

EVERINT

User's Manual

RFID-PBA1

Ver. 1.00

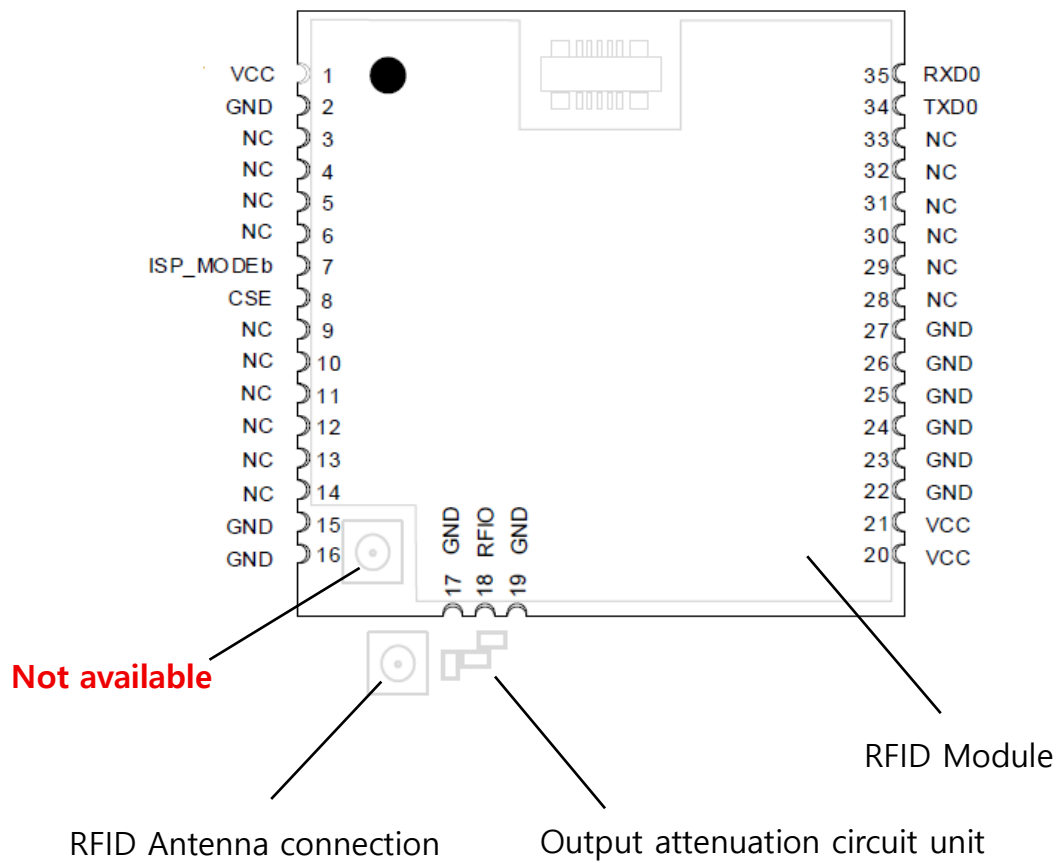
Table of Contents

1. Overview.....	3
2. Composition.....	4
3. Operation Description.....	6
3-1 DC Power supply	6
3-2 Interface.....	6
3-3 RF IO.....	6
3-4 CSE (Chip select enable).....	6
3-5 ISP MODE settings.....	6
4. Specifications	8

1. Overview

RFID-PBA1 is a UHF RFID module that uses 900MHz radio frequency.

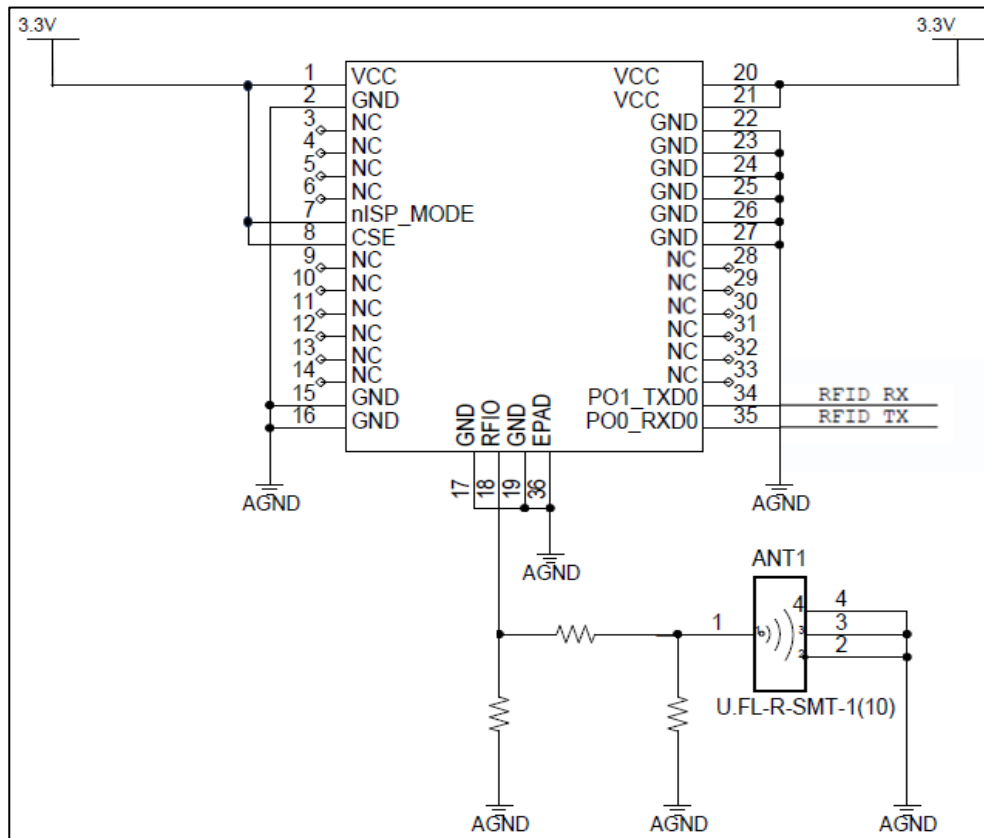
2. Composition



● Module Pin Details

Pin No.	Pin name	Discription
1	VCC	DC Power
2	GND	Ground
3	NC	Not Connection
4	NC	Not Connection
5	NC	Not Connection
6	NC	Not Connection
7	ISP_MODEb	Mode settings
8	CSE	Chip select enable
9	NC	Not Connection
10	NC	Not Connection
11	NC	Not Connection
12	NC	Not Connection
13	NC	Not Connection
14	NC	Not Connection
15	GND	Ground
16	GND	Ground
17	GND	Ground
18	RF IO	Rx Input / Tx Output
19	GND	Ground
20	VCC	DC Power
21	VCC	DC Power
22	GND	Ground
23	GND	Ground
24	GND	Ground
25	GND	Ground
26	GND	Ground
27	GND	Ground
28	NC	Not Connection
29	NC	Not Connection
30	NC	Not Connection
31	NC	Not Connection
32	NC	Not Connection
33	NC	Not Connection
34	TXD0	UART Output
35	RXD0	UART Input

3. Operation Description



< Application Circuit >

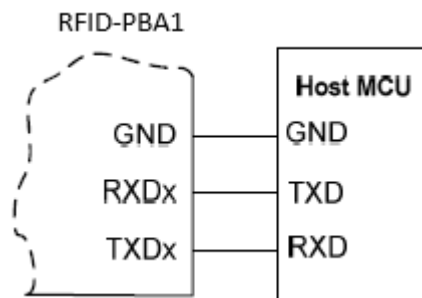
- ANT1 Info
 - Model part No.: U.FL-R-SMT-1
 - Connector type: Coaxial Micro-Receptacle
 - Manufacturer: HIROSE

3-1 Power Supply

3.3V DC power is supply to the VCC (Pin1, 20, 21).

3-2 Interface

The serial interface is assigned with two pins. RXD0 assigned to Pin35 is the pin for receiving commands from the host, and TXD0 assigned to Pin34 is the pin for transmitting responses from the host. Pin connection is shown as below figure.



3-3 RF IO

The RF I/O assigned to Pin18 is optimized at 50ohm impedance.

3-4 CSE (Chip select enable)

CSE assigned to Pin8 is '1': Operation / '0': Not Operation

3-5 Mode settings

ISP_MODEb assigned to Pin7 is set to logic '1'. (Use pull-up resistor)

4. Specifications

No.	Item	Unit	Specification		
			Min	Typ.	Max
1	Frequency Range	MHz	902.75		927.25
2	Operating Temperature	°C	-20		70
3	Operating Humidity	%	0		90
4	DC Power	V	3.3		3.6
5	Host Interface	-	UART (Tx, Rx)		
6	RF Output	dBm			23
7	RF IO Impedance	ohm		50	

- FCC ID: 2AKMF-RFID-PBA1
- IC: 22266- RFID-PBA1

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.
2. This device must accept any interference received, including interference that may cause undesired operation.

Caution

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- A minimum separation distance of **20 cm** must be maintained between the antenna and any person to satisfy RF exposure requirements.

Radio Frequency Interference

This device generates, uses, and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. 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, 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.

OEM Integration Requirements

General Conditions

This device is intended only for OEM integrators under the following conditions:

- The module must be installed such that a minimum separation distance of **20 cm** is maintained between the radiator (antenna) and all persons.
- The module is limited to installation in mobile or fixed applications.
- The transmitter module must not be co-located or operating in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures.
- The module must only be used with the included onboard antenna or antennas approved by the manufacturer (EVERINT CO., LTD.). Use of unauthorized antennas is strictly prohibited.
- Ensure that the power supply to the module is clean, regulated 3.3V DC.
- Use appropriate decoupling capacitors near the VCC pins to minimize noise.

Installation and End-User Manual

- The OEM integrator is responsible for ensuring that the end-user manual does not contain instructions on how to install or remove the RF module.
- The OEM integrator must include the required FCC statements (per Part 15.19 and 15.21) in the user manual of the host device.
- The user manual for the host product must clearly indicate the operating requirements and conditions to ensure compliance with current FCC RF exposure guidelines.

Labeling Requirements**Module Labeling**

The module is labeled with its own FCC ID. If the FCC ID is not visible when the module is installed inside another device, the outside of the device must also display a label referring to the enclosed module:

Example:

“Contains FCC ID: **2AKMF-RFID-PBA1** or “Contains Transmitter Module FCC ID: **2AKMF-RFID-PBA1**”

End Product Labeling

To satisfy FCC exterior labeling requirements, the final product must include the above statement in a visible location.

Additional Compliance

- As long as the above conditions are met, further transmitter testing will not be required.
- However, the OEM integrator is still responsible for testing the final product for any additional compliance requirements (e.g., digital device emissions under Part 15B).
- If the module is used in configurations not covered by the original certification (e.g., portable use, different antennas), separate FCC authorization is required.

Power Supply Requirements for FCC / IC Compliance

- This module has to install the input the 3.3V, cause there is no regulator in the device.
- The host system must ensure that a regulated 3.3V DC is supplied to the module.
- Since the module lacks an onboard voltage regulator, the responsibility for voltage regulation lies entirely with the host system.

This device may only operate using an antenna of a type and maximum (or lesser) gain approved by (EVERINT CO., LTD.). Antenna types not included in the list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this transmitter.

Note

No.	Antenna model	Peak gain	Type
1	KSA-920MS4510A	-35.44dBi	PCB Antenna
2	KSA-875MS1008A	-8.68dBi	PCB Antenna

Canada IC approval 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.

Attention : Toute changé ou modifications non expressément approuvées par la partie responsable de la conformité pourraient annuler l'utilisateur autorité de faire fonctionner cet équipement.

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 ID IC: **22266-RFIDPBA1** ou d'une formulation similaire exprimant le même sens, comme suit.

Le dispositif rencontre l'exemption des limites courantes d'évaluation dans la section 2.5 de RSS 102 et la conformité à l'exposition de RSS-102 RF, utilisateurs peut obtenir l'information canadienne sur l'exposition et la conformité de RF.

Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ou émetteur. Cet équipement devrait être installé et actionné avec une distance minimum de **20 centimètres** entre le radiateur et votre corps.

IMPORTANT : Le produit hôte final doit être équipé d'une antenne intégrée qui ne peut pas être retirée par l'utilisateur final.

Revision History

[illegible]