BL654PA

Regulatory Information *v1.1*

1 Current Regulatory Certifications

The BL654PA holds current certifications in the following countries:

Country/Region	Regulatory ID
USA (FCC)	SQGBL654PA
Canada (ISED)	3147A-BL654PA
Korea (KC)	R-C-LAI-BL654PA
Australia	N/A
New Zealand	N/A

2 Certified Antennas

The antennas listed below were tested for use with the BL654PA. 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.

Manufacturer	Model	Laird Connectivity Part Number	Type	Connector	Maximum Gain
Laird Connectivity	NanoBlue	EBL2400A1-10MH4L	PCB dipole	IPEX MHF4	2.0
Laird Connectivity	FlexPIFA	001-0022	PIFA	IPEX MHF4	2.0
Laird Connectivity	2.4 GHz dipole	001-0001	Dipole	RP-SMA male	2.0
Mag.Layers	EDA-8709-2G4C1-B27-CY	0600-00057	Dipole	IPEX MHF4	2.0
Laird Connectivity	mFlexPIFA	EFA2400A3S-10MH4L	PIFA	IPEX MHF4	2.0
Laird Connectivity	NFC	0600-00061	NFC	N/A	-
Laird Connectivity	BL654 PCB printed antenna	N/A	Printed PCB	N/A	0.0

3 Documentation Requirements

To ensure regulatory compliance, when integrating the BL654PA 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 BL654PA is integrated.

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Europe: +44-1628-858-940
Hong Kong: +852 2923 0610

4 FCC REGULATORY

Model	US/FCC
453-00020 453-00021	SQGBL654PA

The 453-00020 and the 453-00021 hold full modular approvals. The OEM must follow the regulatory guidelines and warnings listed below to inherit the modular approval.

Part #	Form Factor	Tx Outputs	Antenna
453-00020	Surface Mount	18 dBm	PCB Trace
453-00021	Surface Mount	18 dBm	IPEX MHF4

4.1 Antenna Information

The BL654PA family has been designed to operate with the antennas listed below with a maximum gain of 2 dBi. The required antenna impedance is 50 ohms.

Manufacturer	Model	Laird Connectivity Part Number	Type	Connector	Maximum Gain
Laird Connectivity	NanoBlue	EBL2400A1-10MH4L	PCB dipole	IPEX MHF4	2.0
Laird Connectivity	FlexPIFA	001-0022	PIFA	IPEX MHF4	2.0
Laird Connectivity	2.4 GHz dipole	001-0001	Dipole	RP-SMA male	2.0
Mag.Layers	EDA-8709-2G4C1-B27-CY	0600-00057	Dipole	IPEX MHF4	2.0
Laird Connectivity	mFlexPIFA	EFA2400A3S-10MH4L	PIFA	IPEX MHF4	2.0
Laird Connectivity	NFC	0600-00061	NFC	N/A	-
Laird Connectivity	BL654 PCB printed antenna	N/A	Printed PCB	N/A	0.0

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.

To reduce potential radio interference to other users, the antenna type and gain should be chosen so that the equivalent isotropic radiated power (EIRP) is not more than that permitted for successful communication.

4.2 FCC Documentation Requirements

Federal Communication Commission 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.

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- 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 US portable 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 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.

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.

End-Product Labeling

The end product must be labeled in a visible area with the following: ***Contains FCC ID: BL654PA***

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 show in this manual.

5 ISED (CANADA) REGULATORY

Model	ISED (Canada)
453-00020 453-00021	3147A-BL654PA

5.1 Antenna Information

This radio transmitter (IC: 3147A-BL654PA) 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-BL654PA*) *a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci-dessous 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.*

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Manufacturer	Model	Laird Connectivity Part Number	Type	Connector	Maximum Gain
Laird Connectivity	NanoBlue	EBL2400A1-10MH4L	PCB dipole	IPEX MHF4	2.0
Laird Connectivity	FlexPIFA	001-0022	PIFA	IPEX MHF4	2.0
Laird Connectivity	2.4 GHz dipole	001-0001	Dipole	RP-SMA male	2.0
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Laird Connectivity	mFlexPIFA	EFA2400A3S-10MH4L	PIFA	IPEX MHF4	2.0
Laird Connectivity	NFC	0600-00061	NFC	N/A	-
Laird Connectivity	BL654 PCB printed antenna	N/A	Printed PCB	N/A	0.0

5.2 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.*

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 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.

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 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 coïmplanté 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.

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.

End-Product Labeling

The final end product must be labeled in a visible area with the following: ***Contains IC: 3147A-BL654PA***

Plaque signalétique du produit final

Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: ***Contient des IC: 3147A-BL654PA***

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.

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.

5.3 ISED ICES-003 Issue 7 Compliance Declaration

This device was originally tested to the requirements of ICES-003 Issue 6, Information Technology Equipment (Including Digital Apparatus) — Limits and Methods of Measurement; and evaluated to the updates published in ICES-003, Issue 7, Information Technology Equipment (Including Digital Apparatus). Based on this evaluation, this product continues to observe compliance to the requirements set forth by The Innovation, Science and Economic Development Canada (ISED), and complies with the updates published in ICES-003, Issue 7, Information Technology Equipment (Including Digital Apparatus).

6 KOREA (KC) REGULATORY

The BL654PA is approved for use in the Korean market.

Model	Certificate Number
BL654PA	R-C-LAI-BL654PA

R-C-LAI-BL654PA

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7 Australia and New Zealand Regulatory

RCM: Pending Compliant to standards EN 300 328 V1.9.1, AS/NZS 4268: 2012-A1:2013, and EN 55022:2010/AC:2011
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.

8 Regulatory Domain Support

Domain support but not currently certified for – TBD

9 Revision History

Version	Date	Notes	Contributor(s)	Approver
1.0	22 Jan 2021	Initial version	Maggie Teng	Jonathan Kaye
1.1	20 May 2021	Added ISED ICES-003 Issue 7 compliance declaration	Sue White	Ryan Urness

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