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The Communication Specifications of the Adaptor Line

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* Comment addition

2013.1.11

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1. Summary

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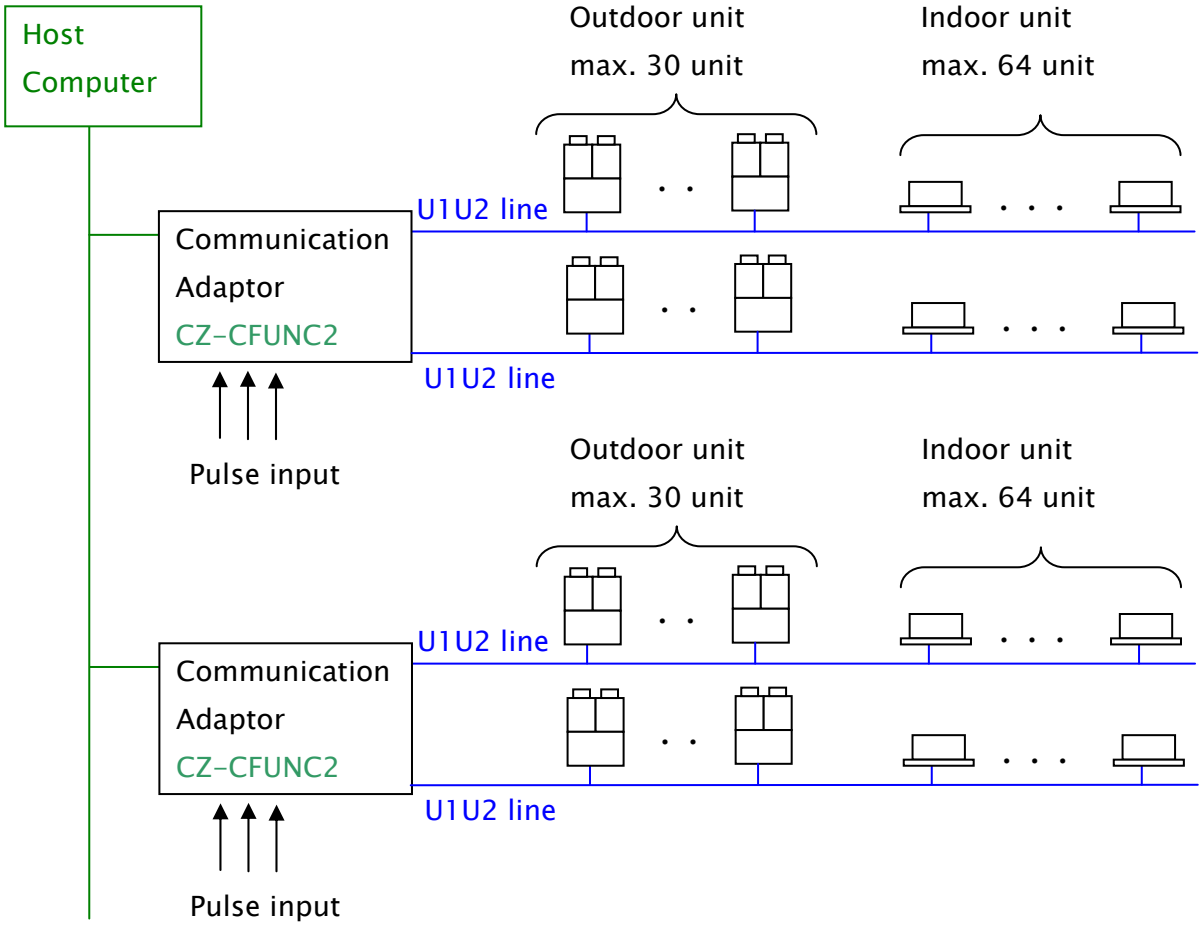
1-1. System figure



RS485

Adaptor control Line

64 indoor unit most and 30 outdoor unit most are accessible to U1U2 line.

CZ-CFUNC2 can connect two U1U2 lines.

CZ-CFUNC2 is connected to RS485 line to 16 most.

An air conditioner can be controlled on RS485 line.

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1-2. Physical condition of Adaptor control line (System Bus)

Communication distance	Max. 1000 meter
Communication method	RS485
Communication rate	19200 bps
Numbers of connected stations	Max. 16 adaptor

※ Terminal resistance is necessary.

1-3. Setting the address

Setting the number of the Adaptor for the Host computer is necessary.
Adjust a touch switch and a 7 segment led the Adaptor PCB manually when setting the number.
This is called "Adaptor number".
Setting the Adaptor number on the U1U2 line (main bus) should be within the range of 00 to 15 without repetitive address.
Automatic address setting on the main bus is not adopted on the system sub-bus.
Central addresses should be registered to the master indoor units when attached through wired remote controller manually.
However it is hard to register the central address to the indoor units by wireless remote controller or without remote controller, central address should be registered from the host computer.

Adaptor number	adaptor address
00	0 1
01	2 3
. .	. .
15	30 31

1-4. Function

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The state monitor of the air conditioner	ON / OFF (Start / Stop)	*1
	Operation Mode	
	Set Temperature	*2
	Fan Speed	*2
	Air Direction	*2
	Remote Controller Prohibition	
	Filter Sign	
	Alarm	*3
	Room Temperature	
The operation of the air conditioner	ON / OFF (Start / Stop)	
	Operation Mode	
	Set Temperature	*2
	Fan Speed	*2
	Air Direction	*2
	Remote Controller Prohibition	
	Filter Sign clear	

*1 If the remote controller of the air conditioner is ON, the state is ON at the time of the thermo OFF or warning stop.

*2 States are different every operation mode.
When a operation mode changed, these states change.
For example, please change setting temperature after having set a operation mode for heating when host computer wants to set it to heating 20 degrees.

*3 When plural trouble occurred, the warning that occurred is notified an air conditioner of first.

2. Communication Specifications

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2-1. Basic Specifications of Adaptor control line

Topology	Bus type
Number of maximum stations	Adaptor : 16 Host computer : 1
Transmission line	2-core cable（more than 0.75 mm^2）
Communication rate	19200 bps
Electrical spec	RS485
Error detection	Horizontal parity
Bit constitution	Start bit : 1 byte Data bit : 8 bit Even number parity : 1 byte Stop bit : 1 byte
Communication Control	Polling transmitted from the host to Adaptor
Synchronism method	Asynchronous (Start-stop synchronous)

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2-2. Communication Protocol

[host computer] [adaptor]

Command ——————————————→

←—————————————— Normal reply data

(←—————————————— NAK)

(←—————————————— BUSY)

- NAK reply

  NAK replies at the time of injustice sent data from HOST.

  For example, when indoor unit number is different or when the command head is short.

- BUSY reply

  After the power supply injection of the communication adapter,

  BUSY replies until an adapter acquires data from an air conditioner.

  It usually takes around two minutes.

- No reply

  When there are not reply data, it is a connection error.

  Because it is assumed for influence and the communication congestion of the noise when reply data do not come, please do the error detection of the host computer as follows.

  When there are not reply data, please transmit a message again one second later.

  The reply from a communication adapter cries more than one minute, and please judge a communication error

2-3. Frame Format

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Sign	Comment	Length
SA	Source Address	1 byte
DA	Destination Address	1 byte
CC	Control Code	1 byte
BC	Byte Count (Length of DATA+2)	1 byte
EA	Extended Address	1 byte
CMD	Command Code or Data Code	1 byte
DATA	Communication Data	variable
FCC	Horizon parity of the data from SA to before FCC	1 byte

- SA (Source Address) and DA(Destination Address)

  The communication address of the host computer is 0xDE.
  The communication adaptor has two self-addresses.
  One of the addresses is for air conditioner link 1.
  Another address is for air conditioner link 2.

Communication Adaptor	Communication Address of Adaptor
The first of them.	0x00 (for link 1) 0x01 (for link 2)
The second of them	0x02 (for link 3) 0x03 (for link 4)
:	:
The seventh of them	0x0C 0x0D

- CC (Control Code)

item	Data
Request data	0x15
Set data	0x11
Reply data	0x18

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- BC (Byte Count)

  It is the number of bytes of EA, CMD and DATA.

  The number of bytes of the SA, DA, CC, BC and FCC are not included.

BC	Data length
0x01	1 byte
0x02	2 byte
:	:
0xFF	255 byte

- EA

  It is always 0x00.

- CMD (Command)

  Command is 1 byte.

- DATA

  DATA is different by Command.

- FCC (Frame Check Code)
  - The FCC is horizontal parity from a self-address to the FCC past.
  - It is even parity.

2-4. Command disposal of host computer method

It is a polling method.

There is not the voluntary transmission from an adapter.

1) Please transmit a message from a host.
2) Please receive the reply from an adapter.
3) Please check FCC.

   The FCC is XOR from the top of data to the last (horizontal parity).

   In the case of FCC error, please throw away data.

3. Command Commentary

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3-1. List of Commands

Data code is a hex digit.

Please require the address of the air conditioner first.

○: Applicable

List of commands (Applicable to system bus only) -: Not applicable

Code	Function	Requirement of situation	Instruction of setting
C 0	ON/OFF (Start / Stop)	○	○
C 1	Operation Mode	-	○
C 2	Set Temperature	-	○
C 3	Fan speed	-	○
C 4	Air Direction	-	○
C 5	Remote Controller Prohibition	-	○
C 6	Clean filter	○	○
D 0	Monitoring operation (Operation Mode / Set Temperature / Fan Speed / Air Direction / Remote Controller Prohibition)	○	-
D 1	Alarm Code	○	-
D 2	Room temperature for control	○	-
D E	Indoor/Outdoor unit address	○	-

A 1	ＡＣＫ（Affirmative response）	Response only
A 2	ＮＡＣＫ（Negative response）	Response only
A 3	ＢＵＳＹ	Response only

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3-2. On / Off (Start / Stop)

1) Command required by host

Command from HOST

C0

Reply Data from Adaptor

C0 NM U1 U2 … Un

2) Setting Conmmand

Command from HOST

C0 NM Y1 Y2 … Yn U1 U2 … Un S1 S2 … Sn SQ

Reply Data from Adaptor

A1 (ACK normal reply)

A2 (NAK : negative response)

A3 (BUSY)

3) Data form

- NM (Number of indoor units)

  NM means number of indoor units connected to Adaptor.

0x 0 0	Number of unit is not decided or installed individually.
0x 0 1	1 indoor unit.
:	:
0x 3 F	63 indoor units.
0x 4 0	64 indoor units

- Un (On/ Off data)

  Un means the data wish instruct ON/OFF situation on each unit or ON/OFF operation.

  The data has 64 bits (8 bytes) in maximum length.

  The “b0” in the first byte corresponds to the indoor unit No.1.

  And the “b7” in the eighth byte corresponds to the indoor unit No.64.

  Like this way, each byte corresponds to the indoor unit in order.

  On each byte, “1” means ON, and “0” means OFF.

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- Yn (effective / ineffective data)

  When setting command, set “0” or “1” at Yn to decide whether next data Un, SQ or Sn is effective or ineffective.

  The correspondence between each byte in Yn and the unit number is as same as Un.

  On each byte, ”1” means effective, and “0” means ineffective.

- SQ (Flag for starting order of the indoor units)

  SQ is the data which the host instructs the Adapter to transmit signals starting indoor units at certain intervals.

  b0 = 「0」: Adaptor transmits signals to all indoor units to start almost at the same time. (In order microscopically.)

  b0 = 「1」: Adaptor transmits signals to indoor units to start at one second intervals.

  When set SQ=1, Adapter transmits signals delaying soon after received operation command from the host.

- Sn (Test Run Flag)

  Sn is the data which the Adaptor instructs test run (thermostat is forcibly ON) to each connected indoor unit.

  The correspondence between bits and the number of units is as same as Un.

  When “1” is set at the bit, the indoor unit correspond to the bit operates test run. (Thermostat is forcibly ON.)

  However transmitting “Test run” signal to an OFF-state unit, it does not make the unit run.

  In order to make the unit to perform “Test run”, it is also necessary for Adapter to transmit “ON” signal to corresponding bit in Un and Sn.

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4) Comment

Though the host set “1” to the Un bit, the indoor unit does not run.

The contents of Un, SQ and Sn become effective when corresponding bit to the indoor unit in Yn is set 1.(= effective)

Thanks to this Yn bit, ON/OFF operation on multiple indoor units can be performed individually, collectively and randomly.

Even if it sends an operation command to indoor unit under operation,

a state does not change.

Adaptor carries out an ACK response.

A stop is also the same.

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5) Communication example

Case 1: The system which eight indoor units are connected to link 1

When only the first of them runs

[Command from HOST] D8 00 15 02 00 C0 0F

D8 … Address of HOST Computer

00 … Address of CZ-CFUNC2(Communication Adaptor)

* When address is not right, Adaptor does not answer.

15 … Control Code is Request data.

* When code is not right, Adaptor does not answer.

02 … Byte Count is 2 byte.

* When Byte Count is smaller than 2 bytes,

Adaptor carries out a NAK response.

00 … always 0x00

C0 … Command is ON/OFF (Start/Stop).

0F … FCC data

* When FCC is not right, Adaptor does not answer.

[Reply Data from Adaptor] 00 D8 18 04 00 C0 08 01 0D

00 …Address of CZ-CFUNC2(Communication Adaptor)

D8 …Address of HOST Computer

18 … Control Code is Reply data.

04 … Byte Count is 4 byte.

00 … always 0x00

C0 … Command is ON/OFF (Start/Stop).

08 … The number of indoor units is eight.

01 … The 1st indoor unit is operated.

The seven remaining sets are stops.

0D … FCC data

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Case 2: The system which eight indoor units are connected to link 1

When only first three of them let you run.

[Command from HOST] D8 00 11 07 00 C0 08 07 07 00 01 07

D8 … Address of HOST Computer

00 … Address of CZ-CFUNC2(Communication Adaptor)

* When address is not right, Adaptor does not answer.

11 … Control Code is set data.

* When code is not right, Adaptor does not answer.

07 … Byte Count is 7 byte.

* When Byte Count is smaller than 7 bytes,

Adaptor carries out a NAK response.

00 … always 0x00

C0 … Command is ON/OFF (Start/Stop).

08 … The number of indoor units is eight.

* When number is not right,

Adaptor carries out a NAK response.

07 … (0b00000111) 3 sets of the beginning are effective.

07 … All 3 sets operate

00 … not Test RUN

01 …1-second delay

0F … FCC data

* When FCC is not right, Adaptor does not answer.

[Reply Data from Adaptor] 00 D8 18 02 00 A1 63

00 …Address of CZ-CFUNC2(Communication Adaptor)

D8 …Address of HOST Computer

18 … Control Code is Reply data.

04 … Byte Count is 4 byte.

00 … always 0x00

C0 … Command is ON/OFF (Start/Stop).

08 … The number of indoor units is eight.

01 … The 1st indoor unit is operated.

The seven remaining sets are stops.

0D … FCC data

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3-3. Operation Mode

1) Setting Conmmand

Command from HOST

C1 NM Y1 Y2 ... Yn MD

Reply Data from Adaptor

A1 (ACK normal reply)

A2 (NAK : negative response)

A3 (BUSY)

2) Data form

- NM (Number of indoor units)

  Please refer to the explanation of CO command.

- Yn (effective / ineffective)

  Please refer to the explanation of CO command.

- MD (Mode)

  0x01 : Heating

  0x02 : Cooling

  0x03 : Fan

  0x04 : Dry

  0x05 : Automatic heating and cooling

3) Comment

When number is not right, Adaptor carries out a NAK response.

Command is not accepted by Adapter even if the host sets mode (01 to 05) only at MD.

Adaptor carries out a NAK response.

The content of MD become effective when corresponding bit to the indoor unit in YK is set 1 (= effective).

Thanks to this YK bit, modes on multiple indoor units can be changed individually, collectively and randomly.

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5) Communication example

Case 1: When setting to heating

[Command from HOST] ------- **C1 08 07 01** ----

C1… Command is Operation Mode.

08 … The number of indoor units is eight.

* When number is not right,

Adaptor carries out a NAK response.

07 … (0b00000111) 3 sets of the beginning are effective.

01 … Heating

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3-4. Set Temperature

1) Setting Conmmand

Command from HOST

C2 NM Y1 Y2 … Yn MD ST

Reply Data from Adaptor

A1 (ACK normal reply)

A2 (NAK : negative response)

A3 (BUSY)

2) Data form

- NM (Number of indoor units)

  Please refer to the explanation of CO command.

- Yn (effective / ineffective)

  Please refer to the explanation of CO command.

- MD (Mode)

  MD is an operation mode to set ST (Temperature Setting).

  For example, the host can change the temperature setting for heating on cooling operation indoor unit.

  0x01 : Heating

  0x02 : Cooling

  0x03 : Fan

  0x04 : Dry

  0x05 : Automatic heating and cooling

  0xFF : MD will follow the mode which is set already when setting the temperature. (It means that the mode will not change.)

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- ST (Temperature setting)

ST	Temperature
0x00	-35.0 ℃
0x01	-34.5 ℃
:	:
0x46	0.0 ℃
0x47	0.5 ℃
:	:
0xFF	92.5 ℃

ST = (Temperature X 2) + 70

Temperature = (ST - 70) / 2

4) Comment

Command is not accepted by Adaptor even if the host sets temperature only at ST.

The content of ST and MD become effective when corresponding bit to the indoor unit in Yn is set "1" (= effective).

When ST and MD become effective, temperature setting on plural indoor unit can be changed individually, collectively and randomly.

5) Communication example

Case 1: When setting to 24 ℃

[Command from HOST] ------- C2 08 07 02 76 ----

C2… Command is Set Temperature

08 … The number of indoor units is eight.

* When number is not right,

Adaptor carries out a NAK response.

07 … (0b00000111) 3 sets of the beginning are effective.

02 … Cooling

* At the time of data other than 0x01-0x05, FF,

Adaptor carries out a NAK response.

76 … 24 ℃

3-5. Fan Speed

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1) Setting Conmmand

Command from HOST

C3 NM Y1 Y2 … Yn MD FM

Reply Data from Adaptor

A1 (ACK normal reply)

A2 (NAK : negative response)

A3 (BUSY)

2) Data form

- NM (Number of indoor units)

  Please refer to the explanation of CO command.

- Yn (effective / ineffective)

  Please refer to the explanation of CO command.

- MD (Mode)

  MD is an operation mode to set FM.

  For example, the host can change the set Fan Speed for heating on cooling indoor unit.

  0x01 : Heating

  0x02 : Cooling

  0x03 : Fan

  0x04 : Dehumidification

  0x05 : Automatic heating and cooling

  0xFF : MD will follow the mode which is set already when setting Fan Speed. (It means that the mode will not change.)

- FM (Fan Speed)

  0x02 : Auto Fan Speed

  0x03 : High（H）

  0x04 : Medium(M)

  0x05 : Low （L）

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3) Comment

Comment is not accepted by Adaptor even if the host sent only Fan Speed Setting to **FM**.

The content of **MD** and FM become effective when corresponding bit to the indoor unit in **Yn** is set "1" (= effective).

When **MS** and **FM** become effective, the Fan Speed Setting on plural indoor units can be changed individually, collectively and randomly.

5) Communication example

Case 1: When setting to High(H)

[Command from HOST] ------- **C3 08 07 FF 03 ----**

C3… Command is Fan Speed

08 … The number of indoor units is eight.

* When number is not right,

Adaptor carries out a NAK response.

07 … (0b00000111) 3 sets of the beginning are effective.

FF … The present mode of operation

* At the time of data other than 0x01-0x05, FF,

Adaptor carries out a NAK response.

03 … High (H)

* At the time of data other than 0x02-0x05,

Adaptor carries out a NAK response.

3-6. Air Direction

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1) Setting Conmmand

Command from HOST

C4 NM Y1 Y2 … Yn MD FP

Reply Data from Adaptor

A1 (ACK normal reply)

A2 (NAK : negative response)

A3 (BUSY)

2) Data form

- NM (Number of indoor units)

  Please refer to the explanation of CO command.

- Yn (effective / ineffective)

  Please refer to the explanation of CO command.

- MD (Mode)

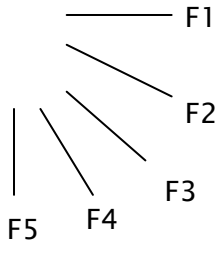
  MD is an operation mode to set FP.

  For example, the host can change the set Air Direction for heating on cooling indoor unit.

  0x01 : Heating
  0x02 : Cooling
  0x03 : Fan
  0x04 : Dehumidification
  0x05 : Automatic heating and cooling
  0xFF : MD will follow the mode which is set already (It means that the mode will not change.)

- FP (Setting Air Direction)

  0x01 : Swing
  0x02 : F1 (about horizontal)
  0x03 : F2
  0x04 : F3
  0x05 : F4
  0x06 : F5 (about vertical)



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3) Communication example

Case 1: When setting to Swing

[Command from HOST] ------- **C4 08 07 FF 01** ----

C4… Command is Air Direction

08 … The number of indoor units is eight.

* When number is not right,

Adaptor carries out a NAK response.

07 … (0b00000111) 3 sets of the beginning are effective.

FF … The present mode of operation

* At the time of data other than 0x01-0x05, FF,

Adaptor carries out a NAK response.

01 … Swing

* At the time of data other than 0x01-0x06,

Adaptor carries out a NAK response.

3-7. Remote Controller Prohibition

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1) Setting Conmmand

Command from HOST

C5 NM Y1 Y2 ... Yn IH

Reply Data from Adaptor

A1 (ACK normal reply)

A2 (NAK : negative response)

A3 (BUSY)

2) Data form

- NM (Number of indoor units)

  Please refer to the explanation of CO command.

- Yn (effective / ineffective)

  Please refer to the explanation of CO command.

- IH (Prohibit item)

  IH is a prohibit item of remote controller operation.

  0 : Permission, 1 : Prohibition

  Bit 7 6 5 4 3 2 1 0

  | | | | | | | |_____ On/Off
  | | | | | | |_____ Operation Mode
  | | | | | |_____ Set Temperature
  | | | | |_____ Air Direction
  | | | |_____ Fan Speed
  | | |_____ =0 (Un-use)
  | |_____ =0 (Un-use)
  |_____ =0 (Un-use)

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3) Communication example

Case 1: When operation and the stop in all rooms are forbidden

[Command from HOST] ------- **C5 08 FF 01** ----

C5… Command is Remote Controller Prohibition

08 … The number of indoor units is eight.

* When number is not right,

Adaptor carries out a NAK response.

FF … (0b11111111) All indoor unit.

01 …Prohibit item (Only ON/OFF)

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3-8. Filter Sign Reset

1) Command required by host

Command from HOST

C6

Reply Data from Adaptor

C6 NM F1 F2 … Fn

2) Setting Command

Command from HOST

C6 NM Y1 Y2 … Yn

Reply Data from Adaptor

A1 (ACK normal reply)

A2 (NAK : negative response)

A3 (BUSY)

3) Data form

- NM (Number of indoor units)

  Please refer to the explanation of CO command.

- Yn (effective / ineffective)

  Please refer to the explanation of CO command.

- Fn (Filter sign)

  Fn means filter sign situation on each indoor unit.

  The data has 64 bits (8byte) in maximum length.

  The “b0” in the first byte corresponds to the indoor unit No.1.

  And the “b7” in the eighth byte corresponds to the indoor unit No.64.

  On each byte, “1” means filter-sign ON, and “0”means filter-sign OFF.

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4) Communication example

Case 1: When the filter sign of the indoor unit in all rooms has come out

[Reply Data from Adaptor] ------- C6 08 FF ----

C6… Command is Filter sign

08 … The number of indoor units is eight.

FF … Filter sign

Case 2: When erasing the filter sign of the indoor unit in all rooms

[Command from HOST] ------- C6 08 FF ----

C6… Command is Filter sign

08 … The number of indoor units is eight.

* When number is not right,

Adaptor carries out a NAK response.

FF … (0b11111111) All indoor unit.

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3-9. Monitoring Operation

(Operation Mode / Set Temperature / Fan Speed / Air Direction Remote Controller Prohibition)

1) Command required by host

Command from HOST

D0

Reply Data from Adaptor

D0 NM M1 M2 ... Mn

2) Data form

- **NM** (Number of indoor units)

  Please refer to the explanation of CO command.

- **Mn** (Monitor data) ... 3byte data

  Mn is three byte data.

  The content of the three bytes are as follows.

【The first byte】

b7	b6	B5	b4	b3	b2	b1	b0
|	|	|	0	0 --- Auto Fan Speed	0	0	0 --- (Unused)
|	|	|	0	1 --- High (H)	0	0	1 --- Heating
|	|	|	1	0 --- Medium (M)	0	1	0 --- Cooling
|	|	|	1	1 --- Low (L)	0	1	1 --- Fan
|	|	|			1	0	0 --- Dry
0	0	0 --- (Unused)			1	0	1 --- Auto (Heating)
0	0	1 --- Swing			1	1	0 --- Auto (Cooling)
0	1	0 --- F1 (Almost horizontal)			1	1	1 --- (Unused)
0	1	1 --- F2					
1	0	0 --- F3					
1	0	1 --- F4					
1	1	0 --- F5 (Almost vertical)					
1	1	1 --- (Unused)					

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【The second byte】

The second byte is for temperature setting data.

The second byte	Temperature
0x00	-35.0 ℃
0x01	-34.5 ℃
:	:
0x46	0.0 ℃
0x47	0.5 ℃
:	:
0xFF	92.5 ℃

This table is same as C2 Command.

【The third byte】

The condition of prohibition or permission to use remote controller.

In the bits from b0 to b4, putting “1” in one of the bits means prohibition to use remote controller for operation, and “0” means permission to use remote controller

```
Bit  7 6 5 4  3 2 1 0
          |     | | | |_______ On/Off
          |     | | |________ Operation Mode
          |     | |__________ Set Temperature
          |     |___________ Air Direction
          |_________________ Fan Speed
```

3) Communication example

Case 1: When all indoor unit is same state

(Cooling, Set temperature 24℃、High, Swing, Rmote control permission)

[Reply Data from Adaptor]

------- D0 08 2A 76 00 2A 76 00 2A 76 00 2A 76 00
2A 76 00 2A 76 00 2A 76 00 2A 76 00 ----

D0… Command is Monitoring Operation

08 … The number of indoor units is eight.

2A… (0b00101010) Swing High(H), Cooling

44 … Set temperature 24 ℃

00… Remote control permission

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3-10. Alarm Code

1) Command required by host

Command from HOST

D1

Reply Data from Adaptor

D1 NM A1 A2 … An GA

2) Data form

- NM (Number of indoor units)

  Please refer to the explanation of CO command.

- An (Alarm Code)

  An is an alarm code of an indoor unit.

  It is 64bytes at the longest. The length of An is the same as the indoor number.

- GA (Adaptor Alarm Code)

  GA is an alarm code of adaptor.

An, GA	Alarm Code	An, GA	Alarm Code	An, GA	Alarm Code	An, GA	Alarm Code
0x00	Normal						
0x01	A01	0x41	E01	0x81	H01	0xC1	L01
0x02	A02	0x42	E02	0x82	H02	0xC2	L02
:	:	:	:	:	:	:	:
0x1F	A31	0x5F	E31	0x9F	H31	0xDF	L31
0x21	C01	0x61	F01	0xA1	J01	0xE1	P01
0x22	C02	0x62	F02	0xA2	J02	0xE2	P02
:	:	:	:	:	:	:	:
0x3F	C31	0x7F	F31	0xBF	J31	0xFF	P31

3) Communication example

Case 1: When the alarm code of the indoor unit in all rooms is E04

[Reply Data from Adaptor] ------- D1 08 44 44 44 44 44 44 44 44 ----

D1… Command is Alarm Code

08 … The number of indoor units is eight.

44 … E04 (alarm code)

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3-11. Room Temperature

1) Command required by host

Command from HOST

D2

Reply Data from Adaptor

D2 NM T1 T2 … Tn

2) Data form

- NM (Number of indoor units)

  Please refer to the explanation of CO command.

- Tn (Room temperature)

  Tn is a room temperature assigned to each indoor unit.

Tn	Temperature
0x00	-35.0 ℃
0x01	-34.5 ℃
:	:
0x46	0.0 ℃
0x47	0.5 ℃
:	:
0xFF	92.5 ℃

This table is same as C2 Command.

3) Communication example

Case 1: When the room temperature of the indoor unit in all rooms is 24 ℃

[Reply Data from Adaptor] ------- D2 08 76 76 76 76 76 76 76 76 ----

D2… Command is Room temperature

08 … The number of indoor units is eight.

76 … 24 ℃

3-12. Indoor / Outdoor Unit Address

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1) Command required by host

Command from HOST

DE 01

Reply Data from Adaptor

DE In1 In2 In3 … In64 IB

Command from HOST

DE 02

Reply Data from Adaptor

DE Ou1 Ou2 Ou3 … Ou30 OB

2) Data form

- InXX (Indoor unit Address) … 2 byte data

  InXX is two bytes. It is a total of 128 bytes from In1 to In64.
  The first 2 bytes correspond to indoor unit No.1
  and next 2bytes correspond to indoor unit No.2.
  The first 1 byte of 2-byte data is an indoor unit number (0x00-0x3F).
  The 2nd byte is a system address (0x01-0x1D) .
  If the data is 0xFFFF, it means the address is undecided or not exist.

  Example)

First byte data	2nd byte data	Indoor unit address (Remote controller display)
0x00	0x00	1-1
0x01	0x00	1-2
0x3F	0x00	1-64
0x00	0x01	2-1
0x3F	0x1D	30-64

- IB (unused) … 8 byte data

  This data is not used.

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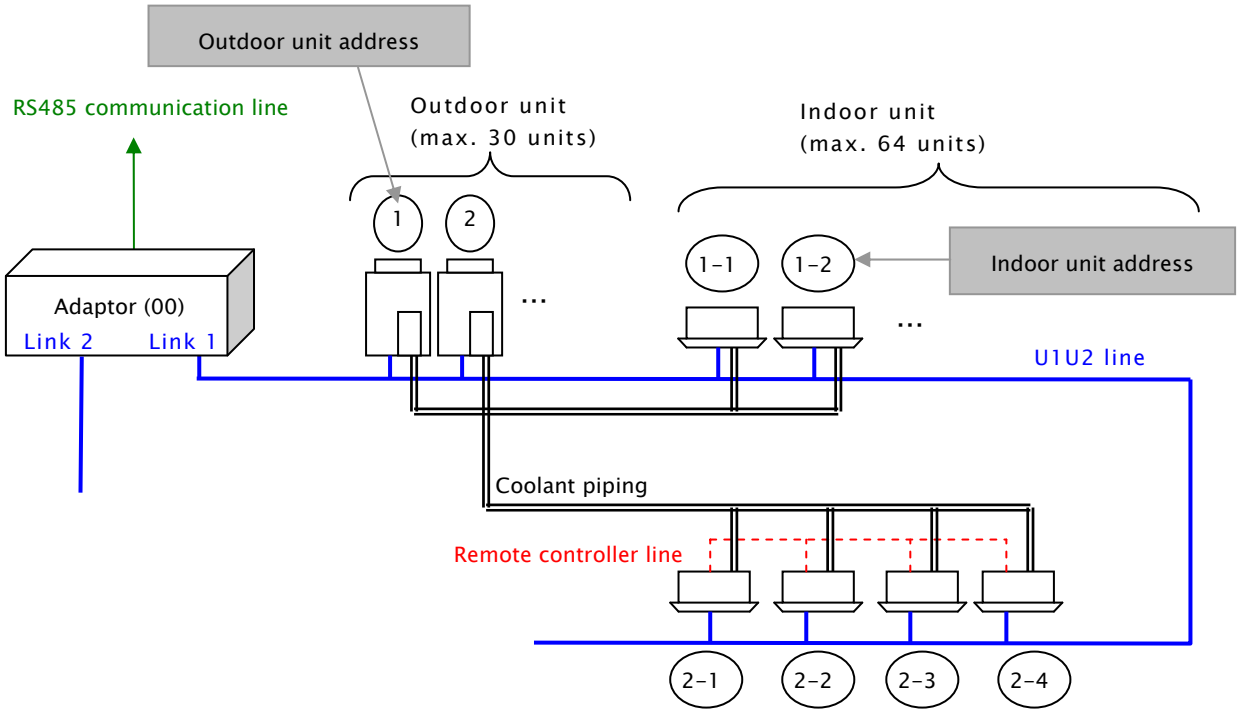
- **OuXX** (Outdoor unit Address) … 1 byte data
  OuXX(0x00-0x1D) is 1 byte.
  It is a total of 30 bytes from Ou1 to Ou30.
  If the data is 0xFF, it means the address is undecided or not exist.

- **OB** (unused) … 4 byte data
  This data is not used.

3) Comment

Only this command does not change length by the number of the air-conditioning units connected.

The address of an indoor unit and outdoor unit is decided at the time of installation of an air conditioner.



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Outdoor unit Address [1 … 30]	The outdoor unit of the same address as one U1U2 line does not exist.
Indoor unit number [1 … 64]	The indoor unit which is making coolant piping connection at the same outdoor unit is a different indoor number.
Indoor unit Address [1-1 … 30-64]	(Outdoor unit address - indoor unit number) It is displayed on a remote controller like 1-1, 2-1.

In the case of the system of the last page, communication data becomes the following.

[Command from HOST] D8 00 15 03 00 DE 01 11

[Reply Data from Adaptor] 00 D8 18 8A 00 DE 00 00 01 00 00 01 01 01
02 01 03 01 FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF 00 00 00 00 00 00 00 00 95

[Command from HOST] D8 00 15 03 00 DE 02 12

[Reply Data from Adaptor] 00 D8 18 24 00 DE 00 01 FF FF FF FF FF FF FF FF
FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF FF
FF FF FF 00 00 00 00 3B