

# LPS (Local Positioning System) Module User Manual

## Part Number: LBES0ZZ1VG



LBES0ZZ1VG has been FCC/ISED certified as Single Modular Approval with the following IDs.

FCC ID: VPYLB1VG

IC: 772C-LB1VG

The module is limited to OEM installation ONLY. The OEM integrator is responsible for ensuring that the end-user has no manual instruction to remove or install module.

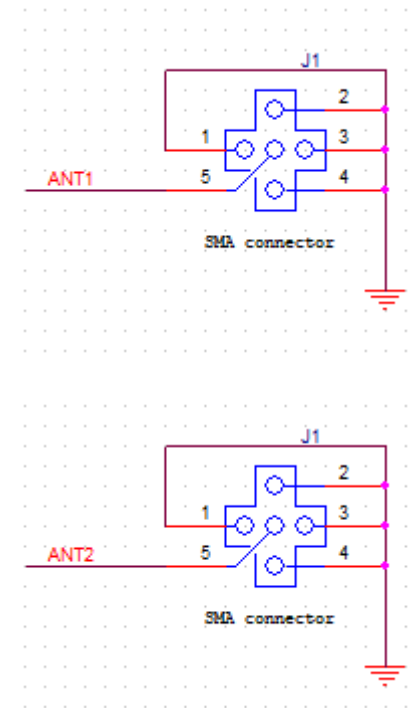
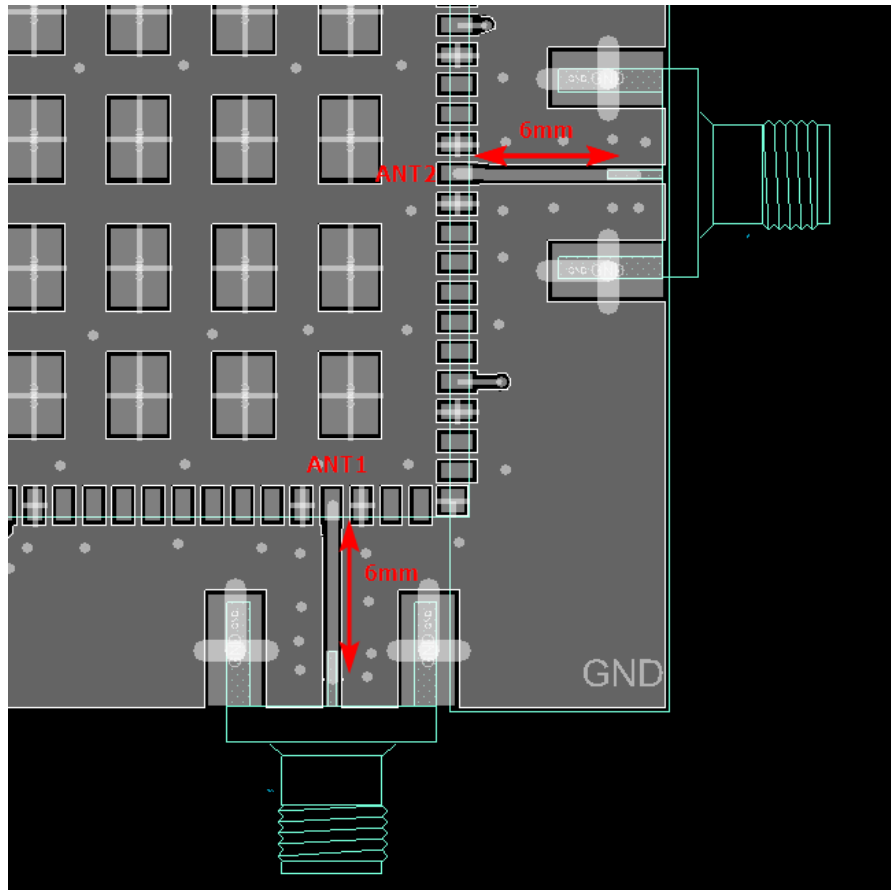
Therefore, the final host product must be submitted to Murata for confirmation that the installation for the module into the host is in compliance with regulations of FCC and IC Canada. Specially, if an antenna other than the model documented in the Filing is used, a Class 2 Permissive Change must be filed with the FCC.

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

This module has been approved by FCC to operate with the antenna types with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device. The following antennas have been certified in combination with the module. Refer to next pages for the antenna application guidance.

- (a) Dipole whip antenna ANT-DB1-RAF-RPS for WLAN with peak gains of 4.1dBi (2.4GHz) and 5.1dBi (5GHz);
- (b) Monopole PCB antenna for 5GHz WLAN with peak gain of 4.5dBi;
- (c) Monopole PCB antenna for Sub-GHz with a peak gain of 1.5dBi;

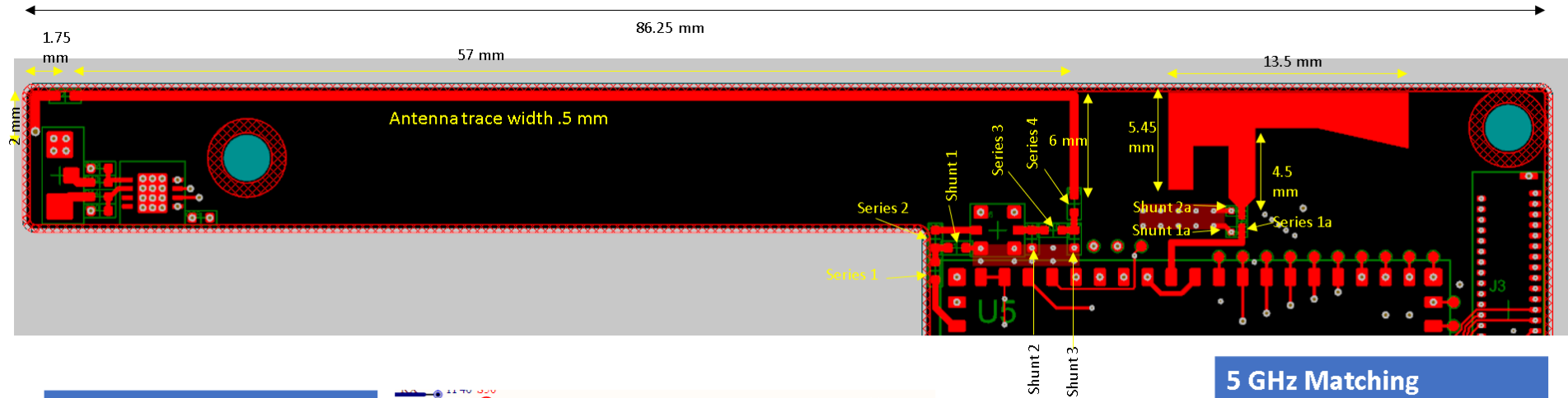
# Antenna Application Guidance



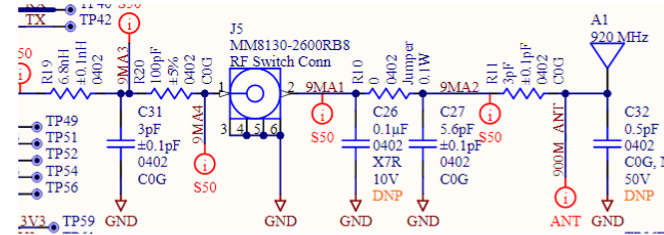
There is no RF components on the RF path.

RF path of Dipole whip antenna ANT-DB1-RAF-RPS for WLAN

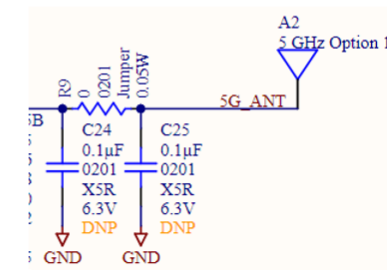
# Antenna Application Guidance



900 MHz Matching	
Ref	Value
Series 1	6.8 nH
Shunt 1	3 pF
Series 2	100 pF
Shunt 2	open
Series 3	0
Shunt 3	5.6 pF
Series 4	3 pF
Shunt 4	open



5 GHz Matching	
Ref	Value
Shunt 1a	open
Series 2a	0
Shunt 2a	open



RF path of Monopole PCB antenna for 5GHz WLAN and sub-G

## FCC Statements



Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment complies with FCC/IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

When the FCC ID is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can be use wording "Contains transmitter module FCC ID: VPYLB1VG" or "Contains FCC ID: VPYLB1VG".

## FCC Statements (cont.)



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

## IC Statements



This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

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

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

*Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.*

*Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.*

## IC Statements (cont.)



This equipment complies with FCC/IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

ce matériel est conforme aux limites de dose d'exposition aux rayonnements, FCC / CNR-102 énoncée dans un autre environnement. cette équipement devrait être installé et exploité avec distance minimale de 20 entre le radiateur et votre corps.

When the Industry Canada certification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can be use wording "Contains transmitter module IC: 772C-LB1VG" or "Contains IC: 772C-LB1VG".