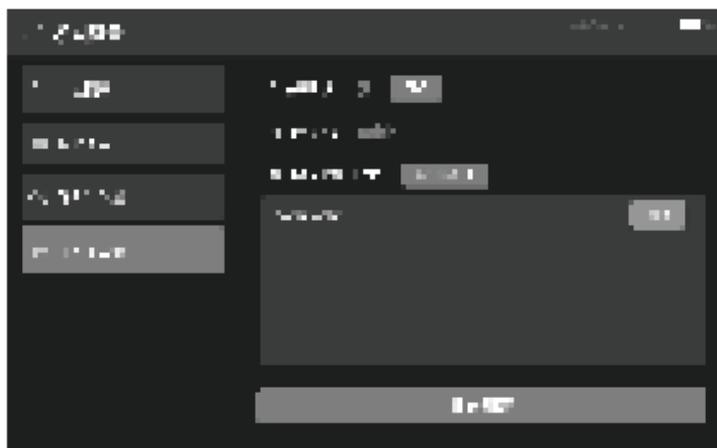
3. 呼叫点设置界面内展示地图内全部可发起呼叫请求的餐桌号或者包厢，按上键或者下键可选中，按主键可确认选中桌号。



4. 完成选中后设备默认返回设置界面，用户需点击上键回到设置界面的返回按钮，再次点击上键，返回至手环主界面。

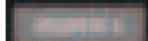
呼叫卡添加流程

1. 在此界面长按上键3秒，即可进入设置界面。



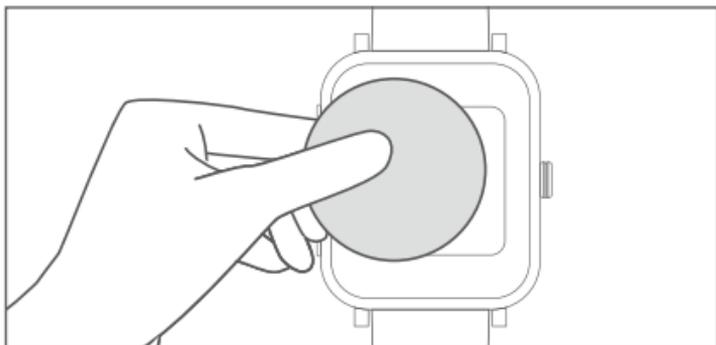
2. 点击 ，在弹出界面选择需要添加呼叫卡的餐桌或者包厢号码，点击确定，即选中此桌号或者包厢



3. 点击 ，弹出如下界面



4. 此时请使用完成地图同步并部署完成的手环，取出随中控附带的呼叫卡，点亮手表，接触手表屏幕正面



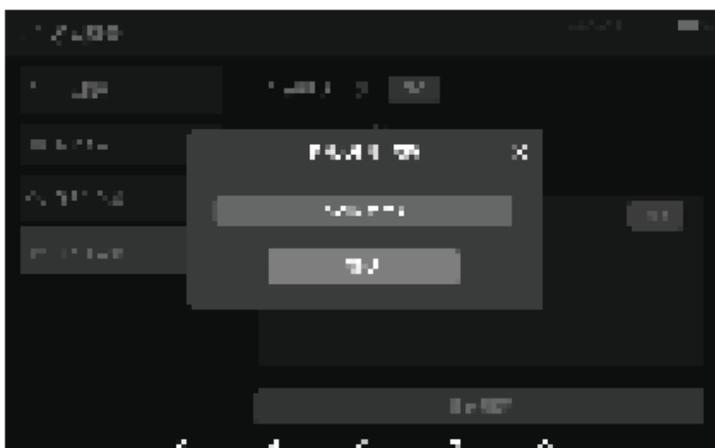
5. 手环发生振动即代表呼叫发起，此时手环界面如右图所示



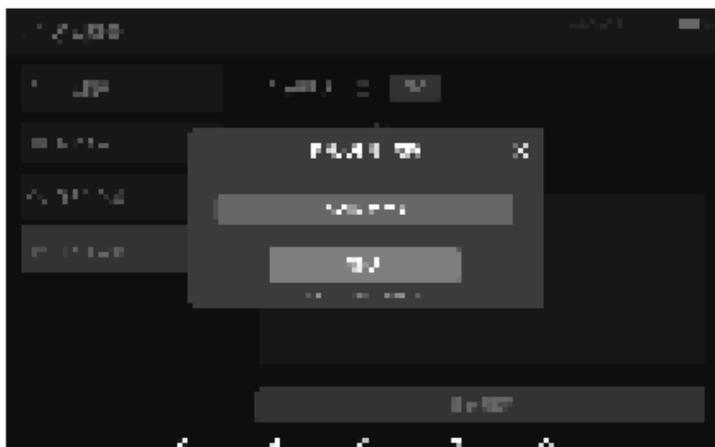
6. 添加呼叫卡流程将迅速完成，所以手环会立刻跳转至已抵达



7. 此时机器人界面添加呼叫卡弹窗也将显示此对应的呼叫卡号码



8. 点击确认即完成添加（注，如果当前所添加呼叫卡已经在其他餐桌完成了添加，则此界面将提示已添加结果，并且无法添加成功）



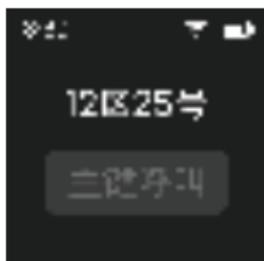
9. 点击保存配置，即可将当前所添加呼叫卡配置完成保存



手环使用流程

前厅模式手环发起呼叫流程：

1. 手环数秒内无操作，将进入熄屏低功耗状态，此时需点击主键，点亮屏幕。



2. 点亮屏幕后，用手环接触呼叫卡片，即可通过呼叫卡片发起对机器人的呼叫（前厅模式的手环只能通过接触呼叫卡片发起呼叫）。



3. 完成任务呼叫后，任务会先进入队列（呼叫结果由中控返回）



4. 当任务由机器人启动执行时，界面将跳转为正在赶来。



5. 机器人抵达目的地后，界面跳转为已抵达，展示若干秒后返回至呼叫主界面。



6. 在机器人抵达之前，用户可按下主键，尝试取消呼叫。



7. 按上键，可选中“是”按钮，再点击主键，即可取消呼叫。



呼叫器模式手环发起呼叫流程

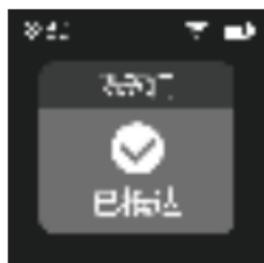
1. 呼叫器模式手环任务发起呼叫流程与前厅模式一致。
2. 但是呼叫器模式手环只能通过按下主键发起呼叫。

洗碗间模式手环工作流程

1. 洗碗间手环不能发起呼叫，只能接受机器人抵达洗碗间的消息通知



2. 机器人抵达洗碗间后，洗碗间手环可收到机器人抵达的消息通知



3. 按下主键，可查看所有机器人任务执行状态



售后服务

1. 免费保修服务

公司承诺符合以下情况，自产品收货之日起，在产品有效保修期内（产品的不同部件保修期限有所不同），符合如下情况的将提供免费的产品保修服务。

- 自购买产品在规定的产品保修期限内正常使用，出现非人为的质量问题；
- 无擅自拆机、无非官方说明书指引的改装或加装、其它非人为引起的故障；
- 产品序列号、出厂标签及其他标示无撕毁、涂改迹象；
- 提供有效的购买证明、单据及单号；
- 免费保修期内更换的损坏备件属公司所有，应按公司要求寄回。

2. 保修范围外的售后服务

对于不在免费保修范围内的售后服务（超出保修期或者在保修期内不符合免费保修条款），公司提供收费售后服务。

- 公司官方提供线上和远程技术支持渠道，客户需配合技术工程师进行问题诊断和故障处理；
- 经技术工程师诊断必须上门解决问题的，指派专业技术人员提供上门服务；
- 不在免费保修范围内的售后服务，需按照要求填写《售后服务记录表》。服务费用包含：售后维护费用以及备件费用。

3. 售后服务咨询

如果您有任何问题需要咨询，请联系客服热线：400-0826-660。

售后人员服务工作时间是：每周一至周六，上午 9:30 至 12:00，下午 13:30 至 18:30。

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any changes or modifications not expressly approved by the party responsible for compliance

could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC ID: 2AXDWPM

IC Caution:

English:

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions: 1. This device may not cause interference. 2. This device must accept any interference, including interference that may cause undesired operation of the device.

French:

L' émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d' Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L' exploitation est autorisée aux deux conditions suivantes : 1. L' appareil ne doit pas produire de brouillage; 2. L' appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d' en compromettre le fonctionnement.

Specific absorption rate (SAR):

This Pudu Watch meets the government's requirements for exposure to radio waves. The guidelines are based on standards developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a margin of safety designed to ensure the safety of all people regardless of their age or health.

The FCC Statement of Exposure to RF and the SAR limit for the United States (FCC) is 1.6 W/kg average for each gram of tissue. This device was tested for typical operations of use on the body, with the back of the Watch at 10mm from the Front-of-Face and Watch at 0mm from the Back-of-Wristbands. To maintain compliance with FCC RF exposure requirements, use the Watch at 10mm from the Front-of-Face and Watch at 0mm from the Back-of-Wristbands. The use of belt clips, covers and similar accessories must not contain metallic components in their assembly. The use of accessories that do not meet these requirements may not meet FCC RF exposure requirements and should be avoided.

Functioning in the body

This device was tested for typical operations of use in the body. To comply with RF exposure requirements, use the Watch at 10mm from the Front-of-Face and Watch at 0mm from the Back-of-Wristbands, including the antenna. Third-party accessories such as belt clips, covers and similar accessories used with this device should not contain metallic components, accessories that do not meet these RF exposure requirements and should be avoided from use on the body. Use only the supplied antenna or an approved antenna.

Disclaimer

Copyright © 2019 Shenzhen Pudu Technology Co., Ltd. All rights reserved.

This document may not be copied, reproduced, transcribed or translated, in part or in whole, by any persons or organizations, or be transmitted in any form or by any means (electronic, photocopy, recording, etc.) for any commercial purposes without the prior written permission of Shenzhen Pudu Technology Co., Ltd. The product specifications and information mentioned in this document are for reference only and are subject to update without prior notice. Unless otherwise specified, this document is used as a guidance only and comes with no warranties of any kind.

Quick Guide

Contents

Product Overview	17
Configurations	19
After-sales Services	29

Product Overview

Thank you for choosing our product.

This product is intended to be used with Pudu Holabot and LoRa Communication Console. LoRa Wristband Pager (hereinafter the "Wristband") is the terminal that sends and receives messages between the robot and LoRa Communication Console (hereinafter the "Console"). The entire paging communication system of Holabot is built on the LoRa communication scheme that runs over an ad hoc network. The scheme works in the following way: the Wristband initiates all task requests, sends them to the Console for task assignment and decision relaying, and then transfers tasks to the robot; the robot returns the execution result to the Console, and then returns the execution status to the Wristband. Therefore, for the stable operation of the paging system, it is not recommended, unless absolutely necessary, to power down or move the gateway once configurations are completed.

We hope that Holabot will serve your needs better.

Product Features

Features	Description
Working Frequency	470-510 MHz, 490 MHz by default 863-870MHz, 868MHz(H8)by default 902-928MHz, 915MHz(H9)by default 917-923.5MHz, 920MHz(H9K)by default
NFC Read-Write Card	Available
LCD	1.3-inch TFT LCD screen, RGB full color, 240 x 240 pixels
Battery Capacity	≥ 300mAh
Theoretical Battery Life	24H [Ⓞ]
Standby Current	1.1mA
Communication Distance	≥ 400m [Ⓞ]

Ⓞ The theoretical battery life is derived in the laboratory by initiating one call every 30 minutes.

Ⓞ Testing conditions: On a sunny day, in an open place, and at the maximum power, a antenna gain of 5 dBi, a height greater than 2 m, and a data rate of 2.4 Kbps.

Product Features

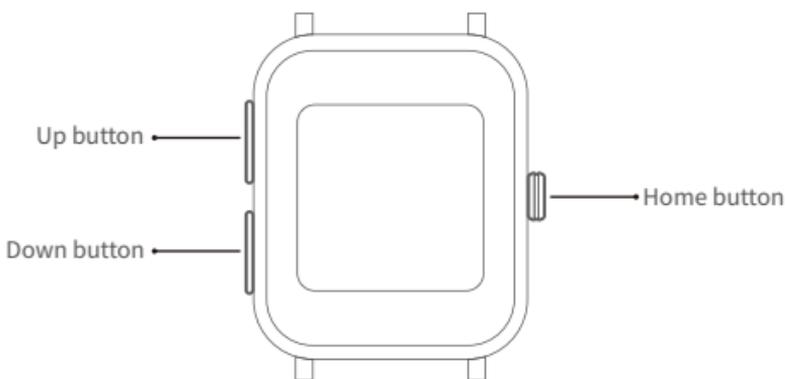
Item	Qty
LoRa Wristband Pager (PW1)	1
Charging Dock 1	1
USB-A Charging Cable	1
Warranty Card 1	1
User Manual 1	1
Quality Certificate	1

Note: Before installing the gateway, check all the accessories included in the package. If anything is damaged or missing, please contact your seller immediately.

Notes for Use

1. You can either wear the Wristband around your wrist, or put it onto the charging dock and affix it anywhere you want the call to be initiated.
2. The Wristband is water-proof and can still work properly upon reasonable exposure to water. However, it cannot withstand any violent flushing or soaking, or provide resistance to water in a steam environment.
3. The Wristband comes with an LED indicator to indicate the Wristband's status in different colors, i.e., calling in blue, charging in green, and low battery in red.
4. Do not use the Wristband in an environment with a temperature lower than -20°C or higher than 40°C , and protect the Wristband from any liquid ingress.
5. In some circumstances, the walls of private dining rooms may impair the Console's ability to send and receive signals around the edges. In this case, reposition the Console to maximize its coverage. If the signal is still poor after repeated adjustments, it means this environment is beyond the coverage of the Console.

Buttons on the Wristband



Configurations

Configuring the Hardware

1. There is a disposable adhesive sheet on the bottom of the charging dock. Remove the film to expose the adhesive surface. You can stick the charging dock onto a table or a wall. When the Wristband is used as a pager, take the length of the charging cable and the position of the charging dock into consideration in the configuration.
2. Once you have configured the charging dock, simply remove the strap of the Wristband and attach it to the charging dock through the magnetic force.
3. When the Wristband is used as a mobile calling watch, calling cards are required. These cards are included with the Console, 100 cards for each Console by default.
4. For the Wristband to initiate a call upon card swiping, press the home button to the right of the screen to light up the screen, and then touch the calling card to initiate a call.

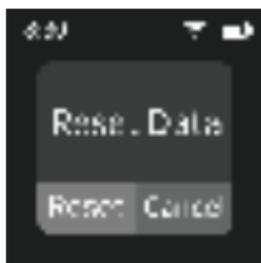
Connecting the Wristband to the System

Connecting the Wristband to the System

1. Once you have got the environment ready, built the map and added elements for Holabot, you can get started with connecting the Console.
2. Follow the Console User Manual to go through the connection steps.
3. After the connection is complete, press and hold the home button to start the Wristband, and select the channel corresponding to the current Console.
4. If the Wristband is started for the first time, you will be automatically directed to the channel selection screen. If you accidentally choose the wrong channel, you can reset the data to refresh the Wristband and open the channel selection screen again by the following operations:
 - a) Press and hold the Up button for 3 seconds to go to "Settings".
 - b) Press the Down button and select "Reset Data".



c) Press the home button to go to the confirmation screen for data resetting.



d) Press the Up button, select "Reset" and press the home button again to confirm the operation.



e) After the data is reset, the device restarts automatically and the channel selection screen appears.

f) Use the Up and Down buttons to select a channel and press the home button to confirm your selection.

g) After you are finished, you will be directed to the "Awaiting Broadcast from Console" screen.



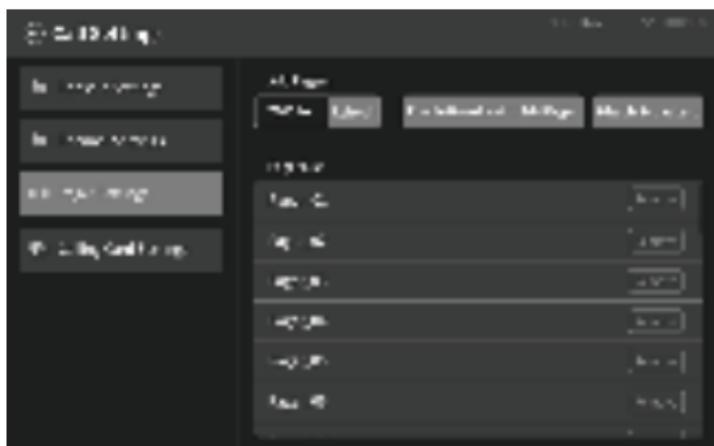
5. On the "Call Settings" → "Pager Settings" screen of the robot, tap



to refresh a random calling number, and tap



to initiate a broadcast.



6. The "Awaiting Broadcast from Console" screen of the Wristband changes to display a message prompting you to accept the calling number. Tap "Accept" and you will see a message showing the result of the operation.



7. After you are finished, tap **Disable service** to disable the broadcast for adding pagers (VERY IMPORTANT).
8. Once the pairing is successful, the Wristband will start the map version checking process.

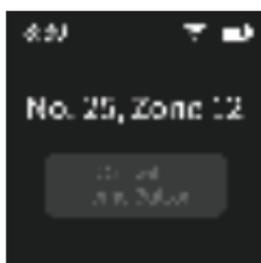


9. If the Wristband is added for the first time or the map has changed, a map update will be required. (It generally takes 3 to 5 minutes to update the map, depending on the area covered by the map and the number of tables.)
10. Once the map is updated, the main calling screen appears with the first table number selected by default.



Setting the Wristband Modes

1. On this screen, press and hold the Up button for 3 seconds to go to "Settings".



2. Press the Down button to select "Wristband Modes" and press the home button.



3. Three modes are available:

a)Pager Mode: A call can be initiated by pressing the home button, but not by swiping the calling card.

b)Dish-washing Room Mode: Once the robot arrives at the dish-washing room, the Wristband receives a message notifying that the robot has arrived.

c)Lobby Mode: A call can be initiated by swiping the calling card, but not by pressing the home button.

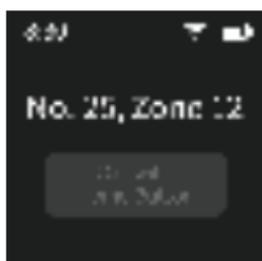
Please select the desired mode.



4. After a mode is selected, the Wristband will restart and display the home screen.

Setting the Calling Point

1. On this screen, press and hold the Up button for 3 seconds to go to "Settings".



2. Select "Calling Point Settings" and press the home button.



3. The "Calling Point Settings" screen shows all the tables or private dining rooms that can initiate call requests within the map. Press the Up or Down button to select a table number or private room, and press the home button to confirm your selection.



4. After the selection, you will be directed back to the "Settings" screen by default. Press the Up button to select the "Back" button on the "Settings" screen and press the Up button again to return to the home screen.

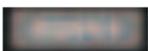
Adding a Calling Card

1. On the robot screen, tap "Calling Card Settings".



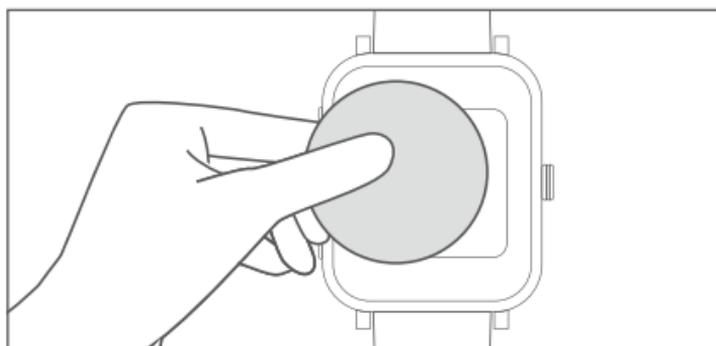
2. Tap  and select the number of the table or private room for which you want to add a calling card on the screen that appears. Tap OK to confirm your selection.



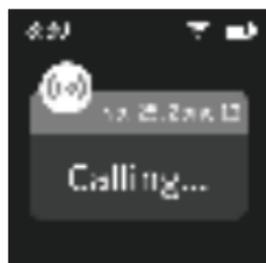
3. Tap  and the above screen appears.



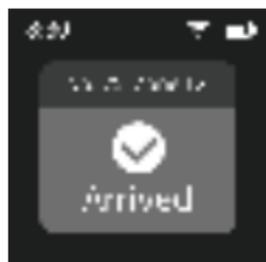
4. Now, use the Wristband for which you have finished the map update and other configurations, take out the calling card included with the Console, light up your Wristband, and touch the front of the screen.



- 5. When a call is initiated, the Wristband vibrates and the above screen appears.



- 6. As the card adding process gets done quickly, you will soon be directed to the "Arrived" screen.



- 7. The number of the calling card to add will appear on the robot screen.



- 8. Tap Confirm to complete the process.(Note: If the card to add has been added for another table or private room, you will be prompted that the card has been added, and the operation will fail.)



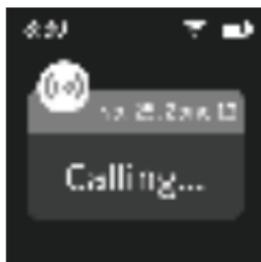
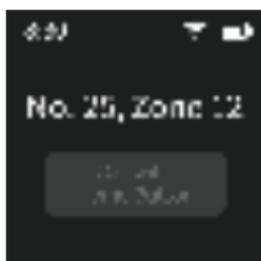
- Tap "Save Configurations" to save the card you have added.



Using the Wristband

Initiating a Call in Lobby Mode

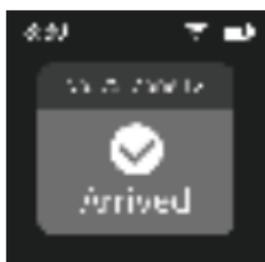
- The screen will automatically turn off when the Wristband is left idle for several seconds. Press the home button to light up the screen.
- Once the screen lights up, touch the calling card with the Wristband to initiate a call to the robot. (A Wristband in Lobby Mode can initiate a call only by touching the calling card.)
- Once the call is initiated, the task will be put into the queue. (The call result will be returned by the Console.)



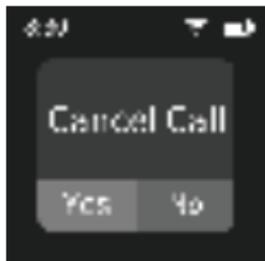
- When the robot starts to execute the task, the "Coming" screen appears.



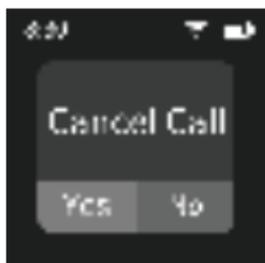
- Once the robot arrives at the destination, the screen changes to "Arrived", which stays put for several seconds before returning back to the home screen.



- You can press the home button to try to cancel the call before the robot arrives.



- Press the Up button to select "Yes", and press the home button again to cancel the call.



Initiating a Call in Pager Mode

- You can initiate calls in Pager Mode using the same steps as in Lobby Mode.
- However, Pager Mode only allows a call to be initiated by pressing the home button.

Working in Dish-washing Room Mode

1. In Dish-washing Room Mode, the Wristband cannot initiate calls; it can only receive messages about the arrival of the robot.



2. Once the robot arrives at the dish-washing room, the Wristband receives a message notifying that the robot has arrived.



3. Press the home button to view the status of all tasks.



After-sales Service

1. Free Warranty

When the robots are under warranty (different warranty periods for different components, calculated from the receipt of the robot), Pudu offers a free warranty if.

- Defects are caused by non-human factors.
- There are no unauthorized disassembly, modification or addition not included in the user manual, or other faults caused by non-human factors.
- The robot S/N sticker and other labels are not removed or altered.
- Effective purchase certificate, receipt, and order number are provided.
- Damaged components are sent back to Pudu as required.

2. Paid Services

Pudu offers paid after-sales services when the robot is out-of-warranty or the policy of free warranty is not applicable.

- Online and remote technical support is provided, and customers should cooperate with engineers for diagnosis and troubleshooting.
- Technicians will offer on-site service when necessary.
- The "After-sales Service Form" should be filled when the policy of free warranty is not applicable; Customers should pay for both maintenance and spare parts.

3. Contact Us

For any questions, please call +86-400-0826-660.

Working hours: 9:30 - 12:00, 13:30 - 18:30, Monday to Saturday (GMT+8)

