



Home Broadband Wi-Fi Extender

Nokia WiFi HA-0236G-A Extender Product Guide

3FE-48251-AAAA-TCZZA

Issue 01

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1 Preface

This preface provides general information about the documentation set for HA-0236G-A extender equipment.

1.1 Scope

This documentation set provides information about safety, features and functionality, ordering, hardware installation and maintenance, and software installation procedures for the current release.

1.2 Audience

This documentation set is intended for planners, administrators, operators, and maintenance personnel involved in installing, upgrading, or maintaining the devices.

1.3 Required knowledge

The reader must be familiar with general telecommunications and networking principles.

1.4 Acronyms and initialisms

The expansions and optional descriptions of most acronyms and initialisms appear in the Glossary (3FE 47157 AAAA TCZZA).

1.5 Assistance and ordering phone numbers

Nokia provides global technical support through regional call centers. Phone numbers for the regional call centers are available at the following URL: <http://customer.nokia.com/s/>. If this link does not work, copy and paste it directly into your web browser.

For ordering information, contact your Nokia sales representative.

1.6 Nokia quality processes

Nokia's extender quality practices are in compliance with TL 9000 requirements. These requirements are documented in the Fixed Networks Quality Manual 3FQ-30146-6000-QRZZA. The quality practices adequately ensure that technical requirements and customer end-point requirements are met. The customer or its representatives may be allowed to perform on-site quality surveillance audits, as agreed upon during contract negotiations

1.7 Safety information

For safety information, see the appropriate safety guidelines chapter.

1.8 Documents

Documents are available using Nokia Support Portal.

Procedure 1 To download a ZIP file package of the customer documentation

- 1 Navigate to <http://customer.nokia.com/s/> and enter your user name and password. If you are a new user and require access to this service, please contact your Nokia sales representative.
 - 2 From the Technical Content for drop-down menu, choose the product.
 - 3 Click on Downloads: Electronic Delivery.
 - 4 Choose Documentation from the drop-down menu and click Next.
 - 5 Select the image from the drop-down menu and click Next.
 - 6 Follow the on-screen directions to download the file.
-

Procedure 2 To access individual documents

Individual PDFs of customer documents are also accessible through the Nokia Customer Support website.

- 1 Navigate to <http://customer.nokia.com/s/> and enter your user name and password. If you are a new user and require access to this service, please contact your Nokia sales representative.
 - 2 From the Technical Content for drop-down menu, choose the product.
 - 3 Click on Manuals and Guides to display a list of customer documents by title and part number. You can filter this list using the Release drop-down menu.
 - 4 Click on the PDF to open or save the file.
-

1.9 Special information

The following are examples of how special information is presented in this document.



Danger — Danger indicates that the described activity or situation may result in serious personal injury or death; for example, high voltage or electric shock hazards.



Warning — Warning indicates that the described activity or situation may, or will, cause equipment damage or serious performance problems.



Caution — Caution indicates that the described activity or situation may, or will, cause service interruption.



Note — A note provides information that is, or may be, of special interest.

1.9.1 Procedures with options or substeps

When there are options in a procedure, they are identified by letters. When there are required substeps in a procedure, they are identified by roman numerals.

Procedure 3 Example of options in a procedure

At step 1, you can choose option a or b. At step 2, you must do what the step indicates.

-
- | | |
|---|---|
| 1 | This step offers two options. You must choose one of the following: |
| a | This is one option. |
| b | This is another option. |
-

- | | |
|---|-----------------------------|
| 2 | You must perform this step. |
|---|-----------------------------|
-

Procedure 4 Example of required substeps in a procedure

At step 1, you must perform a series of substeps within a step. At step 2, you must do what the step indicates.

-
- | | |
|-----|---|
| 1 | This step has a series of substeps that you must perform to complete the step. You must perform the following substeps: |
| i | This is the first substep. |
| ii | This is the second substep. |
| iii | This is the third substep. |
-

- | | |
|---|-----------------------------|
| 2 | You must perform this step. |
|---|-----------------------------|
-

1.10 Multiple PDF document search

You can use Adobe Reader Release 6.0 and later to search multiple PDF files for a common term. Adobe Reader displays the results in a single display panel. The results are grouped by PDF file, and you can expand the entry for each file.



Note — The PDF files in which you search must be in the same folder.

Procedure 5 To search multiple PDF files for a common term

-
- 1 Open Adobe Acrobat Reader.

 - 2 Choose Edit®Search from the Acrobat Reader main menu. The Search PDF panel appears.

 - 3 Enter the search criteria.

 - 4 Click on the All PDF Documents In radio button.

 - 5 Select the folder in which to search using the drop-down menu.

 - 6 Click on the Search button.

Acrobat Reader displays the search results. You can expand the entries for each document by clicking on the + symbol.

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2 ANSI extender safety guidelines

This chapter provides information about the mandatory regulations that govern the installation and operation of devices in the North American or ANSI market.

2.1 Safety instructions

This section describes the safety instructions that are provided in the extender customer documentation and on the equipment.

2.1.1 Safety instruction boxes in customer documentation

The safety instruction boxes are provided in the extender customer documentation. Observe the instructions to meet safety requirements.

The following is an example of the Danger box.



Danger — Possibility of personal injury.

The Danger box indicates that the described activity or situation may pose a threat to personal safety. It calls attention to a situation or procedure which, if not correctly performed or adhered to, may result in death or serious physical harm.

Do not proceed beyond a Danger box until the indicated conditions are fully understood and met.

The following is an example of the Warning box.



Warning 1 — Possibility of equipment damage.

Warning 2 — Possibility of data loss.

The Warning box indicates that the described activity or situation may, or will, cause equipment damage, loss of data, or serious performance problems. It identifies a possible equipment-damaging situation or provides essential information to avoid the degradation of system operations or data.

Do not proceed beyond a warning until the indicated conditions are fully understood and met.

The following is an example of the Caution box.



Caution 1 — Possibility of service interruption.

Caution 2 — Service interruption.

The Caution box indicates that the described activity or situation may, or will, cause service interruption.

Do not proceed beyond a caution until the indicated conditions are fully understood and met.

The following is an example of the Note box.



Note — Information of special interest.

The Note box provides information that assists the personnel working with devices. It does not provide safety-related instructions.

2.1.2 Safety-related labels

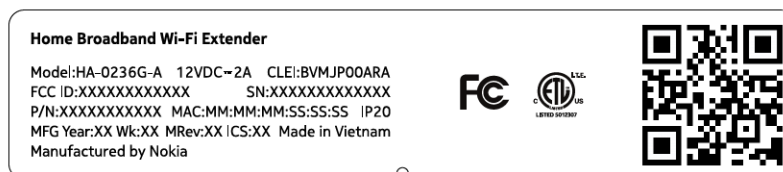
The customer premises equipment is labeled with specific safety compliance information and instructions that are related to a variant of the extender. Observe the instructions on the safety labels.

Table 1 provides examples of the text in the various extender safety labels.

Table 1 **Safety labels**

Label text	Description
ETL compliance	Communication service equipment US listed.
ESD warning	Caution: This assembly contains electrostatic sensitive device.
FCC standards compliance	Tested to comply with FCC standards for home or office use.

Figure 1 shows a sample safety label located on the bottom of the HA-0236G-A extender.

Figure 1 **Sample safety label**

2.2 Safety standards compliance

This section describes the extender compliance with North American safety standards.



Warning — Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

2.2.1 EMC, EMI, and ESD standards compliance

The customer premises equipment complies with the following requirements:

- Federal Communications Commission (FCC) CFR 47, Part 15, Subpart B, Class B requirements for equipment

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 needed.
- Consult the dealer or an experienced radio/TV technician for help.

2.2.2 Energy-related products standby and off modes compliance

Hereby, Nokia declares that the HA-0236G-A extender devices are in compliance with the essential requirements and other relevant provisions of Directive 2009/125/EC together with Commission Regulation (EC) No 1275/2008 and Commission Regulation (EC) No 801/2013.

The HA-0236G-A extender devices qualify as high network availability (HiNA) equipment. Since the main purpose of HA-0236G-A extender devices is to provide network functionality with HiNA 7 days/24 hours, the modes Off/Standby, Power Management, and Networked Standby are inappropriate.

For information about the type and number of network ports, see [“HA-0236G-A extender interfaces and interface capacity”](#) in chapter 4.

For information about power consumption, see [“HA-0236G-A extender detailed specifications”](#) in chapter 4.

2.2.3 FCC statement

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.

2.2.4 FCC Radiation Exposure Statement

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment and it also complies with Part 15 of the FCC RF Rules. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 26 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and consider removing the no-collocation statement.

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 1 — For product availability in the USA and Canada, only channels 1 to 11 can be operated. Selection of other channels is not possible.

Note 2 — This device is restricted for indoor use.



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

2.2.5 Resistibility requirements compliance

The customer premises equipment complies with the requirements of ITU Recommendation K.21 for resistibility of telecommunication equipment installed in customer premises to overvoltage and overcurrents.

2.3 Electrical safety guidelines

This section provides the electrical safety guidelines for the customer premises equipment.

HA-0236G-A extender devices are compliant with the following standards

- IEC-62368-1
- UL-62368-1



Note — The devices comply with the U.S. National Electrical Code. However, local electrical authorities have jurisdiction when there are differences between the local and U.S. standards.

2.3.1 Power supplies

The use of any non-Nokia approved power supplies or power adapters is not supported or endorsed by Nokia. Such use will void any warranty or support contract with Nokia. Such use greatly increases the danger of damage to equipment or property.

2.3.2 Cabling

The following are the guidelines regarding cables used for the customer premises equipment:

- Use only cables approved by the relevant national electrical code.

3 ETSI environmental guidelines

This chapter provides information about environmental operation parameters of general interest.

3.1 Environmental requirements

Observe the following environmental requirements when handling the extender

3.1.1 Extender environmental requirements

See the extender technical specification documentation for more information about temperature ranges.

3.1.2 Transportation

According to EN 300-019-1-2 - Class 2.3, transportation of the equipment must be in packed, public transportation with no rain on packing allowed.

3.1.3 EU RoHS

European Union (EU) Directive 2011/65/EU, “Restriction of the use of certain Hazardous Substances” (RoHS), restricts the use of lead, mercury, cadmium, hexavalent chromium, and certain flame retardants in electrical and electronic equipment. Nokia products shipped to the EU comply with the EU RoHS Directive.

Nokia has implemented a material/substance content management process. The process is described in: Nokia process for ensuring RoHS Compliance (1AA002660031ASZZA). This ensures compliance with the European Union Directive 2011/65/EU on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment.

3.1.4 End-of-life collection and treatment

Electronic products bearing or referencing the symbol shown in Figure 2, when put on the market within the European Union (EU), shall be collected and treated at the end of their useful life, in compliance with applicable EU and local legislation. They shall not be disposed of as part of unsorted municipal waste. Due to materials that may be contained in the product, such as heavy metals or batteries, the environment and human health may be negatively impacted as a result of inappropriate disposal.



Note — In the European Union, a solid bar under the symbol for a crossed-out wheeled bin indicates that the product was put on the market after 13 August 2005.

About mark is used in compliance to European Union WEEE Directive (2012/19/EU).

There can be different requirements for collection and treatment in different member states of the European Union.

In compliance with legal requirements and contractual agreements, where applicable, Nokia will offer to provide for the collection and treatment of Nokia products bearing the logo shown in Figure 2, at the end of their useful life, or products displaced by Nokia equipment offers. For information regarding take-back of equipment by Nokia, or for more information regarding the requirements for recycling/disposal of product, contact your Nokia account manager or Nokia take back support at sustainability.global@nokia.com.

Figure 2 Recycling/take back/disposal of product symbol



4 HA-0236G-A extender data sheet

- 4.1 HA-0236G-A extender part numbers and identification
- 4.2 HA-0236G-A extender general description
- 4.3 HA-0236G-A extender software and installation feature support
- 4.4 HA-0236G-A extender interfaces and interface capacity
- 4.5 HA-0236G-A extender LEDs
- 4.6 HA-0236G-A extender detailed specifications
- 4.7 HA-0236G-A extender functional blocks
- 4.8 HA-0236G-A extender responsible party
- 4.9 HA-0236G-A extender special considerations

4.1 HA-0236G-A extender part numbers and identification

Table 2 provides part numbers and identification information for the HA-0236G-A extender.

Table 2 HA-0236G-A extender identification

Ordering part number	Provisioning number	Description	CLEI Code	CPR	ECI/ Bar code
Wi-Fi Router 3FE 48251 AA	3FE48265AAAA	Nokia T-Mobile extender 2 Gigabit Ethernet, AX4200 Triband Wi-Fi 6, US plug.	BVMJP00ARA	N70HWG	474609

Table 3 provides power supply ordering information for the HA-0236G-A extender.

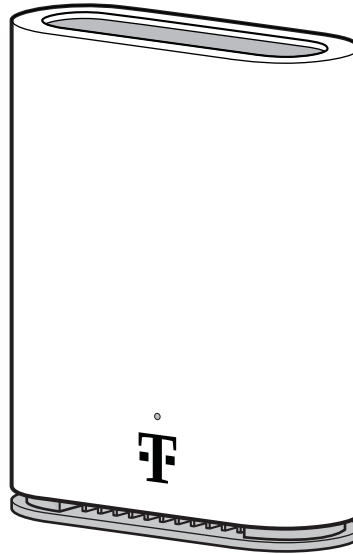
Table 3 **HA-0236G-A Extender power supply**

Manufacturer	Applicable power supply model	Power information	Compliance detail	Notes
FUHUA	UES24WU-120200SPA	12V2A, US plug, DC plug 12 mm	ANSI municipality US, FCC/ETL	2-pin US wall mounted input plug Type A
RUIDE	RD1202000-C55 154MG	12V2A, US plug, DC plug 12 mm		

4.2 HA-0236G-A extender general description

Wi-Fi is abundantly deployed in home networks. Users crave a seamless experience at home including effortlessly connecting their wireless devices to the network. Traditional Wi-Fi networks require unique SSIDs for each of the access points or tedious set-up of Wi-Fi extenders, which complicate the user experience. The Nokia WiFi network simplifies the user experience by providing a seamless mesh network with easy device onboarding and automated network optimization, which is configured using the Mobile app.

The HA-0236G-A extender is a device that supports Wi-Fi 6 (IEEE 802.11ax) to extend 4G LTE and 5G Sub6GHz RGW with Tri-band speeds throughout the home using Easy Mesh technology. The RGW is the central point of the mesh network providing access to the broadband network (Internet) while the HA-0236G-A extender extends the Wi-Fi coverage to every corner of the home, providing seamless roaming to wireless connected devices. The HA-0236G-A extender requires a QR scanning on boarding procedure. Figure 3 shows the HA-0236G-A extender.

Figure 3 HA-0236G-A extender

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The HA-0236G-A does not have any RGW features and is primarily used for extending customer Wi-Fi access. Wi-Fi devices (client) connect to the HA-0236G extender, then traffic is from the extender to the RGW using Ethernet cable or Wi-Fi.

The overall Nokia WiFi solution is composed of a 5G RGW, one or more HA-0236G extender(s), the Nokia WiFi Care Portal for the operator's customer care team, and a mobile application for the end-user's self care.



Note — The Nokia WiFi Care Portal can be accessed by the end user and the operator.

The HA-0236G-A extender provides the following functions and benefits.

- Form a mesh network using Easy Mesh technology.
- Tri-band wifi6 (IEEE 802.11ax), and compatible with IEEE 802.11a/b/g/n/ac:
 - 2.4 GHz: 2x2, (40MHz BW)
 - 5 GHz Low: 2x2, (80MHz BW)
 - 5 GHz High: 4x4, (80MHz BW)
- Orthogonal Frequency-Division Multiple Access (OFDMA)
- Maximum number of connected devices is 64(Can be extended up to 256 if required)
- WPA, WPA2, and WPA3 personal encryption
- Racetrack enclosure

Benefits:

- OFDMA and MU-MIMO are multiuser technologies that enable simultaneous bidirectional communication between an access point (AP) and end users. While MU-MIMO increases capacity and efficiency in high-bandwidth applications like mission-critical voice calls and video streaming, OFDMA is ideal for low-bandwidth, small-packet applications such as IoT sensors.
- PHY rate up to 574 Mb/s for 2.4 GHz, 1200 M b/s for low 5 GHz, and 2400 Mb/s for High 5 GHz
- High quality of service (QoS) video over Wi-Fi
- Improves connection speeds throughout the home and provides Wi-Fi where typically there would be none.
- Ease of setup because the extender uses Wi-Fi as the backhaul; it is more free to find a place for it.
- User intuitive information

Table 4 lists additional function detail.

Table 4 HA-0236G-A extender function detail

Function	Detail
Installation	Desk mounted
Interfaces	• Two RJ45 Gigabit Ethernet (10/100/1000Base-T) LAN ports; any one of them can be used as Ethernet backhaul link • Supports 2x2 802.11a/b/g/n/ac/ax 2.4 GHz wireless LAN (WLAN) interface • Supports 2x2 802.11a/b/g/n/ac/ax 5 GHz low band wireless LAN (WLAN) interface • Supports 4x4 802.11a/b/g/n/ac/ax 5 GHz high band wireless LAN (WLAN) interface • Maximum effective isotropic radiated power (EIRP) on 2.4 GHz up to 500 mW, 5 GHz (low band) up to 500mw, and 5 GHz (high band) up to 1 W • WPA support including WPA, WPA2, and WPA3 personal encryption • Nokia Design for Security (DFSEC) requirement compliant
Basic function	• Layer 2 forwarding • Priority queue based QoS • Supports TR-069 with ACS access for remote device management • Supports FOTA using T-Mobile ACS server • Flexible video delivery options over Ethernet or wireless
LED	Single multi-color LED for simple and intuitive status indication
Regulatory compliance	• IEC/UL 62368-1 • FCC Part 15

4.2.1 TR-069 object support

HA-0236G-A extender supports the following activities:

- Software image upgrade by ACS
- Log file retrieval by ACS
- Wi-Fi statistic retrieval by ACS

4.3 HA-0236G-A extender software and installation feature support

To install the HA-0236G-A extender, see [Install a HA-0236G-A extender](#).

4.4 HA-0236G-A extender interfaces and interface capacity

Table 5 describes the supported interfaces and interface capacity for HA-0236G-A extender devices.

Table 5 HA-0236G-A extender interface connection capacity

Device type and model	Maximum capacity							
	POTS	10/100 BASE-T	10/100/1000 BASE-T	RF video (CATV)	MoCA	VDSL2	E1/T1	Local craft
HA-0236G-A extender	—	1	1	—	—	—	—	—

4.4.1 HA-0236G-A extender connections and components

Figure 4 shows the physical connections for HA-0236G-A extender.

Figure 4 HA-0236G-A extender physical connections

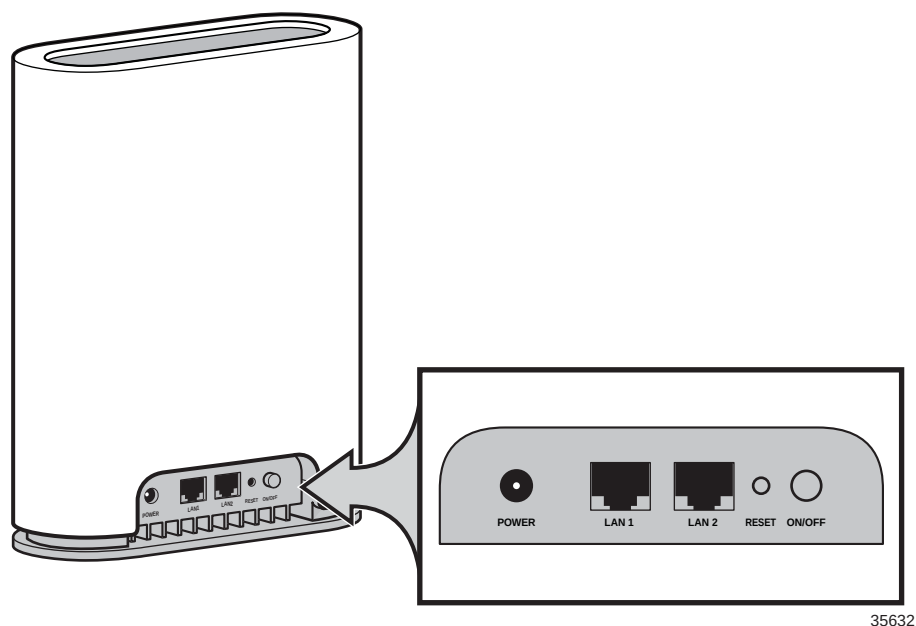


Table 6 describes the physical connections for HA-0236G-A.

Table 6 HA-0236G-A extender physical connections

Connection	Description
Reset button	Pressing the Reset button for less than 10 seconds reboots the extender; pressing the Reset button for 10 seconds or more restores the extender to its factory defaults.
LAN	This connection is provided through Ethernet RJ-45 connectors. One 10/100/1000 Base-T Ethernet interface is supported. The Ethernet ports can support both data and in-band video services.
Power input	This connection is provided through the power connector. A power cable fitted with a barrel connector is used to make the connection.
ON/OFF button	This button powers the unit on or off.

4.5 HA-0236G-A extender LEDs

The HA-0236G-A extender has multi-color LED indicator on the front face. The LED color and pulse rate acts as a signal to the home user, which indicates the state of the extender and the quality of its backhaul link.

Table 7 provides LED descriptions for the HA-0236G-A extender.

Table 7 HA-0236G-A extender LED indications

LED color	LED behavior	LED behavior description
Off	Off	Power off.
Blue - Green	Solid	Good backhaul connection. A link to the next node is available.
Yellow	Solid	Backhaul connection is successful but not optimal. A link to the next node is below standard.
Red	Solid	Backhaul connection is not successful. A link to the next node is not operational.
	Fast pulsing	Factory reset
White	Solid	Powering on

4.6 HA-0236G-A extender detailed specifications

Table 8 lists the physical specifications for the HA-0236G-A extender.

Table 8 HA-0236G-A extender physical specifications

Description	Specification
Length	61 mm (2.40 in.)
Width	160 mm (6.30 in.)
Height	205 mm (8.07 in.)
Weight [within ± 0.5 lb (0.23 kg)]	766.0 g (1.69 lb)

Table 9 lists the power consumption specifications for the HA-0236G-A extender.

Table 9 HA-0236G-A extender power consumption specifications

Maximum power (Not to exceed)	Condition	Minimum power	Condition
~24 W	2 10/100/1000 Base-T Ethernet, Wi-Fi operational	4.9 W	interfaces/services not provisioned

HA-0236G-A extender is Thermal compliant to UL Standard 60950-1, EN563 Thermal, and ASTM C1055 Thermal Sensation and Associated Effects.

Table 10 lists the environmental specifications for HA-0236G-A extender.

Table 10 HA-0236G-A extender environmental specifications

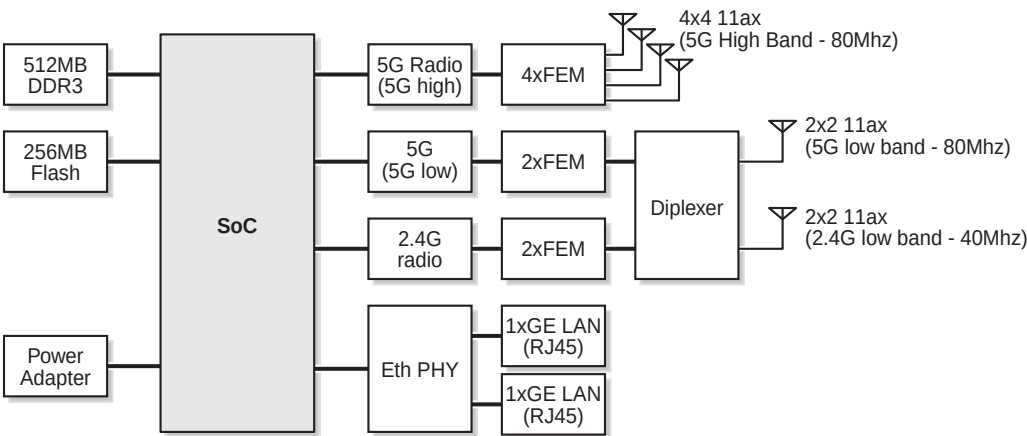
Mounting method	Temperature range and humidity	Altitude
On desk or shelf	Operating: -5°C to 45°C (23°F to 113°F) ambient temperature 95% relative humidity, non-condensing at 40°C	Contact your Nokia technical support representative for more information
	Storage: -20°C to 70°C (-4°F to 158°F)	

4.7 HA-0236G-A extender functional blocks

HA-0236G-A extender devices are single-residence units that support Wireless (Wi-Fi) service. Wi-Fi service on these devices is compliant with the IEEE 802.11ax (Wi-Fi 6) standard to extend the 4G LTE and 5G Sub6GHz indoor speeds using Easy Mesh technology. In addition to the Wi-Fi service, these devices transmit Ethernet packets to two RJ-45 Ethernet ports. Any one of them, but only one, can be used as an Ethernet backhaul link.

Figure 5 shows the functional blocks for the HA-0236G-A extender.

Figure 5 Wi-Fi extender [11ax 2+2+4]



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4.8 HA-0236G-A extender responsible party

Table 11 lists the party in the US responsible for the extender.

Table 11 Responsible party contact information

Legal Company name	Nokia USA Inc.
Address	2301 SUGAR BUSH RD. STE 300, RALEIGH, NC 27612
Phone, Fax	+1 866 582-3688

4.9 HA-0236G-A extender special considerations

This section describes the special considerations for HA-0236G-A extender devices.

4.9.1 Wi-Fi service

HA-0236G-A extender devices feature Wi-Fi service as well as data services. Wi-Fi is a wireless networking technology that uses radio waves to provide wireless HSI and network connections. This device complies with the IEEE 802.11ax standards, which the Wi-Fi Alliance defines as the basis for Wi-Fi technology. This standard also extends the 4G LTE and 5G Sub6Ghz indoor speeds, throughout the home using Easy Mesh technology.

4.9.1.1 Wi-Fi standards and certifications

The Wi-Fi service on B HA-0236G-A extender devices supports the following IEEE standards, FCC Standards, and Wi-Fi Alliance certifications:

- Wi-Fi: Wi-Fi Alliance
- Safety: ETL
- Resistibility: K21 and Surge Immunity Test of AC power Line supports: Differential mode standard: 6kV; Common mode standard: 6kV
- Environmental: (ETSI EN 300 019-2-3 V2.4.1 (2015-12) T3.2 (no icing, no condensation) for working, ETSI EN 300 019-2-2 V2.4.1 (2017-11) T 2.3 for Transportation, ETSI EN 300 019-2-1 V2.3.1 (2017-11) T 1.2 for Storage
- FCC Standards compliance (47 CFR FCC Part 15 Subpart B/C/E)

4.9.2 HA-0236G-A extender considerations and limitations

None

5 Install a HA-0236G-A extender

5.1 Purpose

5.2 General

5.3 Prerequisites

5.4 Recommended tools

5.5 Safety information

5.6 Installation procedure

5.1 Purpose

This chapter provides the steps to install a HA-0236G-A extender using an Ethernet cable. For a guided setup procedure using the APP, refer to the Quick Start Guide (QSG) found in the HA-0236G-A extender package.

5.2 General

The steps listed in this chapter describe installing and cabling for a HA-0236G-A extender.

5.3 Prerequisites

You need the following items before beginning the installation:

- One Ethernet cable (included with the device)
- AC power jack
- Running TMO 5G CPE RGW

5.4 Recommended tools

You need the following tools for the installation:

- Paper clip

5.5 Safety information

Read the following safety information before installing the unit.



Danger 1 — Hazardous electrical voltages and currents can cause serious physical harm or death. Always use insulated tools and follow proper safety precautions when connecting or disconnecting power circuits.

Danger 2 — Make sure all sources of power are turned off and have no live voltages present on feed lines or terminals. Use a voltmeter to measure for voltage before proceeding.

Danger 3 — Always contact the local utility company before connecting the enclosure to the utilities.



Caution — Keep indoor devices out of direct sunlight. Prolonged exposure to direct sunlight can damage the unit.



Note 1 — Observe the local and national laws and regulations that may be applicable to this installation.

Note 2 — Observe the following:

- The device must be installed by qualified service personnel.
- Indoor units must be installed with cables that are suitably rated and listed for indoor use.
- See the detailed specifications in the [HA-0236G-A extender data sheet](#) for the temperature ranges for these devices.

5.6 Installation procedure

Use this procedure to install a HA-0236G-A extender.

Procedure 6 Installation procedure

- 1 Place the unit on a flat surface, such as the base included, a desk or shelf.



Note 1 — The HA-0236G-A extender cannot be stacked with another extender or with other equipment. The installation requirements are:

- allow a minimum 100 mm clearance above the top cover
- allow a minimum 50 mm clearance from the side vents
- do not place any heat source directly above the top cover or below the bottom cover

Note 2 — The Wi-Fi coverage between the RGW and the HA-0236G-A extender must overlap the Wi-Fi/Ethernet signal to configure Easy Mesh seamlessly. The number of HA-0236G-A extender(s) needed depends on the size of area that needs access.

-
- 2 Review the connection locations, as shown in Figure 3.
 - 3 Connect the Ethernet cable to the RJ-45 port; see Figure 3 for the location of the RJ-45 port.
 - 4 Connect the power cable to the power connector.
-



Note — Units must be powered by a Listed power supply with a minimum output rate of 12 V dc, 2A. The polarity of the power adapter plug must match the extender.

-
- 5 Power up the unit by using the On/Off power switch.
 - 6 Verify the LED, which indicates WiFi backhaul quality. See [4.5HA-0236G-A extender LEDs](#) for the LED description.
-

If the Ethernet backhaul is connected, the LED does not indicate the WiFi backhaul signal quality. Only when the LED is blue-green, the extender indicates a good backhaul connection and it has started and configured. At this time, you can remove the Ethernet backhaul cable and it will switch to WiFi backhaul automatically, then you can move the extender to another place.



Note 1 — You may consider repositioning the HA-0236G-A extender after evaluating the WiFi backhaul signal. If :

- there is no WiFi backhaul signal is weak or medium. The LED is solid red or yellow.
- you want to further improve your service.

You might need to repeat this cycle several times before finding the best location for the HA-0236G-A extender.

Note 2 — Position the HA-0236G-A extender in a place with few obstructions for Wi-Fi waves, least number of walls between the extender and the RGW or any other extenders. Away from the metal fixture, enclosures, cabinets, appliances, blinds, reinforced concrete, and pipes.

7 If necessary, reset the HA-0236G-A extender.

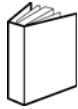


Note — Resetting the device will return all settings to factory default values; any configuration customization will be lost.

- i Locate the Reset button as shown in Figure 3.
- ii Insert the end of a straightened paper clip or other narrow object into the hole in the Reset button and push for more than 10 seconds to reset the device.

8 STOP. This procedure is complete.

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