

User Guide

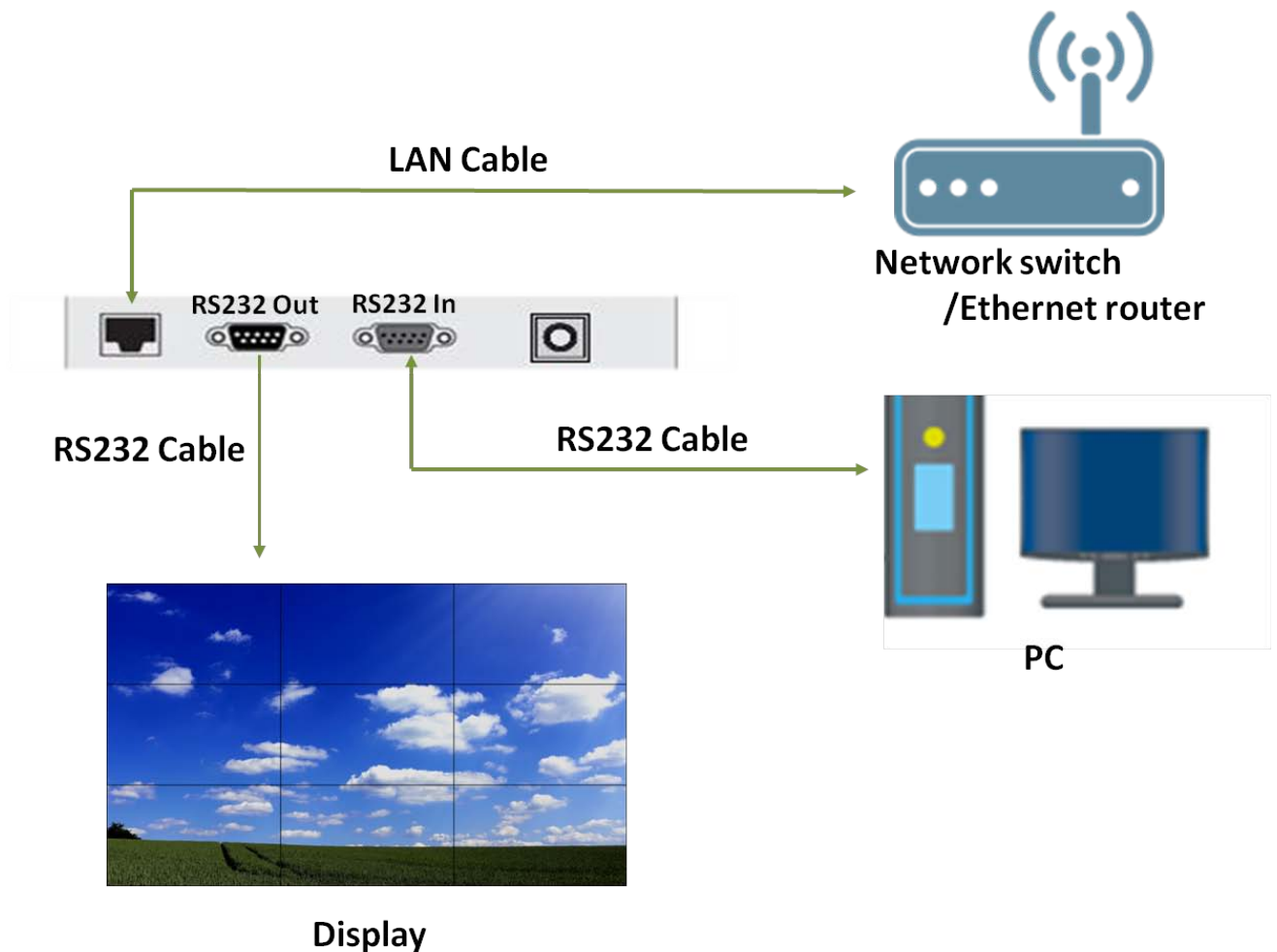


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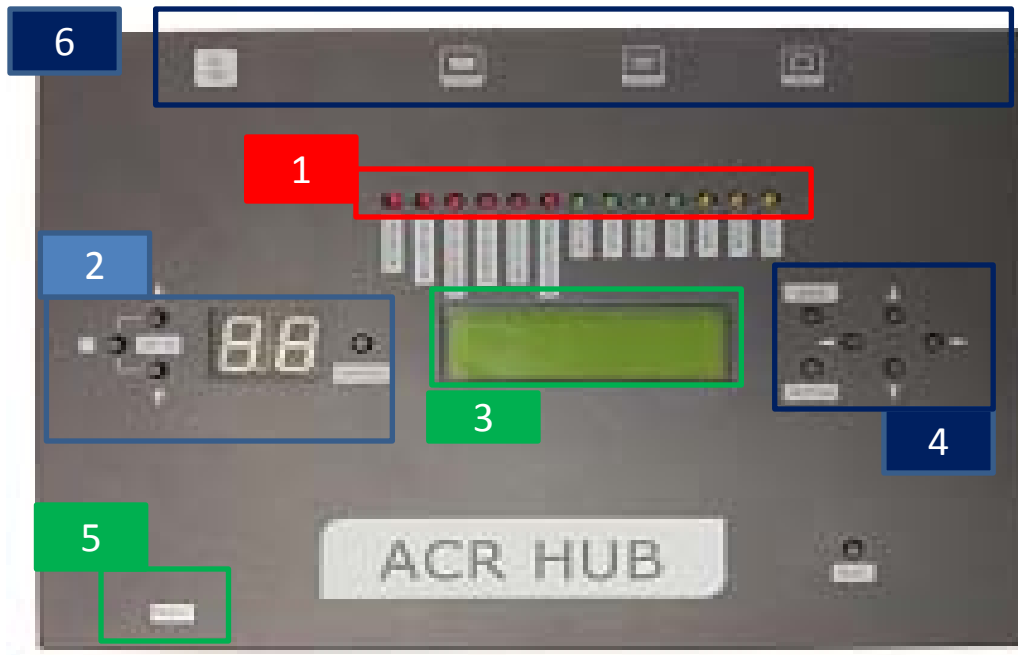
Pg. 37: Troubleshooting with ACR

ACR Hub



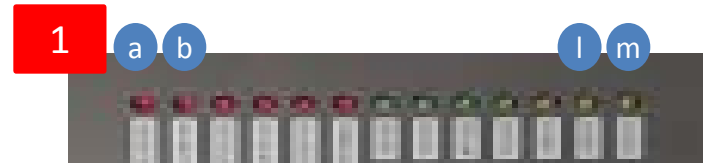
ACR Hub

Manual		
 <p>Utilities CD</p>		
Cable		
 <p>Adapter</p>	 <p>RS-232C Cable</p>	 <p>AC Power Cable</p>
Others		
 <p>Remote Control</p>	 <p>Batteries (AAA x 2)</p>	



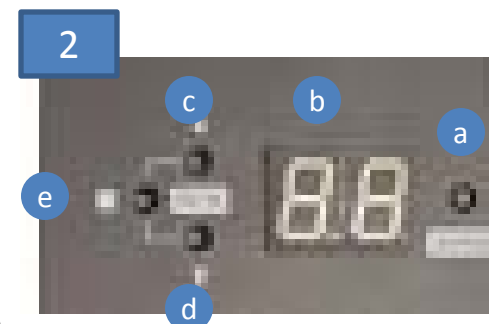
1 ACR LED Display (from “a” to “m”)

- a. LED light (RED) : Active Network Connection
- b. LED light (RED) : Backlight On (Lux) → Optional
- c. LED light (RED) : Internal Temperature Exceeding Threshold
- d. LED light (RED) : Active Power On
- e. LED light (RED) : Active Backlight On
- f. LED light (RED) : Active Backlight Dimming On
- g. LED light (GREEN) : Active DC24V Input
- h. LED light (GREEN) : Active DC12V Input
- i. LED light (GREEN) : Active DCM5V Input
- j. LED light (GREEN) : Active DCS5V Input
- k. LED light (YELLOW) : Active Source Input 1 (DVI #1)
- l. LED light (YELLOW) : Active Source Input 2 (DVI #2)
- m. LED light (YELLOW) : Active Source Input 3 (VGA)



2 Select SET ID via ACR Hub buttons & LCD Display

- a. Read current status of selected SET ID
- b. Display window for selected SET ID
- c. SET ID adjust button (Press the button to change the number of SET ID “Up”)
- d. SET ID adjust button (Press the button to change the number of SET ID “Down”)
- e. SET ID adjust button (Press the button return SET ID value to “00”)



3 Temperature and Time Display

- TEMP: Displays internal temperature of selected SET ID
- TIME: Displays current time, on/off time setting.

<Display data>



1. Display of current internal set temperature.
2. Display the saved current time.
3. Display On/Off setting mode.
 - a. Power On time setting status (On: O / Off: X)
 - b. Power Off time setting status (On: O / Off: X)

4 Setting the current time / On & Off time setting

- a. Use this button to save the current, displayed settings.
- b. Menu button for setting current time, On & Off time.
- c. Use this "left" directional menu button to toggle between current time, On & Off time.
- d. Use this button to adjust (up) current time, On & Off time.
- e. Use this button to adjust (down) current time, On & Off time.
- f. Use "right" directional menu button to toggle between current time, On & Off time.



<Current time setting>



1. Access CUR TIME SET menu in order to use buttons as described in #4
2. ◀ / ▶ Use buttons to select Hours/Minutes/Seconds adjustments
3. ▲ / ▼ Use buttons to adjust Hours/Minutes/Seconds values
4. Press "SAVE" button to save settings.

<On time setting>



1. Go to ON TIME SET menu to press the "SETTING" button as described in the "Setting the current time / On & Off time setting" section on the previous page
2. ◀ / ▶ Use buttons to navigate menu and set Hours/Minutes/Seconds/On & Off menu.
3. ▲ / ▼ Press the button to go to menu to set Hours/Minutes/Seconds/On & Off menu.
4. Press "SAVE" button to save the settings.

<Off time setting>



1. Go to OFF TIME SET menu to press the "SETTING" button as described in the "Setting the current time / On & Off time setting" section on the previous page.
2. ◀ / ▶ Press the button to go to menu to set Hours/Minutes/Seconds/On & Off menu.
3. ▲ / ▼ Press the button to go to menu to set Hours/Minutes/Seconds/On & Off menu.
4. Press "SAVE" button to save settings.

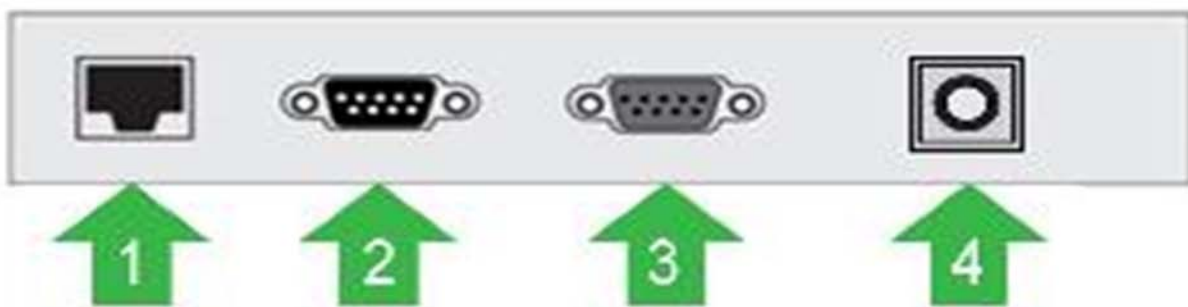
5

Remote controller

-. The remote controller can be used to control the menu and OSD Menu on individual SET IDs (when a specific Set ID is selected on ACR Hub) or an entire video wall array (when Set ID "00" selected). There is an IR receiver below the #5 on the ACR Hub diagram on p. 4.

6

ACR Hub I/O port

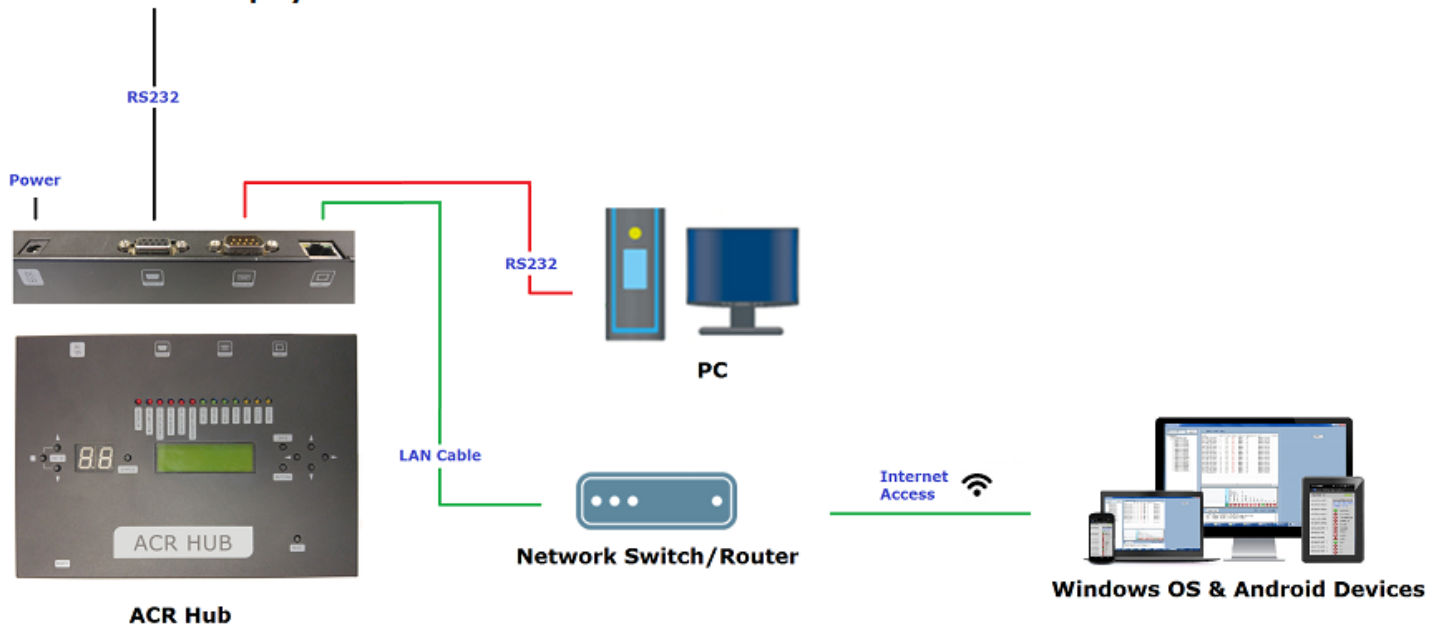


1. LAN Input
2. RSRS-232 Input
3. -232 Output
3. DC 12V Input

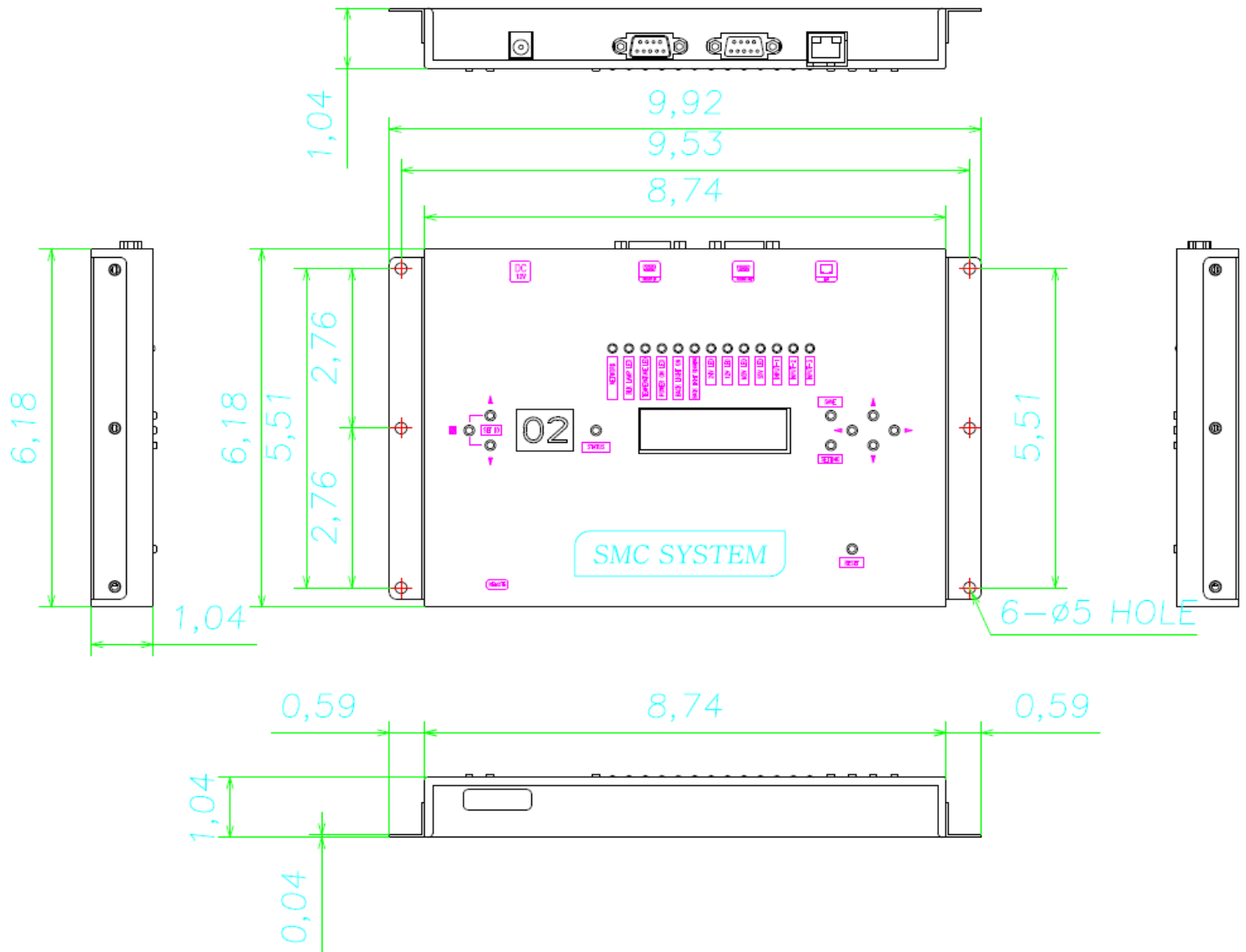
◆ Cabling



ACR Enabled Display



◆ ACR Hub drawing (in.)



◆ Remote Control



1. SOURCE : Selects Input Source
-DVI 1-> DVI 2-> PC
2. POWER : Turns the LCD Display On and Off
3. UP : Controls the UP cursor in the menu
- 4 LEFT : Controls the LEFT cursor in the menu
- 5 RIGHT : Controls the RIGHT cursor in the menu
- 6 ENTER : Controls the ENTER cursor in the menu
- 7 DOWN : Controls the DOWN cursor in the menu
- 8 MENU : Displays the main On-Screen menu or returns to previous menu screen
9. EXIT : Exits the On-Screen menu

Network setup for ACR

Static IP is recommended for ACR Monitoring*

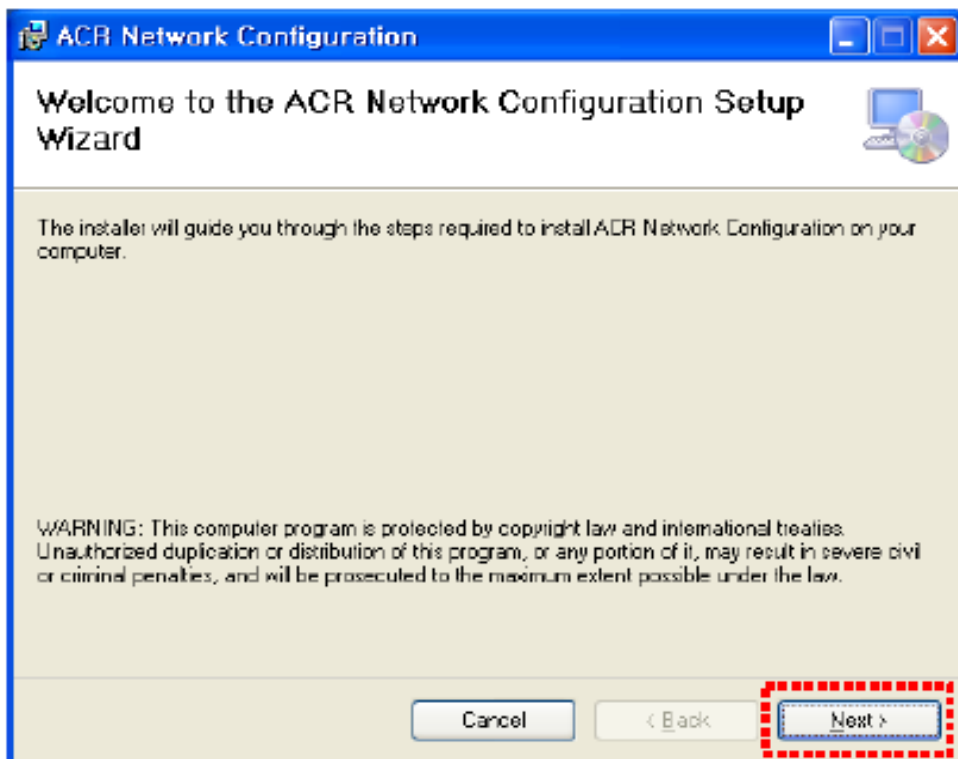
1. This user guide is provided to users of ACR (Auto Condition Report) Network Agent and Monitoring Software & App.

-Program: ACR Network Configuration.msi
ACR Network Setup.exe
ACR Monitor

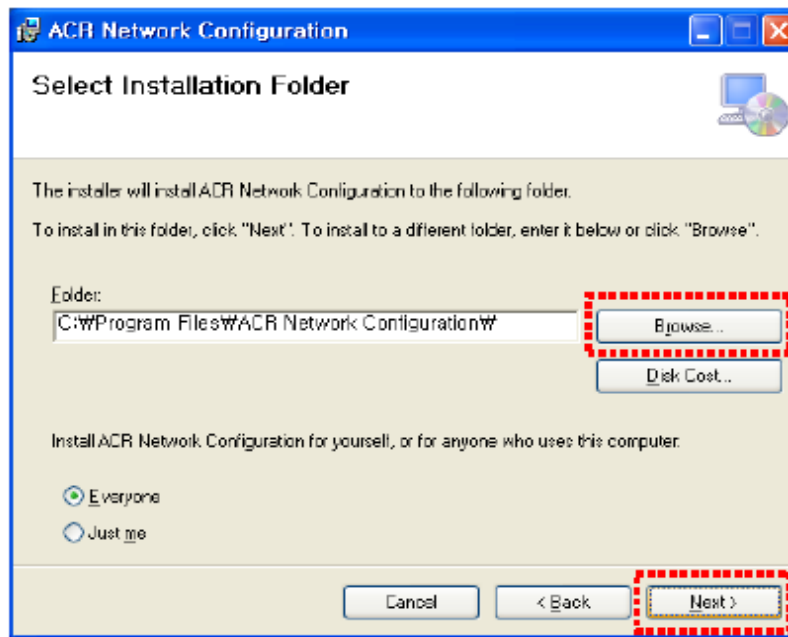
2. Program Installation

Installing ACR Network Setup

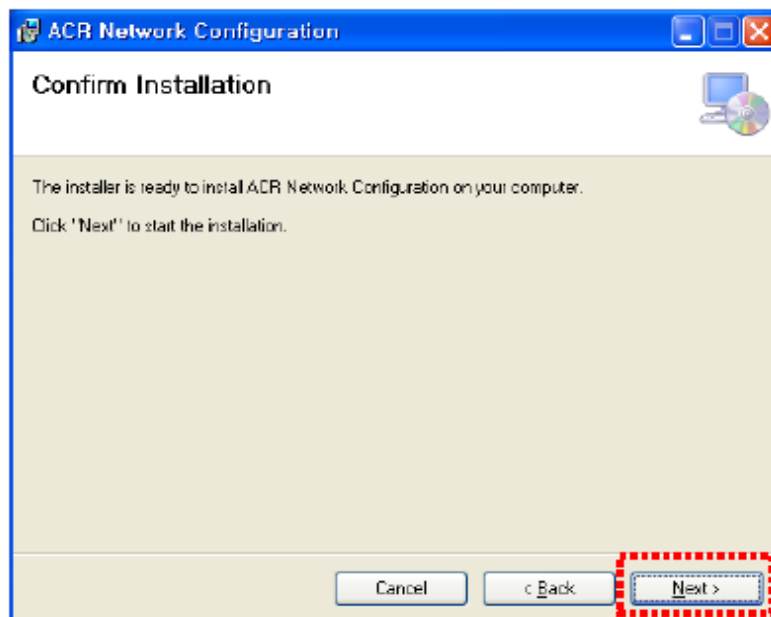
Run the file named “ACR Network Setup.exe” and follow the instructions below.
If you previously installed the ACR Network Program, delete the previous one and re-install the new one.



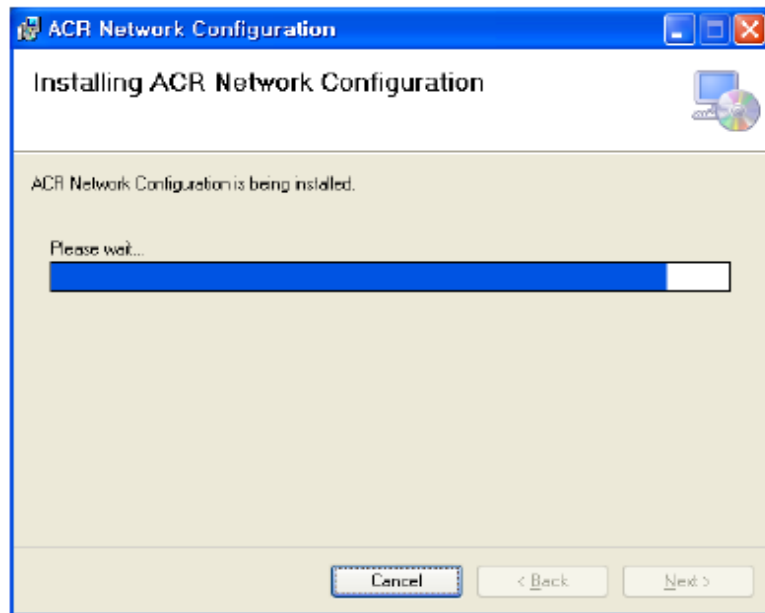
Click “Next”



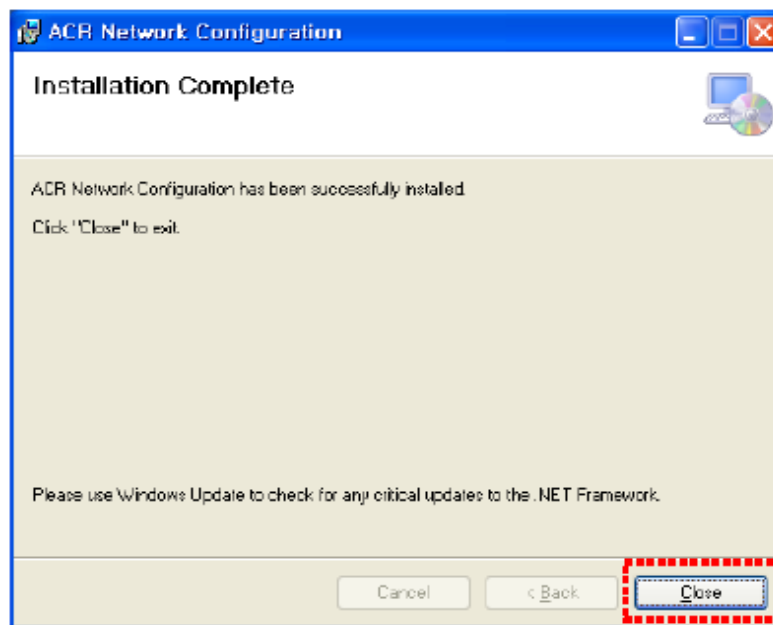
Select the folder you wish to save the file in. Press "Install" if you are ok with the designated folder.



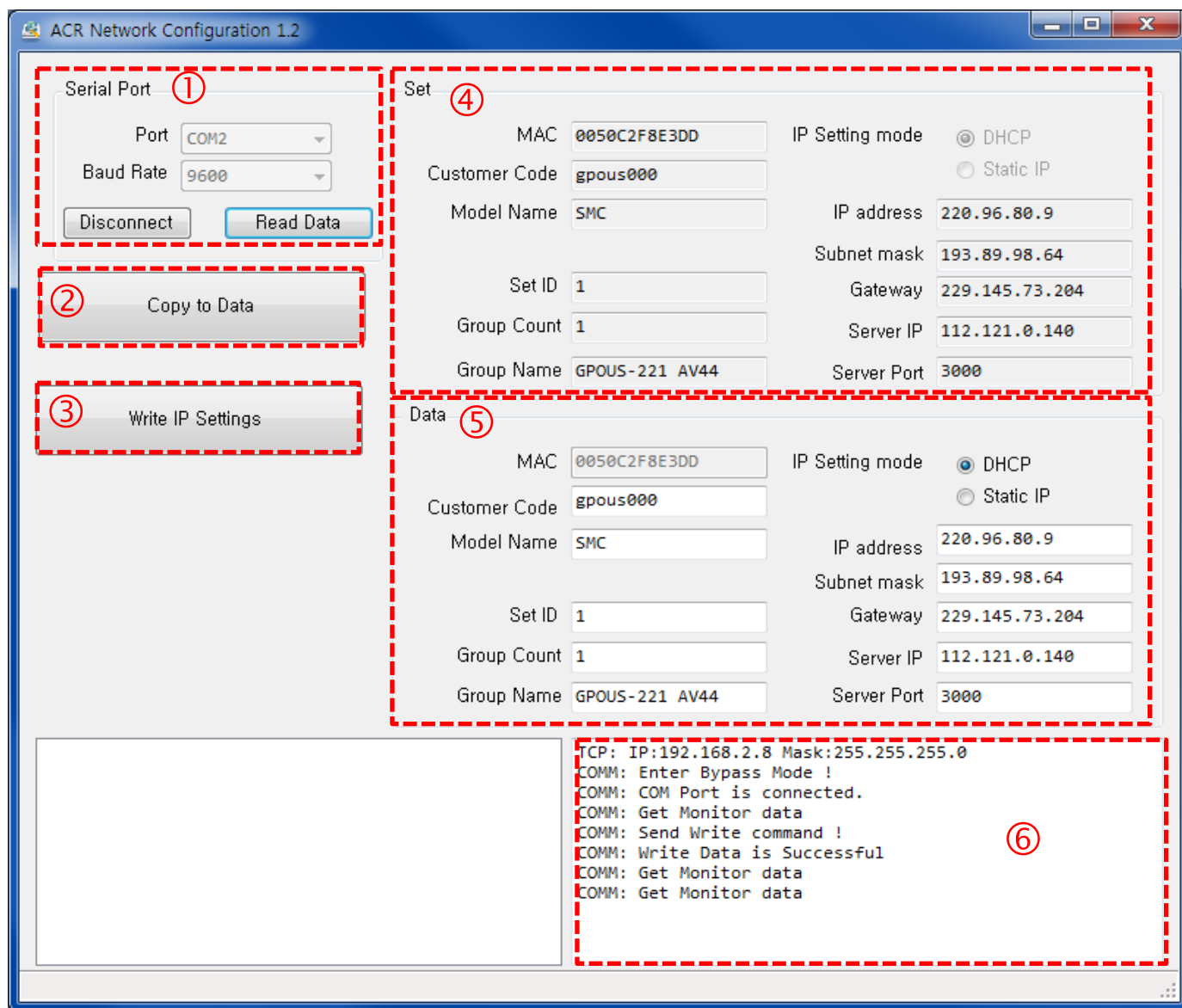
Click "Next"



Wait until the installation is complete.



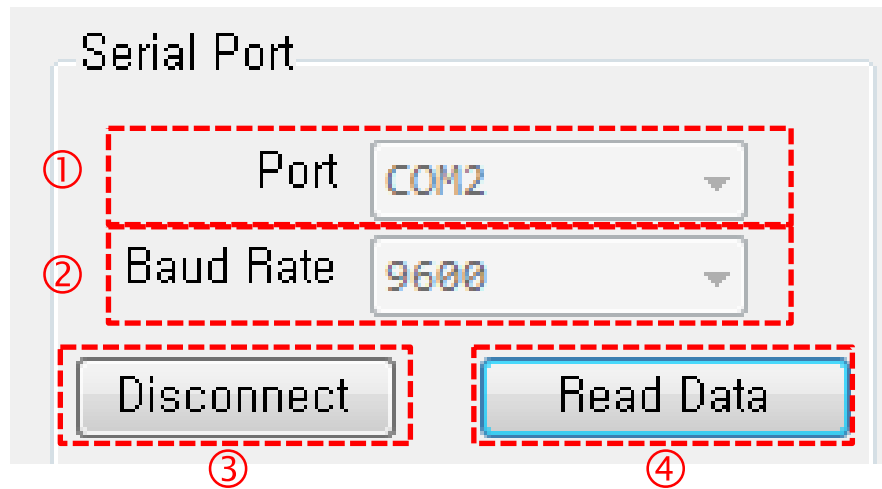
Once installation is complete,
Go to "C:\Program Files\ACR Network Configuration\" to run the program.
or go to shortcut to run program at "C:\Users\Public\Desktop"



1. Serial Port info (COM Port, Baud Rate)
2. "Copy To Data" button- Copies data from "Set" block and applies same values to "Data" block
3. "Write IP Settings" button- saves settings (IP, Subnet mask, gateway, Server IP/port) to ACR Hub
4. When "Read Data" is clicked, ACR Hub data is shown in this section
5. Enter desired IP, Subnet mask, gateway, Server IP settings in this section. Do not change any settings in left column. After entering data, click "Write IP Settings". Then, click "Read Data" button- the settings in this box and #4 should be the same.
6. Message log (successful communication, error)

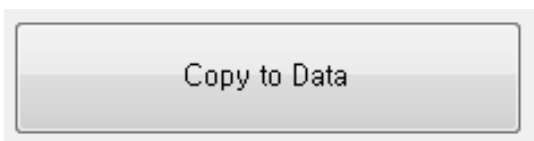
****Server IP (in section 5 of the picture above)
should be "112.121.0.140" or change to user's desired local IP setting**

3-1. Serial Port Block



- A. Sets PC's serial communication port
 - Sets PC's serial communication speed (Baud rate)
- B. Serial Communication Speed
 - SET: 115200
 - Smart Controller: 9600
- C. Connection button (PC & SET Communication)
 - Connect: Connect for serial communication between User PC and SET
 - Disconnect: Stop serial communication between User PC and SET
- D. Reads ACR Hub connection info

3-2. Copy to Data



- Copies data from “Set” block and applies same values to “Data” block

3-3. Write IP Settings



- Applies settings to ACR Hub

3-4. SET Block

Set	
① MAC 0050C2F8E3DD	IP Setting mode <input checked="" type="radio"/> DHCP ⑦ <input type="radio"/> Static IP
② Customer Code gpous000	
③ Model Name SMC	<div>⑧</div> IP address 220.96.80.9 Subnet mask 193.89.98.64 Gateway 229.145.73.204 Server IP 112.121.0.140 Server Port 3000
④ Set ID 1	
⑤ Group Count 1	
⑥ Group Name GPOUS-221 AV44	

- 1) MAC Address Display window
- 2) Display window of Buyer code under master control
- 3) Display window of product model under master control
- 4) ID display window of SET
- 5) Display Group's product quantity under Buyer's control
- 6) Display Group's name under Buyer's control
- 7) IP mode display to show the setting value
- 8) Show IP Display Setting

3-5. Data Block

Data	
① MAC 0050C2F8E3DD	IP Setting mode <input checked="" type="radio"/> DHCP ⑦ <input type="radio"/> Static IP
② Customer Code gpous000	
③ Model Name SMC	<div>⑧</div> IP address 220.96.80.9 Subnet mask 193.89.98.64 Gateway 229.145.73.204 Server IP 112.121.0.140 Server Port 3000
④ Set ID 1	
⑤ Group Count 1	
⑥ Group Name GPOUS-221 AV44	

- 1) MAC Address Display window
- 2) Client's Code display window under master control
- 3) Product model display window under master control
- 4) ID display window of SET
- 5) Display window of master product's quantity under the client's control
- 6) Set Group name display under the client's control
- 7) Setting IP mode setting
- 8) Setting IP

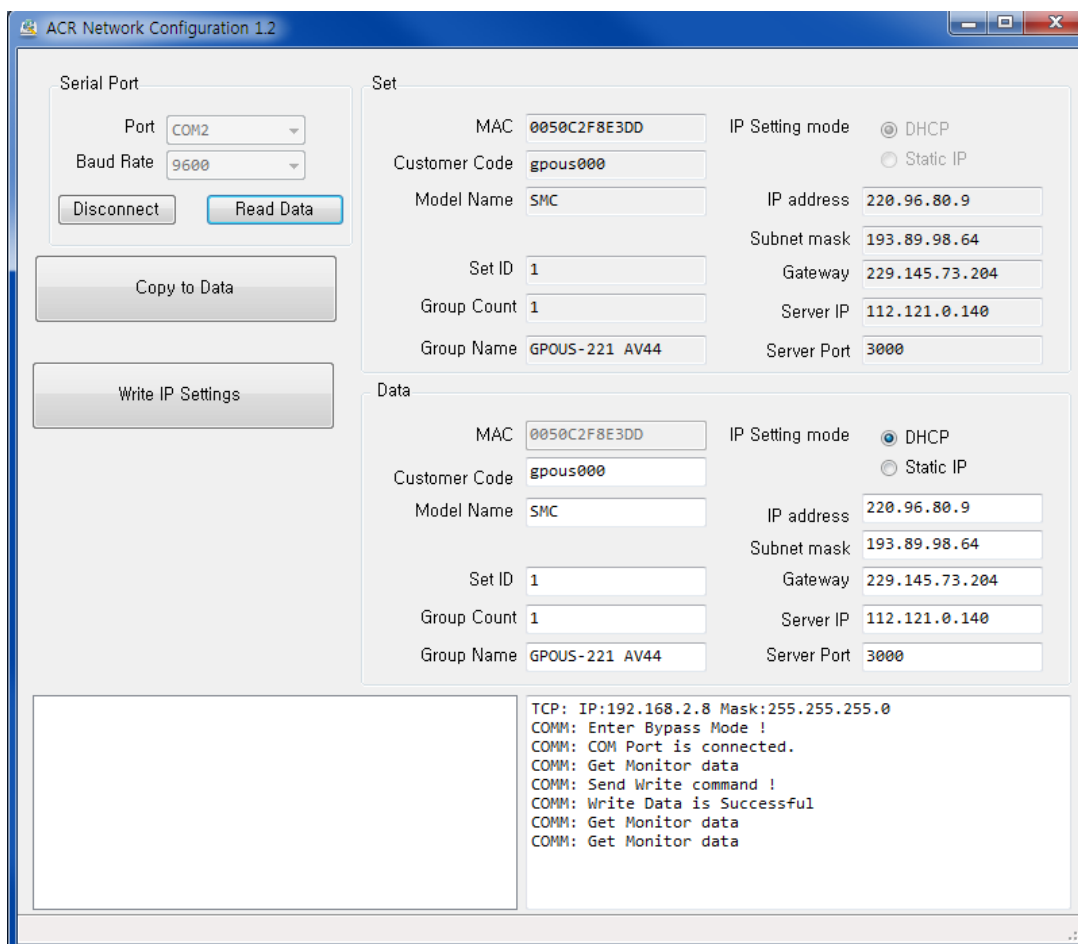
3-6. Data Block

```
TCP: IP:192.168.2.8 Mask:255.255.255.0
COMM: Enter Bypass Mode !
COMM: COM Port is connected.
COMM: Get Monitor data
COMM: Send Write command !
COMM: Write Data is Successful
COMM: Get Monitor data
COMM: Get Monitor data
```

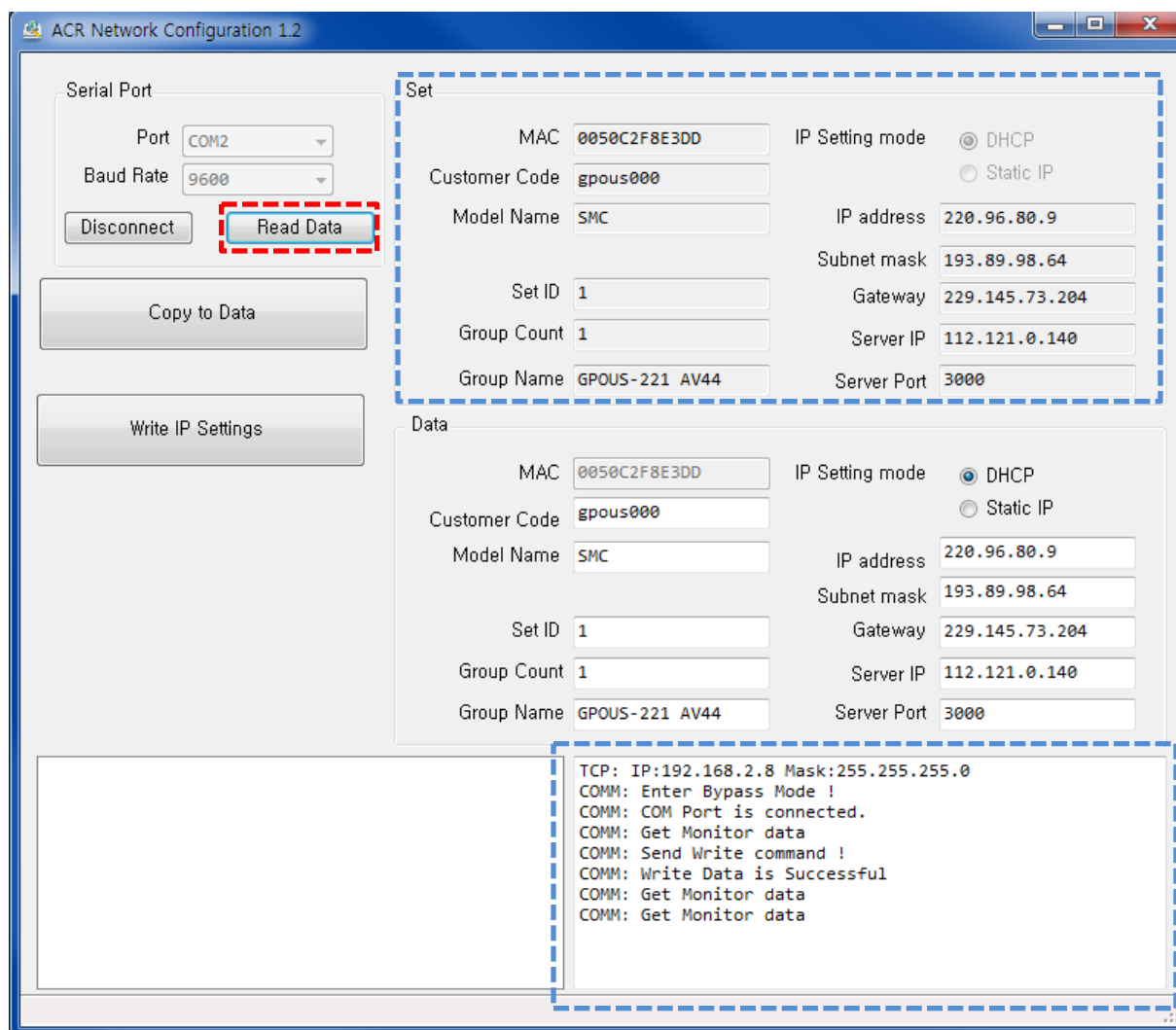
- Displays communication status, errors, program notifications

4. Installation Process

- 4-1. Open "ACR Network Configuration" Program
- 4-2. Enter Settings in Serial Port Block
- 4-3. Click Connection button (in red below)



4-4. Select Read Data button



ACR Network Configuration 1.2

Serial Port
 Port: COM2
 Baud Rate: 9600
 Disconnect
Read Data
 Copy to Data
 Write IP Settings

Set

MAC: 0050C2F8E3DD
 Customer Code: gpous000
 Model Name: SMC
 Set ID: 1
 Group Count: 1
 Group Name: GPOUS-221 AV44

IP Setting mode: ☒ DHCP ☐ Static IP
 IP address: 220.96.80.9
 Subnet mask: 193.89.98.64
 Gateway: 229.145.73.204
 Server IP: 112.121.0.140
 Server Port: 3000

Data

MAC: 0050C2F8E3DD
 Customer Code: gpous000
 Model Name: SMC
 Set ID: 1
 Group Count: 1
 Group Name: GPOUS-221 AV44

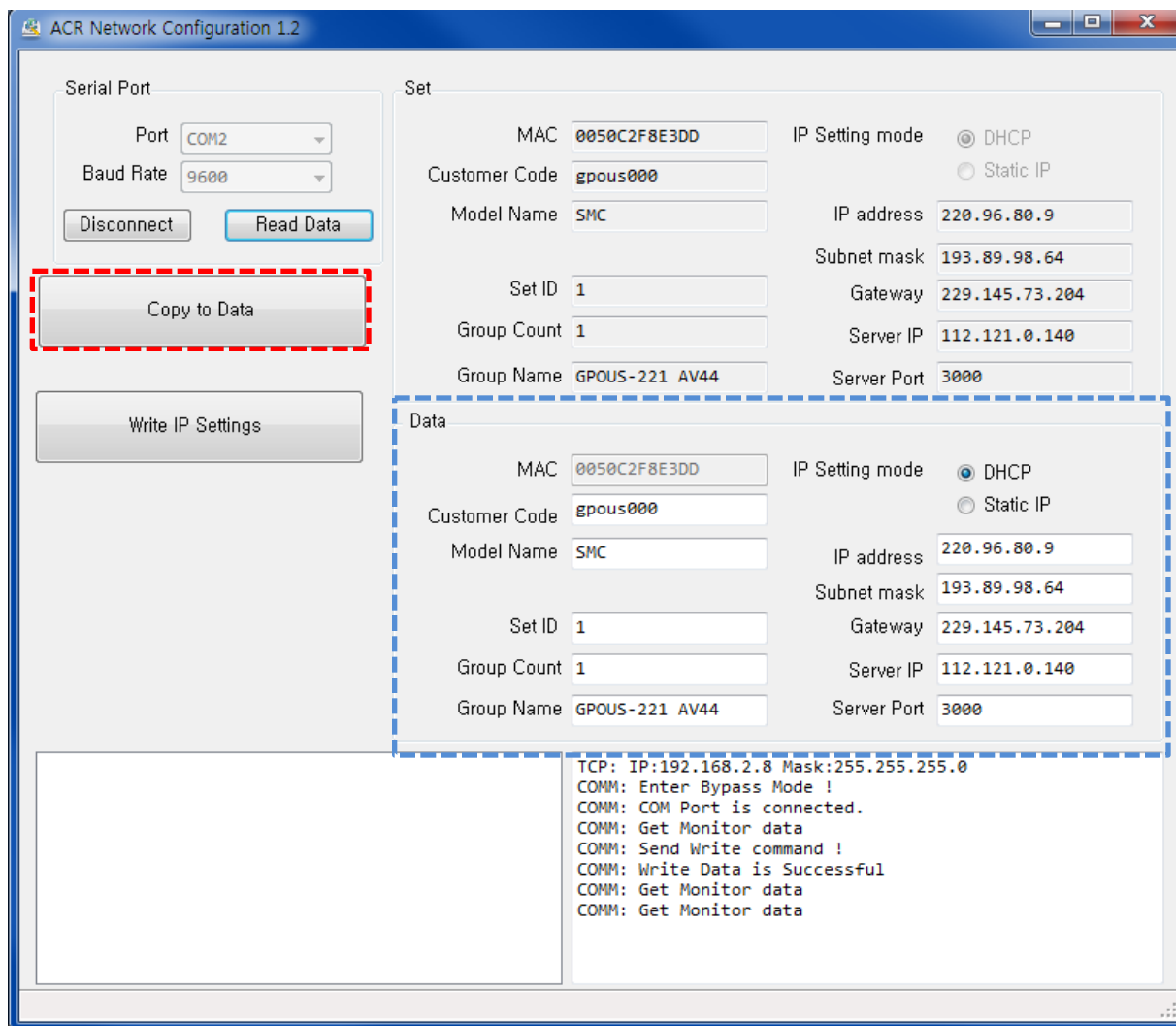
IP Setting mode: ☒ DHCP ☐ Static IP
 IP address: 220.96.80.9
 Subnet mask: 193.89.98.64
 Gateway: 229.145.73.204
 Server IP: 112.121.0.140
 Server Port: 3000

TCP: IP:192.168.2.8 Mask:255.255.255.0
 COMM: Enter Bypass Mode !
 COMM: COM Port is connected.
 COMM: Get Monitor data
 COMM: Send Write command !
 COMM: Write Data is Successful
 COMM: Get Monitor data
 COMM: Get Monitor data

- Successful when the IP value appears in “Set” box circled in blue in top/right
- Successful when message of “COMM” Get Monitor or data” appears in bottom/right

****Server IP should be 112.121.0.140 or change to user’s desired local IP setting**

4-5. Select Copy Data button

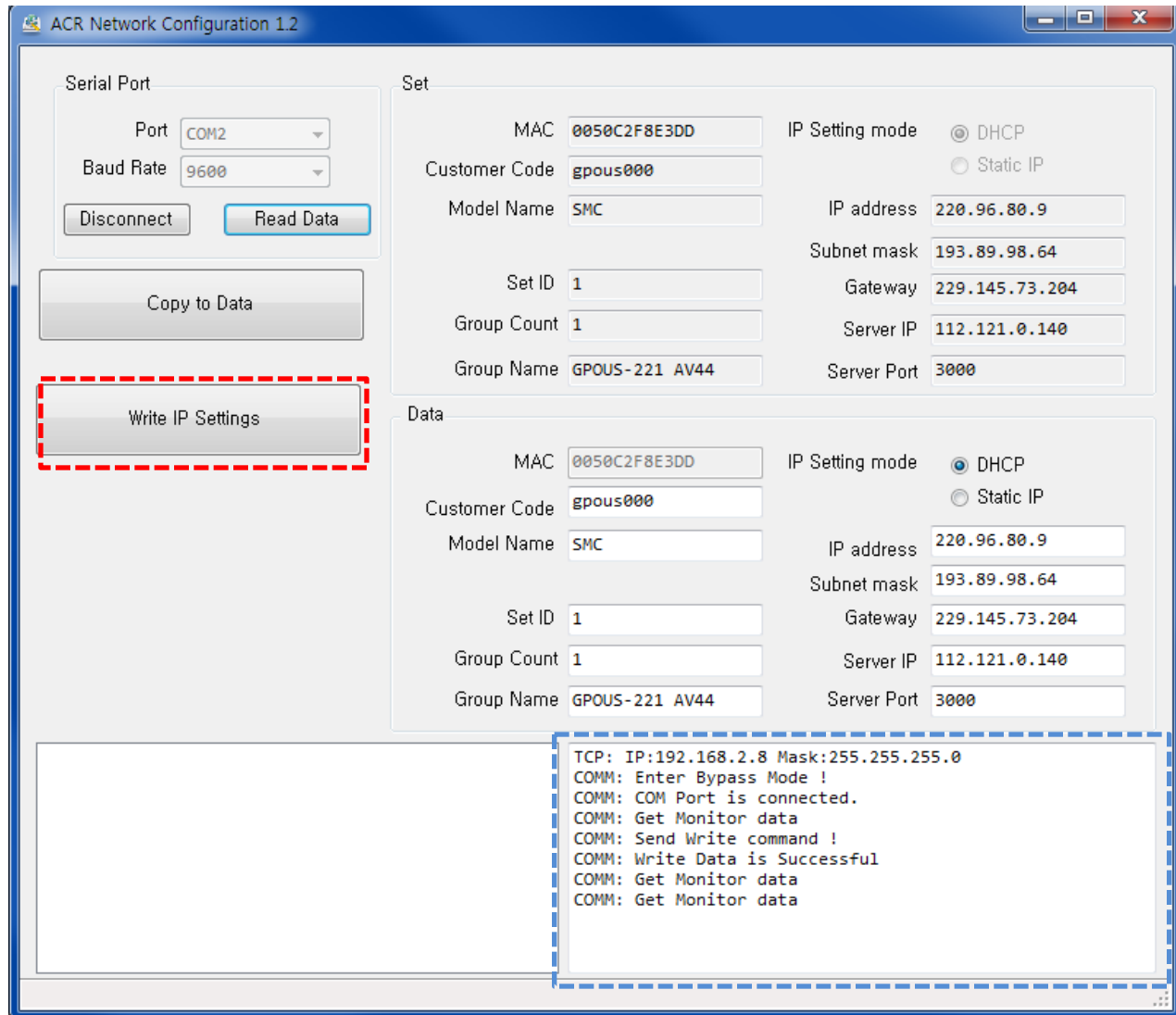


- Successful when IP address value appears in “Data” block (circled in blue-bottom/right)
- Successful when “COMM: is successful” appears

- a. Set Group Count
- b. Set Group Name
- c. Set IP Setting mode
- d. Set IP of the install location

****Server IP should be 112.121.0.140 or change to user’s desired local IP setting**

4-6. Select Write Setting button



ACR Network Configuration 1.2

Serial Port

Port: COM2

Baud Rate: 9600

Disconnect Read Data

Copy to Data

Write IP Settings

Set

MAC: 0050C2F8E3DD

Customer Code: gpous000

Model Name: SMC

Set ID: 1

Group Count: 1

Group Name: GPOUS-221 AV44

IP Setting mode: ☒ DHCP ☐ Static IP

IP address: 220.96.80.9

Subnet mask: 193.89.98.64

Gateway: 229.145.73.204

Server IP: 112.121.0.140

Server Port: 3000

Data

MAC: 0050C2F8E3DD

Customer Code: gpous000

Model Name: SMC

Set ID: 1

Group Count: 1

Group Name: GPOUS-221 AV44

IP Setting mode: ☒ DHCP ☐ Static IP

IP address: 220.96.80.9

Subnet mask: 193.89.98.64

Gateway: 229.145.73.204

Server IP: 112.121.0.140

Server Port: 3000

TCP: IP:192.168.2.8 Mask:255.255.255.0

COMM: Enter Bypass Mode !

COMM: COM Port is connected.

COMM: Get Monitor data

COMM: Send Write command !

COMM: Write Data is Successful

COMM: Get Monitor data

COMM: Get Monitor data

- Click "Write IP Settings" to save settings
- Successful when "COMM: is successful" appears
- Click "Read Data" button to cross-check values of "Set" and "Data" blocks

****Server IP should be changed to: 112.121.0.140**

ACR Monitor Program

1. Introduction

This section of the user guide pertains to ACR (Auto Condition Reporting) Monitor Program.

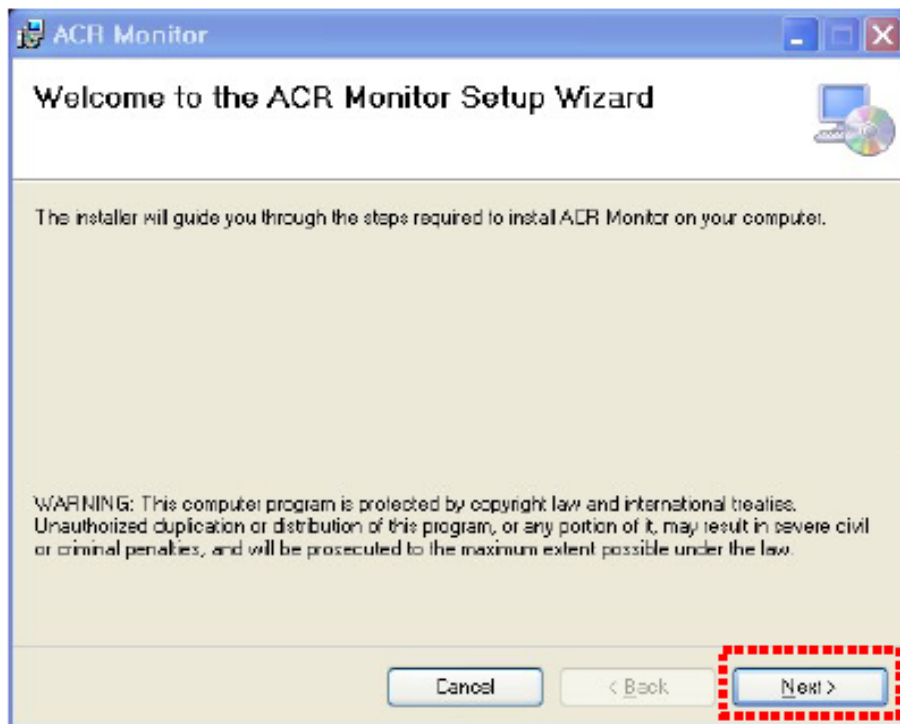
This program allows users to pull real-time status of groups and individual sets via the network.

- Program: ACR Monitor.msi
ACR Monitor Setup.exe
- Operating System : Microsoft Windows XP, WIN7

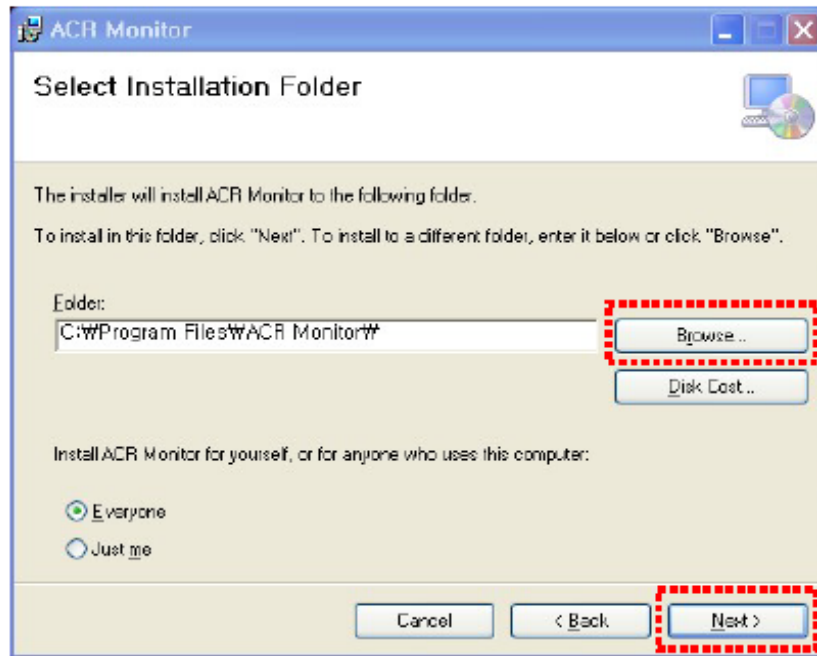
2. Program Installation

Installing ACR Network Setup

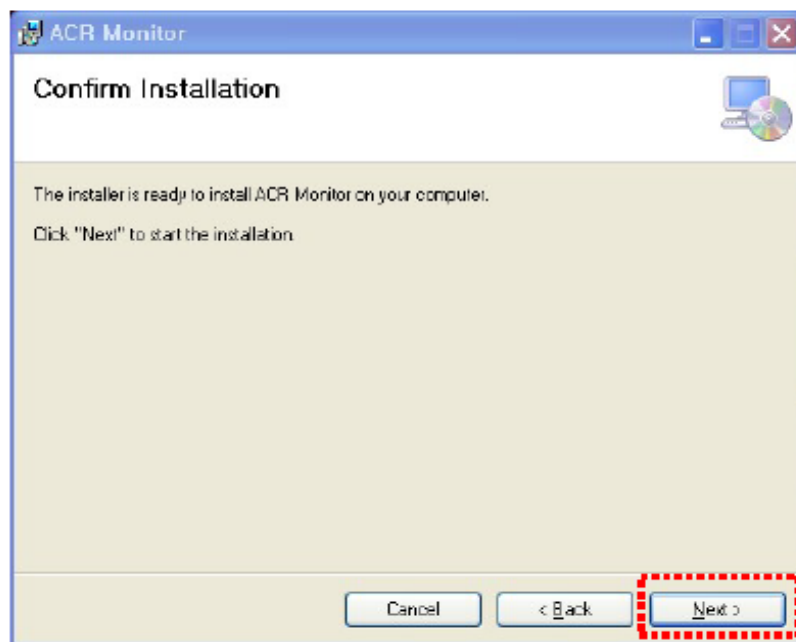
Run the file named "ACR Monitor Setup.exe and follow the instructions below If you have ACR Monitor software installed already, delete/uninstall the previous version and re-install the new one.



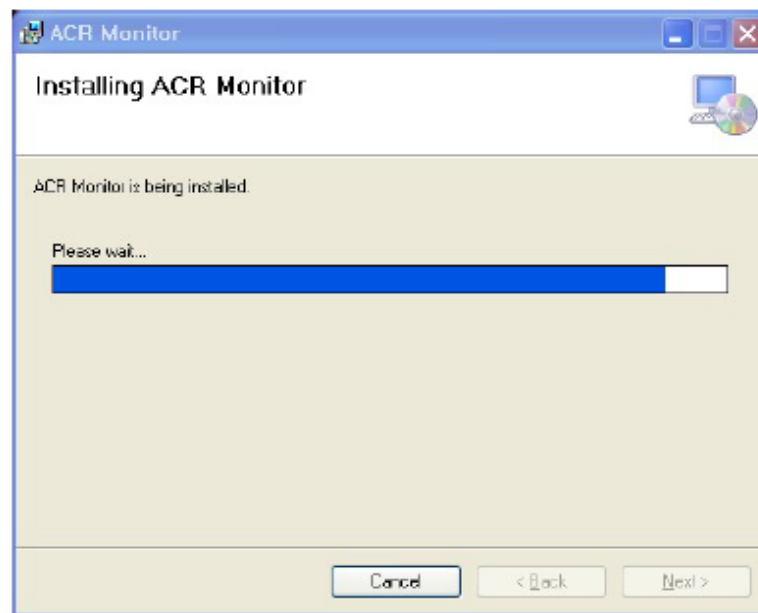
Click "Next"



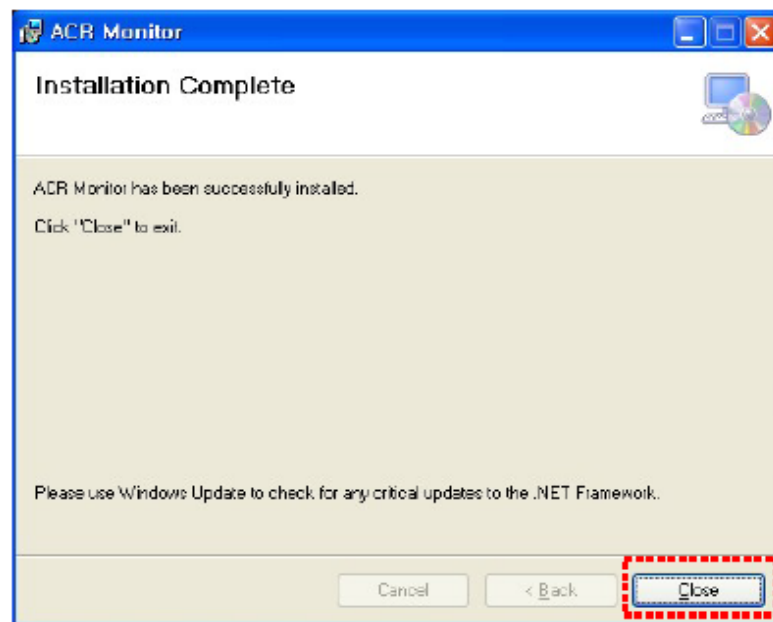
Select the folder you wish to save the file in. Press "Install" if you are ok with the designated folder.



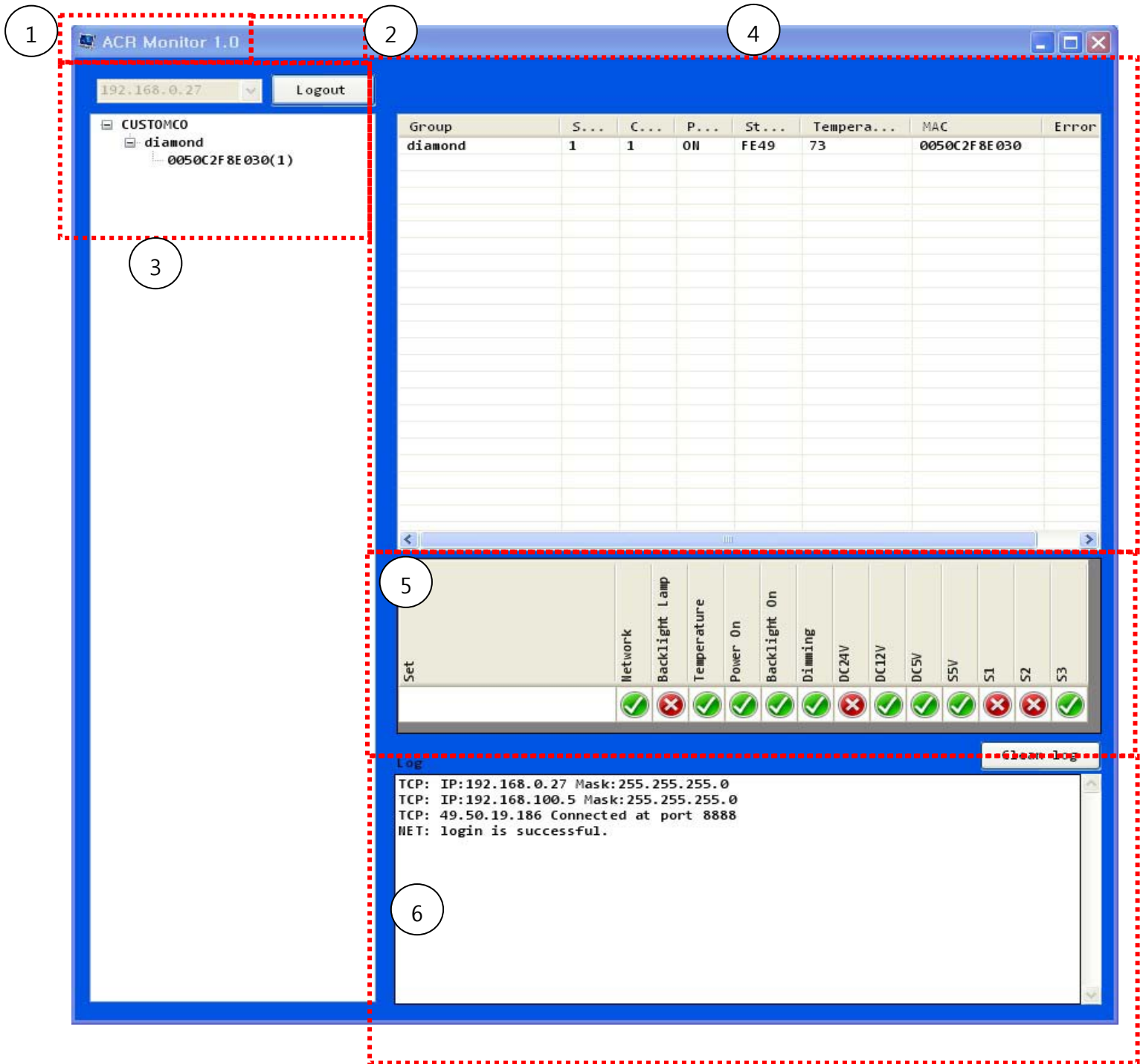
Click "Next"



Wait until the installation is complete.



Once installation is complete,
Go to "C:\Program Files\ACR Monitor\" to run the program.
or go to shortcut to run program at "C:\Users\Public\Desktop"



The screenshot shows the ACR Monitor 1.0 application window. The interface includes a top menu bar, a left sidebar for navigation, a main data table, a status bar with various indicators, and a log window at the bottom.

Numbered callouts identify the following components:

- 1: IP address field (192.168.0.27) and Logout button.
- 2: Server connection button.
- 3: Tree view showing the hierarchy: CUSTOMCO > diamond > 0050C2F8E030(1).
- 4: Main data table with columns: Group, S..., C..., P..., St..., Tempera..., MAC, and Error.
- 5: Status bar with indicators for Network, Backlight Lamp, Temperature, Power On, Backlight On, Dimming, DC24V, DC12V, DC5V, 55V, S1, S2, and S3.
- 6: Log window showing network connection details and a successful login message.

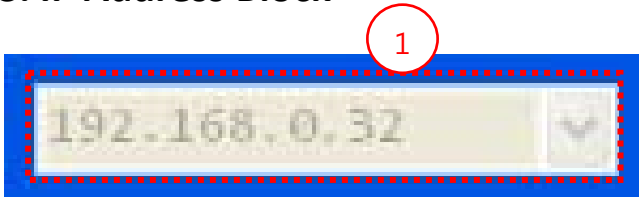
Group	S...	C...	P...	St...	Tempera...	MAC	Error
diamond	1	1	ON	FE49	73	0050C2F8E030	

Log:

```
TCP: IP:192.168.0.27 Mask:255.255.255.0
TCP: IP:192.168.100.5 Mask:255.255.255.0
TCP: 49.50.19.186 Connected at port 8888
NET: login is successful.
```

1. PC's IP Address on which ACR Monitor Program being used
2. Server connection button
3. Displays MAC address and Group Name of the SET on server
4. Displays SET (display) status and basic information on server
5. Displays the selected SET by the user on server
6. Displays messages/feedback

3. IP Address Block

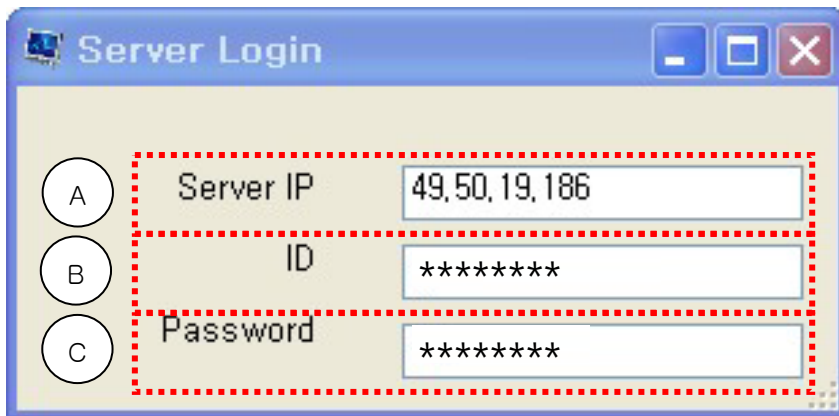


- IP Address of PC on which ACR Monitor Program is installed/running

4. Login

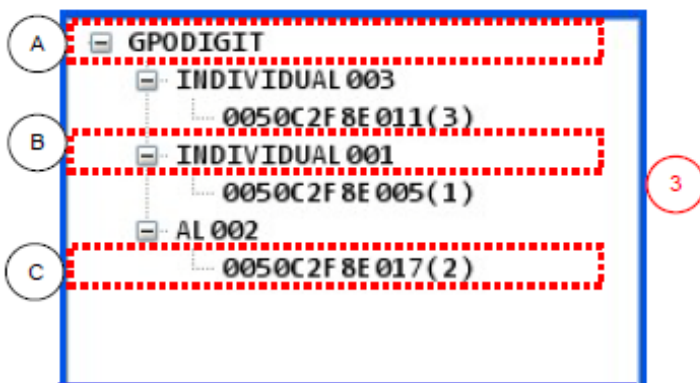


- Server connection button



- A. Server IP Address. ****Server IP should be changed to: 112.121.0.140**
- B. Server program allows for setting of access ID (local server- GPO provides ID in other cases).
- C. Server program allows for setting of access password (local server- GPO provides ID in other cases).

5. Server Connection Status



- Display of MAC address and Group Name of the SET on server

- A. Customer Code of SET on server
- B. Group Name of SET on Server
- C. MAC address and Set ID of the SET on server

6. SET Block

Group	SetID	Count	Power	Status	Temperature	MAC
INDIVIDUAL 003	3	1	ON	FE01	1	0050C2F8E01
INDIVIDUAL 001	1	0	ON	FF00	0	0050C2F8E00
AL 002	2	0	ON	FE01	1	0050C2F8E01

(A)
(B)
(C)
(D)
(E)
(F)
(G)

4

- A. Group Name on server
- B. SET ID on server
- C. Quantity of Group's SETS (displays) on server
- D. Product power (on/off) on server
- E. Status of the SET (ASCII) on server
- F. Temperature status (over/under threshold: "1" indicates "over") of SET on server
- G. MAC Address of SET on server

7. Data Block

Set	Network	Backlight Lamp	Temperature	Power On	Backlight On	Dimming	DC24V	DC12V	DC5V	S5V	S1	S2	S3
	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓	✗	✗	✓

- Displays the status of SET on Server
- ACR status indicators of selected SET

ACR Input LED

S1 ↕	S2 ↕	S3 ↕	Input ↕
✓	✗	✗	DVI1 ↕
✗	✓	✗	DVI2 ↕
✗	✗	✓	PC ↕
✓	✗	✓	HDMI ↕
✓	✓	✗	DP ↕
✗	✓	✓	Component ↕

8. Message Block

TCP: IP:192.168.0.27 Mask:255.255.255.0 TCP: IP:192.168.100.5 Mask:255.255.255.0 TCP: 49.50.19.186 Connected at port 8888 NET: login is successful.

- Window displays connection info and status

- Backlight monitoring function optional.

10. Checking the status of a selected SET

- Check the product settings on ACR MONITOR PROGRAM
 - Green indicators show that parameter being monitored is in good condition, Red indicates a problem or inactivity.
- 1) If the SET is powered on and fully operational with no malfunction,
- All parameters being monitored will show a corresponding green indicator.
 - Backlight Lamp monitoring is optional so this status may be displayed in red even when SET is fully operational.

Set	Network	Backlight Lamp	Temperature	Power On	Backlight On	Dimming	DC24V	DC12V	DC5V	S5V	S1	S2	S3
	✓	✗	✓	✓	✓	✓	✗	✓	✓	✓	✗	✗	✓

- 2) If there is NO display, check status of the input signal.
- Check each of the input signals
 - Green indicator will be shown for an active input, red indicator for inactive input/no signal
- 3) If there is an active input as shown in the diagram above but still no display, check the power indicators. There is no active DC24V in the readout above, indicating a board issue.

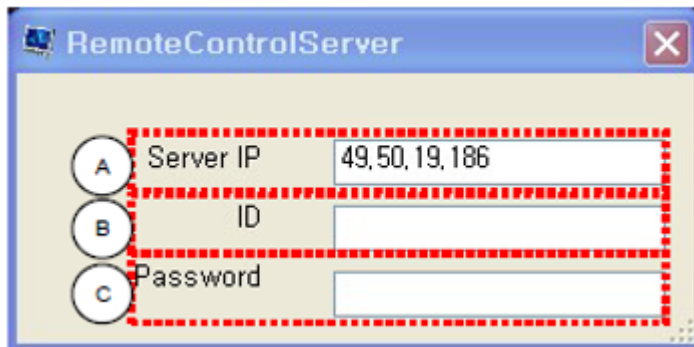
Remote control mode

(applicable to non-video wall series only)

5. Remote Control Mode

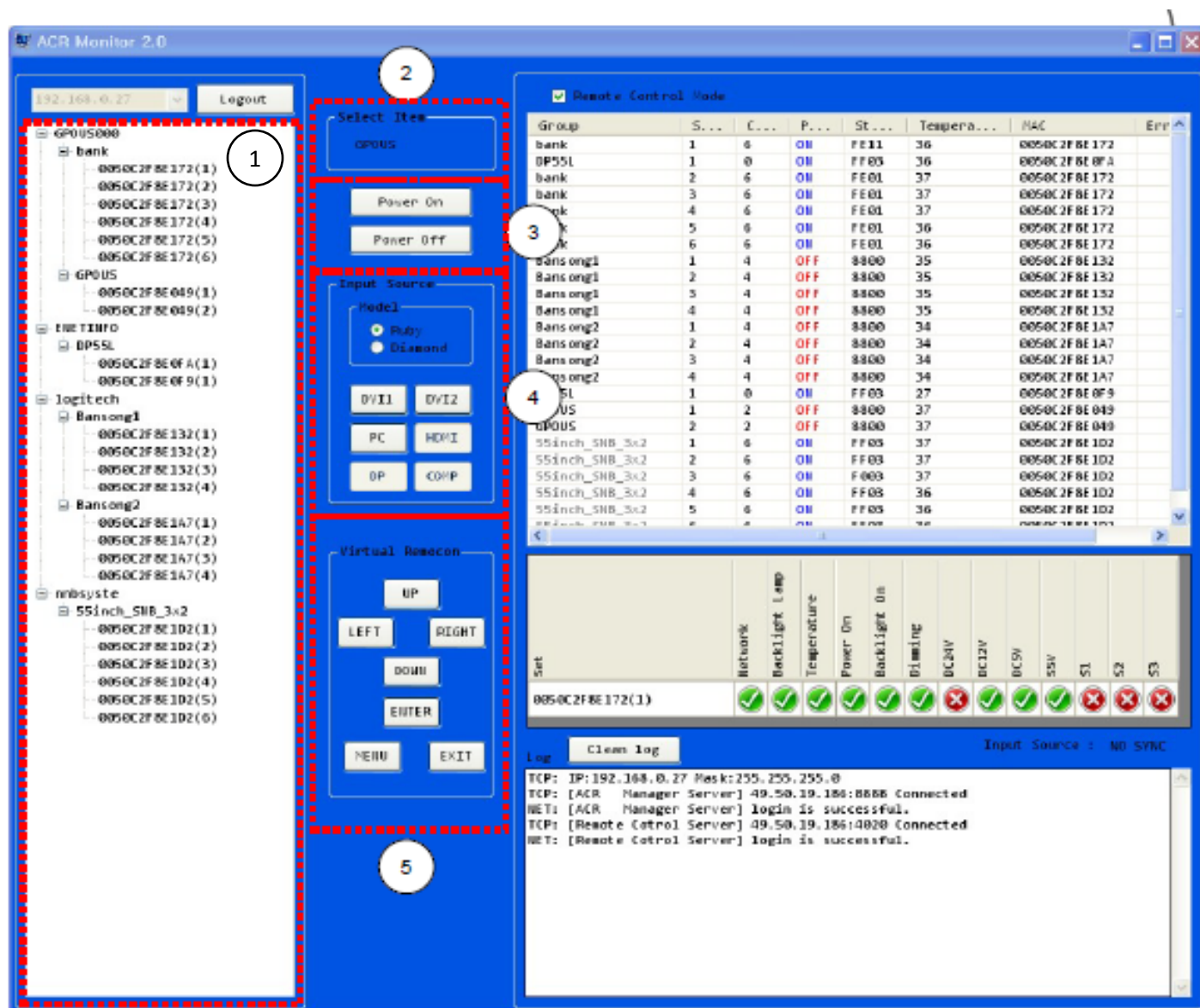


- Remote Control Mode activated with this box is selected



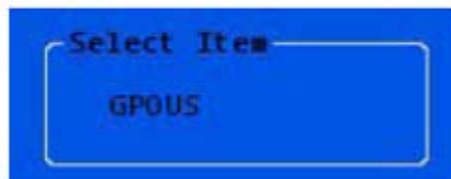
- A. Server IP Address.
- B. Enter Remote Control ID created in server program allows for setting of access password (local server- GPO provides ID in other cases).
- C. Enter Remote Control password created in server program allows for setting of access password (local server- GPO provides ID in other cases).

****Server IP should be "112.121.0.140" or change to user's desired local IP setting**



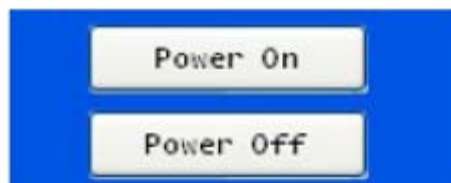
1. Displays MAC address and Group Name of the SET on server
 - Click Group name to control all displays in the group at once
 - Click specific sets the list under the group to control individually
2. Name of selected group or set selected for control
3. Power On/Off control button
4. Source select buttons.
5. Virtual Remote Control button (Remote controller)

5-1. Select Item.



- Name of selected group or set selected for control

5-2. Power On / Off.



- Power On/Off control buttons

5-3. Input Source.



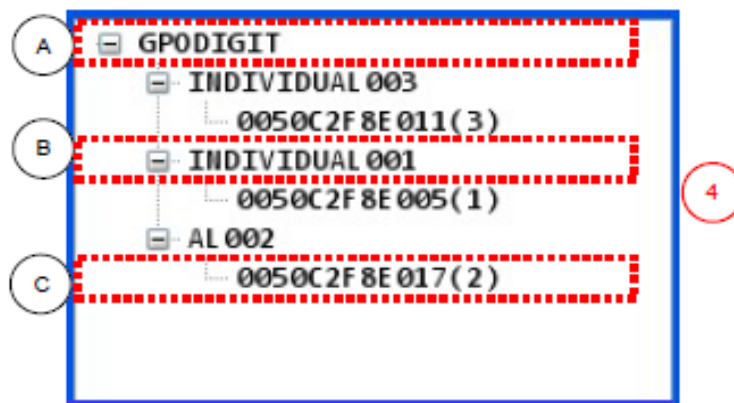
- A. Select "Diamond"
- B. Select input signal/source

5-4. Virtual Remocon.



- Remote control buttons

6. Server connection status



- Displays MAC address and Group Names of Sets (displays) on server or connected on local network
- A. Displays Customer Code of SETs on server
- B. Displays Group Names of SETs on server
- C. Displays MAC addresses and SET IDs of SETs on server

ACR Serial Protocol

SICP (Serial Interface Communication Protocol)

This document defines all the command and messages exchanged between the Master (a PC or the other controller) and the Slave (the displays).
It also describes the ways to send or read the commands or the messages.

1. Protocol definition

SICP stands for “Serial Interface Communication Protocol”.
The protocol is specifically designed to allow data communication in half duplex multi-point environments, but it can also be used for half duplex point-to-point RS-232C communication.

2. Communication characteristics

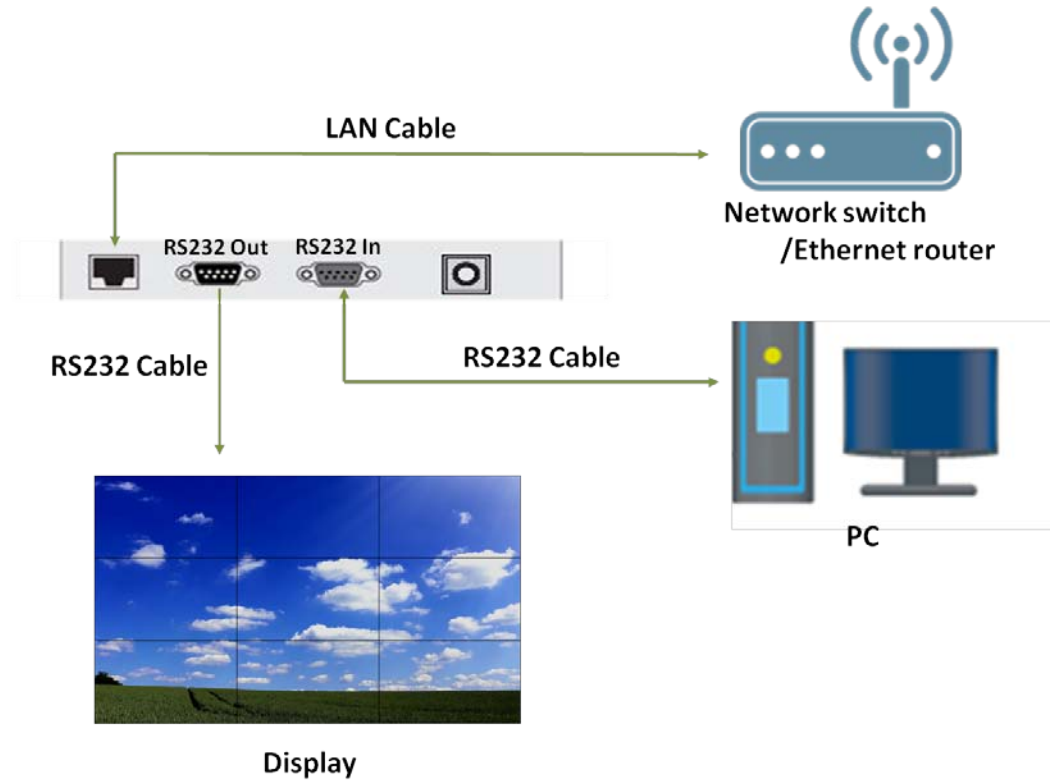
A half duplex communication is implemented starting from the concept of a master-slave structure, where the display is supposed to be the slave.
The first action is always taken by the master, which can be either a PC or any controlling device (acting as server) interfaced to the monitor. After sending a command or a request in the appropriate format the master receives from the slave an acknowledgement, which tells the transmitter whether the command is not valid (or not executable, anyway) or it is accepted. In case of a request, the requested information is sent back and it becomes the acknowledgement by itself.

3. How to connect a external equipment

Female Pin number	Male Pin number
2 <----->	2
3 <----->	3
5 <----->	5

4. Hardware Protocol

Baud rate : 9600 bps
 Data bits : 8 bit
 Parity bits : None
 Stop bits : 1 bit
 Handshake : None



Send the packet below from control device in order to receive status acknowledgement

◆ Send Status Data

- ID1 ~ ID3 : Set ID ("001" ~ "100")
- DA1 ~ DA3 : Status Data

STX	ID1	ID2	ID3	CM1	CM2	CM3	R/W	DA1	DA2	DA3		ETX
0x0f				R	D	S	#				#	0x0d
Hex	ASCII (capital letter)							Hex			ASCII	Hex

[Status Data Code Value]
(bit 0, bit 1, bit 2 always "0")

DA1								DA2								DA3							
7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
					0	0	0						0	0	0				x	x	0	0	0

("x" : unused code)

DA1.7 : Active System (On: 1 , Off: 0)
DA1.6 : Backlight Lamp (On: 1 , Off: 0)
DA1.5 : Temperature (Below 80°C:1 , Over 80°C: 0)
DA1.4 : Power On (On: 1 , Off: 0)
DA1.3 : Backlight On (On: 1 , Off: 0)

DA2.7 : Backlight Dimming (On: 1 , Off: 0)
DA2.6 : DC24V (On: 1 , Off: 0)
DA2.5 : DC12V (On: 1 , Off: 0)
DA2.4 : DC5V (On: 1 , Off: 0)
DA2.3 : S5V (On: 1 , Off: 0)

DA3.7 : DVI1 Signal (On: 1 , Off: 0)
DA3.6 : DVI2 Signal (On: 1 , Off: 0)
DA3.5 : PC Signal (On: 1 , Off: 0)

* < > Hex Value

Ex)

<0x0F>003RDSR0000<0x0D> (Read System Status Set ID : 003)

<0x0F>003RDS#<0x78><0xF8><0x20>#<0x0D> (ACK System Status Set ID : 003)

Troubleshooting with the ACR



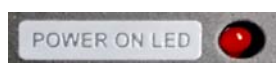
Network (red): indicates whether there is active network connection. The light will be on if the ACR Hub is connected to a network.



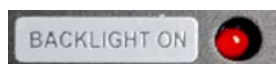
BLK Lamp LED (red): This LED light will always be turned off unless option selected



Temperature LED (red): Indicates whether internal temperature on the controller board detects overheating. This should always be on if the displays is on The light will turn off if the temp. threshold set by the user (or the default 45 C) is exceeded.



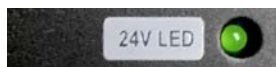
Power ON LED (red): Indicates whether or the AD board has sent power to the Inverter board. This should be on unless display is off.



Backlight ON (red): Indicates whether or not the Inverter board has sent power to the panel. This should be on unless display is off.



Backlight dimming (red): indicates whether the power board has sent the Dimming power (3.3v) to the Inverter board. This should be on unless display is off.



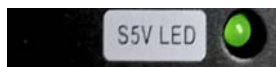
24V LED (green): Indicates whether the power board has sent the Backlight power (24V) to the panel's inverter board. This should be on unless display is off



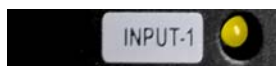
12V LED (green): Indicates whether M12V power is running to the AD board and power board. This should be on unless display is off.



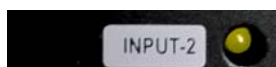
M5V LED (green): Indicates whether M5V power is running to the AD board This should be on unless display is off.



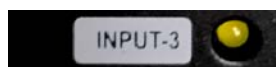
SSV LED (green): Indicates whether power is running to the standby function (on the AD board). This should always be on.



Input-1 (yellow): Indicates whether DVI #1 input is active. This light will be on if you are running a source through this input.



Input-2 (yellow): Indicates whether DVI #2 input is active. This light will be on if you are running a source through this input.



Input-3 (yellow): Indicates whether VGA input is active. This light will be on if you are running a source through this input.