PTL Base Station

Product Manual

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1. Contents

1.1 Product Introduction

Base Station is the third-generation wireless base station. It is a new Active RFID fixed base station which implements bidirectional communication between the host system and the new ESL Tags. Century produces the base station for its electronic shelf label system (ESLs) and other products.

1.2 Dimensions and Weight

Dimensions:140mm x 42mm Weight: 250g (approx)

1.3 Unpacking and Checking

In order to facilitate future storage and transportation, please keep the carton and packing materials after opening them. In addition to the base station, there is also included the following products and accessories:

Item	Name	Qty	Comment
1	PTL Base Station	1	
2	Power Adapter	1	
3	Phillips pan head self-tapping screws	4	
4	Fitting	1	
5	Warranty card	1	

1.4 Features and Usage

Main Features: Wireless communication with ESL with easy installation,operation of the labels, large signal coverage radius and supports many labels.

Interface: TCP / IP connection with ESL server, 2.45GHz ISM with ESL labels. LED: Blue - Power, Red - System, Yellow - Data Tx, Green - Data Rx.

The TS-PTLS-2001 maximum communication distance is 30-50 meters (Line of Sight and open environment).

Compared with base stations of similar nature the PTL bases tation has an attractive appearance, ease of installation, and has good structural design, with an IP53 protective environment rating. 1

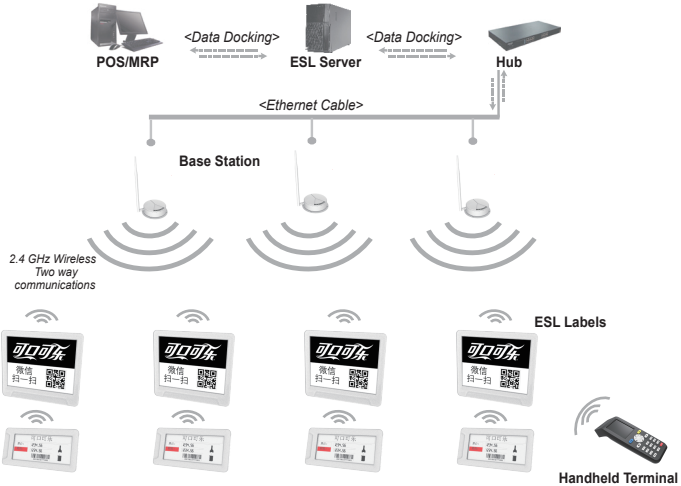
1.5 Environmental Requirements

Temperature Range: -10°C to +55°C(14°F to +131°F)Humidity range: 20% to 95%Supply Voltage: AC/DC Adapter. Base Station Input Voltage 6VDC, 2.3A

1.6 Electronic Shelf Label System Overview

An electronic shelf label system (ESLs) consists of electronic shelf labels, ESL server, switches, base stations, Handset and software. The product information in the database will be copied from the host computer to the electronic shelf label system application software; then updated prices or other information will be sent via Ethernet (or serial port) to the Base Stations which will then deploy the update throughout the entire store via 2.4GHz wireless transmission Each part is described below:

ESL server: Running ESL System;Switch: For data exchange between the base station and the server;Base Station: For data exchange between the ESL and the Hub;Electronic Shelf Label: Updatable display for stored server information;Handheld Reader: Used to bind labels to merchandise and for administration.



Electronic shelf label system (ESLs) Connection Diagram

2. Technical Characteristics

2.1 Key Performance Areas

Uses 2.4GHz frequency within ISM band, worldwide compatibilityGreenTags proprietary wireless protocol to ensure data securitySupports Power over Ethernet (PoE) applicationGreenTags independent research to specifically support ESLThe ability to cascade Base Stations to reduce installation complexity and cost.

2.2 Detail Specifications

(1) Electrical Characteristics

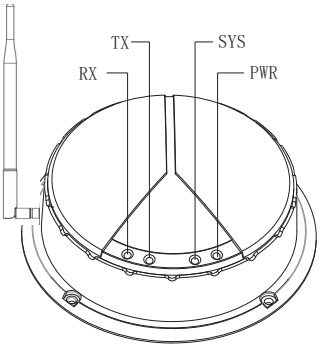
Parameter	Specification
Power Supply	DC6V, 2.3A
	Supports 802.3af POE Power Supply
Standby Current	650mA
Operating Current	800mA
Network Interface	10/100M Ethernet UDP Protocol
Expansion Interface	10/100M Ethernet expansion port for a single Base Station extension
IP Rating	IP53

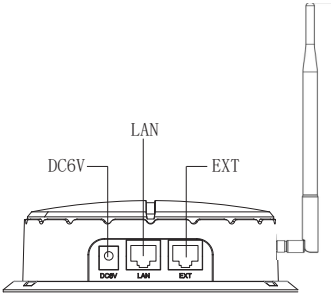
(2) RF Characteristics

Parameter	Specification
Modulation	GFSK
Frequency	2402-2482MHz
Antenna Gain	2dBi
Reciever Sensitivity	-85dBm@0.1%BER
Antenna VSWR	⩽ 1.5:1
Communication Distance	15m to 50m

3. Base Station Installation

3.1 Panel Description



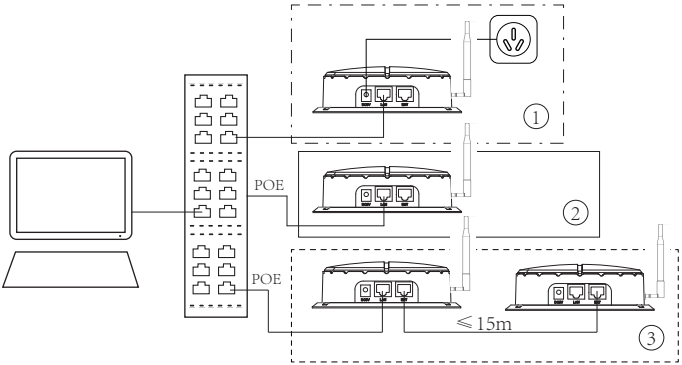


Label	Name	Use
RX	Recieve Data LED	Lights when data from an ESL is recieved
TX	Send Data LED	Lights when Base Station sends data to ESL
SYS	System Status LED	Indicates normal System Status when flashing once per second
PWR	Power LED	Lights when Base Station Powered
DC6V	Power Port	6VDC Power Connection (DC plug socket)
LAN	Network Port	Network cable into Base Station
EXT	Expansion Por	Port to connect one additional Base Station

3.2 Power Supply and Networking

Shown in the below figure the Base Stations can be powered in three ways:

Method	Power Supply	Description	Connections
Border 1	Power Supply	When the switch doesnot provide power andexternal power isrequired	Provide 6V to DC6V socket Connect Ethernet to LAN port
Border 2	POE	Switch provides power via Ethernet port	Connect PoE Ethernet to LAN Port
Border 3	Cascade	Base Station provides power to next Base Station using PoE(do not cascade more than one extra)	Connect PoE Switch to LAN Port and connect Base Station to EXT Port on Second Base Station



3.3 Installation Conditions

Before Installation Check that the product is intact and all attachements arecomplete, if there is damage or missing parts please contact Century promptly.

Check whether the following installation conditions exist before continuing:

A) Installation will meet applicable workplace standards.

B) Complete the required Installation processes.

3.4 Installation Location

The choice of Base Station position depends on its installation, it should bewhere possible, in a place free of obstacles that is safe and easy to operate.

The Base Station can be mounted on the ceiling and or wallsdepending on

3.5 Installation Method

Before Installation: Configure all Base Station IP Addresses (refer software manual for instructions for this step).

Installation: the Base Station secures with Phillips pan head self-tapping screws connect power cable and Network cable. Typical installation Figures 3-1 and 3-3

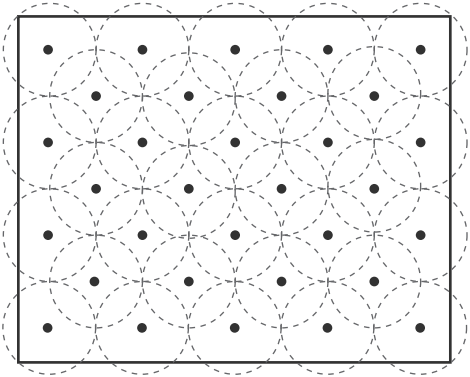


Figure 3-1 Base Station Arrangement

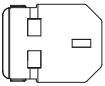


Figure 3-2 Fitting

As figure 3-2 show, when you want to put the Cable out,you can use the fitting.

Figure 3-1 Base Station Arrangement

The Frame is the building outline, the view is from the top down with the viewof all the Black dots (which are Base Stations) on the ceiling of the building;

The Round dotted line circles are the Base Station signal coverage areas, typical coverage depending on the environment is between 15m to 50m in a simple open environment for a single Base Station.

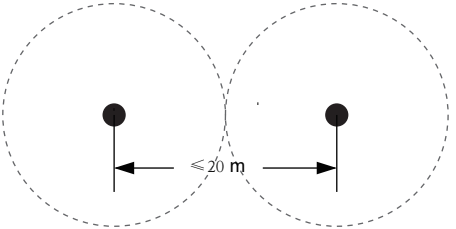


Figure 3-3 Base Station Installation Distance

Figure 3-3 shows the inter Base Station installation distance, the dotted line represents the Base Station wireless signal coverage area;

Ensure the distance betwen base stations is less than or equal to 20m.

3.6 Precautions

1) The PTL Base Station power supply shipped has an input range of 100V to 240Vac 360mA please ensure it is able to be supplied with the correct voltage.

(2) Ensure that equipment is grounded.

(3) Check the Base Station and antenna installation position and orientationwith respect to the ESL that will be exchanging data.

(4) This product radiates Radio Frequency (RF) energy, the installation andcommissioning personnel should leave at least 30cm between themselves and theantenna in order to meet the FCC requirements for human exposure.

(5) Any radio transmitting equipment, inlcuding this Base Station, can beinterfered with by medical devices without proper protection. If there are problemsseek the medical device manufacturer for advice.

(6) This equipment may cause interference with other electronic devices.

4. Troubleshooting

Symptom	Cause	Troubleshooting	Comment
Power LED Does not light	Power Adapter may not work	Check Mains socket has power and is on, replace adapter if it does	
Network Communication not normal	Interface Cable not connectedor has problem	Reconnect cable or replaceif this still no response	
	Base StationIP configuration Problem may exist	Use the ESL Startup softwareto configure Base Station IP Address	

5. Warranty

Thank you for purchasing Century product. The products you havepurchased have a limited warranty service during the given warranty period in whichwe will provide the warranty services. The product warranty card is sent along withthe product, please t keep it safe, if the product needs warranty service, please returnit together with the warranty card to Century.

To learn more about our productsor if you have any need or help, please visit our website www.century-cn.com contact us directly, our contact details on the last page of this manual, we will be happy toserve you.

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FCC Warning Statement

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. 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.

BASE STATION