

JemRF Intelligent Gateway Manual

The JemRF M1 Gateway (Elnogw) is an intelligent Gateway that collects and stores the measurements from the remote wireless sensors, stores them internally then appends a date and location code and sends the measurement data to the JemRF Monitoring Cloud Server. Because it is an intelligent (A small single board computer) device, it can be configured to monitor and collect data from different sensor products. After receiving a sample, it can store and keep samples for several days to provide continuous monitoring even if the local Internet is disrupted. When the Internet connect to the cloud is restored it will push the history to the cloud server for plotting and review. The operation of the Elnogw is pretty automated, it will detect and report new and missing sensors automatically. The standard sensor sample rate is 5 minute.

First Time Startup

Upon first time power up, the JemRF M1 Gateway will be in AP mode, start your laptop or table in WiFi mode and connect to the gateway:

The WiFi SSID is **elnogw** and Password is **12345678**.

Once connect open your web browser and the address <http://elnogw> (<http://10.0.0.1>). A welcome page and see a list of the local WiFi SSIDs nearby. You select your WiFi, enter your WiFi passphrase and connect. The Elnogw SSID will be turned off and the gateway will use the selected WiFi to upload data to the ELNO web site.

Gateway Power Requirements

The Elnog Gateway uses its own 5-volt power module because most USB chargers do not provide the 2.5 amps needed for safe operations.

It is recommended to have the gateway plugged into a UPS to remove power glitches. The Elnogw can operate on a small 400-watt UPS for 4 to 6 hours depending on number of sensors and Internet connection.

Antenna

The antenna is a 915 MHz unidirectional design to provide max range to the remote sensors. For best range and performance, it should be in vertical position (pointing straight up). To provide maximum range the remote sensors should also be vertical with the antenna pointing up.

Light Patterns

What does the different colors and blinking lights mean?

The led is the only visible way to know the JemRF M1 Gateway is working. The led provides different blink patterns and colors base on the stat it is in.

When first starting up it comes on green for 1 second then turns Blue. During that time, it is connecting to the Internet. Then it turns blue-green for 1 second then blue Red. During this time, it is loading all the programs. The last sequence is turns blue-green then Red. That tells you all the applications are loaded and starting.

Once loaded and functioning as a gateway, it starts blinking with a cycle of 4 Greens and one Red. This indicates none of the remote sensors have connected to the gateway. If the unit has been off for a few days or more it may take several hours for the local sensors to wake up and try to communicate, but normally this only takes a few minutes. When one or more sensors are detected the led changes to breathing Green.

The led light also indicates failure conditions.

1. Fail to connect to Internet is 6 blinking Reds and one Green blink
2. Fail to connect to Elnog Servers is 3 blinking Reds and one Green blink.
3. An internal data logging error shows as an alternating Red Green blink. You will need to contact support if this error occurs.

Black Button

The black button on back has three different functions, it can Reset the Gateway, Shut the Gateway Down and can reset the WiFi and all the operator to change WiFi's. When you press the button, the LED will show a blue color to let you know it sees that the button is pressed.

Button Options:

1. To **Reset** the JemRF M1 Gateway press and hold the button down for 4 flashing light cycles
 1. Can take up to thirty seconds, it tries to tell the cloud it is going off
 2. Wait about 5 seconds after you see the light go out before pulling power
2. To **Shut** down the gateway, press and hold the button down for 7 flashing light cycles
 1. Can take up to thirty seconds, it tries to tell the cloud it is going off
 2. Wait about 5 seconds after you see the light go out before pulling power
3. To **Switch the Gateway's** WiFi and make the gateway an Internet hot spot.
This is changing the WiFi SSID and Password it uses to connect to the Internet.
 1. Press and hold the button down for 11 flashing light cycles.
Note: The LED will have a Blue color when in WiFi Mode.
 2. After that start your laptop or table in WiFi mode and connect to the gateway with the WiFi SSID of **Elnogw** and Password of **12345678**.
 3. Once connect open your web browser and enter the address 10.0.0.1.
 4. A welcome page and see a list of the WiFi SSIDs nearby. You select your WiFi , enter your WiFi passphrase and connect.
 5. The **Elnogw** SSID will be turned off and the gateway will use the selected WiFi to upload data to the JemRF Monitoring web site.
 6. When Successful the led should turn to solid Green breathing pattern and the Blue color gone.

Operational Conditions

When processing a Reset and Shutdown command it first tries to contact the cloud to report it has been task to restart or shutdown. This can take up to 30 seconds to start depending on internal timing, because the system tries to notify the server it has been commanded to reset or shutdown. That notification is on just under 30 second cycle. Once the led goes out it does its final processing before stopping and that takes an additional 5 seconds, so please wait about 5 seconds after the LED goes out to pull power.