# Haier Air Conditioner Product Manual

**-------Multilink module**

The manual is applicable to Haier Air Conditioner multilink technology communication module

**Series：IGU09（Master IDU Multilink module）、IGU10（Slave IDU Multilink Module）、IGU11（Repeater）**

# Catalogue

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.
Note: This product has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This product generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this product does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
—Reorient or relocate the receiving antenna.
—Increase the separation between the equipment and receiver.
—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
—Consult the dealer or an experienced radio/TV technician for help.
Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.
This equipment complies with FCC/IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:
(1) this device may not cause interference, and
(2) this device must accept any interference, including interference that may cause undesired operation of the device.
Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radioexempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
(1) l'appareil ne doit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
*Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.*
*Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.*
Ce dispositif répond aux limites de dose de rayonnement dans un autre environnement (FCC / CNR - 102).L 'eqipment doit être installé et exploité à une distance d' au moins 20 cm entre le radiateur et votre corps.

# 2. Introduction to multilink module

Haier multilink module, based on MRV5 HP ODUs,The products that are multilink module compatable are listed below,MRV5 HR ODUs only the following three types of IDUs are supported.

**ODUs: MRV 5 HP**

IDUs：All VRF IDUs such as AD**MLERA、AD**MMERA、AD**MHERA、AC**MCERA、AC**MFERA、AS**MCERA、AB**MCERA、AB**MEERA、AD**MNERA、AE**MLERA、AD**MZERA、AD**MJERA、AD**MSERA、AD**MSERA(D)、AD**MQERA、AB**MCERA(M)、AB**MRERA、AS**MNERA 、AF**MBERA、AB**MAERA、AB**MBERA etc.

**ODUs: MRV 5 HR**

IDUs： MVAB*MV2AA、MVAL*ME2AA、MVAM*ME2AA

Multilink module is a wireless communication network containing an master IDU multilink module, slave IDU multilink modules and repeaters.

Notice:

1. The master IDU multilink module, slave IDU multilink modules and repeaters share the same hardware, but with different programming.
2. Repeaters are powered by external 5v power adapters.

# 3. Selection methods for multilink module

Master IDU multilink modules, slave IDU multilink modules and repeaters all have their own BOM numbers. Product managers can place the multilink module PO according to it's BOM number if multilink module is an optional module.

| Item | Units No. | BOM No. | Private No. |
|---|---|---|---|
| Master IDU multilink module | **IGU09** | AA9VH2B3P | 0151800313C |
| Slave IDU multilink Module | **IGU10** | AA9VH1B3P | 0151800314B |
| Repeater | **IGU11** | AA9VH0B3P | 0151800321B |

# 4. Multilink module installation requirements

## (1) Connection requirements for multilink technology communication systems

A mix-connection of wired and wireless communication is recommended for MRV systems utilizing wireless communications. The master ODU connects to the nearest IDU ( Valve box ) by wire, and the remaining IDUs connect wireless subsequently. The ODU does not require a multilink module. The first or closest IDU is equipped with the master (IGU09) multilink module, and the remaining IDUs are equipped with slave (IGU10) multilink modules.

Note: The number of IDU communication addresses connected to the master IDU multilink module(IGU09) must be smaller than that of other slave IDUs.

## (2) Indoor Unit (IDU) multilink module installation requirements

a. Installation as an accessory: Connect module to port CN34 of the IDU PC board. The multilink module will be installed at the factory if the IDU is ordered with the option.

b. The IDU multilink module antenna is rotatable. Keep the antenna 4 inches(10cm) away from metal surfaces.

c. Indoor units with multilink modules should be located 30 feet(10m) away other WiFi devices in the room.

## (3) Repeater installation requirements

a. Add a repeater if the distance between any two multilink modules exceeds 330 feet(100m).

b. Add (N-1) repeaters if N walls exists between any two multilink modules. (N >=2)

Note: Do not need to add the repeater when there is only one wall between two multilink modules.

c. Repeaters should be installed in open spaces and with the antenna as far as possible from metals.

d. Repeaters must be powered by its power adapter and separate for any other devices. Installation locations should consider 220v power source connection convenience.

Note: The number of repeaters should be calculated in advance. The stability and reliability of the multilink technology communication system should be considered when selecting the quantity and location of repeaters.

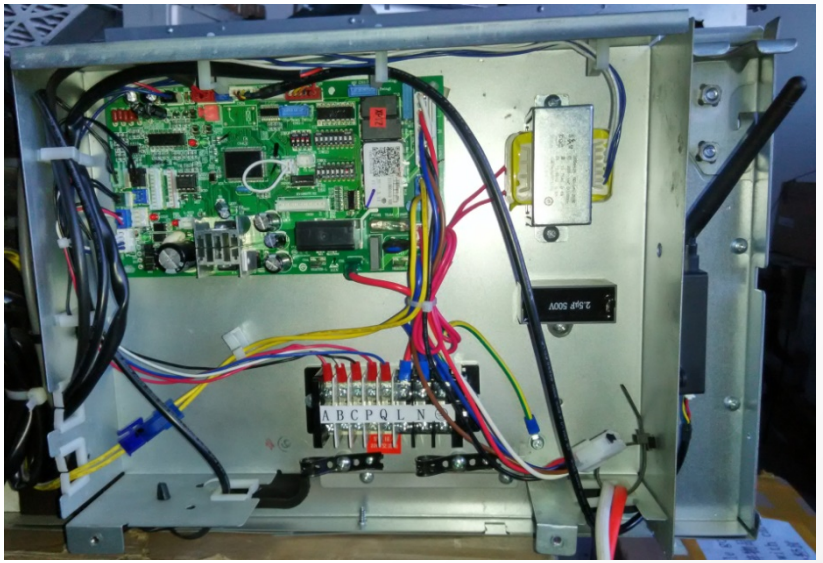
# 4. Multilink module installation requirements

## (4) IDUs installation requirements

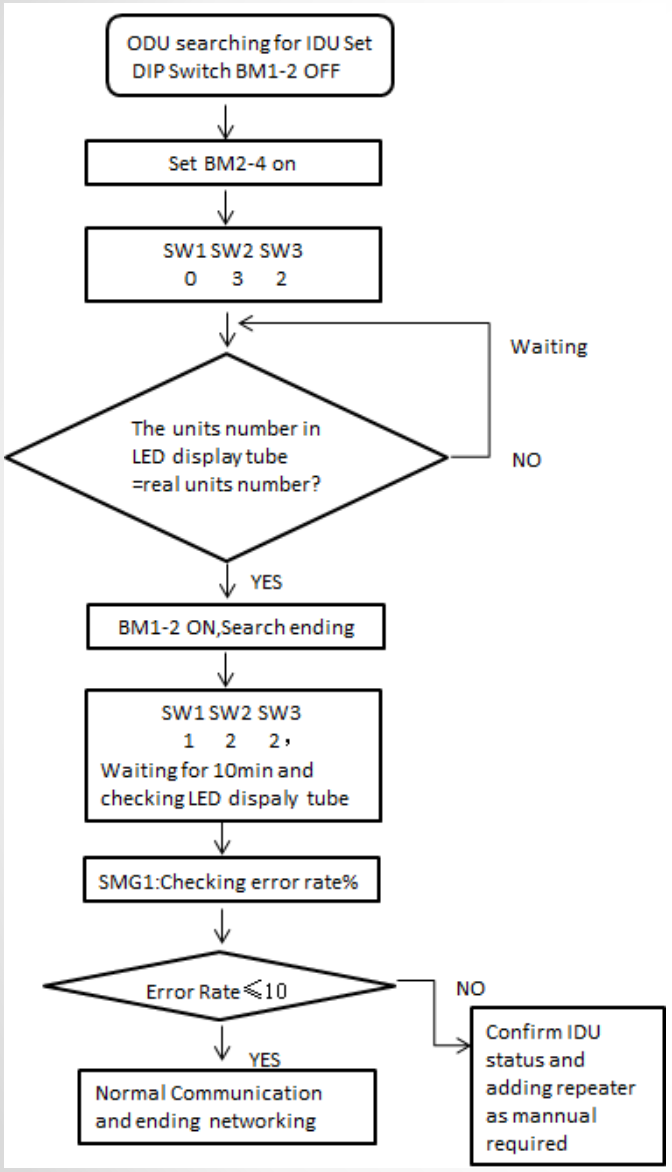
a. For the system adopting multilink technology communication,the installation of IDUs should use network structure instead of line-type structure;

b. Do not install the IDUs in the space surrounded by metal, such as metro computer room and hospital X-ray room, otherwise the system should adopt the wired connection.

c. Keep the IDUs more than 30 feet(10m) away from the Wifi devices in the room.

| Installation Location Diagram of IDU multilink Modules | |
|---|---|
|  |  |

# 5. Multilink module troubleshooting




Each multilink technology communication system can automatically complete network debugging separately. See chart:

Important:

Multilink technology communication system commissioning should be done one system at a time. Do not power up additional communication networks during commissioning. Power systems down after commissioning to begin start up on another wireless network. Do not power up all networks until commissioning on all networks is completed.

2. The wireless networks needs to check communication error rate after all IDUs have been discovered. This can be determined by the ODU LED. See the table below for the error rate checking method. 0% indicates the best communication while 20% or less can ensure normal operation.

| SW1 | SW2 | SW3 | Function | LED Display LD1～4 |
|---|---|---|---|---|
| 1 | 2 | 2 | The first two digits show the percentage of inconsistency between the IDU and the E2 quantity. The last two digits indicates real-time IDU quantity. | For example, 0522 indicates 22 sets of real-time IDUs and 5% of inconsistent communication percentage between the IDUs and the E2 quantity. |

3. It will be necessary to confirm whether repeaters should be added when error rates are very high. This is in accordance with the installation requirements