

Instruction for implementing **Bluetooth®** functionality into robotic mower: Certification Requirements

In addition to technical implementation specifications, the following instructions shall be followed when implementing the HMI Boards incorporating Bluetooth functionality, i.e. the **HMI BLE1A** and **HMI BLE1B**, for the below mentioned certifications to be valid.

These instructions are also applicable to the Application boards using the Bluetooth design **BLE1C**.

These instructions shall be followed for all boards with the following Bluetooth design on them:

- HQ-BLE-1: 590 54 13

The design is on all PCBs with any of the numbers:

- 582 87 12
- 590 11 35
- 591 10 05

Changes or modifications made to this equipment not expressly approved by Husqvarna compliance department may void the validity of the certification, for instance the FCC authorization to operate this equipment.

The Bluetooth boards with design HQ-BLE-1 can only be used in robotic lawn mowers developed and manufactured by Husqvarna. The boards are only allowed to be mounted during the manufacturing process of the robotic lawn mower. The boards are not for sale for use in any other product. The boards are only allowed to be used in the robotic lawn mower models which are covered by the certification.

1 Identification of the certified boards

Board level	PCB: 582 87 12	PCB: 590 11 25	PCB: 591 10 05
Design	Common Robotic Mower BT design, inkl. Antenna. Design reference: 590 54 13-01 ("HQ-BLE-1")		

2 Worldwide

2.1 Bluetooth Special Interest Group

For Bluetooth certification to BT SIG, the design HQ-BLE-1 is certified. All products that uses HMI-boards or other boards with Bluetooth functionality activated shall be listed in the BT SIG community database.

The guidelines from Bluetooth SIG regarding word mark and logos shall be followed for documentation and information.

3 Europe

3.1 Robotic mower

Make sure the robotic mower is verified with appropriate EMC and spurious emission standards.

3.2 Manual and other documentation

The manual of the mower shall state the frequency and output power of the radio signals.

4 USA and Canada

The HMI boards (**HMI BLE1A** and **HMI BLE1B**) have FCC and ISED approvals according to 47 CFR Part 15.247 and RSS 247/Gen. The boards are marked with the following FCC and IC IDs:

Table 1:

Board id	FCC ID	PMN	IC ID
582 87 12-01	ZASHQ-BLE-1A	HMI Board Type 10 HMI Board Type 11 HMI Board Type 12 HMI Board Type 14	23307-HQBLE1A
590 11 35-01	ZASHQ-BLE-1B	HMI Board Type 13	23307-HQBLE1B

The Application board (**Application Board BLE1C**) have FCC and ISED approval according to 47 CFR Part 15.247 and RSS 247/Gen. The board is marked with the following FCC and IC IDs:

Table 2:

Board id	FCC ID	PMN	IC ID
591 10 05-01	ZASHQ-BLE-1C	Husqvarna Automower	23307-HQBLE1C

4.1 Robotic mower

The ZASHQBLE-1A, -1B and -1C designs are certified as limited modular approvals due to the design without shielded RF-circuit. Therefore shall the radio characteristics be verified on the robotic lawn mower. This check can be done as a spot check with the mower in a typical configuration to verify fundamental frequency and spurious emissions according to applicable rules as mentioned above.

The ZASHQBLE-1A, -1B and -1C are only FCC authorized for the rules mentioned above. The robotic lawn mower must comply to all applicable FCC rules, including Part 15B for unintentional radiators with applicable radio transmitters included.

4.1.1 Radiation Exposure Statement

US

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

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

Canada

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

Déclaration d'exposition aux radiations

Cet équipement est conforme Canada limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 20 cm entre le radiateur et votre corps.

4.1.2 FCC ID label

If boards with Bluetooth functionality are mounted so that the FCC ID cannot be seen from the outside, the robotic mower shall be marked with a label with the FCC ID. The label should be seen from the outside of the mower and easy for the customer to find. The following format is recommended on the label:

This device contains module FCC ID XXXXXXXX

Where XXXXXXXX shall be exchanged to the applicable FCC ID, i.e according to Table 1 and Table 2 above, for instance “*This device contains module FCC ID ZASHQ-BLE-1A*”.

Also the Canadian IC should be mentioned for mowers intended for Canada. The recommended format is then the following:

This device contains module FCC ID XXXXXXXX IC:YYYYYYYY

Where XXXXXXXX and YYYYYYYY shall be exchanged to the applicable FCC ID and IC ID, i.e according to Table 1 and Table 2 above, for instance “*This device contains module FCC ID ZASHQ-BLE-1A IC: 23307-HQBLE1A*”.

Also the following notice should be on a label on the outside of the mower:

NOTICE:

This device complies with Part 15 of the FCC Rules and with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- *this device may not cause harmful interference, and*
- *this device must accept any interference received, including interference that may cause undesired operation.*

4.1.3 SDoC requirements

Verify that the robotic mower fulfills requirements for EMC Part 15B as required for a SDoC to be issued.

It is allowed on a voluntary basis to use the FCC-logo on the machine as below:



4.2 Manual

4.2.1 Warning

The following information shall be in the manual for US market. It shall be placed among other warnings.

Notice

Changes or modifications made to this equipment not expressly approved by Husqvarna may void the FCC authorization to operate this equipment.

4.2.2 Label information

If a label is needed on the outside of the mower (see 4.1 above), there shall be information in the mower manual describing where inside the mower the applicable boards are mounted and the FCC ID can be found.

4.2.3 Radiation exposure

The robotic lawn mower manual shall contain information that the robotic lawn mower should be operated with minimum distance of 20 cm between the mower and the body of the user.

4.2.4 Notice

The following information shall be in the manual, especially the manual following the board incorporating Bluetooth if there is more than one manual:

NOTICE:

This device complies with Part 15 of the FCC Rules and contains license-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS standard(s).

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.*

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, et*
- (2) *l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.*

4.2.5 SDoC information

It is recommended that the following information is included in documentation provided at the time of marketing or importation for meeting the FCC SDoC requirement.

Refer to Husqvarna compliance department for information about contact person etc. for the SDoC.

Unique Identifier: (*e.g.*, Trade Name, Model Number)

Party issuing Supplier's Declaration of Conformity

Company name

Street Address

City, State

Postal Code

Country

Telephone number or internet contact information

Responsible Party – U.S. Contact Information

Street Address

City, State

Postal Code

United States

Telephone number or internet contact information

4.2.6 Robotic mower information

The following information is applicable for the manual for the complete robotic mower system, on the level for the SDoC.

NOTE: 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.*

5 RoW

5.1 Japan

The design HQ-BLE-1 (590 54 13) is certified according to Japanese Radio, and may not be changed in any way.

5.1.1 Robotic Mower

The following text should be put on the outside of the mower:

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.")

5.1.2 Manual

The user manual shall be in English or Japanese language and shall include instructions required for the user. In case of module approval, installation descriptions shall be available. In the case with Bluetooth functionality, the module is always installed from the factory, thus the installation description needed is manufacturing description (manufacturing plans, drawings, instructions, test specifications, approval steps etc. as required by the quality process) together with Implementation Instruction (this document).

Reference of the Japanese approval should be given, indicating the rule by which conformity has been approved, i.e. the following text shall be in the manual which covers Bluetooth specific instructions:

This robotic mower contains an internal module which are approved for use in Japan according to:

Japanese Radio Law Compliance.

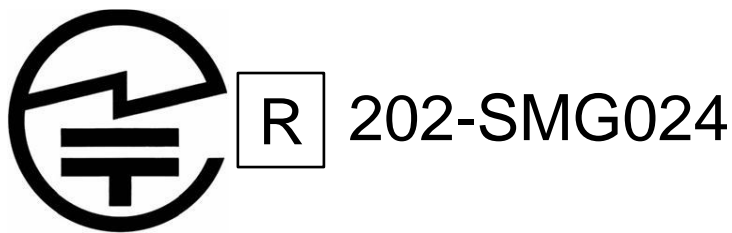
This device is granted pursuant to the Japanese Radio Law (電波法)

This device should not be modified (otherwise the granted designation number will become invalid).

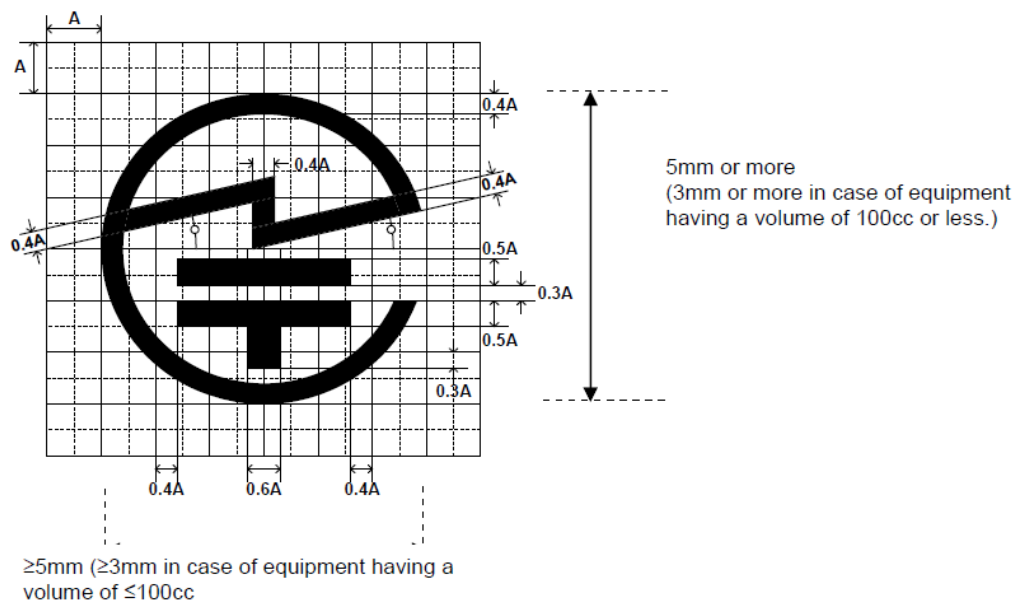
The certification label cannot be recognized from outside of the mower since it is installed inside the host (robotic mower) and the mark is also too big to fit on the HQ-BLE-1 module. Therefore the following information must be referenced in the user manual:

- The MiC-mark defined as below,
- boxed R, and
- certificate number.

For the Bluetooth module, the boxed R shall be followed by 202 and a certification specific number, which gives R 202-SMG024 as follows:



The size of the Mark shall be 5 mm or more in diameter. In case of terminal equipment or specified radio equipment having a volume of 100 cc or less, the size shall be 3 mm or more in diameter.



5.2 Brasil – Modular approval

In Brasil is the Bluetooth functionality planned to be certified under two licenses:

- HMI Board Type 10, 11 and 12 as a family with one certificate number,
- HMI Board Type 13 with one certificate number.

5.2.1 Marking on module/board

The board should be marked with the certificate number.

5.2.2 Marking on product

The product should be marked in a similar way as for US FCC labeling.

“Este produto contém a placa HMI Board Type XX código de homologação ANATEL XXXXX-XX-XXXXX”

5.2.3 Manual

In the manual there has to be a clear reference to the included radio module as a verbatim text. The text shall be:

Este produto contém a placa HMI Board Type XX código de homologação ANATEL XXXXX-XX-XXXXX.

It is not allowed to add multiple board type numbers or put the info in a table etc. If the manual covers more than one model (i.e. AM105, AM310, AM315 and AM315X) where some models have Bluetooth and some don't, we should put:

Husqvarna AM310 contém a placa HMI Board Type XX código de homologação ANATEL XXXXX-XX-XXXXX.

Husqvarna AM315 contém a placa HMI Board Type YY código de homologação ANATEL YYYYY-YY-YYYYY.

Please check with Husqvarna compliance department for exact certificate numbers.