

User Manual

➤ User Manual

TM03LNNAHD0 as telematics module device equipped in the vehicles.

In charge of wireless communications in LTE/WCDMA network

Platform for Telematics Virtual Machine (VM) and other VMs based on Hypervisor

TM03LNNAHD0 supports WCDMA B2/5, LTE B2/4/5/12 network

There will be perform some use-case to demonstrate LTE/WCDMA performances targeted

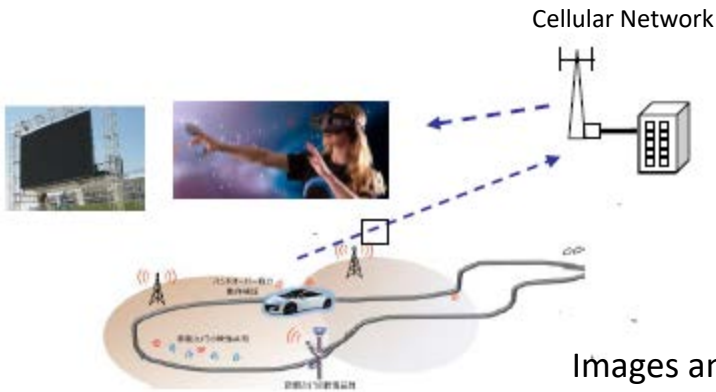
1. High throughput features
2. Low Latency features. below is just for example.

- **High throughput features**



Demonstrate high-throughput, high-quality image by hotspot.

- **Low Latency features**



Images and file uploaded from the car are displayed without delay to other devices

Frequency Band				
Item	Uplink	Downlink	WCDMA	FDD-LTE
Band2	1850-1910	1930-1990	V	V
Band4	1710-1755	2110-2155		V
Band5	824-849	869-894	V	V
Band12	699-716	729-746		V

➤ Telematics NAD Module installation guide and information

NAD Module as TM03LNNAHDO Module is mounted with solder ball on the main TSU board.

The strength of the RF field produced by the wireless module or modules embedded in the TSU is well within all international RF exposure limits known at this time. Because the wireless modules embedded in the TSU emit less than the maximum amount of energy permitted in radio frequency safety standards and recommendations, the manufacturer believes these modules are safe for use.

Regardless of the power levels, care should be taken to minimize human contact during normal operation. This module should remain more than 20 cm (8 inches) from the body when wireless devices are on and transmitting.

This transmitter must not be collocated or operated in conjunction with any other antenna or transmitter. Operation is subject to the following two conditions: (1) this module does not cause interference, (2) this module accepts any interference that may cause undesired operation.

Information for the integrator

The integrator must not provide information to the end user regarding how to install or remove this RF module in the user manual of the end product. The user manual that is provided by the integrator for end users must include the following information in a prominent location. To comply with FCC RF and IC RSS-102 exposure requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operated in conjunction with any other antenna or transmitter. The label for the end product must include FCC ID: BEJTM03LNNAHDO or A RF transmitter inside, IC: 2703H-TM03LNNAHDO.

➤ Telematics NAD Module installation guide and information

This module complies with FCC/IC rules.

FCC : Part 22, Part 24, Part 27

ISED : RSS-130, RSS-132, RSS-133, RSS-139

Furthermore, this device complies with FCC radiation exposure limits set forth for uncontrolled environments.

This module must be installed and operated with minimum distance of 20 cm between the radiating element and the user. This module must not be co-located with any other transmitters or antennas. To comply with FCC regulations limiting both the 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 the values listed in the following table.

Frequency [MHz]	699	716	729	734	746	748	758	791	803	814
Peak Gain(dBi)	-3.16	-2.85	-1.78	-1.26	-0.48	-0.39	-0.12	-0.72	-1.14	-0.85
Average Gain(dBi)	-5.87	-5.97	-5.30	-4.91	-4.26	-4.17	-3.89	-4.77	-5.47	-5.62
Frequency [MHz]	824	832	849	859	869	880	894	915	925	960
Peak Gain(dBi)	-0.44	-0.43	0.32	0.13	-0.62	-0.78	-1.57	-1.89	-2.24	-1.81
Average Gain(dBi)	-5.40	-5.70	-5.19	-5.34	-5.97	-5.94	-5.49	-5.79	-5.65	-4.53
Frequency [MHz]	1710	1755	1785	1805	1850	1880	1910	1920	1930	1980
Peak Gain(dBi)	2.50	2.86	2.40	2.82	2.66	2.83	2.73	2.71	2.92	2.28
Average Gain(dBi)	-2.84	-2.16	-1.61	-2.07	-1.80	-1.94	-2.16	-2.21	-2.02	-2.75
Frequency [MHz]	1990	2110	2155	2170	2300	2400	2500	2570	2620	2690
Peak Gain(dBi)	2.42	2.22	2.2	1.68	1.95	2.45	1.59	0.75	0.57	1.09
Average Gain(dBi)	-2.62	-3.05	-3.04	-3.40	-3.12	-2.24	-3.18	-4.02	-4.83	-5.26

To satisfy the FCC’s exterior labeling requirements, the following text must appear on the exterior of the end product. Contains transmitter module FCC ID: BEJTM03LNNAHD0 Contains transmitter module IC: 2703H-TM03LNNAHD0

Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. Users may lose the authority to operate this equipment if an unauthorized change or codification is made.

Note: If this module is intended for use in a portable device, additional testing will be required to satisfy the RF exposure and SAR requirements of FCC Part 2.1093 and RSS-102.

➤ Notice

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

The OEM integrator is responsible for ensuring that the host product which is installed and operating with the module is in compliant with Part 15B unintentional Radiator requirements, please note that For a Class B digital device or peripheral, the instructions furnished the user manual of the end-user product shall include the following or similar statement, placed in a prominent location in the text of the host product 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.

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.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This device should be installed and operated with minimum distance 20cm between the radiating element of this device and the user.

➤ Notice

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.

L'étiquette d'homologation d'un module d'Innovation, Sciences et Développement économique Canada devra être posée sur le produit hôte à un endroit bien en vue, en tout temps. En l'absence d'étiquette, le produit hôte doit porter une étiquette sur laquelle figure le numéro d'homologation du module d'Innovation, Sciences et Développement économique Canada, précédé du mot « contient », ou d'une formulation similaire allant dans le même sens et qui va comme suit : Contient IC : 2703H-TM03LNNAHDO est le numéro d'homologation du module.

Cet équipement est conforme aux limites d'exposition aux radiations IC CNR-102 établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps.