

## **N** Owner's Manual

## **Original Instructions**

H2M Gateway

Models: ME31-33/EH1(M)

Thank you for choosing commercial air conditioners. Please read this Owner's Manual carefully before operation and retain it for future reference

If you have lost the Owner's Manual, please contact the local agent or visit www.gree.com or send an email to global@gree.com.cn for the electronic version.

GREE ELECTRIC APPLIANCES, INC. OF ZHUHAI

### To Users

Thank you for selecting Gree's product. Please read this instruction manual carefully before installing and using the product, so as to master and correctly use the product. In order to guide you to correctly install and use our product and achieve expected operating effect, we hereby instruct as below:

- (1) This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsibility for their safety. Children should be supervised to ensure that they do not play with the appliance.
- (2) This instruction manual is a universal manual, some functions are only applicable to particular product. All the illustrations and information in the instruction manual are only for reference, and control interface should be subject to actual operation.
- (3) In order to make the product better, we will continuously conduct improvement and innovation. We have the right to make necessary revision to the product from time to time due to the reason of sales or production, and reserve the right to revise the contents without further notice.

- (4) For personal injury or property loss and damage caused by improper operation such as improper installation and debugging, unnecessary maintenance, violation of related national laws and rules and industrial standard, and violation of this instruction manual, etc., we will bear no liability.
- (5) The final right to interpret for this instruction manual belongs to Gree Electric Appliances Inc. of Zhuhai.

## Contents

| 1 SAFETY NOTICES (PLEASE BE SURE TO ABIDE) | 1  |
|--|----|
| 2 OPERATION NOTICES                        | 2  |
| 3 FUNCTIONS INTRODUCTION                   | 3  |
| 4 PARTS                                    |    |
| 5 DETAILED INTRODUCTION                    |    |
| 5.1 PORTS                                  | 4  |
| 5.2 LED DISPLAY                            | 5  |
| 5.3 DIP SWITCH                             |    |
| 6 INSTALLATION                             | 12 |
| 6.1 DIMENSIONS AND INSTALLATION METHOD     | 12 |
| 6.2 COMMUNICATION CONNECTION               | 14 |
| APPENDIX A: ADDRESS TABLE OF DIP SWITCH    | 21 |
|  |    |

## 1 Safety Notices (Please be sure to abide)



Warning: If not abide strictly, it may cause severe damage to the unit or the people.



Note: If not abide strictly, it may cause slight or medium damage to the unit or the people.



This sign indicates that the operation must be prohibited. Improper operation may cause severe damage or death to people.



This sign indicates that the items must be observed. Improper operation may cause damage to people or property.



### WARNING!

This product can't be installed at corrosive, inflammable or explosive environment or the place with special requirements, such as kitchen. Otherwise, it will affect the normal operation or shorten the service life of the unit, or even cause fire hazard or serious injury. As for above special places, please adopt special air conditioner with anti-corrosive or anti-explosion function.

## 2 Operation Notices



- (1) This appliance is powered by the indoor unit of air conditioner. Do not connect other power source to this appliance, otherwise it may cause fire hazard and damage the appliance.
- (2) Before touching the electric components, please be sure the appliance is disconnected to power.
- (3) Never install the appliance in a damp place or allow it to be exposed to direct sunlight.
- (4) Never install the appliance near heat source or a place that may easily get splashes of water.
- (5) Please install the appliance in a place without electromagnetic interference or dusty particles.
- (6) Make sure that the communication wires are connected to the correct ports, otherwise communication failure will occut and may damage the appliance.
- (7) Once wires are connected, use insulative tape to protect the wires from oxidation and short circuit.
- (8) Working conditions for the appliance:
- ① Temperature: -20~+60°C;
- ② Relative humidity: ≤85%;
- ③ Install it indoors (better to install it in an electric control cabinet), avoid direct sunlight, rain and snow.
- (9) All the graphics in the instruction manual are for reference only.

### 3 Functions Introduction

Gree H2M Gateway can exchange data with air conditioners and the upper units of Modbus. It provides standard Modbus RTU protocol.

This gateway is applicable for Gree Multi VRF Units (CAN Communication). The upper units of Modbus can control the VRF indoor units (CAN Communication) through H2M Gateway. One upper unit of Modbus can directly control one (or more) indoor units.

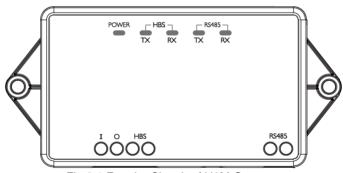


Fig.3.1 Exterior Sketch of H2M Gateway

### 4 Parts

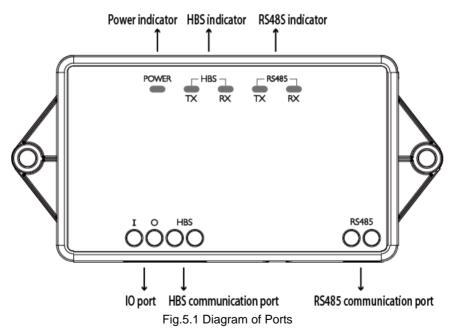
Please check whether the following items are all included before installation.

| H2M Gateway                   | 1 set    |
|-------------------------------|----------|
| Instruction Manual            | 1 copy   |
| Installation screw ST4.2X13MB | 2 pieces |

## 5 Detailed Introduction

### 5.1 Ports

## 5.1.1 Diagram of Ports



### 5.1.2 Description of Communication Ports

HBS communication port: It is connected to the indoor unit of air conditioner through a 2-core communication wire. It is used for the indoor unit to supply power to H2M Gateway and communicate with H2M Gateway;

RS485 communication port: It is connected to Modbus through a 2-core communication wire. It is used for the communication between H2M Gateway and the upper unit of Modbus.

IO port: Reserved function port.

## 5.2 LED Display

The following table is a detailed description about the LEDs indicated in Fig.5.1.

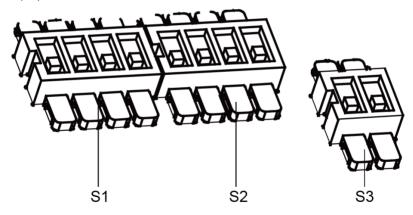
| POWE  | ER | It lights up if the power supply of H2M Gateway is normal.             |
|-------|----|--|
| LIDO  | TX | It will be blinking if H2M Gateway sends data to the indoor unit.      |
| HBS   | RX | It will be blinking if H2M Gateway receives data from the indoor unit. |
| RS485 | TX | It will be blinking if H2M Gateway sends data to Modbus.               |
| K5465 | RX | It will be blinking if H2M Gateway receives data from Modbus.          |

Note: If the gateway receives no data from Modbus for a long time, RX indicator of RS485 will be blinking once every 6 seconds.

### 5.3 DIP Switch

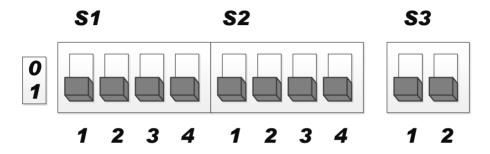
Attention! Before using this device, please set its DIP switch first; otherwise the device will not work!

Gateway's DIP switch is built within. Before setting, screw off the locating screws on the sides of the gateway and then open the cover. The allocation of DIP switch is shown below. It is combined with address DIP switch (S1&S2) and function DIP switch (S3).



### 5.3.1 Diagram of DIP Switch

As shown below, S1 and S2 refer to the address DIP switch while S3 refers to the function DIP switch.



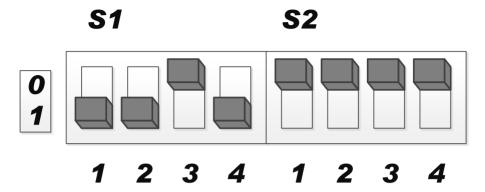
### 5.3.2 Address DIP Switch—Modbus Device Address Setting

Set the gateway's Modbus device address through address DIP switch. Please note that the address must not be identical with any other devices in the Modbus, otherwise communication failure will occur. After changing a device address, restart the gateway to enable the new address.

Address range of H2M Gateway: 1~255. Please refer to the Address table of DIP Switch for specific switch codes.

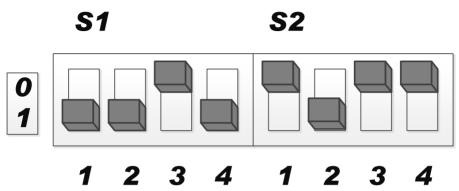
#### For example:

The method of setting address 11 is as below:



|   | Ad    | dres | s Ta | ble o | of DI | P Sv | vitch |      |  |  |  |  |  |  |  |
|---|-------|------|------|-------|-------|------|-------|------|--|--|--|--|--|--|--|
|   | S1 S2 |      |      |       |       |      |       |      |  |  |  |  |  |  |  |
| 1 | 2     | 3    | 4    | 1     | 2     | 3    | 4     | Addr |  |  |  |  |  |  |  |
| 1 | 1     | 0    | 1    | 0     | 0     | 0    | 0     | 11   |  |  |  |  |  |  |  |

The method of setting address 43 is as below:



|   | Ad    | dres | s Ta | ble o | of DI | P Sv | vitch |      |  |  |  |  |  |  |  |
|---|-------|------|------|-------|-------|------|-------|------|--|--|--|--|--|--|--|
|   | S1 S2 |      |      |       |       |      |       |      |  |  |  |  |  |  |  |
| 1 | 2     | 3    | 4    | 1     | 2     | 3    | 4     | Addr |  |  |  |  |  |  |  |
| 1 | 1     | 0    | 1    | 0     | 1     | 0    | 0     | 43   |  |  |  |  |  |  |  |

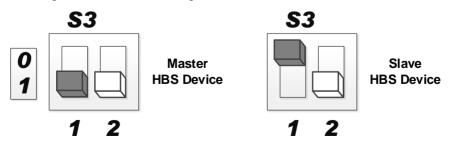
# 5.3.3 The 1st Lever of Function DIP Switch –Master/Slave HBS Device Setting

The 1st lever of function DIP switch S3 is used for the setting of master/slave HBS device. After changing the setting of master/slave HBS devices, restart the gateway to enable the new setting. For the connection method of master/slave HBS device, please refer to Section 6.2.1.

In an HBS network, if H2M Gateway is the only device that is connected to indoor units, it should be set as the master HBS device. Turn the 1<sup>st</sup> lever of function DIP switch S3 to 1.

In an HBS network, if both the wired controller and H2M Gateway are connected to indoor units, wired controller should be set as the master HBS device (i.e. master wired controller, please refer to the instruction manual of wired controller for the setting method). So H2M Gateway should be set as the slave HBS device. Turn the 1st lever of function DIP switch S3 to 0.

Diagram of DIP Switch Setting for Master/Slave HBS Device:



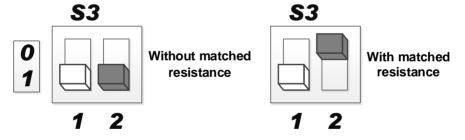
# 5.3.4 The 2nd Lever of Function DIP Switch –Modbus Matched Resistance Setting

The 2nd lever of function DIP switch S3 is used for the setting of Modbus matched resistance. For the method of connecting gateway to Modbus, please refer to Section 6.2.2.

If H2M Gateway is at the end of Modbus, it should be set to be with matched resistance. Turn the 2<sup>nd</sup> lever of function DIP switch S3 to 0;

If H2M Gateway is not at the end of Modbus, it should be set to be without matched resistance. Turn the 2<sup>nd</sup> lever of function DIP switch S3 to 1.

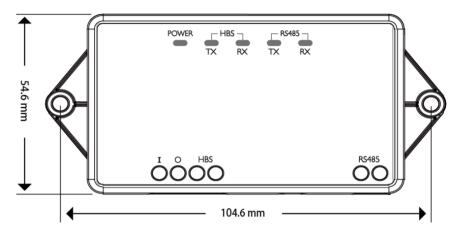
Diagram of DIP Switch Setting for Matched Resistance:



## 6 Installation

### 6.1 Dimensions and Installation Method

### 6.1.1 Dimensions



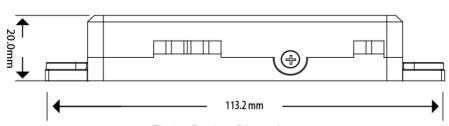
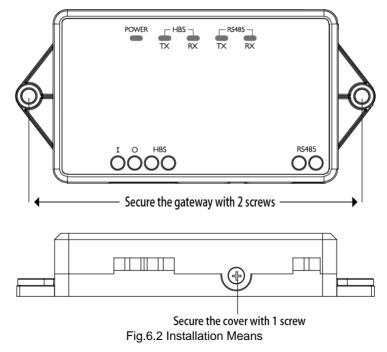


Fig.6.1 Product Dimensions

### 6.1.2 Installation Method

Once the gateway's DIP switch setting is finished, re-install the gateway's cover and secure it with screws. Install the gateway in a proper place indoors. We recommend installing it horizontally in an electric control cabinet, with its front facing upward. Secure it with 2 installation screws.



13

### 6.2 Communication Connection

The communication system of H2M Gateway includes:

- (1) HBS Communication: Communication between H2M Gateway and indoor units
- (2) RS485 (Modbus) Communication: Communication between H2M Gateway and the upper units of Modbus

### 6.2.1 HBS Communication Connection

(1) Selection of Communication Wire

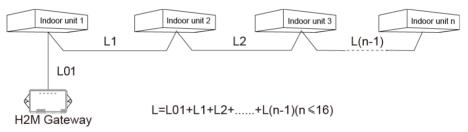


Fig.6.3 Length of Communication Wire

| Wire material type   | Total length of communicati on line L (m/feet) | Wire size<br>(mm²/AWG)    | Material<br>standard | Remarks   |
|--|--|---------------------------|----------------------|---|
| Light/Ordinary<br>polyvinyl<br>chloride<br>sheathed cord.<br>(60227 IEC 52<br>/60227 IEC 53) | L≤250m<br>(L≤820-1/5fe<br>et)                  | ≥2×0.75 mm²<br>(≥2×AWG18) | IEC<br>60227-5:2007  | Total length of communication line can't exceed 250m (820-1/5feet).      The cord shall be Circular cord (the cores shall be twisted together).      Should be in compliance with EN 55032, it is necessary to use shielded wire. |

### (2) Communication Connection Method

There are 4 methods to connect gateway to the network of indoor units:

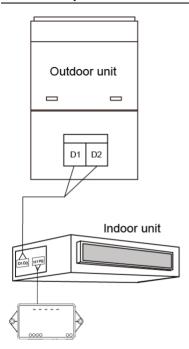


Fig.6.4 One gateway controls one indoor unit

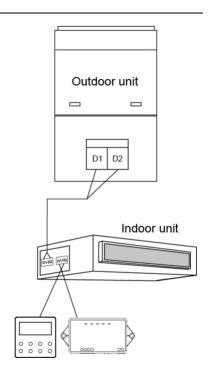


Fig.6.5 One gateway and one wired controller control one indoor unit

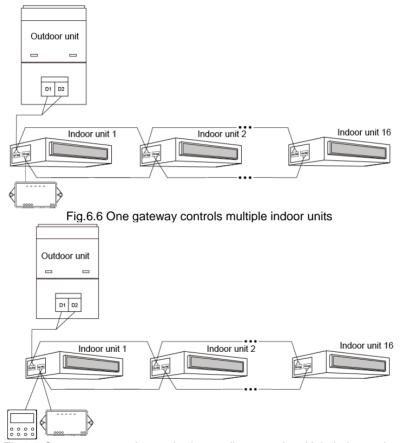


Fig.6.7 One gateway and one wired controller control multiple indoor units

### Wiring instructions:

- (1) If the gateway (or wired controller) is going to control multiple indoor units, it can be connected to HBS port (H1、H2) of any one indoor unit but the units to be connected must belong to the same series. The gateway (or wired controller) can control up to 16 indoor units, which must be wiithin the same HBS network.
- (2) If the gateway and the wired controller are going to control one (or more) indoor units together, they should be set as master/slave HBS device. Please refer to Section 5.3.3 for the setting method of master/slave HBS device.
- (3) If the gateway (or wired controller) is going to control multiple indoor units, then all the indoor units will be running in the same status.

#### Notice:

- (1) The HBS port of H2M Gateway has no polarity, thus we don't have to consider the polarity of HBS port.
- (2) Series of indoor units include: ① common VRF units; ②Fresh air units;
  ③Units of double heat sources; ④ AHU-KIT; Common VRF units refer to units except fresh air units, units of double heat sources and AHU-KIT.

### 6.2.2 RS485 (Modbus) Communication Connection

### (1) Selection of Communication Wire

| Wire material type   | Total length of communicati on line L (m/feet) | Wire size<br>(mm²/AWG)    | Material<br>standard    | Remarks  |
|--|--|---------------------------|-------------------------|--|
| Light/Ordinary<br>polyvinyl<br>chloride<br>sheathed cord.<br>(60227 IEC 52<br>/60227 IEC 53) | L≤800m<br>(L≤2624feet)                         | ≥2×0.75 mm²<br>(≥2×AWG18) | IEC<br>60227-5:2<br>007 | ① Total length of communication line can't exceed 800m (2624feet). ② The cord shall be Circular cord (the cores shall be twisted together). ③ If unit is installed in places with intense magnetic field or strong interference, it is necessary to use shielded wire. |

### (2) Communication Connection Method

Two terminal of RS485 port should be connected respectively to terminal A, B of the RS485 port of the upper unit of Modbus. The RS485 port of H2M Gateway has no polarity, thus we don't have to have to consider the polarity of terminal during wiring.

Attention! If Modbus is connected to other devices in addition to the upper unit of Modbus and H2M gateway, then the devices of Modbus must adopt series connection instead of star connection.

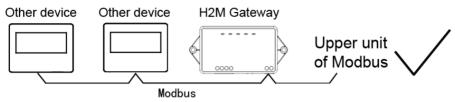


Fig.6.8 Series Connection of Modbus Devices

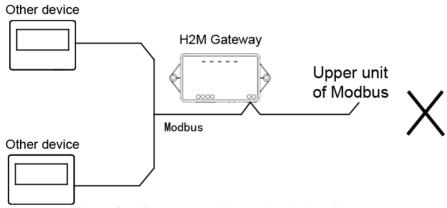


Fig.6.9 Star Connection is forbidden for Modbus Devices

(3) Communication Connection Configuration

Before using the gateway, please set its DIP switch first; otherwise Modbus will not communicate normally!

- Step 1: Set the device address through DIP switch according to Section 5.3.2;
- Step 2: Set Modbus matched resistance according to Section 5.3.4.

## Appendix A: Address Table of DIP Switch

|   | 0~26 address table of DIP switc |   |   |   |   |   |   | vitch |   | 27~ | ·53 a | ıddre | ess t | able | of D | IP sv | witch |
|---|---------------------------------|---|---|---|---|---|---|-------|---|-----|-------|-------|-------|------|------|-------|-------|
|   | S                               | 1 |   |   | S | 2 |   | addr  |   | S   | 1     |       |       | S    | 2    |       | addr  |
| 1 | 2                               | 3 | 4 | 1 | 2 | 3 | 4 | auui  | 1 | 2   | 3     | 4     | 1     | 2    | 3    | 4     | auui  |
| 0 | 0                               | 0 | 0 | 0 | 0 | 0 | 0 | \     | 1 | 1   | 0     | 1     | 1     | 0    | 0    | 0     | 27    |
| 1 | 0                               | 0 | 0 | 0 | 0 | 0 | 0 | 1     | 0 | 0   | 1     | 1     | 1     | 0    | 0    | 0     | 28    |
| 0 | 1                               | 0 | 0 | 0 | 0 | 0 | 0 | 2     | 1 | 0   | 1     | 1     | 1     | 0    | 0    | 0     | 29    |
| 1 | 1                               | 0 | 0 | 0 | 0 | 0 | 0 | 3     | 0 | 1   | 1     | 1     | 1     | 0    | 0    | 0     | 30    |
| 0 | 0                               | 1 | 0 | 0 | 0 | 0 | 0 | 4     | 1 | 1   | 1     | 1     | 1     | 0    | 0    | 0     | 31    |
| 1 | 0                               | 1 | 0 | 0 | 0 | 0 | 0 | 5     | 0 | 0   | 0     | 0     | 0     | 1    | 0    | 0     | 32    |
| 0 | 1                               | 1 | 0 | 0 | 0 | 0 | 0 | 6     | 1 | 0   | 0     | 0     | 0     | 1    | 0    | 0     | 33    |
| 1 | 1                               | 1 | 0 | 0 | 0 | 0 | 0 | 7     | 0 | 1   | 0     | 0     | 0     | 1    | 0    | 0     | 34    |
| 0 | 0                               | 0 | 1 | 0 | 0 | 0 | 0 | 8     | 1 | 1   | 0     | 0     | 0     | 1    | 0    | 0     | 35    |
| 1 | 0                               | 0 | 1 | 0 | 0 | 0 | 0 | 9     | 0 | 0   | 1     | 0     | 0     | 1    | 0    | 0     | 36    |
| 0 | 1                               | 0 | 1 | 0 | 0 | 0 | 0 | 10    | 1 | 0   | 1     | 0     | 0     | 1    | 0    | 0     | 37    |
| 1 | 1                               | 0 | 1 | 0 | 0 | 0 | 0 | 11    | 0 | 1   | 1     | 0     | 0     | 1    | 0    | 0     | 38    |
| 0 | 0                               | 1 | 1 | 0 | 0 | 0 | 0 | 12    | 1 | 1   | 1     | 0     | 0     | 1    | 0    | 0     | 39    |
| 1 | 0                               | 1 | 1 | 0 | 0 | 0 | 0 | 13    | 0 | 0   | 0     | 1     | 0     | 1    | 0    | 0     | 40    |
| 0 | 1                               | 1 | 1 | 0 | 0 | 0 | 0 | 14    | 1 | 0   | 0     | 1     | 0     | 1    | 0    | 0     | 41    |
| 1 | 1                               | 1 | 1 | 0 | 0 | 0 | 0 | 15    | 0 | 1   | 0     | 1     | 0     | 1    | 0    | 0     | 42    |
| 0 | 0                               | 0 | 0 | 1 | 0 | 0 | 0 | 16    | 1 | 1   | 0     | 1     | 0     | 1    | 0    | 0     | 43    |
| 1 | 0                               | 0 | 0 | 1 | 0 | 0 | 0 | 17    | 0 | 0   | 1     | 1     | 0     | 1    | 0    | 0     | 44    |
| 0 | 1                               | 0 | 0 | 1 | 0 | 0 | 0 | 18    | 1 | 0   | 1     | 1     | 0     | 1    | 0    | 0     | 45    |
| 1 | 1                               | 0 | 0 | 1 | 0 | 0 | 0 | 19    | 0 | 1   | 1     | 1     | 0     | 1    | 0    | 0     | 46    |
| 0 | 0                               | 1 | 0 | 1 | 0 | 0 | 0 | 20    | 1 | 1   | 1     | 1     | 0     | 1    | 0    | 0     | 47    |
| 1 | 0                               | 1 | 0 | 1 | 0 | 0 | 0 | 21    | 0 | 0   | 0     | 0     | 1     | 1    | 0    | 0     | 48    |
| 0 | 1                               | 1 | 0 | 1 | 0 | 0 | 0 | 22    | 1 | 0   | 0     | 0     | 1     | 1    | 0    | 0     | 49    |
| 1 | 1                               | 1 | 0 | 1 | 0 | 0 | 0 | 23    | 0 | 1   | 0     | 0     | 1     | 1    | 0    | 0     | 50    |
| 0 | 0                               | 0 | 1 | 1 | 0 | 0 | 0 | 24    | 1 | 1   | 0     | 0     | 1     | 1    | 0    | 0     | 51    |
| 1 | 0                               | 0 | 1 | 1 | 0 | 0 | 0 | 25    | 0 | 0   | 1     | 0     | 1     | 1    | 0    | 0     | 52    |
| 0 | 1                               | 0 | 1 | 1 | 0 | 0 | 0 | 26    | 1 | 0   | 1     | 0     | 1     | 1    | 0    | 0     | 53    |

|   | 54~80 address table of DIP switch |   |   |   |   |   |   |      |  |   | 81~ | 107 | addr | ess t | able | of D | IP s | witch |
|---|-----------------------------------|---|---|---|---|---|---|------|--|---|-----|-----|------|-------|------|------|------|-------|
|   | S                                 | 1 |   |   | S | 2 |   | addr |  |   | S   | 31  |      |       | S    | 2    |      | addr  |
| 1 | 2                                 | 3 | 4 | 1 | 2 | 3 | 4 | auui |  | 1 | 2   | 3   | 4    | 1     | 2    | 3    | 4    | auui  |
| 0 | 1                                 | 1 | 0 | 1 | 1 | 0 | 0 | 54   |  | 1 | 0   | 0   | 0    | 1     | 0    | 1    | 0    | 81    |
| 1 | 1                                 | 1 | 0 | 1 | 1 | 0 | 0 | 55   |  | 0 | 1   | 0   | 0    | 1     | 0    | 1    | 0    | 82    |
| 0 | 0                                 | 0 | 1 | 1 | 1 | 0 | 0 | 56   |  | 1 | 1   | 0   | 0    | 1     | 0    | 1    | 0    | 83    |
| 1 | 0                                 | 0 | 1 | 1 | 1 | 0 | 0 | 57   |  | 0 | 0   | 1   | 0    | 1     | 0    | 1    | 0    | 84    |
| 0 | 1                                 | 0 | 1 | 1 | 1 | 0 | 0 | 58   |  | 1 | 0   | 1   | 0    | 1     | 0    | 1    | 0    | 85    |
| 1 | 1                                 | 0 | 1 | 1 | 1 | 0 | 0 | 59   |  | 0 | 1   | 1   | 0    | 1     | 0    | 1    | 0    | 86    |
| 0 | 0                                 | 1 | 1 | 1 | 1 | 0 | 0 | 60   |  | 1 | 1   | 1   | 0    | 1     | 0    | 1    | 0    | 87    |
| 1 | 0                                 | 1 | 1 | 1 | 1 | 0 | 0 | 61   |  | 0 | 0   | 0   | 1    | 1     | 0    | 1    | 0    | 88    |
| 0 | 1                                 | 1 | 1 | 1 | 1 | 0 | 0 | 62   |  | 1 | 0   | 0   | 1    | 1     | 0    | 1    | 0    | 89    |
| 1 | 1                                 | 1 | 1 | 1 | 1 | 0 | 0 | 63   |  | 0 | 1   | 0   | 1    | 1     | 0    | 1    | 0    | 90    |
| 0 | 0                                 | 0 | 0 | 0 | 0 | 1 | 0 | 64   |  | 1 | 1   | 0   | 1    | 1     | 0    | 1    | 0    | 91    |
| 1 | 0                                 | 0 | 0 | 0 | 0 | 1 | 0 | 65   |  | 0 | 0   | 1   | 1    | 1     | 0    | 1    | 0    | 92    |
| 0 | 1                                 | 0 | 0 | 0 | 0 | 1 | 0 | 66   |  | 1 | 0   | 1   | 1    | 1     | 0    | 1    | 0    | 93    |
| 1 | 1                                 | 0 | 0 | 0 | 0 | 1 | 0 | 67   |  | 0 | 1   | 1   | 1    | 1     | 0    | 1    | 0    | 94    |
| 0 | 0                                 | 1 | 0 | 0 | 0 | 1 | 0 | 68   |  | 1 | 1   | 1   | 1    | 1     | 0    | 1    | 0    | 95    |
| 1 | 0                                 | 1 | 0 | 0 | 0 | 1 | 0 | 69   |  | 0 | 0   | 0   | 0    | 0     | 1    | 1    | 0    | 96    |
| 0 | 1                                 | 1 | 0 | 0 | 0 | 1 | 0 | 70   |  | 1 | 0   | 0   | 0    | 0     | 1    | 1    | 0    | 97    |
| 1 | 1                                 | 1 | 0 | 0 | 0 | 1 | 0 | 71   |  | 0 | 1   | 0   | 0    | 0     | 1    | 1    | 0    | 98    |
| 0 | 0                                 | 0 | 1 | 0 | 0 | 1 | 0 | 72   |  | 1 | 1   | 0   | 0    | 0     | 1    | 1    | 0    | 99    |
| 1 | 0                                 | 0 | 1 | 0 | 0 | 1 | 0 | 73   |  | 0 | 0   | 1   | 0    | 0     | 1    | 1    | 0    | 100   |
| 0 | 1                                 | 0 | 1 | 0 | 0 | 1 | 0 | 74   |  | 1 | 0   | 1   | 0    | 0     | 1    | 1    | 0    | 101   |
| 1 | 1                                 | 0 | 1 | 0 | 0 | 1 | 0 | 75   |  | 0 | 1   | 1   | 0    | 0     | 1    | 1    | 0    | 102   |
| 0 | 0                                 | 1 | 1 | 0 | 0 | 1 | 0 | 76   |  | 1 | 1   | 1   | 0    | 0     | 1    | 1    | 0    | 103   |
| 1 | 0                                 | 1 | 1 | 0 | 0 | 1 | 0 | 77   |  | 0 | 0   | 0   | 1    | 0     | 1    | 1    | 0    | 104   |
| 0 | 1                                 | 1 | 1 | 0 | 0 | 1 | 0 | 78   |  | 1 | 0   | 0   | 1    | 0     | 1    | 1    | 0    | 105   |
| 1 | 1                                 | 1 | 1 | 0 | 0 | 1 | 0 | 79   |  | 0 | 1   | 0   | 1    | 0     | 1    | 1    | 0    | 106   |
| 0 | 0                                 | 0 | 0 | 1 | 0 | 1 | 0 | 80   |  | 1 | 1   | 0   | 1    | 0     | 1    | 1    | 0    | 107   |

|   | 108~ | -134 | add | ress | table | e of | DIP : | switch |   | 135- | -161 | add | ress | tabl | e of | DIP : | switch |
|---|------|------|-----|------|-------|------|-------|--------|---|------|------|-----|------|------|------|-------|--------|
|   | S    | 1    |     |      | S     | 2    |       | addr   |   | S    | 1    |     |      | S    | 2    |       | addr   |
| 1 | 2    | 3    | 4   | 1    | 2     | 3    | 4     | auui   | 1 | 2    | 3    | 4   | 1    | 2    | 3    | 4     | auui   |
| 0 | 0    | 1    | 1   | 0    | 1     | 1    | 0     | 108    | 1 | 1    | 1    | 0   | 0    | 0    | 0    | 1     | 135    |
| 1 | 0    | 1    | 1   | 0    | 1     | 1    | 0     | 109    | 0 | 0    | 0    | 1   | 0    | 0    | 0    | 1     | 136    |
| 0 | 1    | 1    | 1   | 0    | 1     | 1    | 0     | 110    | 1 | 0    | 0    | 1   | 0    | 0    | 0    | 1     | 137    |
| 1 | 1    | 1    | 1   | 0    | 1     | 1    | 0     | 111    | 0 | 1    | 0    | 1   | 0    | 0    | 0    | 1     | 138    |
| 0 | 0    | 0    | 0   | 1    | 1     | 1    | 0     | 112    | 1 | 1    | 0    | 1   | 0    | 0    | 0    | 1     | 139    |
| 1 | 0    | 0    | 0   | 1    | 1     | 1    | 0     | 113    | 0 | 0    | 1    | 1   | 0    | 0    | 0    | 1     | 140    |
| 0 | 1    | 0    | 0   | 1    | 1     | 1    | 0     | 114    | 1 | 0    | 1    | 1   | 0    | 0    | 0    | 1     | 141    |
| 1 | 1    | 0    | 0   | 1    | 1     | 1    | 0     | 115    | 0 | 1    | 1    | 1   | 0    | 0    | 0    | 1     | 142    |
| 0 | 0    | 1    | 0   | 1    | 1     | 1    | 0     | 116    | 1 | 1    | 1    | 1   | 0    | 0    | 0    | 1     | 143    |
| 1 | 0    | 1    | 0   | 1    | 1     | 1    | 0     | 117    | 0 | 0    | 0    | 0   | 1    | 0    | 0    | 1     | 144    |
| 0 | 1    | 1    | 0   | 1    | 1     | 1    | 0     | 118    | 1 | 0    | 0    | 0   | 1    | 0    | 0    | 1     | 145    |
| 1 | 1    | 1    | 0   | 1    | 1     | 1    | 0     | 119    | 0 | 1    | 0    | 0   | 1    | 0    | 0    | 1     | 146    |
| 0 | 0    | 0    | 1   | 1    | 1     | 1    | 0     | 120    | 1 | 1    | 0    | 0   | 1    | 0    | 0    | 1     | 147    |
| 1 | 0    | 0    | 1   | 1    | 1     | 1    | 0     | 121    | 0 | 0    | 1    | 0   | 1    | 0    | 0    | 1     | 148    |
| 0 | 1    | 0    | 1   | 1    | 1     | 1    | 0     | 122    | 1 | 0    | 1    | 0   | 1    | 0    | 0    | 1     | 149    |
| 1 | 1    | 0    | 1   | 1    | 1     | 1    | 0     | 123    | 0 | 1    | 1    | 0   | 1    | 0    | 0    | 1     | 150    |
| 0 | 0    | 1    | 1   | 1    | 1     | 1    | 0     | 124    | 1 | 1    | 1    | 0   | 1    | 0    | 0    | 1     | 151    |
| 1 | 0    | 1    | 1   | 1    | 1     | 1    | 0     | 125    | 0 | 0    | 0    | 1   | 1    | 0    | 0    | 1     | 152    |
| 0 | 1    | 1    | 1   | 1    | 1     | 1    | 0     | 126    | 1 | 0    | 0    | 1   | 1    | 0    | 0    | 1     | 153    |
| 1 | 1    | 1    | 1   | 1    | 1     | 1    | 0     | 127    | 0 | 1    | 0    | 1   | 1    | 0    | 0    | 1     | 154    |
| 0 | 0    | 0    | 0   | 0    | 0     | 0    | 1     | 128    | 1 | 1    | 0    | 1   | 1    | 0    | 0    | 1     | 155    |
| 1 | 0    | 0    | 0   | 0    | 0     | 0    | 1     | 129    | 0 | 0    | 1    | 1   | 1    | 0    | 0    | 1     | 156    |
| 0 | 1    | 0    | 0   | 0    | 0     | 0    | 1     | 130    | 1 | 0    | 1    | 1   | 1    | 0    | 0    | 1     | 157    |
| 1 | 1    | 0    | 0   | 0    | 0     | 0    | 1     | 131    | 0 | 1    | 1    | 1   | 1    | 0    | 0    | 1     | 158    |
| 0 | 0    | 1    | 0   | 0    | 0     | 0    | 1     | 132    | 1 | 1    | 1    | 1   | 1    | 0    | 0    | 1     | 159    |
| 1 | 0    | 1    | 0   | 0    | 0     | 0    | 1     | 133    | 0 | 0    | 0    | 0   | 0    | 1    | 0    | 1     | 160    |
| 0 | 1    | 1    | 0   | 0    | 0     | 0    | 1     | 134    | 1 | 0    | 0    | 0   | 0    | 1    | 0    | 1     | 161    |

|   | 162~188 address table of DIP<br>S1 S2 |   |   |   |   |   |   | switch |   | 189 | ~215 | ado | ress | s tab | le of | DIP | switch |
|---|---------------------------------------|---|---|---|---|---|---|--------|---|-----|------|-----|------|-------|-------|-----|--------|
|   | S                                     | 1 |   |   | S | 2 |   | addr   |   | S   | 1    |     |      | S     | 2     |     | addr   |
| 1 | 2                                     | 3 | 4 | 1 | 2 | 3 | 4 | auui   | 1 | 2   | 3    | 4   | 1    | 2     | 3     | 4   | auui   |
| 0 | 1                                     | 0 | 0 | 0 | 1 | 0 | 1 | 162    | 1 | 0   | 1    | 1   | 1    | 1     | 0     | 1   | 189    |
| 1 | 1                                     | 0 | 0 | 0 | 1 | 0 | 1 | 163    | 0 | 1   | 1    | 1   | 1    | 1     | 0     | 1   | 190    |
| 0 | 0                                     | 1 | 0 | 0 | 1 | 0 | 1 | 164    | 1 | 1   | 1    | 1   | 1    | 1     | 0     | 1   | 191    |
| 1 | 0                                     | 1 | 0 | 0 | 1 | 0 | 1 | 165    | 0 | 0   | 0    | 0   | 0    | 0     | 1     | 1   | 192    |
| 0 | 1                                     | 1 | 0 | 0 | 1 | 0 | 1 | 166    | 1 | 0   | 0    | 0   | 0    | 0     | 1     | 1   | 193    |
| 1 | 1                                     | 1 | 0 | 0 | 1 | 0 | 1 | 167    | 0 | 1   | 0    | 0   | 0    | 0     | 1     | 1   | 194    |
| 0 | 0                                     | 0 | 1 | 0 | 1 | 0 | 1 | 168    | 1 | 1   | 0    | 0   | 0    | 0     | 1     | 1   | 195    |
| 1 | 0                                     | 0 | 1 | 0 | 1 | 0 | 1 | 169    | 0 | 0   | 1    | 0   | 0    | 0     | 1     | 1   | 196    |
| 0 | 1                                     | 0 | 1 | 0 | 1 | 0 | 1 | 170    | 1 | 0   | 1    | 0   | 0    | 0     | 1     | 1   | 197    |
| 1 | 1                                     | 0 | 1 | 0 | 1 | 0 | 1 | 171    | 0 | 1   | 1    | 0   | 0    | 0     | 1     | 1   | 198    |
| 0 | 0                                     | 1 | 1 | 0 | 1 | 0 | 1 | 172    | 1 | 1   | 1    | 0   | 0    | 0     | 1     | 1   | 199    |
| 1 | 0                                     | 1 | 1 | 0 | 1 | 0 | 1 | 173    | 0 | 0   | 0    | 1   | 0    | 0     | 1     | 1   | 200    |
| 0 | 1                                     | 1 | 1 | 0 | 1 | 0 | 1 | 174    | 1 | 0   | 0    | 1   | 0    | 0     | 1     | 1   | 201    |
| 1 | 1                                     | 1 | 1 | 0 | 1 | 0 | 1 | 175    | 0 | 1   | 0    | 1   | 0    | 0     | 1     | 1   | 202    |
| 0 | 0                                     | 0 | 0 | 1 | 1 | 0 | 1 | 176    | 1 | 1   | 0    | 1   | 0    | 0     | 1     | 1   | 203    |
| 1 | 0                                     | 0 | 0 | 1 | 1 | 0 | 1 | 177    | 0 | 0   | 1    | 1   | 0    | 0     | 1     | 1   | 204    |
| 0 | 1                                     | 0 | 0 | 1 | 1 | 0 | 1 | 178    | 1 | 0   | 1    | 1   | 0    | 0     | 1     | 1   | 205    |
| 1 | 1                                     | 0 | 0 | 1 | 1 | 0 | 1 | 179    | 0 | 1   | 1    | 1   | 0    | 0     | 1     | 1   | 206    |
| 0 | 0                                     | 1 | 0 | 1 | 1 | 0 | 1 | 180    | 1 | 1   | 1    | 1   | 0    | 0     | 1     | 1   | 207    |
| 1 | 0                                     | 1 | 0 | 1 | 1 | 0 | 1 | 181    | 0 | 0   | 0    | 0   | 1    | 0     | 1     | 1   | 208    |
| 0 | 1                                     | 1 | 0 | 1 | 1 | 0 | 1 | 182    | 1 | 0   | 0    | 0   | 1    | 0     | 1     | 1   | 209    |
| 1 | 1                                     | 1 | 0 | 1 | 1 | 0 | 1 | 183    | 0 | 1   | 0    | 0   | 1    | 0     | 1     | 1   | 210    |
| 0 | 0                                     | 0 | 1 | 1 | 1 | 0 | 1 | 184    | 1 | 1   | 0    | 0   | 1    | 0     | 1     | 1   | 211    |
| 1 | 0                                     | 0 | 1 | 1 | 1 | 0 | 1 | 185    | 0 | 0   | 1    | 0   | 1    | 0     | 1     | 1   | 212    |
| 0 | 1                                     | 0 | 1 | 1 | 1 | 0 | 1 | 186    | 1 | 0   | 1    | 0   | 1    | 0     | 1     | 1   | 213    |
| 1 | 1                                     | 0 | 1 | 1 | 1 | 0 | 1 | 187    | 0 | 1   | 1    | 0   | 1    | 0     | 1     | 1   | 214    |
| 0 | 0                                     | 1 | 1 | 1 | 1 | 0 | 1 | 188    | 1 | 1   | 1    | 0   | 1    | 0     | 1     | 1   | 215    |

| : | 216~235 address table of D |   |   |   |   |   | DIP | switch |   | 236- | -255 | add | ress | tabl | e of | DIP | switch |
|---|----------------------------|---|---|---|---|---|-----|--------|---|------|------|-----|------|------|------|-----|--------|
|   | S                          | 1 |   |   | S | 2 |     | addr   |   | S    | 1    |     |      | S    | 2    |     | addr   |
| 1 | 2                          | 3 | 4 | 1 | 2 | 3 | 4   | auui   | 1 | 2    | 3    | 4   | 1    | 2    | 3    | 4   | auui   |
| 0 | 0                          | 0 | 1 | 1 | 0 | 1 | 1   | 216    | 0 | 0    | 1    | 1   | 0    | 1    | 1    | 1   | 236    |
| 1 | 0                          | 0 | 1 | 1 | 0 | 1 | 1   | 217    | 1 | 0    | 1    | 1   | 0    | 1    | 1    | 1   | 237    |
| 0 | 1                          | 0 | 1 | 1 | 0 | 1 | 1   | 218    | 0 | 1    | 1    | 1   | 0    | 1    | 1    | 1   | 238    |
| 1 | 1                          | 0 | 1 | 1 | 0 | 1 | 1   | 219    | 1 | 1    | 1    | 1   | 0    | 1    | 1    | 1   | 239    |
| 0 | 0                          | 1 | 1 | 1 | 0 | 1 | 1   | 220    | 0 | 0    | 0    | 0   | 1    | 1    | 1    | 1   | 240    |
| 1 | 0                          | 1 | 1 | 1 | 0 | 1 | 1   | 221    | 1 | 0    | 0    | 0   | 1    | 1    | 1    | 1   | 241    |
| 0 | 1                          | 1 | 1 | 1 | 0 | 1 | 1   | 222    | 0 | 1    | 0    | 0   | 1    | 1    | 1    | 1   | 242    |
| 1 | 1                          | 1 | 1 | 1 | 0 | 1 | 1   | 223    | 1 | 1    | 0    | 0   | 1    | 1    | 1    | 1   | 243    |
| 0 | 0                          | 0 | 0 | 0 | 1 | 1 | 1   | 224    | 0 | 0    | 1    | 0   | 1    | 1    | 1    | 1   | 244    |
| 1 | 0                          | 0 | 0 | 0 | 1 | 1 | 1   | 225    | 1 | 0    | 1    | 0   | 1    | 1    | 1    | 1   | 245    |
| 0 | 1                          | 0 | 0 | 0 | 1 | 1 | 1   | 226    | 0 | 1    | 1    | 0   | 1    | 1    | 1    | 1   | 246    |
| 1 | 1                          | 0 | 0 | 0 | 1 | 1 | 1   | 227    | 1 | 1    | 1    | 0   | 1    | 1    | 1    | 1   | 247    |
| 0 | 0                          | 1 | 0 | 0 | 1 | 1 | 1   | 228    | 0 | 0    | 0    | 1   | 1    | 1    | 1    | 1   | 248    |
| 1 | 0                          | 1 | 0 | 0 | 1 | 1 | 1   | 229    | 1 | 0    | 0    | 1   | 1    | 1    | 1    | 1   | 249    |
| 0 | 1                          | 1 | 0 | 0 | 1 | 1 | 1   | 230    | 0 | 1    | 0    | 1   | 1    | 1    | 1    | 1   | 250    |
| 1 | 1                          | 1 | 0 | 0 | 1 | 1 | 1   | 231    | 1 | 1    | 0    | 1   | 1    | 1    | 1    | 1   | 251    |
| 0 | 0                          | 0 | 1 | 0 | 1 | 1 | 1   | 232    | 0 | 0    | 1    | 1   | 1    | 1    | 1    | 1   | 252    |
| 1 | 0                          | 0 | 1 | 0 | 1 | 1 | 1   | 233    | 1 | 0    | 1    | 1   | 1    | 1    | 1    | 1   | 253    |
| 0 | 1                          | 0 | 1 | 0 | 1 | 1 | 1   | 234    | 0 | 1    | 1    | 1   | 1    | 1    | 1    | 1   | 254    |
| 1 | 1                          | 0 | 1 | 0 | 1 | 1 | 1   | 235    | 1 | 1    | 1    | 1   | 1    | 1    | 1    | 1   | 255    |



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