KNECT

# One to Many System

MODEL NUMBERS: KEP-200, KGW-100, ARF-T100

The KNECT™ One to Many system is a multipoint wireless bridge, capable of transmitting data using either Wiegand or OSDP, that can be remotely managed and monitored used the Aether RF IoT platform.



## FEATURES

**Cloud Connected:** Optionally register the device on Aether RF IoT to unlock advanced reporting and diagnostic features.

**Range:** Aether RF's proprietary radio technology transmits reliable signal up to a mile through obstructions, and up to 25 miles line of sight.

**Operation:** Supports up to 8 KNECT™ Endpoints per Gateway, and 2 KNECT™ Gateways per system.

## BENEFITS

**Expanded coverage:** Transmitt data to up to eight remote access points using Aether RF's proprietary radio technology, all from one powerful source.

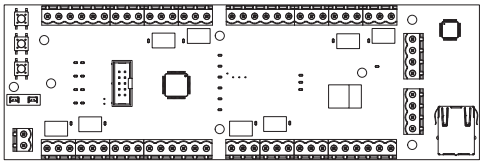
**Less hardware:** Reduces the amount of devices required on site compared to traditional point to point wireless bridges.

**Convenient size:** Designed to accommodate a wide variety of site specifications, each device in the system can easily fit alongside existing infrastructure.

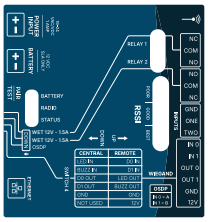
## DEVICES

The KNECT One to Many System is composed of several critical pieces of equipment; KNECT Gateways, an ARF Tether, and multiple KNECT Endpoints. Each device has a minimum and maximum quantity that a single One to Many System can support.

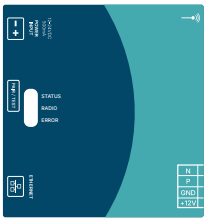
| MINIMUM EQUIPMENT | MAXIMUM EQUIPMENT |
|---|---|
| (1) KNECT Gateway (KGW-100)<br>(1) ARF Tether (ARF-T100)<br>(2) KNECT Endpoint (KEP-200) | (2) KNECT Gateway (KGW-100)<br>(1) ARF Tether (ARF-T100)<br>(8) KNECT Endpoint (KEP-200) |



KNECT Gateway
(KGW-100)



KNECT Endpoint
(KEP-200)



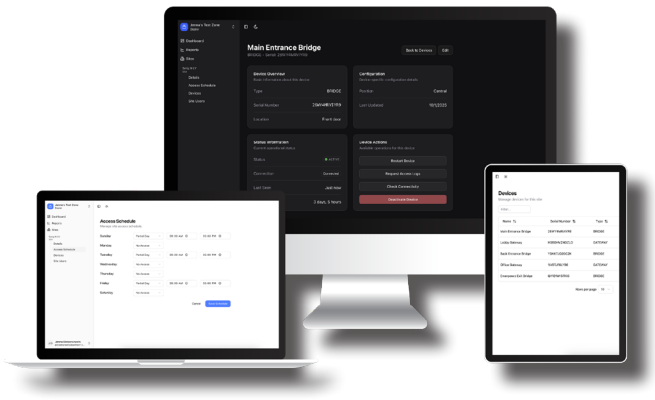
ARF Tether
(ARF-T100)

## CLOUD CONNECTED

It is recommended that the One to Many system be onboarded into the Aether RF IoT cloud platform in order to obtain detailed insights on device performance. Device registration should occur once your primary device is connected to ethernet.

If your organization is not already registered, it is recommended you do so prior to installation by visiting:

**AetherRFiot.com/register/dealer**



INSTALL GUIDE (WIEGAND)

# KNECT One to Many Kit

The KNECT One to Many Kit includes the foundational pieces necessary to set up a One to Many System. Depending on your installation specifications, additional hardware may be required.



## BEFORE YOU BEGIN

The following equipment is necessary to perform basic system installation and should be included in your kit.

- (1) ARF Tether with compatible transformer
- (1) KNECT Gateway
- (2) KNECT Endpoints with compatible transformers

**⚠ The devices included in the KNECT One to Many system are NOT water resistant. ⚠**

**NOTE:** Depending on the specifications of your installation, additional hardware may be required to complete the system setup. This hardware will need to be purchased seperately.

One additional Gateway (KGW-100) and up to six additional Endpoints (KEP-200) can be used if your installation covers additional access points. However, **the One to Many system will not support more than two Gateways and will never require more than one Tether.**

Additionally, **If your installation requires OSDP, you will need to purchase and install an OSDP add-on for the Gateway.**

## MOUNTING CONSIDERATIONS PER DEVICE

**Gateway**

- Mount the Gateway in a secure dry place, near the site's primary access control panel.
- Do not mount the device in areas that may be susceptible to damage due to tampering or the elements.

**Tether**

- Mount the Tether in a location that provides the best signal support from the Gateway to the various Endpoints on site. This location should be an area where the antenna has a mostly-unobstructed airway, preferably high and near an exterior wall or window if mounted indoors. You will want to note the location of the Tether for future service calls.

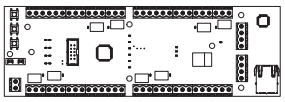
**Endpoints**

- Before mounting, ensure the antenna is tight enough and doesn't fall or swing freely in any position.
- Mount the unit in an area where the antenna has a mostly-unobstructed airway, preferably high and near an exterior wall or window if mounted indoors.

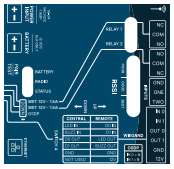
## SYSYEM DESIGN AND CONFIGURATION

The One to Many System has 3 key components. It is recommended that each component be installed in the following order.

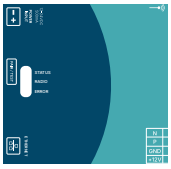
1. Mount, Power, and Wire the **Gateway**
2. Wire, mount, and Configure the **Tether**
3. Power, Pair, and Mount each **Endpoint**



KNECT Gateway (KGW-100)



KNECT Endpoint (KEP-200)

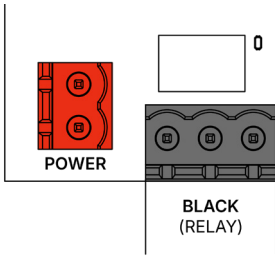


ARF Tether (ARF-T100)

## STEP 1: Mount, Power, and Wire the Gateway

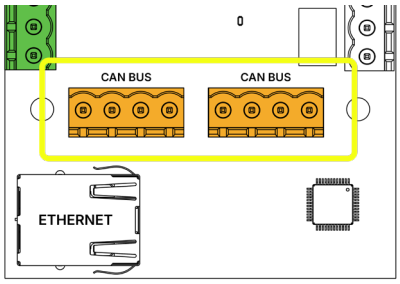
**1. Mount the Gateway** according to the mounting specifications.

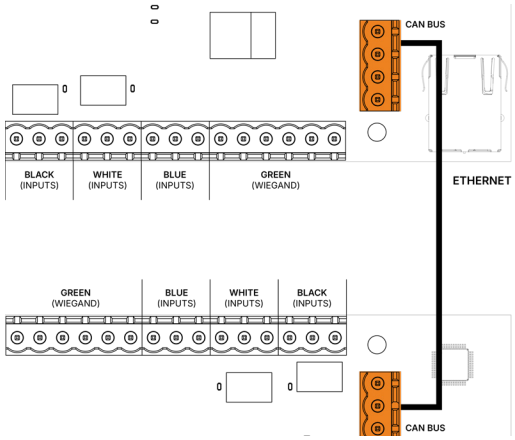
**2. Power the Gateway** by connecting 12-24V DC power to the RED terminal block on each Gateway.



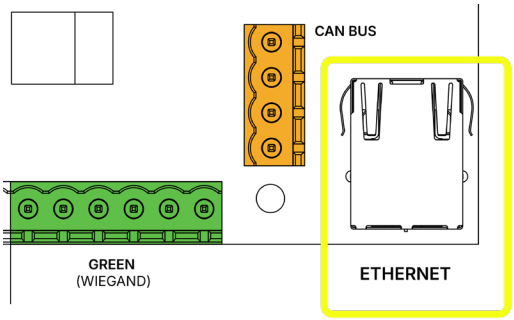
## **STEP 1:** Mount, Power, and Wire the **Gateway**

**3. If you are connecting multiple Gateways**, you'll need to wire the Gateways together through the orange CAN bus.

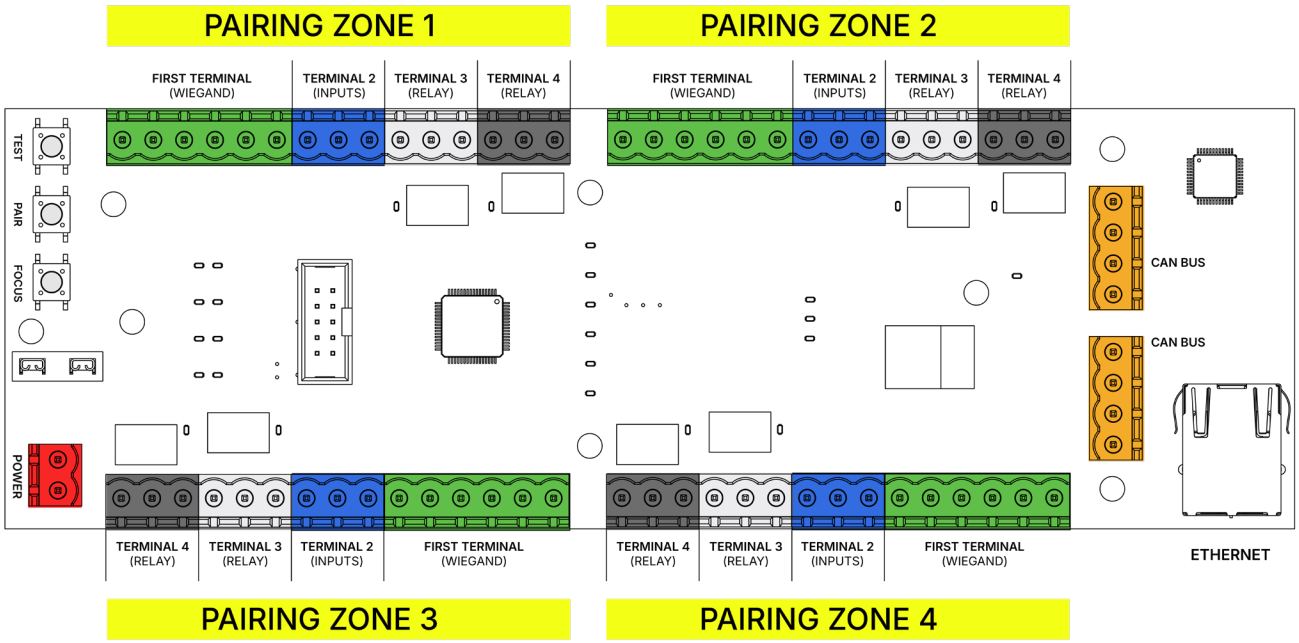



**4. Connecting Gateways to Ethernet.** If you intend to utilize the cloud-based monitoring features of the One to Many system, you will need to wire the Gateway an Ethernet connection. Ethernet is also required in the event firmware updates are necessary.




**5. Connecting Gateways to a Control Panel.** Each Gateway has four pairing zones that will need to be connected to the corresponding data points for each access point (DOOR) on the access control panel.



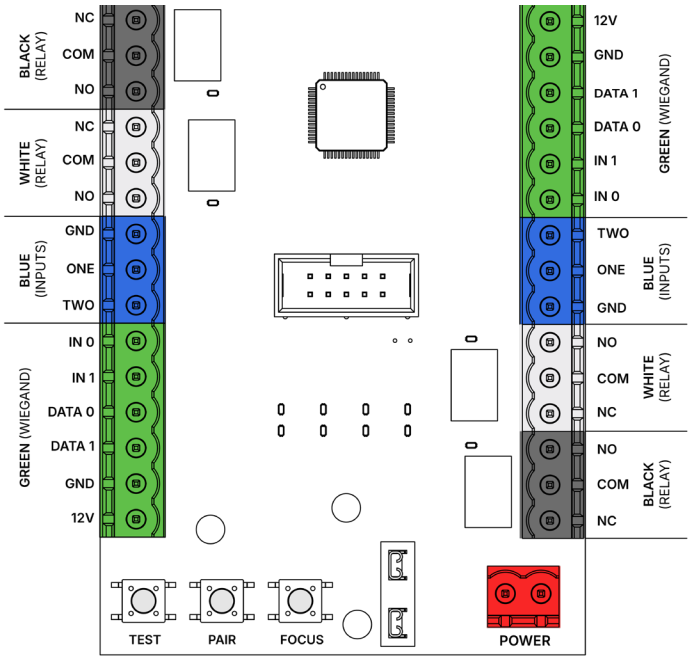
### Gateway Wiring Per Pairing Zone

**GREEN TERMINAL:**
Wires into 12V, Ground, Data 1, Data 0, LED (IN 1), Buzzer Control (IN 0)

**BLUE TERMINAL:**
Input 2, Input 1, Ground

**WHITE TERMINAL:**
Normally Open, COM, Normally Closed

**BLACK TERMINAL:**
Normally Open, COM, Normally Closed

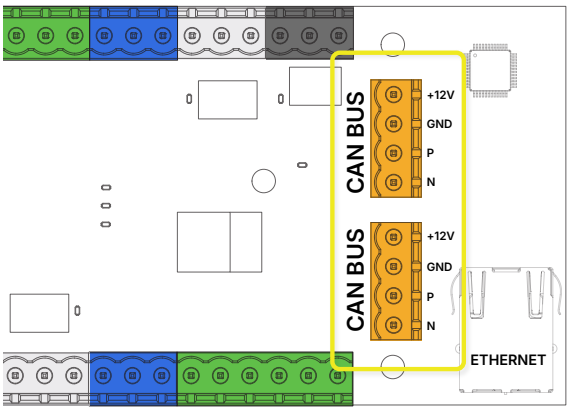


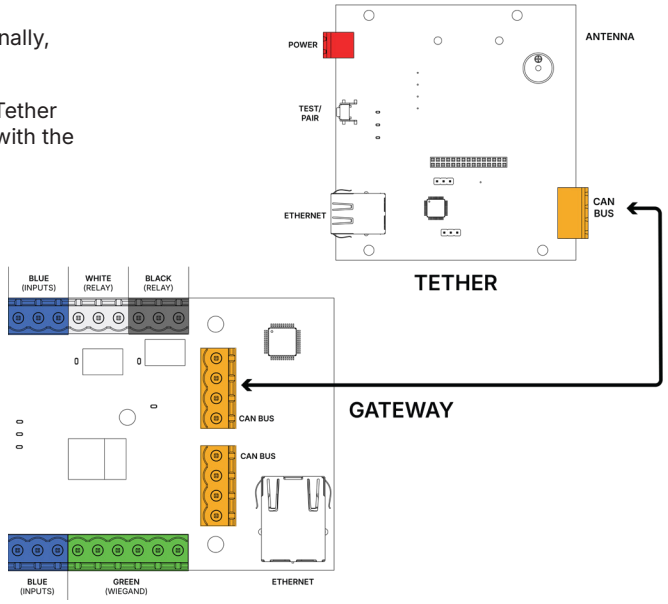

## STEP 2: Wire, mount, and Configure the **Tether**

**1. Mount the Tether** according to the mounting specifications.

**2. Connect the Tether to the Gateway** using the CAN bus to power. Optionally, connect 12-24V DC power to the red terminal block.

**3. The Tether will automatically connect and configure.** You'll know the Tether is properly connected when the Status LED on the Tether turns on along with the corresponding LED on the Gateway.

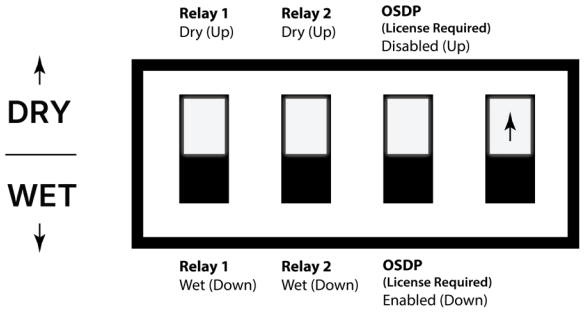



## STEP 3: Pair, Wire, and Mount each **Endpoint**

**1. Set the DIP Switches on each Endpoint** according to your site specifications, determining whether contacts will be either **WET or DRY.**

**NOTE:** The fourth DIP Switch will always be set to UP in a One to Many installation, as the Gateway will act as the Central Unit for all Endpoints.

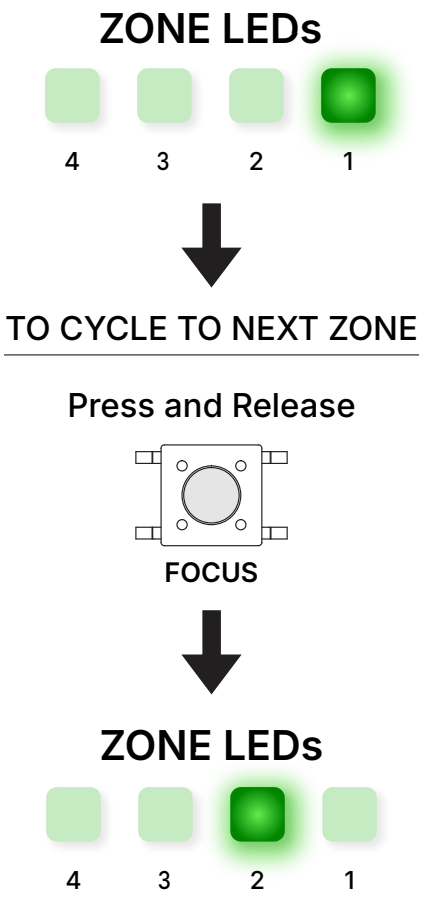


**2. Begin pairing Endpoints to the Gateway.** Each Gateway can host up to four Endpoints. If you have more than four Endpoints, you'll need to repeat this process for each Gateway.

**You do not need to adjust any setting on the Endpoint during pairing**, each Endpoint will enter Pairing Mode once powered.

1. Connect 16-24VAC/VDC power to the **Red** terminal block on the first Endpoint you wish to pair. **Do not power on more than one Endpoint at a time. This will disrupt the pairing process.**
2. Locate the **FOCUS** button on the Gateway. This will be used to select a pairing zone for the Endpoint. **You may only have 1 Endpoint assigned per zone.**
3. Press and release the **FOCUS** button to select your pairing zone. The LEDS of each quadrant will flash to indicate which zone you are currently in.
4. The Gateway will search for the available Endpoint and connect automatically. **This process must be done individually.** It is important you do not have more than one endpoint in Pairing Mode during this step.
5. Locate and Press the **PAIR** button on the Gateway to confirm pairing the Endpoint to your selected zone.
6. LEDs on the Endpoint will flash repeatedly to indicate pairing is in process, when the lights turn off pairing is complete.
7. Press the **TEST** button on the Gateway to initiate a test transmission to the Endpoint. Flashing RSSI lights on the Gateway will show the signal strength and confirm proper pairing. Both the Gateway and Endpoint will also beep twice when paired.
8. Press the **FOCUS** button on the Gateway to cycle to your next pairing zone.
9. Complete the same process (steps 2-8) for each additional Endpoint in your system.

*If using more than four Endpoints,* complete these steps on the second Gateway for Endpoints 5-8, treating them as if they were an original 1-4). **Only ONE Gateway should be connected to ethernet.**




**3. Begin connecting Endpoints to each access point.** (Door strike, Maglock, REX button, etc.). Each Endpoint in the One to Many system will follow the same wiring specifications.

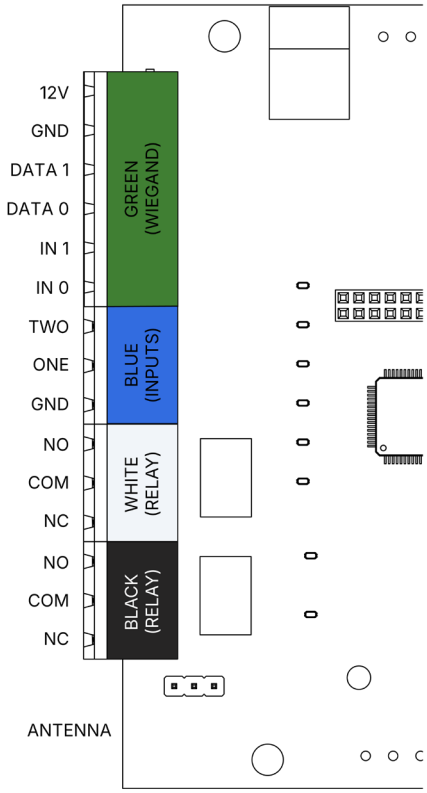
GREEN TERMINAL (Wiegand terminal): Wires into 12V, Ground, Data 1, Data 0, LED, Buzzer Control

BLUE TERMINAL (Inputs): Input 2, Input 1, Ground

WHITE TERMINAL: Normally Open, COM, Normally Closed

BLACK TERMINAL: Normally Open, COM, Normally Closed

ORANGE TERMINAL: Wires into optional battery backup, Use 12VDC sealed lead acid battery ONLY.




**4. Mount each Endpoint** according to the following mounting specifications.

- Before mounting, ensure the antenna is tight enough and doesn't fall or swing freely in any position.
- Mount the unit in an area where the antenna has a mostly-unobstructed airway, preferably high and near an exterior wall or window if mounted indoors.

## FUNCTIONAL TESTING

Setup is complete when pressing the **Test/Pair** button on the Endpoint causes the RSSI indicator to light up, confirming that a test packet was successfully sent to and received from the Gateway. Pressing **Test/Pair** will also have the device beep twice.

Alternatively, select a paired zone and press the **Test/Pair** button. This sends a packet to the Endpoint associated with that zone. The RSSI indicator should light up, confirming successful communication with the device.

## RSSI & OTHER LED'S

Each device has various LEDs to signal specific operating states, or performance insights. Understanding the main LED behaviors will improve both installation and troubleshooting.

### ENDPOINTS

**RELAY 1**
**RELAY 2**

These LED indicators will illuminate green when the relay is switched from NC to NO, if no LED is present then the relay is in the standard NC position.

**BATTERY**

The battery LED will flash green when the battery is charging. You can check the LED status on Aether RF IoT as well.

**RADIO**

The radio LED will flash on every transmit from the device (i.e. on a wiegand card scan or relay input).

**STATUS**

If no device is paired, it will flash once every 3 seconds. If atleast one device is paired, it will remain solid.

Will flash **twice** quickly on the REMOTE unit when radio communication is not in sync. This light should remain solid on both units during proper radio operation.

### TETHER

**RADIO**

The radio LED will flash on every transmit from the device (i.e. on a wiegand card scan or relay input).

**STATUS**

The status LED will actively flash while the device is pairing. If no device is paired, it will flash **twice** every 5 seconds. If atleast one device is paired, it will flash **once** every 5 seconds.

### GATEWAY

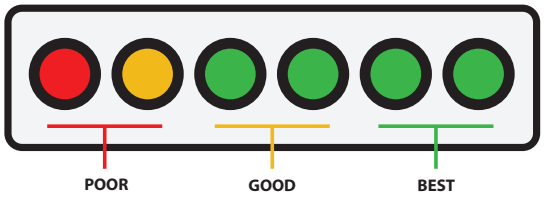
**STATUS**

The status LED will actively flash once every 5 seconds.

**NETWORK**

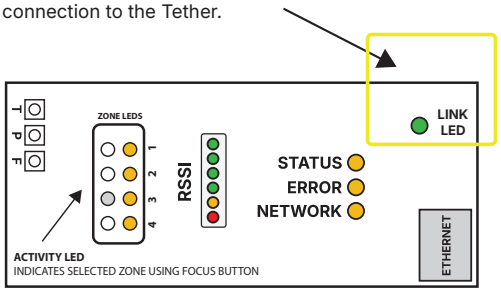
LED will remain off if there is no network connection. LED will remain solid on an active network. Flashing indicates connectivity errors.

**SIGNAL STRENGTH RSSI INDICATORS**




On the Gateway, the RSSI Indicators will only display the signal strength of the Zone that you're **currently focused on.**

The link LED being on is an indicator of strong connection to the Tether.




## UNPAIRING AND FACTORY RESET

**Remove Endpoint from a Gateway**

1. Use the **FOCUS** button on the Gateway to select the appropriate zone for the Endpoint you're wanting to unpair.
2. Press and hold the **Pair/Test button** on the Endpoint for 10 seconds. Flashing LEDs will signal the device has been successfully unpaired from the system. Devices will beep twice once they have been unpaired.