Wireless LAN Elevator Local Monitor System

ÄSJT-WZB Serial Å

8 V H U ¶ V 0 D Q X D

Shenyang Bluelight Automatic Technology Co.,Ltd

Version Ö V1.2

1 ÊProduct Information

1.1 Product Type

The monitor network of Wireless LAN Elevator Local Monitor system is composed of LAN Data Collector (SJT-WZB-V0).

LAN Data Collector is mainly for collecting elevator data and upload elevator data through wireless LAN. The product is shown in following Figure 1.1.



Figure 1.1 Wireless LAN monitor device

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1.2 Dimension

Product dimension is as followingÖ

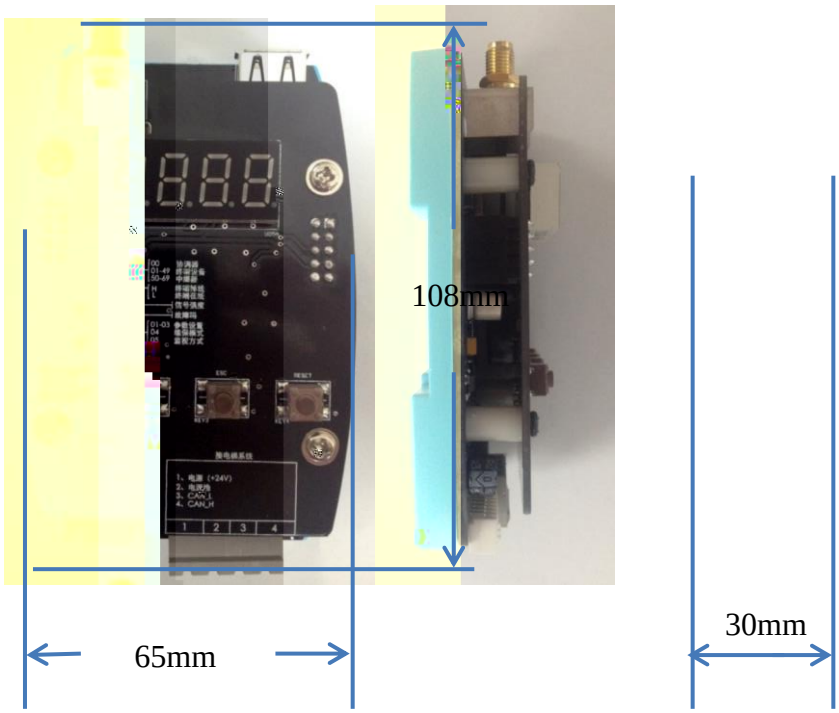


Figure 1.2 Product Dimension

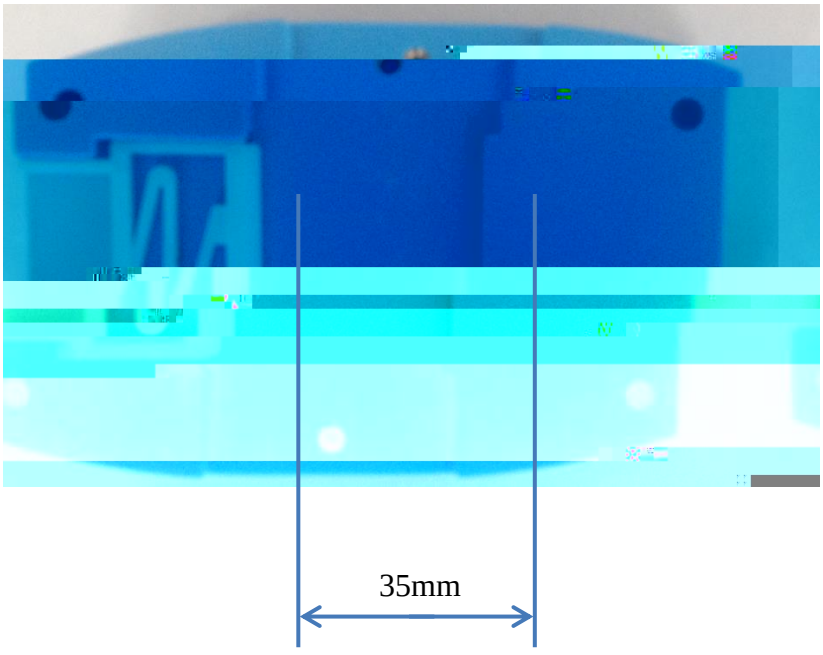


Figure 1.3 Product Dimension

Note: 1. All device have backside slot, which can be fastened on standard rail directly.

2. About dimension donot include SMA antenna.

1.3 Product composition

This product mainly includes following part:

Name	Model	Introduction	Note
Wireless LAN Data collector	SJT-WZB-V0	LAN elevator data collection and summary	
LAN Monitor PC Software	VerÖ 0.6.0	Display current elevator data on computer	
All direction antenna	12db- È2.4G	Enhance signal quality of monitor device	Default set

Chart 1. Composition of LAN Data Collector

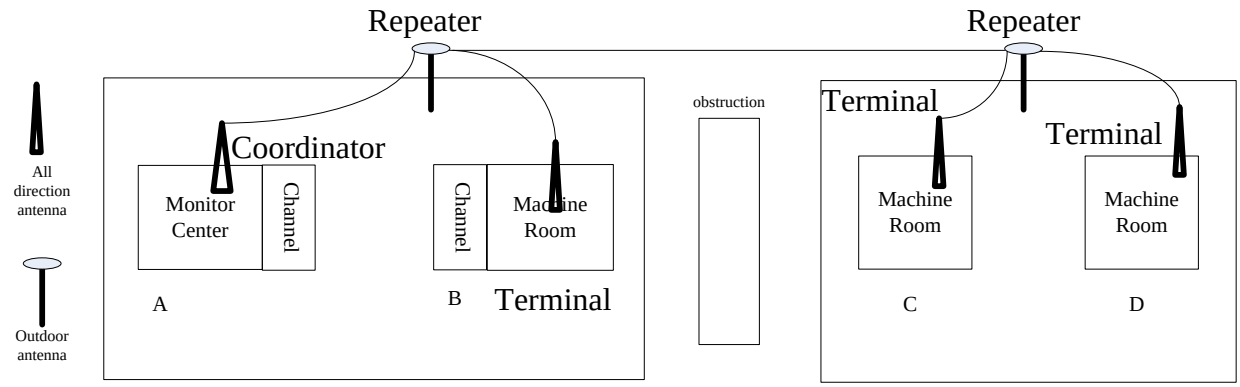
1.4 System Structure

Figure 1.4 System Structure

Monitor system is composed of PC monitor software and LAN data collector. LAN data collector can be divided to Coordinator, repeater and terminal device. The hardware are same, but its function can be various through different ID as following:

Coordinator: LAN initiator. Repeater and terminal device join in LAN organization after finding

Ma



When Terminal B & C & D device cannot directly communicate with coordinator because of obstruction or distance, customer can consider to build repeater with outdoor antenna. As shown in the figure, build one repeater with outdoor antenna out of machine room of terminal B device and build another repeater out of machine room of terminal C & D device. Then terminal B & C & D devices can communicate with coordinator through repeater and complete networking.

1.6 Networking Capacity

The networking capacity of this system is maximum 30 terminals and 20 outdoor repeater intheory. That means it can monitor maximum 30 elevators at same time with one coordinator. But the capacity will be affected by environment. When communication environment is good, the capacity is strong, terminal number can be 20~30 units. When communication environment is complex (too many obstructions or

drop below 10 units.

Above networking capacity base on experience, actual networking capacity need to be confirmed according to environment at site. Meanwhile, building outdoor relay will improve networking capacity.

1.7 LAN Local monitor software operation introduction

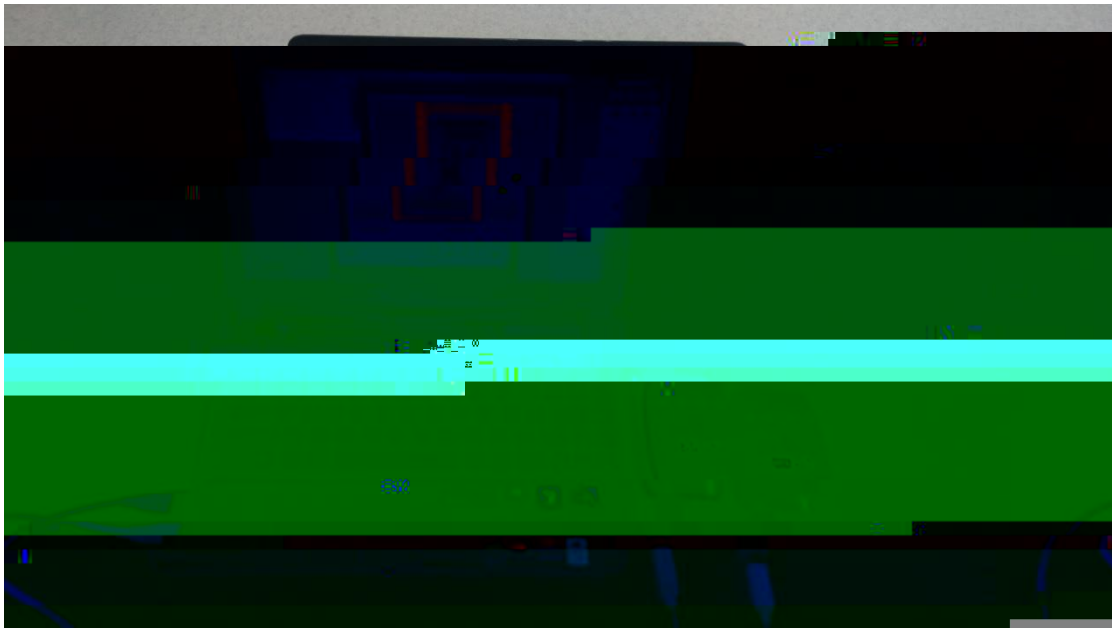
1.7.1 Overview

This software is for display elevator monitor information. Data is collected through Zigbee networking. Computer use RS232 to send & receive data, it support several port working at same time.

1.7.2 Basic function

1.7.2.1 Computer connection

RS232 port of computer is availabel, USB-to-RS232 conversion is also availabel. As shown in following pictureÖ



1. Software Start (Main Menu)

After software start, the interface is shown in following picture: including elevator list part & Page Turning part & Date/Time part & Status Statistics part.



Elevator List Part: After communication built, elevator list part shows elevator basic status,

Page Turning Part: Click button to turn page. The content on each page will be confirmed according to resolution. System will turn page automatically ,the default interval is 15 sec and can be changed by setting.

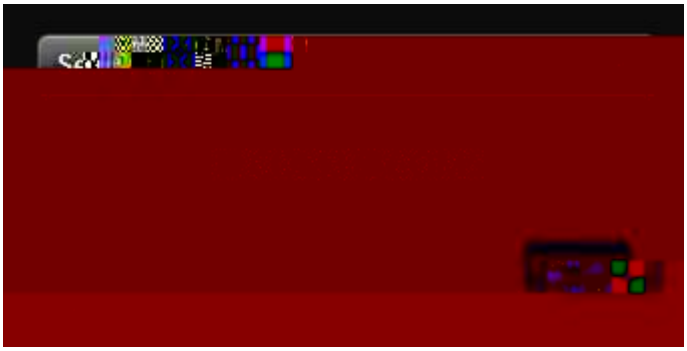
Date/Time Part: Display current date clock and version.

Status Statistics Part: Display all elevator status summary data.

2. Add elevator and start monitor

Click  button, then it show following message box. In the box, it list all availabel COM.

Monitor data will refresh each 20 sec about.



Software does not support manual elevator addition. Elevator addition is automatic. Once communication connect, elevator will be shown in 20 sec.

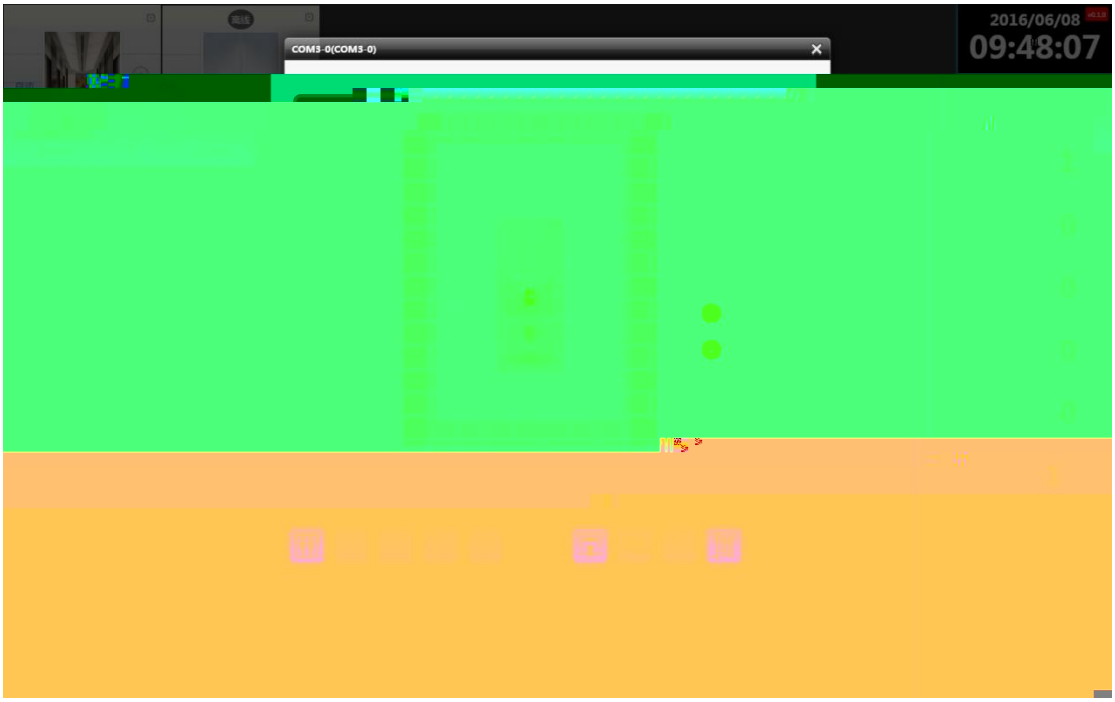
3. Rename elevator

- - For distinguishing elevator, software support rename elevator. The operation is to click default name. Then it show Rename message box, enter new name and click Enter to confirm.



4. Single elevator real -time monitor

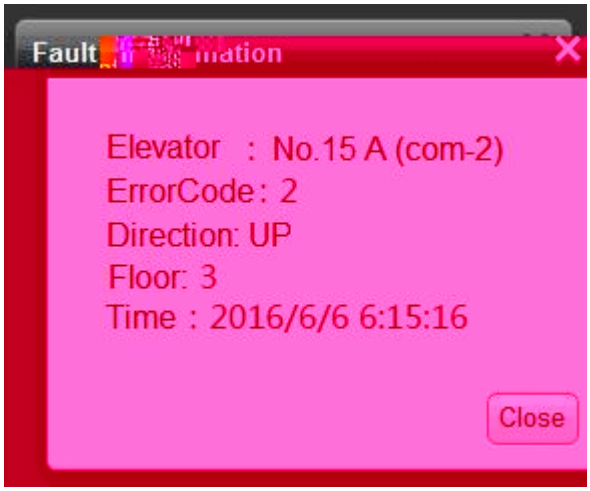
Click door part of one elevator in elevator list, it will show single elevator monitor interface as following picture.



For current elevator, the data refresh interval rise up to 1 sec. Elevator running status can be monitored.

5. Elevator Fault

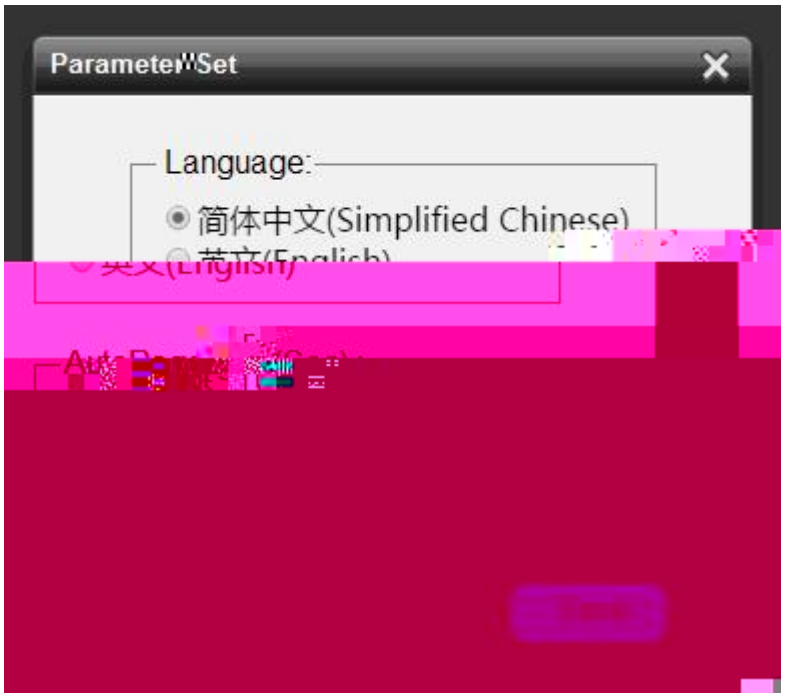
During monitoring, once elevator has fault, it will show elevator information for checking problem.



6. Delete elevator

If one elevator become off-

button at right top to de



Setting will affect immediately.

8. Exit software

Click 

2 ÊTerminal Definition

2.1 System wiring

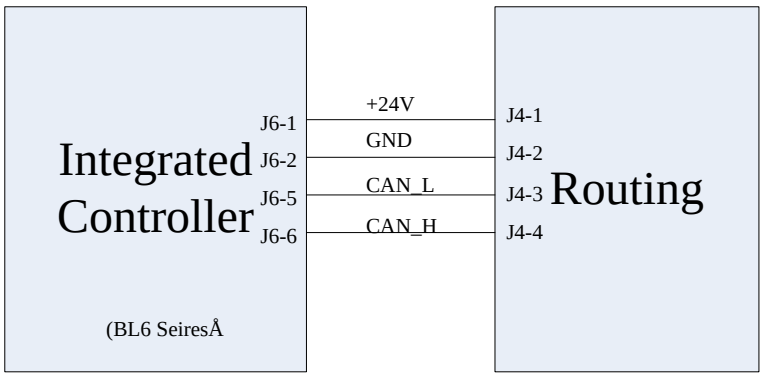


Figure 2.1 Routing Wiring

Note: For BL3 integrated controller, J6-5 is CAN H, J6-6 is CAN L. Others are same.

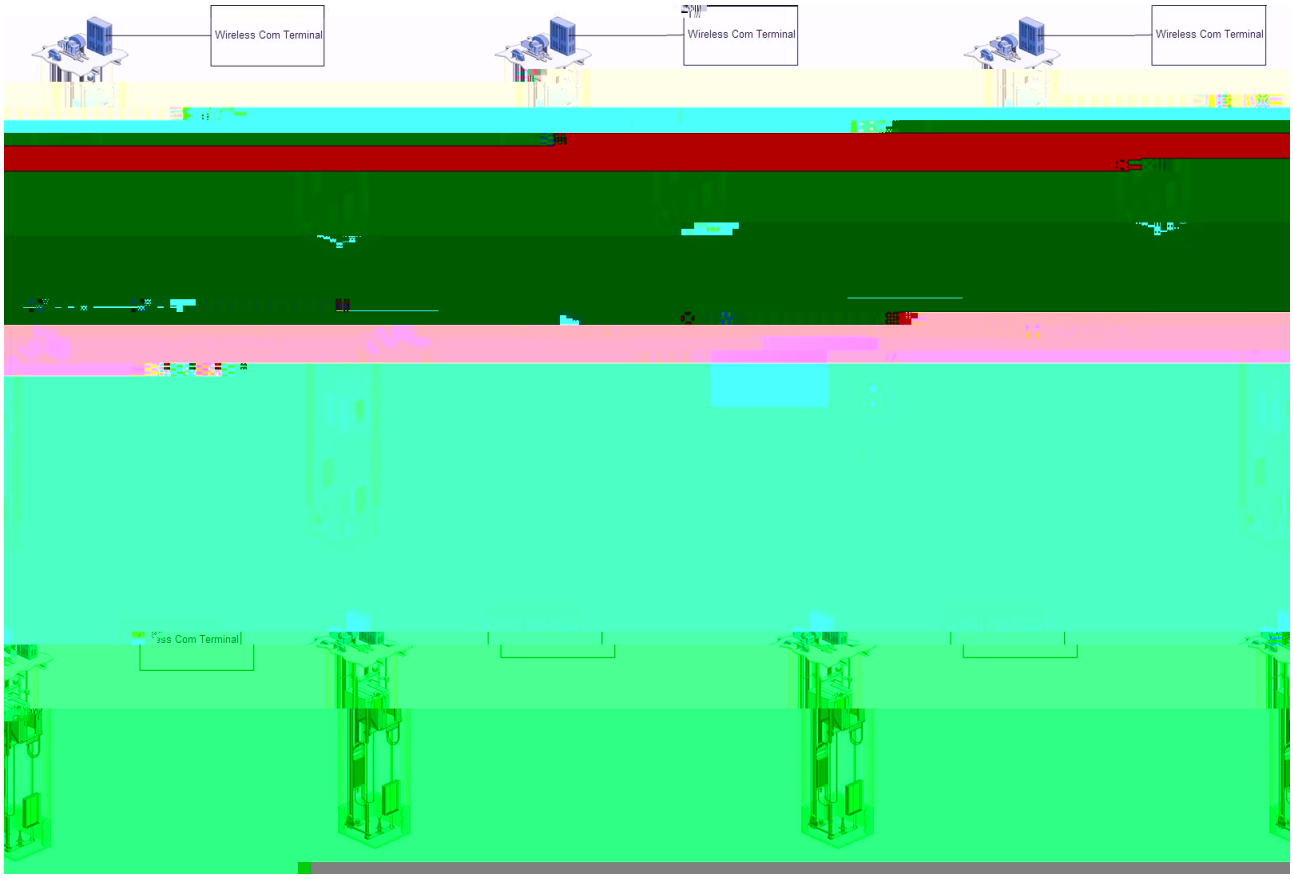
2.2 Terminal Definition

1Ã The Terminal Definition of Wireless LAN Data Collector is in following Chart:

Port	Name	Location	Definition	Usage
J5	SMA antenna port to connect SMA antenna			
USB1	USB port, connect to computer for monitoring			
SP0	Program upgrade jumper.			
SP2	CAN Bus terminal resistor jumper			
	+24V	J4-1	Power	Connect to mainboard

J4

3.2 Installation location of wireless LAN monitor device



Figre 3.1 Structure of wireless LAN communication

While using, each elevator need to install according to actual condition. It is normally installed on elevator control cabinet. Meanwhile, coordinator is installed in monitor center and connect to computer through RS 232 port.

Because machine room signals are weak.

1RWH :KHQHYHUURPHQV LV FRPSOH[DQ WKHUHV PDQREVWUFWLRQV WR JHW LGHDO communication effect and networking capacity, we strongly suggest customer to install outdoo r wireless repeater. If outdoor repeater installation is not avai label , communication effect will be band or networking capacity will drop.

3.3 Antenna Selection

Wireless LAN data collector in monitor system needs to work with antenna. The antenna is shown as following picture.



Figure 3.2 All direction antenna

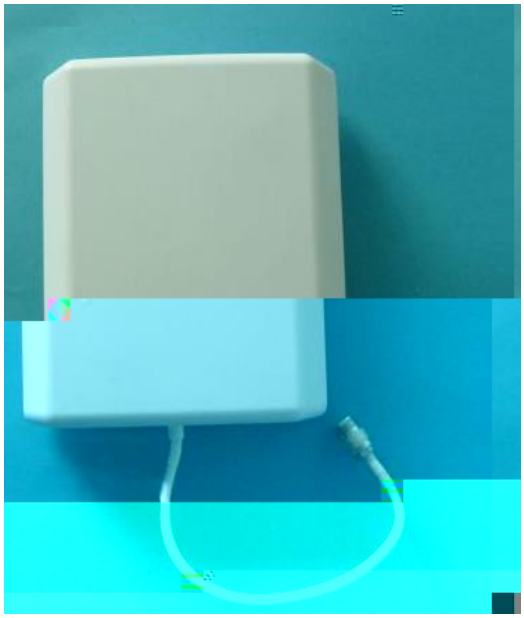


Figure 3.3 Directional antenna

All direction antenna at left side is suggested when LAN data collector does normal networking. This kind of antenna has wide communication coverage, but signal penetration is weak. So it is mostly used when devices are visible between each other or with few obstructions.

If there are many obstructions between two nodes, directional antenna can be considered. Directional antenna can make signal has better penetration, but their signals can only shoot out in a straight line along front of antenna. So directional antenna need to work in pairs. And need face to face to ensure they can receive signal from the other.

If environment is complex and there are many obstructions between devices, please consider about outdoor antenna installation. Then install repeater and use outdoor antenna among devices. That make communication distance shorter and raise communication quality. The details of wireless repeater installation, please take Chapter 4.3 as reference.

3.4 Wireless R epeater Installation

Wireless Repeater is composed of wireless LAN collector & Waterproof box & Outdoor antenna & Isolated Power. It is shown in Figure 3.4.

Following figure is a sample of wireless repeater layout.

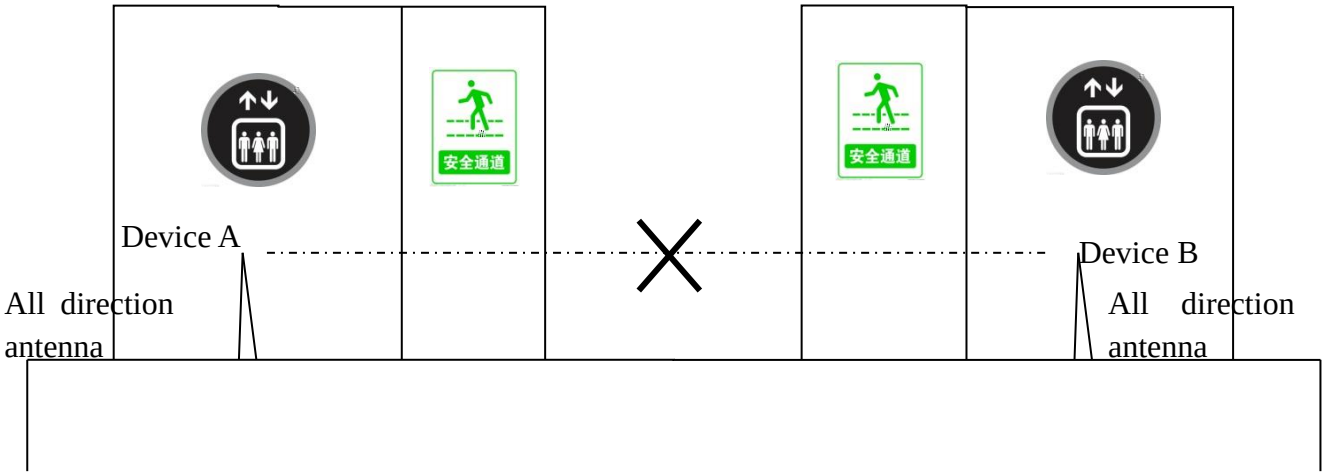


Figure 3.6 Networking cannot achieve with all direction antenna

direction antenna has poor penetration, signal cannot go through several walls, networking cannot be achieved. At this moment, it need to change to directional antenna. The installation is shown as following:

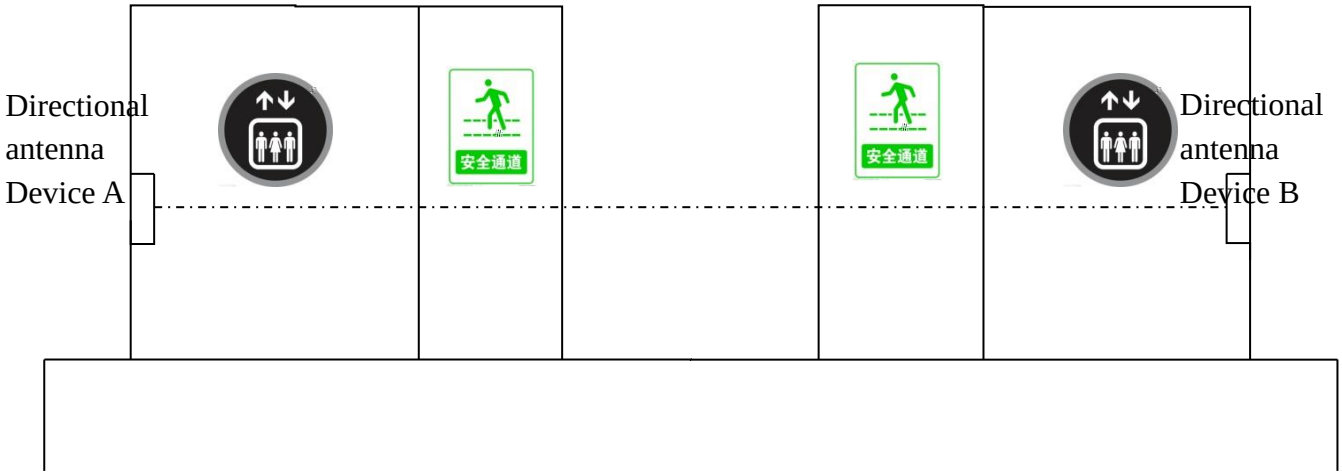


Figure 3.7 Add repeater and use directional antenna to complete networking

As shown in Figure 3.7, it raise penetration of signal by installing repeater with directional antennaÈ and achieve two devices networking.

1. Change antenna of A and B to directional antenna.
2. Select location that has less obstructions between two devices to fasten directional antenna, two antennas need face to face and same height, same level.Ä

Note: Tablet directional antenna can only raise communication capacity between two nodes. It cannot improve all communication capacity. If W K H U H ¶ V P D Q \ R E V W U X F W L R Q V L signal strength is poor, then repeater is needed. If no repeater, it may cause communication turn bad or networking capacity drop.

3.6 Installation Step with outdoor wireless LAN repeater

Installation steps of wireless LAN elevator monitor system is shown as following:

3.6.1 Installation of wireless coordinator

Firstly check terrain condition. Find a centre location among building group. Installing coordinator at centre will be benefit for wireless LAN establishment.

1Å Dig a small hole on the wall for installation, then fasten guide rail with enough length;

2Å

2Å Wireless data collector need to be fastened on guide rail, communication antenna should be

3Å Connect wire from J6-1 (+24V) & J6-2(GND) of main board to J4-1 & J4-2 of coordinator. Connect wire from J6-6 (CAN+) & J6-5(CAN-) of main board to J4-3 & J4-4 of coordinator. (Detail port

4Å Installation complete.

Placing the device near window can raise communication quality.

3.6.4 Set node ID for wireless terminal

Node ID can not be repeated.

The connection label for elevator controller connection should be exclusive, and between 1 to 50. Node ID also refer to serial number of elevator controller.

Setting method is shown as following:

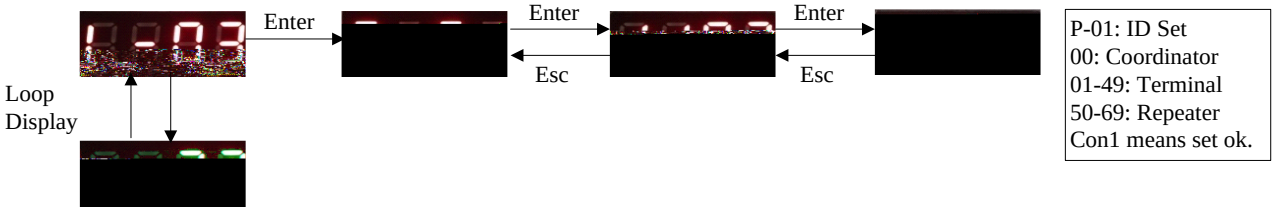


Figure 5.9 ID setting

3.6.5 Terminal monitor device start

After setting network parameter and Terminal device ID, reset device. After reset, enter P-XX interface through LED button as shown in Figure 5.8. Select P-06, then display should be Fun0. Modify it to Fun1 and press ENT button. Then it show Con1. After it change to Con0, press ESC to return Menu. LED display will change from H to L. It means device has connected to network. Signal strength value will change. If signal strength is lower than 20 or cannot join in network. Installing repeater between this device and nearby device that already connect to network is suggested. Through directional antenna assistance, enhance signal strength. If Con1 cannot change to Con0 after long time, then reset device and repeat above operation until succeed.

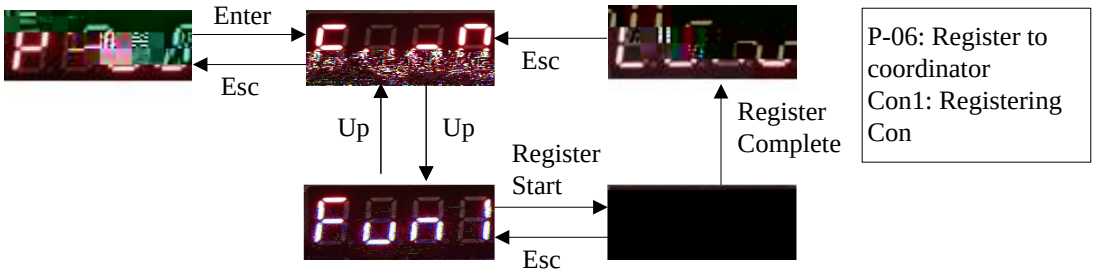


Figure 5.10 Terminal device register

At node, on-line status and signal strength can be checked.



Figure 5.11 Not join in Network



Figure 5.12 Already join in network

If networking cannot complete, adjust device location. If no obvious improvement, please consider about repeater installation.

3.6.6 Wireless r epeater installation

terminal device and coordinator, networking cannot directly build or signal strength bad after networking built. Then repeater is needed. Installation refer to

After installation, you need to set parameter for device

1. Set ID. Set ID between 50 to 69. Network parameter should be same as device. Detail information is in Chapter 5.6.2 Setting network parameter.
2. Modify device type. Enter P-08 through LED button. Press ENT, then it shows FUN0. Press Up to

5.7.7 Following operation please refer to 5.6.7 and 5.6.8

4 ÊLAN data collector instruction

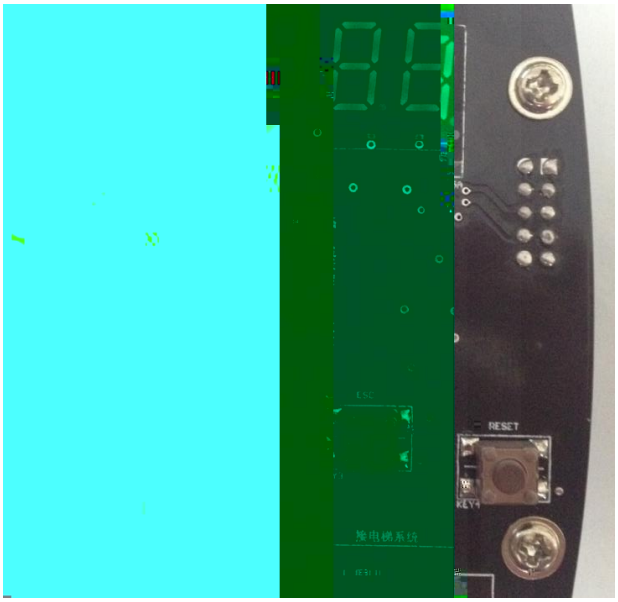
4.1 Adjustme nt and setting component

Complete adjustment and setting through LED segment and button on data collector.

4.2 Adjustment and setting method

4.2.1 Main interface

Customer interface of data collectorÖ



Data collector customer interface include 4 segment LED and 4 buttons.
4 Bottoms are Up, Enter, Exit, Reset (from left to right).
After power on, segment display main interface as following chart.

Label	Description	Label	Description
	1. Letter show network status H: Off line LÖ On line 2. Number show		1. N means current value is signal strength 2. Number show signal strength, range is 0~99, high value means

	device ID 00 Ö Wireless coordinator 01-49 Ö Wireless Terminal device 50-69 Ö Wireless Repeater		signal good. 1. E

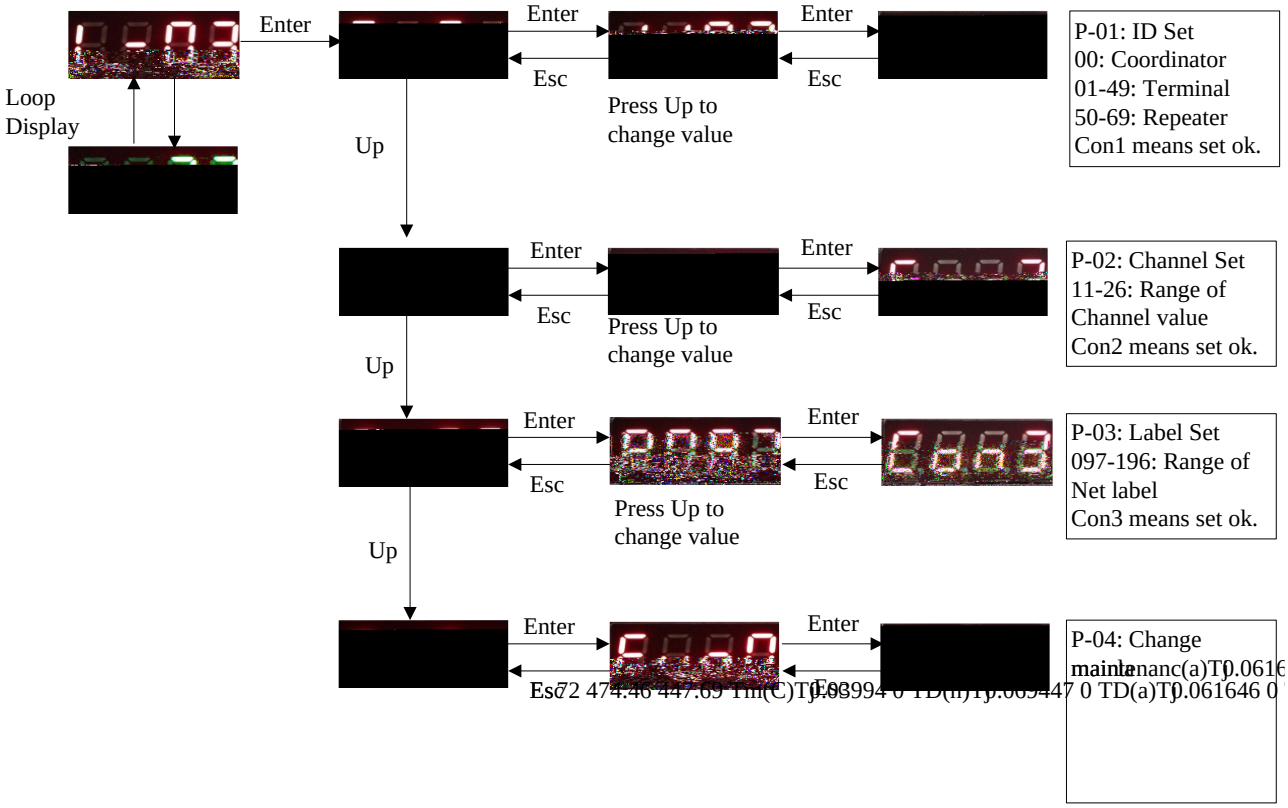
4.2.2 Setting Interface

When leaving factory, data collector has default setting. Use default setting can save networking time, but may have network conflict problem. So we suggest to plan network parameter before installation.

Only devices with same channel and same net label can constitute one wireless network. Wireless network use 2.4G net, it can set 11 to 26, totally 16 signal channels. In this system each signal channel support 99 network, which can be separated by net ID. Each network can install maximum 1 coordinator & 30 terminal devices & 20 repeaters.

Net parameter can be modified through LED display and button on device.

In main interface, press ENT to enter parameter modification menu. The default operation is shown as following:



Note: P-01È P-02È P-03 take effect after reset by pressing Reset Button.

4.3 Error Code and Error Information

Code	Content	Solution
E-01		