RS232 to WiFi CONVERTER
Model : RHW-925

Your purchase of this RS232 to WiFi CONVERTER marks a step forward for you into the field of precision measurement. Although this Meter is a complex and delicate instrument, its durable structure will allow many years of use if proper operating techniques are developed. Please read the following instructions carefully and always keep this manual within easy reach.

OPERATION MANUAL

TABLE OF CONTENTS

1. FEATURES

* Can be temperature and humidity data sent to the desired device through WiFi. the use of smart phones or tablet computers developed by the company's free software to do data collection record APP.
* WiFi work mode: Access Point(AP) or Client mode
* I/O terminal:
   1.DC 9V power input
   2.DC 9V power output(power supply for the connecting RS232 meter)
   3.Pt-100 ohm input.
   4.Three RS232 input(photo isolate RS232 type)
   3.Ethernet RJ485 input.
* Basic setting:
   1.NetMode, 2.SSID, 3.Password, 4.IP address, 5.Port,
   6.Gateway address,
* Simultaneous display Humidity ,Temperature,Web buie, Dew point temp. reading value.
* Humidity range : 5% to 95%
* Temprature range : 0 ℃ to 50 ℃, ℃/℉
* Maximum TCP connections to 20
* Without going through the computer settings, can be used directly after the machine settings

2. SPECIFICATIONS

Circuit	Custom single-chip microprocessor LSI circuit
Display	LCD Size: 3.2 X 2.4" (60 X 44.4 mm)
	Dot Matrix backlit LCD (128 X 64 pixels)
Wireless	* Support IEEE 802.11b / g / n wireless standards
	* Support the range of frequency : 2.412 to 2.484 GHz.
	* Support two types of wireless networks: Access
	Point(AP) and Client
	* Support multiple security authentication mechanisms :
	64/128/152 bit WEP encryption, WPA-PSK/
	WPA2-PSK、、WPA/WPA2 security mechanism.
NET mode setting	* Access Point (AP) Mode(Wireless)
	* Client Mode(Wireless)
	* Ethernet Mode(RJ45)
Measurement	* Humidity/ Temperature
	* Dew pint Temperature
	* Wet bulb Temperature
	* Pt 1000 ohm Temp.
Data Output USB/RS232 *Computer interface	RS232 computer serial interface
	* Connect the optional USB cable USB-01 will get the USB plug.
	* Connect the optional RS232 cable UPCB-02 will get the RS232 plug.
Operating temperature	0 to 50℃ (32 to 122℉).
Operating humidity	Less than 80% R.H..
Power supply	AC to DC adapter 9V.
Power consumption	DC 170 mA approximately.
Weight	222 g/0.49 LB.
Dimension	134 X 80 X 32 (5.3 X 3.1 X 1.3 inch).
	* Dimension is for the meter without antenna only.

Accessories included	* Instruction manual... 1PCS
	* Hanging unit (with sticker)..................................... 1PCS
	* AC to DC 9V power adapter.................................... 1PCS
Optional Accessories	* RS232 cable,UPCB-02.
	* Pt 1000 Temp. probe,TP-1000
	* USB cable,USB-01.
	* Data Acquisition software,SW-U801-WIN.
	* Power interface cable, PWCB-06

2-2.Electrical Specifications (23 ± 5 ℃)

Humidity

Range	Resolution	Accuracy
5 % to 95 %RH	0.1 %RH	< 70 %RH: ± 3 %RH
		≧70 %RH: ±(3 %RH reading + 1 %RH)

Temperature

Range	Resolution	Accuracy
0.0 ℃ to 50.0 ℃	0.1 ℃	± 0.8 ℃
32.0 ℉ to 122.0 ℉	0.1 ℉	± 1.5 ℉

Dew point Temp.

Range	Resolution	Accuracy
–25.3 ℃ to 49.0 ℃	0.1 ℃	Calculate from the
–13.5 ℉ to 120.0 ℉	0.1 ℉	Humidity/Temp. Value

Wet bulb Temp.

Range	Resolution	Accuracy
–5.4 ℃ to 49.0 ℃	0.1 ℃	Calculate from the
22.2 ℉ to 120.0 ℉	0.1 ℉	Humidity/Temp. Value

Pt 1000 ohm Temperature(optional probe)

Range	Resolution	Accuracy
–10.0 ℃ to 70.0 ℃	0.1 ℃	± 1.2 ℃
14.0 ℉ to 158.0 ℉	0.1 ℉	± 2.5 ℉

3. FRONT PANEL DESCRIPTION

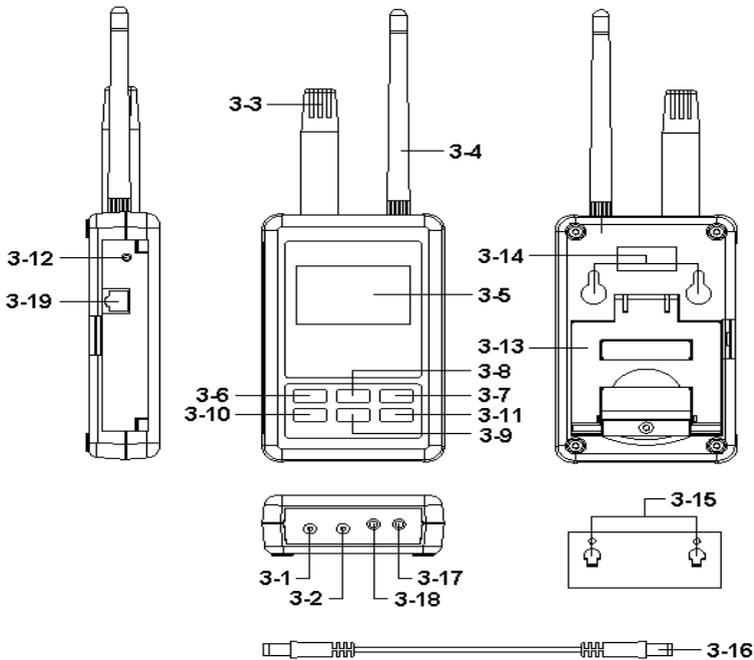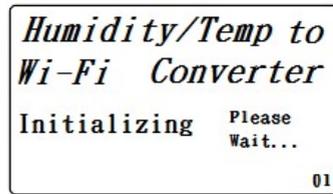
Fig. 1

3-1 DC 9V Power adapter input socket

3-2 DC 9V output socket

3-3 Humidity/Temp. sensor

3-4 Antenna and antenna socket

3-5 Display

3-6 SETUP/ENTER KEY

3-7 EXIT(❄) key button

3-8 ▲ key button

3-9 ▼ key button

3-10 ◄ key button

3-11 ► key button

3-12 System reset button

3-13 Stand

3-14 Hanging holes

3-15 Hanging unit (with sticker)

3-16 Power interface cable/plugs

3-17 Isolate RS232 output socket

3-18 Pt1000 input socket

3-19 Network socket(RJ45)
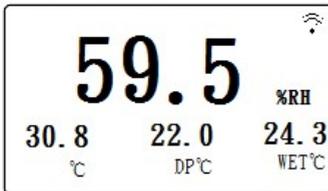
4. MEASURING PROCEDURE

4-1.The initial startup screen

```
Humidity/Temp to
Wi-Fi  Converter
Initializing   Please
               Wait...
                       30
```

SCREEN4-1-1

```
Humidity/Temp to
Wi-Fi  Converter
Initializing   Please
               Wait...
                       01
```

SCREEN4-1-2

4-2.Measuring and setting screens:

  1.Measurement screen:

```
        59.5  %RH
 30.8     22.0     24.3
  ℃        DP℃      WET℃
```

SCREEN4-2-1

```
Pt1000
        27.7
                    ℃
```

SCREEN4-2-2

```
WiFi  AP
SSID : RHW-925
IP   : 192.168.  0.254
Port : 200
```

SCREEN4-2-3

```
WiFi  Client
SSID : RHW-925
IP   : 192.168.  0.254
Port : 200
```

SCREEN4-2-4

```
WiFi  AP        Reconnect
SSID : RHW-925
IP   : 192.168.  0.254
Port : 200
```

SCREEN4-2-5

```
WiFi  Client    Reconnect
SSID : RHW-925
IP   : 192.168.  0.254
Port : 200
```
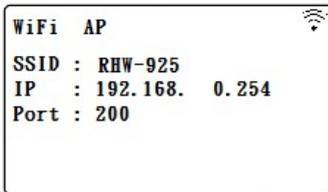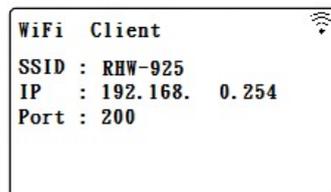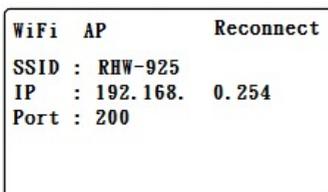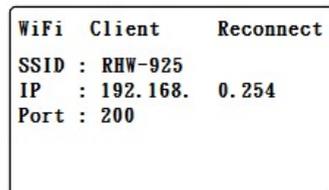
SCREEN4-2-6

2.Setting screen:

```
NetMode : Client
SSID    : RHW-925
Encrypt : none
Password: 12345678
IP  : 192.168.  0.254
Port: 200
                      1/2
```

```
Gateway:
        192.168.  0.  1
Unit:  ℃
Default Settings: N


                      2/2
```

SCREEN4-2-5   SCREEN4-2-6

4-3.The summary description of keyboard:
1.SETUP(Enter) KEY: Setting screen into the select key
2.In the setting mode:
2-1.Press ▲ or ▼ to select the field in the upper and lower beating
2-2.▲ or ▼ > 2 SEC.: The selected field will rapidly beating
2-3.▲ + ▼ > 2 SEC.: Then the entire column cleanup
2-4.Press ▲ KEY hold short press ▼ KEY and the right of the text
will be cleared
2-5. ◀ 、 ▶KEY: Left and right keys
2-6.EXIT/SHIFT(❋) KEY: Press key text input type selection or
setting screen left
3.In the measurement mode:
3-1.In Easy mode, press ▲ + ▼ > 2 SEC. Then turned into full mode
3-2.In full mode, press ▲ + ▼ > 2 SEC. Then becomes easy mode
3-3.EXIT/SHIFT(❋) KEY: Backlight control key

4-4.Setting Description:
1.When the POWER ON, then enter the startup screen countdown 30 SEC.
(SCREEN4-1-1 & SCREEN4-1-2) to 0 SEC. Then enter the measurement
screen (SCREEN4-2-3 or SCREEN4-2-4).
2.Press SETUP KEY once you enter the setup screen as SCREEN4-2-7 or
SCREEN4-2-8
3.In the function directory option Press ▲ or ▼ KEY, functional directory
option will flash.
4.Press ◀ or ▶ KEY into the content selection function directory option
(in this case will flash), After selecting the complete press SETUP KEY
Then back to the function directory option to determine the setting options
5.Function directory:

5-1.NetMode: Select AP or Client, the factory setting is Client.

    A. Enter this option, then press◄ or ► KEY contents into the option, then press ▲ or ▼ KEY to select AP or Client, After determining Press SETUP KEY do confirm the contents, then will return to NetMode directory

    B. Press ▼ KEY into the SSID option from NetMode

5-2.SSID: The default setting is RSW-925

    A. Enter up to 21 characters

    B. Press ◄ or ► KEY then enter the option contents, then press ▲ or ▼ KEY to select the input text, press EXIT / SHIFT KEY select words in English caseor numbers. Determined by SETUP KEY do confirm the contents, then will return to the SSID directory.

    C. Press ▼ KEY into the Encrypt option from SSID

5-3.Encrypt:The default setting is none

    A. none/wep_open/wep/wpa_tkip/wpa_aes/wpa2_tkip/wpa2_aes/ wpawpa2_tkip/wpawpa2_aes total of nine

    B. After pressing ▲ or ▼ KEY select the option by the need, press SETUP KEY to confirm, then will return to Encrypt directory

    C.Press ▼ KEY into the Password option from Encrypt

5-4.Password: The default setting is 12345678

    A. Press ◄ or ► KEY then enter the option contents, then press ▲ or ▼ KEY to select the input text, press EXIT / SHIFT KEY select English words large, lowercase and numbers Press SETUP KEY do confirm the contents, then will return to Password directory

    B. Press ▼ KEY into the IP option from Password

5-5.IP: The default setting is 192.168.0.254

    A. Press ► or ◄ KEY then enter the option contents, then press ▲ or ▼ KEY to select the number, press the SETUP KEY The contents do confirm, then will return to the IP directory

    B. Press ▼ KEY into the Port option from IP

5-6.Port: The default setting is 200

    A. Input Range:1-65535

    B. Press ► or ◄ KEY then enter the option contents, then press ▲ or ▼ KEY to select the number, press the SETUP KEY The contents do confirm, then will return to the Port directory

    C. Press ▼ KEY into the Gateway option from Port

5-7.Gateway: The default setting is 192.168.0.1

 A. Press ▶ or ◀ KEY then enter the option contents, then press ▲
  or ▼ KEY to select the number, press the SETUP KEY The
  contents do confirm, then will return to the Gateway directory

 B.Press ▼ KEY into the Meter CH.option from Gateway

5-8.UNIT:

 A. Press ▶ or ◀ KEY once,into the UNIT Choice, then use ▲ or ▼ Key to
  select ℃ or ℉, then press SETUP Key back to UNIT Choice.

 B. Press▼ KEY into the Default Settings option from Meter CH.

5-9.Default Settings: Reply factory setting (refer NO.4-7)

4-5.Set value storage:

 Press EXIT / SHIFT KEY save settings, and return to the measurement
 screen, such as SCREEN4-2-5 or SCREEN4-2-6. This time to reconnect
 after about 25 SEC WiFi is doing set after, then back SCREEN4 -2-3 or
 SCREEN4-2-4 screen.

4-6. Mesurement and WiFi connection:

 A. In SCREEN4-2-1 is Tempereture and Humidity mesurement Function screen.

 B. Pt1000 mesurement Function:

  1) Pt1000 probe insert to Fig.1 3-18.

  2) In SCREEN4-2-1, press ▶ Key once ,into Pt1000 mesurement scree
   (as SCREE 4-2-2),then press ▶ Key again,will back SCREE 4-2-1.

  3) SCREE 4-2-3 or SCREE 4-2-4 upper right corner Symbol flashes, that WIFI
   connection is ok.

4-7.Reply factory setting

 1.Press SETUP KEY once you enter the setup screen as SCREEN4-2-7 &
  SCREEN4-2-8

 2.Press ▲、▼ KEY select the option to Default Settings item, pres▶ KEY
  once you enter N option, press ▲ or ▼ KEY select Y press Enter KEY
  ,will return to directory option then press EXIT / SHIFT KEY will return to
  factory default action to do its screen will SCREEN4-2-5 or SCREEN4-2-6,
  after about 25 SEC later. would return SCREEN4-2-3 or SCREEN4-2-4.

4-8.AP Mode:
    1.First, install lutron dedicated APP software
        1-1.The use of smart phone Andriod or iOS system software download
            Lutron MeterApp (SCREEN4-8-1), Andriod Password: Az6210
            ,iOS Password: aZ6210.
        1-2.After the download is complete, install it.

      SCREEN4-8-1   SCREEN4-8-2

    2.The RHW-925 boot into the measurement screen (SCREEN4-2-1).
        2-1.Determine the following set parameters (such as SCREEN4-2-6)
            A.NetMode: AP
            B.SSID: RSW-923
            C.IP: 192.168.0.254
            D.Port: 200

        2-2.Start Smart Phone WiFi, make RHW-925 connection (SCREEN4-8-2).
        2-3.Open MeterApp software (such as SCREEN4-8-3)
            A. In SCREEN4-8-3 select Step1 (Meter1)
            B. Is displayed SCREEN4-8-4, select Step2 tool button then
               into the SCREEN4-8-5
            C. Enter the relevant information in SCREEN4-8-5
               1) Meter name: Meter1 name can be changed to the desired
                   user name
               2) CH NO.: In accordance Meter CH NO. To enter
               3) Sampling time: minutes as a reference, check after do Logger
                  function (must be set)
               4) IP: In accordance with RHW-925 IP as input and must tick
                (must be set)

5) Port: In accordance with RSW-925 Port as input and must
tick (must be set)
6) Save file: Select the Logger path to be stored (must be set)
7) Alarm Beeper: After checking the SCREEN4-8-7 to tie the set
, when they meet the conditions have an effect
8) Alarm SMS: After checking the SCREEN4-8-7 to tie the set,
when meet the conditions will send SMS
D. In SCREEN4-8-6 the Save tool button, the value will be set
according to Save the storage, and it will return to
SCREEN4-8-4 screen when Step3 green and flashing that
means the RSW-925 connection
E. In SCREEN4-8-4 of Step4 (CH1) click on the picture into
the SCREEN4-8-7, then do High and Low Set and checked,
when you press the Return smart phone screen will return
to SCREEN4-8-4 When the measured value have reached
the condition CH1-CH3 will show red numbers and have
Beeper and send SMS.
F. In SCREEN4-8-4 of Step5 tool button to switch directly
display the value of Meter1-Meter4
G. Re-connect: When they find breaking news WiFi is not connected,
you can press the function do reconnect action.
H. Auto Log: Sampling time is set based on the time and checked, do
the automatic recording function (such as SCREEN4-8-5).
I. Manaul Log: Each time you press the tool button, then record sum.
Both formats Auto Log or Manaul Log, archival records
are xml .
J. View Log: See the recorded data directly on smart phones
(such as SCRE

REMARK:
if use lutron sw-818 software, channals please setting to 12 CH .

SCREEN4-8-3   SCREEN4-8-4   SCREEN4-8-5
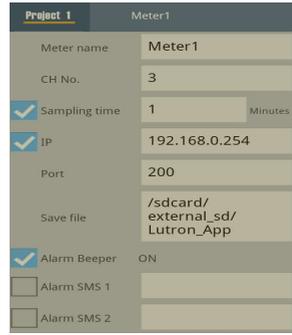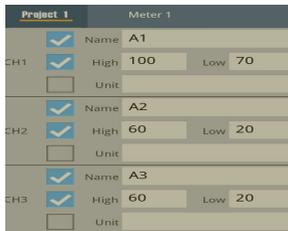
SCREEN4-8-6   SCREEN4-8-7   SCREEN4-8-8
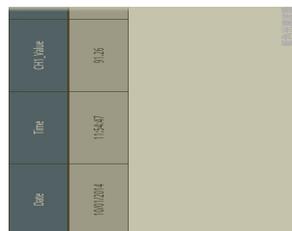
4-9.Client Mode (internal network):
   1.First, you must prepare a wireless device as AP.
      1-1.This device set SSID for RHW-925 (by the user to determine
         the SSID name)
      1-2.Password not set
   2.The RHW-925 is set to Client mode, the relevant parameters are
     as follows:
     2-1.NetMode: Client
     2-2.SSID: RHW-925
     2-3.IP: 192.168.0.254
     2-4.Port: 200

   2.AS SCREE4-2-3 , SCREE4-2-4 .

4-10.Client Mode(External network fixed IP):
   1.Simple schematic network:
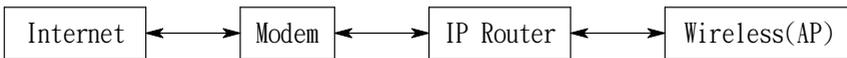
| Internet | ←→ | Modem | ←→ | IP Router | ←→ | Wireless(AP) |

   2. The RHW-925 is set to Client mode, the relevant parameters are as
     follows:
     2-1.NetMode: Client
     2-2.SSID: RHW-925
     2-3.IP: 192.168.0.254
     2-4.Port: 200
     2-5.Gateway: 192.168.0.1(With a smart phone in the App Store to
        download IP Tools, after the installation and execution can
        be learned)

3.into the IP Router do parameter settings, the contents of the red
   box set you can do
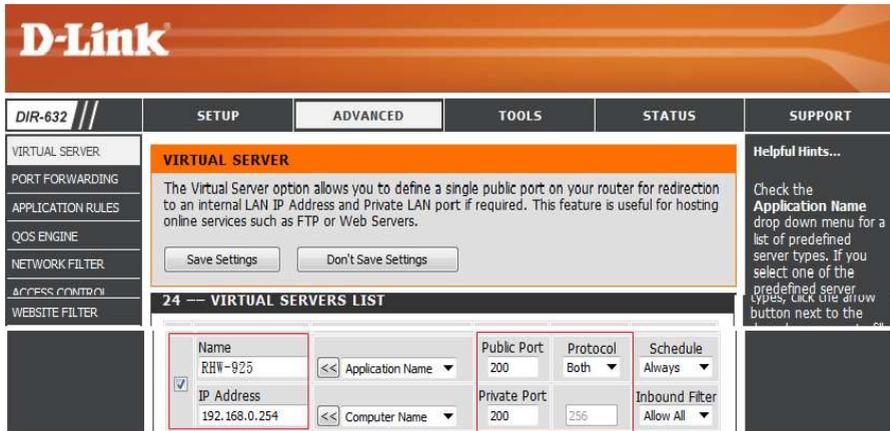
4.Execution MeterApp, enter the need of parameters. IP item which
   required the use of IP Tools software to learn the input

4-11.Client Mode(External network floating IP):

1.Simple schematic network:

| Internet | ← → | URL forwarding server | ← → | Modem | → | IP Router | ← → | Wireless(AP) |

2.The RHW-925 is set to Client mode, the relevant parameters are as
    follows:
    2-1.NetMode: Client
    2-2.SSID: RHW-925
    2-3.IP: 192.168.0.254
    2-4.Port: 200
    2-5.Gateway:192.168.0.1(With a smart phone in the App Store to
                download IP Tools,after the installation and execution
                can be learned)
3.into the IP Router do parameter settings, the contents of the red
 box set you can do

4.Apply for free transfer to www.noip.com address, the name of the

application will be transferred to the address input to the IP Router

5.Execution MeterApp, enter the need of parameters. IP item which
required the use of IP Tools software to learn the input

4-12.Ethernet Mode connecter network floating (intenal network):
  1.Simple schematic network:

| Internet | ←→ | Modem | ←→ | IP Router LAN PORT | ←→ | RHW-925 |

  2.The RHW-925 is set to Client mode, the relevant parameters are as
    follows:
    2-1.IP: 192.168.0.254
    2-2.Port: 200
    2-3.Gateway: 192.168.0.1

  3.RJ485 connecter model as 3-19, Fig1.

4-13.Ethernet Mode connecter network floating (extenal network):
  1.Simple schematic network:

| Internet | ←→ | Modem | ←→ | IP Router LAN PORT | ←→ | RHW-925 |

  2.The RHW-925 is set to Client mode, the relevant parameters are as
    follows:
    2-1.IP: 192.168.0.254
    2-2.Port: 200
    2-3.Gateway: 192.168.0.1
  3.RJ485 connecter model as 3-19, Fig1.

4-14.Ethernet Mode is connected via the wireless bridge network
      (External network fixed IP):
  1.Simple schematic network:

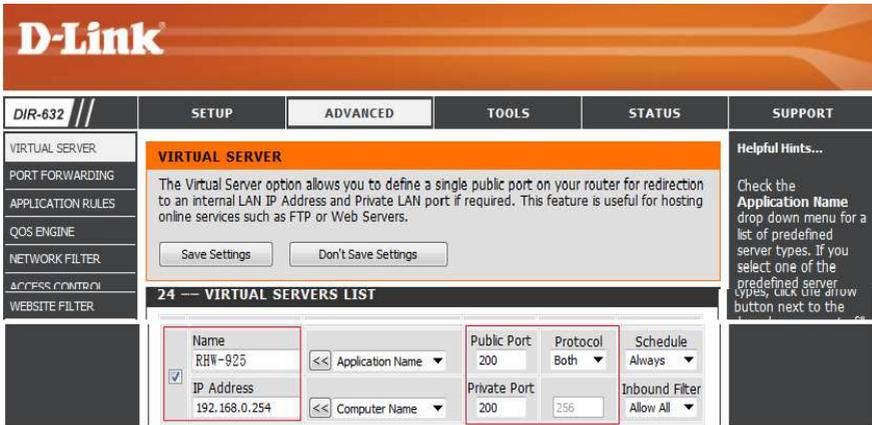| Internet | ←→ | Modem | ←→ | IP Router LAN PORT | ←→ | RHW-925 |

  2.The RHW-925 is set to Client mode, the relevant parameters are as
    follows:
    2-1.IP: 192.168.0.254
    2-2.Port: 200
    2-3.Gateway: 192.168.0.1

3. Enter the IP Router to set parameters,Set the contents of the red box.

4.RJ485 connecter model as 3-19 , Fig1.

4-15.Ethernet Mode is connected via the wireless bridge network
(External network Floating IP):
1.Simple schematic network:

2.The RHW-925 is set to Client mode, the relevant parameters are as
follows:
2-1.IP: 192.168.0.254
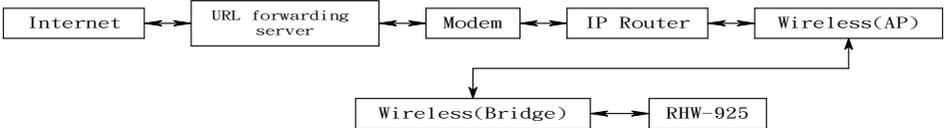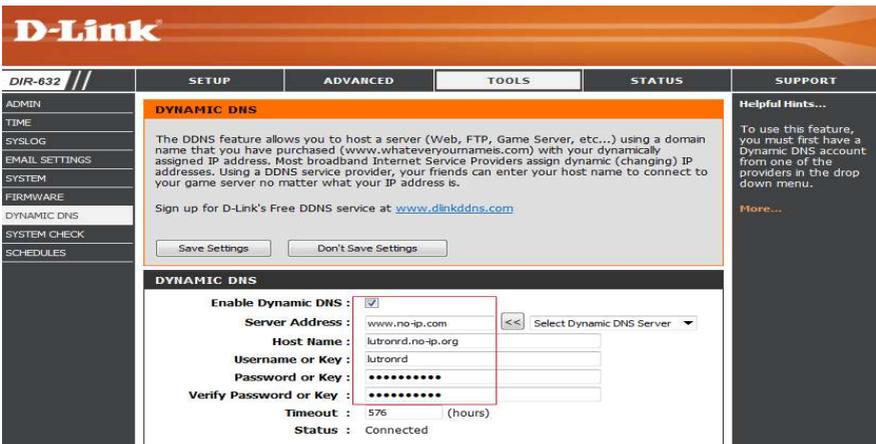2-2.Port: 200
2-3.Gateway: 192.168.0.1

3. Enter the IP Router to set parameters,Set the contents of the red box.

4. To www.dlinkddns.com apply for a free address, the application of the address name input to the IP Router.


5. When the Metro App is implemented, the required parameters are entered using the IP Tools software as SCREEN4-8-4 、
   SCREEN4-8-5 or SCREEN4-9-4.
6.RJ485 connecter model as 3-19 , Fig1.

4-16. RS232 Function SERIAL OUTPUT

The instrument is provided an 3.5 mm dia. Phone socket
(3-7, Fig. 1) for RS232 computer interface socket.
The connector output is a 16 digits data stream which
can be utilized to the user's specific application.
A RS232 lead with the following connection will be
required to link the instrument with the PC or NB USB port or serial port.
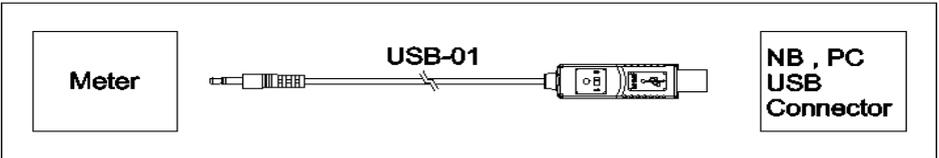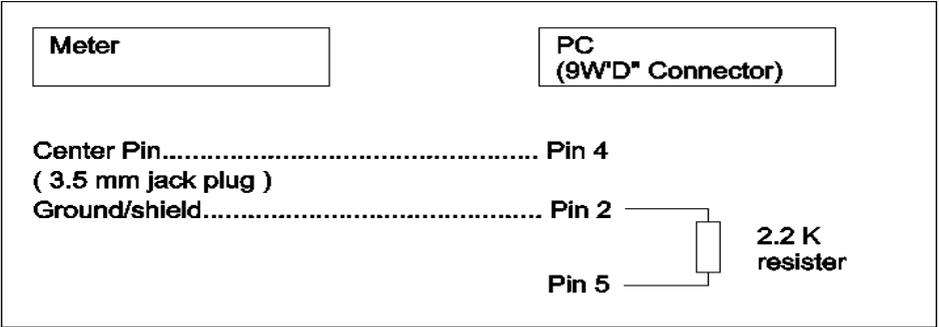
The 16 digits data stream will be displayed in the following format :

D15 D14 D13 D12 D11 D10 D9 D8 D7 D6 D5 D4 D3 D2 D1 D0

Each digit indicate the following status :

D15	Start Word		
D14	4		
D13	1 ~ 9		
D12 & D11	Annunciator for Display		
	01=℃	02=℉	04 = %RH
D10	Polarity 0 = Positive　　　1 = Negative		
D9	Decimal Point(DP), position from right to the left 0 = No DP, 1= 1 DP, 2 = 2 DP, 3 = 3 DP		
D8 to D1	Display reading, D1 = LSD, D8 = MSD For example : If the display reading is 1234, then D8 to D1 is : 00001234		
D0	End Word		

RS232 setting

Baud rate	9600
Parity	No parity
Data bit no.	8 Data bits
Stop bit	1 Stop bit