PATLITE®

Wireless Data Acquisition System

WD-Z2 Series

Installation Guidelines Rev.6

Transmitter: WDT-5E-Z2
                    WDT-6M-Z2
                    WDT-4LR-Z2
                    WDT-5LR-Z2
                    WDT-6LR-Z2
Receiver: WDR-L-Z2

Table of Contents

1. Introduction

This manual contains the installation guidelines with step-by-step instructions from the start of operation for a smooth installation of the WD-Z2 series. Refer to this manual to check the tasks required for each step and it is also recommended to plan an installation schedule and share information with relevant departments.

This manual covers the basic functions of the WD-Z2, and summarizes the steps provided in the WD-Z2 installation kit. Check the content of this manual in conjunction with the associated product instruction manual included with the product.

Below is a list of associated instruction manuals:

Item		Model	Instruction Manual	Item Code
WD-Z2 Installation Kit	-	-	This manual	GA0000218
	Startup Kit	WD-STARTZ2 +T0158	Startup Kit Instruction Manual	T95100206
	WD System Setup kit (for WDT-4LR-Z2)	WDX-4LRB	Setup Kit Instruction Manual	GA0001506
	WD System Setup kit (for WDT-5LR-Z2)	WDX-5LRB		
	WD System Setup kit (for WDT-6LR-Z2)	WDX-6LRB		
	AC Adaptor (100 to 240 VAC)	ADP-001	AC Adaptor Instruction Manual	T95100247
Transmitter		WDT-4LR-Z2 WDT-5LR-Z2 WDT-6LR-Z2	Wireless Data Communication System (LR4/LR5/LR6 Transmitter) Instruction Manual	B95100527
		WDT-5E-Z2 WDT-6M-Z2	Wireless Data Communication System Instruction Manual	T95100193
Receiver		WDR-L-Z2		
Software	For transmitter and receiver settings, CSV data collection	WDS-WIN01	WDS-WIN01 Instruction Manual	B95100536
	For transmitter and receiver settings	WDS-AUTO2 and other Applicable Software Applications	WD-Z2-specific system settings Application Operation Manual	-
	For CSV data collection		WDS Application User's Manual	T95100199

*1   Download the instruction manuals from our website (For Japan, download after completing the customer registration.)

2. WD-Z2 Installation Kits

Below is a list of the items included in each installation kit and their description.

Item			Description	Signal Tower Compatibility	
				LE / LME	LR
Startup Kit	Receiver (with AC adaptor)		Receiver for standard operation use.	Yes	Yes
	Receiver for setup (without AC adaptor)		Used when configuring the initial settings of the transmitter in locations such as the office. Also serves as a spare receiver in the event the main receiver fails.	Yes	Yes
	Body unit for setup Body Unit		Used when configuring the transmitter settings. Can also be used as a 4-contact transmitter by connecting a push-button switch, or other switches to the back of the connector. *Refer to reference 2 for details on the connector.	Yes	No
	AC adaptor for the body unit AC Adaptor		Supplies power to the body unit when used to setup. (100 VAC, for Japan only)	Yes	Yes
	Transmitter		Transmitter for standard operation use in combination with the LME or LE bracket.	Yes	No
	Bracket for LME		ϕ 60 Bracket for attaching the transmitter to the LME series signal tower. Included with the WDT-6M-Z2.	Yes	No
	Bracket for LE		ϕ 50 Bracket for attaching the transmitter to the LE series signal tower. Included with the WDT-5E-Z2.	Yes	No
	USB Cable		Setup cable for connecting the receiver to a PC.	Yes	Yes
	Customer Registration Guide	-	The customer is required to register (for Japan only). When registered, the customer can download manuals and software packages and can request the "Radio Wave Environmental Investigation Service" for use in conjunction with the Startup Kit.	Yes	Yes
Setup Kit	Body unit for setup Body Unit (for LR)		Used when configuring the transmitter settings. For setting up the WDT-6LR-Z2,WDT-5LR-Z2 and WDT-4LR-Z2.	No	Yes
	Mounting bracket		A fixture used to enable the body unit to stand by itself during setup.	No	Yes
	Conversion cable		A conversion cable used during setup when connecting the AC adaptor and the body unit.	No	Yes
AC Adaptor (100 to 240 VAC)			For use in North America, Europe, and other areas for supplying power to the body unit and Setup Kit during setup. Free-range power supply.	Yes	Yes

3. WD-Z2 Series Wireless Capability

(1) WD-Z2 Wireless Network System Overview

① Mesh Network Transmission

This is a function that automatically connects the WDT over an optimum communication route to the WDR when transmitting information. A dense mesh status can be used to increase communication redundancy.
- The network can include a mixture of WDT-6M-Z2, WDT-5E-Z2, WDT-6LR-Z2, WDT-5LR-Z2 and WDT-4LR-Z2 transmitters.
- Use a 20m distance as a guide for estimating the radio wave reach between devices.
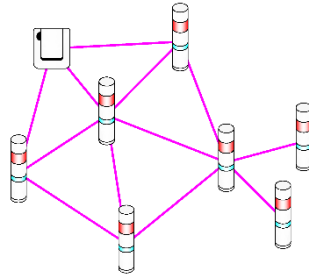
② **ExtendedPanID** setup example

- The WD-Z2 system requires to group each WD wireless network, with one WDR grouped per multiple WDT connections. The group can be defined by setting the **ExtendedPanID** and **Wireless channel** properties on the WDR and WDT to the same values.

ExtendedPanID consists of 16 single-byte, alphanumeric characters.
Setup range is from hexadecimal 0000 0000 0000 0000 to FFFF FFFF FFFF FFFE.
Wireless channel selection is in a range of 16 channels, from CH11 to CH26. When there are multiple receivers operating, always group the receivers together with the transmitters on the same channel with the same "ExtendedPanID".

WD Network
Group 1
  WDT and WDR Common Settings
  ● ExtendedPanID: 0000 0000 0000 0001
  ● Wireless Channel: CH15

WD Network
Group 2
  WDT and WDR Common Settings
  ● ExtendedPanID: 0000 0000 0000 0002
  ● Wireless Channel: CH20
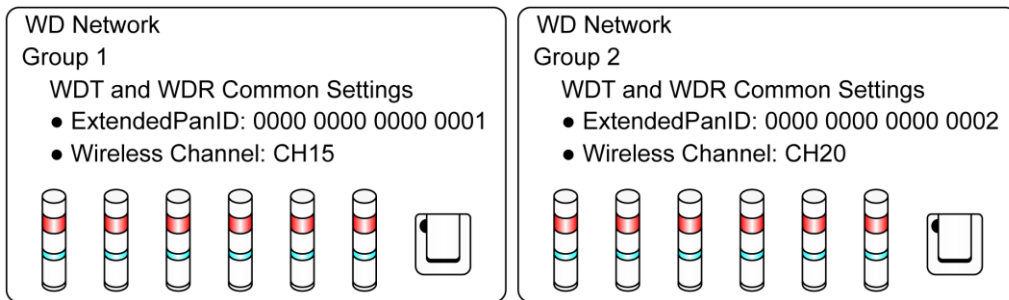
③ MAC Address for Identification

- For identification, fixed addresses are assigned to the WDT, which is called a MAC Address (IEEE Address). The MAC address is printed on the WDT, in the locations indicated below:

WDT-5E-Z2 / WDT-6M-Z2	WDT-4LR-Z2 / WDT-5LR-Z2 / WDT-6LR-Z2
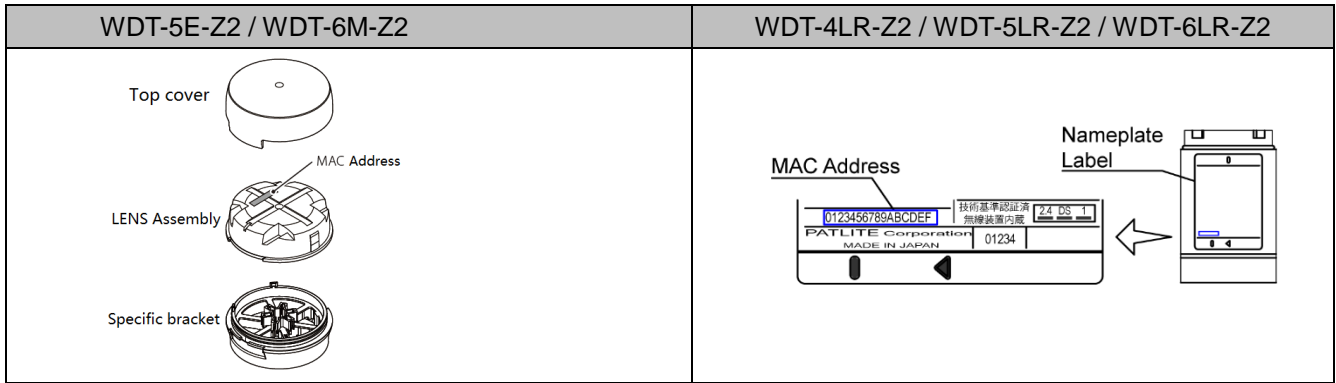
(2) Using with other Wireless Systems

- The WD wireless network operates on the ZigBee (IEEE802.15.4 compliant) 2.4 GHz frequency. Although it runs on the same 2.4 GHz frequency as a wireless LAN (Wi-Fi), the WD wireless network can operate without connecting to a wireless LAN because it conforms to the IEEE802.15.4 standard. This also applies to Bluetooth and other ZigBee wireless networks.
  However, if the frequencies being used happen to overlap, the WD wireless network could experience transmission delays and other communication issues.
- The wireless communication is encrypted. The encryption standard uses AES-CCM (Advanced Encryption Standard-Counter with CBC-MAC), with an encryption key of 128 bits.
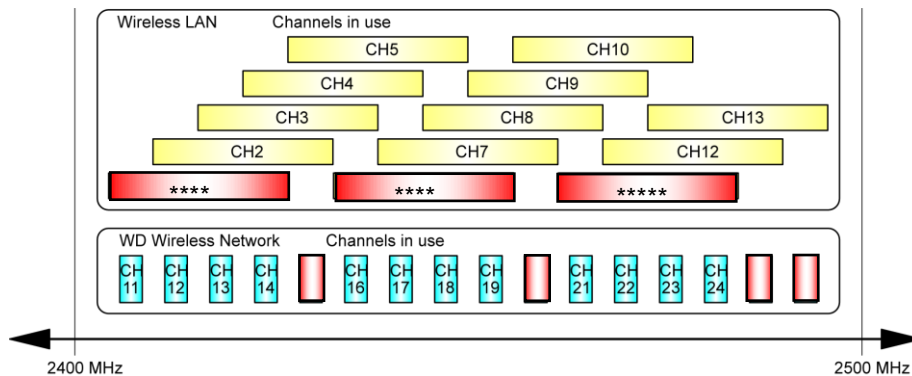
As an example, if the wireless LAN uses Channels 1, 5 and 6 (CH1, CH5, CH6); the WD can use Channels 15, 20, 25 and 26 (CH15, CH20, CH25, CH26). (Refer to the diagram above)

(3) Stable Wireless Communication Zone

- It is required to have a good line of sight for each device (WDR, WDT) free from any obstacles (hereafter referred to as the Fresnel Zone).
- The Fresnel Zone is a three-dimensional space, in which its size is estimated as follows:
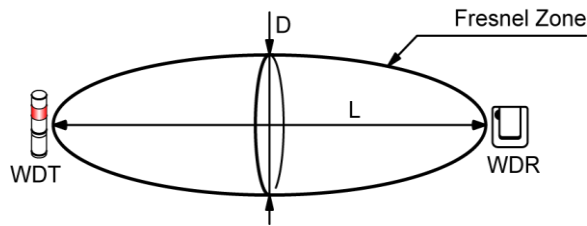
With a line of sight at L: 20m, the Fresnel Zone diameter D is about 1.6m.

With a line of sight at L: 10m, the Fresnel Zone diameter D is about 1.2m.

- If the Fresnel Zone cannot be set up, the available communication distance may be shorter than usual due to obstacles inhibiting communication.

⚠ CAUTION

- When the transmitter and receiver are mounted on the same wall, as shown in the diagram below, the wall becomes an obstacle in the Fresnel Zone, risking a decrease in communication performance. This applies not only to walls, but also to other obstacles such as ceilings, flooring and large equipment.
In such cases, devise a way of installing the receiver and transmitter as far from the wall, or other obstacles, as possible.

---
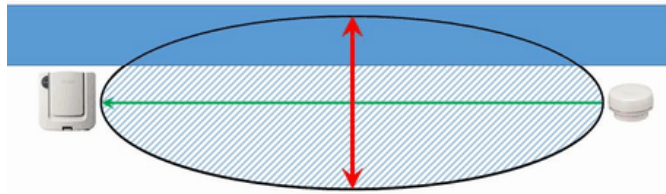
(4) Radio Wave Environmental Investigation Service

Requesting a "Radio Wave Environmental Investigation" in the WD installation area is an essential condition for a stable operation of the WD system.

The "Radio Wave Environmental Investigation Service" for one receiver is provided with the Startup Kit. It is recommended to use the "Radio Wave Environmental Investigation Service" if it is difficult for the customer to investigate.

The service can be requested through the link in the "Customer Registration Guide", which is included in the Startup Kit.

The "Radio Wave Environmental Investigation" is from data collected, using a spectrum analyzer (shown below), showing the wireless LAN operation, as well as checking any radiation noise from surrounding equipment.

The recommended channels to be used for the WD is based on this investigation.
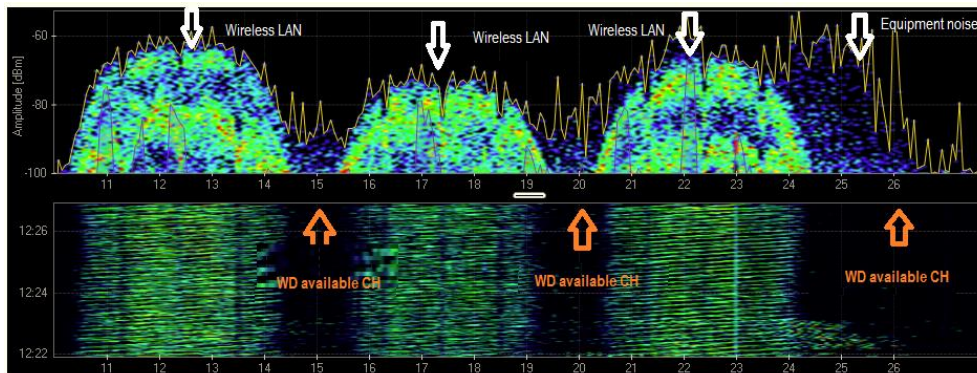
Note
The link below introduces a tool that can be used for investigation by the customer. The tool is used in the "Radio Wave Environmental Investigation Service" at PATLITE for checking the wireless environment (as shown in the above diagram) and selecting the optimal wireless channels for the WD series. MetaGeek 2.4GHz USB Spectrum Analyzer Wi-Spy 2.4x Analysis Tool Chanalyzer http://www.metageek.net/products/wi-spy/

4. WD Installation Startup

Step 1. Determine the equipment for WD installation

●Purpose

Decide on which machinery the equipment operation data will be collected from. If there is a large number of machinery, consider to make an order of installation in the installation area.

Note
Select a machine for one receiver, and establish an operation period for testing, such as verifying the operation of the collected operation log data and determine the installation order.

Step 2. Determine the operation log data utilization method

●Purpose

Clarify the log data application and select the appropriate software, based on operation status and operation analysis visualization, etc.

① Select from PATLITE partners that support the WD system when using software packages.

　There is a benefit of being able to start operations right away when following the WD system installation.

　　=>Consult with PATLITE if customization is required.

② When developing your own application:

　　(1) Use the PATLITE WDS application (WDS-AUTO2/WDS-WIN01) when generating CSV log data.

　　　=> Before selecting which WDS to use, refer to "Reference 7: WDS Selection".

　　(2) Operation data can be collected from the receiver via LAN communication, without the PATLITE (WDS-AUTO2/WDS-WIN01) application software.

　　　*If considering on developing an application, first contact your PATLITE sales representative.

Note
- Refer to the "WDS Application User Manual" for details on WDS-AUTO2. - Refer to "3.1 Checking CSV Files" in the "WDS Application User Manual", for details on CSV log data. - Refer to the "WDS-WIN01 Instruction Manual" for details on the WDS-WIN01.

Step 3. Radio Wave Environmental Investigation

●Purpose

For a stable use of the WD system, check with the "Radio Wave Environmental Investigation System" in the targeted installation area, deciding upon the best possible WD wireless for each area, and the location for the receiver installation. When purchasing the Startup Kit, a request for using the "Radio Wave Environmental Investigation System" is included in the "Customer Registration Guide".

(Also check our catalog, website, etc., for areas where the service is provided free-of-charge.)

Note
About the "Radio Wave Environmental Investigation System"   (1) The investigation into the wireless environment of the WD installation area is by using a 2.4GHz band spectrum analyzer (explained in the previous section) to propose the optimum wireless channels to be used for the WD system.   (2) The optimal installation location for the receiver is selected by monitoring the site on the recommended WD wireless channel; testing the effective radio wave distance from the recommended position for all the equipment in 4 corners of the target area, with a radio wave intensity measuring jig and tool to verify the effective location for the receiver. The recommended location, position, height, direction is used when installing the receiver and while the receiver is in operation.

⚠ CAUTION
- The proposal is based on a guaranteed operation under the environmental conditions when tested.   - A wireless channel other than the recommended channel may be better in some cases, due to a change in environmental noise from other equipment. In that case, it is recommended to establish a test operation period.   - The on-site investigation work takes approximately 2 hours per area.   - The "Radio Wave Environmental Investigation Report" is submitted at a later date.

Step 4. Equipment Investigation with Signal Tower

●Purpose

To check that the Signal Tower model is one which can be attached with the WD and be attached to the targeted equipment.

If the WD cannot be attached to the Signal Tower, this next step is to review the specifications to find a compatible LR/LME/LE Series model.

- Check list

Check Specifications	Contents
Equipment Information	Equipment name and other identifiable equipment information such as asset management number.
Manufacturer	Signal Tower manufacturer name which is mounted on the equipment
Model	Signal Tower model
Power Supply Voltage	Signal Tower's power supply voltage
Mounting Method	Type of mounting: L-bracket, direct, pole-mount, etc.
Display Color	From the top: Red, Amber, Green, and so on.
Buzzer	Equipped with or without a buzzer
Flashing Action	A function to turn flashing on or off
Flashing Cycle	A required setting is in the transmitter's "Determining Signal Tower Input settings". Checking the length of one ON/OFF cycle, the internal Signal Tower flashing cycle is 1 second (ON: 0.5 seconds, OFF: 0.5 seconds).
Determine WD compatibility	Go to step 5, "Device Settings List".
Replacement model	Go to step 5, "Device Settings List".

* For a target equipment worksheet, refer to "Reference 3: Sample Target Equipment Investigation Sheet".

Step 5. Device Settings List

●Purpose

 After investigating the "Radio Wave Environment" and target equipment, first group the equipment based on the floor layout and verify the WD settings, then group the equipment according to the layout diagram, etc. of the factory, and verify the WD setting contents.

① When filling out the target equipment worksheet list:

Item	Check content
Determine the WD compatibility	Determine the WD compatible Signal Towers based from the target equipment investigation results. If an LR / LME / LE series is mounted on an existing Signal Tower, enter "Y", otherwise enter "N".
Replacement model	For equipment marked "N", after checking the specs for the current signal tower LR series, fill in the investigation worksheet with the replacement model.

 * For details on signal tower models, refer to "Reference 6: Signal Tower Model ".

② When filling out the transmitter initialization check sheet list:

Item	Settings
① User Name	Use in " Step 8. System Operation Check".
② MAC Address	*1 Check this item in "Step 6. WD Initial Set".
③ ExtendedPanID	*2 Referring to this table note, describe how the groups are divided.
④ Wireless Channel	Describe the wireless channel for each group based on the "Radio Wave Investigation" results.
⑤ Flashing Cycle	*3 Referring to this table note, define the settings for Determining Signal Tower Input.
⑥ Power Supply Wire	*4 Referring to this table note, set the display colors for the WD power supply wires.

 *1 Transmitter MAC address

   Identify the transmitter mounted on the unit.

   The MAC address is on the wireless module of the transmitter. It can even be checked in the setup tool, but it is more efficient if the address is registered while doing the work.

 *2 Create an equipment list

   Create a list for a group of around 20 targeted equipment (maximum 30 units) based on the factory layout diagram for grouped equipment and register the same ID as the group number in the **ExtendedPanID** property for the transmitter and receiver.

Point
ExtendedPanID is an ID for wireless groups when there are multiple receivers.   A receiver and transmitter that operate in the same group have the same **ExtendedPanID**.   The initial value is "0000 0000 0000 0000", which connects to any receiver by default.   Setup range: 0000 0000 0000 0000 to FFFF FFFF FFFF FFFE.   [Example settings]   The **ExtendedPanID** of the receiver and transmitter in the first group is 0000 0000 0000 0001   The **ExtendedPanID** of the receiver and transmitter in the second group is 0000 0000 0000 0002   The **ExtendedPanID** of the receiver and transmitter in the third group is 0000 0000 0000 0003

Note
*If there is one receiver, the **ExtendedPanID** is 0000 0000 0000 0000.   *If the same **ExtendedPanID** number is registered for the group, it is easier to manage.

*3 Flashing Cycle settings

  4 patterns can be selected from the Signal Tower flashing status, in conjunction with the flashing cycle of the equipment worksheet (Low speed, medium, standard, or none.). Select in accordance to the flashing cycle in the targeted equipment worksheet.

⚠ CAUTION
If the Signal Tower settings and flashing actions are not synchronized, the wireless transmission repeats for each flash, which places a load on communication and may result in lost data. If the Signal Tower flashing cycle for the equipment cannot be determined, use the "Low speed" option.

*4 Power Supply Wire

  Set the display color for the WD power supply wire (a color which is not used for the lamps).
  For the LME / LE Series, the default value is "White". For the LR series, the default value is "Power Supply Wire".

Note
This feature can be used to show the ON/OFF status for the equipment's main power supply.

③ Receiver's LAN setting Adjustment

- Get the number of receivers with IP addresses connected to the internal LAN.

Setup Item	Initial value
IP address	192.168.0.1
Subnet mask	255.255.255.0
Default gateway	0.0.0.0
DNS server	0.0.0.0
Port number	10001

*Enter the settings in the receiver initialization sheet.

⚠ CAUTION
When operating the WDS-AUTO2/WDS-WIN01, do not change the initial values of the DNS server. Use the default value for the port number.

Note

- For other WDT check items, the explanation in this manual is based on the following default values.

Transmitter Setup Item		Reference
LME / LE Series	LR series	
Display firmware version		Version information of the transmitter in use is used for inquiries and checking for version updates, etc.
Connection allowed (Default Value: Permitted)		Set to "Permitted" or "not permitted" for the transmitter relay function. (The default value is recommended)
Transmission Mode (Default Value: Immediate transmission)		The timing is set for when the Signal Tower changes or when a request is received from the host while the transmitter is transmitting data.
Simple counter function (Default Value: Do not use)	Not applicable	Set if the simple counter function is being used.
Counter upper limit value (Default Value: 4294967295)	Not applicable	Used when "counter mode" and "simple counter" are enabled.

- Other WDR check items.

Receiver Setup Item	Reference
Display firmware version	Version information of the receiver in use is used for inquiries and checking for version updates, etc.
MAC Address	Used to identify the receiver installed in each area. If using a LAN connection, the receiver can be identified by its IP address and is labeled on the receiver's wireless module. This can also be checked by using the setup tool.

*Refer to the "WD-Z2-specific System Settings Application Operation Manual" and "WDS-WIN01 Instruction Manual" for details on each function.

Step 6. WD Initial Setup

- This section explains how to run an initial setup of the transmitter with the use of a USB connection as an example. The USB connection is the most popular connection method for initial setups.

(1) Transmitter Initial Setup

① Hardware Configuration
■ LE/LME series Signal Tower
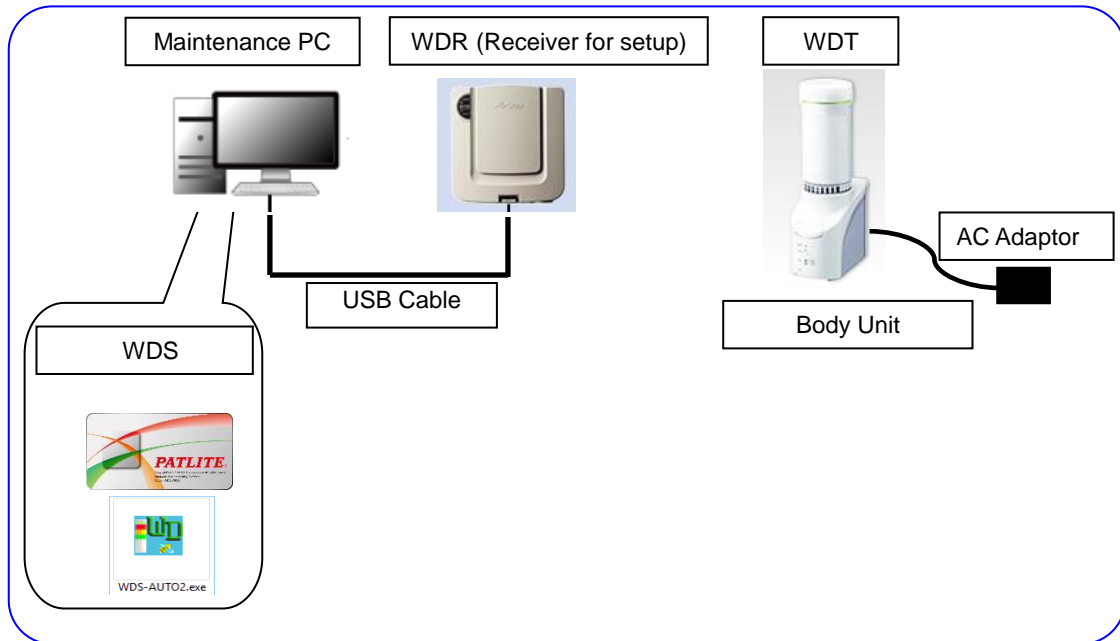
- Configuration Table

Item	Number of configuration items	Models
WDT	Number as required	WDT-6M-Z2 / WDT-5E-Z2
Body Unit	1	Included in the Startup Kit
AC Adaptor	1	Included in the Startup Kit
WDR (Receiver for setup)	1	Included in the Startup Kit
WDS	1	WD-Z2-specific system settings/WDS-WIN01
Maintenance PC	1	-
USB Cable	1	Included in the Startup Kit

■ LR series Signal Tower
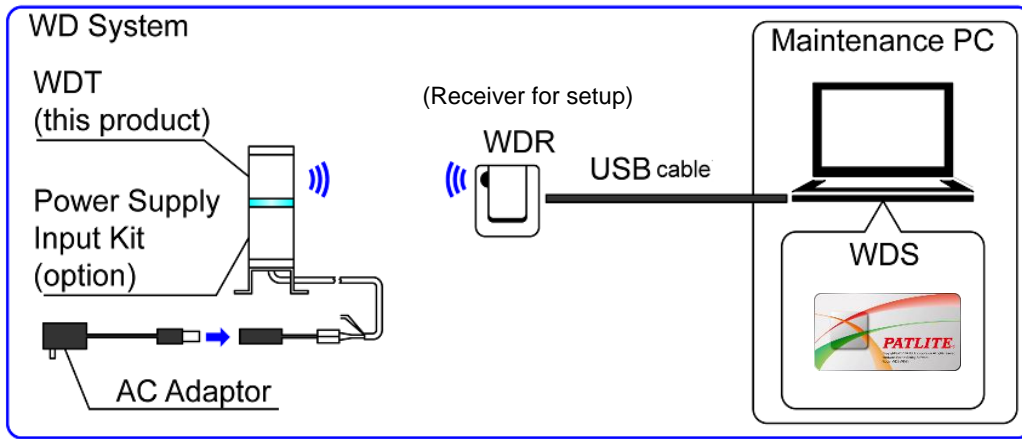
- Configuration Table

Item	Number of configuration items	Models
WDT	Number as required	WDT-4LR-Z2 / WDT-5LR-Z2 / WDT-6LR-Z2
Setup Kit	1	WDX-4LRB / WDX-5LRB / WDX-6LRB
AC Adaptor	1	Included in the Startup Kit
WDR (Receiver for setup)	1	Included in the Startup Kit
WDS	1	WDS-WIN01
Maintenance PC	1	-
USB Cable	1	Included in the Startup Kit

② Setup Items

Information required for setup	Description	Kitting sheet item number
Wireless settings	ExtendedPanID	③ ExtendedPanID
	Wireless channels	④ Wireless channel
Run time settings	Determining Signal Tower Input	⑤ Flashing cycle
	Power supply settings *1	⑥ Power supply wire
	Transmission mode	-

*1 For the LR series, use "Power Supply Wire". For more information, refer to the "WDS-WIN01 Instruction Manual".

 - Set the contents from the "Transmitter Kit Sheet" one unit at a time for the WDS.

 - Copy the transmitter's MAC address to the "Kit Sheet".

■ Using "WD-Z2-specific system settings" for LE/LME series
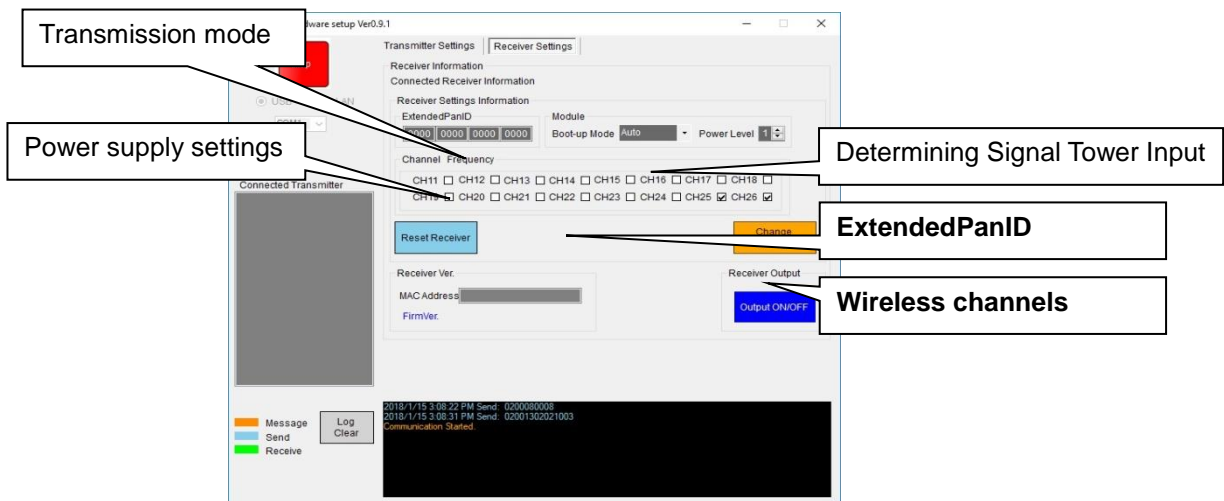
*For details on the setup method, refer to the "WD-Z2-specific System Settings Application Operation Manual".

■ Using "WDS-WIN01" for LR series
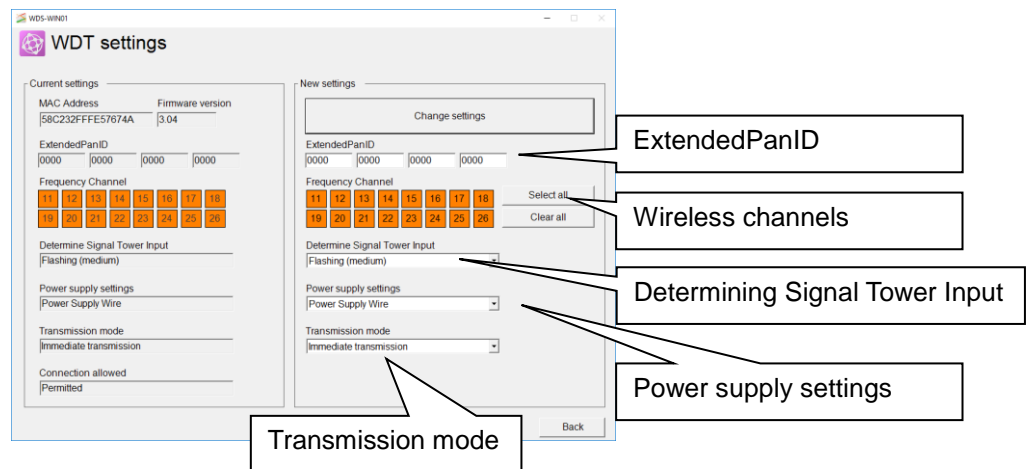
*For details on the setup method, refer to the "WDS-WIN01 Instruction Manual".

(2) Initial receiver setup

① Hardware Configuration

When using with the USB connection

Maintenance PC | WDR (for operation)

USB Cable

WDS

WDS-AUTO2.exe

When using with the LAN connection

Maintenance PC | WDR (for operation)

HUB

LAN Cable | AC Adaptor

WDS

WDS-AUTO2.exe

Browser

- Configuration Table

Item	Number of configuration items	Models
WDR (for operation)	Number as required	WDR-L-Z2
WDS	1	WDS-WIN01/WD-Z2-specific system settings
AC Adaptor	1	Included in the Startup Kit
Maintenance PC	1	-
LAN Cable (cross cable) *1 *2	1	-
USB Cable *3	1	Included in the Startup Kit

*1 Connect with a LAN cable when configuring the WDR LAN settings.

*2 Use a cross cable when connecting the WDR directly to the maintenance PC via LAN cable.

*3 Do not connect LAN and USB cables at the same time.

② Setup Items

Information required	Description
Wireless Settings	ExtendedPanID
	Wireless channels
	Network startup method *1
LAN Communication	IP address *2
	Subnet mask
	Default gateway
	DNS server (Use the default value)
	Port number (Use the default value)

*1: For the network startup method, use "Auto Startup".

　　 For more information, refer to the "WDS-WIN01 Instruction Manual".

*2: Prepare beforehand the number of IP addresses required for use with the WDR.

- For the WDS, set one unit at a time in accordance with the settings list in the "Kit Sheet".

■ When using the "WD-Z2-specific system settings" for LE/LME series
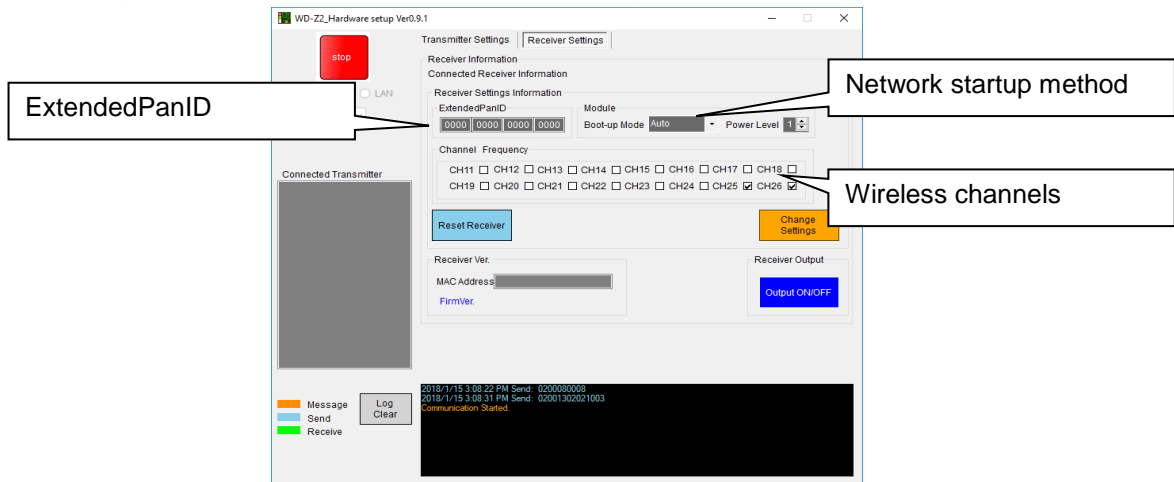
*For details on the setup method, refer to the "WD-Z2-specific System Settings Application Operation Manual".

■ If using "WDS-WIN01" for the LR series
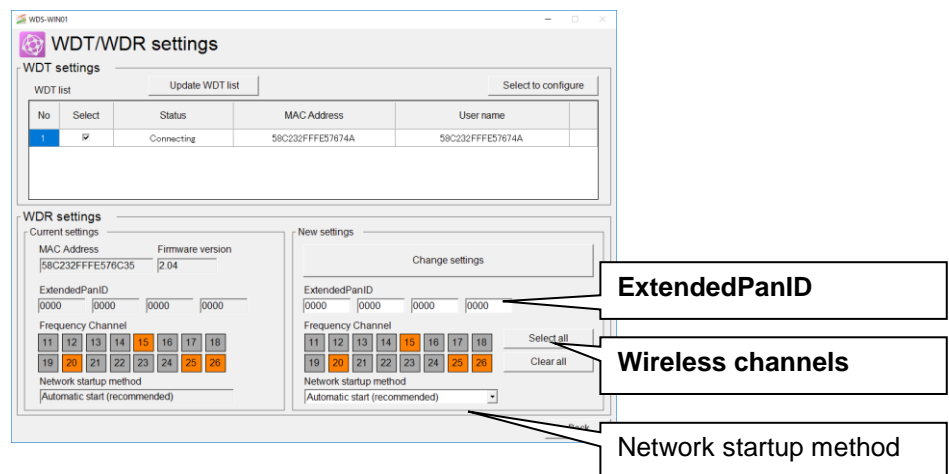
*For details on the setup method, refer to the "WDS-WIN01 Instruction Manual".

③ Settings for LAN Connections

- Set one receiver at a time with the browser.

Network Menu

WDR:
IP address
Subnet mask
Default gateway
DNS server

Connection Menu

Port

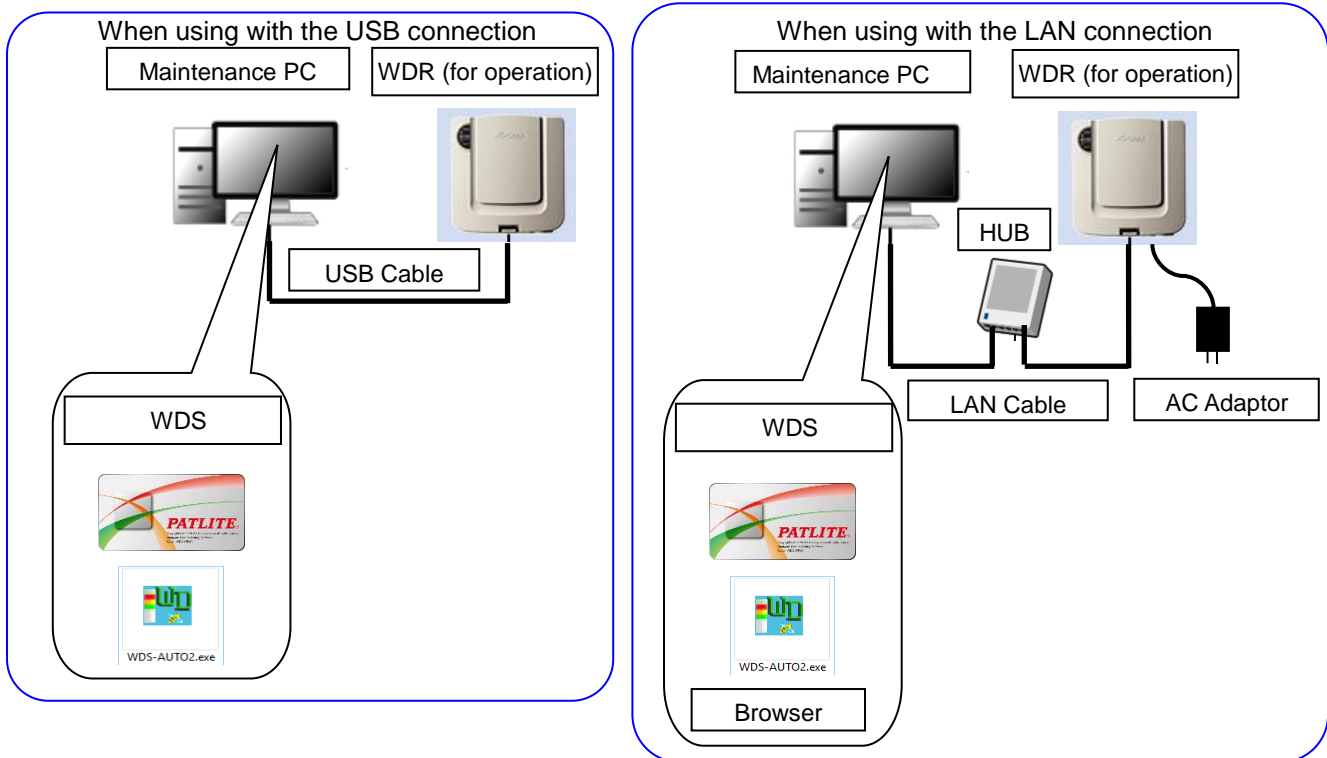| ⚠ CAUTION	
🚫 Prohibited	◆ Do not change any settings for items not described in this manual. - Do not setup the DNS server. - Use the default value for the port number.

Note

In browsers such as IE11, the IP address may not display correctly.
 	
Setup method in IE11 (The setup method differs depending on the version of IE.)
  1. From the [Tools] menu, click [**Compatibility view settings**].
  2. By entering and registering the IP address of the target receiver in the [**Compatibility View Settings**] window, it will display correctly.

Step 7. Installation

(1) Transmitter Installation

■ LE/LME series Signal Tower

(1-1) Mounting the transmitter onto the Signal Tower

For the Signal Tower that requires a WDT Installation, mount the WDT transmitter after the settings are already prepared, to the Signal Tower.

⚠ CAUTION	
🚫 Prohibited	◆ Do not overtighten the center screw. **(Tightening Torque: 0.2 to 0.3Nm)** Overtightening the screw may result in operational defects such as internal damage or lamps flickering. ◆ If oil or other matter adheres to the center screw, wipe it thoroughly before use. Failure to follow this instruction could result in product failure.

(1-2) Wiring the Signal Tower to equipment
- Wiring is necessary to constantly supply power to the transmitter.
- Wiring is necessary even if the Signal Tower is not being replaced.

⚠ CAUTION	
❗ Enforced	◆ Constant WDT power supply To operate the WDT, you need to constantly supply power to the LME/LE series signal tower's power line. To connect the power supply, wire the supply to a signal wire of a lamp color that is not in use (initial value is white) so that it is constantly on. - Wiring is necessary even if the Signal Tower is not being replaced. ◆ For the 24 VDC specification, do not connect the white wire to the same polarity as the power supply's yellow wire. ◆ When using transistor control for the 24 VDC type, beware of the white wire polarity. The power supply wire color for the LE series 24 VDC specification is black.

LME/LES
■ AC/DC 24V Type

The signal line (the figure indicates the white line) is assigned as the power supply source and the power supply is the source line (Yellow) to supply power to the unit.

Relay\Switch

External Contact

- LED Red/ Red Wire
- LED Amber/ Orange Wire
- LED Green/ Green Wire
- LED Blue/ Blue Wire
- LED Clear/ White Wire
- Power/ Yellow Wire

External Fuse 1A

Power Source

■ AC 100/120/220/230 -240V Type

The signal line (the figure indicates the white line) is assigned as the power supply source and the power supply is the source line (Yellow) to supply power to the unit.

External Contact

- LED Red/ Red Wire
- LED Amber/ Orange Wire
- LED Green/ Green Wire
- LED Blue/ Blue Wire
- LED Clear/ White Wire
- Lighting/ Yellow Wire
- Power COM / Gray Wire
- Power/ Black Wire

External Fuse 1A

Power Source

NPN Transistor

NPN Contact

- LED Red/ Red Wire
- LED Amber/ Orange Wire
- LED Green/ Green Wire
- LED Blue/ Blue Wire
- LED Clear/ White Wire
- Power/ Yellow Wire

Fuse 1A

Power 24VDC

NPN Contact

- LED Red/ Red Wire
- LED Amber/ Orange Wire
- LED Green/ Green Wire
- LED Blue/ Blue Wire
- LED Clear/ White Wire
- Flashing COM/ Brown Wire
- Power COM / Gray Wire
- Power/ Black Wire

Fuse 1A

Power Source

PNP Transistor

Power 24VDC   Fuse 1A

PNP Contact

- Power/ Yellow Wire
- LED Red/ Red Wire
- LED Amber/ Orange Wire
- LED Green/ Green Wire
- LED Blue/ Blue Wire
- LED Clear/ White Wire

PNP Contact

- COM / Yellow Wire
- LED Red/ Red Wire
- LED Amber/ Orange Wire
- LED Green/ Green Wire
- LED Blue/ Blue Wire
- LED Clear/ White Wire
- Power COM / Gray Wire
- Power/ Black Wire

Fuse 1A

Power Source

(1-3) Verify Operation

- The product's status **indicator lamp** can be used to determine the wireless communication status.

- After installation is complete, turn on the main power supply to the equipment and with **all the signal tower lamps off**, check the transmitter **indicator lamp**, verifying that **it is not in the off state**. If the **indicator lamp** does not turn on, the power supply wiring to the transmitter is not correct.

- The **indicator lamp** operates as follows:
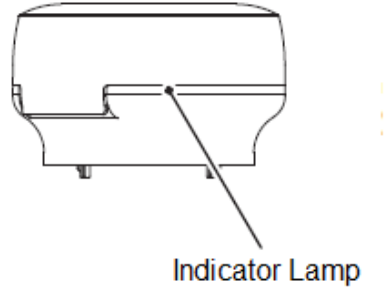
Indicator Lamp

Indicator Lamp	Wireless Connection Status
Green pulse	Indicates a good status.
Orange pulse	The connection is not good; however, it can still be used.
Red pulse	The wireless connection is not good.
Red light	Product is waiting to join a WD Network.

■ LR series Signal Tower

(1-1) Mounting the transmitter on the signal tower

- For the Signal Tower that requires a WDT Installation, mount the WDT transmitter <u>after the settings are already prepared</u>, to the Signal Tower.

	⚠ CAUTION
🚫 Prohibited	◆ Do not attach this product to the upper part of the adjoining body unit. If this product is attached on top of an LED unit, the status shown by the indicator lamp on this product will be difficult to assess.
	◆ Do not detach multiple connected units, except the headcover, from this product or the body unit. When detaching units (this product, LED unit, or buzzer unit) from the body unit or this product, detach units one at a time. Failure to follow these instructions could result in equipment damage.

(1-2) Wiring the Signal Tower to equipment

⚠ CAUTION	

🛑
Enforced
	◆ Constant WDT power supply
	  - To operate the WDT, the power needs to be constantly supplied to the LR series Signal
	    Tower power line.

◆ Signal Tower Rated Voltage: 12 / 24 VDC
  - Applicable Models: LR□-□01 / LR□-□02
	◆ Signal Tower Rated Voltage: 100 to 240 VAC
	  - Applicable Models: LR□-□M2

(1-3) Verify Operation

- The product's status **indicator lamp** can be used to determine the wireless communication status.
- After installation is complete, turn on the main power supply for the equipment and with **all of the signal tower lamps off**, check the transmitter **indicator lamp**, verifying that **it is not in off state**. If the **indicator lamp** does not turn on, the power supply wiring to the transmitter is not correct.
- The **indicator lamp** operates as follows:
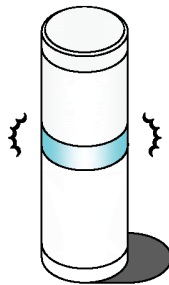
Indicator Light	Wireless Connection Status
Green pulse	This status indicates a good status, in which the product can communicate directly with the WDR without relying on other WDT units. (If the WDT and WDR are close together, within tenths of centimeters, the WDT may display a red pulse.)
Amber pulse	Direct wireless connection with the WDR is not good, but the connection with nearby WDT units are good. If a nearby WDT has a green pulse, the WDT will be used as a repeater for communication.
Red pulse	Connection is not good with any WDR or WDT in the WD Network.
Red light	The product is waiting to join a WD Network.

(2) Receiver Installation

Because the installation location is always in a high place, do the installation only after completing the initial settings (wireless settings, LAN settings, etc.).

Install the receiver in the location (position, height, direction) described in the "Radio Wave Environment Investigation Report".

The installation location requires LAN wiring and a 100 VAC outlet for the AC adaptor.

When storing the receiver in a box, use a plastic box, etc., with radio wave permeability.

Important
When determining the installation location, carefully review the "About the receiver installation location" below. Because the WD is a product that uses wireless communication, a poor installation location could cause problems such as unstable operation or communication failure.

(2-1) Receiver installation location

(2-1-1) Receiver position

① Radio reception with the receiver at the center of the area [◎ Very good]

- The receiver seeks out equipment in all directions, so an optimal mesh network can be configured.
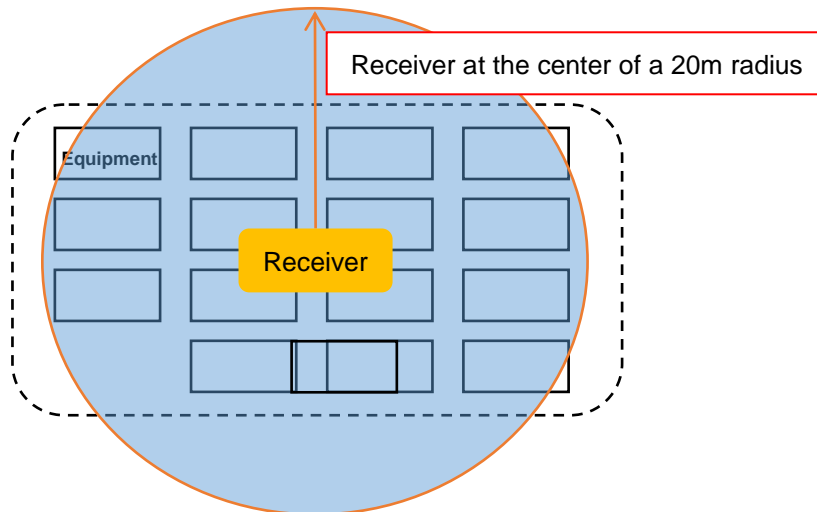
② Radio reception with the receiver installed on a wall in the center of the area [○ Good]
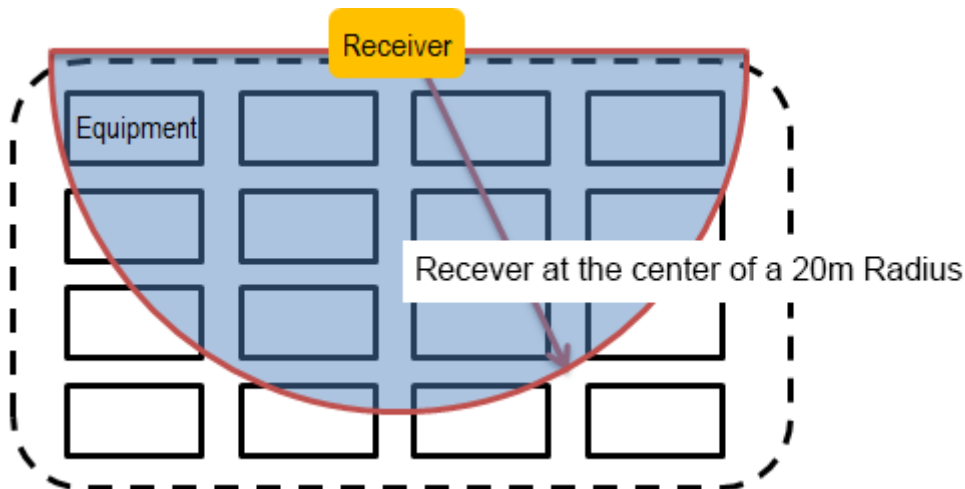
③ Radio reception with the receiver installed in a corner of the area [× Not good]

The relay load tends to be biased toward some of the transmitters, so the wireless path is not distributed well.
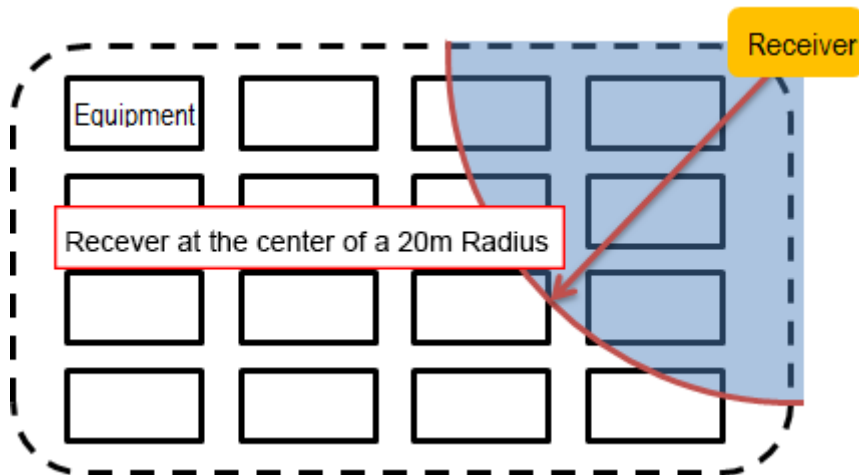
(2-1-2) Receiver Height

It is recommended to install the transmitter for all equipment at a height where there is minimal obstruction, and the receiver should be installed at about the same height as the transmitter.
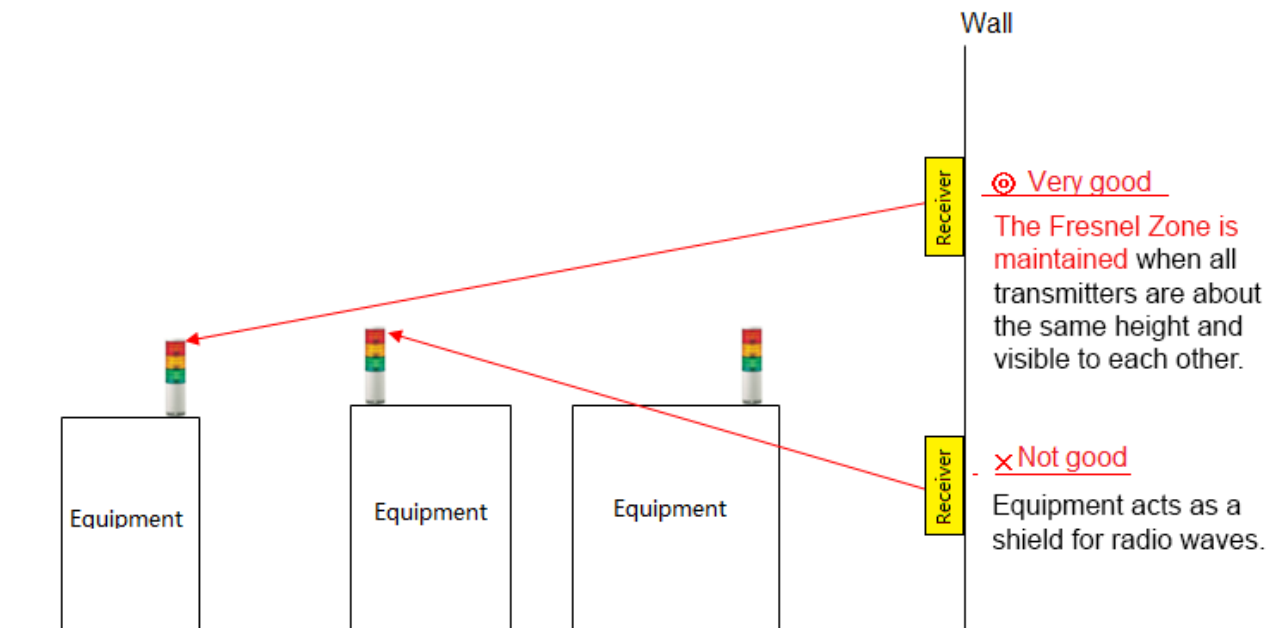
Important
When selecting the receiver installation location, give sufficient consideration and refer to "(3) Stable wireless communication Zone".
Also, it is recommended to temporarily install the receiver at a location where the "Radio Wave Environment Investigation Service" is provided, establish a test period for about one week, and proceed with a final installation if there are no issues.

(2-1-3) Receiver Direction

◎ Horizontal, with the cover facing downward

○ Wall-mounting

(2-1-4) Adverse effect of the material used in the receiver installation location

If the receiver is mounted on an H-beam pillar, the metal construction will cause reception to be unstable, even if the receiver is placed in the center of the area.

Select an installation location where the targeted equipment aligns with the front side of the receiver (the side that is not in contact with the metal face).
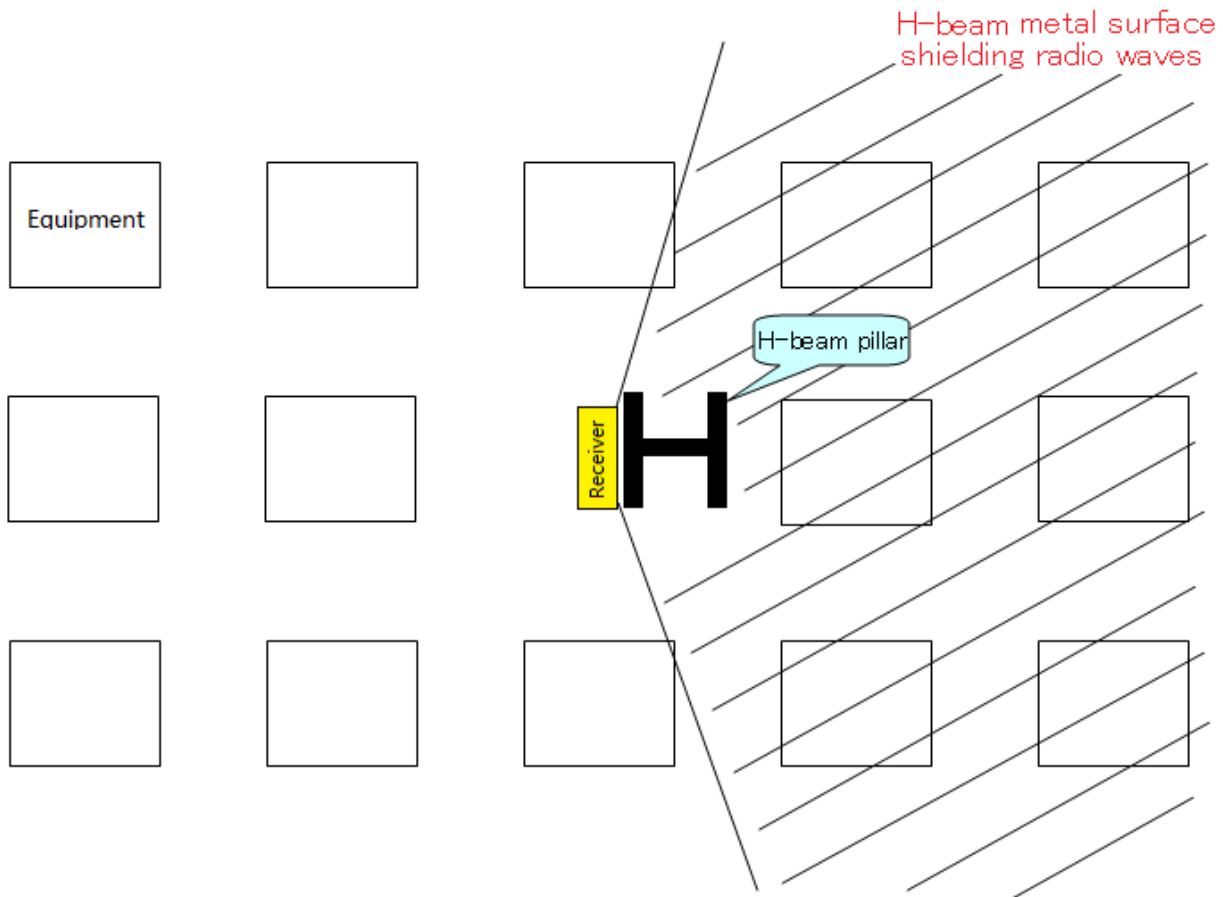
As an alternative, select a location as shown in (2) Receiver Installation, "②Radio reception with the receiver installed on a wall in the center of the area [○ Good]".

(2-1-5) Example of an optimal receiver installation location

The receiver is mounted in the center of the area, facing in the downward direction, secured to a cable rack with cable ties.

The targeted equipment is in line-sight of the receiver, and mounting the receiver and extending the LAN wiring is easy.
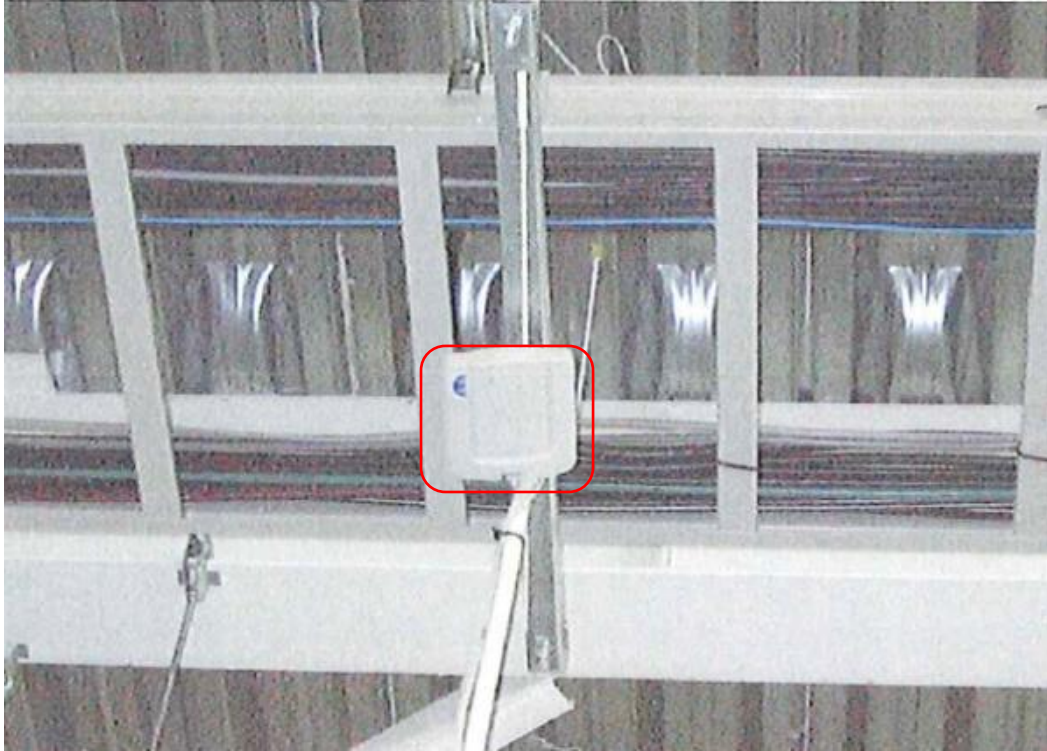
Upward view of the receiver installation location from the floor area.

⚠ CAUTION
When wireless LAN and in-house PHS access points are installed, receivers should be installed so they are 5 to 10 m or more away from PHS access points.

Step 8. System Operation Check

■ WDS-AUTO2 Operation Check

(1) Register the WDT "username" (create an .init file)

- The following explains the settings in WDS-AUTO2 to associate the equipment name with the transmitter's MAC address for each equipment.

(1-1) Start-up the WDS-AU file settings application.

Note
In the MAC address field marked in red, enter the transmitter MAC address for each equipment from the "Kit Sheet", and in the "username" field, register the equipment name from the "Target Equipment Investigation" sheet.

(2) WDS-AUTO2 Default Settings

(2-1) Start-up the WDS-AUTO2 application.

⚠ CAUTION
- WDS-WIN01 requires administrator privileges prior to use.
- If starting WDS-AUTO2 for the first time, it will request to select the .init file, first. Specify the file created in step "(1) Register the WDT "username" (create an .init file)".

(2-2) Set the receiver's connection destination.

Set up the information of the receiver to connect with, based on the LAN network settings in the "Receiver Kit" sheet.
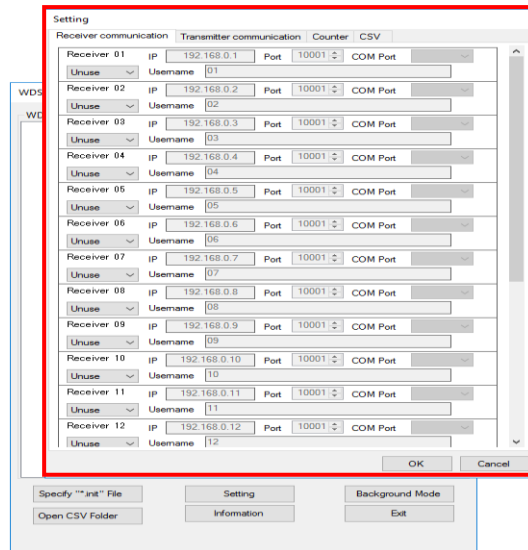
Note
The initial values for all settings, except the settings marked in red in the [Settings] window's [Receiver Communication Settings] tab, can be set.

(3) Check transmitter/receiver connections and .csv log file

The receiver list appears in the **WD List** window (as shown below), and the transmitters are displayed in a tree configuration.

Check that all receivers and transmitters are connected, then check that the transmitters are connected to their designated receivers.
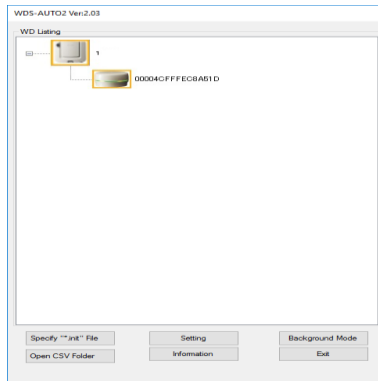
When clicking "Open CSV File", the CSV file opens so that it can be checked.

⚠ CAUTION
- By opening the CSV file directly, the operation log data may not be updated.
- When checking the CSV file during WDS-AUTO2 operation, always copy the file to another location and open the copied file when checking.

Note
- If the receiver icon shown on the left appears, the receiver is not connected properly.   - Check that the receiver power is on, the LAN wiring is correct, and the correct IP address is specified.

This completes the initial system operation check.

Establish a test operation period of at least one week and check the

operation log data to ensure proper setup.

■ Checking using WDS-WIN01

(1) WDS-WIN01 Default Settings

(1-1) Start-up the WDS-WIN01 application.
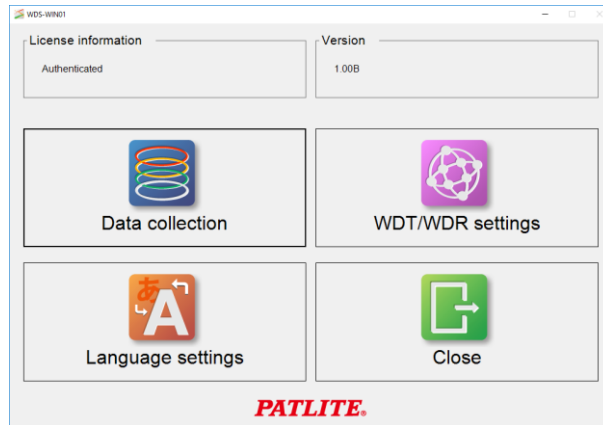
(1-2) Enter the license key.
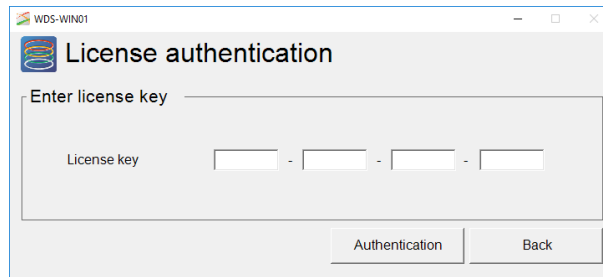
⚠ CAUTION
WDS-WIN01 requires administrator privileges prior to use.

(2) Register the WDT "username"

- The following explains the settings in WDS-WIN01 to associate the equipment name with the transmitter's MAC address for each equipment.
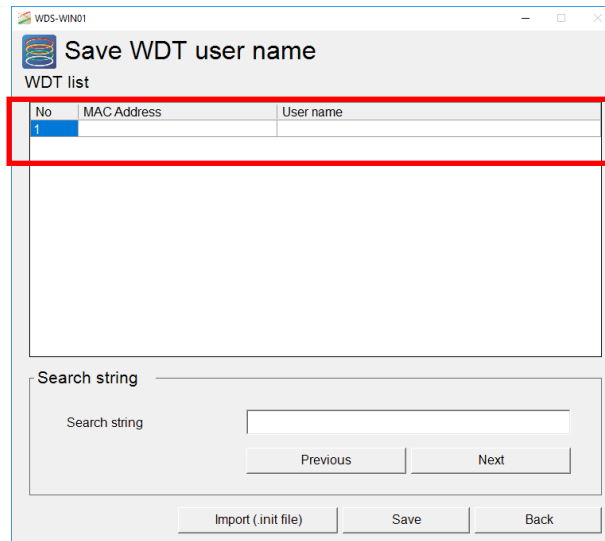
Note
In the **MAC address** field marked in red, enter the transmitter MAC address for each equipment in the "Kit Sheet", and in the **User name** field, register the equipment name from the "Target Equipment Investigation" sheet.

(2-2) Set the receiver's connection destination.

Set up the information of the receiver to connect with, based on the LAN network settings in the "Receiver Kit" sheet.
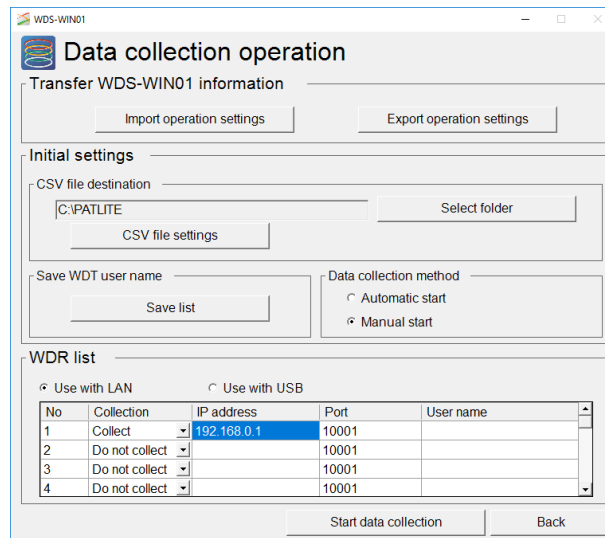
(3) Check transmitter/receiver connections and .csv log file

Two lists are displayed; the receiver list appears in the WDR Information window (as shown below), and the transmitters are displayed by their receiver in the WDT Information window. Check that all receivers and transmitters are connected, then check that the transmitters are connected to their designated receivers.
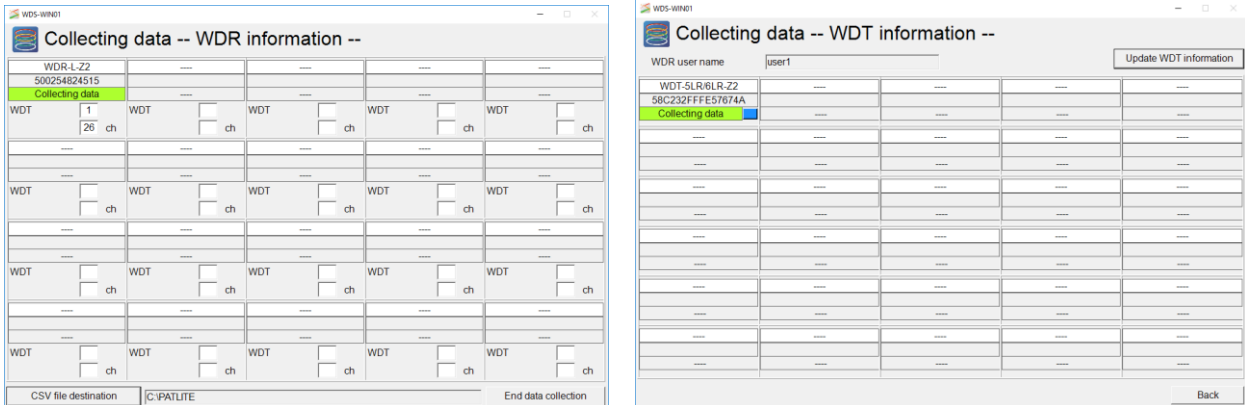
When clicking "CSV file destination", the CSV file can be opened as read-only for checking.

This completes the initial system operation check.

Establish a test operation period of at least one week and check the operation log data to ensure proper setup.

5. Maintenance

(1) New Equipment Installation

Specify the equipment manufacturer to install in the WD. After equipment delivery, remove the transmitter to re-configure the various settings by using the Startup Kit.

(See Step 6) If the LME or LE Series WD compatible signal towers is specified, request the color and wiring for the transmitter power supply. By doing so, the work required after equipment delivery can be reduced. Also, tasks following equipment delivery can be omitted.

The following instructions are included with the LME / LE series WDT-6M-Z2 / WDT-5E-Z2 transmitter.

PATLITE

Please read prior to installation.

Connecting the power supply to the transmitter

1) A voltage has to be connected to the transmitter by connecting it to the signal line of a Tiered Signal Tower.

2) Select an unused Signal Line as the power source for the AirGRID Transmitter. The default value is set for the White Wire as the power source for the AirGRID Transmitter.

3) The following is a wiring example for the LE and LME Models.

The following instructions are included with the LR series WDT-6LR-Z2 / WDT-5LR-Z2 / WDT-4LR-Z2 transmitter.

(2) Equipment Relocation

- Remove the transmitter from equipment be relocated, that will use the Startup Kit at the office to change the settings for the WD wireless channel and ExtendedPanID to the area where equipment will be relocated. (Refer to Step 6. WD Initial Settings.)
- The operation log data is the same no matter which receiver the data passes through.
- If the equipment name and so on, need to change, change the user name of the transmitter. (Refer to "Step 8. Check system operation" in "4. WD Installation Steps until starting operations")

(3) WD Failure

When there is a receiver failure, use the spare receiver used from the Startup Kit during setup as a replacement receiver while the main receiver is being repaired. The transmitter won't be able to get operation data during the repair period, so it is recommended to have spare devices available in such situations.

6. Reference 1: Frequency Table

Wireless LAN IEEE802.11b/g Frequency Table

Wireless LAN	Mid-range Frequency (MHz)	Bandwidth (MHz)	Occupied Bandwidth
Ch1	2,412	22	2,401-2,423
Ch2	2,417	22	2,406-2,428
Ch3	2,422	22	2,411-2,433
Ch4	2,427	22	2,416-2,438
Ch5	2,432	22	2,421-2,443
Ch6	2,437	22	2,426-2,448
Ch7	2,442	22	2,431-2,453
Ch8	2,447	22	2,436-2,458
Ch9	2,452	22	2,441-2,463
Ch10	2,457	22	2,446-2,468
Ch11	2,462	22	2,451-2,473
Ch12	2,467	22	2,456-2,478
Ch13	2,472	22	2,461-2,483
Ch14	2,484	22	2,473-2,495

Channels that don't interfere with each other are displayed in the same color.

ZigBee Frequency Channels

ZigBee	Mid-range Frequency (MHz)	Bandwidth (MHz)	Occupied Bandwidth
Ch11	2,405	2	2,404 - 2,406
Ch12	2,410	2	2,409 - 2,411
Ch13	2,415	2	2,414 - 2,416
Ch14	2,420	2	2,419 - 2,421
Ch15	2,425	2	2,424 - 2,426
Ch16	2,430	2	2,429 -,2,431
Ch17	2,435	2	2,434 - 2,436
Ch18	2,440	2	2,439 - 2,441
Ch19	2,445	2	2,444 - 2,446
Ch20	2,450	2	2,449 - 2,451
Ch21	2,455	2	2,454 - 2,456
Ch22	2,460	2	2,459 - 2,461
Ch23	2,465	2	2,464 - 2,466
Ch24	2,470	2	2,469 - 2,471
Ch25	2,475	2	2,474 - 2,476
Ch26	2,480	2	2,479 - 2,481

ZigBee Channels compatible with Wireless LAN

Wireless LAN	ZigBee	Mid-range Frequency (MHz)	Bandwidth (MHz)	Occupied Bandwidth
Ch1		2,412	22	2,401-2,423
	Ch15	2,425	2	2,424 - 2,426
Ch6		2,437	22	2,426-2,448
	Ch20	2,450	2	2,449 - 2,451
Ch11		2,462	22	2,451-2,473
	Ch25	2,475	2	2,474 - 2,476
	Ch26	2,480	2	2,479 - 2,481

7. Reference 2: Body Unit Pin Assignments

■ Body Unit, MJ Connector Pin Assignments:

PIN number ①
PIN number ②
PIN number ③
PIN number ④
PIN number ⑤, ⑥
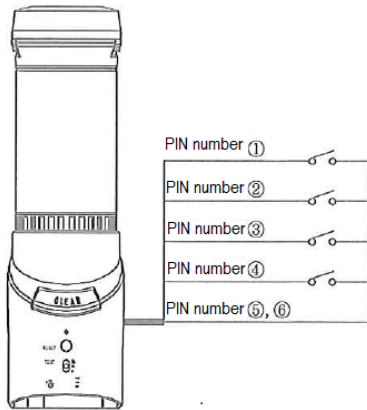
Table 1

PIN number	Recognition signal
①	Signal tower red state
②	Signal tower amber state
③	Signal tower green state
④	Signal tower blue state
⑤	Tower light COM
⑥	Tower light COM

⑥ ⑤ ④ ③ ② ①
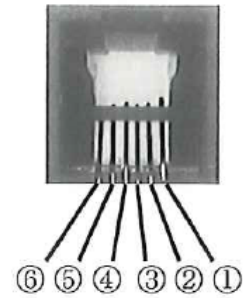
⚠ CAUTION

Connect a non-voltage contact such as a switch to the MJ connector.

8. Reference 3: Sample Target Equipment Investigation Sheet

AirGRID WD series installation facility check sheet

	Equipment information			Information of existing signal light								
	Control number	Name (user name)	Manufacturer	Model	Power supply voltage	Mounting Method	Display color (from the top)	Buzzer function	Flashing operation	Flashing cycle	Model is WD compatible	Replacement model
Example	30-115	OX Seiki	PATLITE	LHE-_02	DC24V	Attach directly	RYG	No	Yes	1 second	X	LME-302W-RYG
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												

9. Reference 4: Sample Kit Check Sheet

■ Transmitters

AirGRID WD-Z2 Transmitter Kitting Check Sheet

| No. | Equipment information | | | Transmitter settings | | | | | | | | | | | | | Check | Group No. |
	Control number	① User name (WDS file settings)	Model	Counter mode DIP SW 2	version	② MAC Address	③ ExtendedPanID	Connection allowed	④ Wireless channel	Transmission mode	⑤ Flashing cycle	⑥ Power supply wire	Simple counter function	Counter upper limit value		
Example	30-115	#3 spindle process machine	WDT-6M-Z2	OFF	2.02	001697FFFE979E64	0000 0000 0000 0001	Permitted	21	Send	Standard	White	Do not use	0	☑	1
1															☐	
2															☐	
3															☐	
4															☐	
5															☐	
6															☐	
7															☐	
8															☐	
9															☐	
10															☐	
11															☐	
12															☐	
13															☐	
14															☐	
15															☐	
16															☐	
17															☐	
18															☐	
19															☐	

Create the transmitter "Kit check sheet" along with the "Installation Equipment Check Sheet".

■ Receivers

AirGRID WD-Z2 Receiver Kitting Check Sheet

| | Group No. | Version | Ethernet mac | Wireless Settings | | LAN Settings | | | |
				ExtendedPanID	Channel	IP address	Subnet mask	Default GW	Port number
Example	1	1.00	00-20-4A-BC-BD-C4	0000 0000 0000 0001	21	192.168.0.12	255.255.255.0	192.168.0.254	1001
1									
2									
3									
4									
5									

The yellow highlighted items above are required setting items for basic WD functions described in this manual.

10. Reference 5: Installation Steps and Task Allocation

AirGRID WD-Z2 series installation and task assignment table

Step	Task Description / Check Item	Primary Contact
1. Decide on target facility	Target facility should consider collecting equipment operation data.	
2. Determine how to use facility operation log	Use WD partner packages, or develop within the company	
3. Radio Environmental Survey	Wireless 2.4 GHz band radio environment survey (Radiation noise from manufacturing equipment, wireless LAN, etc.) Determine optimum receiver installation location Check radio waves received from target equipment	
4. Target equipment Signal Tower survey	Indicator Light for each equipment	
5. Device Settings List	Determine WDT configuration and select grouping of model and equipment	
6. WD Default Settings	Transmitter/Receiver wireless Ch, Pan ID, other settings Various Transmitter Settings Receiver IP address	
7. Installation	Receiver Installation - LAN Cable, transmitter power supply installation - WD compatible equipment: additional wiring for WDT power supply signal line - WD non-conforming equipment: signal light replacement, wiring	
8. System Operation Check	Create definition file Check WDS-AUTO2 log data	

11. Reference 6: Signal Tower Model Code

■ LME Model Code:

Model Code

LME-502FBW-RYGBC-Z

Model
Tiers

Rated Voltage

02	AC/DC24V
10	AC100V
20	AC220V

Specifications

None	Light on
FB	Light on/Flashing/Buzzer

Color

R	Red	B	Blue
Y	Amber	C	White
G	Green		

Top tier, from the left

For clear lens type only

Mounting Specifications

None	Pole mounting (round base)
W	Direct mounting
L	Pole mounting (L-type fittings)
K *	Pole mounting (detachable)

* FB specifications only

*Other than the L-type, because the pole is aluminum the length cannot be changed.

■ LE Model Code:

Model Code

LE-502FBP-RYGBC

Model
Tiers

Rated Voltage

01	AC/DC12V
02	AC/DC24V
10	AC100V
20	AC220V

Specifications

None	Light on
FB	Light on/Flashing/Buzzer

Mounting Specifications

P	Pole mounting
W	Direct mounting

Color

R	Red
Y	Amber
G	Green
B	Blue
C	White

Top tier, from the left
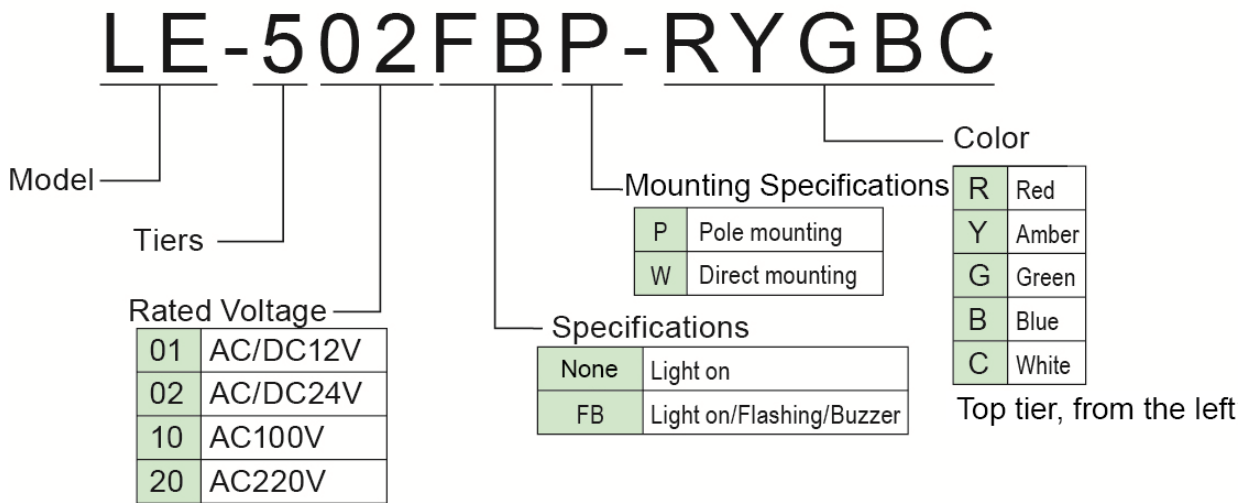
■ LR Series Model Code:

Model Code

Example) **LR6-502WJBW-RYGBC-Z**

Model ① ② ③ ④ ⑤ ⑥ ⑦

LED Colors include: R (Red), Y (Yellow), G (Green), B (Blue), C (White). Position is the top tier, starting from the left

① Size
4 = Φ40
5 = Φ50
6 = Φ60
7 = Φ70

② Tiers
1 = Tier 1
2 = Tier 2
3 = Tier 3
4 = Tier 4
5 = Tier 5

③ Rated Voltage
01 = DC12V *1
02 = DC24V
M2 = AC100 to 240V *2

④ Mounting and Wiring Specifications
WJ = Direct / Cable
LJ = Pole Mount / L-angle Bracket /Cable *3
PJ = Pole Mount / Circular Bracket / Cable *3
QJ = Pole Mount / Hinged Bracket / Cable *4

⑤ Flashing/Buzzer
B = Flashing/Buzzer
N = None

⑥ Body color
W = Off-white (Material: Polycarbonate Resin)
A = Off-white *5 (Material: ABS and AS resin)

⑦ Globe color
None = Globe Color
Z = Clear Globe *6

*1 LR5 only / *2 WJ, PJ, or LJ for LR4 or LR6 only / *3 LR4, LR5, or LR6 only / *4 LR4 or LR6 DC 24 V only / *5 WJ or PJ for LR4 or LR6, or LJ in DC 24 V for LR4 or LR6 / *6 LR4 or LR6 only

12. Reference 7: WDS Selection

Select the WDS application in accordance with the system needs.

Select WDS-AUTO2 or WDS-WIN01 based on the Settings by Model table and Function Compatibility table below.

(1) Model vs. WDS application Table

Yes: Using   No: Not Using

Receiver	WDR-L-Z2			WDR-L/ WDR-LE	WDS System to select for the application
Transmitter	WDT-4LR-Z2/ WDT-5LR-Z2/ WDT-6LR-Z2		WDT-5E-Z2/ WDT-6M-Z2	WDT-5E/ WDT-6M	
	Extension Format	Standard Format			
Settings	Yes	Yes	Yes	No	WDS-WIN01
	Yes	Yes	No	No	
	Yes	No	Yes	No	
	Yes	No	No	No	
	No	Yes	Yes	No	WDS-WIN01 or WDS-AUTO2
	No	Yes	No	No	
	No	No	Yes	No	
	No	Yes	Yes	Yes	WDS-AUTO2
	No	Yes	No	Yes	
	No	No	Yes	Yes	
	No	No	No	Yes	
	Yes	Yes	Yes	Yes	This combination of settings cannot be used
	Yes	Yes	No	Yes	
	Yes	No	Yes	Yes	
	Yes	No	No	Yes	

*For WDS-AUTO2, use Version 2.00 or later.

(2) Function Compatibility Table

Yes: Function available   No: Function not available

Function		WDS-AUTO2	WDS-WIN01
Data collection			
Maximum number of transmitters (WDT units)		400 units[*1]	600 units[*1]
CSV file specifications			
File creation method	Common	Yes	Yes
	Common (file name)	Yes	Yes
	Per WDR	No	Yes
	Per WDT	No	Yes
File division method	Divide by date	Yes[*2]	Yes
	Divide by time	No	Yes
	Divide by file size	No	Yes
	Do not divide	Yes[*3]	Yes
CSV file information	Date/Time	Yes	Yes
	MAC address (WDT)	Yes	Yes
	User name (WDT)	Yes	Yes
	Red information	Yes	Yes
	Amber information	Yes	Yes
	Green information	Yes	Yes
	Blue information	Yes	Yes
	White information	Yes	Yes
	Buzzer information	No	Yes
	WDT monitoring information	Yes	Yes
	Counter value	Yes	No
CSV file format	Character code	shift JIS	Unicode (UTF-8)
	Line-break code	CR+LF	CR+LF
Other functions			
Confirm display of WDT call		No	Yes
Settings data	Import	No	Yes
	Export	No	Yes
Import .init file	CSV file destination	Yes	No
	Schedule settings	Yes	No
	CSV file information	Yes	No
	Transmitter User name	Yes	Yes

*1: Maximum number when the maximum of 20 receivers are connected.

*2: Fixed value when selecting "Common" for the file creation method.

*3: Fixed value when selecting "Common (file name)" for the file creation method.

13. Reference 8: WDS-AUTO2 to WDS-WIN01 Migration

(1) Statement Comparison Table

Because the statements displayed in the WDS-AUTO2/WD-Z2-specific system settings are partially different than those for WDS-WIN01, replacement names are shown in the table below.

a. WDS-AUTO2 and WDS-WIN01 comparison table

No	WDS-AUTO2	WDS-WIN01
1	Transmitter	WDT
2	Receiver	WDR
3	CSV output destination settings log format	CSV file format
4	automatic CSV file name	Common
5	fixed CSV file	Common (file name)
6	Transmitter removed/no reply notification	WDT monitoring information

b. Comparison table of WD-Z2-specific system settings and WDS-WIN01

| No	WD-Z2-specific system settings	WDS-WIN01
1	Transmitter	WDT
2	Receiver	WDR
3	(Transmission mode) Transmit	Immediate transmission
4	(Transmission mode) Stop transmission	Request transmission
5	Cycle data	Determine Signal Tower Input
6	No flashing	Normal
7	Standard flashing	Flashing (short)
8	Medium-speed flashing	Flashing (medium)
9	Low-speed flashing	Flashing (long)
10	Power supply	Power supply settings
11	Start setting	Network startup method

(2) Notes when migrating to WDS-WIN01

Only if the migration is from WDS-AUTO2 to WDS-WIN01, and the visualization application in the customer's system configuration is not changed, note the following.

a. (2-1) CSV file output method

b. (2-2) WDT-4LR-Z2/WDT-5LR-Z2/WDT-6LR-Z2 power settings and signal tower information format
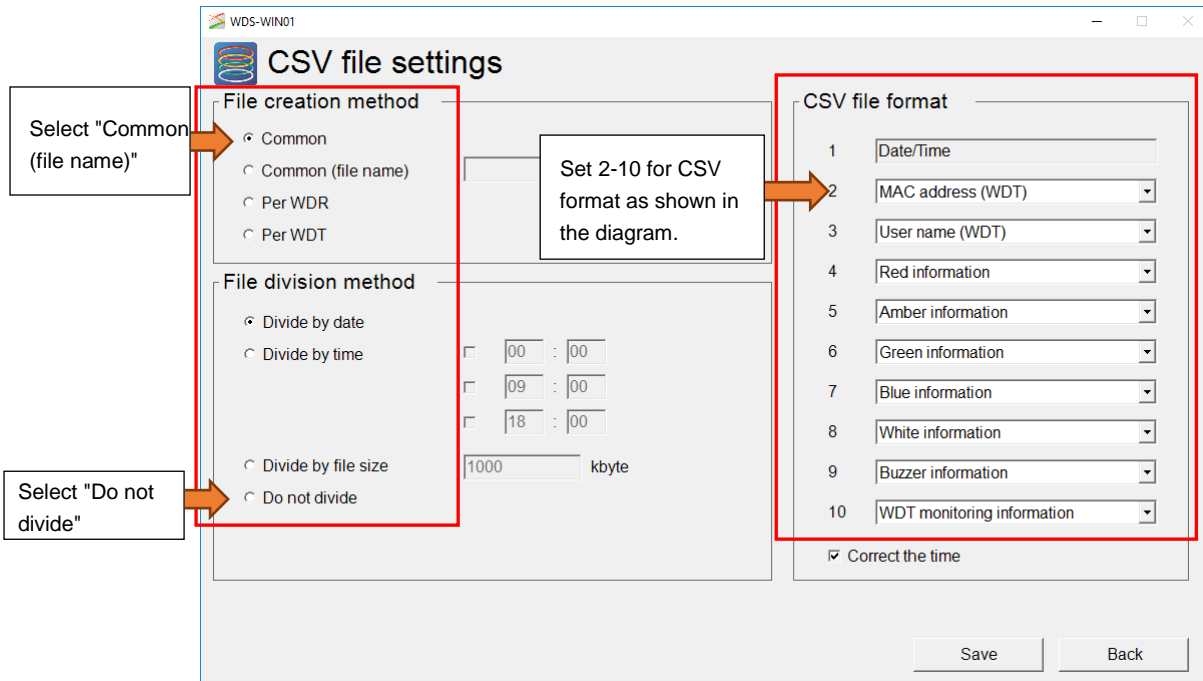
(2-1) CSV file output method

Check the diagram below and configure the settings in conjunction with the "CSV output" settings for the WDS-AUTO2.

① If an Auto-generate CSV file name is selected for "CSV output":
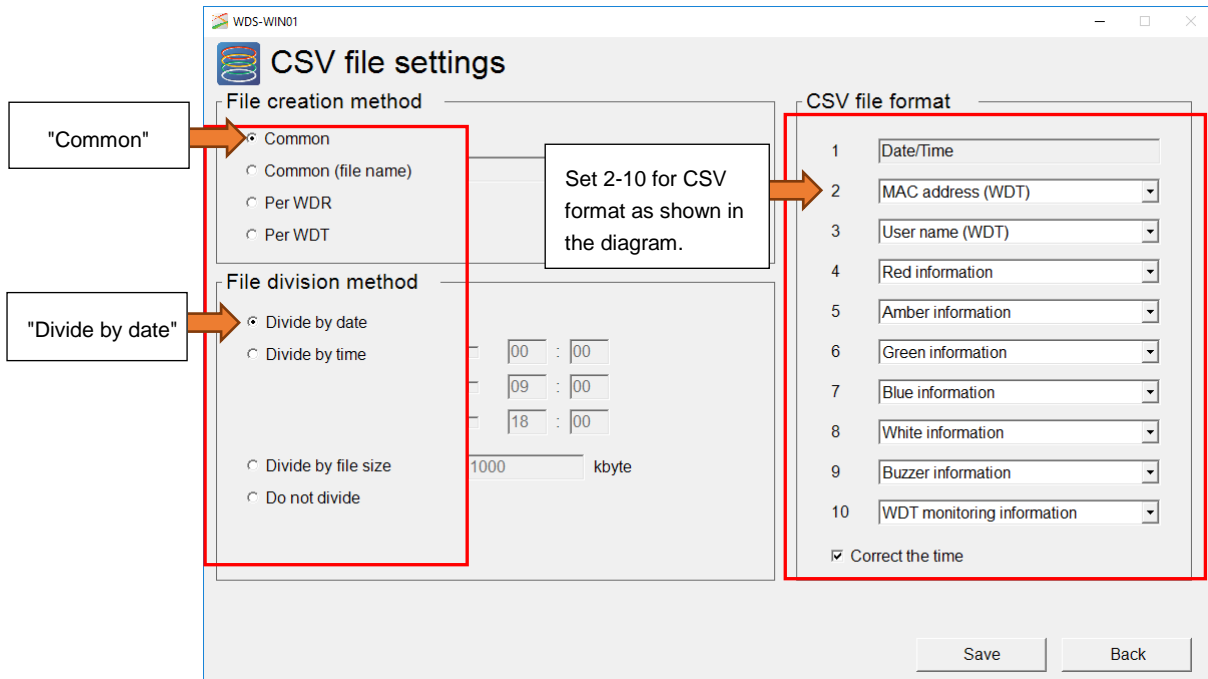
② If a Fixed CSV file name is selected for "CSV output":

(2-2) WDT-4LR-Z2/WDT-5LR-Z2/WDT-6LR-Z2 power settings and signal tower information format

In WDS-AUTO2, the WDT monitoring status ("0", "9") output is exported as CSV data to the signal wire information string specified in the transmitter's power settings.

Therefore, when the CSV output is set in (2-1), it is necessary to set one of the signal wires as the transmitter's power settings in WDS-WIN01.

For the WDT-4LR-Z2/WDT-5LR-Z2/WDT-6LR-Z2, refer to "Reference 9: Using WDT-4LR-Z2/WDT-5LR-Z2/WDT-6LR-Z2 in WDS-AUTO2" to set the appropriate power settings.

14. Reference 9: Using WDT-4LR-Z2/WDT-5LR-Z2/WDT-6LR-Z2 in WDS-AUTO2

In WDS-AUTO2, the WDT monitoring status ("0", "9") output is exported as CSV data to the signal wire information string specified in the transmitter's power settings.

Therefore, when the CSV output is set in (2-1), it is necessary to set one of the signal wires as the transmitter's power settings.

In order for the data to be collected correctly by WDS-AUTO2, set the following for WDT-4LR-Z2/WDT-5LR-Z2/WDT-6LR-Z2.

(1) WDT-4LR-Z2/WDT-5LR-Z2/WDT-6LR-Z2 (power settings)

Specify "Signal wire color" in the power settings.

Operation settings	Setup value
Power supply settings	Select signal wire colors in which data will not be collected, outside the wire to be used for "Power Supply Setting".

*Signal wire color selection: Red, yellow, green, blue, white

---

⚠ CAUTION

If the "Power supply wire" is specified for the power settings, the WDT monitoring status ("0", "9") output will not be generated as CSV data.

Moreover, since the WDS-AUTO2 will determine the transmitter has an invalid state, be sure to select anything other than "Power supply wire".

---

(2) Select Signal Tower information format

Select the "Standard Format".

DIP Switch	Setting
No3	OFF (Standard Format)

⚠ CAUTION

The WDT-4LR-Z2/WDT-5LR-Z2/WDT-6LR-Z2 does not support the extended format, so always select the standard format. WDT-4LR-Z2/WDT-5LR-Z2/WDT-6LR-Z2 are shipped with the standard format as the factory default value.

PATLITE Corporation G2J

PATLITE Corporation ※Head office	■www.patlite.com/
PATLITE (U.S.A.) Corporation	■www.patlite.com/
PATLITE Europe GmbH ※Germany	■www.patlite.eu/
PATLITE (SINGAPORE) PTE LTD	■www.patlite-ap.com/
PATLITE (CHINA) Corporation	■www.patlite.cn/
PATLITE KOREA CO., LTD.	■www.patlite.co.kr/
PATLITE TAIWAN CO., LTD.	■www.patlite.tw/
PATLITE (THAILAND) CO., LTD.	■www.patlite.co.th/
PATLITE MEXICO S.A. de C.V.	■www.patlite.com.mx/