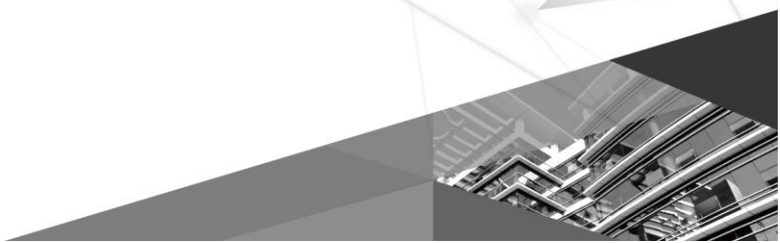




***Owner's Manual***  
***Original Instructions***

**VRF Debugger Eudemon Tool Kits**  
**Model: SST01G1**

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



# To Users

Thank you for selecting Energolux'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 responsible 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 Energolux.

# Contents

1 SAFETY NOTICES (PLEASE BE SURE TO ABIDE).....	1
2 USER NOTICE .....	2
3 VRF DEBUGGER .....	3
3.1 GENERAL .....	3
3.2 NETWORK .....	4
3.2.1 Topological Diagram .....	4
3.2.2 Introduction to the Topological Diagram .....	4
3.3 FEATURES .....	5
3.3.1 Automatic Debugging .....	5
3.3.2 Complete Monitoring .....	5
3.3.3 Real-time Control .....	5
3.3.4 Wild Application .....	6
3.4 INSTALLATION INSTRUCTIONS .....	6
3.4.1 Installation Requirements .....	6
3.4.2 Installation of .Net Framework 4.0 .....	7
3.4.3 Installation of Debugger .....	12
4 USB DATA CONVERTER .....	18
4.1 GENERAL .....	18
4.2 INTERFACES AND INDICATING LEDs .....	18
4.2.1 Structural Drawing .....	18
4.2.2 Introduction to the Interfaces and Indicating LEDs .....	19
4.3 FEATURES .....	20
4.3.1 RS485 to USB .....	20

4.3.2 CAN to USB .....	21
4.3.3 HBS to USB .....	21
4.4 INSTALLATION INSTRUCTIONS .....	21
4.4.1 Installation Requirements .....	21
4.4.2 Installation of Data Converter Driver .....	22
4.5 OPERATION INSTRUCTIONS .....	23
4.5.1 Operation of USB Data Converter .....	23

# 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 User Notice

This debugger eudemon consists of one flash disk (incl. VRF Debugger, USB Data Converter Driver), one operation manual, one data converter, one USB data line, one communication line (two-wired, 1.5m).

The operation manual is divided into two parts. The first part presents the VRF Debugger which now is mainly applied to the second-generation VRF units. The second part introduces the USB Data Converter which is intended to convert the air conditioner network's communication mode to the computer's RS232 communication mode.

## 3 VRF Debugger

### 3.1 General

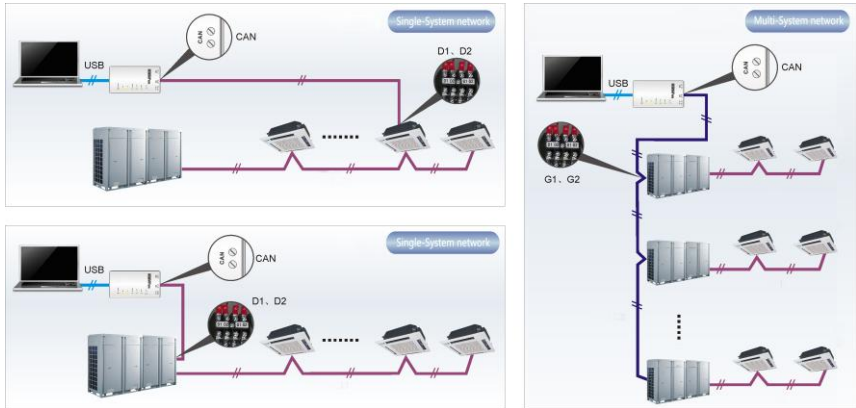
With the fast development of the large-sized buildings, the central air conditioning system varies to much more extent in quantity, model and layout, which makes the central management much more difficult. Therefore, **VRF Debugger** is especially designed so that the servicemen can view its running status, start/stop it and set its parameters sitting comfortably in front of a computer but not required to be present at the jobsite in person. It can be seen clearly that this software can largely improve the work efficiency and reduce the labor, material and management cost.

**VRF Debugger** is capable of completely monitoring and controlling second-generation VRF units and then the user is allowed to monitor and control these units through a computer. As a high-efficient tool to intelligently manage the air conditioning system for the modern buildings, it functions for jobsite commissioning of the air conditioning system during installation and service. Through it, the servicemen can easily get to know the running status of the air conditioning system and make analysis for satisfactory operation, which will greatly improve its operation efficiency and low the service cost and better serve users.



## 3.2 Network

### 3.2.1 Topological Diagram



As shown in the figure above, either the single-system or the multi-system network is available.

### 3.2.2 Introduction to the Topological Diagram

It can be seen from the topological diagram above that the network consists of three parts.

The first part represents the monitoring computer, including **VRF Debugger**.

The second part represents the **USB Data Converter** including the USB data line which is mainly intended to convert the air conditioner network's communication

mode to the computer RS232 communication mode.

The third part represents the air conditioning system—indoor units, outdoor units and connection lines. Suppose the connection line is not long enough, a patch board will help. In the single-system network, **VRF Debugger** is allowed to connect to either the indoor or the outdoor units. However, in the multi-system network, it can only connect to the outdoor units.

## 3.3 Features

### 3.3.1 Automatic Debugging

Simply by pressing one button, the automatic debugging will start to the air conditioning system in accordance with the debugging logic. All normal stages will be ticked automatically and turn to green while the abnormal will turn to red.

### 3.3.2 Complete Monitoring

This software can monitor each system, equipment and part. The resultant data will be expressed in the form of texts by which the user is able to get to know the running status of the whole air conditioning system directly and briefly.

### 3.3.3 Real-time Control

There are different requirements on the runtime and operation conditions for air conditioners used at different zones. In order to realize the central management to these complicated requirements, the user through this software is allowed to set not

only the air conditioner indoor units, like start/stop, temperature, fan speed, operation mode, etc, but also the air conditioner outdoor units and gateways etc.

### 3.3.4 Wild Application

Developed in accordance with demands from development engineers, users and servicemen, this software can be used under wide applications and is applicable to various kinds of central air conditioning systems and in the future it tends to cover all kinds, like VRF units, centrifugal units, screw chillers, ground-source heat pumps, modular units, duct split units, and close control air conditioners etc.

## 3.4 Installation Instructions

### 3.4.1 Installation Requirements

#### 3.4.1.1 Computer Configuration

Memory	1 GB at least 2 GB or above is preferred
Hard Disc	10 GB available
CPU	Core 2 or higher 1 GHz at least 2 GHz or above is preferred
Operation System	Windows Server 2003 SP3 or higher Windows XP SP3 or higher Windows Vista Windows 7

Windows 8 Windows 10 Note: Be sure you are authorized to be an administrator of this computer.
--

### 3.4.1.2 Flash Disk Insertion

Insert this flash disk into this computer. Double clicking the executable file under "**Launcher.exe**", then the computer display will be as shown in the figure below.



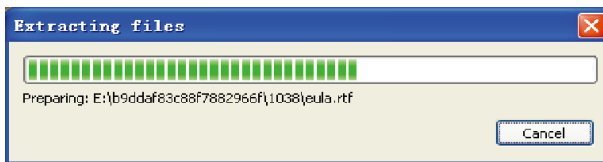
For the initial use of this debugger eudemon, it is required to install **.Net Framework 4.0**, **USB Converter Driver**, and **Debugger**.

### 3.4.2 Installation of .Net Framework 4.0

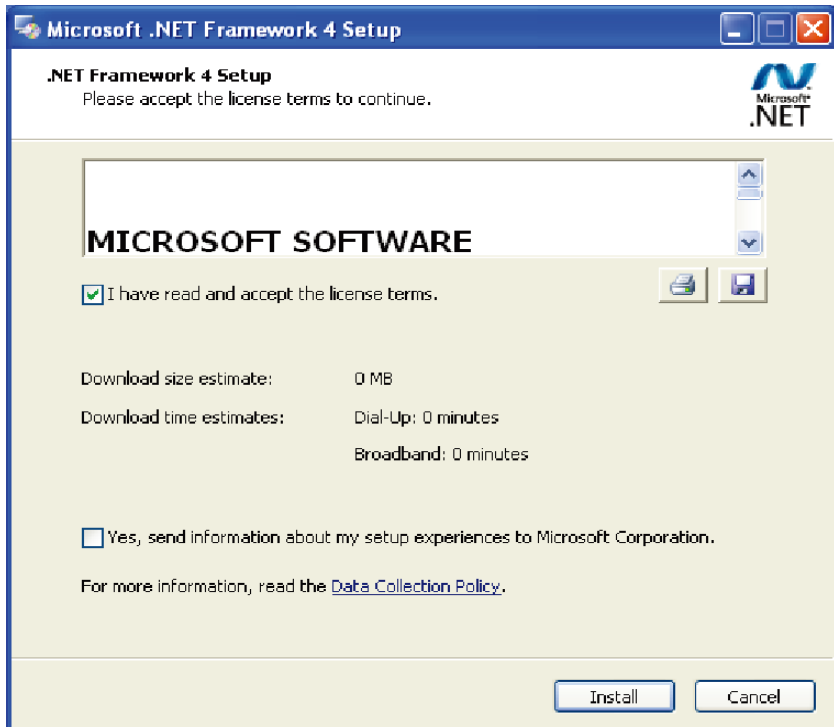
Unless **.Net Framework 4.0** or above has been installed in your computer, otherwise it shall be installed by clicking "**Install. Net Framework 4.0**"



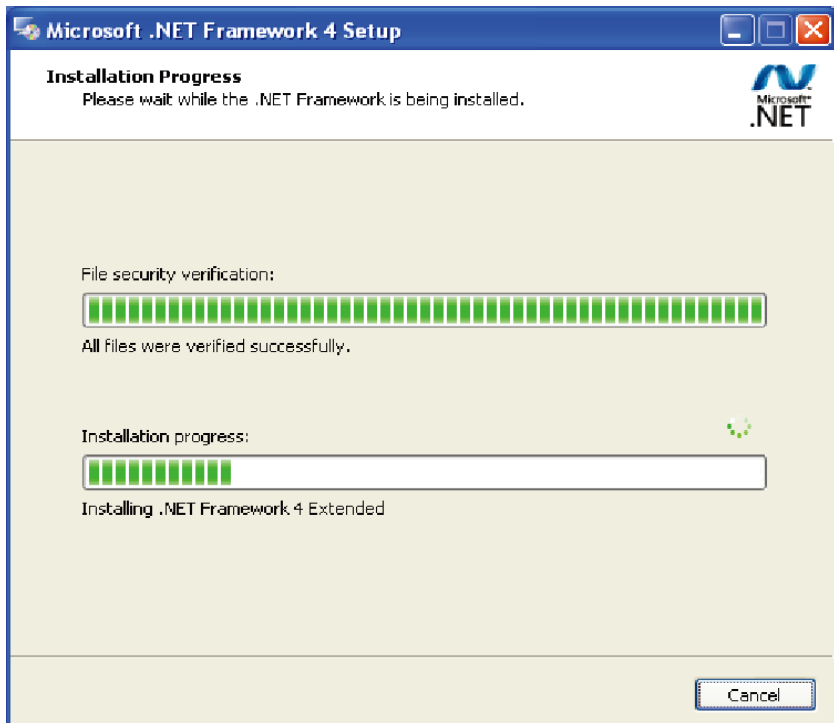
Files are being extracted.



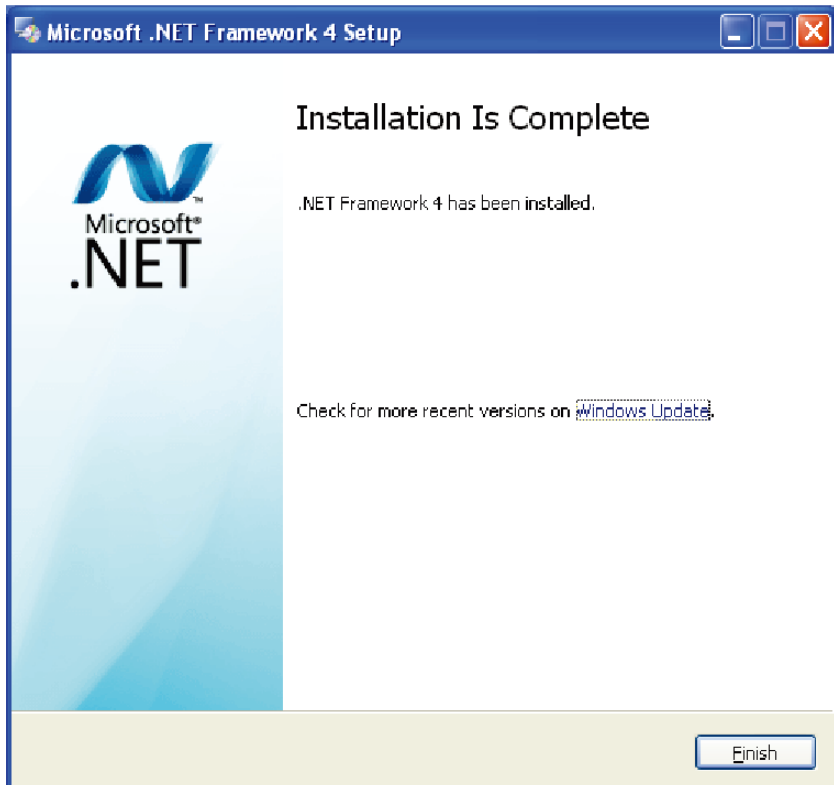
Tick "**I have read and accept the license terms**" and then click "**Install**" to start the installation.



.Net. Framework is being installed.



Click "**Finish**" to complete this installation.





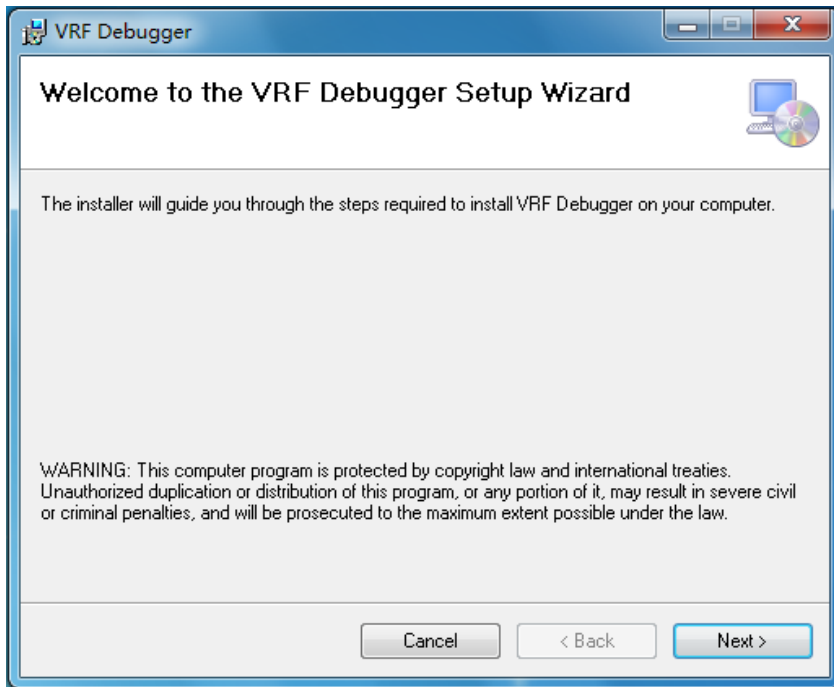
### 3.4.3 Installation of Debugger

Be sure .Net Framework 4.0 or higher has been installed before installing Debugger.

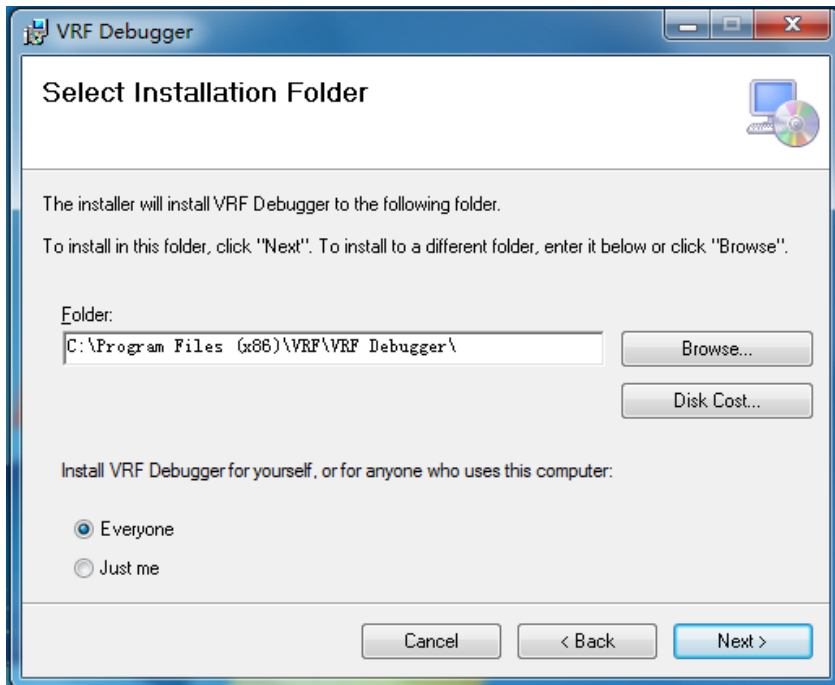
Clicking "**Install Debugger**".



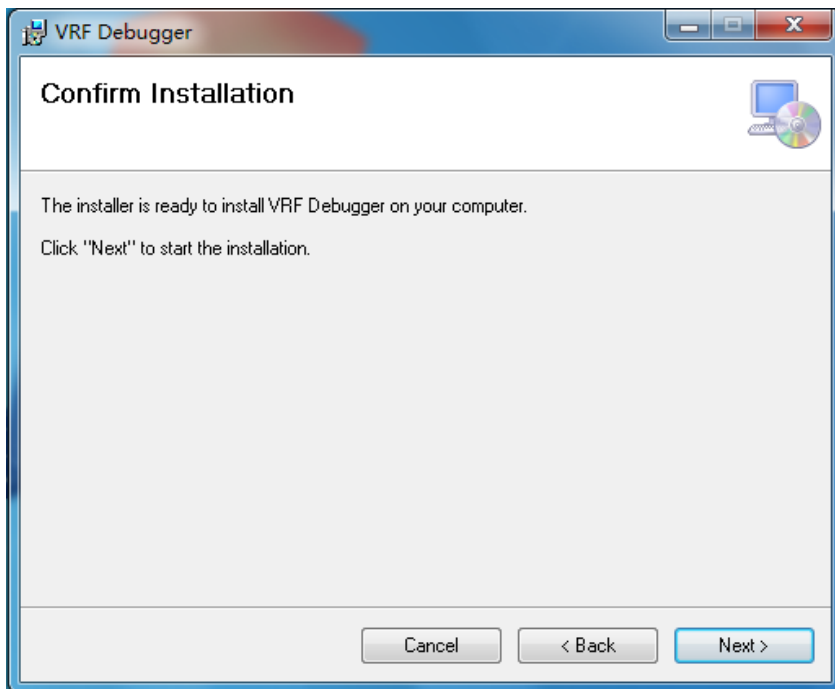
Click "**Next**" to go on.



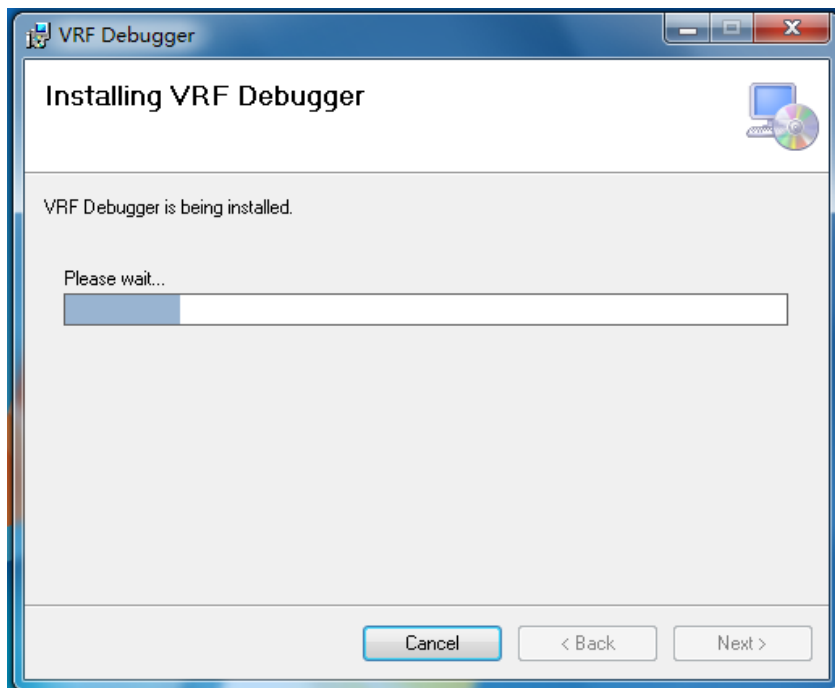
Click "**Browse**" to change the default folder to the expected, or click "**Next**" to continue the installation.



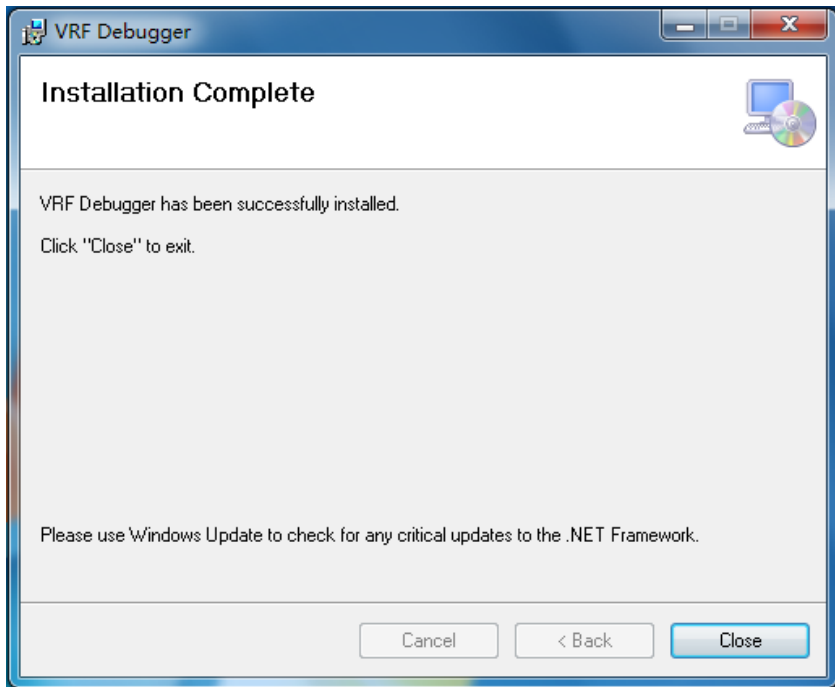
Click "**Next**" to go on.



VRF Debugger is being installed.



Click "**Close**" to complete this installation.



Detailed operation instructions please refer to the help file of software.

## 4 USB Data Converter

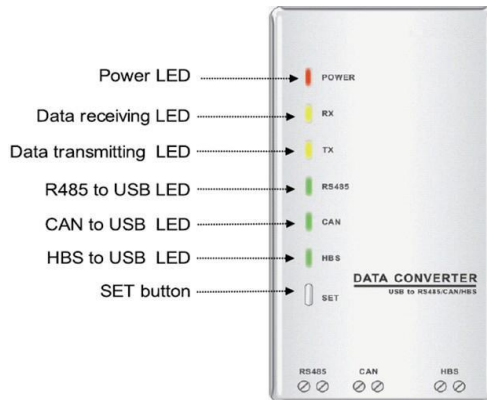
### 4.1 General

USB data converter is developed for data exchange between CAN/HBS/RS485 protocol and USB protocol so as to guarantee the normal data exchange between PC and the air conditioning unit.

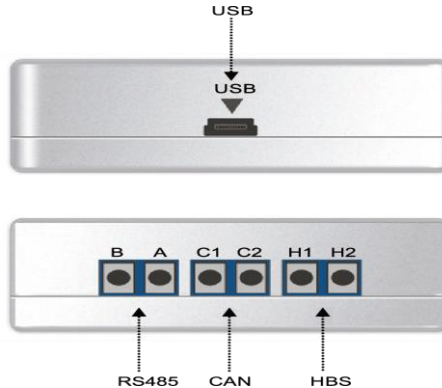
### 4.2 Interfaces and Indicating LEDs

#### 4.2.1 Structural Drawing

Front View



## Side View



## 4.2.2 Introduction to the Interfaces and Indicating LEDs

### 4.2.2.1 Interfaces

**USB Interface:** it is used to connect the USB data line.

**CAN Interface:** under the CAN communication mode, this non-polar interface is connected with the corresponding CAN interface on the air conditioning unit.

**HBS Interface:** under the HBS communication mode, this non-polar interface is connected with the corresponding HBS interface on the air conditioning unit.

**RS485 Interface:** under the RS485 communication mode, this polar interface is connected with the corresponding RS485 interface on the air conditioning unit.



### 4.2.2.2 Indicating LEDs

The red LED is the power indicating LED. When the LED lights on, it indicates the data converter is energized normally; when the LED lights off, it indicates the data converter is not energized or energized improperly.

The two yellow LEDs are the data receiving (RX) and data transmitting (TX) indicating LEDs respectively. When the PC is transmitting data to the air conditioning unit, the TX LED will flash, when the air conditioning unit is transmitting data to PC, the RX LED will flash.

Three green LEDs are the communication mode indicating LEDs.

When RS485 to USB LED lights on, it indicates that the data converter functions under the RS485 communication mode.

When CAN to USB LED lights on, it indicates that the data converter functions under the CAN communication mode.

When HBS to USB LED lights on, it indicates that the data converter functions under the HBS communication mode.

## 4.3 Features

### 4.3.1 RS485 to USB

It is intended to convert the RS485 communication mode to the USB communication mode.

### 4.3.2 CAN to USB

It is intended to convert the CAN communication mode to the USB communication mode.

### 4.3.3 HBS to USB

It is intended to convert the HBS communication mode to the USB communication mode.

## 4.4 Installation Instructions

### 4.4.1 Installation Requirements

#### 4.4.1.1 Computer Configuration

Memory	1 GB at least 2 GB or above is preferred
Hard Disc	10 GB available
CPU	Core 2 or higher 1 GHz at least 2 GHz or above is preferred
Operation System	Windows Server 2003 SP3 or higher Windows XP SP3 or higher Windows Vista Windows 7 Windows 8 Windows 10

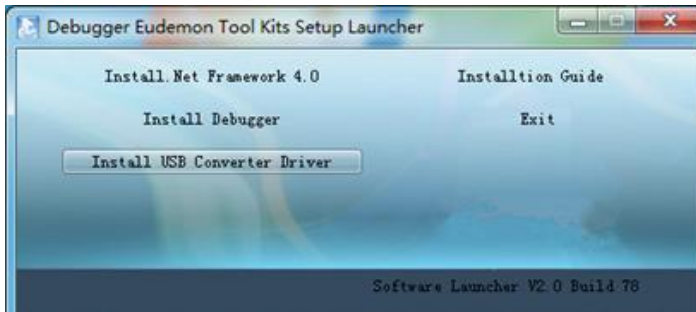
### 4.4.1.2 Flash Disk Insertion

Insert this flash disk into this computer. Double clicking the executable file under "**Launcher.exe**", then the computer display will be as shown in the figure below.

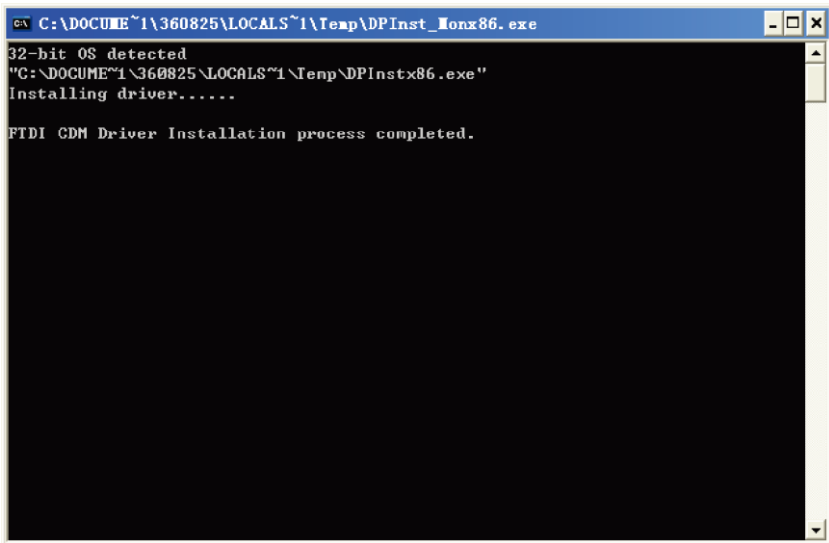


### 4.4.2 Installation of Data Converter Driver

Clicking "**Install USB Converter Driver**".



"FTDI CDM Driver Installation process completed" will show to indicate the installation is completed.



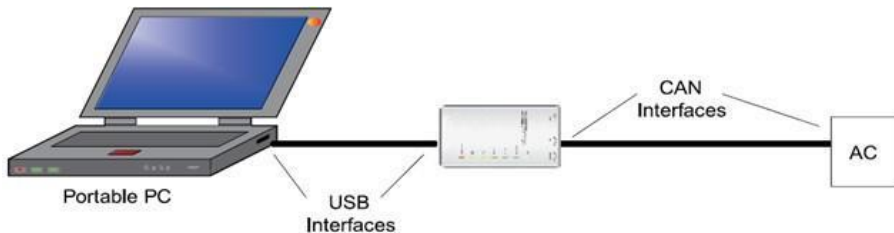
```
ex C:\DOCUME~1\360825\LOCALS~1\Temp\DPInst_monx86.exe
32-bit OS detected
"C:\DOCUME~1\360825\LOCALS~1\Temp\DPInstx86.exe"
Installing driver.....

FTDI CDM Driver Installation process completed.
```

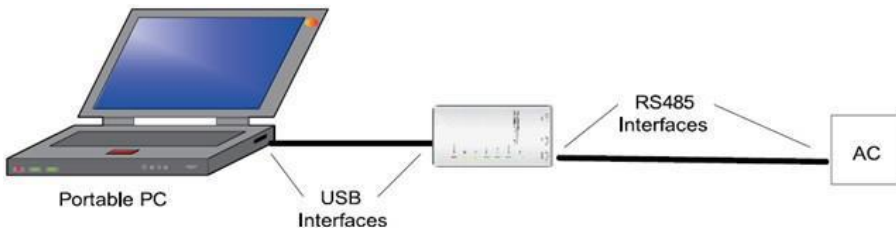
## 4.5 Operation Instructions

### 4.5.1 Operation of USB Data Converter

When the CAN communication is applied, the single-system air conditioning system is connected to D1 and D2 interfaces and the multi-system air conditioning system is connected to G1 and G2 interfaces.



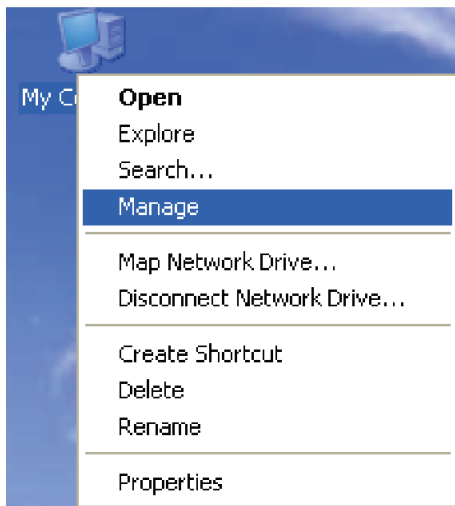
When the RS485 communication is applied, the air conditioning system is connected to the indoor unit, outdoor unit or the control board as per the actual condition.



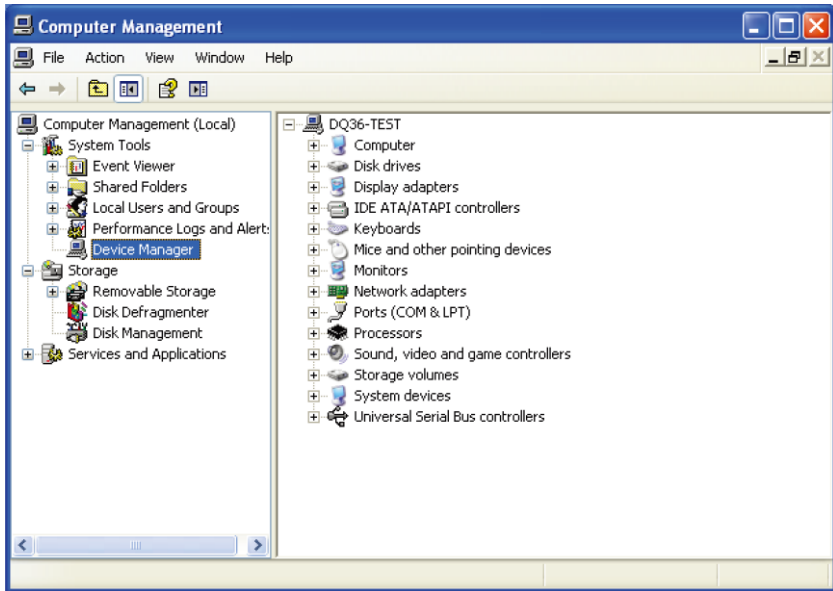
HBS, CAN and RS485 can be switched over by pressing the "SET" button and the switchover can be checked through the indicating LEDs.

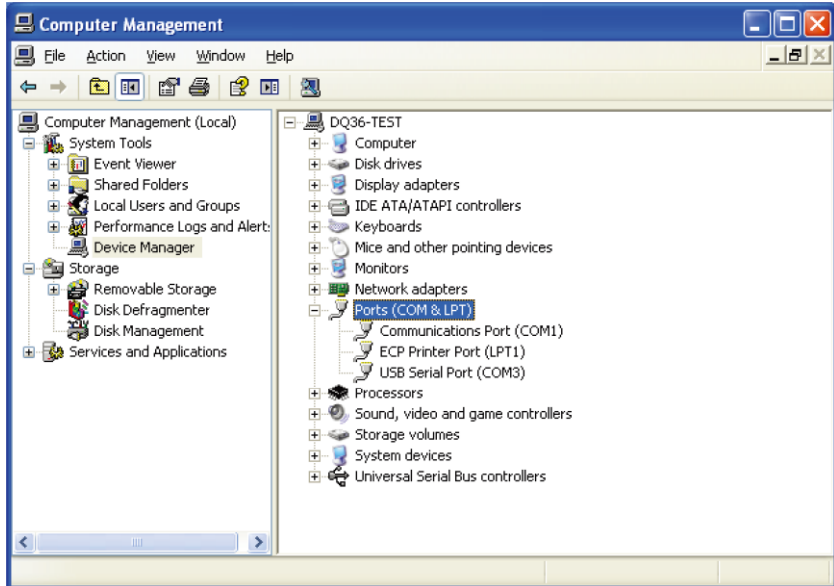
**CAUTION:** for the initial use of the USB Data Converter, in order to prevent it from being misjudged to be other device and then resulting in improper operation of the mouse, after the USB Data Converter is put into connection the serial enumerator is required to be closed following the steps stated below.

Step 1: right click "**My Computer**" and access to "**Manage**", and then a widnow will pop up.



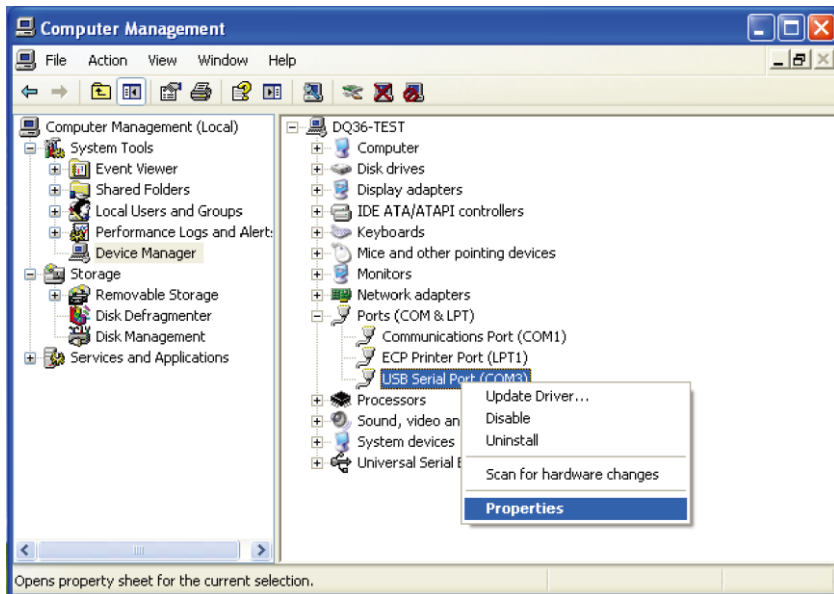
Step 2: at the window, access to "**Device Manager**" and then click in the left side of the "**Ports (COM & LPT)**".



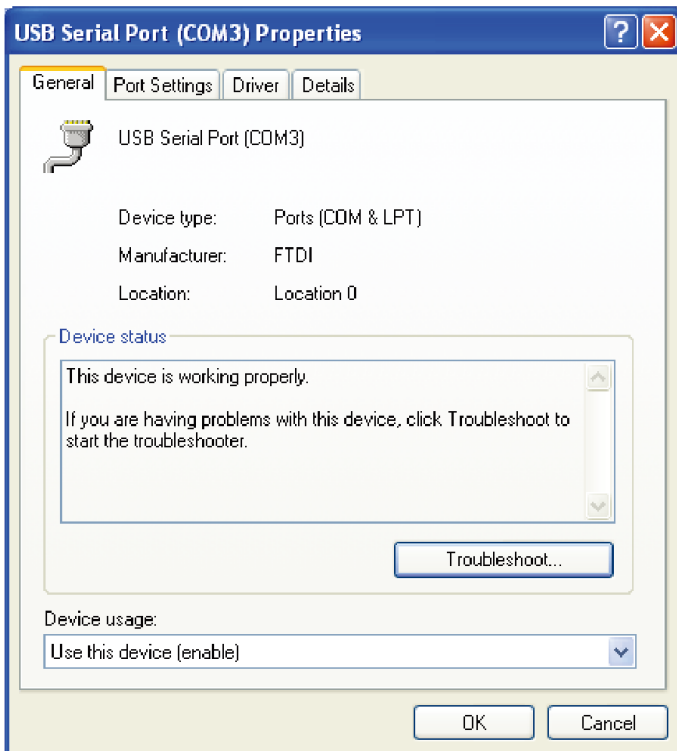


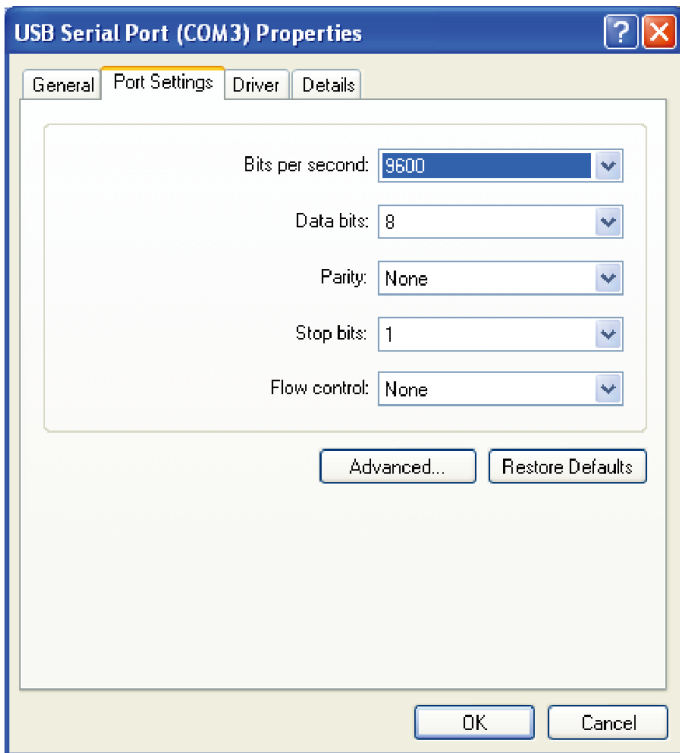


Step 3: right click "**USB Serial Port (COM3)**" and access to "**Properties**" and a dialog box will pop up.



Step 4: at the dialogue box, click "**Port Settings**" and a window of "**USB Serial Port (COM3) Properties**" will pop up.





Step 5: click "**Advanced**" and a dialogue box will pop up where the tick of "**Miscellaneous Options**"/"**Serial Enumerator**" can be removed and then click "**OK**" for a confirmation.

**Advanced Settings for COM3**

COM Port Number:

**USB Transfer Sizes**  
Select lower settings to correct performance problems at low baud rates.  
Select higher settings for faster performance.

Receive (Bytes):

Transmit (Bytes):

**BM Options**  
Select lower settings to correct response problems.

Latency Timer (msec):

**Timeouts**

Minimum Read Timeout (msec):

Minimum Write Timeout (msec):

**Miscellaneous Options**

Serial Enumerator

Serial Printer

Cancel If Power Off

Event On Surprise Removal

Set RTS On Close

Disable Modem Ctrl At Startup

OK  
Cancel  
Defaults

**Advanced Settings for COM3** [?] [X]

COM Port Number:

OK

Cancel

Defaults

**USB Transfer Sizes**  
Select lower settings to correct performance problems at low baud rates.  
Select higher settings for faster performance.

Receive (Bytes):

Transmit (Bytes):

**BM Options**  
Select lower settings to correct response problems.

Latency Timer (msec):

**Timeouts**

Minimum Read Timeout (msec):

Minimum Write Timeout (msec):

**Miscellaneous Options**

Serial Enumerator

Serial Printer

Cancel If Power Off

Event On Surprise Removal

Set RTS On Close

Disable Modem Ctrl At Startup







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