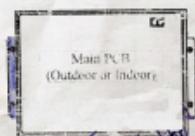


H/W Installation

- Purchase interface card PI485 for air_conditioner from LG, then install PI485 (PI485 model name is different according to air_conditioner model name(refer to the Solution catalogue))
- Install PI485 in the outdoor or indoor unit.
- (indoor for single constant product, outdoor for the others product_Multi,Multi+Invert)
- Set the dip switch on the PI485 according to the following.
- Set the indoor address at you want(that id Group no, indoor unit No)

PI485 Connection



Please refer to network Interface setting method on the next page.
It explains about how to set PI485(M) dip switch.



RS485 Output

Controller

Dip Switch Setting



NETFLY PLUS & HPB series products

1 and 4 on: All others OFF - Multi V plus & Multi Invert

2 and 4 on: All others OFF - Multi-standard Product

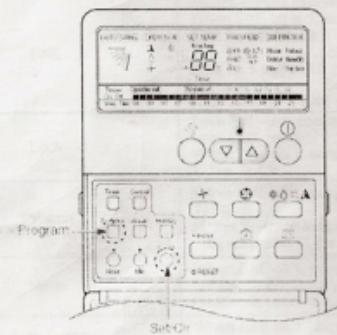
Please refer to network Interface setting method on the next page. It explains about how to set PI485(M) dip switch.

CAUTION:
The wrong setting of airconditioner switch causes malfunctioning of the system.
Switch off the power before doing so.

Indoor Address setting method

Set the indoor address by using wired remote controller or wireless remote controller.

Using wired remote controller



1. Press the Program & Set On keys at the same time to activate the settings.

2. Set the indoor unit address using the temperature control buttons.
Allowed Range: 00 - FF



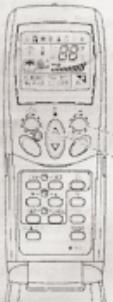
3. To complete the address setting, press the Program & Set On keys again at the same time for 3 seconds.

Using wireless remote controller

1. Address setting mode

1) Keep pressing upper left side key continuously and press RESET button once. Now the system is ready for address setting.

2) Set the indoor unit address using the temperature controller buttons.
Allowed Range: 00 - FF



3) After setting address, press ON/OFF key once to switch indoor unit.

4) The indoor unit shows the set address and it means completion of address setting process. (The address displaying time and its way can depend upon the type of indoor unit.)

2. Address check mode

1) Keep pressing upper right side key continuously and press RESET button once. Now the system is ready for address checking.

2) Press 'ON/OFF' key once toward the indoor unit which shows set address on the display. The address is displayed few seconds and it depends upon the type of indoor unit.

3) Press the remote controller to use it for next operation mode.

◆ Some remote controllers may not support above functions according to the production date of manufacturing remote controllers. As it has to concern with customer's use, use the remote controller available for the address setting during installation.

◆ The remote controller comes with the indoor unit by purchase of control card.

1. Communication basic Spec

- ① format : Start(1bit_low), Data(from bit0 to bit7),Parity(None),Stop(1bit_high)
- ② Speed : 4800bps
- ③ Method : at first master request, slave answer. Master is controller, slave is air_conditioner
(control or monitoring data is transferred from Controller to air_conditioner with address No, then same address air_conditioner will response)

2. Basic data for control air_conditioner

Group No,Indoor Unit No	Indoor address for control, set by wired or wireless remote controller.
ON	1 : air.con ON, 0 : air.con OFF
EXE	Means control execution, 1:control execution, 0: just response(Monitoring). When EXE bit is 1, according to the ON bit, air_conditioner will be controlled, EXE bit 1 & ON bit 1 : air_condition ON, according to the Mode,Fan Speed,Auto swing, Set temp,Lock data, air_conditioner will be operated. EXE bit 1 &ON bit 0 : air condition OFF, according to the Mode,Fan Speed,Auto swing, Set temp,Lock data, air_conditioner will be operated. After EXE bit 1, EXE 0 data must be transferred to enable individual control
Lock	Lock Set : only control from communication is possible, individual control disable Lock CLR : control from communication & individual control disable. When EXE bit 1, according to Lock bit, Lock Set or Clr is executed 1: Set 0: Clr
Plasma	When EXE bit 1, according to Plasma bit, Function Set or Clr is executed 1: Set 0: Clr ※ this Function is option function, some product doesn't have plasma function. so according to the Model Name, This function must be applied.(recommend not use)
Mode	When EXE bit 1, according to Mode bit, Mode setting is executed cooling(0),dehumidify(1),fan(2),heating(4), Auto(3) is only for monitoring. Heating is optional function according to the model name.
Auto Swing	When EXE bit 1, according to Auto swing bit, auto swing setting is executed 1: auto swing set 0: Clr, optional function according to the model name.
Fan Speed	When EXE bit 1, according to Fan Speed bit, Fan Speed setting is executed Low(1), Middle(2), High(3), Auto(4). Auto is optional according to the model name. Slow(5),Power(6),Slow,Power is optional according to the model name
Set Temp	When EXE bit 1, according to Set Temp bit, Set Temp setting is executed Indoor Set Temp = Communication Set Temp bits Value + 15°C In cooling mode, set temp is 18~30°C is possible, in fan/dehumidify mode, set temp is no need.. In heating mode, set temp is 16~30°C is possible
Room Temp	Room temperature is according to the following Room Temperature Table.
ERROR	Error Code of air conditioner for SVC. Controller can display the error code in decimal, 0 means No Error.

3. Room Temperature Table

comm data(Decimal)	Room Temp(°C)	comm data(Decimal)	Room Temp(°C)
76,77	40	114,115,116	25
78,79	39	117,118,119	24
80,81,82	38	120,121,122	23
83,84	37	123,124,125	22
85,86	36	126,127,128	21
87,88,89	35	129,130,131	20
90,91,92	34	132,133,134	19
93,94	33	135,136,137	18
95,96,97	32	138,139,140,141	17
98,99	31	142,143,144	16
100,101,102	30	145,146,147	15
103,104,105	29	148,149,150	14
106,107,108	28	151,152,153	13
109,110,111	27	154,155,156	12
112,113	26	157,158,159	11
		160,161,162	10

Home Automation Linkage _ LGAP Protocol(S/W connection)

6σ

4. TX & RX Data for control air_conditioner

- TX data from Controller

Controller -> PI485

	7	6	5	4	3	2	1	0			
TX0	1	0000			000						
TX1		00									
TX2		0xA0									
TX3	Group No		Indoor Unit No								
TX4	000	Plasma	0	Lock	EXE	ON					
TX5	0	Fan Speed	Auto	Mode							
TX6	000		Set Temp(1~15)								
TX7	CHECK SUM=(TX0+TX1+...+TX6) XOR (0x55)										

- RX data from air_conditioner

PI485 -> Controller

	7	6	5	4	3	2	1	0							
TX0	0	Length(16_decimal))													
TX1	X	0000			Lock	X	ON								
TX2		X													
TX3		X													
TX4	Group No			Indoor Unit No											
TX5	ERROR														
TX6	X	Fan speed		Auto	Mode										
TX7	X	Plasma	X	Set Temp											
TX8	Room Temp(0~255)														
TX9		X													
TX10		X													
TX11		X													
TX12		X													
TX13		X													
TX14		X													
TX15	CHECK SUM=(TX0+TX1+...+TX14) XOR (0x55)														

X: Don't Care

※ Example

- want to ON the air_conditioner address No is 02, to "cooling/set temp 20°C/Fan speed high/auto swing set/Lock Clr"

- Controller → air conditioner

80H	00H	A0H	02H	03H	38H	05H	37H
TX0							TX7

For more reliability the communication.
After transferring that data 3 times, then transfer monitoring data(EXE bit is 0, other data is same)

5. Basic data for control Ventilation product

Group No,Indoor Unit No	Indoor address for control, set by wired or wireless remote controller.
ON	1 : ventilation ON, 0 : ventilation OFF
EXE	Means control execution, 1:control execution, 0: just response(Monitoring). When EXE bit is 1, according to the ON bit, ventilation will be controlled, EXE bit 1 & ON bit 1 : ventilation ON, according to the Mode,Fan Speed,Lock data, ventilation will be operated. EXE bit 1 &ON bit 0 : ventilation OFF, according to the Mode,Fan Speed,Lock data, ventilation will be operated. After EXE bit 1, EXE 0 data must be transferred to enable individual control
Lock	Lock Set : only control from communication is possible, individual control disable Lock CLR : control from communication & individual control disable. When EXE bit 1, according to Lock bit, Lock Set or Clr is executed 1: Set 0: Clr
Mode	When EXE bit 1, according to Mode bit, Mode setting is executed Heat_Exchange(0),Auto(1),Normal(2)
Fan Speed	When EXE bit 1, according to Fan Speed bit, Fan Speed setting is executed Low(1), High(2), Super High(3), Auto(4)
Filter	1 : Filter sign On, 0 : Filter Sign OFF
ERROR	Error Code of ventilation for SVC. Controller can display the error code in decimal, 0 means No Error.

6. TX & RX Data for control ventilation**- TX data from Controller****Controller -> PI485**

	7	6	5	4	3	2	1	0							
TX0	1	0			000										
TX1	0x70														
TX2	0xA0														
TX3	Group No		Indoor Unit No												
TX4	0000		00	EXE	ON										
TX5	0	Fan Speed	0	Mode											
TX6	0x00														
TX7	CHECK SUM={TX0+TX1+...+TX6} XOR (0x55)														

- RX data from ventilation**PI485 -> Controller**

	7	6	5	4	3	2	1	0									
TX0	0	0x0A															
TX1	X				ON												
TX2	0xA0																
TX3	0x70																
TX4	Group No		Indoor Unit No														
TX5	ERROR																
TX6	File	Fan Speed	X	Mode													
TX7	X																
TX8	X																
TX9	CHECK SUM={TX0+TX1+...+TX8} XOR (0x55)																

X. Don't Care

※ Example

- want to ON the ventilation address No is 02, to "heat_exchange/Fan speed high/Lock Clr"

- Controller → ventilation

80H	70H	A0H	02H	03H	20H	00H	E0H
TX0							TX7

For more reliability the communication.
After transferring that data 3 times, then transfer monitoring data(EXE bit is 0, other data is same)

Home Automation Linkage _ LGAP Protocol(S/W connection)

7. Reference

- ① In case of control air_conditioner, transfer control TX data(EXE=1) more than 3 Times (protect to data loss)
- ② Interval TX data Transfer (controller -> air_conditioner) : more than 100msec.
- ③ After transferring control data 3 times, then transfer monitoring data(EXE bit is 0, other data is same)

※ Example(On the air_conditioner from Controller)

Air_conditioner is now "OFF". In case of On command from the controller

