

# BL54L15 $\mu$

## Regulatory Information

v1.0

The BL54L15 $\mu$  holds current certifications in the following countries:

| Country/Region    | Regulatory ID              |
|-------------------|----------------------------|
| USA (FCC)         | SQG-BL54L15U               |
| Canada (ISED)     | 3147A-BL54L15U             |
| UK (UKCA)         | *No Regulatory ID required |
| EU                | *No Regulatory ID required |
| Japan (MIC)       | 201-250075                 |
| Korea (KC)        | R-C-EZU1-BL54L15U          |
| Australia (AS)    | *No Regulatory ID required |
| New Zealand (NZS) | *No Regulatory ID required |

\*Indicates countries where Ezurio has conducted testing and evaluation in accordance with local regulatory requirements; however, a regulatory ID is not available for OEM use. Comprehensive test reports and other relevant documentation can be accessed on the Ezurio website.

## 1 Certified Antennas

The antennas listed below were tested for use with the BL54L15 $\mu$ . The OEM can choose a different manufacturer's antenna but must make sure it is of same type and that the gain is less than or equal to the antenna that is approved for use.\*

**\*Note:** Japan (MIC), South Korea (KCC) lists applicable antennas on its certificates and/or test reports. If your antenna is not on the approved list, regardless of whether it is comparative, it must be added to the certificate before it can be used in these countries.

| Manufacturer                   | Model      | Part Number           | Type         | Connector | Frequency Range   | Peak Gain (dBi) |
|--------------------------------|------------|-----------------------|--------------|-----------|-------------------|-----------------|
| Ezurio<br>(Laird Connectivity) | NanoBlue   | EBL2400A1-10MH4L      | PCB Dipole   | MHF4      | 2.4GHz-2.5GHz     | 2.0             |
| Ezurio<br>(Laird Connectivity) | FlexPIFA   | 001-0022              | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Ezurio<br>(Laird Connectivity) | mFlexPIFA  | EFA2400A3S-10MH4L     | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Mag.Layers                     | 0600-00057 | EDA-8709-2G4C1-B27-CY | Dipole       | IPEX MHF4 | 2.4GHz-2.5 GHz    | 2.32            |
| Ezurio<br>(Laird Connectivity) | i-FlexPIFA | EFG2401A3S-10MH4L     | i-FlexPIFA   | MHF4L     | 2.4 GHz-2.48 GHz  | 2.0             |
| Ezurio<br>(Laird Connectivity) | NFC        | 0600-00061            | NFC Spiral   | N/A       | N/A               | N/A             |
| Yaego (Pulse)                  | NC         | ANT1608LL14R          | Chip Antenna | N/A       | 2.4 GHz-2.5 GHz   | 2.0             |

## 2 Documentation Requirements

To ensure regulatory compliance, when integrating the BL54L15 $\mu$  into a host device, it is necessary to meet the documentation requirements set forth by the applicable regulatory agencies. The following sections (FCC, ISED Canada, European Union, and others) outline the information that may be included in the user's guide and external labels for the host devices into which the BL54L15 $\mu$  is integrated.

## 3 FCC Regulatory

| Model         | Part Number | FCC ID       |
|---------------|-------------|--------------|
| BL54L15 $\mu$ | 453-00223C  | SQG-BL54L15U |
|               | 453-00223R  | SQG-BL54L15U |
|               | 453-00224C  | SQG-BL54L15U |
|               | 453-00224R  | SQG-BL54L15U |

### 3.1 Antenna Information

The BL54L15 $\mu$  family has been designed to operate with the antennas listed below.

| Manufacturer                   | Model      | Part Number           | Type         | Connector | Frequency Range   | Peak Gain (dBi) |
|--------------------------------|------------|-----------------------|--------------|-----------|-------------------|-----------------|
| Ezurio<br>(Laird Connectivity) | NanoBlue   | EBL2400A1-10MH4L      | PCB Dipole   | MHF4      | 2.4GHz-2.5GHz     | 2.0             |
| Ezurio<br>(Laird Connectivity) | FlexPIFA   | 001-0022              | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Ezurio<br>(Laird Connectivity) | mFlexPIFA  | EFA2400A3S-10MH4L     | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Mag.Layers                     | 0600-00057 | EDA-8709-2G4C1-B27-CY | Dipole       | IPEX MHF4 | 2.4GHz-2.5 GHz    | 2.32            |
| Ezurio<br>(Laird Connectivity) | i-FlexPIFA | EFG2401A3S-10MH4L     | i-FlexPIFA   | MHF4L     | 2.4 GHz-2.48 GHz  | 2.0             |
| Ezurio<br>(Laird Connectivity) | NFC        | 0600-00061            | NFC Spiral   | N/A       | N/A               | N/A             |
| Yaego (Pulse)                  | NC         | ANT1608LL14R          | Chip Antenna | N/A       | 2.4 GHz-2.5 GHz   | 2.0             |

**Note:** The OEM is free to choose another vendor's antenna of like type and equal or lesser gain as an antenna appearing in the table and still maintain compliance. Reference FCC Part 15.204(c)(4) for further information on this topic.

### 3.2 FCC Documentation Requirements

#### Federal Communication Commission (FCC) Interference 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 an 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 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.

**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.

#### **FCC Radiation Exposure Statement**

This product complies with the FCC RF exposure limit set forth for an uncontrolled environment and is safe for intended operation as described in this manual. Further RF exposure reduction can be achieved if the product is kept as far as possible from the user body or is set to a lower output power if such function is available.

This device meets the SAR exemption if the minimum separation distance is  $< 5\text{mm}$  assuming an antenna with a max gain of 2.32dBi. Therefore, SAR testing is not required for this module.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

This device is intended only for OEM integrators under the following condition:

1. The transmitter module may not be co-located with any other transmitter or antenna,

If the condition above is met, further transmitter testing is not required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this installed module.

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#### **IMPORTANT NOTE:**

If this condition cannot be met (for example, certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID **cannot** be used on the final product. In these circumstances, the OEM integrator is responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

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### **3.3 End-Product Labeling**

The end product must be labeled in a visible area with the following: ***Contains FCC ID: SQG-BL54L15U***

### **3.4 Manual Information to the End User**

The OEM integrator must be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as shown in this manual. Specifically, the information outlined **FCC Interference Statement**, **FCC Caution Statement** and **FCC Radiation Exposure Statement**.

## 4 Industry Canada Statement

| Model         | Part Number | ISED           |
|---------------|-------------|----------------|
| BL54L15 $\mu$ | 453-00223C  | 3147A-BL54L15U |
|               | 453-00223R  | 3147A-BL54L15U |
|               | 453-00224C  | 3147A-BL54L15U |
|               | 453-00224R  | 3147A-BL54L15U |

### 4.1 Antenna Information

*This radio transmitter (IC: 3147A-BL54L15U) was approved by Innovation, Science and Economic Development (ISED) 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.*

*Le présent émetteur radio (IC: 3147A-BL54L15U) a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés cidessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué pour tout type figurant sur la liste, sont strictement interdits pour l'exploitation de l'émetteur.*

| Manufacturer                   | Model      | Part Number           | Type         | Connector | Frequency Range   | Peak Gain (dBi) |
|--------------------------------|------------|-----------------------|--------------|-----------|-------------------|-----------------|
| Ezurio<br>(Laird Connectivity) | NanoBlue   | EBL2400A1-10MH4L      | PCB Dipole   | MHF4      | 2.4GHz-2.5GHz     | 2.0             |
| Ezurio<br>(Laird Connectivity) | FlexPIFA   | 001-0022              | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Ezurio<br>(Laird Connectivity) | mFlexPIFA  | EFA2400A3S-10MH4L     | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Mag.Layers                     | 0600-00057 | EDA-8709-2G4C1-B27-CY | Dipole       | IPEX MHF4 | 2.4GHz-2.5 GHz    | 2.32            |
| Ezurio<br>(Laird Connectivity) | i-FlexPIFA | EFG2401A3S-10MH4L     | i-FlexPIFA   | MHF4L     | 2.4 GHz-2.48 GHz  | 2.0             |
| Ezurio<br>(Laird Connectivity) | NFC        | 0600-00061            | NFC Spiral   | N/A       | N/A               | N/A             |
| Yaego (Pulse)                  | NC         | ANT1608LL14R          | Chip Antenna | N/A       | 2.4 GHz-2.5 GHz   | 2.0             |

### 4.2 ISED Canada Statement

The end user manual shall include all required regulatory information/warning as shown in this manual.

This device complies with Industry Canada's license-exempt RSSs. 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.

*Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:*

1. *l'appareil ne doit pas produire de brouillage;*
2. *l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.*

### 4.3 Radiation Exposure Statement

The product complies with the Canada portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The minimum separation distance for portable use is limited to 15mm assuming use of antenna with 2.32 dBi of gain. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

## 4.4 Déclaration d'exposition aux radiations:

Le produit est conforme aux limites d'exposition pour les appareils portables RF pour les Etats-Unis et le Canada établies pour un environnement non contrôlé. La distance de séparation minimale pour l'utilisation portative est limitée à 15mm en supposant l'utilisation de l'antenne avec 2.32 dBi de gain. Le produit est sûr pour un fonctionnement tel que décrit dans ce manuel. La réduction aux expositions RF peut être augmentée si l'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible.

This device is intended only for OEM integrators under the following conditions:

1. The transmitter module may not be co-located with any other transmitter or antenna.

If the condition above is met, further transmitter testing is not required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes:

1. Le module émetteur peut ne pas être coimplanté avec un autre émetteur ou antenne.

*Tant que les 1 condition ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.*

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### IMPORTANT NOTE:

If this condition cannot be met (for example, certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID **cannot** be used on the final product. In these circumstances, the OEM integrator is responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

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### NOTE IMPORTANTE:

*Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.*

## 4.5 End-Product Labeling

The final end product must be labeled in a visible area with the following: **Contains IC:** 3147A-BL54L15U

## 4.6 Plaque signalétique du produit final

*Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: **Contient des IC:** 3147A-BL54L15U*

## 4.7 Manual Information to the End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

## 4.8 Manuel d'information à l'utilisateur final

*L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.*

*Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.*

## 4.9 ICES-003 Issue 7 Compliance Statement

This device was tested and found to be compliant to the requirements of ICES-003, Issue 7, Information Technology Equipment (Including Digital Apparatus).

## 5 Japan (MIC) Regulatory

The BL54L15 $\mu$  is approved for use in the Japanese market. The part numbers listed below hold WW type certification. Refer to **ARIB-STD-T66** for further guidance on OEM's responsibilities.

| Model         | Part Number | Certificate Number | Antenna      |
|---------------|-------------|--------------------|--------------|
| BL54L15 $\mu$ | 453-00223C  | 201-250075         | Chip Antenna |
|               | 453-00223R  | 201-250075         |              |
| BL54L15 $\mu$ | 453-00224C  | 201-250075         | Trace Pin    |
|               | 453-00224R  | 201-250075         |              |

### 5.1 Antenna Information

The BL54L15 $\mu$  was tested with antennas listed below.

**Note:** Japan (MIC) lists applicable antennas on its certificates. If your antenna is not on the approved list, regardless of whether it is comparative, it must be added to the certificate before it can be used in Japan.

| Manufacturer                   | Model      | Part Number           | Type         | Connector | Frequency Range   | Peak Gain (dBi) |
|--------------------------------|------------|-----------------------|--------------|-----------|-------------------|-----------------|
| Ezurio<br>(Laird Connectivity) | NanoBlue   | EBL2400A1-10MH4L      | PCB Dipole   | MHF4      | 2.4GHz-2.5GHz     | 2.0             |
| Ezurio<br>(Laird Connectivity) | FlexPIFA   | 001-0022              | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Ezurio<br>(Laird Connectivity) | mFlexPIFA  | EFA2400A3S-10MH4L     | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Mag.Layers                     | 0600-00057 | EDA-8709-2G4C1-B27-CY | Dipole       | IPEX MHF4 | 2.4GHz-2.5 GHz    | 2.32            |
| Ezurio<br>(Laird Connectivity) | i-FlexPIFA | EFG2401A3S-10MH4L     | i-FlexPIFA   | MHF4L     | 2.4 GHz-2.48 GHz  | 2.0             |
| Ezurio<br>(Laird Connectivity) | NFC        | 0600-00061            | NFC Spiral   | N/A       | N/A               | N/A             |
| Yaego (Pulse)                  | NC         | ANT1608LL14R          | Chip Antenna | N/A       | 2.4 GHz-2.5 GHz   | 2.0             |

### 5.2 Labeling Requirements

It is recommended that the host device bears a label showing the Japanese "GITEKI" mark and the certification number accompanied by the following statement:

当該機器には電波法に基づく、技術基準適合証明等を受けた特定無線設備を装着している

Translation: *This equipment contains specified radio equipment that has been certified to the Technical Regulation Conformity Certification under the Radio Law.*



201-250075

## 6 Korea (KC) Regulatory

The BL54L15μ is approved for use in the Korean market.

| Model    | Part Number | Certificate Number |
|----------|-------------|--------------------|
| BL54L15μ | 453-00223C  | R-C-EZU1-BL54L15U  |
| BL54L15μ | 453-00223R  | R-C-EZU1-BL54L15U  |
| BL54L15μ | 453-00224C  | R-C-EZU1-BL54L15U  |
| BL54L15μ | 453-00224R  | R-C-EZU1-BL54L15U  |

### 6.1 Antenna Information

The BL54L15μ was tested with antennas listed below.

**Note:** South Korea (KCC) records applicable antennas in its test reports. If your antenna is not on the approved list, regardless of whether it is comparative, it must be evaluated and potentially added to the certificate before it can be used in South Korea.

| Manufacturer                   | Model      | Part Number           | Type         | Connector | Frequency Range   | Peak Gain (dBi) |
|--------------------------------|------------|-----------------------|--------------|-----------|-------------------|-----------------|
| Ezurio<br>(Laird Connectivity) | NanoBlue   | EBL2400A1-10MH4L      | PCB Dipole   | MHF4      | 2.4GHz-2.5GHz     | 2.0             |
| Ezurio<br>(Laird Connectivity) | FlexPIFA   | 001-0022              | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Ezurio<br>(Laird Connectivity) | mFlexPIFA  | EFA2400A3S-10MH4L     | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Mag.Layers                     | 0600-00057 | EDA-8709-2G4C1-B27-CY | Dipole       | IPEX MHF4 | 2.4GHz-2.5 GHz    | 2.32            |
| Ezurio<br>(Laird Connectivity) | i-FlexPIFA | EFG2401A3S-10MH4L     | i-FlexPIFA   | MHF4L     | 2.4 GHz-2.48 GHz  | 2.0             |
| Ezurio<br>(Laird Connectivity) | NFC        | 0600-00061            | NFC Spiral   | N/A       | N/A               | N/A             |
| Yaego (Pulse)                  | NC         | ANT1608LL14R          | Chip Antenna | N/A       | 2.4 GHz-2.5 GHz   | 2.0             |

### 6.2 Labeling Requirements

**KC mark, Certification No.** and **Conformity Information** must be indicated both on the product and in the user manual.

The **Conformity Information** consist from:

- the applicant name,
- equipment & model name,
- manufacturer & country-of-origin
- manufactured year & month.



R-C-EZU1-BL54L15U

## 7 Australia and New Zealand Regulatory

RCM: Compliant to standards AS/NZS 4268: 2017+Amd 1:2021, AS/NZS 2772.2:2016+ Amd 1:2018, EN 300 328 V2.2.2 (2019-07), and EN 300 330 V2.1.1 (2017-02).

If this device is used in a product, the OEM has responsibility to verify compliance of the final end product to the Australia/New Zealand (RCM) Standards. All end-products require their own certification (SDoc). You will not be able to leverage the module certification and ship product into the country.

### 7.1 Antenna Information

The BL54L15μ was tested with antennas listed below.

**Note:** The OEM is free to choose another vendor's antenna of like type and equal or lesser gain as an antenna appearing in the table and still maintain compliance.

| Manufacturer                   | Model      | Part Number           | Type         | Connector | Frequency Range   | Peak Gain (dBi) |
|--------------------------------|------------|-----------------------|--------------|-----------|-------------------|-----------------|
| Ezurio<br>(Laird Connectivity) | NanoBlue   | EBL2400A1-10MH4L      | PCB Dipole   | MHF4      | 2.4GHz-2.5GHz     | 2.0             |
| Ezurio<br>(Laird Connectivity) | FlexPIFA   | 001-0022              | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Ezurio<br>(Laird Connectivity) | mFlexPIFA  | EFA2400A3S-10MH4L     | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Mag.Layers                     | 0600-00057 | EDA-8709-2G4C1-B27-CY | Dipole       | IPEX MHF4 | 2.4GHz-2.5 GHz    | 2.32            |
| Ezurio<br>(Laird Connectivity) | i-FlexPIFA | EFG2401A3S-10MH4L     | i-FlexPIFA   | MHF4L     | 2.4 GHz-2.48 GHz  | 2.0             |
| Ezurio<br>(Laird Connectivity) | NFC        | 0600-00061            | NFC Spiral   | N/A       | N/A               | N/A             |
| Yaego (Pulse)                  | NC         | ANT1608LL14R          | Chip Antenna | N/A       | 2.4 GHz-2.5 GHz   | 2.0             |

### 7.2 Labeling Requirements

#### RCM - Regulatory Compliance Mark

- The compliance label applied to the external surface of the packaging used for the device must:
  - occupy an area that is greater than 1% of that external surface;



- be clearly visible.
- The compliance label must be durable.
- A compliance label must be applied to a device:
  - permanently; or
  - in a way that makes removal or obliteration difficult.



## 8 UK (UKCA)

### 8.1 UKCA Declaration of Conformity

*BL54L15 $\mu$*

|                              |                                                                                                                                      |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Manufacturer</b>          | Ezurio                                                                                                                               |
| <b>Products Part Numbers</b> | 453-00223C, 453-00223R<br>453-00224C, 453-00224R                                                                                     |
| <b>Product Description</b>   | BL54L15 $\mu$ Series - Bluetooth LE + 802.15.4 + NFC                                                                                 |
| <b>UK Legislation</b>        | Radio Equipment Regulations 2017<br>Electromagnetic Compatibility Regulations 2016<br>Electrical Equipment (Safety) Regulations 2016 |



#### Reference standards used for conformity:

| Legislation     | Requirement                                                         | Reference standard(s)                                                             |                                          |
|-----------------|---------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------|
| Safety          | Low voltage equipment safety                                        | EN 62368-1: 2018, IEC / EN 62368-1:2020+A11:2020, BS EN/IEC 62368-1:2020+A11:2020 |                                          |
|                 | RF Exposure                                                         | BS EN 62479:2010, BS EN 50663:2017                                                |                                          |
| EMC             | Protection requirements –<br>Electromagnetic compatibility          | EN 301 489-1 v2.2.3 (2019-11)                                                     |                                          |
|                 |                                                                     | EN 301 489-3 v2.3.2 (2023-01)                                                     |                                          |
|                 |                                                                     | EN 301 489-17 v3.3.1 (2024-09)                                                    |                                          |
| Radio Equipment | Means of the efficient use of the radio<br>frequency spectrum (ERM) | EN 300 328 v2.2.2 (2019-07)                                                       | Wide-band transmission systems           |
|                 |                                                                     | EN 300 330 v2.1.1 (2017-02)                                                       | Short Range Devices (SRD) 9kHz to 30 MHz |

#### Declaration:

We, Ezurio, declare under our sole responsibility that the essential test suites have been carried out and that the above product to which this declaration relates is in conformity with all the applicable requirements outlined above, when used for its intended purpose.

The device has an output power of 8.55mW EIRP and therefore meets the low-power exclusion level of < 20mW.

|                                 |                                                                                                        |
|---------------------------------|--------------------------------------------------------------------------------------------------------|
| Place of Issue:                 | Ezurio<br>W66N220 Commerce Court, Cedarburg, WI 53012 USA<br>tel: +1-262-375-4400 fax: +1-262-364-2649 |
| Date of Issue:                  | July 15, 2025                                                                                          |
| Name of Authorized Person:      | Brian Petted, Technology Leader                                                                        |
| Signature of Authorized Person: |                     |

## 9 EU Regulatory

The BL54L15 $\mu$  was tested for compliance with relevant standards for the EU market. The BL54L15 $\mu$  module was tested with a 2.32 dBi antenna. The OEM can operate the BL54L15 $\mu$  module with any other type of antenna but must ensure that the gain does not exceed 2.32 dBi to maintain the Ezurio approval.

The OEM should consult with a qualified test house before entering their device into an EU member country to make sure all regulatory requirements have been met for their complete device.

### 9.1 Antenna Information

The BL54L15 $\mu$  was tested with antennas listed below.

| Manufacturer                   | Model      | Part Number           | Type         | Connector | Frequency Range   | Peak Gain (dBi) |
|--------------------------------|------------|-----------------------|--------------|-----------|-------------------|-----------------|
| Ezurio<br>(Laird Connectivity) | NanoBlue   | EBL2400A1-10MH4L      | PCB Dipole   | MHF4      | 2.4GHz-2.5GHz     | 2.0             |
| Ezurio<br>(Laird Connectivity) | FlexPIFA   | 001-0022              | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Ezurio<br>(Laird Connectivity) | mFlexPIFA  | EFA2400A3S-10MH4L     | PIFA         | MHF4L     | 2.4 GHz - 2.48GHz | 2.0             |
| Mag.Layers                     | 0600-00057 | EDA-8709-2G4C1-B27-CY | Dipole       | IPEX MHF4 | 2.4GHz-2.5 GHz    | 2.32            |
| Ezurio<br>(Laird Connectivity) | i-FlexPIFA | EFG2401A3S-10MH4L     | i-FlexPIFA   | MHF4L     | 2.4 GHz-2.48 GHz  | 2.0             |
| Ezurio<br>(Laird Connectivity) | NFC        | 0600-00061            | NFC Spiral   | N/A       | N/A               | N/A             |
| Yaego (Pulse)                  | NC         | ANT1608LL14R          | Chip Antenna | N/A       | 2.4 GHz-2.5 GHz   | 2.0             |

### User's Guide Requirements

The integrator must include specific information in the user's guide for the device into which the BL54L15 $\mu$  is integrated. In addition to the required FCC and ISED statements outlined above, the following Radio Equipment Directive (RED) statements must be added in their entirety and without modification into a prominent place in the user's guide for the device into which the BL54L15 $\mu$  is integrated:

This device complies with the essential requirements of the 2014/53/EU – Radio Equipment Directive (RED). The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the 2014/53/EU – Radio Equipment Directive (RED):

| Standard                        | Description                                                                                                                                                                          |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IEC/EN 62368-1: 2018            | Audio/video, information and communication technology equipment - Part 1: Safety requirements                                                                                        |
| IEC/EN 62368-1: 2020 + A11:2020 | Audio/video, information and communication technology equipment - Part 1: Safety requirements                                                                                        |
| BS / EN 62479:2010              | Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10 MHz to 300 GHz)    |
| BS / EN 50663:2017              | Generic Standard for assessment of low power electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (10 MHz – 300 GHz)                |
| EN 301 489-1 v2.2.3 (2019-11)   | Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements |

| Standard                       | Description                                                                                                                                                                                                                                        |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EN 301 489-3 v2.3.2 (2023-01)  | ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 3: Specific conditions for Short Range Devices (SRD) operating on frequencies between 9 kHz and 246 GHz; Harmonised Standard for ElectroMagnetic Compatibility |
| EN 301 489-17 v3.3.1 (2024-09) | E Electromagnetic compatibility (EMC) standard for radio equipment and services; Part 17: Specific conditions for Broadband and Wideband Data Transmission Systems; Harmonised Standard for ElectroMagnetic Compatibility                          |
| EN 300 328 v2.2.2 (2019-07)    | Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz band; Harmonised Standard for access to radio spectrum                                                                                                         |
| EN 300 330 v2.1.1 (2017-02)    | Short Range Devices (SRD); Radio equipment in the frequency range 9 kHz to 25 MHz and inductive loop systems in the frequency range 9kHz to 30 MHz; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU |
| EU 2015/863 (RoHS 3)           | Declaration of Compliance – EU Directive 2015/863; Reduction of Hazardous Substances (RoHS)                                                                                                                                                        |

This device is a 2.4 GHz wideband transmission system (transceiver), intended for use in all EU member states and EFTA countries.

|                             |                                                                                                                                                                                                               |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| български [Bulgarian]       | С настоящото [име на производителя] декларира, че това устройство [вид оборудване] е в съответствие със съществените изисквания и други приложими разпоредби на Директиви 2014/53/EC                          |
| Hrvatski [Croatian]         | [naziv proizvođača] ovim putem izjavljuje da je ovaj uređaj [vrsta opreme] sukladan osnovnim zahtjevima i ostalim bitnim odredbama Direktiva 2014/53/EU                                                       |
| Česky [Czech]               | [Jméno výrobce] tímto prohlašuje, že tento [typ zařízení] je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 2014/53/EU.                                                         |
| Dansk [Danish]              | Undertegnede [fabrikantens navn] erklærer herved, at følgende udstyr [udstyrets typebetegnelse] overholder de væsentlige krav og øvrige relevante krav i direktiv 2014/53/EU.                                 |
| Deutsch [German]            | Hiermit erkläre [Name des Herstellers], dass sich das Gerät [Gerätetyp] in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 2014/53/EU befindet. |
| Eesti [Estonian]            | Käesolevaga kinnitab [tootja nimi] seadme [seadme tüüp] vastavust direktiivi 2014/53/EL põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.                                  |
| English                     | Hereby, [name of manufacturer], declares that this [type of equipment] is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.                                |
| Español [Spanish]           | Por medio de la presente [nombre del fabricante] declara que el [clase de equipo] cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2014/53/UE.  |
| Ελληνική [Greek]            | ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ [όνομα του κατασκευαστή] ΔΗΛΩΝΕΙ ΟΤΙ [εξοπλισμού] ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2014/53/ΕΕ.                                        |
| Français [French]           | Par la présente [nom du fabricant] déclare que l'appareil [type d'appareil] est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2014/53/UE.                        |
| Íslenska [Icelandic]        | Hér, [Nafn framleiðanda], því yfir að þetta [gerð búnaðar] tæki er í samræmi við grunnkröfur og önnur viðeigandi ákvæði tilskipana 2014/53/ ESB                                                               |
| Italiano [Italian]          | Con la presente [nome del costruttore] dichiara che questo [tipo di apparecchio] è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2014/53/UE.               |
| Latviešu valoda [Latvian]   | Ar šo [izgatavotājas nosaukums] deklarē, ka [iekārtas tips] atbilst Direktīvas 2014/53/ES būtiskajām prasībām un citiemar to saistītajiem noteikumiem.                                                        |
| Lietuvių kalba [Lithuanian] | Šiuo [gamintojo pavadinimas] deklaruoją, kad šis [įrangos tipas] atitinka esminius reikalavimus ir kitas 2014/53/ES Direktyvos nuostatas.                                                                     |
| Nederlands [Dutch]          | Hierbij verklaart [naam van de fabrikant] dat het toestel [type van toestel] in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2014/53/EU.                        |
| Malti [Maltese]             | Hawnhekk, [isem tal-manifattur], jiddikjara li dan [il-mudel tal-prodott] jikkonforma mal-htigijiet essenzjali u ma provvedimenti oħrajn rilevanti li hemm fid-Dirrettiva 2014/53/UE.                         |

|                                |                                                                                                                                                                                                            |
|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Magyar [Hungarian]</b>      | Alulírott, <i>[gyártó neve]</i> nyilatkozom, hogy a <i>[... típus]</i> megfelel a vonatkozó alapvető követelményeknek és az 2014/53/EU irányelv egyéb előírásainak.                                        |
| <b>Norsk [Norwegian]</b>       | Herved <i>[navnet på produsenten]</i> , erklærer at denne <i>[type utstyr]</i> enheten, er i samsvar med de grunnleggende kravene og andre relevante bestemmelser i direktivene 2014/53/EU                 |
| <b>Polski [Polish]</b>         | Niniejszym <i>[nazwa producenta]</i> oświadczam, że <i>[nazwa wyrobu]</i> jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 2014/53/UE.                            |
| <b>Português [Portuguese]</b>  | <i>[Nome do fabricante]</i> declara que este <i>[tipo de equipamento]</i> está conforme com os requisitos essenciais e outras disposições da Directiva 2014/53/UE.                                         |
| <b>Română [Romanian]</b>       | Prin prezenta, <i>[numele producătorului]</i> declară că acest dispozitiv <i>[tipul de echipament]</i> este în conformitate cu cerințele esențiale și alte prevederi relevante ale Directivelor 2014/53/UE |
| <b>Slovenščina [Slovenian]</b> | <i>[Ime proizvajalca]</i> izjavlja, da je ta <i>[tip opreme]</i> v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 2014/53/EU.                                                   |
| <b>Slovenčina [Slovak]</b>     | <i>[Menovýrobcu]</i> týmto vyhlasuje, že <i>[typ zariadenia]</i> spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2014/53/EU.                                                             |
| <b>Suomi [Finnish]</b>         | <i>[Valmistaja]</i> vakuuttaa täten että <i>[laitteen tyyppimerkintä]</i> tyyppinen laite on direktiivin 2014/53/EU oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.         |
| <b>Svenska [Swedish]</b>       | Härmed intygar <i>[företag]</i> att denna <i>[utrustningstyp]</i> står i överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2014/53/EU.            |

## 10 EU Declarations of Conformity

|                             |                                                                                                        |
|-----------------------------|--------------------------------------------------------------------------------------------------------|
| <b>Manufacturer</b>         | Ezurio                                                                                                 |
| <b>Product Part Numbers</b> | 453-00223C, 453-00223R<br>453-00224C, 453-00224R                                                       |
| <b>Product Description</b>  | BL54L15 $\mu$ Series - Bluetooth LE + 802.15.4 + NFC                                                   |
| <b>EU Directives</b>        | 2014/53/EU – Radio Equipment Directive (RED)<br>2011/65/EU- Restriction of Hazardous Substances (RoHS) |



### Reference standards used for presumption of conformity:

| Legislation | Requirement                                                         | Reference standard(s)                                                |
|-------------|---------------------------------------------------------------------|----------------------------------------------------------------------|
| 3.1a        | Low voltage equipment safety                                        | EN 62368-1: 2018, IEC / EN 62368-1:2020+A11:2020                     |
|             | RF Exposure                                                         | EN 62479:2010, EN 50663:2017                                         |
| 3.1b        | Protection requirements –<br>Electromagnetic compatibility          | EN 301 489-1 v2.2.3 (2019-11)                                        |
|             |                                                                     | EN 301 489-3 v2.3.2 (2023-01)                                        |
|             |                                                                     | EN 301 489-17 v3.3.1 (2024-09)                                       |
| 3.2         | Means of the efficient use of the radio<br>frequency spectrum (ERM) | EN 300 328 v2.2.2 (2019-07) Wide-band transmission systems           |
|             |                                                                     | EN 300 330 v2.1.1 (2017-02) Short Range Devices (SRD) 9kHz to 30 MHz |

### Declaration:

We, Ezurio, declare under our sole responsibility that the essential radio test suites have been carried out and that the above product to which this declaration relates is in conformity with all the applicable essential requirements of Article 3 of the EU Radio Equipment Directive 2014/53/EU, when used for its intended purpose.

### Cybersecurity Requirements under Article 3.3 (d), (e), and (f):

Ezurio has determined that cybersecurity requirements outlined in these Articles are not applicable to this product and therefore were not tested.

The device has an output power of 8.55mW EIRP and therefore meets the low-power exclusion level of < 20mW.

|                                 |                                                                                                            |
|---------------------------------|------------------------------------------------------------------------------------------------------------|
| Place of Issue:                 | Ezurio LLC<br>W66N220 Commerce Court, Cedarburg, WI 53012 USA<br>tel: +1-262-375-4400 fax: +1-262-364-2649 |
| Date of Issue:                  | July 15, 2025                                                                                              |
| Name of Authorized Person:      | Brian Petted, Technology Leader                                                                            |
| Signature of Authorized Person: |                         |

## 11 Regulatory Domain Support

Domain support but not currently certified for – TBD

## 12 Revision History

| Version | Date         | Notes           | Contributor(s) | Approver     |
|---------|--------------|-----------------|----------------|--------------|
| 1.0     | 27 July 2025 | Initial version | Tom Smith      | Brian Petted |
|         |              |                 |                |              |

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