T D RTR500BW Network Base Station User Manual

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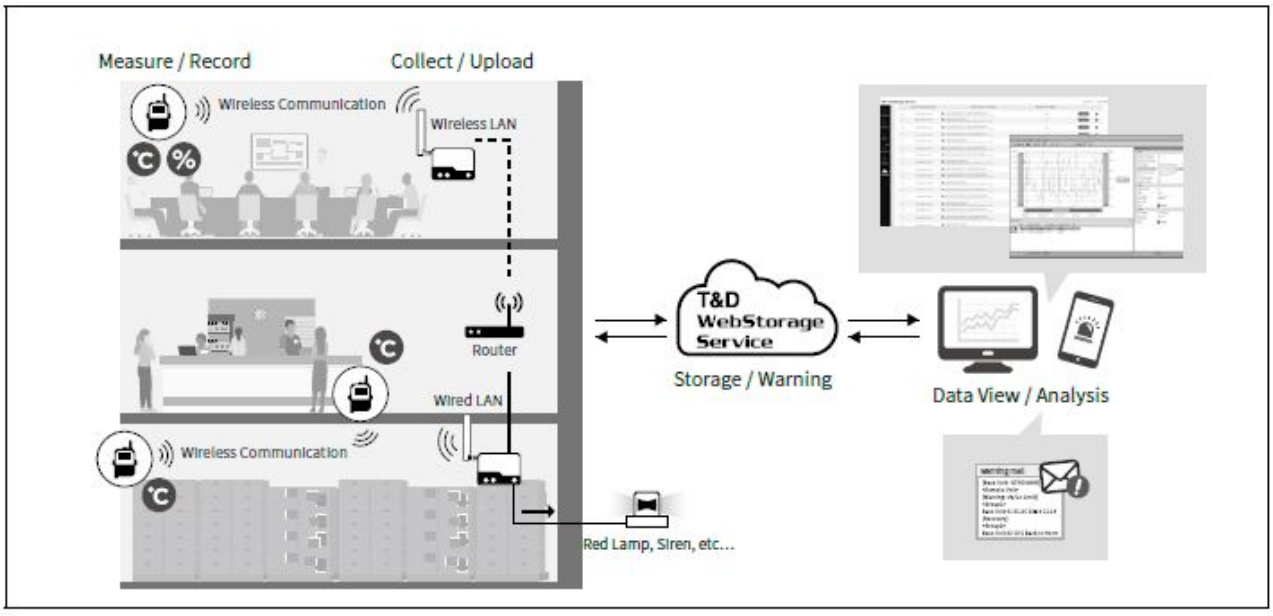
TD RTR500BW Network Base Station

What can the RTR500BW do?

The RTR500BW is a Base Unit equipped with wired and wireless LAN functionality. Measurement data gathered via wireless communication from target Remote Units can be automatically uploaded to our cloud storage service “T&D WebStorage Service”. Remote monitoring, warning monitoring and device settings can also be carried out via the cloud service. Also equipped with Bluetooth® and USB functions, it can be set on either a smartphone or pc



For details about using without the cloud service and for other operational info, please see the RTR500B Series Help. tandd.com/support/webhelp/rtr500b/eng/

Product Specifications

Compatible Devices	Remote Units: RTR501B / 502B / 503B / 505B / 507B RTR-501 / 502 / 503 / 507S / 574 / 576 / 505-TC / 505-Pt / 505-V / 505-mA / 505-P (*1)
	(Including L Type and S Type)
	Repeaters:
	RTR500BC
	RTR-500 (*1)
Maximum Number of Registrations	Remote Units: 50 units Repeaters: 10 units x 4 groups

Communication Interfaces	Short Range Wireless Communication Frequency Range: 869.7 to 870MHz RF Power: 5 mW Transmission Range: About 150 meters (500 ft) if unobstructed and direct Wired LAN (RJ45 connector 100 Base-TX/10 Base-T) Wireless LAN (IEEE 802.11 a/b/g/n, WEP(64bit/128bit) / WPA-PSK(TKIP) / WPA2-PSK(AES)) Bluetooth 4.2 (Bluetooth Low Energy) For settings USB 2.0 (Mini-B connector) For settings Optical Communication:(proprietary protocol)
Communication Time	Data Download Time (for 16,000 readings) Via wireless communication: About 2 minutes An additional 30 seconds should be added for each Repeater. (*2)
External Output Terminal	PhotoMOS Relay Output OFF-State Voltage: AC/DC 50V or less ON-State Current: 0.1 A or less ON-State Resistance: 35Ω
Communication Protocol (*3)	HTTP, HTTPS, FTP, SNTP, DHCP
Power	AC Adaptor: AD-05C1 PoE (IEEE 802.3af)

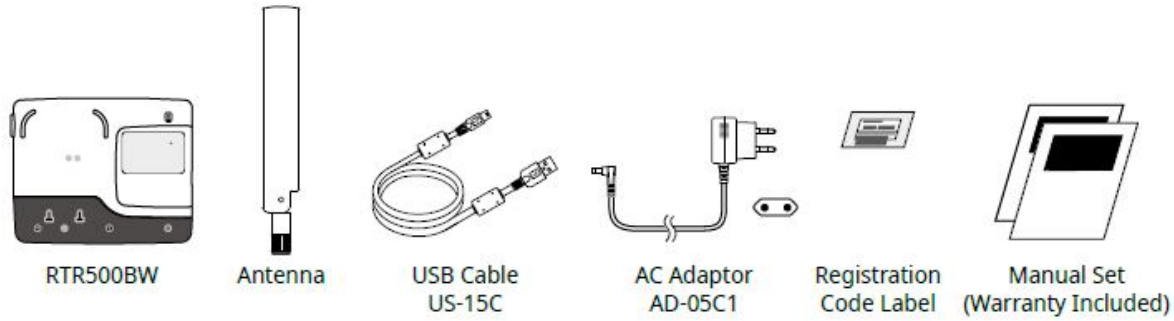
Dimensions	H 83 mm x W 102 mm x D 28 mm (excluding antenna) Antenna Length: 115 mm
Weight	Approx. 130 g
Operating Environment	Temperature: -10 to 60°C Humidity: 90%RH or less (without condensation)
Software	**RTR500BW for Windows, T&D Graph, T&D 500B Utility**
Compatible OS	PC Software (*4) Microsoft Windows 10 32 / 64bit English Microsoft Windows 8 32 / 64bit English Microsoft Windows 7 32 / 64 bit (SP1 or later) English Mobile Application iOS (Check compatibility on the Software page of our website)

1. RTR-500 Series loggers and Repeaters do not have Bluetooth capability.
2. When using RTR500BC as Repeater. Depending upon conditions it may take up to an additional 2 minutes.
3. Client Function. Communication via proxy is not supported.
4. For installation, it is necessary to have Administrator (Computer Administrator) rights.

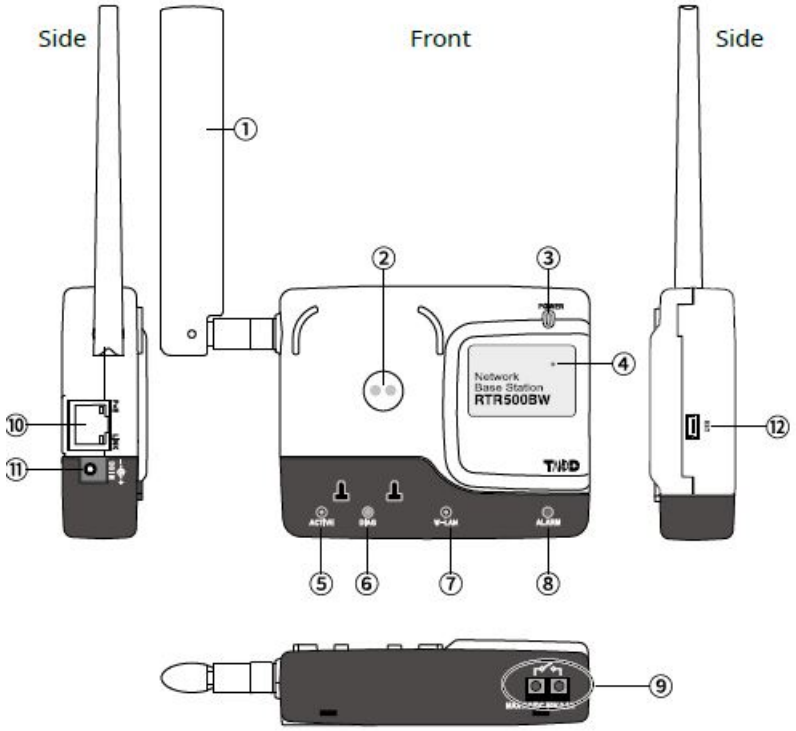
The specifications listed above are subject to change without notice.

Package Contents

Before using this product, please confirm that all of the contents are included.



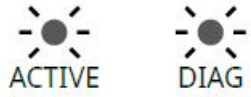
Part Names



1. Antenna
2. Optical Communication Area
3. Power LED (green)
4. Bluetooth Communication LED (blue)
5. ON: Bluetooth Communication is set to ON BLINKING: Bluetooth Communication in progress…
6. ACTIVE LED (green)
7. DIAG LED (orange)
8. W-LAN LED (green)
9. Warning LED (red)
10. External Output Terminal
11. LAN Connector PoE (orange) ON: recharging LINK (green) Blinking: connected to LAN AC Adaptor Jack
12. USB Connector

About the LED Display

LED Status ON BLINKING OFF	**Details**
 ACTIVE	• Network communication available • Connected via USB
 ACTIVE	• Communication in progress…
 DIAG	• Initializing after power on • Network transmission failure
 ACTIVE DIAG	Autonomic operation stopped • Time acquisition failure or time has not been set • No Remote Units have been registered • No settings for autonomic operations such as warning monitoring and sending curre nt readings have been made. • If other settings are incomplete

 ACTIVE DIAG	• Unable to connect to the wireless LAN access point. • IP address cannot be received from DHCP server
 W-LAN	• Wireless LAN Communication Possible (Wired LAN Communication not available)
 ALARM	Warning Issued • One of the following warnings was issued: Upper or Lower Limit Exceeded, Wireless Communication Error, Sensor Error, Low Battery

Terms used in this Manual

Base Unit	RTR500BW
Remote Unit	RTR501B / 502B / 503B / 505B / 507B, RTR-501 / 502 / 503 / 505 / 507S / 574 / 576
Repeater	RTR500BC/ RTR-500 (when used as a Repeater)
Current Readings	The most recent measurements recorded by a Remote Unit
Recorded Data	Measurements stored in the Remote Unit

Settings: Making via smartphone

Installing the Mobile App

Install the mobile app “T&D 500B Utility”. Search for “TandD 500B Utility” in Google Play for Android devices and in the App Store for iOS devices. Install the T&D 500B Utility app to your target smart phone or tablet.

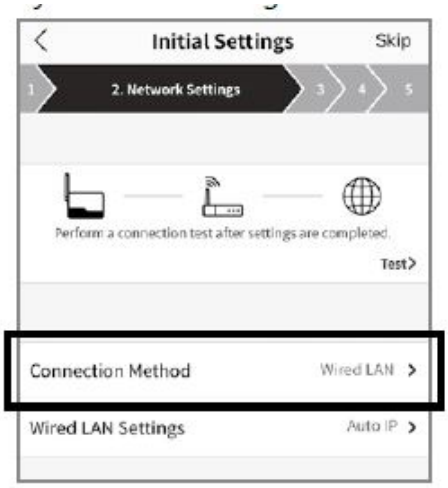
Registering as a Base Unit

1. Open T&D 500B Utility.
2. Connect the Base Unit with the supplied AC adaptor to a power source.
3. From the list of [Nearby Devices] tap the one you wish to use as a Base Unit; the Initial Settings wizard will open.

4. Enter the following information in the [Basic Settings] screen and click the [Next] button.

Making Network Settings

1. Under [Connection Method], select wired LAN or wireless LAN and make the necessary network settings.



2. When using a Wireless LAN: Tap [WLAN Settings] and enter the appropriate settings for SSID, Security Mode and Password. Network settings can be made in the following three methods.
3. Connect the Base Unit to the wired or wireless LAN.
4. Test the connection.

Registering a Base Unit to T&D WebStorage Service

Enter the User ID and Password for T&D WebStorage Service to which you wish to have data sent to, and tap the [Add this Account] button.

Registering a Remote Unit

1. From the list of detected nearby Remote Units, tap the Remote Unit you wish to register to this Base Unit in STEP 2.
2. Enter the necessary info such as Remote Unit Name, Recording Interval, Frequency Channel* and the Remote Unit Passcode; then tap the [Register] button.

The Remote Unit passcode is used when communicating with the Remote Unit via Bluetooth. Enter an arbitrary number of up to 8 digits. When registering subsequent Remote Units and there is only one registered passcode, the set passcode will be displayed as already entered and you can skip entering the passcode.

3. If you wish to register multiple Remote Units, tap [Register the next Remote Unit] and repeat the registration process as necessary. To complete the registration of Remote Units, tap [Finish registration].
    1. It is also possible to register Remote Units using optical communication.
    2. To register RTR-574(-S) and RTR-576(-S) loggers as Remote Units it is necessary to use a PC.See Step 5 of [Settings: By PC] on the back of the printed version of this document.
4. Upon completion of the Initial Settings wizard, log into theT&D WebStorage Service with a browser and confirm that measure-ments of the registered Remote Unit(s) are displayed in the [Data View] window.

Installing the Device

1. Place the device in the measurement location.
2. In the Settings Menu, tap on the [Device List] menu.
3. At the bottom of the screen tap on the [Wireless Routes] tab. Here it is possible to check the route for wireless communication.
4. At the top right of the screen, tap on the [Check] button.
5. Select the devices for which you wish to check the signal strength and tap on the [Start] button.
6. After testing signal strength, return to the wireless route screen and confirm the signal strength.

Settings: Making via PC

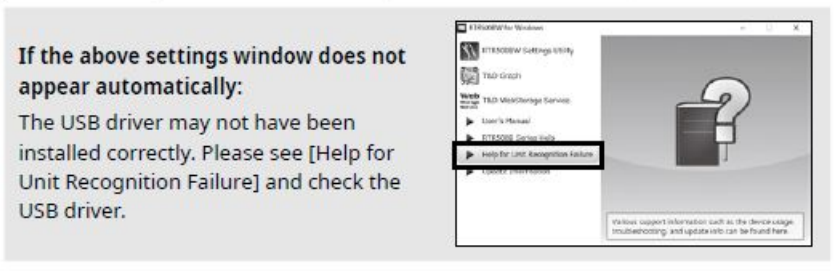
Installing the Software

Download RTR500BW for Windows from the T&D Website and install it to your PC.tandd.com/software/rtr500bwwin-eu.html

Making Initial Settings for the Base Unit

1. Open RTR500BW for Windows, and then open RTR500BW Settings Utility.

2. Connect the Base Unit with the supplied AC adaptor to a power source.
3. Connect the Base Unit with the supplied USB cable to your computer.
    1. The USB driver installation will start automatically.
    2. When the USB driver installation is completed, the RTR500BW settings window will automatically open.

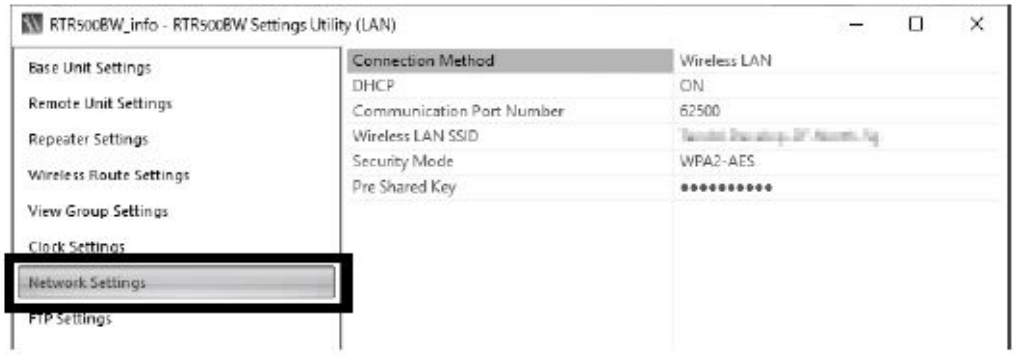


4. Enter the following information in the [Base Unit Settings] window.
5. Check the contents of your selections and click the [Apply] button.
6. In the Settings Window under [Clock Settings], click the Current Time

7. Check the contents of your selections and click the [Apply] button.

Making Network Settings

1. In the Settings Window, from [Network Settings] – [Connection Method], select [Wired LAN] or [Wireless LAN] .
2. When using a Wireless Make settings for [Wireless LAN SSID]*1, [Security Mode]*2, and [Pre-Shared Key(password)].
    1. You can select the access point from the drop down list of detected wireless access points.
    2. Normally, there is no need to change the Security Mode.



3. Check the contents of your selections and click the [Apply] button.
   Upon completion of the above, the following default settings will be applied. Changes can be made, if necessary, from the Settings Window.
    1. Current Readings Transmission ON, Sending Interval: 10 min.
    2. Recorded Data Transmission
    3. ON, Send at 6:00 am every day.

Registering a Base Unit to T&D WebStorage Service

1. Open your web browser and log in to T&D WebStorage Service. **https://webstorage-service.com**
2. From the screen's left-side menu, click [Devices].
3. In the upper right of the screen, click on [Device]
4. Enter the serial number and registration code for the Base Unit, then click [Add]

Registering a Remote Unit

1. Have the target data logger on hand and in the [Remote Unit Settings] window click on the [Register] button.
2. Follow the on-screen instructions and connect the Remote Unit to the RTR500BW.

3. Enter the following information, and click [Register].

Wireless Group	Enter a name for each Group to make it identifiable depending on which frequency channel it is using. If you wish to register a logger to an already registered Group, select the name of the target Group.
Remote Unit Name	Assign a unique name for each Remote Unit.
Communication Frequency Channel*	Select a frequency channel for wireless communication between the Base Unit and Remote Units. When more than one Base Unit is registered, make sure to select channels that are far apart in order to prevent interference of wireless communication between the Base Units.
Recording Mode Endless mode	Upon reaching logging capacity, the oldest data will be overwritten and recording will continue.
Recording Interval	Select the desired interval.

Warning Monitoring	To carry out Warning Monitoring, select “ON”. Settings can be made in each Remote Unit for “Upper Limit” or “Lower Limit” and for “Judgment Time”.
Auto Transmission of Recorded Data	To enable auto download and transmission of recorded data, select “ON”.
Channels for Alternating Display	Here you can select the measurement items you wish displayed in the RTR-574 LCD when the unit is using “Alternating Display” as the display mode.
Button Lock	To lock the operation buttons on RTR-574/576 units, select “ON”. Only the <DISPLAY> button will be functional for Remote Units when the button lock has been set to ON.
Bluetooth	When making settings from the smartphone app make sure that Bluetooth is set to ON.
Bluetooth Passcode	Assign an arbitrary number with up to 8 digits to be used for Bluetooth communication.

Installing the Device

1. Connect the Base Unit to the wired or wireless LAN.
    1. If the target Base Unit is connected to a PC, disconnect the USB cable.
2. Connect the Base Unit with the supplied AC adaptor to a power source. about 30 sec

    1. You will know network connection was established when <ACTIVE> on the LED changes from blinking to lit.
    2. If <ACTIVE> and <DIAG> are both blinking, wireless LAN communication has failed; so please recheck the settings.

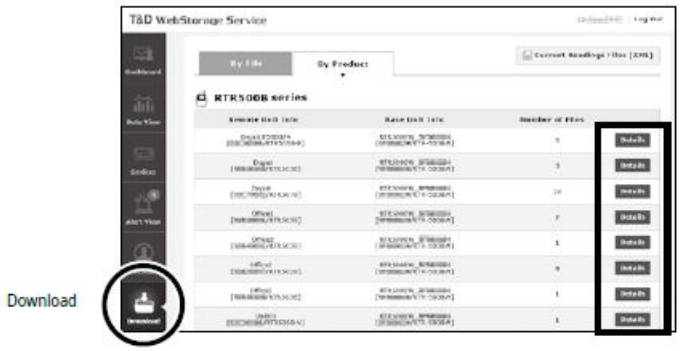
Operations

View Current Readings via Browser

1. Open your web browser and log in to T&D WebStorage Service
2. From the screen's left-side menu, click [Data View]. In this screen you can check items such as Current Readings, Battery Level and Signal Strength.
3. By clicking [Details] (Graph Icon) on the right side of the screen, y can view measurement details in graph form.

Downloading Recorded Data

1. From the screen's left-side menu, click [Download].
2. Click the [By Product] tab and for the target devices click [Details] button.

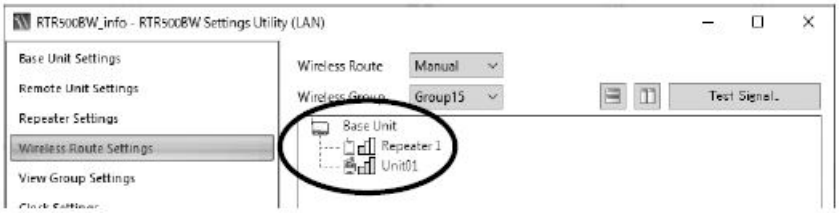


3. Place the device in the measurement location. The wireless communication range, if unobstructed and direct,

is about 150 meters (500ft.).

4. In the Settings window, open [Wireless Route Settings]-[Test Signal].

5. Click [Start] to begin the signal check. When completed, click [Close]. The result will appear.

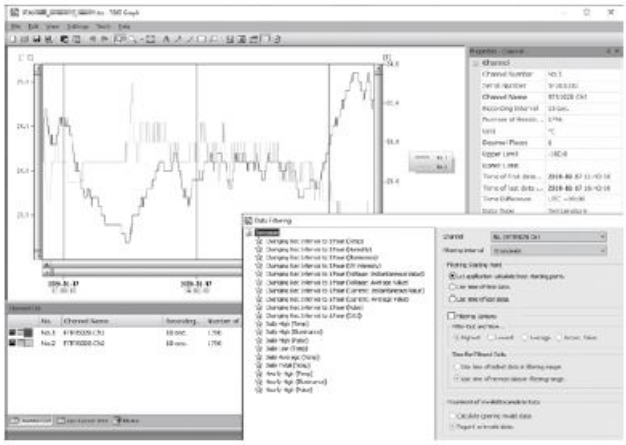


How to Read Signal Strength Results

- Please refer to section [Notes and Precautions for Installing Wireless Communi-cation Devices] under [RTR500B Series Safety Information]
- By using a Repeater, it is possible to bypass obstacles and extend the wireless communication range. For details, refer to [Using as a Repeater] in the RTR500BC User's Manual.

Using T&D Graph

T&D Graph is software that allows you to open recorded data saved on your computer. In addition to displaying and printing graphs, T&D Graph can open data by specifying conditions, extract data, and per-form various data analysis. With T&D Graph, it is possible to directly access and open recorded data stored in the T&D WebStorage Service and save it to your PC.



1. Download T&D Graph from the T&D Website and install it to your PC. tandd.com/software/td-graph.html
2. Open and analyze recorded data. * For details about operations, see T&D Graph Help.

Documents / Resources

	T D RTR500BW Network Base Station [pdf] User Manual RTR500BW, RTR500BW Network Base Station, Network Base Station

References

- Data Management Solutions | T&D Corporation
- RTR500BW for Windows (EU) | Software/Apps | T&D Corporation
- T&D Graph | Software/Apps | T&D Corporation
- RTR500B Series HELP
- T&D WebStorage Service | T&D Corporation