LYNKED
Your Partner in Transformation

LYNKED

Mesh RF Comm. Module A

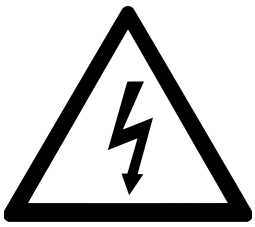
CM-MRFA

Technical Manual

www.lynked.io

CONTENTS

1 SAFETY INFORMATION

DANGER	WARNING AVERTISSEMENT	CAUTION ATTENTION
 **Keep all devices and connected wiring away from moisture, liquids, and wet environments.** **Tenez tous les appareils et le câblage connecté à l'écart de l'humidité, des liquides et des environnements humides.**	Installation, adjustment, and servicing of the unit are best performed by qualified electrical maintenance personnel. Disconnect all power sources before maintenance or adjustment of the unit. L'installation, le réglage et l'entretien doivent être effectués uniquement par du personnel électrique qualifié. Débranchez toutes les sources d'alimentation avant l'installation ou le réglage de l'appareil.	Unauthorized repair, modification, alteration, or operation outside the described steps are strictly prohibited and will void any applicable warranties and service agreements. Toute réparation, modification, altération ou utilisation non conforme aux étapes décrites peut annuler les garanties et les ententes de service.

2 Product Overview

The LYNKED Mesh RF Comm. Module A (CM-MRFA) is an attachment that can be plugged into a supported end device to provide Wi-SUN® communication capabilities.

End devices such as smart meters, sensors, and IoT devices that are equipped with this communication module are to be used in conjunction with a LYNKED Mesh RF Gateway (CG-400).

2.1 What's in the Box

1x LYNKED Mesh RF Comm. Module A (CM-MRFA)

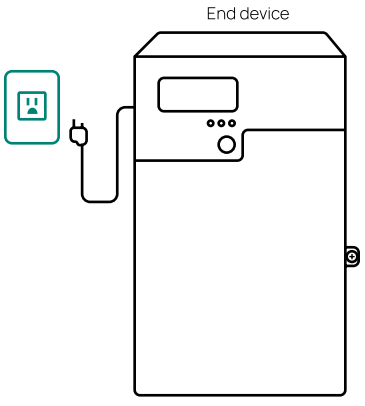
3 INSTALLATION

1 Check Package Contents

Open the box and verify that all items listed in **Section 2.1** are present. If any items are missing or damaged, contact LYNKED Support immediately.

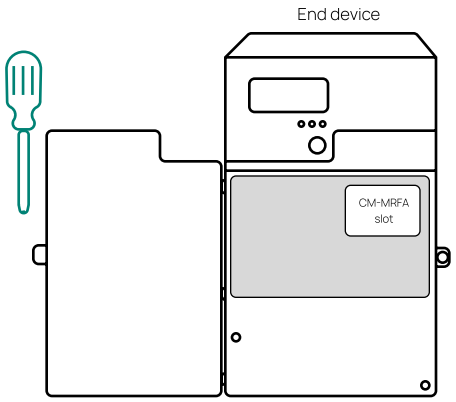
2 Disconnect Power

Unplug the end device that the CM-MRFA inserts into.



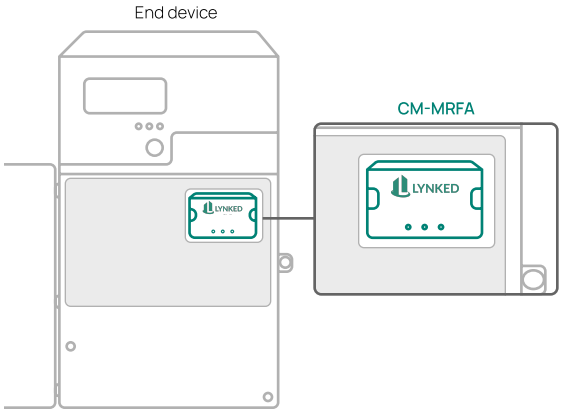
3 Open the Access Cover

If the end device has an access cover, loosen the screw, then lift the cover off.



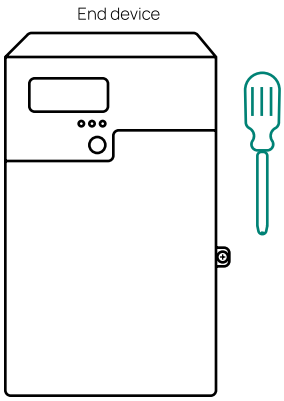
4 Insert the Communication Module

Insert the CM-MRFA into the end device until it is firmly seated and does not move freely.



5 Close the Access Cover

If the end device has an access cover, place it back onto the end device, then tighten the screw to secure the cover.



6 Authorize the Device

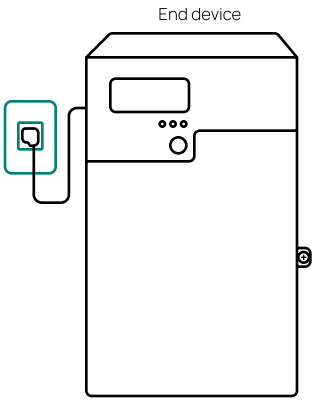
Power on the LYNKED CG-400 that will operate with the CM-MRFA and let it finish booting.

Add the CM-MRFA to the authorized device list in the CG-400 user interface so it can communicate on the Mesh RF network. The end device housing the CM-MRFA determines the module's MAC address. If automatic device addition is enabled, the CG-400 adds the MAC address to the list. You can also add the MAC address manually.

7 Turn On the End Device

Apply power to the end device housing the CM-MRFA. The CM-MRFA will power on and the LEDs will light up. The initial connection can take ~15 minutes.

See **Section 5** for a full description of LED indicators and **Section 6** for basic troubleshooting.



4 WIRELESS COMMUNICATION OVERVIEW

Mesh Topology

Nodes, repeaters, or end devices on the network can communicate directly to the CG-400. Data can also be relayed through these intermediary devices to get to the gateway.

Self-Healing

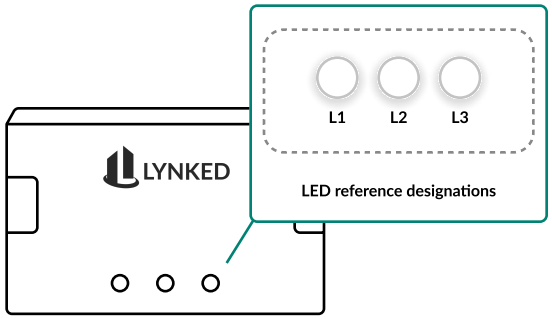
If a node, repeater, or end device drops out of the network, traffic will be automatically rerouted using the neighboring Mesh RF devices as a communication path instead.

Coverage via Mesh RF

LYNKED Mesh RF achieves extended coverage over large areas through its mesh network topology. Each device functions as a repeater, so range is extended as devices retransmit signals to one another rather than requiring a single device to reach the destination directly. This allows coverage to scale with the number of devices in the mesh, rather than being limited to the range of an individual RF device.

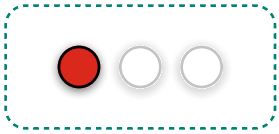
NEED HELP? For technical support, contact **support@lynked.io** or visit **www.lynked.io**

5 LED INDICATORS



Power Indicator

1st LED (L1)

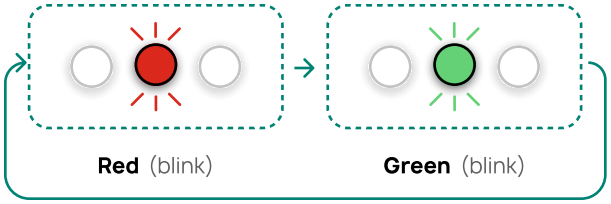


Red (solid)

Device is powered on and working normally

Mesh RF TX/RX Activity Indicator

2nd LED (L2)



Red (blink) **Green** (blink)

Alternating sequence

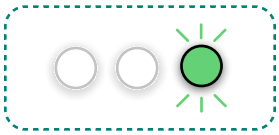
Device is attempting to connect to the network

OFF (after alternating sequence)

Device is connected. LED stays off unless there is TX/RX activity

Mesh RF Indicator

3rd LED (L3)



Green (blink)

Device is attempting to connect to the network

OFF (after blinking)

Device is connected to the network

6 BASIC TROUBLESHOOTING

Power LED is OFF

- Confirm that the power or cable connections for the end device are securely plugged in.
- Confirm the outlet is live or connect to a known-working outlet.

No Mesh RF Activity

Mesh RF connections can take over 15 minutes to establish (scanning, authentication, routing). Wait at least 15 minutes before troubleshooting further.

- Confirm that the CG-400 and other LYNKED devices on the network are powered on.
- If distance is degrading the signal, add another repeating device, such as the LYNKED CN-40, LYNKED CN-41, or LYNKED CM-MRFA to increase Mesh RF coverage.
- Check for metal or thick concrete (especially rebar) blocking the signal path. Relocate the device or antenna to avoid the obstruction.
- Confirm the that the CM-MRFA's MAC address is on the CG-400's authorized device list.

7 REGULATORY INFORMATION

Compliance

EMC:	CAN ICES-003(B) / NMB-003(B)
	FCC Part 15B Class B
Safety:	CSA C22.2 No. 62368-1, UL 62368-1
Radio Frequency (RF):	RSS-Gen, RSS-102, RSS-247
	FCC Part 2 (§2.1091), 15C (§15.247)

Certifications

Contains IC:	8979A-WSN27915
Contains FCC ID:	UU3FC-3902-915
MET Listed:	E115072

ISED Compliance Statements

CAN ICES-003(B)

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(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.

This equipment complies with ISED radiation exposure limits for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm (8 inches) between the radiator and the user's body.

CAN NMB-003(B)

Cet appareil contient un ou plusieurs émetteurs/ récepteurs sans licence conformes aux normes RSS exemptes de licence d'Innovation, Sciences et Développement économique Canada. Son fonctionnement est soumis aux deux conditions suivantes : (1) Cet appareil ne doit pas causer d'interférences, et (2) cet appareil doit accepter toute interférence, y compris les interférences pouvant entraîner un fonctionnement indésirable.

Cet appareil est conforme aux limites d'exposition aux rayonnements d'ISED pour un environnement non contrôlé. Il doit être installé et utilisé à une distance minimale de 20 cm (8 pouces) entre l'émetteur et le corps de l'utilisateur.

UL & CSA Compliance Statements

This product is designed and manufactured to meet the safety requirements of UL 62368-1 and CSA C22.2 No. 62368-1 for Audio/Video, Information and Communication Technology Equipment. Use only the provided power supply and do not operate this equipment near water. This equipment is intended for indoor use only. Follow all instructions in this manual to ensure safe operation.

Ce produit est conçu et fabriqué conformément aux exigences de sécurité des normes UL 62368-1 et CSA C22.2 No. 62368-1 pour les équipements audio/vidéo, les équipements de technologie de l'information et de communication. Utilisez uniquement l'alimentation fournie et ne faites pas fonctionner cet équipement à proximité de l'eau. Cet équipement est destiné uniquement à un usage intérieur. Suivez toutes les instructions de ce manuel pour assurer une utilisation en toute sécurité.

FCC Compliance Statements

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.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by LYNKED Inc. could void the user's authority to operate this equipment.

This device contains transmitter module FCC ID: **UU3FC-3902-915**.

This equipment complies with FCC radiation exposure limits for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 cm (8 inches) between the radiator and the user's body.

Tampering Prohibited

Unauthorized tampering, modification, or alteration of this device is strictly prohibited. Any such actions may compromise the performance, safety, or regulatory compliance of the device and may void applicable warranties, service agreements, and the user's authority to operate the equipment.