

The instruction manual of PN7462 module.

Top Victory Electronics(Taiwan) Co., Ltd.

Model: PN7462

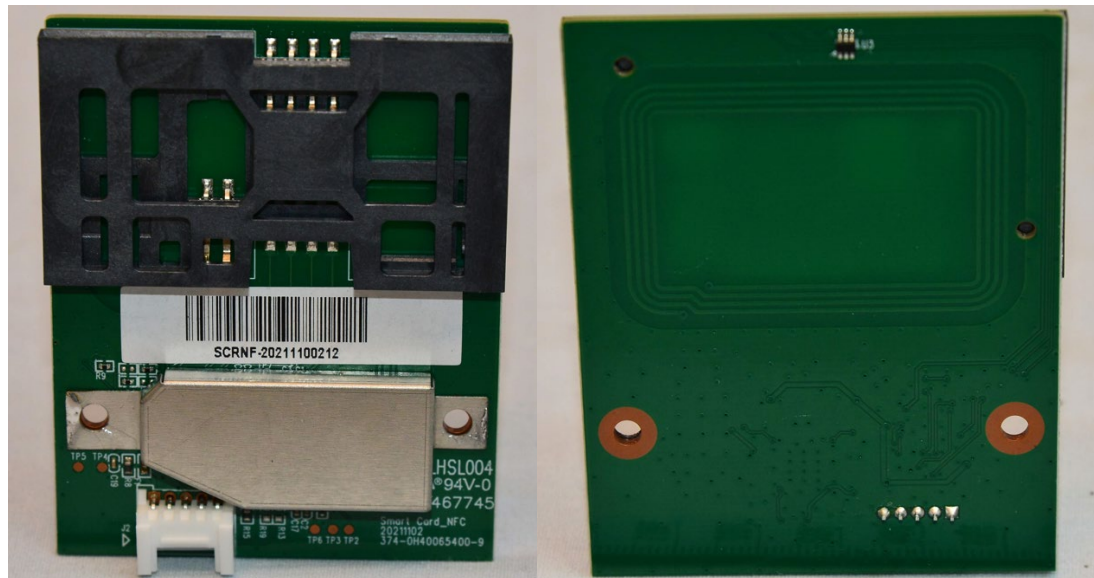
#### Overview

The reader module used NXP PN7462 controller is a highly integrated ISO/IEC7816 interface and transceiver module for contactless reader/writer communication at 13.56 MHz.

A dedicated Flash code is implemented to handle different RF protocols by an integrated microcontroller. The system host controller communicates with the module by using the USB link.

The protocol between the host controller and the module, on top of this physical link is the CCID protocol

Product Photo as below:



#### Contact and Contactless Features

- ◆ Integrated contact interface frontend
  - Class A, B, and C cards can work on 1.8 V, 3 V, and 5 V supply
  - Specific ISO UART, variable baud rate through frequency or division ratio programming, error management at character level for T = 0, and extra guard time register
  - DC-to-DC converter for class A support starting at 3 V, and class B support starting at 2.7 V.
  - Thermal and short-circuit protection on contact cards
  - Automatic activation and deactivation sequence, initiated by software or by hardware in case of short-circuit, card removal, overheating, and VDD or VDD drop-out

- Enhanced ESD protection (> 8 kV)
- ISO/IEC 7816 compliant
- EMVCo 4.3 compliant
- Synchronous card support
- ◆ Integrated contactless interface frontend
- High RF output power frontend IC for transfer speed up to 848 kbit/s
- NFC IP1 and NFC IP2 support
- Full NFC tag support (type 1, type 2, type 3, type 4A, type 4B and type 5)
- P2P active and passive, target and initiator
- Card emulation ISO14443 type A
- ISO/IEC 14443 type A and type B
- MIFARE products using Crypto1
- ISO/IEC 15693, and ISO/IEC 18000-3 mode 3
- Low power card detection
- Dynamic Power Control (DPC) support
- Compliance with EMV contactless protocol specification
- Compliance with NFC standards

#### Support NFC Mode

- ◆ ISO/IEC 7816
- ◆ ISO/IEC 14443-A and B, MIFARE
- ◆ JIS X 6319-4 (comparable with FeliCa scheme)
- ◆ ISO/IEC 15693, ICODE, ISO/IEC 18000-3 mode 3
- ◆ NFC protocols - tag reader/writer, P2P
- ◆ ISO/IEC 14443- type A card emulation
- ◆ EMVCo compliance

#### Caution :

1. Please keep this product and accessory accessories to a child's reach.
2. Do not spill water or other liquids onto this product, otherwise it may cause damage.
3. Please do not place this product near the source of heat or place it in direct sunlight. Otherwise, it may cause deformation or malfunction.
4. Please let this product be flammable or fire such as lighted candles.
5. Please do not repair this product by yourself, only professionals can repair it.

#### General Specifications

- ◆ Bus Powered - +5V +/- 5%, 500mA
- ◆ Average Power Consumption

- Standby Mode: 0.12Watt
- Active/Read Card Mode:  
ISO/IEC7816 => Varied by Different Card Type. NFC => 0.24 Watt

◆ Operational environment

- Operating Temperature: -10°~60°
- Operating Humidity: 10%~90%
- Storage Temperature: -20°~70°
- Storage Humidity: 10%~90%

Modulation Type: ASK

Operating Frequency: 13.56MHz

\*Note: If the design and specifications are changed, no notice shall be given.

This device complies with Part 15 of the FCC / ISED's licence-exempt RSSs 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.

Le présent appareil est conforme aux CNR d' ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

**FCC/ISED/CE-RED Caution:**

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

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

## **Radiation Exposure Statement:**

The product comply with the FCC/ISED/CE-RED portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

This module is intended for OEM integrators only. Per FCC KDB 996369 D03 OEM Manual v01 guidance, the following conditions must be strictly followed when using this certified module:

KDB 996369 D03 OEM Manual v01 rule sections:

### 2.2 List of applicable FCC rules

This module has been tested for compliance to FCC Part 15

### 2.3 Summarize the specific operational use conditions

The module is tested for standalone mobile RF exposure use condition. Any other usage conditions such as co-location with other transmitter(s) or being used in a portable condition will need a separate reassessment through a class II permissive change application or new certification.

### 2.4 Limited module procedures

Not applicable.

### 2.5 Trace antenna designs

Not applicable.

### 2.6 RF exposure considerations

This equipment complies with FCC mobile 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 & your body. If the module is installed in a portable host, a separate SAR evaluation is required to confirm compliance with relevant FCC portable RF exposure rules.

## 2.7 Antennas

The following antennas have been certified for use with this module; antennas of the same type with equal or lower gain may also be used with this module.

Antenna Type	Loop Antenna
Antenna connector	N/A

## 2.8 Label and compliance information

The final end product must be labeled in a visible area with the following: "Contains FCC ID: ARS-PN7462". The grantee's FCC ID can be used only when all FCC compliance requirements are met.

## 2.9 Information on test modes and additional testing requirements

This transmitter is tested in a standalone mobile RF exposure condition and any co-located or simultaneous transmission with other transmitter(s) or portable use will require a separate class II permissive change re-evaluation or new certification.

## 2.10 Additional testing, Part 15 Subpart B disclaimer

This transmitter module is tested as a subsystem and its certification does not cover the FCC Part 15 Subpart B (unintentional radiator) rule requirement applicable to the final host. The final host will still need to be reassessed for compliance to this portion of rule requirements if applicable.

As long as all conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

**IMPORTANT NOTE:** In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

### **Manual Information To the End User**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

### **OEM/Host manufacturer responsibilities**

OEM/Host manufacturers are ultimately responsible for the compliance of the Host and Module. The final product must be reassessed against all the essential requirements of the FCC rule such as FCC Part 15 Subpart B before it can be placed on the US market. This includes reassessing the transmitter module for compliance with the Radio and EMF essential requirements of the FCC rules. This module must not be incorporated into any other device or system without retesting for compliance as multi-radio and combined equipment.

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 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.

### **Industry Canada statement:**

This device complies with ISED's licence-exempt RSSs. 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.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) le dispositif ne doit pas produire de brouillage préjudiciable, et (2) ce dispositif doit accepter tout brouillage reçu, y compris un brouillage susceptible de provoquer un fonctionnement indésirable.

### **FOR PORTABLE DEVICE USAGE (<20m from body/SAR needed)**

#### **Radiation Exposure Statement:**

The product comply with the Canada portable RF exposure limit set forth for an uncontrolled environment and are safe for intended operation as described in this manual. The further RF exposure reduction can be achieved if the product can be kept as far as possible from the user body or set the device to lower output power if such function is available.

#### **Déclaration d'exposition aux radiations:**

Le produit est conforme aux limites d'exposition pour les appareils portables RF pour les Etats-Unis et le Canada établies pour un environnement non contrôlé.

Le produit est sûr pour un fonctionnement tel que décrit dans ce manuel. La réduction aux expositions RF peut être augmentée si l'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible.

**This device is intended only for OEM integrators under the following conditions: (For module device use)**

1) The transmitter module may not be co-located with any other transmitter or antenna.

As long as 1 condition above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

**Cet appareil est conçu uniquement pour les intégrateurs OEM dans les conditions suivantes: (Pour utilisation de dispositif module)**

1) Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

Tant que les 1 condition ci-dessus sont remplies, des essais supplémentaires sur l'émetteur ne seront pas nécessaires. Toutefois, l'intégrateur OEM est toujours responsable des essais sur son produit final pour toutes exigences de conformité supplémentaires requis pour ce module installé.

**IMPORTANT NOTE:**

In the event that these conditions can not be met (for example certain laptop configurations or co-location with another transmitter), then the Canada authorization is no longer considered valid and the IC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate Canada authorization.

**NOTE IMPORTANTE:**

Dans le cas où ces conditions ne peuvent être satisfaites (par exemple pour certaines configurations d'ordinateur portable ou de certaines co-localisation avec un autre émetteur), l'autorisation du Canada n'est plus considéré comme valide et l'ID IC ne peut pas être utilisé sur le produit final. Dans ces circonstances, l'intégrateur OEM sera chargé de réévaluer le produit final (y compris l'émetteur) et l'obtention d'une autorisation distincte au Canada.

**End Product Labeling **FOR PORTABLE DEVICE USAGE (<20m from body/SAR needed)****

The product can be kept as far as possible from the user body or set the device to lower output power if such function is available. The final end product must be labeled in a visible area with the following: "Contains IC: 9190A-PN7462".



### **Plaque signalétique du produit final**

L'appareil peut être conservé aussi loin que possible du corps de l'utilisateur ou que le dispositif est réglé sur la puissance de sortie la plus faible si une telle fonction est disponible. Le produit final doit être étiqueté dans un endroit visible avec l'inscription suivante: "Contient des IC: [9190A-PN7462](#)".

### **Manual Information To the End User**

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module.

The end user manual shall include all required regulatory information/warning as show in this manual.

### **Manuel d'information à l'utilisateur final**


L'intégrateur OEM doit être conscient de ne pas fournir des informations à l'utilisateur final quant à la façon d'installer ou de supprimer ce module RF dans le manuel de l'utilisateur du produit final qui intègre ce module.

Le manuel de l'utilisateur final doit inclure toutes les informations réglementaires requises et avertissements comme indiqué dans ce manuel.

### **Europe – EU Declaration of Conformity**

This device complies with the essential requirements of the Radio Equipment Directive (2014/53/EU) and Radio Equipment Regulations 2017. The following test methods have been applied in order to prove presumption of conformity with the essential requirements of the Radio Equipment Directive

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