ACS-11(P)-MF

Access Control Reader

User's Manual

www.icpdas.com

Warranty

All products manufactured by ICP DAS are under warranty regarding defective materials for a period of one year from the date of delivery to the original purchaser.

Warning

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Document Revision

Version	Date	Description of changes
1.0	2016/04/18	First Release Revision

Table of Contents

1. Introduction

Access Control systems are one of the most important infrastructures for a safe, secure society. ACS-11-MF/ACS-11P-MF is an access control reader that supports keypad and RFID induction of access control. It integrates three functions of door access control, voice guidance and floor control all in one, suitable for use in community door access and elevator control. ACS-11-MF/ACS-11P-MF supports Ethernet and RS-485 communication interface and provides anti-sabotage sensor and door position detection function which can consolidate the security of access control systems and effectively enhance the service quality of management.

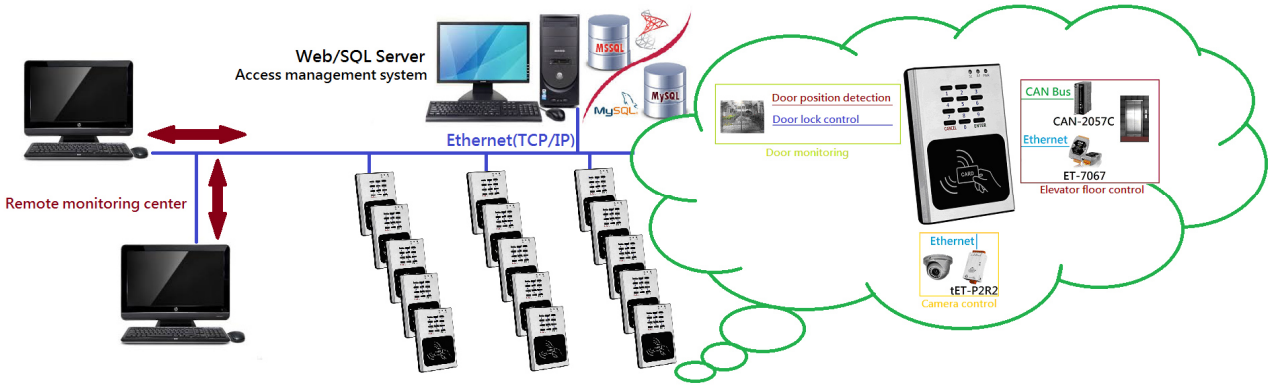
The ACS-11P-MF has integrated Power-over-Ethernet (PoE), it allows power and data to be carried over a single Ethernet cable, so a device can operate solely from the power it receives through the data cable. This innovation allows greater flexibility in office design, higher efficiency in systems design, and faster turnaround time in set-up and implementation. The ACS-11P-MF feature true IEEE 802.3af-compliant (classification, Class 1) Power over Ethernet (PoE) using both Ethernet pairs (Category 5 Ethernet cable).

When using ACS-11P-MF module, you can choose ICP DAS “PoE” Switch – “NS-205PSE” as the power source, NS-205PSE automatically detects the connected devices whether they are PoE devices or not. This mechanism ensures NS-205PSE to work with both PoE and non-PoE devices coordinately at the same time.

1.1 Features

- Supports card type: Mifare
- Built-in Voice message function
- Supports Ethernet / RS-485 interface
- Built-in RTC and WDT
- Supports electronic lock control and door position detection
- Provides access records
- Max card capacity：8000 cards
- Supports elevator floor control (max. 16F)

1.2 Applications



1.3 Specifications

Table 1-1: System Specifications

Models	ACS-11-MF	ACS-11P-MF
CAN Bus		
Baud rate(bps)	1M	-
Specification	ISO-11898-2, CAN 2.0A/B	-
UART		
COM	RS-485(D+, D-)	
Baud rate(bps)	9600	
Format	N, 8, 1	
Ethernet		
Controller	10/100Base-TX Ethernet Controller (Auto-negotiating, Auto MDIX)	
Connector	RJ-45 with LED indicator	

PoE	-	Yes
Digital Input		
Channels	4	2
Input type	Dry Contact (Source), Wet Contact (Sink, Source)	
Relay Output		
Channels	2	
Output Type	Form C	
Contact Rating	0.5A 120VAC / 2A 30VDC	
Micro Switch		
Channels	1	
Circuit arrangement	SPDT	
Contact Rating	6A 125/250VAC	
RFID		
Supported Card	Mifare S50	
Standard	ISO 14443 A	
Power		
Reverse Polarity Protection	Yes	
Powered from CN1 Connector	10 ~ 30 VDC	-
Powered from PoE	-	Yes, IEEE 802.3af, Class1
Consumption	2.0W	1.7W
Mechanical		
Installation	Wall Mounting (Suitable for the outlet box in United States)	
Dimensions	83mm x 120mm x 28mm (W x L x H)	
Environment		
Operating Temperature	-20℃ ~ +60℃	
Storage Temperature	-30℃ ~ +80℃	
Humidity	10% ~ 90%, non-condensing	

2. Hardware

2.1 Front Panel

The front panel of the ACS-11(P)-MF module contains the Keypads, RFID induction area and status LEDs.

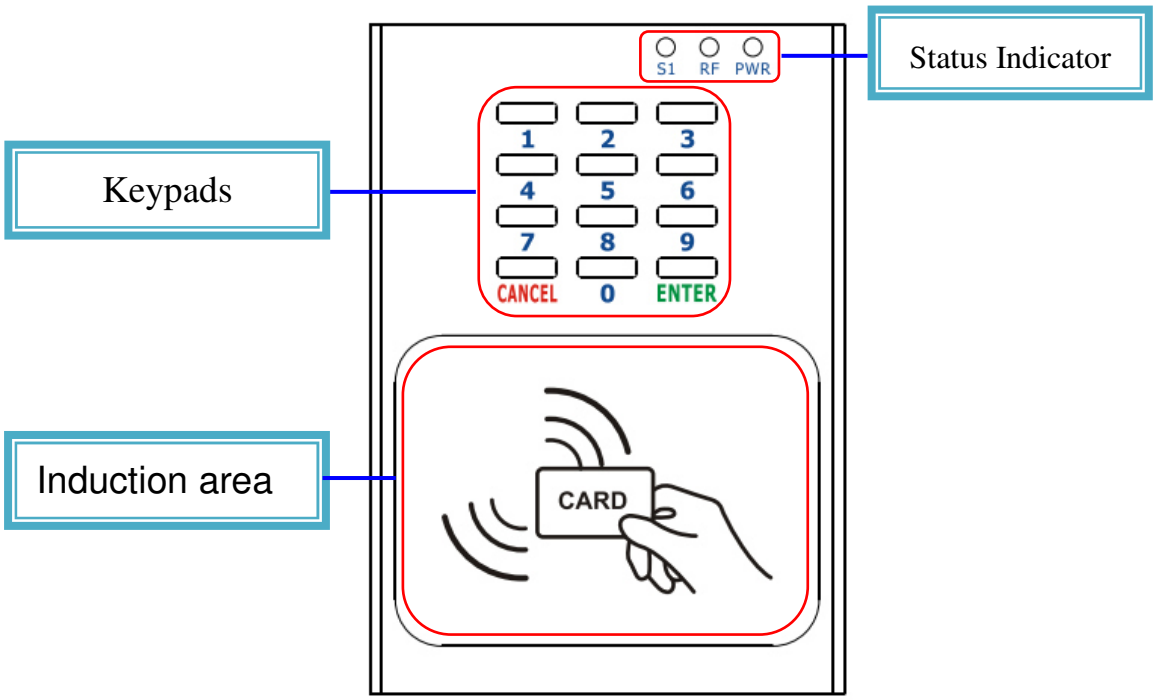


Figure 2-1: Front Panel of the ACS-11(P)-MF

2.1.1 **LED Indicator**

Table 2-1: System Status Indicator

System Status Indicator		
LED	**Module Status**	**LED Status**
PWR	Default IP operation mode	Blink per 100 ms
	Camera control module connection failed	Blink per 1000 ms
	Elevator control module 1 connection failed	Blink per 2000 ms
	Elevator control module 2 connection failed	Blink per 3000 ms
	Power failure	Off
RF	RFID induction	Blink
	Firmware update mode	Blink per 500 ms
	Idle	Off
S1	Data transmission	Blink
	Idle	Off

2.2 Back Panel

The back panel of the ACS-11(P)-MF module contains the Ethernet port and power, signal connectors.

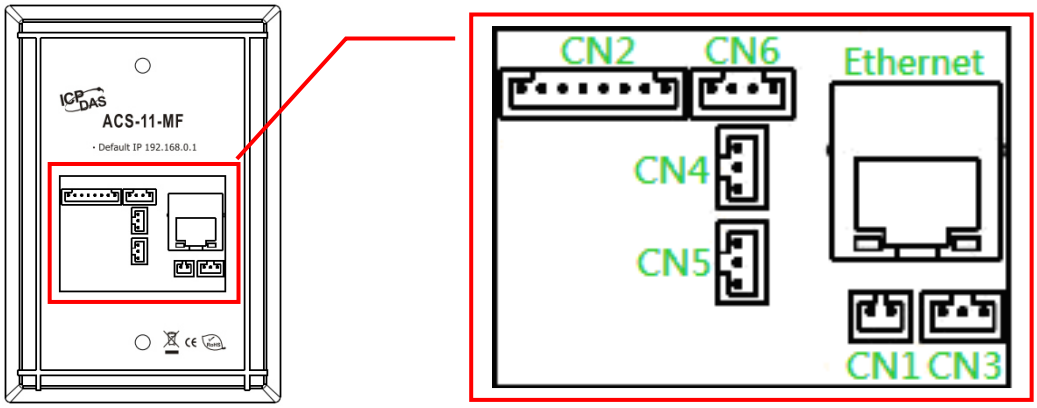


Figure 2-2: ACS-11-MF Connector Assignment

Table 2-2: ACS-11-MF Pin Assignment

Connector Type		Pin Assignment								Description
CN1		GND				VDC				Power (+10V~+30 VDC)
CN2		DI0	G	DI1	G	DI2	G	DI3	G	DI0(Door position detection) DI1(Electric lock trigger) DI2/3(n/a) (Digital Input, Dry Contact)
CN3		COM		NO		NC				Anti-sabotage detection (Relay Output)
CN4		NC COM NO								Electronic lock control (Relay Output)
CN5		NC COM NO								Door position alarm output (Relay Output)
CN6		CAN_L		CAN_H		D+		D-		CAN(CAN_H/CAN_L) Baud Rate (bps) : 1M RS-485(D+/D-) Baud Rate (bps): 9600 Parity: NONE Data Bits: 8 Stop Bits: 1

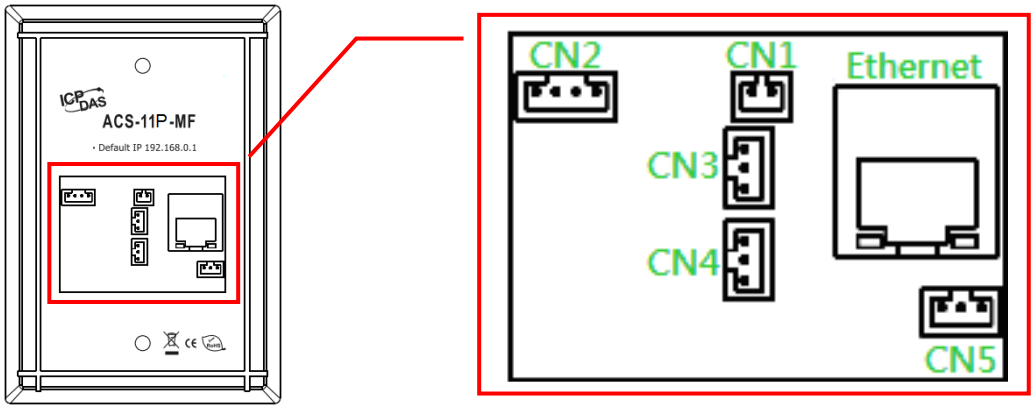


Figure 2-3: ACS-11P-MF Connector Assignment

Table 2-3: ACS-11(P)-MF Pin Assignment

Connector Type		Pin Assignment				Description
CN1		D+		D-		RS-485(D+/D-) Baud Rate (bps): 9600 Parity: NONE Data Bits: 8 Stop Bits: 1
CN2		DI0	G	DI1	G	DI0(Door position detection) DI1(Electric lock trigger) (Digital Input, Dry Contact)
CN3		NC COM NO				Electronic lock control (Relay Output)
CN4		NC COM NO				Door position alarm output (Relay Output)
CN5		COM	NO	NC		Anti-sabotage detection (Relay Output)

2.3 Dimensions

The following diagrams provide the dimensions of the ACS-11(P)-MF module and can be used as a reference when defining the specifications for any custom enclosures. All dimensions are in millimeters.

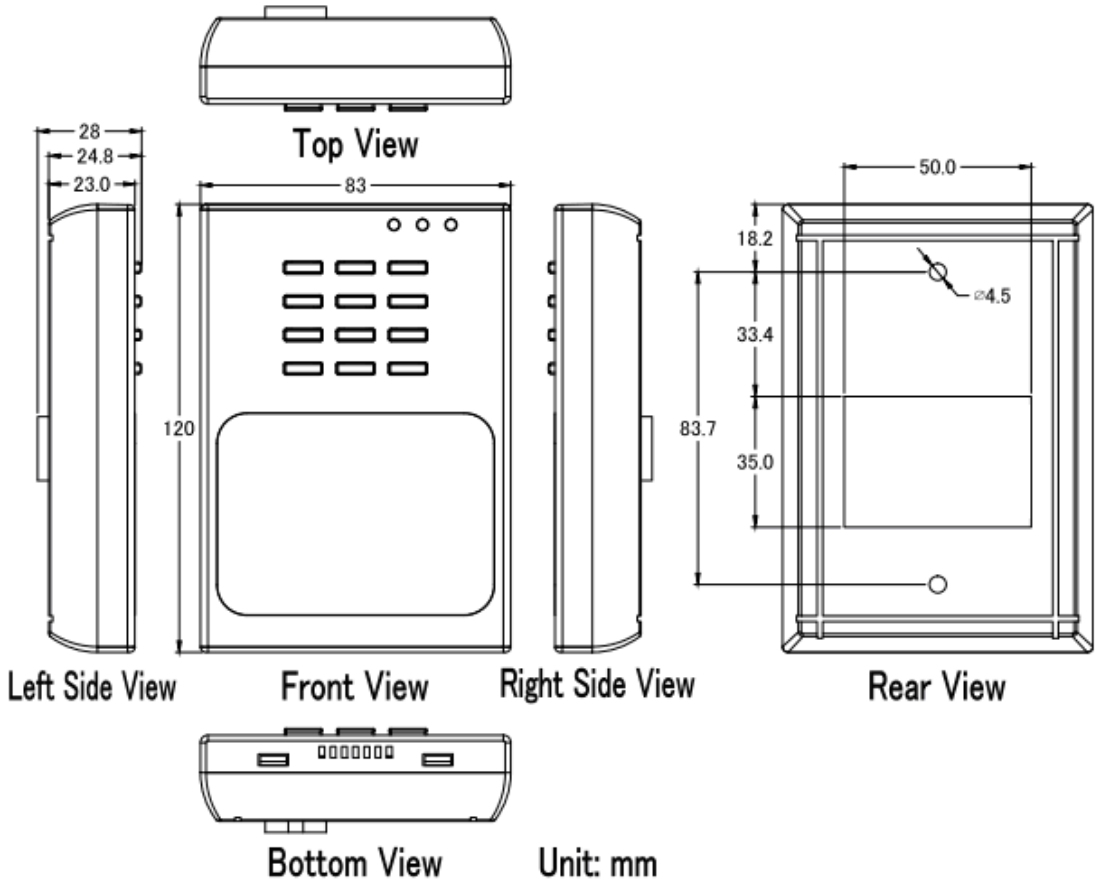


Figure 2-4**:** Dimension of the ACS-11(P)-MF Module

2.4 Hardware Connections

2.4.1 Power and I/O wiring architecture

ACS-11(P)-MF series modules provide a variety of communication interfaces to suit a range of applications. Below is a description of the configuration for simple applications using the ACS-11(P)-MF.

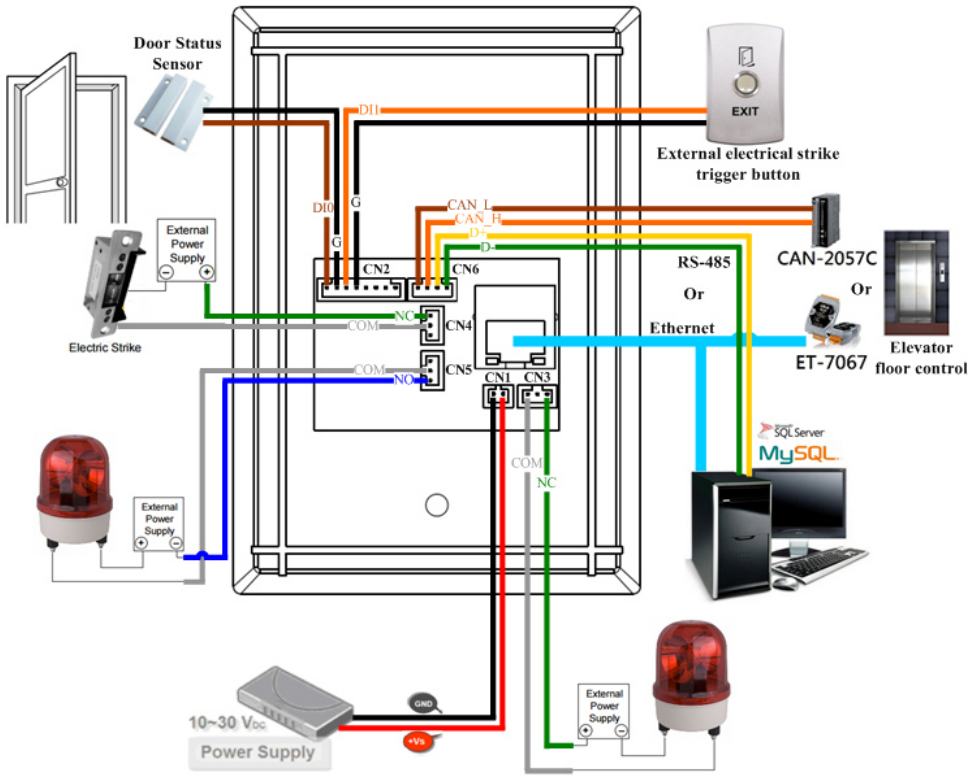


Figure 2-5: ACS-11-MF Power and I/O wiring architecture

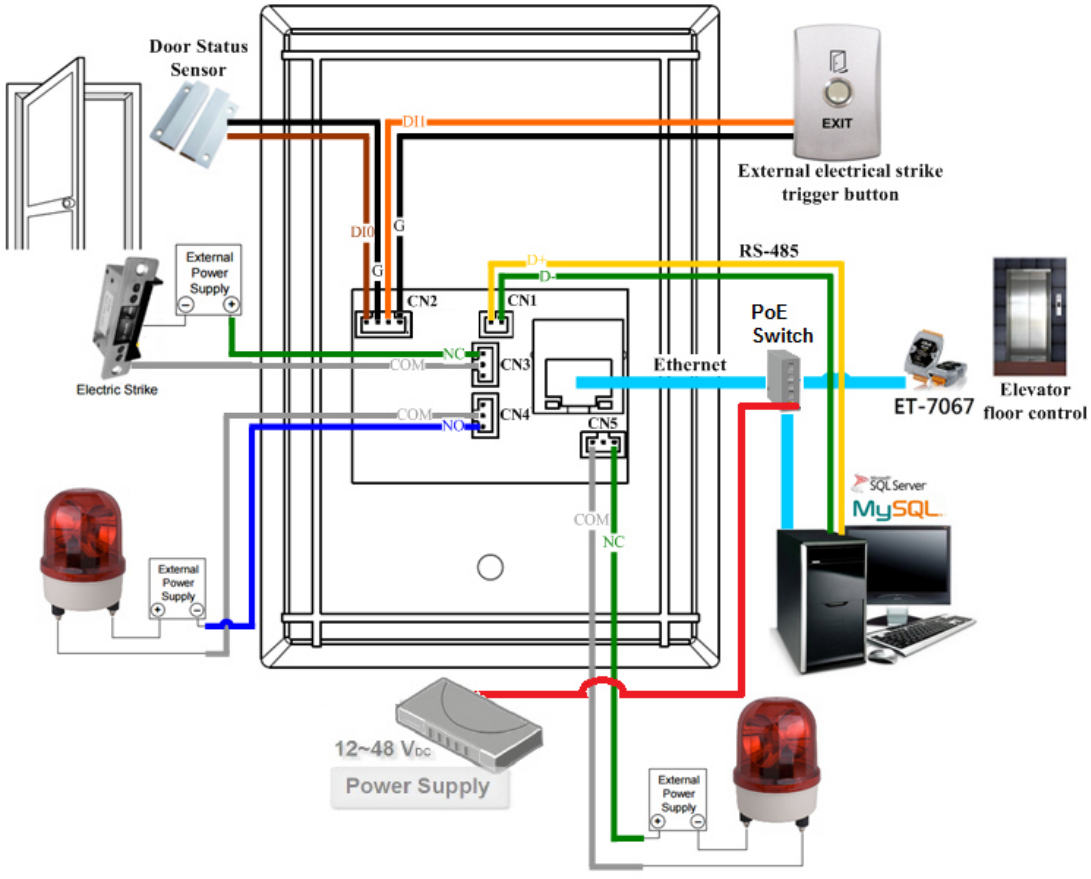


Figure 2-6: ACS-11P-MF Power and I/O wiring architecture

2.4.2 I/O connection

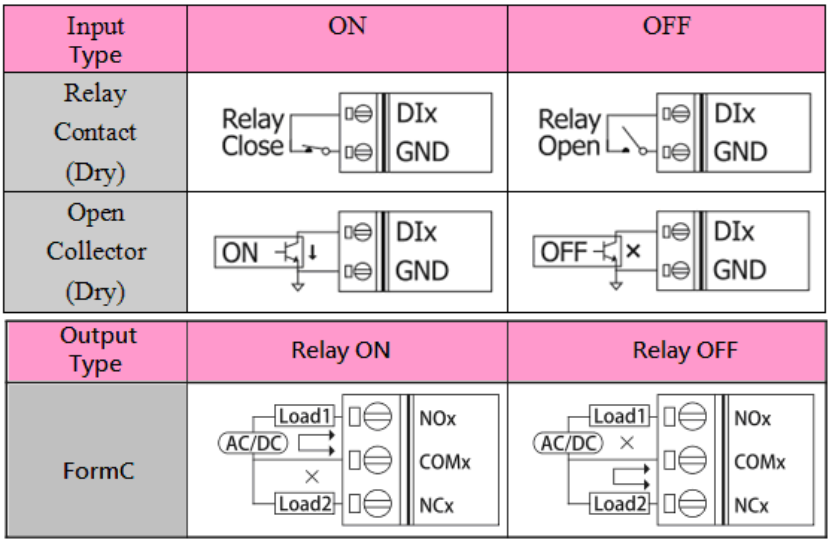


Figure 2-7**:** Wire connection

2.5 Jumper Settings

2.5.1 Terminator Resistor Settings

According to the ISO 11898 specifications, the CAN Bus network must be terminated by two terminal resistors (120Ω) for proper operation, as shown in the below figure.

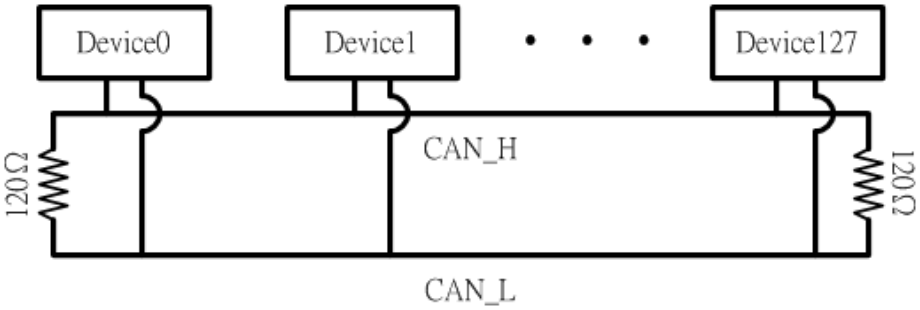


Figure 2-8**:** Terminal Resistor

Therefore, the ACS-11-MF module supplies a jumper for users to active the terminal resistor or not. If users want to use this terminal resistor, please open the ACS-11-MF cover and use the JP3 to activate the 120Ω terminal resistor built in the module, as the Table 2-4. Note that the default setting is active.

Table 2-4: Terminal Resistor Jumper (ACS-11-MF)

Jumper Position	
Enable (default)	Disable
	

2.5.2 Operation Mode Settings

ACS-11(P)-MF module supplies a jumper for users to select the firmware operation or firmware update mode of the module.

Table 2-5: Operation Mode Setting Jumper (ACS-11(P)-MF)

Jumper Position	
Firmware operation mode (default)	Firmware update mode
	

2.6 Firmware update method

There are three ways to make the product enters "Firmware update mode", please refer to the following settings mode. When ACS-11(P)-MF is in firmware update mode, the RF LED will blink per 500 ms. Users can update the firmware of the ACS-11(P)-MF module by the Ethernet interface.

Item	Setting Mode
1	Press and hold the No.0 key for 10 seconds
2	Press and hold the No.0 key, and reset the power of ACS-11(P)-MF
3	Set the JP2 to the "Firmware update mode" position as Table 2-5, and reset the power of ACS-11(P)-MF

Please follow the below steps to complete the firmware updating process.

Step1. Make the product enters "Firmware update mode".

Step2. Network configuration of computer.

Entry the **IP address** as "192.168.0.x", where "x" is a number that between 1 and 254 **except 1**, **Subnet mask** as "255.255.0.0". Finally, press "OK" button.

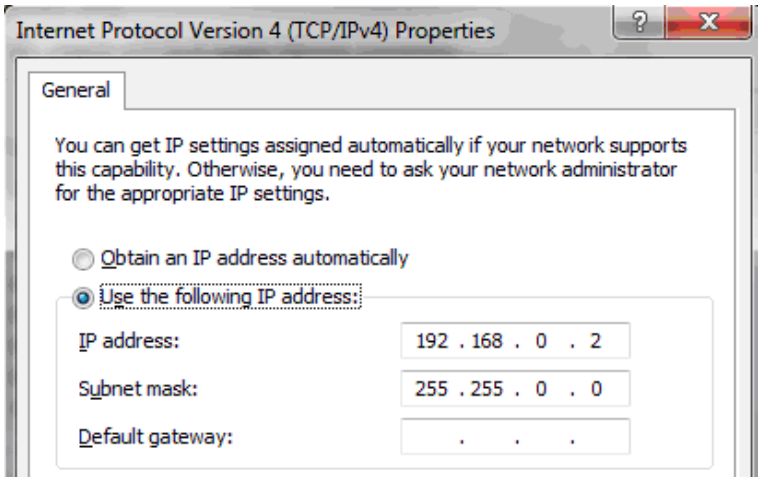
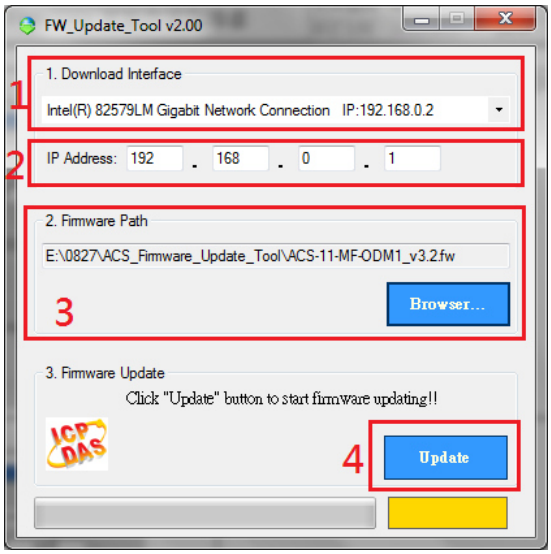


Figure 2-9**:** Network configuration

Step3. Establish a network connection between PC and ACS-11(P)-MF

Step4. Launch the firmware update tool "FW_Update_Tool_v2.00.exe"

1. Select the connection network interface of ACS-11(P)-MF
2. Set IP address as: IP 192.168.0.1
3. Click "**Browser**" button to choose firmware file (ACS-11-MF_vx.fw)
4. Click "**Firmware Update**" button to start firmware updating process
5. After firmware update is complete, please reset the power of ACS-11(P)-MF



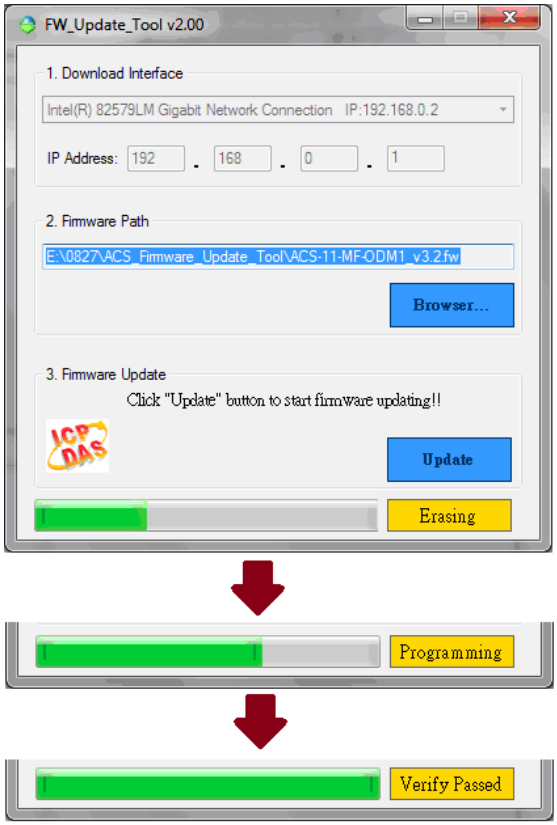


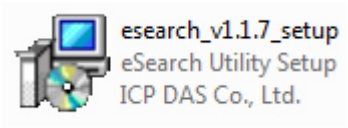
Figure 2-10: Firmware update process

3. Software

3.1 Installing the eSearch Utility

The eSearch Utility is a useful tool that provides a quick and easy way to configure the Ethernet settings to the ACS-11-MF from a PC.

Step 1： Install the eSearch Utility tool



The eSearch Utility can be obtained either from the companion CD at: CD:\Napdos\Software\eSearch\

Or from the ICP DAS FTP site at:
http://ftp.icpdas.com/pub/cd/tinymodules/napdos/software/esearch/

Step 2：Follow the instructions in the Setup Wizard to complete the installation. After the installation has been completed, a new short cut for the eSearch Utility will be displayed on your desktop.

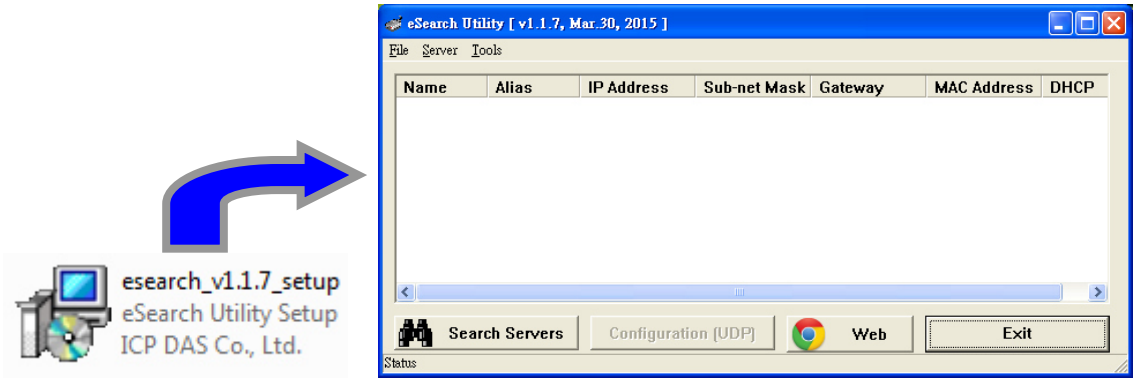
3.2 Using the eSearch Utility to Assign an IP Address

The factory default IP settings are as follows:

Item	Default
IP Address	192.168.0.1
Subnet Mask	255.255.0.0
Gateway	192.168.0.254(Fixed)

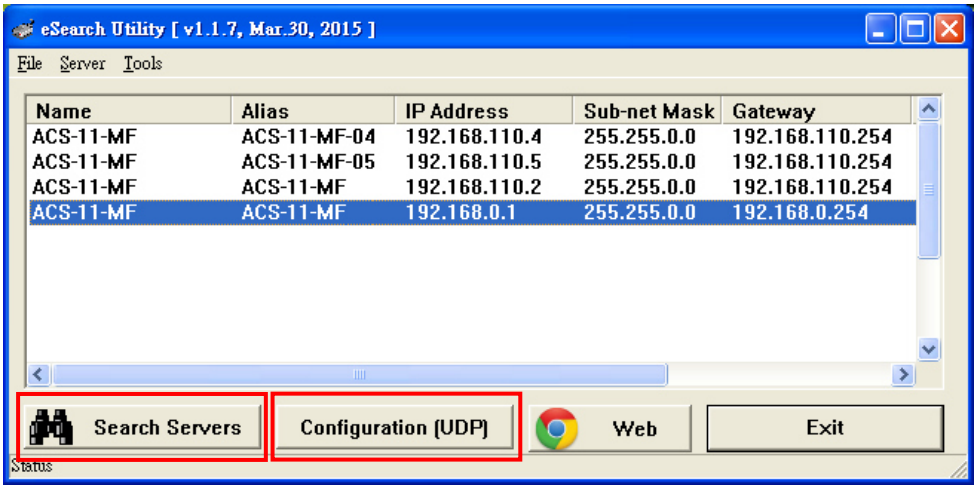
Step 1：Run the eSearch Utility

Double-click the "eSearch Utility" shortcut on your desktop.



Step 2：Press the "Search Servers" button to search for your module

After pressing the "Search Servers" button, the utility will perform a search of all ACS-11-MF modules on your network.



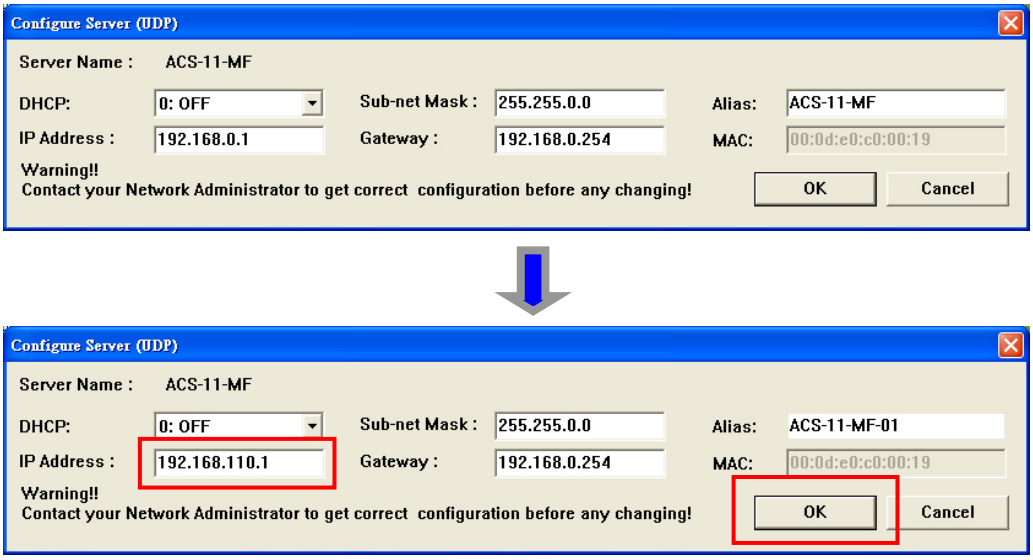
Step 3：Click the "ACS-11-MF" item for which you want to change the IP setting and then click the "configuration(UDP)" button.

All ACS-11-MF series module are IP-based devices that may not be suitable for your network using the default IP address. Therefore, you must first assign a new IP address to the ACS-11-MF series module depending on your network settings.

After the search has been completed, click the name of the module, and then click the "configuration(UDP)" button to open the Configuration Server dialog.

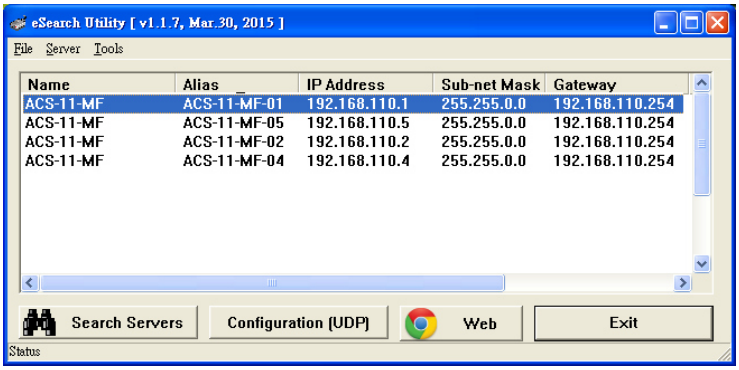
Step 4：Assign a new IP address and then click the "OK" button

Contact your Network Administrator to obtain the correct network configuration information. Modify the network settings as necessary and then click the “OK” button. The ACS-11-MF series module will use the new settings immediately. (ACS-11-MF doesn’t support DHCP function)



Step 5：After save the settings, ACS-11-MF will automatically reboot and then press the "Search Servers" button to check the IP settings

After completing and saving the settings, ACS-11-MF will automatically reboot and then use the eSearch Utility to perform another search for the module to make sure that the IP settings are correct. See Step 2 for details.



3.3 Web Configuration

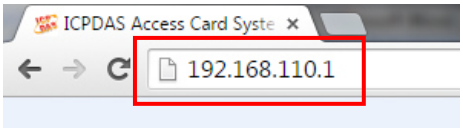
The ACS-11-MF series contains an advanced web configuration system that provides users with access to ACS-11-MF series applications through a standard web browser.

Step 1：Open a browser

Use a standard internet browser to view the ACS-11-MF web pages, such as Google Chrome, Mozilla Firefox and Internet Explorer are reliable and popular internet browsers that can be used to configure ACS-11-MF series module.

Step 2：Enter the URL address for the ACS-11-MF

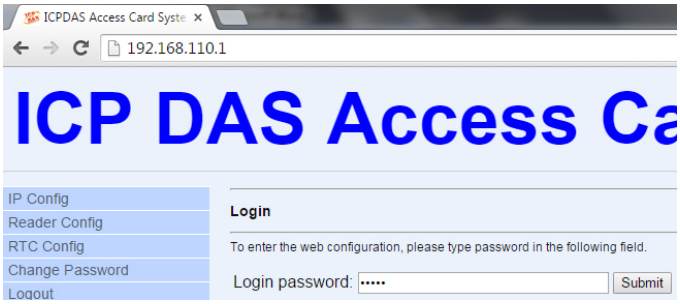
If you haven't changed the default IP address of the ACS-11-MF module, please refer to section 3.2. Using the "eSearch Utility" to assign an IP address to configure it.



Step 3：Enter the Login Password

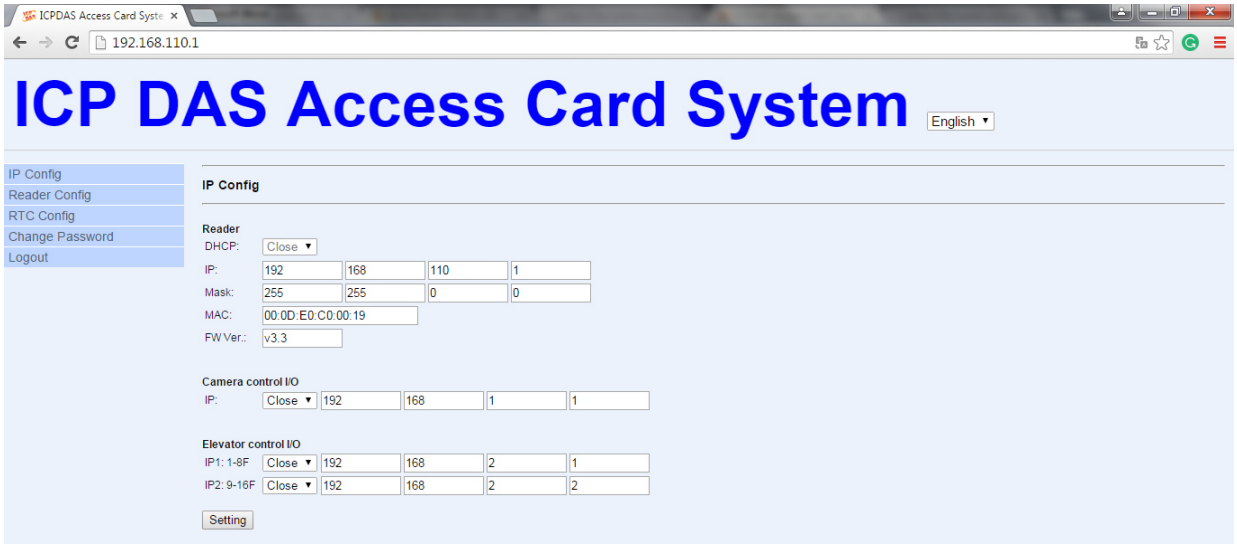
After entering the IP address, the main login dialog page will be displayed prompting you to enter a password. The factory default password is as follows; Click the "Submit" button to continue.

Item	Default
Password	**Admin**



Step 4: Log in to the ACS-11-MF web server

After logging into the ACS-11-MF web server, the "IP Config" page will be displayed.

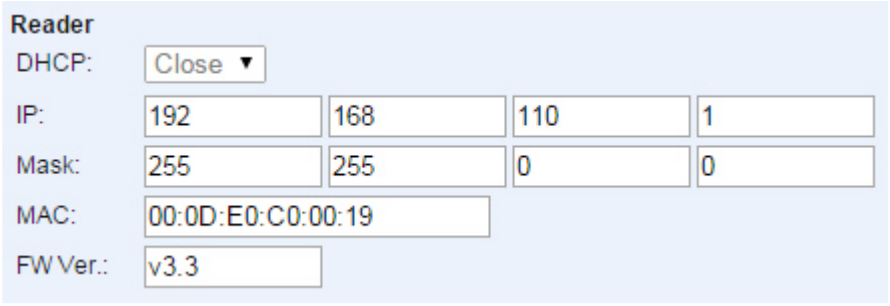


The first section provides basic information related to the ACS-11-MF series module hardware and software including the Firmware version, MAC Address and IP Address, etc.

3.3.1 IP Address Configuration

Clicking the "IP Config" tab will display the network and control I/O connection setting of camera and elevator settings page allowing you verify the current settings and configure the IP address parameters, configure the general parameters for the ACS-11-MF device, each of which will be described in more detail below.

Network Configuration

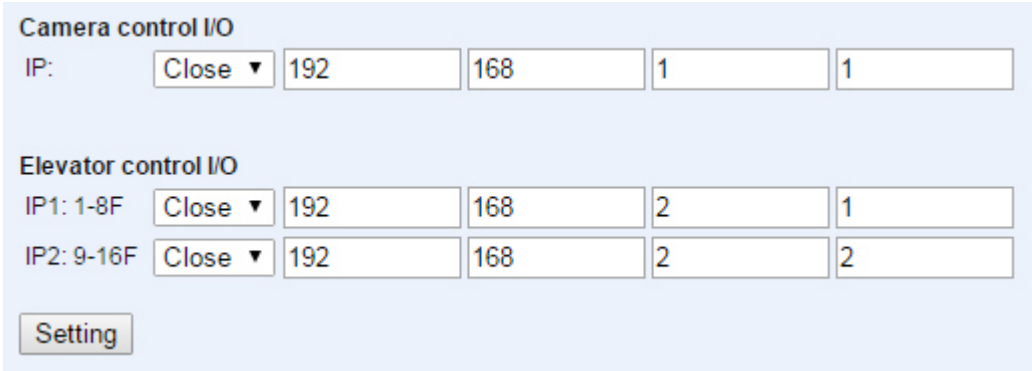


The following table provides an overview of the parameters contained in the Network Configuration section:

Item	Description
DHCP	**Open:** Dynamic Host Configuration Protocol (DHCP) is a network application protocol that automatically assigns an IP address to each device(ACS-11(P)-MF does not support this feature)
	Close(Default): Static IP: If there is no DHCP server installed in your network, you can configure the network settings manually.
IP	Each ACS-11-MF device connected to the network must have its own unique IP address. This parameter is used to assign a specific IP address (Default:192.168.0.1)
Mask	This parameter is used to assign the subnet mask for the ACS-11-MF device. The subnet mask indicates which portion of the IP address is used to identify the local network or subnet. (Default:255.255.0.0)
MAC	This parameter is used to show the MAC address of the ACS-11-MF, which must be in the format FF-FF-FF-FF-FF-FF.
FW Ver.	Firmware version of the ACS-11(P)-MF

Camera and elevator control I/O connection IP Configuration

In addition to the card access control function, ACS-11(P)-MF series modules also support floor control and camera control functions. Users can enable this feature in these setting contents.



The following table provides an overview of the parameters contained in the Camera and Elevator control I/O connection IP Configuration section.

Camera control I/O

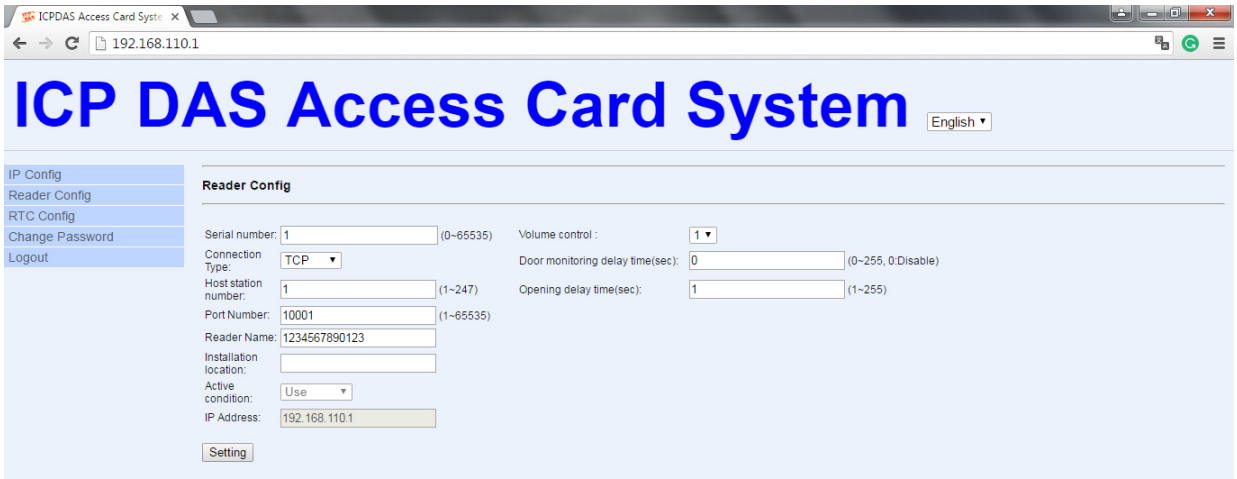
Item	Description
IP	This parameter is used to assign a specific IP address of the tET-P2R2 that can control the camera with the external trigger signal. (Default:192.168.1.1)
Open/Close	Open: Enable this function Close: Disable this function (Default: Close)

Elevator control I/O

Item	Description
IP1: 1-8F	This parameter is used to assign a specific IP address of the ET-7067 that can control the elevator (1F to 8F) for building floor control. (Default:192.168.2.1)
IP2: 9-16F	This parameter is used to assign a specific IP address of the ET-7067 that can control the elevator (9F to 16F) for building floor control. (Default:192.168.2.1)
Open/Close	Open: Enable this function Close: Disable this function (Default:Close)

3.3.2 Reader Configuration

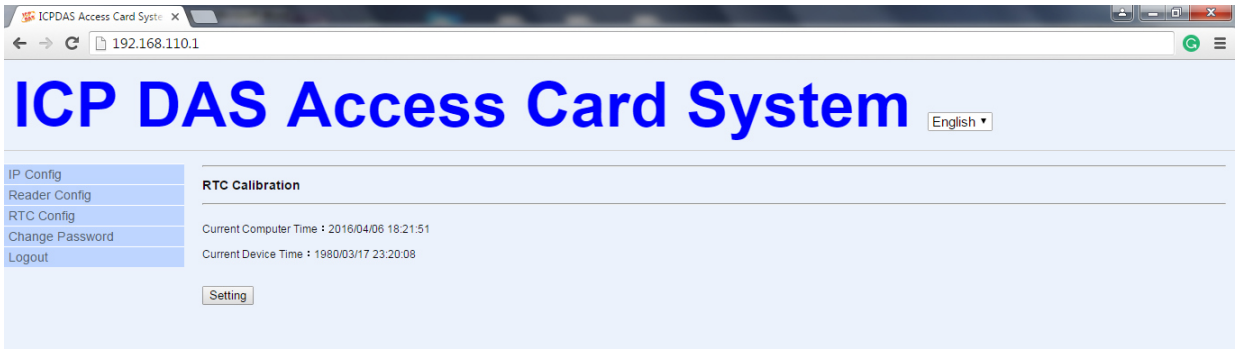
Clicking the "Reader Configure" tab will display the settings page allowing you verify the current settings and configure the general parameters for the ACS-11-MF device, each of which will be described in more detail below.



Item	Description
Serial Number	Serial number assigned to each unit and is used to track project. (Default:1) (Range:0~65535)
Connection Type	Select the connection interface. (Default:TCP)
Host station number	The station Identifier in RS-485 connection type application. (Default:1) (Range:1~247)
Port number	Communication port number of ACS-11-MF. (Default:10001) (Range:1~65535)
Reader Name	The module information indicates the name of the alias that is used to identify the module.
Installation location	The module information indicates the installation location that is used to identify the module.
IP Address	Display the IP address of the module.
Volume control	Volume control settings of the module. (Default:3) (Range:1~5)
Door monitoring delay time(sec)	If the time is reached, but the door is still not closed (DI 0 is on), then the relay(CN5) will be triggered. (Default:5)
Opening delay time(sec)	Relay(CN5) trigger time to open the electric lock. (Default:1)

3.3.3 RTC Configuration

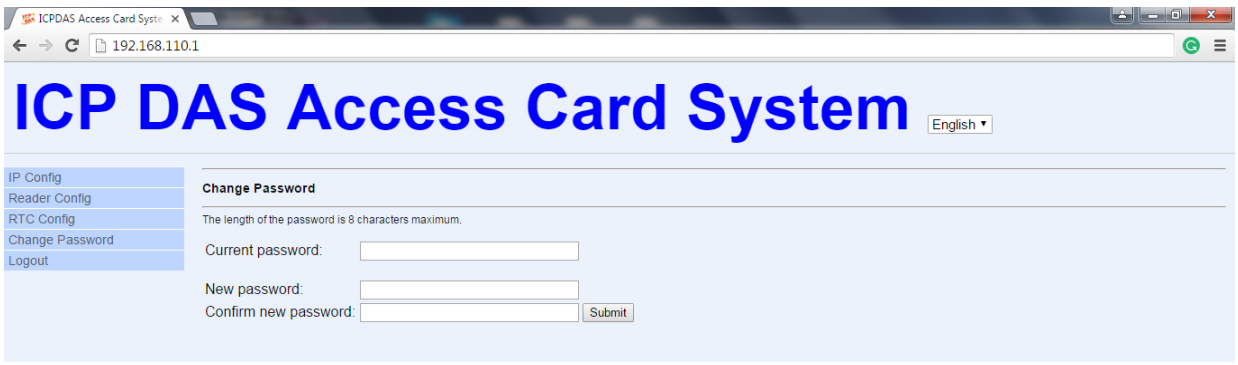
Clicking the "RTC Configure" tab will display the settings page allowing you verify the current system time settings of the ACS-11-MF device.



Item	Description
RTC Calibration	Reference computer time to set the system time of the module

3.3.4 Change Password Configuration

Clicking the "Change Password" tab will display the settings page allowing you change the login password settings of the ACS-11-MF device.



Item	Description
Change Password	Enter the Current password, New password and Confirm password information and then click the “Submit” button to finish configuring.

3.4 Installation

Before use, associated software configuration, the steps described as follows：

Step 1: Install and setup MySQL operating environment

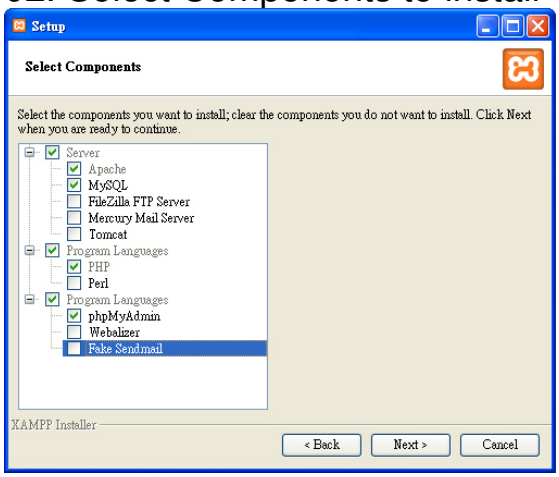
01. Download the XAMPP installation files as the following link, and install on computer. XAMPP is an easy to install Apache distribution containing MySQL, PHP.

http://sourceforge.net/projects/xampp/files/XAMPP%20Windows/

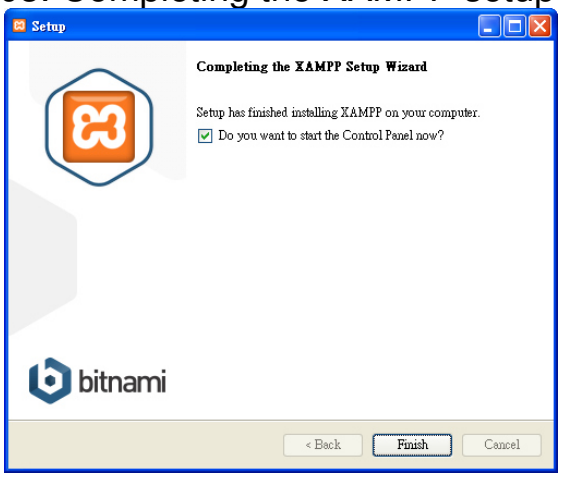
Note. Windows XP or Windows 2003: Install version 1.8.2 of XAMPP that includes PHP version 5.4 or earlier.

Installation includes:
a. Apache web server
b. MySQL database
c. PHPMyAdmin web database management program

02. Select Components to install

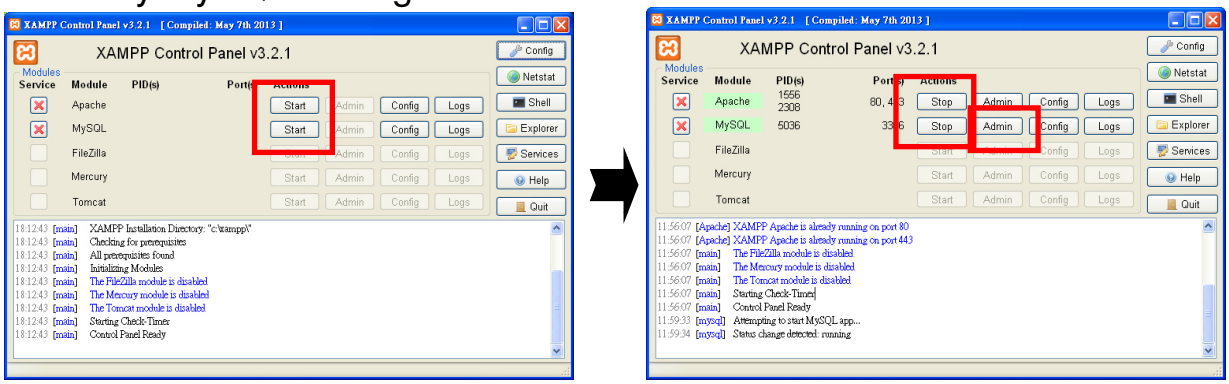


03. Completing the XAMPP setup

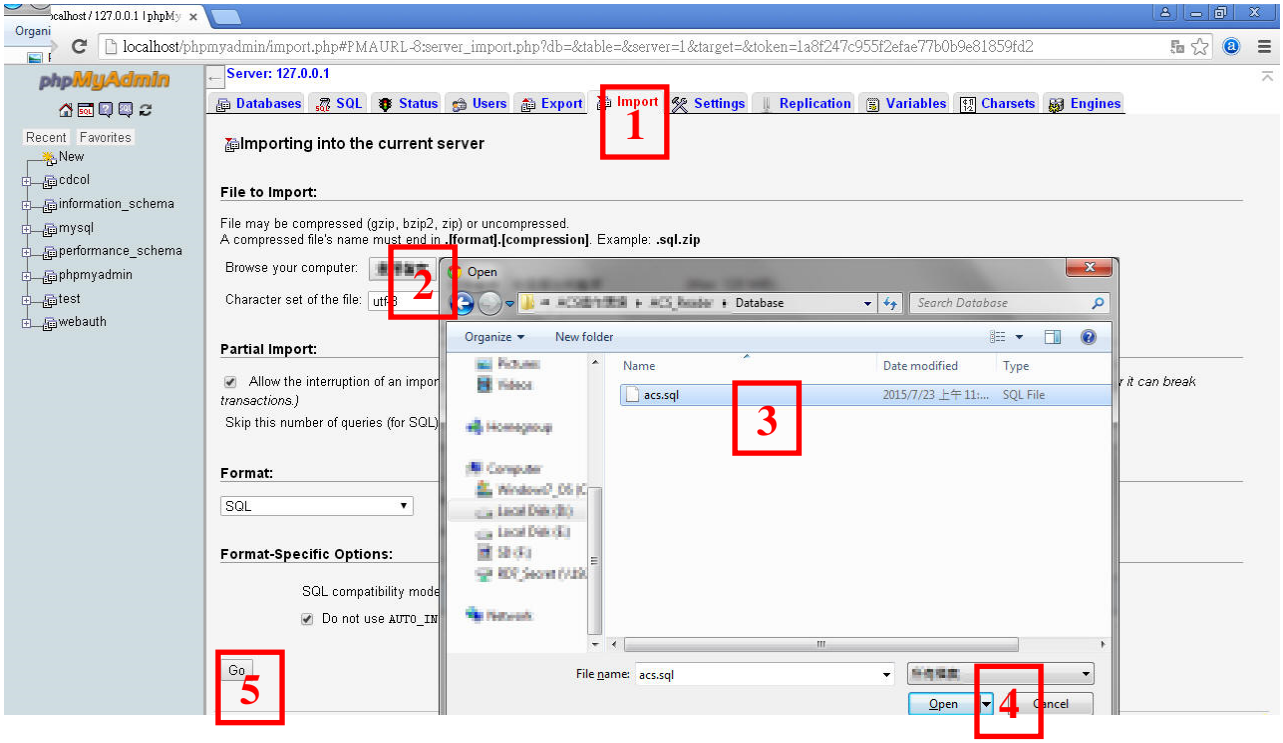


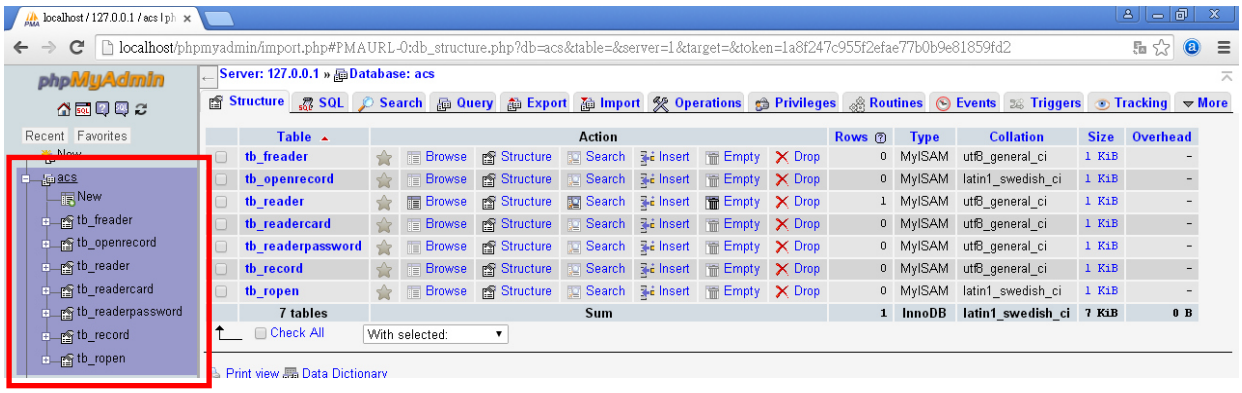
04. Launch XAMPP control panel and start Apache and MySQL service

05. Entry MySQL management environment



06. Import database file of access control system – acs.sql

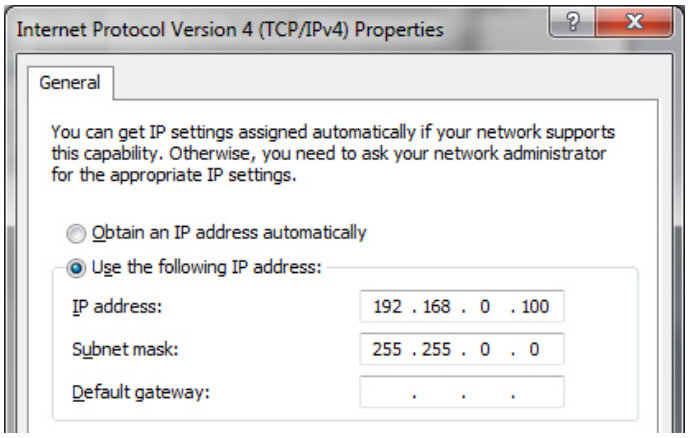




Step 2: Network setup

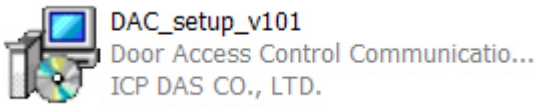
01. Network configuration and connection

a. Entry the **IP address** as "192.168.0.x", where "x" is a number between 1 and 254 **except 1**, **Subnet mask** as "255.255.0.0". Finally, press "OK" button.



b. Establish a network connection between PC and ACS-11-MF

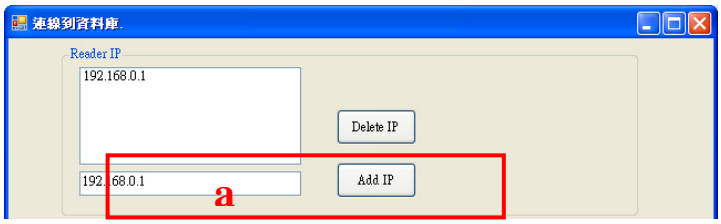
Step 3: Install Door Access Control Communication Program

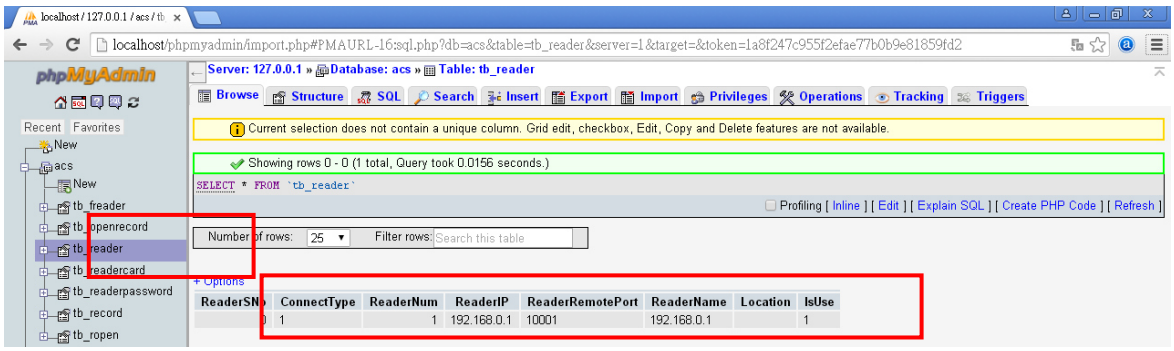


Step 4: Configure Mifare card UID in the database

01. Launch Database Communication Program (RFIDCardReader_DB.exe)

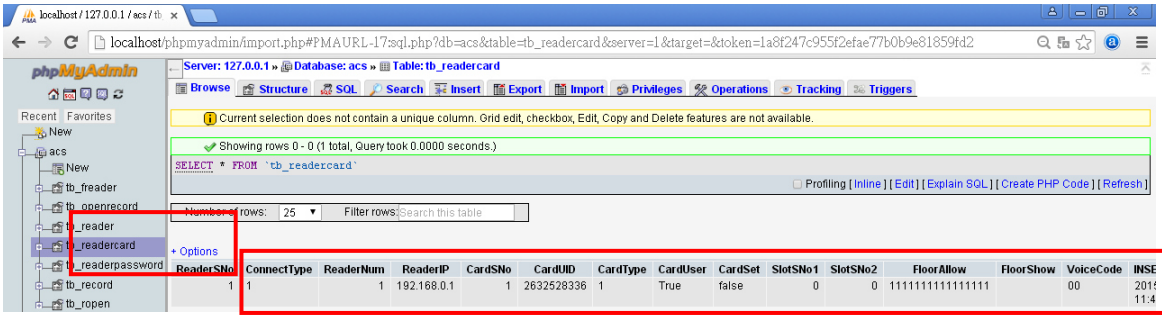
a. Fill and Add ACS-11-MF IP address: 192.168.0.1





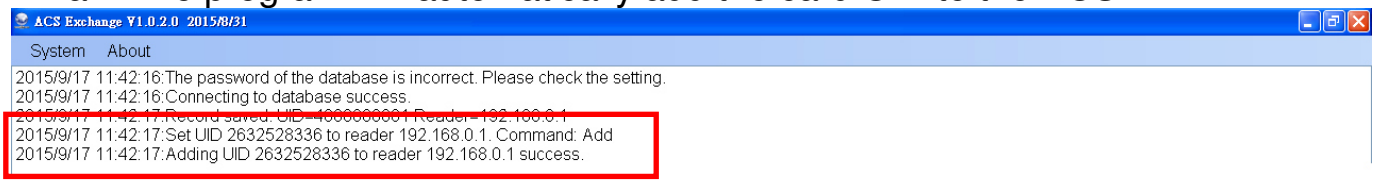
a. Fill card UID: 2632528336
b. Fill voice number: 0
c. Select ACS-11-MF IP address: 192.168.0.1
d. Fill floor control selection: 1111111111111111(16F·····1F)
e. Add/Modify UID

f. It will automatically add the card UID to the database



02. Launch Door Access Control Communication Program (RFIDCardReader.exe)

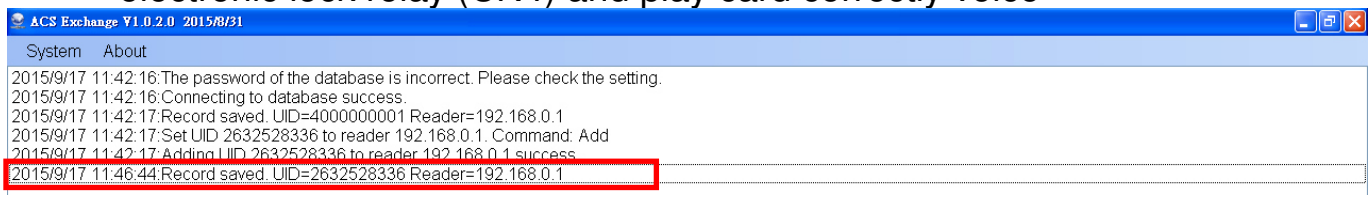
a1. The program will automatically add the card UID to the ACS-11-MF

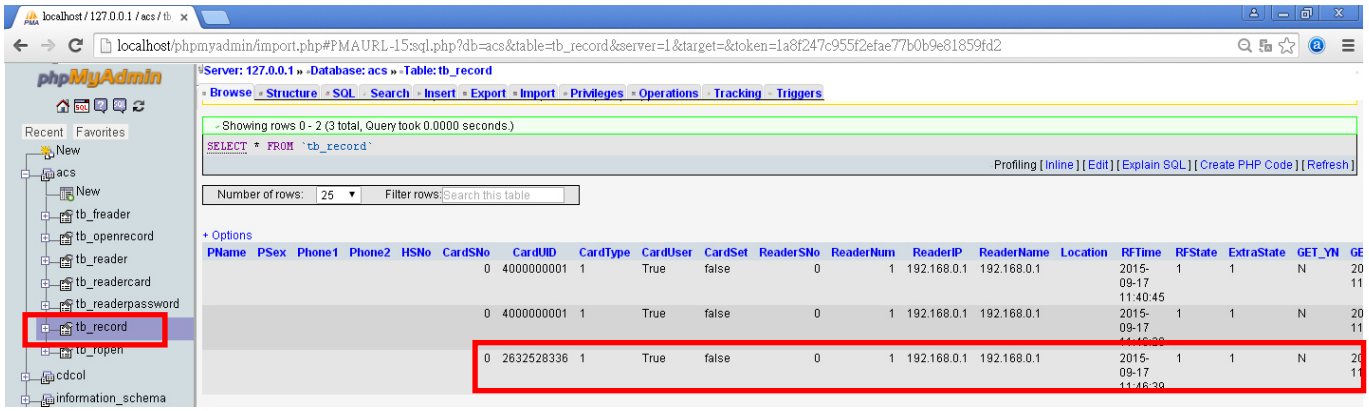


a2. Place the Mifare card close to the ACS-11-MF

a3. ACS-11-MF will read the card UID and return to database via Door Access Control Communication Program

a4. Since the card UID is allowed, so ACS-11-MF will open the electronic lock relay (CN4) and play card correctly voice





4. Communication command Example

After the establishment of the Ethernet wire connection between the PC and the ACS-11(P)-MF, please follows the sections below to learn how to configure the ACS-11(P)-MF.

4.1 Communication settings

The default ACS-11(P)-MF communication port number is 10001.

4.2 Command List

4.2.1 Add Card Number

Function Code	Data Length	UID (8 byte)	Reserve (1 byte)	Elevator Floor Selection (2 byte)	Elevator Floor Open Time (1 byte)	Voice Code (2 byte)	Reserve (2 byte)	CRCH	CRCL
0x05	0x10		0x01				0x00 0x01		

UID: 0x9CEBA860 00000000(2632689760), if the data length is less than 8 bytes, please fill the remaining data fields to zero.
Elevator Floor Selection: 0x80 0x01 (1~8F, 9~16F)
Elevator Floor Open Time: 0x05 (5 Second)
Voice Code: 0x30 0x31 (The 01 Voice Code)

Response: Success

Function Code	Data Length	Result	CRCH	CRCL
0xAF	0x01	0x01		

Response: Fail

Function Code	Data Length	Result	CRCH	CRCL
0xAE	0x01	0x01		

Response: Full number of cards

Function Code	Data Length	Result	CRCH	CRCL
0xAE	0x01	0x02		

4.2.2 Delete Card Number

Function Code	Data Length	UID (8 byte)	CRCH	CRCL
0x06	0x08			

UID: 0x9CEBA860 (2632689760), if the data length is less than 8 bytes, please fill the remaining data fields to zero.

Response: Success

Function Code	Data Length	Result	CRCH	CRCL
0xAF	0x01	0x01		

Response: Fail

Function Code	Data Length	Result	CRCH	CRCL
0xAE	0x01	0x01		

4.2.3 Delete All Cards' Number

Function Code	Data Length	Reserve (2 byte)	CRCH	CRCL
0x07	0x02	0x44 0x45		

Response: Success

Function Code	Data Length	Result	CRCH	CRCL
0xAF	0x01	0x01		

Response: Fail

Function Code	Data Length	Result	CRCH	CRCL
0xAE	0x01	0x01		

4.2.4 Card Number Inquiry

Function Code	Data Length	UID (8 byte)	CRCH	CRCL
0x0A	0x08			

UID: 0x9CEBA860 (2632689760), if the data length is less than 8 bytes, please fill the remaining data fields to zero.

Response (Have this card)

Function Code	Data Length	UID (8 byte)	Elevator Floor Selection (2 byte)	Voice Code (2 byte)	CRCH	CRCL
0xAA	0x0C					

UID:0x9CEBA860 (2632689760) , if the data length is less than 8 bytes, please fill the remaining data fields to zero.
Elevator Floor Selection: 0xFF, 0xFF (1~8F, 9~16F)
Voice Code: 0x30 0x37 (The 07 Voice Code)

Response (Have this card)

Command	Len	Result	CRCH	CRCL
0x80	0x1	0x80		

Example:
00 01 01 01 0A 08 9C E9 AE F2 00 00 00 00 07 8D
UID:9C E9 AE F2 00 00 00 00

Response (With Card UID)
01 01 00 01 AA 0C 9C E9 AE F2 00 00 00 00 01 00 30 34 EE 88
UID:9C E9 AE F2 00 00 00 00
Elevator Floor Selection: 01 00(1~8F, 9~16F)
Voice Code: 30 34

Response (No such card)
01 01 00 01 80 01 80 A7 1C

4.2.5 Add Password Number

Function Code	Data Length	Password (8 byte)	Reserve (1 byte)	Elevator Floor Selection (2 byte)	Elevator Floor Open Time (1 byte)	Voice Code (2 byte)	Reserve (2 byte)	CRCH	CRCL
0x42	0x10		0x01				0x00 0x01		

Password: 0x01020304 (1234), the password data length is 4 byte, please fill the remaining data fields to zero
Elevator Floor Selection: 0x80 0x01 (1~8F, 9~16F)
Elevator Floor Open Time: 0x05 (5 Second)
Voice Code: 0x30 0x37 (The 07 Voice Code)

Response: Success

Function Code	Data Length	Result	CRCH	CRCL
0xAF	0x01	0x01		

Response: Fail

Function Code	Data Length	Result	CRCH	CRCL
0xAE	0x01	0x01		

Response: Card is full

Function Code	Data Length	Result	CRCH	CRCL
0xAE	0x01	0x02		

4.2.6 Delete Password Number

Function Code	Data Length	Password (8 byte)	CRCH	CRCL
0x43	0x08			

Password: 0x01020304 (1234), the password data length is 4 byte, please fill the remaining data fields to zero

Response: Success

Function Code	Data Length	Result	CRCH	CRCL
0xAF	0x01	0x01		

Response: Fail

Function Code	Data Length	Result	CRCH	CRCL
0xAE	0x01	0x01		

4.2.7 Delete All Passwords' Number

Function Code	Data Length	Reserve (2 byte)	CRCH	CRCL
0x44	0x02	0x44 0x45		

Response: Success

Function Code	Data Length	Result	CRCH	CRCL
0xAF	0x01	0x01		

Response: Fail

Function Code	Data Length	Result	CRCH	CRCL
0xAE	0x01	0x01		

4.2.8 Inquire Access Record

Function Code	Data Length	Reserve (2 byte)	CRCH	CRCL
0x27	0x02	0x52 0x54		

Response: Success

Function Code	Data Length	UID (8 Byte)	Access Time (7 Byte)	Access Type	CRCH	CRCL
0x88	0x10					

UID: 0x9CEBA860 (2632689760), if the data length is less than 8 bytes, please fill the remaining data fields to zero.

Access Time: 0x07 E0 04 12 0A 24 30

Year: 0x07 0xE0 (2016)

Month: 0x04 (4)

Day: 0x12 (18)

Hour: 0x0A (10)

Minute: 0x24 (36)

Second: 0x30 (48)

Access Type:

Legal: 0x01

Illegal: 0x02

Response: No Record

Function Code	Data Length	Result	CRCH	CRCL
0x80	0x01	0x80		

4.2.9 Delete Access Record

Function Code	Data Length	Reserve (2 byte)	CRCH	CRCL
0x28	0x02	0x52 0x54		

Response: Success

Function Code	Data Length	Result	CRCH	CRCL
0xAF	0x01	0x01		

Response: Fail

Function Code	Data Length	Result	CRCH	CRCL
0xAE	0x01	0x01		

4.2.10 Configure System Time

Function Code	Data Length	System Time (7 Byte)	CRCH	CRCL
0x10	0x07			

System Time: 0x07 E0 04 12 0A 24 30

Year: 0x07 0xE0 (2016)

Month: 0x04 (4)

Day: 0x12 (18)

Hour: 0x0A (10)

Minute: 0x24 (36)

Second: 0x30 (48)

Response: Success

Function Code	Data Length	Result	CRCH	CRCL
0xAF	0x01	0x01		

4.2.11 Check Door Position

Function Code	Data Length	Reserve	CRCH	CRCL
0x50	0x02	0x52 0x54		

Response

Function Code	Data Length	Status	CRCH	CRCL
0xAF	0x01			

Status: 1=>Close, 2=>Open

4.3 CRC Calculation (CCITT-16)

(C# Example)

```
public static byte[] HexStringToByteArray(string hexString)
{
        if (hexString.Length != 4)  hexString = "0" + hexString;

        byte[] HexAsBytes = new byte[hexString.Length / 2];

        for (int index = 0; index < HexAsBytes.Length; index++)
        {
           string byteValue = hexString.Substring(index * 2, 2);
           HexAsBytes[index] = byte.Parse(byteValue, NumberStyles.HexNumber,
           CultureInfo.InvariantCulture);
        }
        return HexAsBytes;
}
```

```
private byte[] CRC_16(byte[] data, int DataLength)
{
   uint CRC_Polynomial = 0x1021;
   uint CRC_Init = 0xFFFF;
   for (int i = 0; i < DataLength; i++)
   {
    CRC_Init = CRC_Init ^ ((uint)data[i] << 8);
    for (int j = 0; j < 8; j++)
    {
     if (System.Convert.ToBoolean(CRC & 0x8000))
       CRC_Init = (CRC_Init << 1) ^ CRC_Polynomial;
     else
       CRC_Init = (CRC_Init << 1);
    }
   }

     return HexStringToByteArray(Convert.ToString((UInt16)(CRC^ 0xFFFF), 16));
}
```

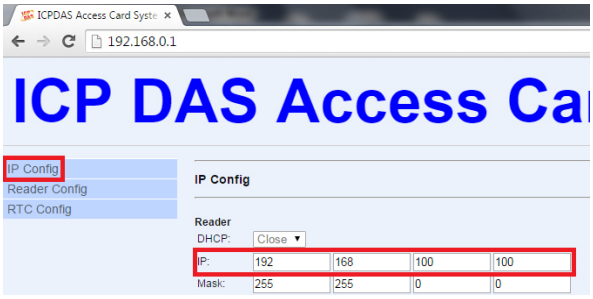
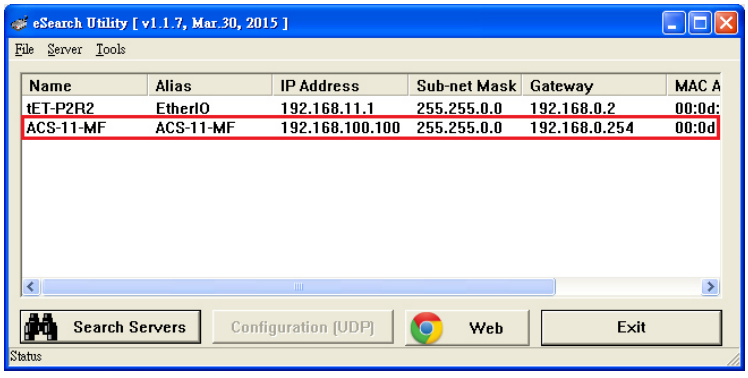
Example：

Input: 0xAF, 0x01, 0x01

Data length: 3

Output：0xDE(CRCH), 0x81(CRCL)

Troubleshooting

Item	Problem Description	Solution
1	Power Failure (PWR LED Off)	1. Please return to the ICP DAS for inspection and repair
2	Cards can not be used	1. Make sure cards support Mifare S50 standard (ISO 14443-A) 2. EM and HID cards are not supported
3	How to find out IP address of ACS-11-MF?	1. Entry the default IP operation mode Step1. Press and hold the No. 1 key Step2. Reset the power of ACS-11-MF Step3. Now the PWR led flashes and IP address is "192.168.0.1" Step4. Enter the settings web page then find out IP address  2. Use eSearch Utility Step1. Launch eSearch.exe Step2. Press "Search Servers" button then find out IP address 

● Technical Support

If you have problems about using the ACS-11-MF series module, please contact ICP DAS Product Support.
Email: service@icpdas.com