MSC-B9604 Module – Installation Manual

FCC ID of this product is as follows:

FCC ID: 2ASLN-ZL07S

IC ID of this product is as follows:

IC: 25037-ZL07S

This module can be used for Bluetooth & ZigBee protocol. The module is tested in compliance with FCC part 15.247. It operates only in 2.4 GHz band [2400-2483.5 MHz].

For integration on Leviton's end-product only – module cannot be sold to general public.

Therefore we will ask end-product documentation to include the following statements required by FCC and Industry Canada (IC) on the product and in the Installation Manual Notice.

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1. Supply Voltage

- The power is provided from the 5-pin connector to the module.
- Rest pins on the connectors are for control signals.

	Min.	Typ.	Max.	Unit
Operating Temperature Range	-40	+25	+85	Deg. C
Operating Voltage	4.3	5.0	5.25	VDC
LED voltage supply	4.3	5.0	5.25	VDC

2. Theory of Operation – BLE Channels

BLUETOOTH					
Channel #	**Frequency (MHz)**	**TX Power - Target MAX dBm (Dec/10) [Avg Power FW Setting]**	**Channel #**	**Frequency (MHz)**	**TX Power - Target MAX dBm (Dec/10) [Avg Power FW Setting]**
37	2402	**8**	18	2442	**8**
0	2404	**8**	19	2444	**8**
1	2406	**8**	20	2446	**8**
2	2408	**8**	21	2448	**8**
3	2410	**8**	22	2450	**8**
4	2412	**8**	23	2452	**8**
5	2414	**8**	24	2454	**8**
6	2416	**8**	25	2456	**8**
7	2418	**8**	26	2458	**8**
8	2420	**8**	27	2460	**8**
9	2422	**8**	28	2462	**8**
10	2424	**8**	29	2464	**8**
38	2426	**8**	30	2466	**8**
11	2428	**8**	31	2468	**8**
12	2430	**8**	32	2470	**8**
13	2432	**8**	33	2472	**8**
14	2434	**8**	34	2474	**8**
15	2436	**8**	35	2476	**8**
16	2438	**8**	36	2478	**8**
17	2440	**8**	**39**	2480	**8**

Frequency Tolerance: ± 20ppm

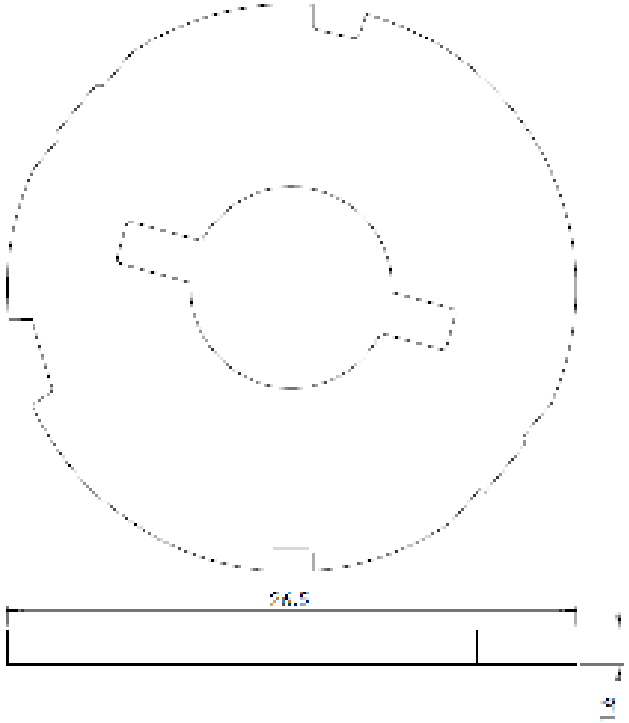
2. Theory of Operation – ZigBee Channels

ZigBee		
Channel #	**Frequency (MHz)**	**TX Power - Target MAX dBm (Dec/10) [Avg Power FW Setting]**
11	2405	**8**
12	2410	**8**
13	2415	**8**
14	2420	**8**
15	2425	**8**
16	2430	**8**
17	2435	**8**
18	2440	**8**
19	2445	**8**
20	2450	**8**
21	2455	**8**
22	2460	**8**
23	2465	**8**
24	2470	**8**
25	2475	**8**
26	2480	**8**

Frequency Tolerance: ± 20ppm

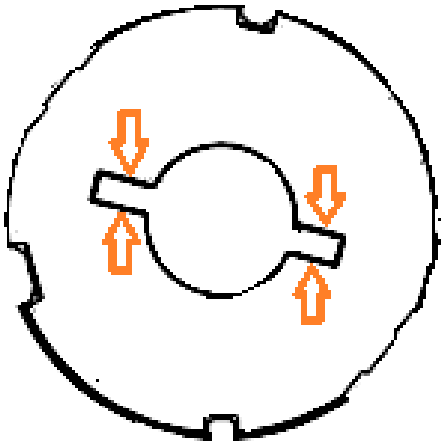
3. Module Dimensions

- The module is of fixed dimensions and no outside changes are permitted.
- Refer to ‘B9604module.dxf’ for footprint.



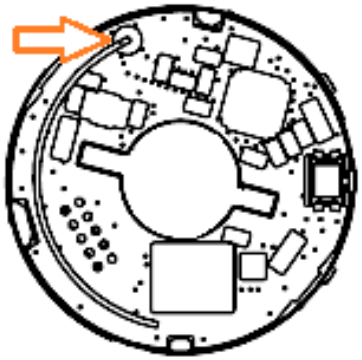
2. Module Connections

- Module can only be used with another PCBs connected using the 8-pin connector.
- Keep area under the antenna clear of any copper or electrolytic components.



MODULE CONNECTION POINTS
[BOTH TOP & BOTTOM SIDES]

SIDE VIEW



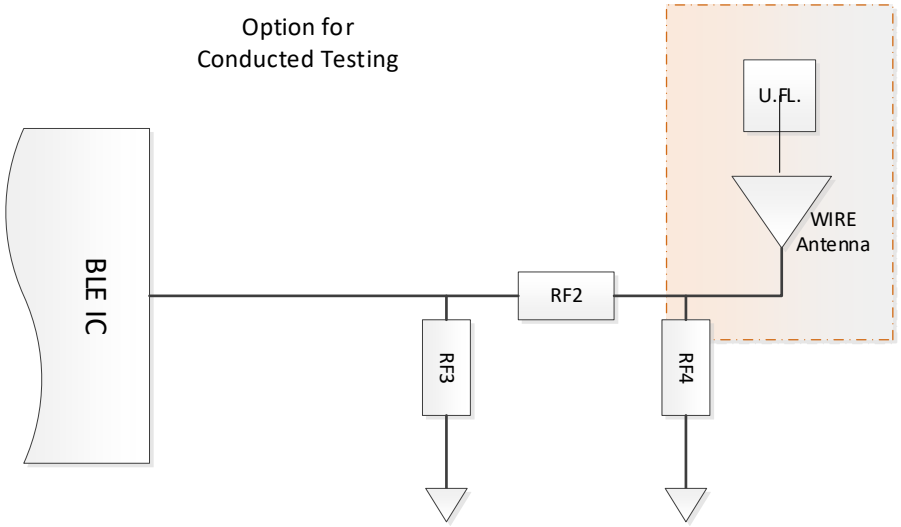
TOP VIEW

4. Antenna

- The module comes with a wire antenna design that followed the specifications of the antenna.
- About the signal line between PCB antenna on the module
  - It is a 50-ohm line design.
  - Fine tuning of return loss etc. can be performed using a matching network. However, it is required to check "Class1 change" and "Class2 change" which the authorities define then.
- The concrete contents of a check are the following two points.
  1. An antenna gain is lower than a gain given in antenna specifications.
  2. The emission level is not getting worse.

4. Antenna

- Please refer KDB 996369 D04 Module Integration Guide for guidance, installation instructions and testing requirements.
- Conducted emissions testing:



7. Notice

- For Leviton's end-product integration only – device cannot be sold to general public.
- This module can be used either for Bluetooth & ZigBee protocol. The module is tested in compliance with FCC part 15.247. It operates only in 2.4 GHz band [2400-2483.5 MHz].
- Therefore we will include the following statements required by FCC/ IC on the product and in the Installation Manual Notice.
- Please describe the following warning on the final product which contains this module.

Contains Transmitter Module: FCC ID: 2ASLN-ZL07S IC: 25037-ZL07S	**OR**	**Contains: FCC ID: 2ASLN-ZL07S IC: 25037-ZL07S**
Contient un module transmetteur: FCC ID: 2ASLN-ZL07S IC: 25037-ZL07S	**OR**	**Contient: FCC ID: 2ASLN-ZL07S IC: 25037-ZL07S**

To comply with FCC and Industry Canada RF exposure limits for general population / uncontrolled exposure, the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and operating in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures.

Pour se conformer aux limites d'exposition aux RF de la FCC et d'Industrie Canada pour la population générale / exposition non contrôlée, l'antenne(s) utilisée pour ce transmetteur doit être installé pour fournir une distance de séparation d'au moins 20 cm de toutes les personnes et fonctionnant conjointement avec une autre antenne ou émetteur, sauf en conformité avec les procédures de produits multi- émetteur FCC.

7. Notice

- Please describe the following warning to the manual.

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.

Le produit décrit aux présentes est conforme aux exigences de la partie 15 des règlements de la FCC. Son utilisation est soumise aux deux conditions suivantes: (1) il ne cause aucun brouillage préjudiciable et (2) il n'est pas affecté par les interférences d'autres dispositifs susceptibles notamment d'en perturber le fonctionnement.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:
1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

FCC/ ISED CAUTION
Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

MISE EN GARDE DE LA FCC / ISED
Toute modification apportée sans l'autorisation expresse du responsable de la conformité pourrait avoir pour effet d'annuler les droits d'utilisation du produit décrit aux présentes.

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

Le produit décrit aux présentes ne doit être ni installé ni utilisé près d'autres antennes ou transmetteurs.

7. Notice

This device is intended only for Leviton end-product integrators under the following conditions:
1)The antenna must be installed such that 20 cm is maintained between the antenna and users, and
2)The transmitter module may not be co-located with any other transmitter or antenna.
3)The use of an antenna with gain less than 1.5 dBi (2.4GHz).

Le produit décrit aux présentes ne peut être utilisé que par des produits finis Leviton dans les conditions suivantes:
1) son antenne doit être installée de manière à assurer un écart de 20 cmentre elle et les utilisateurs;
2) il ne doit être ni installé ni utilisé près d'un autre transmetteur ou d'une autre antenne;
3) son antenne doit avoir un gain de moins de 1.5 dBi (2.4 GHz).

As long as these 3 conditions above are met, further transmitter test will not be required. However, the integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

IMPORTANT NOTE: In the event these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC/ ISED authorization is no longer considered valid and the FCC/ ISED ID can not be used on the final product.
In these circumstances, the OEM integrator will be responsible for re-evaluating the end-product (including the transmitter) and obtaining a separate FCC/ ISED authorization.

REMARQUE IMPORTANTE: advenant qu'une ou plusieurs de ces conditions ne soient pas remplies (certaines configurations d'ordinateurs portables ou voisinage avec un autre transmetteur, p. ex.), l'autorisation de la FCC/ISED ne serait plus jugée comme étant valide et son identificateur ne pourrait plus être utilisé sur le produit.
Dans de telles circonstances, le fabricant d'équipement d'origine devra réévaluer le produit final (y compris son transmetteur) et obtenir une autre autorisation de la FCC/ISED.

7. Notice

End-Product Labeling This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end-product must be labeled in a visible area with the following:
“Contains FCC ID:2ASLN-ZL07S”.
“Contains IC: 25037-ZL07S”.
The grantee's FCC ID can be used only when all FCC compliance requirements are met.

Étiquetage du produit fini: le module transmetteur du produit décrit aux présentes ne peut être utilisé que dans des dispositifs dont l’antenne permet un espacement de 20 cm entre elle et les utilisateurs. Le produit fini doit porter une étiquette visible portant les renseignements suivants:
“Contient FCC ID:2ASLN-ZL07S”.
“Contient IC: 25037-ZL07S”.
L’identificateur de la FCC du détenteur ne peut être utilisé que si toutes les exigences de conformité de l’organisme ont été respectées.

Manual Information To the End User: The Leviton’s end-product 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.

Renseignements fournis aux utilisateurs: le fabricant d’équipement d’origine doit savoir qu’il ne faut pas fournir aux utilisateurs des renseignements concernant l’installation ou le retrait du module RF dans le manuel d’utilisation du produit qui le contient.
Ce manuel doit toutefois comprendre toute l’information et tous les avertissements réglementaires requis.

7. Notice

Declaration of Conformity statement *must* be declared in the end-product user manual.

FCC SUPPLIERS DECLARATION OF CONFORMITY
Smart Sensors manufactured by Leviton Manufacturing, Inc., 201 N Service Road, Melville, NY, http://www.Leviton.com. 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.

DÉCLARATION DE CONFORMITÉ DU FABRICANT AUX EXIGENCES DE LA FCC
Ce détecteur intelligent est fabriqué par Leviton Manufacturing, Inc., 201 N Service Road, Melville, NY, http://www.leviton.com. Il est conforme aux exigences de la partie 15 des règlements de la FCC. Il peut être utilisé à condition qu'il (1) ne cause aucun brouillage préjudiciable et (2) ne soit pas affecté par les interférences d'autres dispositifs susceptibles notamment d'en perturber le fonctionnement.

8. End-product testing

- During design process,
  - Designer of the host board should place the module at recommended location on the host board.
  - Designer should also perform the radiated regulatory FCC testing using manufacturer's low-level radio test firmware to ensure compliance as per KDB 996369 D04.
  - Designer should also test for the applicable unintentional radiator functions (Part 15 Subpart B) of the end-product to ensure compliance as per KDB 996369 D04.
- During production,
  - Host products should be tested to ensure compliance.
  - When the host board is manufactured, the requirement of "Electrical Testing" should be specified with the PCB order to guarantee that no short is present anywhere on the host board (which includes the traces to module RF castellation pads). This simplifies the production test requirements down to verifying that a solder short did not occur during the component placement and reflow of the host board assembly.
  - Verifying no solder short has occurred can be done by measuring an open circuit between pins using a DC multi-meter.