# ACS-11(P)-MF

# Access Control Reader

User's Manual







www.icpdas.com

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#### **Document Revision**

Version	Date	Description of changes
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## **Table of Contents**

1.	Inti	r <mark>oduc</mark> t	ion	5
	1.1		Features	6
	1.2		Applications	6
	1.3		Specifications	6
2.	Ha	rdware	9	8
	2.1		Front Panel	8
		2.1.1	LED Indicator	. 8
	2.2		Back Panel	. 9
	2.3		Dimensions	.11
	2.4		Hardware Connections	.11
		2.4.1	Power and I/O wiring architecture	.11
		2.4.2	I/O connection	13
	2.5		Jumper Settings	13
		2.5.1	Terminator Resistor Settings	13
		2.5.2	Operation Mode Settings	14
	2.6	_	Firmware update method	14
3.	So	ftware		17
	3.1		Installing the eSearch Utility	17
	3.2		Using the eSearch Utility to Assign an IP Address	17
	3.3		Web Configuration	20
		3.3.1	IP Address Configuration	21
		3.3.2	Reader Configuration	23
		3.3.3	RTC Configuration	25
		3.3.4	Change Password Configuration	25
	3.4		Installation	26
4.		mmun		31
	4.1		Communication settings	31
	4.2	401	Command List	31
		4.2.1	Add Card Number	31
		4.2.2	Delete Card Number	32
		4.2.3	Card Number Inquiry	ა∠ ეე
		4.2.4	Add Boosword Number	33 24
		4.2.0	Add Fassword Number	34 24
		4.2.0 197	Delete Fasswords' Number	34 25
		ч.с./ 1 2 Q		32
		4.2.0 1 2 0	Delete Access Record	30
		7.2.3		00

	4.2.10	Configure System Time	36
	4.2.11	Check Door Position	37
4.3		CRC Calculation (CCITT-16)	37

# 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)	1 <b>M</b>	-					
Specification	ISO-11898-2, CAN 2.0A/B -						
UART							
СОМ	RS-485(D+, D-)						
Baud rate(bps)	9600						
Format	N, 8, 1						
Ethernet							
Controller	10/100Base-TX Ethernet Contro	oller (Auto-negotiating, Auto MDIX)					
Connector	RJ-45 with LED indicator						

PoE	-	Yes				
Digital Input						
Channels	4	2				
Input type	Dry Contact (Source), W	Vet Contact (Sink, Source)				
Relay Output						
Channels		2				
Output Type	Fo	rm C				
Contact Rating	0.5A 120VA	C / 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	Y	/es				
Powered from CN1 Connector	10 ~ 30 VDC	<u>-</u>				
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°C ~ +60°C					
Storage Temperature	-30°C ~ +80°C					
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						
	Default IP operation mode	Blink per 100 ms						
	Camera control module connection failed	Blink per 1000 ms						
PWR	Elevator control module 1 connection failed	Blink per 2000 ms						
	Elevator control module 2 connection failed	Blink per 3000 ms						
	Power failure	Off						
	RFID induction	Blink						
RF	Firmware update mode	Blink per 500 ms						
	Idle	Off						
<b>C1</b>	Data transmission	Blink						
51	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

Con	nector Type	Pin Assignment							Description	
CN1	5		ND			VDC			Power (+10V~+30 VDC)	
CN2	<b>F</b>	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		C	ОМ		N	0		NC		Anti-sabotage detection
										(Relay Output)
	E				N	С				Electronic lock control
CN4					CC	ЭM				
		NO								(Relay Output)
		NC								
CN5	<u> </u>		COM							Door position alarm output
			NO						(Relay Output)	
										CAN(CAN_H/CAN_L)
										Baud Rate (bps) : 1M
										RS-485(D+/D-)
CN6	<b>F</b> •• <b>P</b>	CAN	_L	CA	N_H	D+		D-		Baud Rate (bps): 9600
										Parity: NONE
										Data Bits: 8
										Stop Bits: 1



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

Con	nector Type		Pin Ass	ignment	Description		
CN1	æ	D-	÷	D-			RS-485(D+/D-) Baud Rate (bps): 9600 Parity: NONE Data Bits: 8 Stop Bits: 1
CN2	<b>F</b> 9	DI0	G	3 DI1			DI0(Door position detection) DI1(Electric lock trigger) (Digital Input, Dry Contact)
CN3	F		<u> </u>	<u>С</u> Эм	Electronic lock control (Relay Output)		
CN4	F.J		N CC N	С ОМ О	Door position alarm output (Relay Output)		
CN5	<b>F</b> -T	СОМ	N	0		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 (120 $\Omega$ ) 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 <u>JP3</u> to activate the 120 $\Omega$  terminal resistor built in the module, as the Table 2-4. Note that the default setting is active.

able 2-4. Terminal Resistor Jumper (ACS-TT-MF)					
Jumper Position					
Enable (default)	Disable				
JP3	JP3				

## 

#### 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					
JP2	JP2					

#### 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.

Internet Protocol Version 4 (TCP/IPv4) Properties							
General							
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.							
Obtain an IP address automatical	ly						
Use the following IP address:							
IP address:	192.168.0.2						
Subnet mask:	255.255.0.0						
Default gateway:	• • •						

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

FW_Update_Tool v2.00	
1. Download Interface Intel(R) 82579LM Gigabit Network Connection IP:192.168.0.2	2 •
2 IP Address: 192 _ 168 _ 0 _ 1	
2. Firmware Path E:\0827\ACS_Firmware_Update_Tool\ACS-11-MF-ODM1_v3.	2.fw
3 Br	owser
- 3. Firmware Update Click "Update" button to start firmware updating	11
4	pdate

FW_Update_Tool v2.00
1. Download Interface
Intel(R) 82579LM Gigabit Network Connection IP:192.168.0.2
IP Address: 192 _ 168 _ 0 _ 1
2. Firmware Path
E:\0827\ACS_Firmware_Update_Tool\ACS-11-MF-ODM1_v3.2.fw
Browser
3. Firmware Update Click "Update" button to start firmware updating!!
Erasing
+
Programming
Verify Passed

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: <a href="http://ftp.icpdas.com/pub/cd/tinymodules/napdos/software/esearch/">http://ftp.icpdas.com/pub/cd/tinymodules/napdos/software/esearch/</a>

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.

🐗 eSearch Utility [ v1.1.	7, Mar.30, 2015 ]				
<u>File S</u> erver <u>T</u> ools					
Name	Alias	IP Address	Sub-net Mask	Gateway	^
ACS-11-MF	ACS-11-MF-04	192.168.110.4	255.255.0.0	192.168.110.254	
ACS-11-MF	ACS-11-MF-05	192.168.110.5	255.255.0.0	192.168.110.254	
ACS-11-MF	ACS-11-MF	192.168.110.2	255.255.0.0	192.168.110.254	=
ACS-11-MF	ACS-11-MF	192.168.0.1	255.255.0.0	192.168.0.254	
					-
					~
<				>	-
					2
Search Server	rs Configura	tion (UDP) 🛛 🌈	Web	Fxit	
			TTCD	LAR	
Status					1.

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)

Configure Server (I	JDP)				X
Server Name :	ACS-11-MF				
DHCP:	0: OFF 💌	Sub-net Mask :	255.255.0.0	Alias:	ACS-11-MF
IP Address :	192.168.0.1	Gateway :	192.168.0.254	MAC:	00:0d:e0:c0:00:19
Warning!! Contact your Ne	twork Administrator to g	jet correct configura	ntion before any changing	<u>j</u> !	OK Cancel
			Ļ		
Configure Server (I	JDP)				X
Server Name :	ACS-11-MF				
DHCP:	0: OFF 🔻	Sub-net Mask :	255.255.0.0	Alias:	ACS-11-MF-01
IP Address :	192.168.110.1	Gateway :	192.168.0.254	MAC:	00:0d:e0:c0:00:19
Warning!! Contact your Ne	twork Administrator to g	J jet correct configura	ntion before any changing	<u>,</u>	OK Cancel

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.

-MF-01 192.168 -MF-05 192.168 -MF-02 192.168	.110.1 255.255.0 .110.5 255.255.0 .110.2 255.255.0	.0         192.168.110.254           .0         192.168.110.254           .0         192.168.110.254
-MF-05 192.168 -MF-02 192.168	.110.5 255.255.0 .110.2 255.255.0	.0 192.168.110.254
-MF-02 192.168	110.2 255.255.0	0 100 100 110 004
		.0 192.168.110.254
-MF-04 192.168	.110.4 255.255.0	.0 192.168.110.254

## 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.

SS ICPDA	S Access Card Syste 🗙	-
← → (	<b>2</b> 192.168.110.1	

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
Passwo	ord	Admin
S ICPDAS Access Card Syste	×	
← → C □ 192.168.	110.1	
	JA5	Access La
IP Config	Lawin	
Reader Config	Login	
RTC Config	To enter the we	b configuration, please type password in the following field.
Change Password	Login pass	word
Logout	Login pass	Submit

ACS-11-MF User's Manual (Ver.1.0, Apr./2016) ------ 20

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.

5 ICPDAS Access Card Syst	te x	= 0 <mark>= ×</mark>
← → C 🗋 192.16	8.110.1	馬 公 <b>G</b>
	DAS Access Card System	
IP Config		
Reader Config	- Config	
RTC Config		
Change Password	Reader DHCP: Clans.	
Logout		
	Mask: 255 0 0 0	
	MAC: 00:00:E0:C0:00:19	
	FW Ver.: v3.3	
	Camera control IO	
	IP: Close V 192 168 1 1	
	Elevator control I/O	
	IP1: 1-8F Close T 192 168 2 1	
	IP2:9-16F Close V 192 168 2 2	
	Setting	

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.

Reader				
DHCP:	Close •			
IP:	192	168	110	1
Mask:	255	255	0	0
MAC:	00:0D:E0:C	0:00:19		
FW Ver.:	v3.3			

#### **Network Configuration**

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

Item	Description
DHCP	<b>Open:</b> 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) <b>Close(Default)</b> : 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.

Camera cor	ntrol I/O				
IP:	Close •	192	168	1	1
Elevator co	ntrol I/O				
IP1: 1-8F	Close •	192	168	2	1
IP2: 9-16F	Close •	192	168	2	2
Setting					

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.
Open/Close	Open: Enable this function Close: Disable this function (Default: Close)

#### Elevator control I/O

Item	Description
	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)
	This parameter is used to assign a specific IP address of the
	ET-7067 that can control the elevator (9F to 16F) for building
IF2. 9-10F	floor control.
	(Default:192.168.2.1)
	Open: Enable this function
Open/Close	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.

<ul> <li></li></ul>	0.1					_	• • • • • • • • • • • • • • • • • • •
ICP D	AS	Acce	SS	Card	Syste		
IP Config Reader Config	Reader Conf	ig					
Change Password Logout	Serial number: Connection Type: Host station number: Port Number: Reader Name: Instaliation: Active condition: IP Address: Setting	1 TCP	(0~65535) (1~247) (1~65535)	Volume control : Door monitoring delay time(sec): Opening delay time(sec):	1 • 0 1	0-255, 0 Disable) (1-255)	

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.

	0.1		
ICP D	A	S Access Card System	
IP Config Reader Config RTC Config Change Password Logout	RTC C: Current Current Setting	Allbration Computer Time : 2016/04/06 18:21:51 Device Time : 1980/03/17 23:20:08	
Item		Description	
RTC Calibrat	ion	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.

SICPDAS Access Card Syste			
← → C 🗋 192.168.11	L0.1		<b>e</b> =
ICP D	A	S Access Card System	
IP Config	Change	- Decement	
Reader Config	Change	= Fassword	
RTC Config	The leng	(th of the password is 8 characters maximum,	
Change Password	Currer	nt password:	
Logout			
	New p	iassword:	
	Confin	m new password: Submit	
Item		Description	
Change Passw	vord	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





04. Launch XAMPP control panel and start Apache and MySQL service 05. Entry MySQL management environment

🔀 XAMPP Control Panel v3.2.1 [Compiled: May 7th 2013]		XAMPP Control Panel v3.2.1 [Compiled: May 7th 2013]	
XAMPP Control Panel v3.2.1	Config	XAMPP Control Panel v3.2.1	Config
Modules Service Module PID(s) Port( <u>Acuons</u>	Netstat	Modules Service Module PID(s) Port <mark>s) Actions</mark>	🔘 Netstat
X Apache Start Admin Config Logs	Shell	Apache 1556 80, 4 3 Stop Admin Config Logs	Shell
MySQL Start Admin Config Logs	Explorer	MySQL 5036 33 6 Stop Admin Config Logs	🗀 Explorer
FileZilla Com Admin Config Logs	Services	FileZilla Start Config Logs	👳 Services
Mercury Start Admin Config Logs	leip	Mercury Start Admin Config Logs	😣 Help
Tomcat Start Admin Config Logs	Quit	Tomcat Start Admin Config Logs	Quit
18:12:43 [main] XAMPP Installation Directory: "c'trampp\"		11:5607 [Apache] XAMPP Apache is already running on port 80	~
18:12:43 [main] Checking for perequisites 18:12:43 [main] All perequisites found		11:5607 [Apacine] Schultz Apacine is aneady running on port 445 11:5607 [main] The FileZilla module is disabled	
18:12:43 [main] Initializing Modules 18:12:43 [main] The FileZilla module is disabled		11:56:07 [main] The Mercury module is disabled 11:56:07 [main] The Tomcat module is disabled	-
18:12:43 [main] The Mercury module is disabled 18:12:43 [main] The Tomcat module is disabled	=	11:5607 [main] Starting Check-Times 11:5607 [main] Control Panel Ready	
18:12:43 [main] Starting Check-Timer 18:12:43 [main] Control Panel Ready		11:59:33 [mysql] Attempting to start MySQL app 11:59:34 [mysql] Status change detected; running	
	~		~

#### 06. Import database file of access control system - acs.sql



🏡 localhost / 127.0.0.1 / acs l ph 🗴													L	100	x
$\leftarrow \Rightarrow \mathbf{C}$ 🗋 localhost/php	myad	min/import.php#PMA	URL-0:d	b_structu	re.php?db=acs	&table=&se	erver=1&ta	irget=&toke	en=1a8f247	c955f2efa	e77b0b9e	81859fd2		<b>5</b> 公 @	Ξ
phpMyAdmin	← Se	rver: 127.0.0.1 » 🖶 Da	tabase: a	ncs											~
🔥 🔜 🖾 💭 😂	ff 5	Structure 💦 SQL 🍃	Search	n 📠 Que	ery 🏦 Expor	t 🚡 Impo	nt % Ope	erations g	Privilege	s 🚕 Rou	tines 🕑	Events 28 Trigger	s 💿 Tr	acking 🗢 🛛	Nore
Recent Favorites		Table 🔺				Action				Rows @	Туре	Collation	Size	Overhead	
New		tb_freader	1	Browse	Structure	😰 Search	∃e Insert	🖀 Empty	🗙 Drop	0	MyISAM	utf8_general_ci	1 KiB	-	
ejacs		tb_openrecord		Browse	Structure	🧾 Search	∃e Insert	🖀 Empty	🗙 Drop	0	MyISAM	latin1_swedish_ci	1 KiB	-	
New		tb_reader	1	Browse	Structure	😰 Search	3je Insert	🖀 Empty	🗙 Drop	1	MyISAM	utf8_general_ci	1 KiB	-	
e <b>m</b> tb_freader		tb_readercard	☆ 🗉	Browse	Structure	😰 Search	3je Insert	😁 Empty	🗙 Drop	0	MyISAM	utf8_general_ci	1 KiB	-	
■ftb_openrecord		tb_readerpassword	☆ 🗉	Browse	Structure	🕎 Search	📑 insert	😁 Empty	🗙 Drop	0	MyISAM	utf8_general_ci	1 KiB	-	
e fs_tb_reader		tb_record	☆ 🗉	Browse	Structure	😰 Search	3je Insert	😁 Empty	🗙 Drop	0	MyISAM	utf8_general_ci	1 KiB	-	
tb_readercard		tb_ropen	*	Browse	Structure	😰 Search	📑 insert	🖀 Empty	🗙 Drop	0	MyISAM	latin1_swedish_ci	1 KiB	-	
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a_∰ tb_ropen	è P	rint view 📠 Data Dictio	narv												

#### 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

UID and Access- uid a mose	632528336 Modify UID Delete UID
reader access	22.105/0.1   Remote Access
L	
	查無資料,用新增方式增加一筆資料
	確定

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

🍌 localhost / 127.0.0.1 / acs / tb.	×	
$\leftarrow \rightarrow C \square localhost/p$	$phpmyadminfmport.php\#PMAURL-17:sql.php?db=acs&table=tb\_readercard&server=1⌖=&token=1a8f247c955f2efae77b0b9e81859fd2$	Q54☆ 🙆 ≡
php <mark>MyAdmin</mark> 샵 📾 🛯 😄 오	- Server: 127.0.0.1 » @Database: acs » 圖 Table: Ib_readercard 圖 Browse _ 査 Structure _ ② SOL _ ② Search  驿 Insert . 箇 Export	2
Recent Favorites	Current selection does not contain a unique column. Orid edit, checkbox, Edit, Copy and Delete features are not available.      Showing rows 0 - 0 (1 total, Ouery took 0.0000 seconds.)      SELECT * FROM "tb_readercard"      Profiling [Inline] [Edit] [Explain SQL] [Cree	ate PHP Code ] [ Refresh ]
cfto_openrecord cfto_reader c⊆ftreadercard	Number rows: 25 • Filter rows: Search this table	
c∰ t <mark>y_readerpassword</mark> c∰ tb_record c∰ tb_ropen	ConnectType         ReaderNum         ReaderIP         CardSNo         CardUID         CardType         CardUser         CardSet         SlotSNo1         SlotSNo2         FloorAllow         Floor           1         1         1         1         1         2632528336         1         True         false         0         0         111111111111111111111111111111111111	rShow VoiceCode INS 00 201 11:

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

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

ACS Exchange ¥1.0.2.0 2015/8/31	_ 3 ×
System About	
2015/9/17 11:42:16:The password of the database is incorrect. Please check the setting. 2015/9/17 11:42:16:Connecting to database success.	
2015/9/17 11:42:17:Set UID 2632528336 to reader 192.168.0.1. Command: Add 2015/9/17 11:42:17:Set UID 2632528336 to reader 192.168.0.1 Command: Add 2015/9/17 11:42:17:Adding UID 2632528336 to reader 192.168.0.1 success.	

- 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

ACS Exchange V1.0.2.0 2015/8/31	
System About	
1015/9/17 11:42:16:The password of the database is incorrect. Please check the setting. 1015/9/17 11:42:16:Connecting to database success. 1015/9/17 11:42:17:Record saved. UID=4000000001 Reader=192.168.0.1 1015/9/17 11:42:17:Set UID 2632528336 to reader 192.168.0.1. Command: Add 1015/9/17 11:42:17:Adding UID 2632528336 to reader 192.168.0.1 success.	
015/9/17 11:46:44:Record saved. UID=2632528336 Reader=192.168.0.1	

A localhost/127.0.0.1 / acs/tb_×														80	a x	
$\leftarrow \Rightarrow \mathbf{C}$ D localhost/php	myadmin/import.php#PM/	AURL-15:sql.php?d	b=acs&table=tb_	record &se	rver=1 <i>&amp;</i> ta	rget=&tok	en=1a8f247	c955f2efae7	7b0b9e8185	i9fd2				Q, 🖬 🗹	3 🕘 🚦	=
phpMyAdmin	Server: 127.0.0.1 » Databas	e: acs » -Table: tb_rec	ord													
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tb reader	PName PSex Phone1 F	Phone2 HSNo Card	SNo CardUID	CardType	CardUser	CardSet	ReaderSNo	ReaderNum	ReaderIP	ReaderName	Location	RFTime	RFState	ExtraState	GET_YN	GE
tb_readercard			0 4000000001	1	True	false	0	1	192.168.0.1	192.168.0.1		2015- 09-17	1	1	N	20
tb_readerpassword			0 400000004	1	True	foloo	0	1	10010001	102460.0.4		11:40:45	1	1	N	20
e∰ tb_record			0 400000000	'	nue	laise	0		192.100.0.1	192.100.0.1		09-17	1	1	IN	11
ι⊥_∰ το_ropen			0 2632528336	1	True	false	0	1	192.168.0.1	192.168.0.1		2015-	1	1	N	20
e cdcol												09-17				11
॑@information_schema																

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

UID: 0x9CEBA860 0000000(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 Selection: 0x80 0x01 (1~8F, 9~16

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	Data	UID	CRCH	CRCL
Code	Length	(8 byte)		
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	CRCH	CRCL
		(2 byte)		
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	CRCH	CRCL
		(8 byte)		
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	Elevator	Voice	CRCH	CRCL
		(8 byte)	Floor	Code		
			Selection	(2 byte)		
			(2 byte)			
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 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	Data	Password	Reserve	Elevator	Elevator	Voice	Reserve	CRCH	CRCL
Code	Length	(8 byte)	(1 byte)	Floor	Floor	Code	(2 byte)		
				Selection	Open	(2			
				(2 byte)	Time	byte)			
					(1 byte)				
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	Data	Password	CRCH	CRCL
Code	Length	(8 byte)		
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	CRCH	CRCL
		(2 byte)		
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	CRCH	CRCL
		(2 byte)		
0x27	0x02	0x52 0x54		

**Response: Success** 

Function	Data	UID	Access	Access	CRCH	CRCL
Code	Length	(8 Byte)	Time	Туре		
			(7 Byte)			
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	CRCH	CRCL
		(2 byte)		
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	CRCH	CRCL
		(7 Byte)		
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;
}
</pre>
```

```
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);
        }
    }
}</pre>
```

```
return HexStringToByteArray(Convert.ToString((UInt16)(CRC<sup>^</sup> 0xFFFF), 16));
```

}

Example : Input: 0xAF, 0x01, 0x01 Data length: 3

Output : 0xDE(CRCH), 0x81(CRCL)

	Iroubleshooting				
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	<ol> <li>Make sure cards support Mifare S50 standard (ISO 14443-A)</li> <li>EM and HID cards are not supported</li> </ol>			
3	How to find out IP address of ACS-11-MF?	<ul> <li>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"</li> <li>Step4. Enter the settings web page then find out IP address</li> <li>ICP DAS Access Ca</li> <li>ICP DAS Access Ca</li> <li>IV I 192168.01</li> <li>ICP DAS Access Ca</li> <li>IV I 192168.01</li> <li>Step1. Launch eSearch.exe Step2. Press "Search Servers" button then find out IP address</li> <li>IV IV I</li></ul>			

# • Technical Support

If you have problems about using the ACS-11-MF series module, please contact ICP DAS Product Support.

Email: <a href="mailto:service@icpdas.com">service@icpdas.com</a>