阿法迪
AIoT Solution

E-Ink

Base Station

Product Manual

基站使用说明书

上海阿法迪智能物联技术有限公司
Shanghai Alpha AIOT Technology Co.,Ltd.

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1. Contents

1.1 Product Introduction

MP240B is the second - generation base station. It is a new Active RFID fixed base station which implements bidirectional communication between the host system and the Industrial E-ink. Shanghai Alpha AIOT Technology System Co., Ltd. produces the base station for its Industrial E-ink and other products.

1.2 Dimensions and Weight

Dimensions:168 x 168 x26mm Weight: 276g (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 MP240B base station, there is also included the following products and accessories:

Item	Name	Qty	Comment
1	MP240B 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 E-ink with easy installation,operation of the tags, large signal coverage radius and supports many tags.

Interface: TCP / IP connection with E-ink server, 2.45GHz ISM with E-ink tags.

LED: Green- Power, Blue - System, Red - Lan Err, Yellow - System Err.

The MP240B maximum communication distance is 10-20 meters (Line of Sight and open environment).

Compared with base stations of similar nature the MP240B base station has an attractive appearance, ease of installation, and has good structural design, with an IP20 protective environment rating.

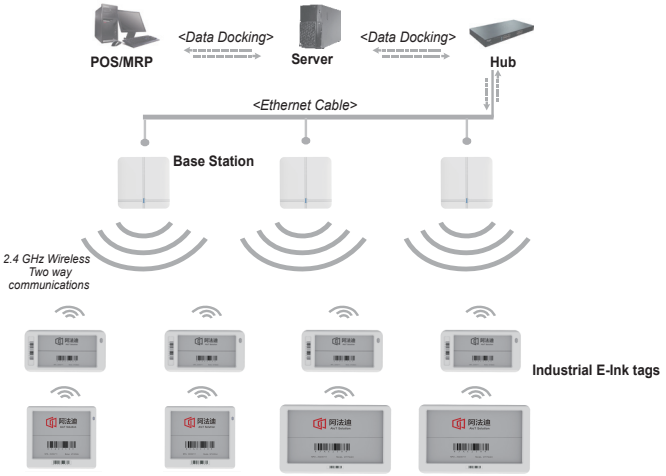
1.5 Environmental Requirements

Temperature Range: -25°C to+55°C(-13°F to +131°F)Humidity range: 20% to 95%Supply Voltage: AC/DC Adapter. Base Station Input Voltage 12VDC, 1.5A

1.6 Industrial E-Ink System Overview

An Industrial E-Ink system consists of Industrial E-Ink tags, Industrial E-Ink server, switches, base stations. The product information in the database will be copied from the host computer to the Industrial E-Ink system application software; then updated contents and other information will be sent via Ethernet to the Base Stations which will then deploy the update throughout the entire store via 2.4GHz wireless transmission Each part is described below:

E-Ink server: Running E-Ink System;Switch: For data exchange between the base station and the server;Base Station: For data exchange between the E-Ink and the Hub; Industrial E-Ink tags: Updatable display for stored server information.



Industrial E-Ink system Connection Diagram

2. Technical Characteristics

2.1 Key Performance Areas

Uses 2.4GHz frequency within ISM band, worldwide compatibility E-Ink Tags proprietary wireless protocol to ensure data security.

And Support independent research and development of Industrial E-Ink tags of Shanghai Alpla AIOT Technology Co., Ltd.

2.2 Detail Specifications

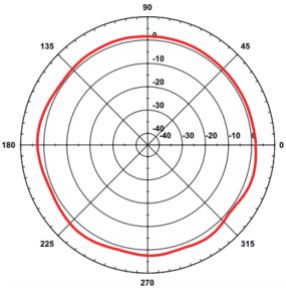
(1) Electrical Characteristics

Parameter	Specification
Power Supply	DC12V, 1.5A
	POE(optional)
Power	<2.5W
Standby Current	650mA
Operating Current	800mA
Network Interface	10/100M Ethernet TCP Protocol
IP Rating	IP20

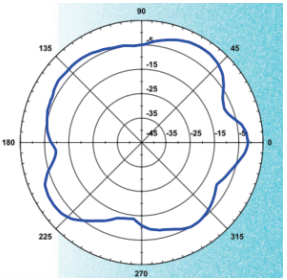
(2) RF Characteristics

Parameter	Specification
Modulation	GFSK
Frequency	2.402 to 2.4835GHz
Transmit Power	13dBm
Reciever Sensitivity	-85dBm@0.1%BER
Antenna VSWR	≤ 1.5:1
Communication Distance	10m to 20m

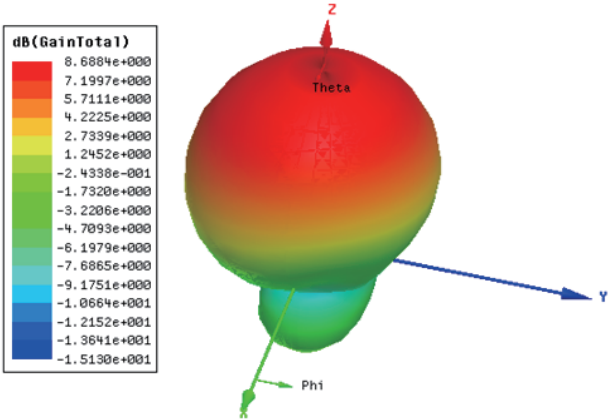
2.3 Base Station Antenna Radiation Pattern



Horizontal Pattern



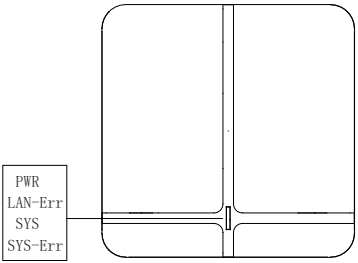
Vertical Pattern

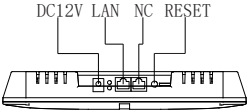


3D plot of Base Station Atenna Radiation Pattern

3. Base Station Installation

3.1 Panel Description



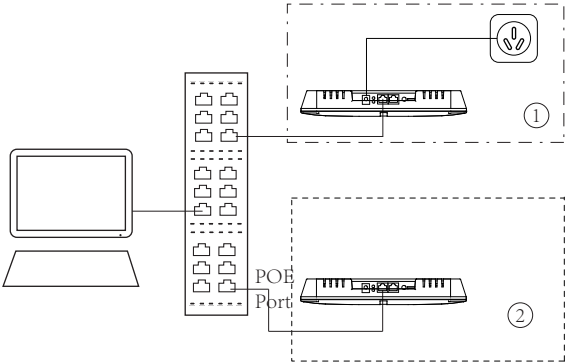


Label	Name	Use
PWR	Power LED	Lights when Base Station Powered
LAN -Err	LAN error LED	Lights when Base Station Lan error
SYS	System Status LED	Indicates normal System Status when flashing once per second
SYS -Err	System error LED	Lights when Base Station System error
DC12V	Power Port	12VDC Power Connection (DC plug socket)
LAN	Network Port	Network cable into Base Station
NC	Noused Port	No used Port

3.2 Power Supply and Networking

Shown in the below figure the MP240B can be powered in two ways:

Method	Power Supply	Description	Connections
Border 1	Power Supply	When the switch doesnot provide power andexternal power is required	Provide 12V to DC12V socket Connect Ethernet to LAN port
Border 2	POE	When the switch provide POE power	Connect Ethernet POE Port to LAN port



Power Supply

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 Alpha-Rfid 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 MP240B 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

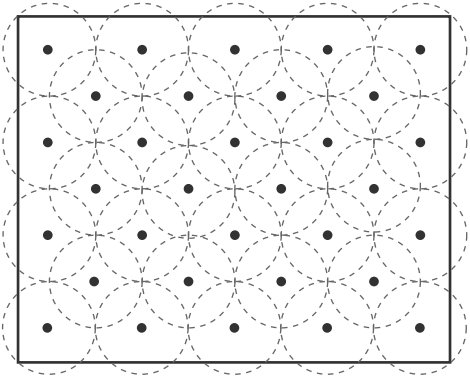


Figure 3-1 Base Station Arrangement

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 10m to 20m in a simple open environment for a single Base Station.

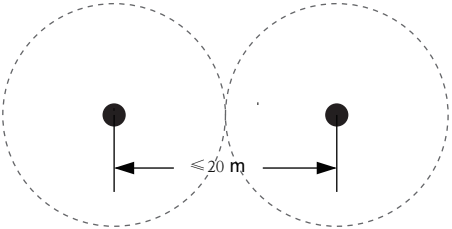


Figure 3-2 Base Station Installation Distance

Figure 3-2 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 MP240B power supplyshipped 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 orientation with respect to the E-Ink 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 E-Ink Startup softwareto configure Base Station IP Address	

5. Warranty

Thank you for purchasing Alpha-Rfid product. The products you have purchased have a limited warranty service during the given warranty period in which we will provide the warranty services. The product warranty card is sent along with the product, please t keep it safe, if the product needs warranty service, please returnit together with the warranty card to Alpha-Rfid.

To learn more about our productsor if you have any need or help, please visit our website www.greentag.cn or contactus directly, our contact details on the last page of this manual, we will be happy to serve you.

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Alpha-Rfid reserves the right to modify the terms and specifications within this document, and has no obligations to notify any person of these modifications of terms or specifications.

FCC Warning

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any inte rference received, including interference that may cause undesired operation.

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 interferenceto 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.

Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

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