EM FLUIDS

USER MANUAL

MODEL: EMF-AA01GLB-A

EMF-900030 v3

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1. Scope

This document describes the unboxing and operation of the EMF-AA01GLB-A, which are herein referred to as EMF device(s).

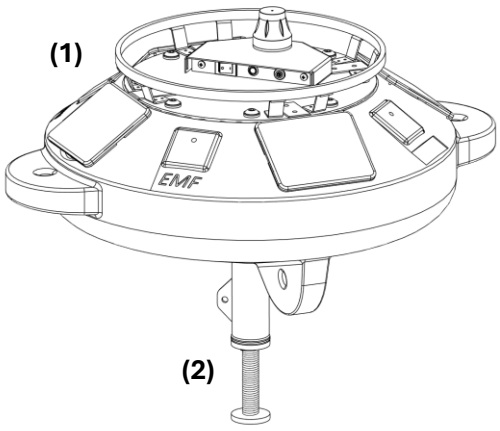
2. Safety

a. Only use the provided 5V DC power supply
b. Power supply should never be used in a wet location or while the unit is deployed in water. Only use the 5V barrel plug to charge the unit while indoors in a dry location.
c. The EMF device weighs roughly 10kg. Take proper care when lifting the device. Always lift the EMF device using the ring handle.
d. Be aware of pinch points around the handle. Ensure that you have a secure and comfortable grip. Hold the EMF device with two hands on the handle and always place the unit down in a controlled manner.
e. Installation should only be performed by personnel with proper water safety training.
    i. Wear properly fitted life jackets/personal flotation devices at all times.
    ii. Have an emergency response plan with rescue equipment readily available.
    iii. Provide training for on water safety, emergency procedures and PPE use.
    iv. Assign a competent supervisor to oversee and enforce protocols.

v. Be aware of hazards like weather, currents, tides, waves and unstable surfaces.
vi. Use appropriate footwear with good traction on wet surfaces.

f. Use appropriate biological PPE for installation / maintenance based on the location of use. Example: freshwater vs sewage lagoon.
g. Ropes and chains for anchoring can pose a danger and should be kept neatly wound and away from personnel.
h. Follow local laws and obtain required permits before deploying.
i. The EMF device contains several RF (radio frequency) antennas (GPS, LTE, BLE). To minimize RF exposure, power can be switched OFF during deployments and routine maintenance. When the power is ON, a distance of at least 20cm should be maintained from the antenna on top of the buoy.

3. Overview



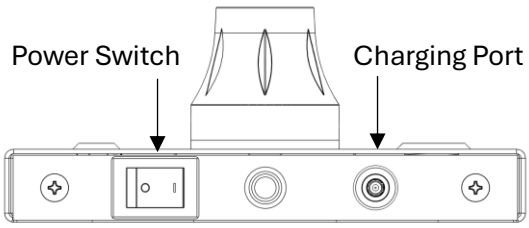
The EMF device consists of two main components. (1) The Buoy: that contains a solar array, charge controller, battery module, communication antennas, device handle, and four anchor tie-off locations. (2) The Signal Transmission Module (STM) that extends from the bottom of the Buoy.

NOTE: Care should be taken to not damage STM. The weight of the buoy should not be rested on the STM. If needed the EMF device should be carefully place on its side. A towel or soft material can be placed under the STM to avoid damaging the protective anti-fouling paint.

4. Charging

The EMF device can be charged using the provided 5V power supply or by the solar panels in direct sunlight. The batteries can be charged while the power switch is OFF.

NOTE: The 5V power supply can only be used in indoor dry locations and should never be used to charge a unit while it is in water.



The charging port is located on the right side of the control panel on the buoy component. The charging port may be used to top up the battery of a unit that will be deployed, or to charge a unit that has been in storage for an extended period of time. During charging it is recommended to place the buoy out of

the way on the ground. Lean the unit with three points of contact on the ground and check that the unit is stable. **Note: The charging port water/dust cover must be in place when the charging port is not in use.**

Once deployed, the EMF device will charge automatically whenever there is direct sunlight on the solar panels. Daily sunlight while deployed is sufficient to power the EMF device for several days in cloud cover or poor weather. To maximize charging, ensure that the solar panels remain clean of dirt and debris by wiping the panels with a damp microfibre cloth when necessary. If the battery is not charging sufficiently, please contact support.

5. EMFConnect App

The EMFConnect application (for Android) can be downloaded from bit.ly/emfconnect.

Note: *Contact your sales representative for the username and password to access the app download.*

Scan to download EMFConnect App

6. License Updates

Licenses are provided by EMFluids support. There are several ways to update the EMF devices license depending on internet access.

Via LTE connection:

If supported at the deployment location the EMF device will automatically connect to the cellular LTE network. You can confirm this by connecting with the EMFConnect app. Wait a few minutes after booting the EMF device. If you see "Connected" under the left side of the map, your EMF device has an remote network connection and will perform license updates automatically with no other steps required.

Via Android device with internet connection:

1. Connect to the EMF device with the EMFConnect app. No other steps required.

Via Android device without internet connection:

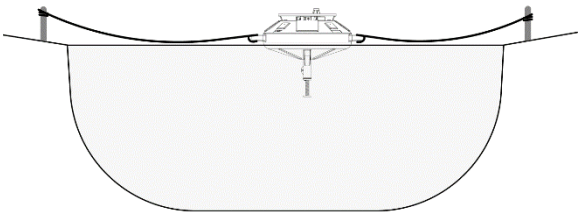
1. Ensure you have connected to the EMF device at least once. Your Android device will now remember this EMF device.
2. Before going to the EMF device location, open the EMFConnect app in a location where the Android device has internet access (WiFi, Cellular, Hotspot etc...). This will automatically download the latest licenses for all previously connected EMF devices.
3. Visit the deployment site and connect to the EMF device using the EMFConnect app. The license

will be automatically updated upon connecting.

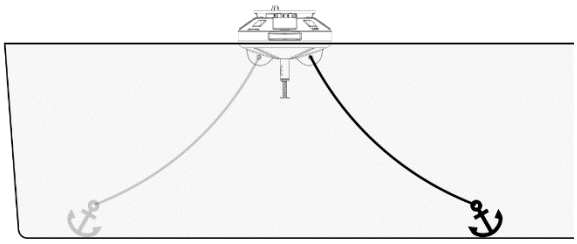
NOTE: If your license is expired or does not update. Please contact support with the serial number (IE: EMF-####) of the device.

7. Anchoring

The EMF device has 4 anchor tie-off locations. In small ponds a rope can be tied to both sides of the EMF device then tied to posts on the shore to maintain the buoy in a desired location. The rope can also be set up so that the buoy can be pulled back to shore without the need for a boat.



In larger waterbodies the lower two anchor points can be used to tie anchor lines to the EMF device. The rope should have enough slack for potential changes in water height. The rope should be short enough that it will not tangle in the STM or allow the buoy to drift too far. If seasonal water level changes are significant it may be required to adjust the anchors rope length during routine maintenance. A second anchor can optionally be used to form an upside-down "V" to keep the buoy in a stable location and minimize tangling from the ropes.



The anchor rope should be made of a marine grade nylon roughly 10mm in diameter. The Anchor tie-offs will accept up to a 16mm diameter rope. The anchor should weigh at least 9 kg.

8. Activation

Activating the device requires a valid license.

1. Power on the EMF device with the power switch on the controls panel (Press "I" in).
2. Connect using the EMFConnect app installed on an Android device.
3. In the app, ensure ***STM Module*** section says: "***Connected & Paired***"

HELP

If the connection section does **NOT** say *"Connected – Paired":*

- Confirm the license is **Valid**
- Power cycle the buoy
- If none of the above worked, please contact support with the serial number of the device (IE: "EMF-####")

4. Select "Turn ON" in the top right above the map.

5. Confirm that you wish to activate the EMF device in the popup menu.
6. Wait several seconds and confirm that the device status changes to “Treatment ON”

IMPORTANT: The EMF device should be deactivated through the app before being powered off and removed from its deployed location.

9. Deactivation

1. Connect using the EMFConnect app installed on an Android device.
2. Select “Turn OFF”
3. Confirm that you wish to deactivate the EMF device in the popup menu.
4. Wait several seconds and confirm that the device status changes to “Treatment OFF”

10. Routine Maintenance

It is recommended that the STM be cleaned once every two weeks using a soft bristle (plastic bristle) brush, a microfibre cloth, and water.

The effectiveness of the EMF device may deteriorate if left for extended periods of time without proper cleaning.

During normal operation, the STM will accumulate biological buildup from organisms and debris in the water. The rate of fouling will depend on the waterbody it is deployed in.

Frequent cleaning of the STM is critical to ensure effective treatment to the waterbody.

11. Relocation

Unless relocating within the same body of water, the unit should be cleaned and decontaminated to avoid possible transfer of biological or invasive species. Follow appropriate local legislation.

12. Extreme weather

Storms

- Remove EMF devices in advance of major storms, hurricanes, tidal surges.

Winterization

- Remove EMF devices before freezing temperatures.

13. Information

Intended use

The EMF device is intended to be appropriately anchored in a waterbody. The unit and anchors should be inspected and maintained according to the routine maintenance schedule.

Manufacturer

EM Fluids Inc.
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Nepean Ontario
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support@emfluids.com
www.emfluids.com

Cybersecurity

Contact: *support@emfluids.com*
Policy on coordinated vulnerability disclosure: www.docs.emfluids.xyz/emf-aa01-glb-a/cvd-policy
Security features are preconfigured. For questions or to report a concern or vulnerability please contact support.

Security updates are managed through firmware updates supplied by EMFluids Inc. as part of the lease agreement. Firmware updates are applied automatically. If manual installation is required, you will be contacted with additional information.

Decommissioning

There are no user or personal data stored on the device. The device can be powered down with the power switch to disable the unit and wipe temporary memory. Please contact your sales representative or support@emfluids.com to arrange for return of the leased device.

Specifications

Suitable for outdoor use, wet location

Installation Category: II
Supply voltage: 5V DC
Current: 1A
Altitude: 0m to 2000m
Temperature: 10°C to 45°C
Relative Humidity: 5%-95%
Ingress Protection: IP66/IP67
Pollution Degree: 2
LTE 700-2200 MHz, Max Ant Tx 28 dBm
BLE 2400-2483.5 MHz, Max Ant Tx 9.4 dBm
GPS L1 C/A 1575.42 MHz, Rx only

Compliance

Compliance Library:
www.docs.emfluids.xyz
Product EMF-AA01GLB-A

EU Declaration of Conformity:
www.docs.emfluids.xyz/emf-aa01-glb-a/ce-doc

Technical support included as per lease agreement for equipment. This product supports technical support, vulnerability handling, and security updates until 5 years from product release (end date: September 1st, 2030). Support is provided for the device and ends at termination or lapse of the lease agreement.