



XRAI NFC MOUDULE

USER MANUAL & Operational description

I. Introduction

DFCN01 is a kind of NFC (Near Field Communication) module that could be embedded in one IT system by simply connecting the module to his target microcontroller and start developing his application software.

II. DESIGN REFERENCE

XRAI reference design module consists of the following:

- Reference Design:

When the user wishes to incorporate the XRAI to their device, it is strongly recommended that this reference design is copied “as is” in the final application board to guarantee optimum performance, regulatory compliance and lowest development time and design effort.

- MCU FPC/FFC Connector:

Allow user to connect the XRAI module to the host board via FPC/FFC connector.

- Antenna Connector:

Connect to FPC antenna.

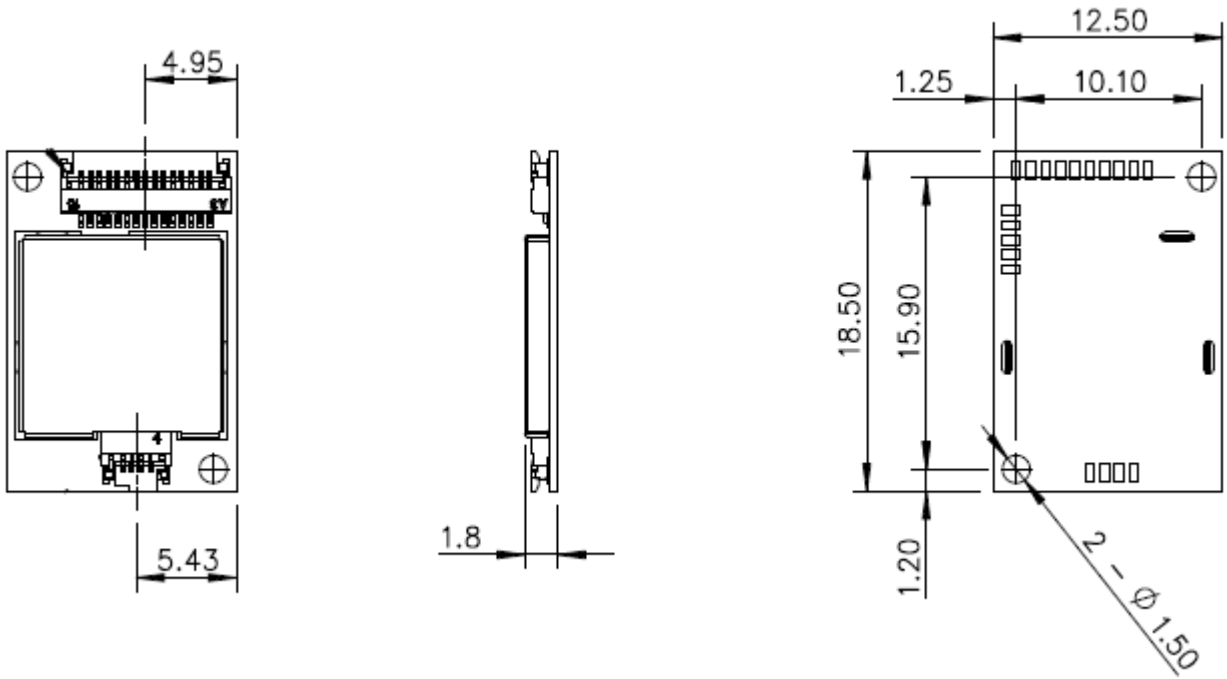
III. FEATURE

- Contactless protocols:
 - ISO14443 A/B
 - ISO15693
 - ISO18092
- Contactless transmission of data and RF energy
- Peer-to-peer communication
- Card emulation
- NFC card reader/writer
- Programmable receiver sensitivity
- Carrier frequency: 13.56 MHz
- RF Field detection
- Single ended external antenna connection

IV. Electrical Characteristics

Symbol	Parameter	Min	Typical	Maximum	Unit
VDD	Power supply voltage	2.7	3.3	5.5	V
VDD_IO	Power supply voltage	3.0	3.3	3.6	
Power consumption					
I _{VDD_IO}				30	mA
I _{MOD_VDD}				120	

V. MECHANICAL DIMENSION



VI. Environmental Requirement

Item	Feature	Description
5.1	Operating Temperature	0 to 80 deg.C
5.2	Storage Temperature	-40 to 85 deg.C
5.3	Operating Humidity	10 to 90 % (Non-condensing)
5.4	MTBF	TBD
5.5	ROHS	TBD

VII. Certifications and Regulatory

Item	Feature	Description
6.1	FCC	RF: FCC part 15C EMI: FCC part 15B FCC grant: TCB Filing fee
6.2	CE	RF: EN302291 EMC: EN301489-1/-3 Safety: EN 60950-1:2006/A11:2009
6.3	TBD	TBD

Federal Communication Commission Interference Statement

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 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 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.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: NKR-DFCN67H ".

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power

(e.i.r.p.) is not more than that necessary for successful communication. **USER MANUAL**

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following: "Contains transmitter module IC: 4441A-DFCN67H".

Contient le module d'émission IC: 4441A-DFCN67H

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

Digital apparatus (ICES003)

CAN ICES-3 (B)/NMB-3(B)

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie 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, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.