1. Introduction

MK-NFC-001 module is complied with 13.56MHz ISM band.

2. FEATURES

Band	13.56MHz
Dimensions	53mm*33mm*2.5mm
power consumption	Average current：＜30mA Peak current：＜100mA
Reading distance	TypeA：≧5cm
Port	I2C、UART
transfer rate	I2C： ＜100K UART: 19200bit/s
Type	Contact：SAM卡 Non-Contact：Mifare 1 S50、Mifare 1 S70、Mifare UltraLight、Mifare Desfire、PLUS CPU
Environment	Operating temperature：-20～80℃ Humidity： 5%～95°%

Canada Statement

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.

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.

Please notice that if the ISED certification number is 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. This exterior label can use wording such as the following: "Contains IC: 25370- MKNFC001" any similar wording that expresses the same meaning may be used.

This equipment complies with IC RF radiation exposure limits set forth for an uncontrolled environment.

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

This equipment should be installed and operated with minimum distance 7.9 inches (20 cm) between the radiator & your body.

Le présent appareil est conforme de ce matériel aux conformités ou aux limites d'intensité de champ RF, les utilisateurs peuvent sur l'exposition aux radiofréquences et la conformité and compliance d'acquérir les informations correspondante.

l'appareil hôte doit porter une étiquette donnant le numéro de certification du module d'Industrie Canada, précédé des mots « Contient un module d'émission », du mot « IC: 25370-MKNFC001» ou d'une formulation similaire exprimant le même sens, comme suit

This radio transmitter 25370-MKNFC001 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.
Le présent émetteur radio 25370-MKNFC001 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.
The concrete contents to check are the following three points.

1) Must use following antenna.
2) Should be installed so that the end user cannot modify the antenna;
3) Feed line should be designed in 50ohm
Fine tuning of return loss etc. can be performed using a matching network. Le contenu concret à vérifier sont les trois points suivants.
1) i l doit utiliser suivant de l'antenne.
2) doivent être installés de façon que l'utilisateur final ne peut pas modifier l'antenne
3) La ligne d’alimentation doit être conçue en 50ohm
Le réglage précis de la perte de rendement, etc. peut être effectué en utilisant un réseau correspondant.

Ant.	Frequency (MHz)	Model number	Antenna Type	Antenna Gain (dBi)
1	13.56	MK-NFC-001	PCB Antenna	0

FCC Statement

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

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.

FCC RF Radiation Exposure Statement:
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of your body.

The device must be professionally installed

The intended use is generally not for the general public.It is generally for industry/commercial use.

The connector is within the transmitter enclosure and can only be accessed by disassembly of the transmitter that is not normally required. the user has no access to the connector.

Installation must be controlled. Installation requires special training

CFR 47 FCC Part 15 C (DXX) has been investigated. It is applicable to the modular transmitter

This radio transmitter 2ASR8MKNFC001 has been approved by Federal Communications Commission 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.

Ant.	Frequency (MHz)	Model number	Antenna Type	Antenna Gain (dBi)
1	13.56	MK-NFC-001	PCB Antenna	0

Notice to OEM integrator

Must use the device only in host devices that meet the FCC/ISED RF exposure category of mobile, which means the device is installed and used at distances of at least 20cm from persons.

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

The end user manual shall include FCC Part 15 /ISED RSS GEN compliance statements related to the transmitter as show in this manual. FCC/ Canada Statement).

Host manufacturer is responsible for compliance of the host system with module installed with all other applicable requirements for the system such as Part 15 B, ICES 003.

The devices must be installed and used in strict accordance with the manufacturer's instruction as described in the user documentation that comes with the product.

Any company of the host device which install this modular should perform the test of radiated &condicted emission and spurious emission etc. according to FCC Part 15C: 15.225and 15.209 &15.207, 15B class B requirement, only if the test result comply with FCC part 15C: 15. 225 and15.209 & 15.207, 15B class B requirement. Then the host can be sold legally.

This modular transmitter is only FCC authorized for the specific rule parts (47CFR Part 15.247) listed on the grant, and that 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.

Host manufacturer is strongly recommended to confirm compliance with FCC/ISED requirements for the transmitter when the module is installed in the host.

Must have on the host device a label showing Contains FCC ID: 2ASR8MKNFC001，IC: 25370-MKNFC001

The use condition limitations extend to professional users, then instructions must state that this information also extends to the host manufacturer’s instruction manual.

This module is stand-alone modular. If the end product will involve the Multiple simultaneously transmitting condition or different operational conditions for a stand-alone modular transmitter in a host, host manufacturer have to consult with module manufacturer for the installation method in end system.

l'hôte doit utiliser l'instrument uniquement dans des dispositifs qui répondent à la fcc / (catégorie d'exposition rf mobile, ce qui signifie le dispositif est installé et utilisé à une distance d'au moins 20 cm de personnes.

le manuel de l'utilisateur final doit inclure la partie 15 / (fac rss gen déclarations de conformité relatives à l'émetteur que de montrer dans ce manuel.

le fabricant est responsable de la conformité de l'hôte, le système d'accueil avec le module installé avec toutes les autres exigences applicables du système comme la partie 15 b, ices - 003.

accueillir le fabricant est fortement recommandé de confirmer la conformité avec les exigences de la fcc / (émetteur lorsque le module est installé dans l'hôte.

le dispositif d'accueil doivent avoir une étiquette indiquant contient FCC ID:2ASR8MKNFC001，

IC: 25370-MKNFC001