



## 19-318 User Manual

### 2.2 List of applicable FCC rules

FCC Title 47 part 15 section 15.247

### 2.3 Summarize the specific operational use conditions

TYRI Internal use only. The usage for the module is to connect TYRI's products into a wireless network for adding functionality to the products that today's products do not have. The wireless network is BLE Mesh service and are transmitting on the frequency band for Blue Tooth. There is one internal Ramda/4 antenna implemented on the module that has an omni-directional radiation pattern. The frequency bandwidth for the antenna is 2,4 - 2,485GHz and the VSWR <1:2. There is no master device in the system.

### 2.4 Limited module procedures

The module is defined together with a plastic cover to ensure that no mechanical change on the product can change the RF performance. See attached file for drawing.



54-026\_-2.PDF

The host equipment for this module must be operated by battery.

### 2.5 Trace antenna designs



19-318 PA07.zip

### 2.6 RF exposure considerations

One typical installation is showed in Figure 1 and 2 together with distances to driver of the vehicle.

RF Exposure - This device has been tested for compliance with FCC RF exposure limits in a portable configuration. At least 20 cm of separation distance between the RF module device and the user's body must be maintained at all times. This device must not be used with any other antenna or transmitter that has not been approved to operate in conjunction with this device.

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Figure 1 shows typical installation of the system and distances to cockpit

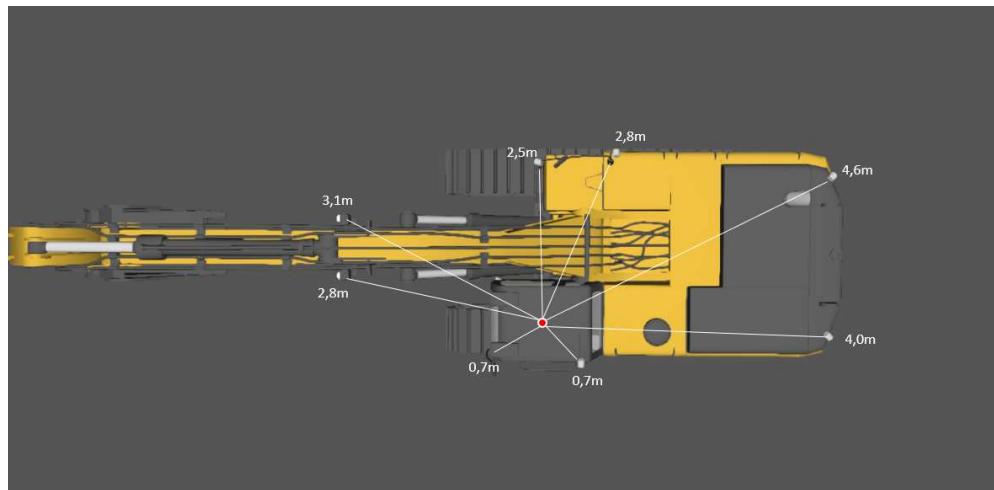
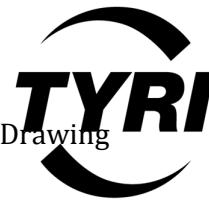


Figure 2 shows typical installation of the system and distances to cockpit



## 2.7 Antennas

The module has one Ramda/4 antenn mounted on the PCB. See attach Drawing for details.



Drawing Antenn  
607582\_A1.pdf

## 2.8 Label and compliance information

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.

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

### CAUTION:

NOTE: The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The host of this RF module must be marked with "Contains FCC ID: 2ASUU19-318"



Figure 3 Shows label on the module with certifications

## 2.9 Information on test modes and additional testing requirements

This module has been granted modular approval for mobile applications. OEM integrators for host products may use the module in their final products without additional FCC / IC (Industry Canada) certification if they meet the following conditions. Otherwise, additional FCC / IC approvals must be obtained.

- The host product with the module installed must be evaluated for simultaneous transmission requirements.
- The user's manual for the host product must clearly indicate the operating requirements and conditions that must be observed to ensure compliance with current FCC / IC RF exposure guidelines.
- To comply with FCC / IC regulations limiting both maximum RF output power and human exposure to RF radiation, the maximum antenna gain including cable loss in a mobile-only exposure condition must not exceed 1dBi. *{antenna ref. 1, antenna cable ref.2}*.
- A label must be affixed to the outside of the host product with the following statements:

The final host / module combination may also need to be evaluated against the FCC Part 15 B criteria for unintentional radiators in order to be properly authorized for operation as a Part 15 digital device.

If the final host / module combination is intended for use as a portable device, the host manufacturer is responsible for separate approvals for the SAR requirements from FCC Part 2.1093.

## 2.10 Additional testing, Part 15 Subpart B disclaimer

This module is tested according to Part 15 subpart C but if this module is put into a product the final product can be tested for part 15 subpart B to show compliance.



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