

## HRF-SG01-US Module User Manual

This is a user manual for host product manufacturers to use when integrating the module in a host product.

This module should be installed in the host device according to the interface specification (installation procedure).

### ■ for FCC

#### FCC CAUTION

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

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

#### [2.1 General]

This user manual describes the integration procedure from section 2.2 to 2.12.

#### [2.2 List of applicable FCC rules]

This device complies with below part 15 of the FCC Rules.

Part 15 Subpart C
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#### [2.3 Summarize the specific operational use conditions]

Refer to "Installation Procedure" described later.

#### [2.4 Limited module procedures]

This device is Limited Modular Approval.

Refer to "Installation Procedure" described later.

#### [2.5 Trace antenna designs]

Refer to "Trace example" described later.

#### [2.6 RF exposure considerations]

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines. This equipment should be installed and operated keeping the radiator at least 20cm or more away from person's body.

#### [2.7 Antennas]

The device is designed to use the antennas listed below. Do not modify the antenna or any other part of the module. Any modifications will invalidate the modular certifications and require new approvals for the host system.

Part No.	Type	Gain
MEGWX-241XRSBX-920A	1/4 $\lambda$ Monopole	1dBi
MEGWX-467XRSBX-920	1/2 $\lambda$ Dipole	2dBi

#### [2.8 Label and compliance information]

Following information must be indicated on the host device of this module.

Contains Transmitter Module FCC ID: T82-HRFSG01US
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or

Contains FCC ID: T82-HRFSG01US
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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.
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\*If it is difficult to describe this statement on the host device due to the size, please describe in the user's manual and also either describe on the device packaging or on a removable label attached to the device.

#### [2.9 Information on test modes and additional testing requirements]

Test modes for host device should take into consideration different operational conditions for a stand-alone modular transmitter in a host, as well as for multiple simultaneously transmitting modules or other transmitters in a host product.

Refer to "Support" described later for contact us.

#### [2.10 Additional testing, Part 15 Subpart B disclaimer]

The modular transmitter is only FCC authorized for the specific rule parts (i.e., FCC

transmitter rules) listed on the grant FCC Part 15.247, and the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification.

The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

#### [2.11 Note EMI Considerations]

We recommend to use "best practice" RF design engineering testing and evaluation in case non-linear interactions generate additional non-compliant limits due to module placement to host components or properties.

The host manufacturer is responsible for ensuring compliance with the applicable FCC rules for the transmitters operating individually and simultaneously. This includes compliance for the summation of all emissions from all outputs occupying the same or overlapping frequency ranges, as defined by the applicable rules.

#### [2.12 How to make changes]

Only Grantees are permitted to make permissive changes.  
Refer to "Support" described later for contact us.

#### ■ for ISED

Following information must be indicated on the host device of this module.  
Les informations suivantes doivent être indiquées sur le périphérique hôte de ce module.

Contains IC: 10608A-HRFSG01US
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<p>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:</p> <ol style="list-style-type: none"><li>1. This device may not cause interference.</li><li>2. This device must accept any interference, including interference that may cause undesired operation of the device.</li></ol>
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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.

This radio transmitter (10608A-HRFSG01US) has been approved by Innovation, Science and Economic Development 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.

Antenna type	Gain	Impedance
1/4 $\lambda$ Monopole	1dBi	50 $\Omega$
1/2 $\lambda$ Dipole	2dBi	50 $\Omega$

Le présent émetteur radio (10608A-HRFSG01US) 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.

Antenna type	Gain	Impedance
1/4 $\lambda$ Monopole	1dBi	50 $\Omega$
1/2 $\lambda$ Dipole	2dBi	50 $\Omega$

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment and meets RSS-102 of the ISED radio frequency (RF) Exposure rules. This equipment should be installed and operated keeping the radiator at least 20cm or more away from person's body.

Cet équipement est conforme aux limites d'exposition aux rayonnements énoncées pour un environnement non contrôlé et respecte les règles d'exposition aux fréquences radioélectriques (RF) CNR-102 de l'ISDE. Cet équipement doit être installé et utilisé en gardant une distance de 20 cm ou plus entre le radiateur

et le corps humain.

## Installation Procedure

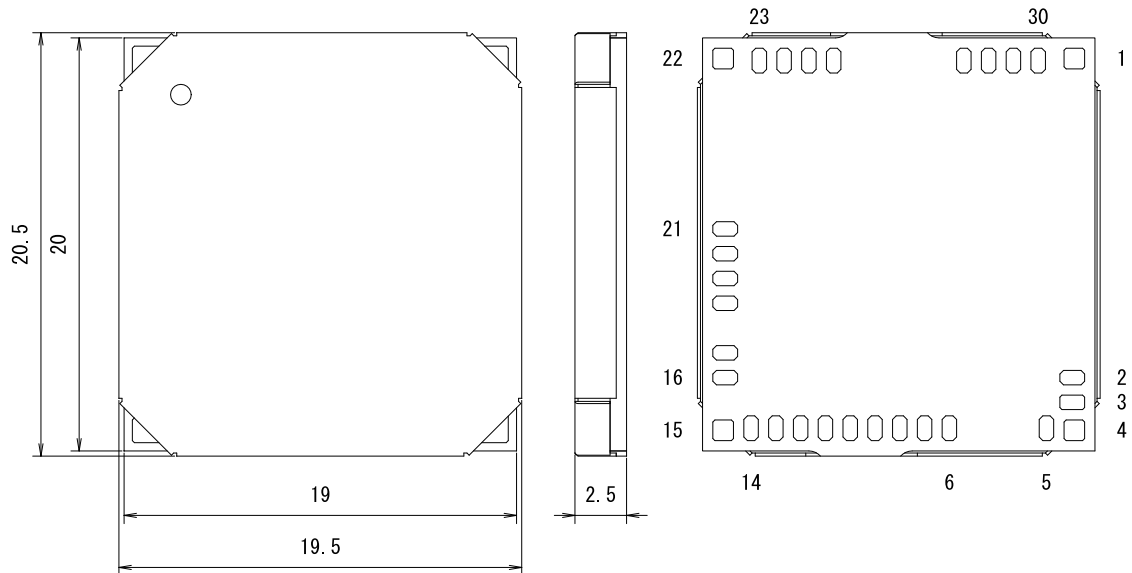
The procedure for installing this module on the host device is shown below.

### ■ Limited module procedures

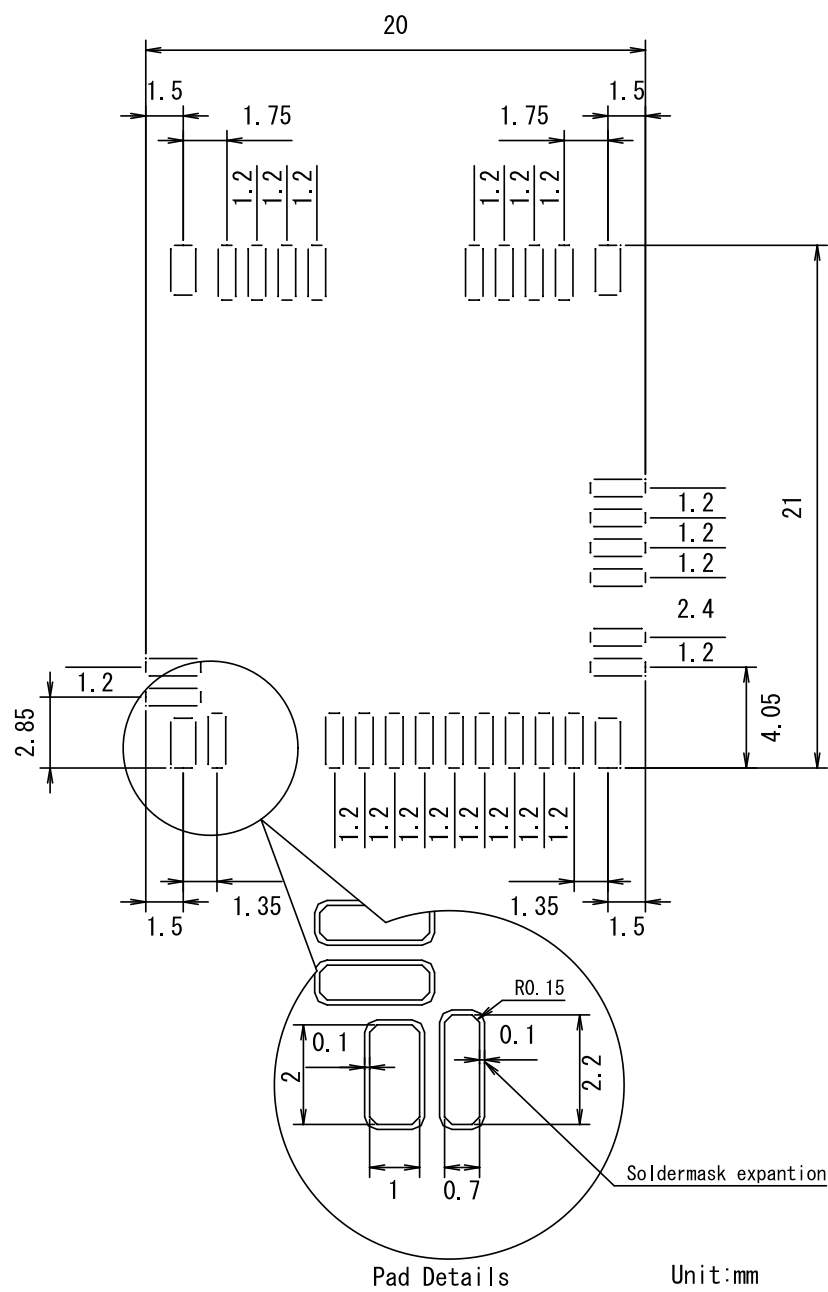
This device is Limited Modular Approval for the following reasons:

- This module is certified as limited modular approval as it does not have its own power supply regulator, therefore regulated 3.0V must be supplied by a host device using voltage regulator, e.g. TLV74330PDBVR or equivalent.

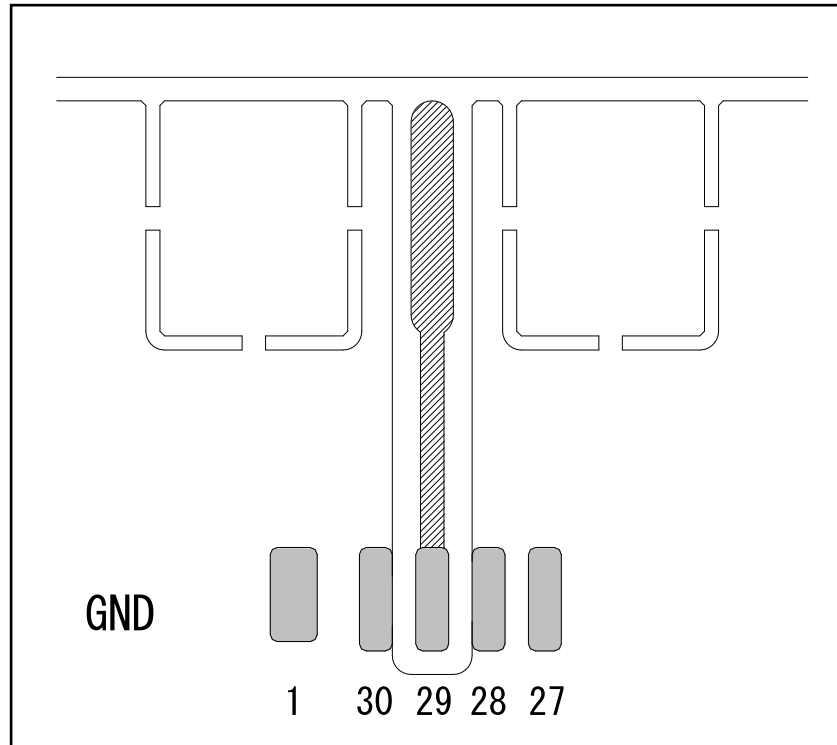
### ■ Dimensions & Pin No.



■ Recommended Footprint



■ Trace example



Trace Dimensions:

Width: 0.5mm

Gap: 0.6mm

Copper thickness: 1oz

PCB Details:

Two layer

FR-4

Thickness: 1.6mm

Antenna connector:

Reverse SMA (PCB edge)

Impedance: 50Ω



## **Support**

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