# Product User Guide

## WTDL-RX

**WTDL-RX**
Wireless Transceiver

# Product Notes

Model WTDL-RX is designed with a high powered transceiver that has a substantially long transmission range, meaning better performance in occluded environments (ovens, refrigerators, etc.). This WTDL-RX also includes an external antenna, allowing more flexibility with mounting positions in both orientation and proximity to metal walls.  This may be used as a repeater, or directly plugged into the PC.

## Transmission Distance

The WTDL-RX transmits to other WTDL-RXs up to 2500 feet maximum typical outdoors/line of sight, 700 feet maximum typical indoors/urban. The WTDL-RX transmits to data loggers up to 2000 feet maximum typical outdoors/line of sight, 500 feet maximum typical indoors/urban. The WTDL-RX can connect to a maximum of 64 data loggers. The WTDL-RX transmits on a frequency of 2.405GHz - 2.475GHz.

## Operating Environment

The WTDL-RX is rated for use in an environment with temperatures from -20°C to 85°C and a humidity range of 0% to 95% RH non-condensing. The WTDL-RX is rated IP40 and is protected against solids that are greater than 1mm in size. This device is not water resistant.

## LEDs

The red LED indicates that the device has power. The green LED will blink when communicating with other Dwyer WTDL devices.

# Installation Guide

## Installing the Software

Insert the DL700 Software Flash Drive into an open USB port on a Windows PC. If the autorun does not appear, locate the drive on the computer and double click on **Autorun.exe**. Install the **Dwyer Software** and **USB Interface Drivers (under Drivers and Third Party Tools)**. The software can also be downloaded from www.dwyer-inst.com.

## Channel Programming

The WTDL-RX transmits data on the 2.4GHz band, channel 11. Each Dwyer Wireless Data Logger and WTDL-RX has a set of dip switches with which the channel may be programmed.

Any Dwyer WTDL Data Logger or WTDL-RX that is on the same network is required to use the same channel. If they are not on the same channel, the devices will not communicate with one another.

**WTDL Series:** Switch the wireless ON / OFF switch to '0'. The dip switches are located on the back of the device. Switch the wireless ON / OFF switch back to '1'.

## Deploying and Activating Devices

**Step 1:** Plug the WTDL-RX into the USB port on the base station computer. *(Additional WTDL-RXs can be used as repeaters to transmit over greater distances)*

**Step 2:** If using multiple WTDL-RXs plug each one into a wall outlet in the desired locations. *(If transmitting over a distance greater than 700 feet indoors or 2500 feet outdoors or there are walls/obstacles/corners that need to be maneuvered around, set up additional WTDL-RXs as needed.)*

**Step 3:** Verify that the data loggers are in wireless transmission mode. *(See Channel Programming steps above)*

**Step 4:** On a Windows PC, launch the DL700 software program. All active data loggers will be listed in the software showing that the device(s) are recognized.

**Step 5:** To activate the data loggers, click on one to highlight, then click the **Claim** icon, and then click the **Start** button. Repeat this step to activate additional listed data loggers.

The default wireless channel for Dwyer wireless devices is channel 11. Different wireless channels may be used to create multiple networks in one area, or to avoid wireless interference from other devices. The diagram below show the orientations available of the switches for each channel. Channel 26 (all switches in the up position) is not supported.

| | | | |
|---|---|---|---|
| Channel 11 | Channel 12 | Channel 13 | Channel 14 |
| Channel 15 | Channel 16 | Channel 17 | Channel 18 |
| Channel 19 | Channel 20 | Channel 21 | Channel 22 |
| Channel 23 | Channel 24 | Channel 25 | Channel 26 (not supported) |

Follow the instructions below to configure the channel settings for Dwyer WTDL Data Loggers.

**WTDL-RX:** To program the channel on an WTDL-RX, first unplug the WTDL-RX. Use a Phillips head screwdriver to unscrew the enclosure. The dip switches are located on the front of the PCB circuit board. Change the dip switches to match the desired channel settings by referring to the diagram above. Reconnect the WTDL-RX.

## Mounting Instructions

For best wireless performance, both the WTDL-RX and the Dwyer WTDL Data Loggers should be mounted in the same orientation. This usually means that the external antenna should be pointing straight up. The antenna can pivot to accommodate either a wall mount or a desk mount.
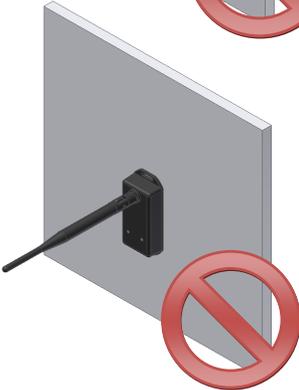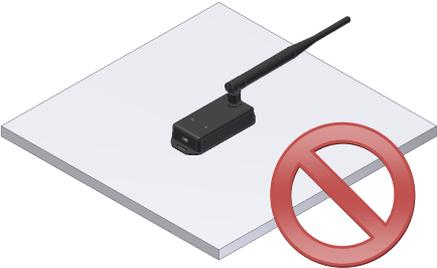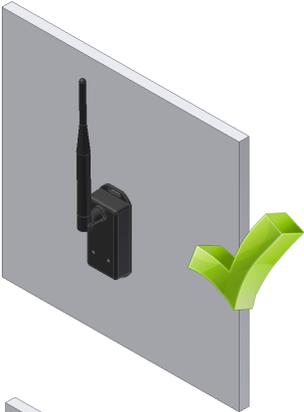
# Compliance Information

• "This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation."

• "To satisfy FCC RF Exposure requirements for mobile and base station transmission devices, a separation distance of 20cm or more should be maintained between the antenna of this device and persons during operation. To ensure compliance, operation at closer than this distance is not recommended. The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter."

• "This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement."

• "Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante."

| | |
|---|---|
| Interface Type | USB (to PC) / Wireless (to Data Logger) |
| Operating Environment | -20 to +85°C, 0 to 95%RH non-condensing |
| LED Indicators | Red & Green |
| Enclosure Materials | ABS Plastic (body), PVC Plastic (antenna) |
| Dimensions | Enclosure: 3.8" x 1.6" x 0.8" / Antenna: 2.7" |
| Weight | 1.4oz (40g) |
| Compatible Data Loggers: | WTDL Series |
| Approvals | FCC ID: OA3MRF24J40MC, IC#: 7693A-24J40MC, CE, ETSI 300 328 (EU R&TTE) |
| Transmission Distance (To other WTDL-RX's) | 2,500' max. outdoors - line of sight unobstructed 700' max. indoors - typical urban environment |
| Transmission Distance (To data loggers) | 2,000' max. outdoors - line of sight unobstructed 500' max. indoors - typical urban |
| Maximum number of connected data loggers | 64 |
| Sensitivity: | -95dBm Typical |
| Frequency | 2.405GHz - 2.475GHz |
| Ingress Protection | IP40 |

*Specifications subject to change.*
*See Dwyer's terms and conditions at www.dwyer-inst.com*