



***ALIO Style
ALIO Vend
RADIO MODULE 4G
Integration***

Manual
Revision R01
P/N: MAE5015

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3 SCOPE

The purpose of the document is to describe how to assembly the Radio Module 4G into ALIO Style / ALIO Vend devices.

4 FCC PRESCRIPTIONS

The optional LTE HL7618RD Radio module, in order to be compliant with FCC requirements, must respect the following:

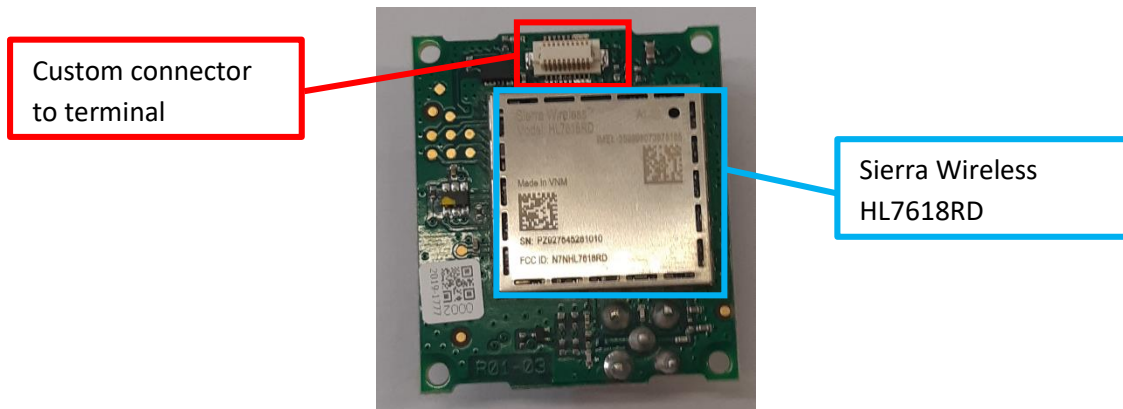
- The LTE HL7618RD Radio module has been approved for use in USA (United States of America)
- The LTE HL7618RD Radio module is not suitable for use in Canada
- At least 20 cm separation distance between the antenna and the user's body must be maintained at all times.
- The LTE HL7618RD Radio module must not transmit simultaneously with NFC Antenna or Bluetooth.
- When the LTE HL7618RD Radio module is installed inside the product, the provided label bearing the writing "This device contains FCC ID: N7NHL7618RD" must be applied on the product as stated into the Radio module assembly manual.
- To comply with FCC 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:
 - 5 dBi in LTE Band 4
 - 9 dBi in LTE Band 13
- The installation of the LTE HL7618RD Radio module must be done by authorized personnel.

Changes or modifications made to the equipment not expressly approved by MADIC ITALIA S.P.A. may void the FCC authorization to operate this equipment.

5 RADIO MODULE OVERVIEW

The Radio module mount a Sierra Wireless HL7618RD (FCC ID: N7NHL7618RD) and interface itself with the terminal through a custom connector (only Radio Module designed by MADIC ITALIA can be interfaced with the terminal).

The Sierra Wireless HL7618RD has fixed carrier VERIZON and hence can be used only in USA.



6 ASSEMBLY OF THE 4G RADIO MODULE INTO ALIO STYLE

This operation must be done by the authorized personnel that perform the terminal installation.
The terminal must be powered off and disconnected from power supply during the execution of the activities.

- 1) Remove the plastic cover on the back of the terminal as showed in **Image 1**.
- 2) Insert the 4G radio module into the cavity present into the back plastic cover of the terminal, taking care to align the holes in the 4 corners of the module with the 4 plastic turrets in the terminal cavity as showed in **Image 2**.



Image 1 – Removal of radio cover



Image 2 – 4G Radio Module insertion

- 3) Before insert the SIM, unlock the metal SIM cover sliding it toward right. Lift up the connector and insert the SIM. (Image 3).

Close the metal SIM cover and lock it sliding it toward left. (Image4)



Image 3 – Sim Card Connector Opening

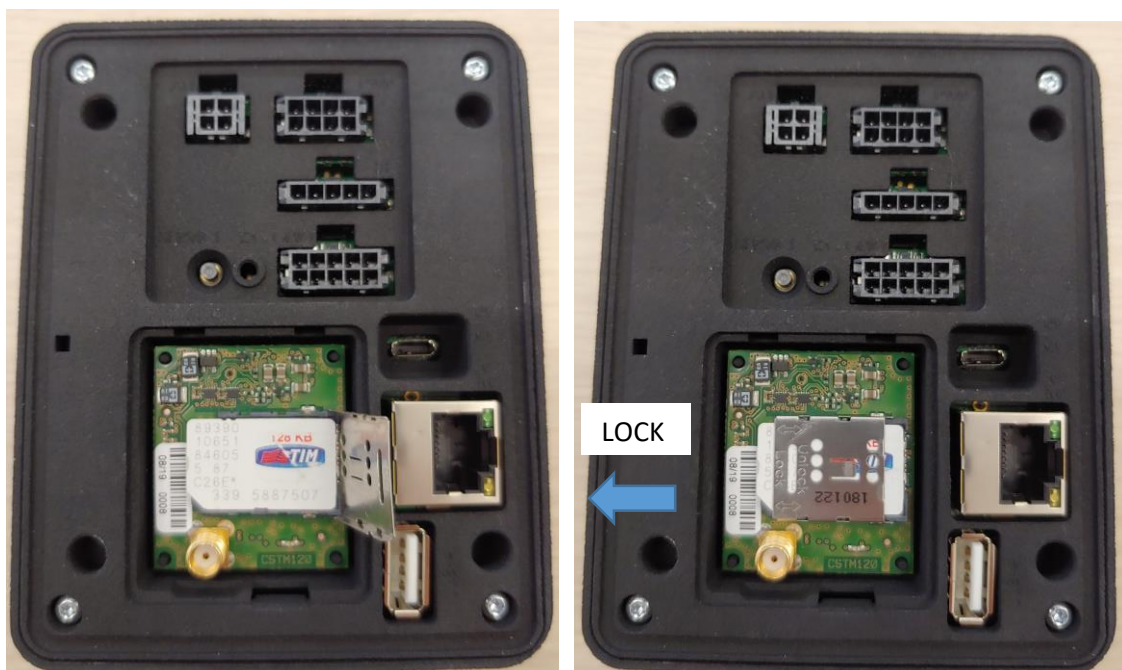


Image 4 – Sim Card Insertion and Connector Closing

- 4) Insert the Radio Cover on terminal as showed into Image 5



Image 5 – Radio Cover Closed

7 ASSEMBLY OF THE 4G RADIO MODULE INTO ALIO VEND

The terminal must be powered off and disconnected from power supply during the execution of the activities.

- 1) Remove the SIM cover on the back of the terminal as showed in Image 6.



Image 6 – Removal of radio cover

- 2) Before insert the SIM, unlock the metal SIM cover sliding it toward right. Lift up the connector and insert the SIM. (Image 7).
Close the metal SIM cover and lock it sliding it toward left. (Image8)

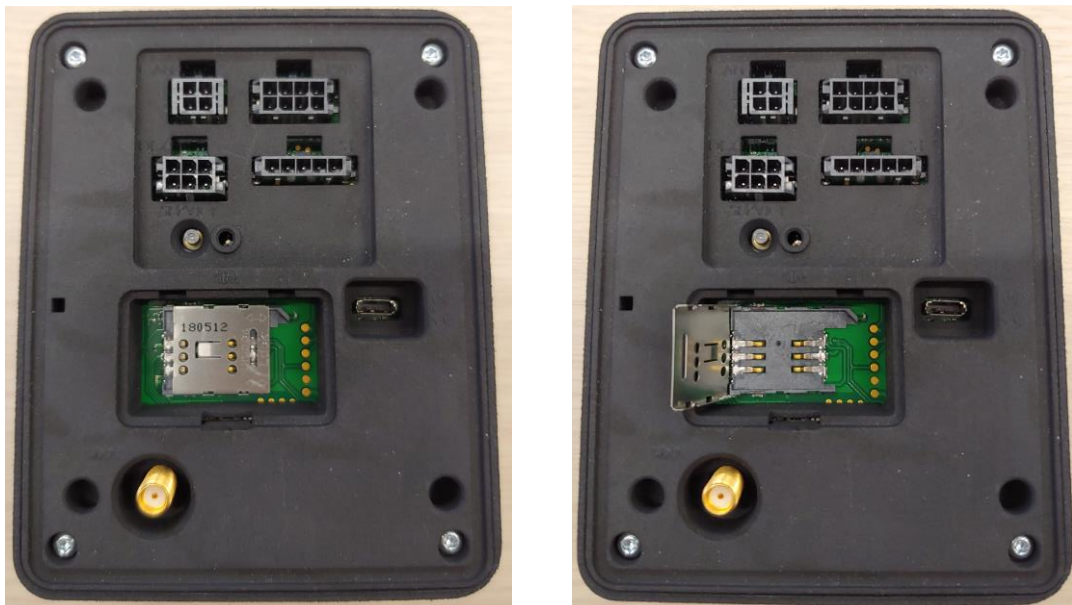


Image 7 – Sim Card Connector Opening



Image 8 – Sim Card Insertion and Connector Closing

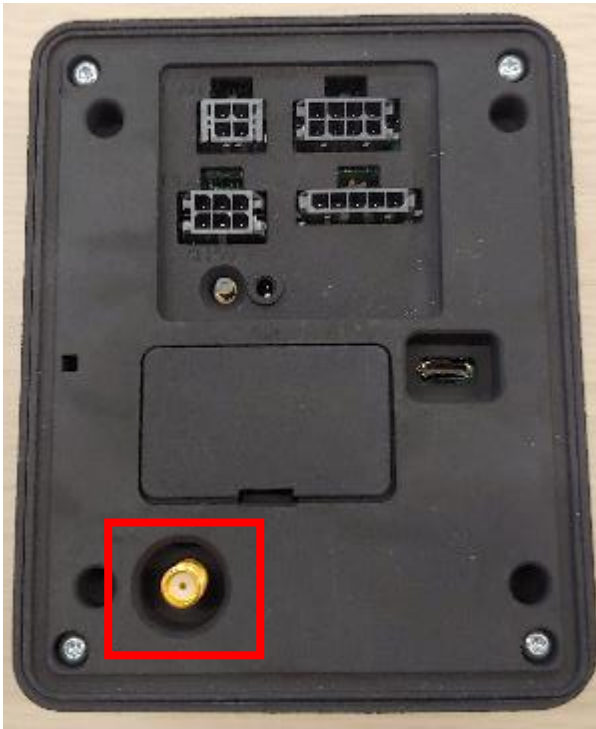
- 3) Insert the SIM Cover on terminal as showed into Image 9.



Image 9 – SIM Cover Closed

8 4G RADIO MODULE ANTENNA

The antenna of the 4G radio module must be connected to the SMA connector. The antenna must have a cable with a length of more than 1 meter. At least 20 cm separation distance between the antenna and the user's body must be maintained at all times.

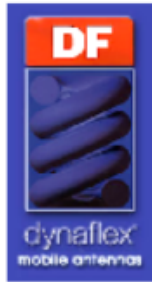


ALIO Style



ALIO Vend

1.1 EXAMPLE OF ANTENNAS



4G BODY MOUNT ANTENNA Part Number 592C

Applications

- Automotive
- IoT devices

Main features

- Low profile
- RoHS Compliant
- IP67
- Compact structure



Main Specifications 4G CHANNEL

Parameter/ Frequency Band	700-960 MHz	1710-2170 MHz	2500-2700 MHz
Gain (dBi)	-2.0	4.5	6.6
VSWR	<2.9	<2,0	<2,0
Imp. (Ohm)	50	50	50
Polarization	Linear	Linear	Mostly linear
Radiation Pattern	Omnidirectional	Omnidirectional	Omnidirectional



SPECIFICATIONS

Part Number: 650-10010-01

Product Name: LTE 201A (Mini-GP Antenna)

Features: External Mounted
 698 – 960 MHz/1710-2170 MHz/
 2300 – 2700 MHz/2900 – 3500MHz¹
 Single Antenna (SISO)
 1.83m Low-loss cable
 IP67 Waterproof (Upper mounting portion)
 2" Threaded Mount
 RoHS Compliant

PARAMETER	SPECIFICATION (with 1.83m Cable)
Frequency of Operation	698 to 960 MHz, 1710 to 1990 MHz, 1920 to 2170 MHz, 2100 to 2500MHz, 2500 to 2700 MHz, 2900 to 3500 MHz
Return Loss (698~2.7GHz LTE)	< -6dB
Return Loss (2.9 ~3.5GHz)	< -5dB
Efficiency (698 to 787 MHz)	>50%
Efficiency (824-896 MHz)	>25%
Efficiency (880-960 MHz)	>50%
Efficiency (1710 to 1990 MHz)	>60%
Efficiency (2100 to 2500 MHz)	>50%
Efficiency (2500 to 2700 MHz)	>40%
Efficiency (2900 to 3500 MHz)	>20%

¹ - denotes reduced performance over band

9 REVISION INDEX

Revision	Author	Change descriptions
R01	R.B.	First Issue

10 HOW TO CONTACT US

Dear customer thanks you for the choice of our products.

To satisfy any your requirements you can contact us at the following address:



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