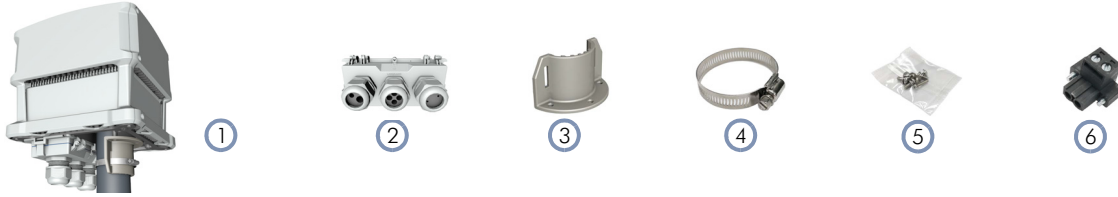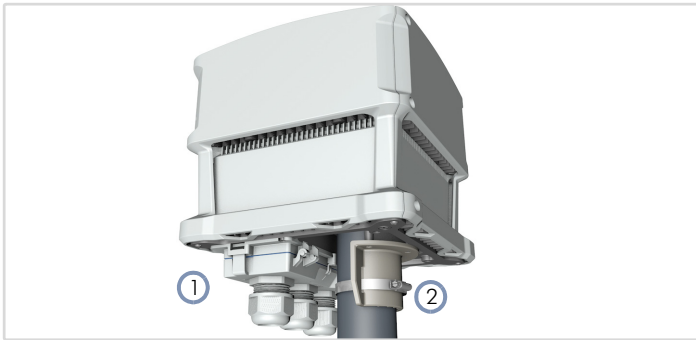# Quick Start Guide

60GHz Terragraph Distribution Node
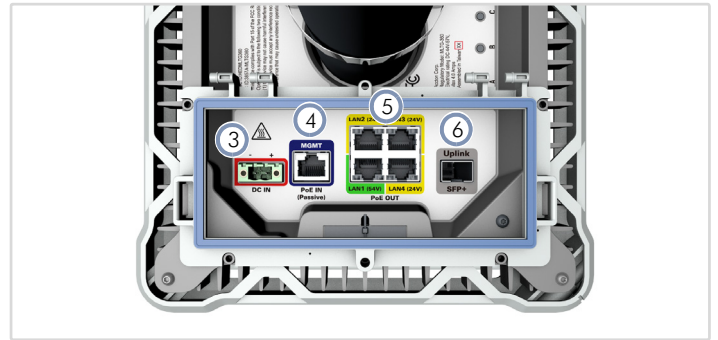## MLTG-360

Edge-corE®

Package Contents

1. 60GHz Terragraph Distribution Node MLTG-360
2. Weatherproof port cover
3. Pole-mount bracket
4. Steel-band clamp — 5 cm (2 inch) diameter max.
5. Screw kit
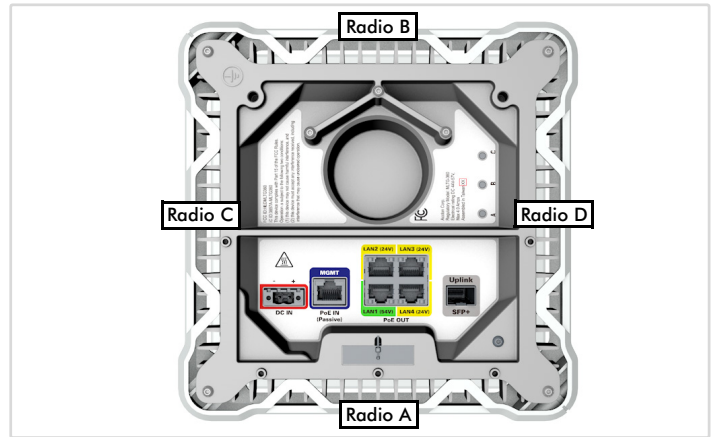6. DC terminal plug

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Overview

1. Port cover
2. Pole mounting bracket with steel-band clamp
3. DC power connection.
4. MGMT PoE IN Port: Connects to PoE injector and management network.
5. PoE OUT LAN Ports: Connect to LAN devices.
6. Uplink SFP+ fiber transceiver port

Product Lineup

Product Name	Position of Radios
MLTG-360	A, B, C, D
MLTG-360-3	A, C, D
MLTG-360-2R	A, D
MLTG-360-2P	C, D
MLTG-360-1	A

Installation

⚡ **Warning:** For a safe and reliable installation, use only the accessories and screws provided with the device. Use of other accessories and screws could result in damage to the unit. Any damages incurred by using unapproved accessories are not covered by the warranty.

Avertissement: Pour une installation sûre et fiable, utilisez uniquement les accessoires et les vis fournies avec l'appareil. L'utilisation d'autres accessoires et vis pourrait endommager l'appareil. Les dommages causés par l'utilisation d'accessoires non approuvés ne sont pas couverts par la garantie.

1 Ground the MLTG-360

Ground the MLTG-360 by connecting a ground wire to the grounding point on the MLTG-360 and to nearby good earth.

ℹ **Note:** Make sure the grounding and lightning protection conform to local standards.

2 Make Network Connections
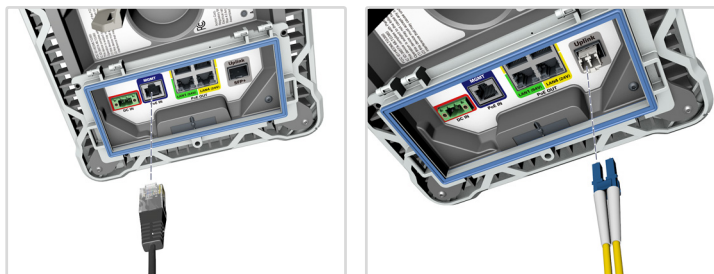
RJ-45 MGMT and LAN Ports
Connect outdoor-rated Category 5e or better cable to the 1000BASE-T RJ-45 MGMT PoE IN port.

(Optional) Connect other network devices to the PoE OUT 1000BASE-T LAN ports. The LAN1 port supports 54V (IEEE 802.3at) PoE out, and the LAN2-LAN4 ports support 15 W Passive PoE out, only when the MLTG360 is powered via DC Power over 94 W.

SFP+ Uplink Port
Install a 10G fiber transceiver in the Uplink SFP+ port and then connect outdoor-rated fiber cable to the transceiver port.

3 Attach the Port Cover
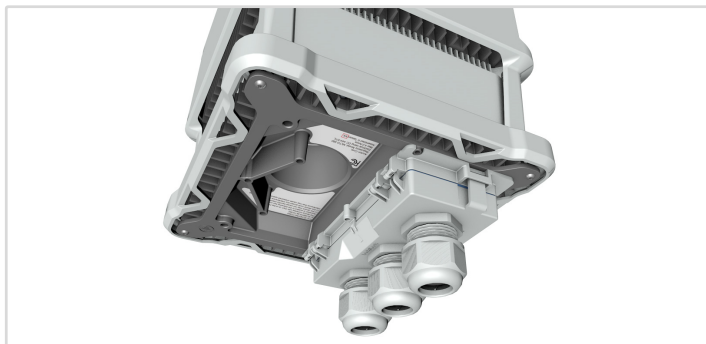
Attach the weatherproof port cover to the MLTG-360 using the screws provided in the screw kit.

4 Mount the MLTG-360

a. Attach the Pole-Mount Bracket
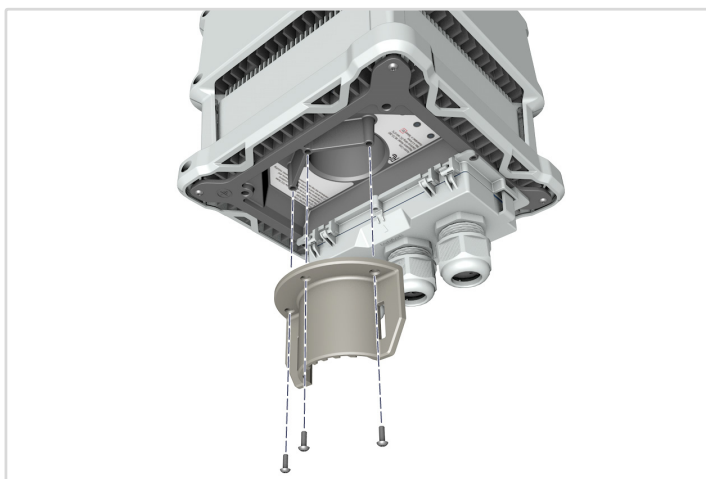
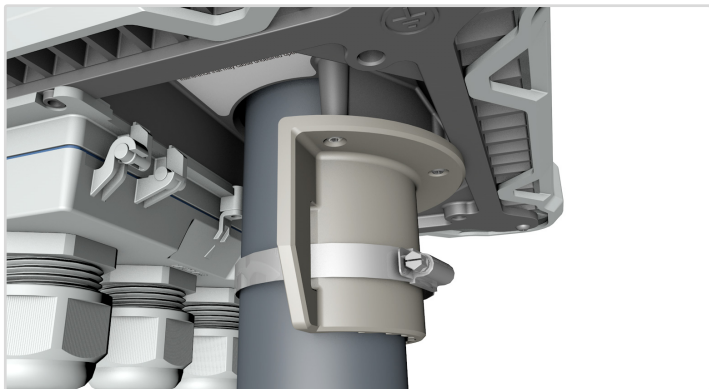Attach the pole-mount bracket to the MLTG-360 using the screws provided in the screw kit.

b. Mount on a Pole
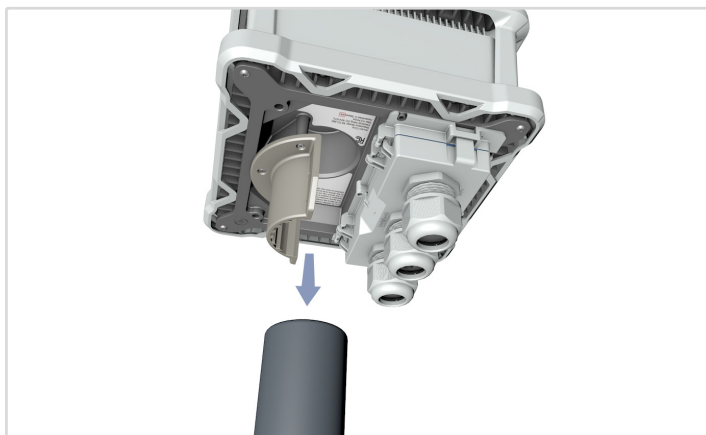
Place the MLTG-360 on the top of a 4–5 cm (1.57–2 inch) diameter pole.

ℹ **Note:** It is strongly recommended the MLTG-360 be mounted on the top of the pole without any obstructions above it. Where impossible, consider using the optional J-bracket mount, designed to mount the MLTG-360 aside the pole.
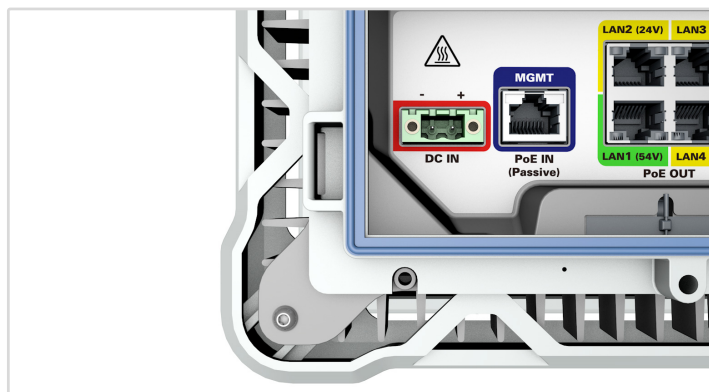
c. Clamp to the Pole

Feed the provided steel-band clamp through the pole-mount bracket and around the pole, and then tightly fasten it to secure the MLTG-360 to the pole.

Optional J-Mount Bracket Installation
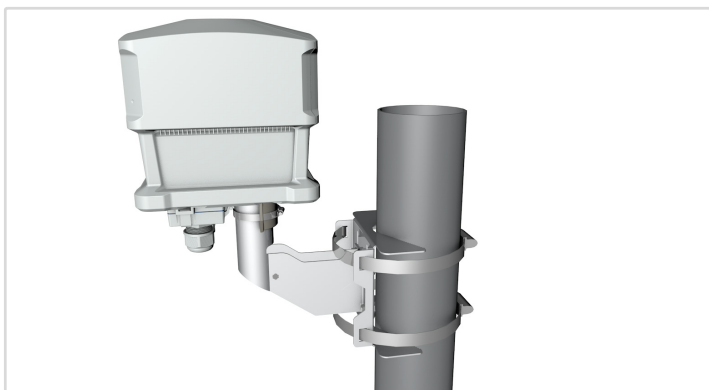
An optional J-mount bracket is available for installation on poles of up to 10". It is sold separately as ICC-J-BRACKET.

5 Connect Power

a. DC Power

Wire the included DC terminal plug to a 44-57 VDC, 2.73 A source to provide power to the MLTG-360. Follow the wiring scheme shown on the panel with the negative pole (-) on the left and the positive pole (+) on the right.

b. Optional PoE Injector

The MGMT PoE IN port connection provides power to the unit through a PoE power injector. The PoE injector must be a passive (non-IEEE) injector that can provide 90 W at 56 V.

Sold separately as ICC-POE-90W. For indoor use only.
Altitude: Operating 10,000 feet max.
            Non-Operating 40,000 feet max.
Temperature: Operating -20°C to 40°C.
            Non-Operating -20°C to 65°C

| i | **Note:** DC power and PoE power cannot be connected at the same time. |

| i | **Note:** PoE OUT on LAN Ports is only available when the MLTG-360 is powered via DC power. |

6 Verify Power is On
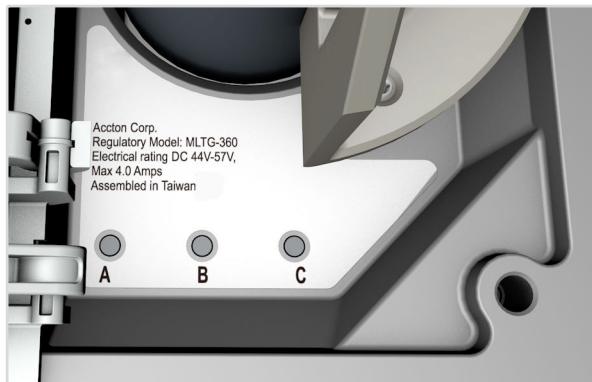
Check the LED
The "C" power LED should stay on after boot-up when operating normally.

7 Access the Web User Interface

1. Connect a PC directly to the MLTG-360's MGMT port.
2. Set the PC IP address to be on the same subnet as the MLTG-360 MGMT port default IP address. The PC address must start at 192.168.1.x with subnet mask 255.255.255.0.
3. Enter the MLTG-360's default IP address of 192.168.1.20 into the web browser address bar.
4. Log in to the web interface using default settings:
   Username = admin
   Password = admin
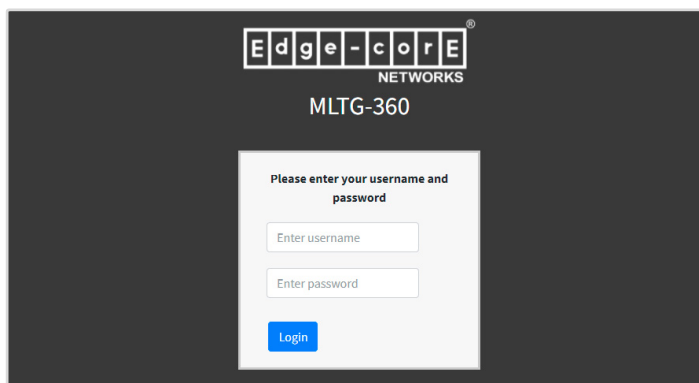
Safety and Regulatory Information

FCC Class A

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

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.

This device is not to be operated on aircraft except for the conditions listed on FCC CFR 15.255 (b).

IMPORTANT NOTE:
FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 40 cm between the radiator and your body.

Industry Canada Statement

This Class A digital apparatus complies with Canadian ICES-003.

This device complies with 'Innovation, Science and Economic Development (ISED) 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.

This radio transmitter [3857A-MLTG360] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Cet appareil est conforme aux normes RSS exemptes de licence «Innovation, Science et Développement économique (ISDE) Canada». Son fonctionnement est soumis aux deux conditions suivantes: (1) cet appareil ne doit pas provoquer d'interférences, et (2) cet appareil doit accepter toute interférence, y compris les interférences susceptibles d'entraîner un fonctionnement indésirable de l'appareil.

Cet émetteur radio [3857A-MLTG360] a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci-dessous, avec le gain maximal autorisé indiqué. Les types d'antenne non inclus dans cette liste qui ont un gain supérieur au gain maximum indiqué pour tout type répertorié sont strictement interdits pour l'utilisation avec cet appareil

Antenna Type	Antenna Gain (dBi)
Integrated	28

IMPORTANT NOTE:
IC Radiation Exposure Statement:

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 40 cm between the radiator and your body.

This device is not to be operated on aircraft except for the conditions listed on ISED RSS-210 Annex J.1.

CE Statement

This equipment complies with EU radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 70 cm between the radiator and your body.

All operational modes:
60 GHz: 802.11ad, 802.11ay

The frequency and maximum transmitted power limit in EU are listed as below:
57-66 GHz: 40 dBm

AT	BE	BG	CH	CY	CZ
DE	DK	EE	EL	ES	FI
FR	HR	HU	IE	IS	IT
LI	LT	LU	LV	MT	NL
NO	PL	PT	RO	SE	SI
SK	TR	UK			

The abbreviations of the countries, as prescribed in above table, where any restrictions on putting into service or any requirements for authorization of use exist.

CE

CE Mark Declaration of Conformance for EMI and Safety (EEC)

This information technology equipment is in compliance with the Directive 2014/53/EU and Directive 2014/35/EU.

The Declaration of Conformity (DoC) can be obtained from www.edge-core.com -> support -> download.

Japan VCCI-A Statement

　この装置は、クラスA機器です。この装置を住宅環境で使用すると電波妨害を引き起こすことがあります。この場合には使用者が適切な対策を講ずるよう要求されることがあります。

VCCI − A

Warnings and Cautionary Messages

⚠️ **Warning:** Hot surface. Do not touch!

⚡ **Warning:** This product does not contain any serviceable user parts.
Warning: Installation and removal of the unit must be carried out by qualified personnel only.
Warning: When selecting a fiber SFP+ device, considering safety, please make sure that it can function at a temperature that is not less than the recommended maximum operational temperature of the product. You must also use an approved Laser Class 1 SFP+ transceiver.

⚠️ **Caution:** Wear an anti-static wrist strap or take other suitable measures to prevent electrostatic discharge when handling this equipment.
Caution: Do not plug a phone jack connector in the RJ-45 port. This may damage this device.
Caution: Use only twisted-pair cables with RJ-45 connectors that conform to FCC standards.
Caution: The device must be installed in a restricted-access location.

⚠️ **Avertissement:** Surface chaude. Ne pas toucher!

⚡ **Avertissement:** Ce produit ne contient aucun composant susceptible d'être réparé par l'utilisateur.
Avertissement: L'installation et la dépose de l'unité ne doivent être réalisées que par du personnel qualifié.
Avertissement: Lorsque vous utilisez un dispositif fibre de type SFP+, en ce qui concerne la sécurité, assurez-vous qu'il puisse fonctionner à une température inférieure à la température maximale de fonctionnement recommandée du produit. Utilisez également un émetteur-récepteur laser SFP+ de classe 1 agrée.

⚠️ **Attention:** La manipulation de cet équipement requiert le port d'un bracelet antistatique ou l'utilisation d'autres mesures pour éviter toute décharge électrostatique.
Attention: Ne branchez pas un connecteur téléphonique dans le port RJ-45. Vous risqueriez d'endommager l'appareil.
Attention: Ne branchez que des fils torsadés par paires conformes aux normes FCC sur les connecteurs RJ-45.
Attention: le périphérique doit être installé dans un emplacement à accès restreint.

Hardware Specifications

AP Chassis

Size (WxDxH)	19.9 x 19.9 x 20.0 cm (7.83 x 7.83 x 7.87 in)
Weight	3.9 kg (8.6 lb) with bracket
Temperature	Operating: -20° C to 55° C (-4° F to 131° F) Storage: -40° C to 70° C (-40° F to 158° F)
Humidity	Operating: 5% to 95% (non-condensing)

Network Interfaces

Ports	1 x MGMT PoE IN RJ-45 Port: 1000BASE-T, PoE PD 1 x Uplink Port: 10G SFP+ 4 x LAN RJ-45 Ports: 1000BASE-T (PoE OUT)
60 GHz	4 x 60GHz Radios, 802.11ad/ay

Power Supply

PoE Input Power	ICC-POE-90W: 52–57 VDC, 1.44 A (Passive PoE)
Power Consumption	75 W max. (without PoE out) 94 W (including PoE out)

Regulatory Compliances

Radio	EN 302 567 V2.1.1 EN 62311 (MPE) 47 CFR FCC Part 15.255 ICES-003 Issue 6 Class A RSS-247 RSS-210 Issue 10 RSS-Gen Issue 5 RSS-102 Issue 5 (MPE) MIC Article 2 Paragraph 1 Item 19—4-2
Emissions	EN 301 489-1 V2.1.1 EN 301 489-17 V3.1.1 Part 15 subpart B Class A (ANSI C63.4-2014) ICES-003 Issue 6 VCCI-CISPR 32
Safety	EN 62368-1: 2014+ A11: 2017 IEC 60950-1: 2005, AMD1: 2009, AMD2: 2013 IEC 60950-22: 2016 IEC 60529-1: 1989+ AMD1: 1999+ AMD2: 2013CSV (IP66) UL/CUL 62368-1, 2nd Ed UL/CUL 60950-22 2nd Edition