

Icon25 NAD User Manual

(QV28NUS)

1. Product Information

1.1 NAD Introduction

The NAD module (QV28NUS) is designed for integration into the vehicle for the automotive product. The core chip of this NAD is based on MediaTek MT2737 platform and supports the WWAN capability with WCDMA, LTE and 5G NR technology. The NAD is LGA phone-type and could not be manually removed or repaired by end user.

1.2 Operating Conditions

- Operating Voltage : DC 6V
- Operating Temperature : -40°C to 90°C
- Storage Temperature : -40°C to +95°C
- Humidity : 95% or less

2. RF Connectivity Specification

2.1 Operating Band List associated with each RF mode

Mode	Band List	3GPP Specification
UMTS/WCDMA	B2, B5	Rel 9
LTE	B2, B4, B5, B7, B12, B13, B17, B25, B26, B38, B42, B48, B66, B71	Rel 16
5G NR	n2, n5, n7, n12, n25, n41, n48, n66, n71, n77, n78	Rel 16

2.2 Tx Power Table associated with each antenna port

Operating Band	Operating Frequency (MHz)		Target Power (dBm)			Remark
	Tx	Rx	MIMO1	MIMO2	Int BUA	
B2 / n2	1850~1910	1930~1990	23		23	
B4	1710~1755	2100~2155	23		23	
B5 / n5	824~849	869~894	23		23	
B7 / n7	2500~2570	2620~2690	23		23	

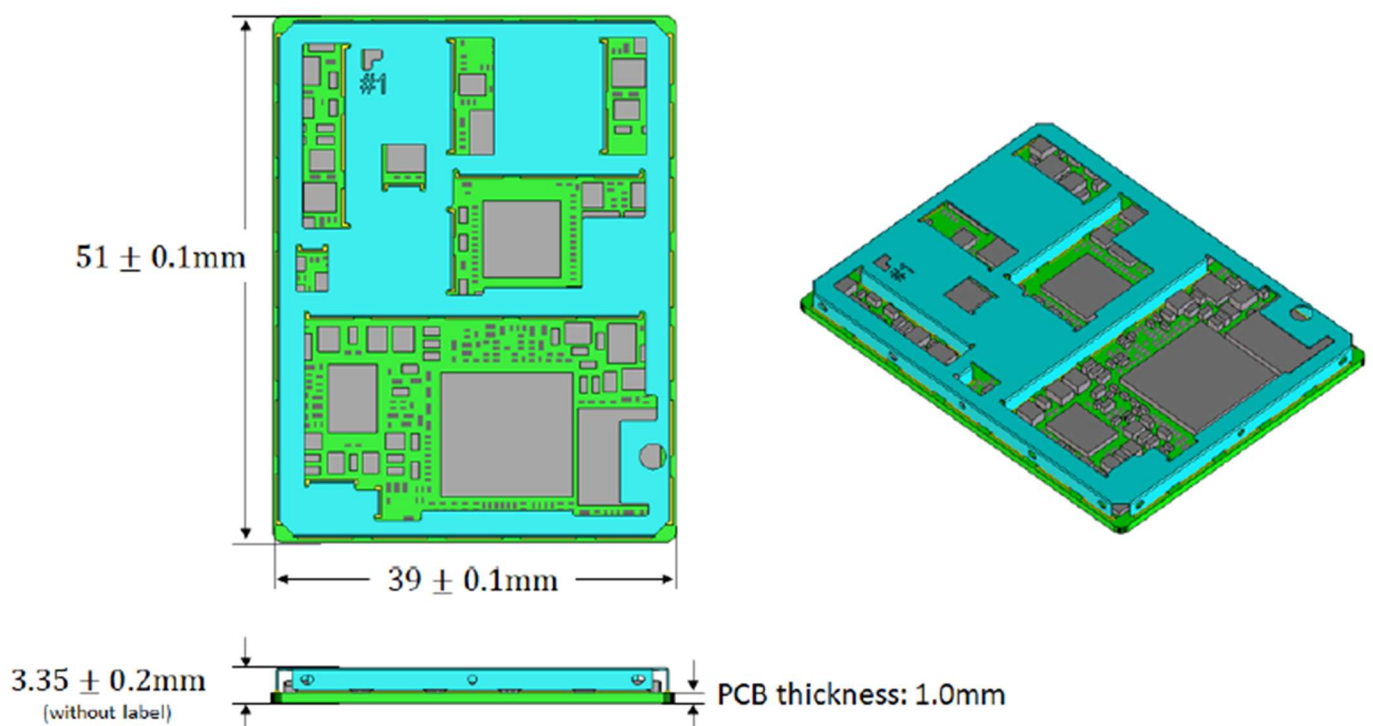
B12 / n12	669~716	729~746	23			
B13	777~787	746~756	23			
B17	704~716	734~746	23			
B25 / n25	1850~1915	1930~1995	23		23	
B26	814~849	859~894	23		23	
B29	X	717~728	X			Receiver only
B38	2570~2620	2570~2620	23		23	
n41	2496~2690	2496~2690	23		23	
B42	3400~3600	3400~3600	21	22		
B48 / n48	3550~3700	3550~3700	21	22		
B66 / n66	1710~1780	2110~2200	23		23	
B71 / n71	663~698	617~652	23			
n77	3300~4200	3300~4200	24.5	25.5		PC2
n78	3300~3800	3300~3800	21	22		

3. Mechanical Information

NAD weight is under the total weight requirement of 15.6-g

3.1 NAD Physical Dimensions

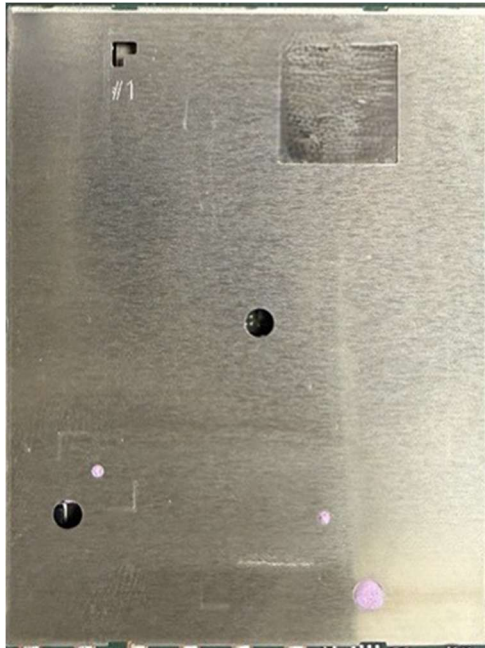
Product outline of finished-goods NAD is defined by dimensions with the fabrication tolerance in the drawing chart listed as below



3.2 NAD Assemble with Shielding Cover

The shield can is designed to cover the entire module, as shown in the figure below.

The module must be installed with the shield can cover in place before operation.



4. Statement

The NAD has been certified for integration into the host products under the following condition:

- Antenna installation requirement

The antennas for NAD must be installed a minimum separation distance from the human body

- External Antenna (Shark fin type, MIMO1/MIMO2): 200mm
- Internal Antenna (BUA): 200mm

- Co-location restrictions

Any additional transmitter module could not be co-operated with any other antenna except in accordance with FCC multi-transmitter product procedures.

<FCC>

CAUTION:

Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.

This module is intended for OEM integrator. The OEM integrator is responsible for the compliance to all the rules that apply to the product into which this certified RF module is integrated. Additional testing and certification may be necessary when multiple modules are used.

USERS MANUAL OF THE END PRODUCT:

In the user's manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated.

The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied.

The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment.

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.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: HFS-QV28NUS ".

RF Exposure warning

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provide with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

<ISED>

Canada, Industry Canada (IC) Notices

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:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Canada, avis d'Industry Canada (IC)

Cet appareil contient un ou des émetteurs/récepteurs exempts de licence conformes aux RSS exempts de licence d'Innovation, Sciences et Développement économique Canada. Le fonctionnement est soumis aux deux conditions suivantes:

1. Cet appareil ne doit pas causer d'interférences.
2. Cet appareil doit accepter toutes les interférences, y compris les interférences pouvant entraîner un fonctionnement indésirable de l'appareil.

Radio Frequency (RF) Exposure Information

The radiated output power of the Wireless Device is below the Innovation, Science and Economic Development Canada (ISED) radio frequency exposure limits. The Wireless Device should be used in such a manner such that the potential for human contact during normal operation is minimized.

This device has also been evaluated and shown compliant with the IC RF Exposure limits under mobile exposure conditions. (Antennas are greater than 20cm from a person's body).

Informations concernant l'exposition aux fréquences radio (RF)

La puissance de sortie rayonnée de l'appareil sans fil est inférieure aux limites d'exposition aux radiofréquences d'Innovation, Sciences et Développement économique Canada (ISDE). L'Appareil sans fil doit être utilisé de telle manière que le potentiel de contact humain pendant le fonctionnement normal soit minimisé.

Cet appareil a également été évalué et démontré conforme aux limites d'exposition RF IC dans des conditions d'exposition mobile. (Les antennes sont à plus de 20 cm du corps d'une personne).

End Product Labeling

The module is labeled with its own ISED Certification number. If the ISED Certification number are not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. In that case, the final end product must be labeled in a visible area with the following:

Contains IC: 1787B-QV28NUS

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: 1787B-QV28NUS est le numéro d'homologation du module.