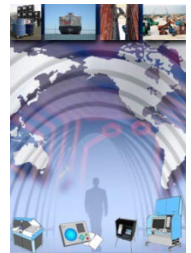


U-3000 Reader

Avante International Technology, Inc.



2011

User Manual

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
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SAFETY & GENERAL INFORMATION

Use the following to ensure the antenna & device installation is compliant with RF safety exposure requirements

CAUTIONS & WARNINGS

Please read the following cautions and warnings for safe operation.

-  Follow all safety electrical rules to avoid personal injury to self or others.
-  Established & connect a ground point to the device prior to turning the unit on.
-  Follow ESD (Electro Static Discharge) guidelines.
-  Warranty will be voided if factory installed screws and/or bolts are removed.
-  Do not stay in front of the antenna for long periods of time. Please refer to the section titled “RF Exposure”
-  Please note that it is up to the user to adhere to all instructions listed in this document. Using settings other than the ones specified in this document are not recommended and are the sole responsibility of the user.

RF SPECIFICATIONS

Below you'll find RF specifications for the U-3000 UHF Reader.

COMPLIANCES

The U-3000 UHF reader complies with FCC part 15.247 requirements:

- **Frequency:** 905-925MHz
- **Frequency Hopping**

EXPOSURE

Refer to the chart below for recommended operational distances.

| Distance | Time Exposure | Description |
|----------|---------------|--|
| 20 cm. | ~ 30 min. | Recommended distance one should keep away from the antenna |

FCC & IC STATEMENTS

| Device Name | Model Number | FCC ID | IC |
|-------------------|--------------|-----------|-------------|
| UHF Reader U-3000 | U-3000 | QJZ-U3000 | 9611A-U3000 |

FCC STATEMENT AND CAUTION

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.

In order to maintain compliance with the FCC RF exposure guidelines, this device should be installed and operated with a minimum distance of 20cm between the radiator, and the body of the operator and/or nearby persons.

Any change or modification not approved by the party responsible for compliance could void the user's authority to operate this device. Permitted Low Gain Patch Antenna (5.5dBi). This device requires professional installation.

IC STATEMENT

1. 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.

Conformément à la réglementation d'Industrie Canada, le présent émetteur radio peut fonctionner avec une antenne d'un type et d'un gain maximal (ou inférieur) approuvé pour l'émetteur par Industrie Canada. Dans le but de réduire les risques de brouillage radioélectrique à l'intention des autres utilisateurs, il faut choisir le type d'antenne et son gain de sorte que la puissance isotrope rayonnée équivalente (p.i.r.e.) ne dépasse pas l'intensité nécessaire à l'établissement d'une communication satisfaisante.

2. This radio transmitter has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (identifier le dispositif par son numéro de certification ou son numéro de modèle s'il fait partie du matériel de catégorie I) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne. Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

ANTENNA APPROVED/ANTENNE APPROUVÉ

| Type/Type | Max. Gain/Max. Gain | Impedance/ Impédance |
|-----------|---------------------|----------------------|
| Patch | 5.5 dBi | 50 Ω |

3. 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.

4. In order to maintain compliance with the IC RF exposure guidelines, this device should be installed and operated with a minimum distance of 20 cm between the radiator, and the body of the operator and/or nearby persons.

Afin de maintenir la conformité avec les directives d'exposition RF IC, ce dispositif doit être installé et exploité avec une distance minimale de 20 cm entre le radiateur et le corps de l'opérateur ou à proximité de personnes.

INTRODUCTION



The UHF-900 Reader is a passive RFID card reader capable of handling up to four antenna connections for multi-switch reading mode. A LCD screen and simple keypad are available for easy user operation. Data ports are located on the bottom of the reader and these include 1 power port, 1 power ON/OFF switch, 1 SD card slot, 1 Ethernet port, and 1 USB port.

In addition, 2 LED lights are located between the LCD screen and keypad to inform the user if the unit is working properly or when the unit is being charged. The green LED will blink intermittently when the system is working properly. The red LED will turn on steady when the reader is being charged, and will turn off automatically once the charge is completed. In addition the red LED will blink intermittently when the unit is plugged into the wall outlet via the power supply and turned ON to indicate it is being charged while being operated.

KEYPAD FUNCTION KEYS F1 - F4



Four function keys are located on the top area of the keypad. Use these keys to set the unit's operational mode and other settings. The unit will enter the "Automatic" read mode when it is first turned ON; this is the default setting.

- **F1**
Press the F1 key to switch the unit to "Manual" read mode.
- **F2**
Press the F2 key to switch the unit to "Automatic" read mode.
- **F3**
Press the F3 key to enter the Main Menu. Press the CL key to exit sub-menus or to exit from the Main Menu screen.
- **F4**
The F4 key is used to set the unit for "Inventory" mode (Continuous Test Read Mode). Press the following keys on the keypad in the exact order to set the unit for "Continuous Test Read Mode":

Up arrow key,
 Down arrow key,
 Left arrow key (*),
 Right arrow key (#), CL, OK, and F4.

MAIN MENU

There are 5 submenus on the Main Menu screen.





- EPC GEN2
- Record List
- Save to SD
- System Setting
- About Us

EPC GEN2

The EPC GEN2 menu item will allow for interaction with tags or cards within the detectable range. The inventory of tags will continuously be update as tags or cards are detected.

TAG INTERACTIONS

To interact with tags or cards, do the following:

1. Use the  up or  down arrow key to highlight any detected tag or card, then
2. Press the OK key, and use the  up or  down arrow key to highlight one of the following interactions:

- **Tag Read (“Read Tag”)**

Press the OK key when this option is highlighted; the display will show the following information:

```





EPC:  XXXXXXXXXXXXXXXX
      XXXXXXXXXXXXXXXX
Bank Num: X   Block: XX
Data:  XXXX
  
```

- The EPC number is composed of 28 characters containing numbers and letters; this number is unchangeable.
 - The Bank Num is composed of 1 character and ranges from the numbers 0 to 3; this number is changeable.
 - The Block number is composed of 2 characters containing the numbers 00 to 15; this number is changeable.
 - The Data field is composed of 4 characters containing numbers and letters. This will display data on the card or tag based on the Bank Num and Block numbers chosen; a “Read successful” message will appear at the bottom of the display after pressing the OK key and wait for the unit to beep twice; this will indicate a successful read. If a Bank Num and Block number combination contains no data, the Data field will display **** and a “Read failed” message will appear at the bottom of the display. Note: you may need to change either the Bank Num or Block number to achieve a successful read. For example if Bank Num and Block number are 1 and 3, respectively, and a “Read failed” message appears, change the Block number and press the OK key.
- **Tag Write (“Write Tag”)**
- Press the OK key when this option is highlighted; the display will show the following information:

```

EPC:  XXXXXXXXXXXXXXXX
      XXXXXXXXXXXXXXXX
Bank Num: X   Block: XX
Data:  XXXX
  
```

(The EPC, Bank Num, Block, and Data fields have been explained in the previous section. However, here the Block field can contain numbers in the range of 00 to 19. In addition the data field is changeable to any combination of letters and numbers)

- To change the Data field, use the  Right arrow key (#) to move to the Data field. To change a character, use the  Right arrow key (#) to move to the character you wish to change, then use the  up or  down arrow key to select a number or letter of your choice. Press the OK key to save the changes; a “Write failed” message will appear to indicate a failure in writing data to the card or tag.

- **Tag Kill**

Press the OK key when this option is highlighted.

- **Tag Lock**

Press the OK key when this option is highlighted.

RECORD LIST

The Record List menu item will allow for review of the records and EPC stored in memory. The list will also indicate the number of records that have been recorded so far; this number is located on the top right of the display next to the title “Record”



To view a list of records, do the following:

1. Press the OK key when the Record List option is highlighted. The record list is displayed as follows:

```

1      XXXXXXXXXXXXXXXX
      XXXXXXXXXXXXXXXX
  
```

(Where the EPC number is composed of 28 characters containing numbers and letters)

2. Use the  up or  down arrow key to view tags or cards that have been recorded by the unit. Once you reach the last number, scroll back up or press on the CL key to exit. **Note:** if no selections are made while in this menu item, the unit will return to the “Automatic” display; the display may also turn off to save power.

SAVE TO SD

This option allows you to save the records from the unit to an SD card that may be inserted on the available SD port located near the bottom of the unit.

To save records from the unit to the SD card, do the following:

1. Highlight the Save to SD option and press the OK key; the display will show “Ready to save...” and then the “Save successful” message will appear. The unit will return to the “Automatic” display if no other selections are made.

SYSTEM SETTING



The System Setting menu item will allow access to detail settings for proper system functionality.

- Date & Time
- RF Switch
- Display Time
- Clear Flash
- Save Time
- Set Frequency
- Set Power
- Sensitivity
- Net Config

DATE & TIME

The Date & Time menu item allows for setting of the system's date and time.



To change the date, do the following:

1. Use the  Left arrow key (*) or  Right arrow key (#) to move the cursor to a digit you wish to change, then press on a number located on the keypad. Once you change a digit, the cursor will move to the next digit. After making the desired changes, press on the OK key to save the change; the "Set Successful" message will be shown at the bottom of the display and the unit will return to the previous menu and eventually the "Automatic" display, which will turn off to save power. **Note:** the date format is as follows:

Year-Month-Day

2009-08-31

To change the time, do the following:



2. Use the  Left arrow key (*) or  Right arrow key (#) to move the cursor to the second row containing the time, then press on a number located on the keypad. Once you change a digit, the cursor will move to the next digit. After making the desired changes, press on the OK key to save the change; the "Set Successful" message will be shown at the bottom of the display and the unit will return to the previous menu and eventually the "Automatic" display, which will turn off to save power. **Note:** the time is in 24 hour format.

RF SWITCH

The RF Switch menu item allows for choosing how the reader should listen at each antenna port.

- Choose "Manual" to manually set one of the four antenna ports to listen.
- Choose "Automatic" to allow the unit to quickly switch between all ports and listen at each one.

To manually set one of the four antennae, do the following:



1. Press the OK key when the Manual option is highlighted
2. Use the  up or  down arrow key to select an antenna port (RF-1, RF-2, RF-3, and RF-4). Then, press the OK key to set the antenna port; the antenna port light will light up, indicating that it is ready to listen.

To set the unit to switch and listen at all four antenna ports, do the following:

1. Press the OK key when the Automatic option is highlighted. The time format is as follows:

XXXX ms

(Where the characters can be numbers and the units are in milliseconds)

2. Use the  Left arrow key (*) or  Right arrow key (#) to move to the character you wish to change. Then, use the keypad to enter a number; once a character is changed, the cursor moves to the next character. Press on the OK key to save the changes.

DISPLAY TIME



The Display Time menu item allows for setting how long the LCD screen remains on.

To set the Display Time, do the following:

1. Press the OK key when the Display Time option is highlighted. The time format is as follows:

XX sec

(Where the characters can be numbers and the units are in seconds)

2. Use the  Left arrow key (*) or  Right arrow key (#) to move to the character you wish to change. Then, use the keypad to enter a number; once a character is changed, the cursor moves to the next character. Press on the OK key to save the changes.

CLEAR FLASH

The Clear Flash menu item allows the user to delete all the data in the internal flash memory.

To clear the internal memory, do the following:

1. Press the OK key when the Clear Flash option is highlighted. The following warning will appear:

CUATION
Data will be lost!
Are you sure?

2. If you DO NOT wish to clear the internal flash memory, press the CL key to cancel the option. However, if you wish to clear the internal flash memory, press the OK key to confirm the deletion of the flash memory.

SAVE TIME



The Save Time menu item allows for recording the time when a record is saved to the flash memory. This allows repetitive records to be saved when the same card is detected.

To set the Save Time, do the following:

1. Press the OK key when the Save Time option is highlighted. The time format is as follows:

XX sec

(Where the characters can be numbers and the unit is in seconds)

2. Use the  Left arrow key (*) or  Right arrow key (#) to move to the character you wish to change. Then, use the keypad to enter a number; once a character is changed, the cursor moves to the next character. Press on the OK key to save the changes.

SET FREQUENCY

The Set Frequency menu item allows for choosing the reader's frequency.

- Choose "Manual" to manually set the scanning frequency.
- Choose "Automatic" to define a range of frequencies and the ratio of correctness. Then, press the OK key to let the system scan for applicable frequencies. When a desired frequency is detected, press the OK key to set the scanning frequency.



To manually set the frequency, do the following:

1. Press the OK key when the Manual option is highlighted. The frequency is displayed as follows:

Frequency

Main XXX.X

(Where the characters can be numbers and the unit is understood as MHz)

2. Use the  Left arrow key (*) or  Right arrow key (#) to move to the character you wish to change. Then, use the keypad to enter a number; once a character is changed, the cursor moves to the next character. Press on the OK key to save the changes; a "Write successful" message will appear at the bottom of the display.

To set a range of frequencies for the unit to use, do the following:

1. Press the OK key when the Automatic option is highlighted. The frequency range is displayed as follows:



Frequency

From XXX.X M

To XXX.X M

Ratio XXX %

(Where the "To" and "From" characters are numbers and the unit is in MHz. The Ratio characters are numbers and the units are in Percent)

2. Use the  Left arrow key (*) or  Right arrow key (#) to move to the character you wish to change. Then, use the keypad to enter a number; once a character is changed, the cursor moves to the next character. Press on the OK key to save the changes; a "Waiting" message will appear on-screen. Then a "list 00/00" title will appear on the top of the screen.

SET POWER



The Set Power menu item allows the user to set the scanning power attenuation.

To change the Power setting, do the following:

1. Press on the OK key when the Power option is highlighted. The power is displayed as follows:

- XX dB

(Where the characters can range from 00 to 99 and the units are in decibels)

2. Use the  Left arrow key (*) or  Right arrow key (#) to move to the character you wish to change. Then, use the keypad to enter a number; once a character is changed, the cursor moves to the next character. Press on the OK key to save the changes; a "Set successful" message will appear at the bottom of the screen.

SENSITIVITY



The Sensitivity menu item allows the user to set the receiving sensitivity attenuation.

To change the Sensitivity setting, do the following:

1. Press on the OK key when the Sensitivity option is highlighted. The power is displayed as follows:

- XX dB

(Where the characters can range from 00 to 99 and the units are in decibels)

2. Use the  Left arrow key (*) or  Right arrow key (#) to move to the character you wish to change. Then, use the keypad to enter a number; once a character is changed, the cursor moves to the next character. Press on the OK key to save the changes; a "Set successful" message will appear at the bottom of the screen.

NET CONFIG



The Net Config option allows for configuration of the network settings for the unit.

To adjust the network settings for the unit, do the following:

1. Press the OK key when the Net Config option is highlighted. The network configuration is displayed as follows:

MYIP **XXX.XXX.XXX.XXX**
MASK **XXX.XXX.XXX.XXX**
GW **XXX.XXX.XXX.XXX**
SRV **XXX.XXX.XXX.XXX**
PORT **XXXX**

(The MYIP, MASK, GW, and SRV characters can be numbers from 0 to 255. And the PORT characters can be numbers from 0 to 9999. In addition, MYIP is your current IP, MASK is the mask IP, GW is the gateway IP, SRV is the server IP, and PORT is the communication port)

2. Use the  Left arrow key (*) or  Right arrow key (#) to move to the character you wish to change. Then, use the keypad to enter a number; once a character is changed, the cursor moves to the next character. Press on the OK key to save the changes; a “Waiting” message, followed by a “Set successful” message will appear on-screen.

ABOUT US

The About Us option will display information regarding the company name and telephone number, as well as the hardware and software version for the unit. The information is displayed as follows:

Avante International

Technology, Inc.

Hardware VerX.X

Software VerX.X

Tel: (609) 799 – 8896

(The characters in “Ver.” contain numbers. (i.e. Ver3.0))