Uniform Industrial Corp.

UIC802 Portable Reader

Product User Guide

UDN UIC802-PUG Rev. 1.0

July-21-2005

Uniform Industrial Corp. (UIC)

47709 Fremont Blvd., Fremont, CA94538. U.S.A.

Tel: 510-438-6799   Fax: 510-438-6790   Toll Free: 1-888-881-1900

Email: info@uicusa.com   URL: www.uicusa.com

What is the UIC802?

The UIC802 is a battery operated contactless RFID and magnetic stripe card reader designed for data collection application such as Trade Show Lead Capture, Time & Attendance, Off-line E-Payment, etc. The UIC802 has many advanced features yet it's very simple to use.

The UIC802 contains two readers modules. One is the contactless RFID reader. The other one is a manual insert magnetic card reader which can decode 3 tracks ISO, AAMVA, and custom data formats. Each read data is stored into the internal 1 Mega byte flash memory. In additional to the card data, the time and date, record number, ID entry, action code entry are also being captured.

UIC802 Components

The UIC802 kit consists of the following components:
- The UIC802 Potable reader.
- The P.C. data upload cable.
- The UIC801 Utility Program diskette.

UIC802 Features

Magnetic Card Reader
- Support 3 tracks data decoding
- Reliable manual insert type
- 1 Mega byte flash memory for data capture
- Stores up to 4,000 card data
- Fully programmable, support track prefix, suffix, separator codes programming

Contactless RFID Card Reader

- Supports a reading distance of 1 inch
- Supports 13.560 MHz Type A / Type B cards
- 1 Mega byte flash memory for data capture
- Stores up to 4,000 card data

Portable Terminal for Data Collecting Applications

- Easy to read 2 lines x 16 characters LCD display
- Telephone style keypad for easy data entry and reader setup
- Battery operated with low battery warning
- Real Time Clock
- Data can be imported to any spread sheet program

Advanced Electronics and Software

- 16-bit RISC processor plus RFID and Magnetic Reader ICs
- 2 Serial I/O ports (1-RS232, 1-TTL) for P.C. data upload, Printer, Bar-Code Scanner, etc
- Easy to use Window based Utility Program for data upload, reader programming, and configuration

Build-in User and System Configuration Menu

- Reader can be setup easily to fit different data collection applications
- Password protected System Menu entry for added security
- Reader functionality can be changed in seconds using the User Command Menu

UIC802 Card Reading Operation

The UIC802 is designed specifically for data collection purpose. The LCD display prompt and setup screens that make the UIC802 very easy to use. Here are some simple steps to operate the UIC802. They involve the reading of two types of cards:

(I)   Magnetic Card Only – when RFID is disabled

(II)   Magnetic Card and RFID Card – When RFID is enabled

To learn how to turn on the RFID operation, please refer to the section of 'RFID Enable' in the System Command Menu section.
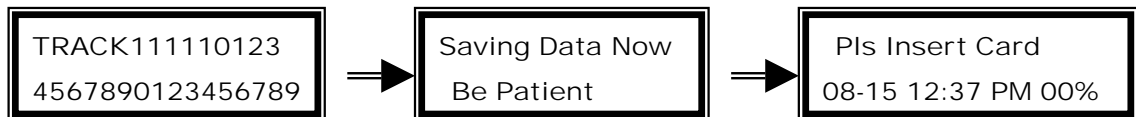
(I)   Magnetic Card Only Operation:

1. Press the POWER key to wake up the UIC802. The UIC802 will beep and displays the idle prompt:

```
Pls Insert Card
08-15 12:36 P 00%
```

2. Insert the magnetic card all the way into the UIC802. **It is very important not to remove the card until "Pull Crd to Read"** displays on the UIC802 LCD:
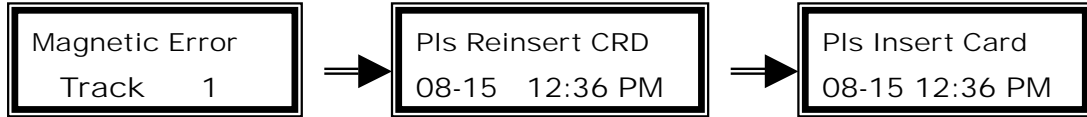
```
Pull Crd to Read
08-15 12:36 P 00%
```

3. Remove magnetic card swiftly. The UIC802 display the first 32 bytes of the card data and the message "Saving Data Now Be Patient" briefly. At this point, the card data has been stored in the internal Flash memory. The display goes back to the idle prompt.

```
TRACK111110123
4567890123456789
```
→
```
Saving Data Now
Be Patient
```
→
```
Pls Insert Card
08-15 12:37 PM 00%
```

4. If the UIC802 is unable to read the magnetic card due to bad card or improper swipe speed. Two possible scenarios may occur.

   a. The UIC802 is unable to detect any card data (for example, magnetic stripe is reversed). The reader will beep 3 times to remind the user about this.

b. The UIC802 detect read error. The UIC802 will display the error code and the message "Pls Reinsert Card" as the idle prompt.

| Magnetic Error		Pls Reinsert CRD		Pls Insert Card
Track 1	→	08-15 12:36 PM	→	08-15 12:36 PM

(II)   Magnetic Card and RFID Card Operation

1.   Press the POWER key to wake up the UIC802. The UIC802 will beep and displays the idle prompt:

Please Read Card
08-15 12:36 P 00%
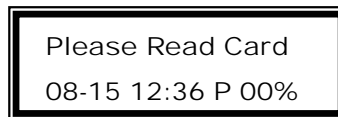
2.   Read the RFID card by taping it against the upper left corner of the reader, where the RFID antenna locates. The UIC802 will beep once, display the first 32 bytes of the card data and the message "Saving Data Now Be Patient" briefly. At this point, the card data has been stored in the internal Flash memory. The display will go back to the idle prompt.

WILLIAM SMITH 23		Saving Data Now		Please Read Card
4567890123456789	→	Be Patient	→	08-15 12:37 PM 00%
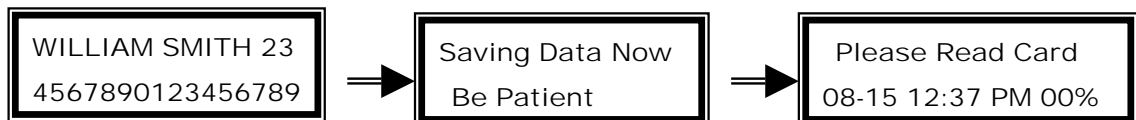
3.   If the card is brought to a distance too far from the antenna and not detected by it, it will have no response at all. The user has to bring it closer. If it is close enough, the reader will read the card. However, if the card is bad or reading unsuccessful, it will beep twice and show the following messages:

RFID		Pls ReRead Card
Bad Reading	→	08-15 12:36 PM
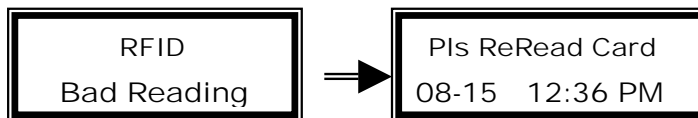
4. For this mode of dual card types operation, the user can always read the magnetic card by inserting it into the slot. The responses will be the same as in the magnetic card only case, except that the prompts messages are slightly different, to reflect either type of card reading:

The "Pls Insert Card" will become "Please Read Card". The "Pls ReInsert

CRD" will become " Pls ReRead Card".
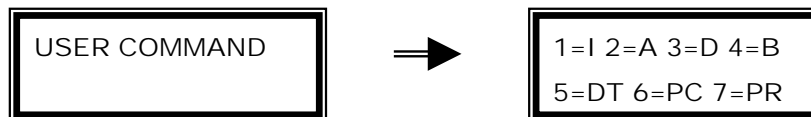
Function Keys   F1   F2   F3

These function keys are used to scroll through the card content, after a card reading was taken, no matter from the magnetic or contactless card. After a successful card reading, pressing the CLEAR key and the F2 key together will bring the unit into card data display mode. It will display the first 32 bytes of the card data. The pressing of the F3 key, and so on, will display the next 32 bytes of the card data, or stay in the last 32 or less bytes of data, if it already comes to the end of the data buffer. Pressing the F1 key, and so on, will bring back to the previous 32 bytes of the card data, or stay in the first 32 bytes of data buffer, if it is already displaying the beginning of the data buffer. Pressing the CLEAR key will leave this card data display mode and go back to the idle prompt.

Please note that the F2 key and the POWER key are physically the same key. The POWER key is pressed for waking up the unit when the latter is in sleeping mode. While pressing the CLEAR key and the F2 key will display the card data of the last card reading, when the reader is in the active operating mode.

UIC802 User Command Menu

The UIC802 can be used in many data collection applications such as Trade Show Lead Capture, Time & Attendance, Off-line E-Payment, Inventory Control, etc. A User Command Menu is implemented in the UIC802 for different configurations to be used in various applications.

1. To access the User Command Menu, press the keys "CLEAR" and "6" together. The LCD displays the message "USER COMMAND" briefly and then the User Setup Selection menu, press "CLEAR" key to exit from User Command Menu anytime.

```
┌─────────────────────┐        ┌─────────────────────┐
│ USER COMMAND        │   ⟹   │ 1=I 2=A 3=D 4=B     │
│                     │        │ 5=DT 6=PC 7=PR      │
└─────────────────────┘        └─────────────────────┘
```

2. Selection "1" – I.D. Entry Option Enable

```
┌─────────────────────┐
│ PID Enable          │
│ 1 = YES 2 = NO      │
└─────────────────────┘
```
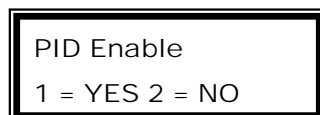
When the I.D. Entry option is enabled, the UIC802 will prompt the user to enter the PID (Personal Identification) number after a successful card read. The PID is any 6 digits number. The PID will be stored in Flash memory along with the captured card data.

Application Example: Trade Show Lead Capture

This option can record which the sales person that took the lead. The sales person ID will be stored in the memory with the captured lead information.

3. Selection "2" – Action Code Option Entry Enable

```
Action Code EN
1 = YES 2 = NO
```

When the Action Code option is enabled, the UIC802 will prompt the user to enter the Action Code after a successful card reading. The Action Codes are any 2 digits numbers. Up to 5 Action Codes can be entered for each record. The Action Codes will be stored in Flash memory along with the captured card data.

Application Example: Time & Attendance

This option can be used to indicate the time event such as Time In, Time Out, Lunch Out, Lunch In, etc. These time events are pre-defined by the 2 digits code.

4. Selection "3" – LCD Display Option

```
Display Mode
1=Date   2=Rec#
```

| 1=Date | Display date (MM-DD) at the idle prompt |
| 2=Rec# | Display total Record Number at the idle prompt |

5. Selection "4" – Beeper Enable

```
Enable Beep?
1=YES   2=NO
```

| 1=YES | Enable the beeper |
| 2=NO | Disable the beeper |

The UIC802 has build in buzzer to provide audio feedback for prompt to remove card, card read error, request key entry from user, and completion of data saving

6. Selection "5" – Data Memory Access and Information

```
┌──────────────────────────┐
│  1=Upload 2=Rec#         │
│  3=% MEM Used            │
└──────────────────────────┘
```
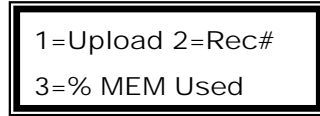
1=Upload   To upload the content of the memory to P.C.
2=Rec#   Display the total number of records (each card read)
3=% MEM Used   Display the percentage of memory that are used

7. Selection "6" – Printer Output Option

```
┌──────────────────────────┐
│  Printer Connect         │
│   1=DT 2=TH 3=NO         │
└──────────────────────────┘
```
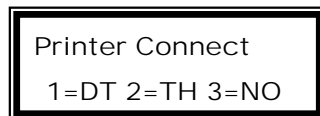
1=DT   Captured data send to RS232 port after each card swipe,
                         Print delay between records for impact printers
2=TH   Captured data send to RS232 port after each card swipe,
                         Print delay between records for thermal printers
3=NO   No data send out to RS232 port after each card swipe

8. Selection "7" – Print Record Option

```
┌──────────────────────────┐
│   Print   Record         │
│  1=ALL   2=UNPRN         │
└──────────────────────────┘
```
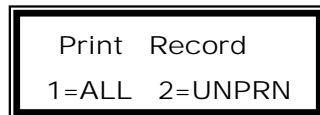
1=ALL   Print all the card data records stored in the flash memory
2=UNPRN   Just print out the card data records that were not printed out
                          Before

UIC802 System Command Menu

The System Command Menu is used to set up the UIC802 configurations – Time and Date setting, Sleep Timer, Change Unit Password, Erase flash memory, Set unit ID number, update flash memory parameters and enable/disable the RFID operation.

1. To access the System Command Menu, press the keys "CLEAR" and "9" together. The System Command Menu is password protected. The LCD displays the message "Enter Password". (Default password is 842811). Press "CLEAR" to exit from the System Command Menu anytime.

```
Enter Password

```

Key in the 6 digits password and the "ENTER" key. The LCD displays the System Command selection menu

```
1=DT 2=SP 3=PW
4ER 5ID 6UF 7RF
```

2. Selection "1" – Time and Date setting. The LCD displays the message "Enter Date" briefly and then the time and date setup screen.

```
Enter Date
08-15   10:28 PM
```
➡
```
mmddyyyy hhmmss
```

Key in the month, day, year, hour, minute, second and press "ENTER".

3. Selection "2" – Sleep Timer, the automatic shutdown feature is incorporate for battery power savings. The UIC802 will shut off after a period of no activity. This period time can be selected from this menu. "1" equal to 30 seconds, "2" equal to 60 seconds, "3" equal to 180 seconds and "4" will disable the auto off feature.

```
Sleep Timer 1=30
2=60 3=180 4=NO
```

4. Selection "3" – Enter New Password, the default password can be changed to any 6 digits number.

```
Ent New Password

```

5. Selection "4" – Erase Data, this menu selection is used to erase all data from flash memory and reset all setting back to the factory default. Please use this selection with care. The data cannot be recovered once the flash memory is erased.

```
┌─────────────────────────┐
│  Erase Data             │
│  1=YES 2=NO 3=RS        │
└─────────────────────────┘
```

    1=YES   Erase all data from flash memory.
    2=NO   Exit from this menu selection
    3=RS**   Reset all settings back to the factory default setting

Warning: All user setups will be erase from memory, need to re-enter all user settings, such as New Password, User ID#, user options, etc.

6. Selection "5" – Enter Unit I.D. number, the unit ID# is any 6 digit number. The unit I.D. number will be sent along each data record

```
┌─────────────────────────┐
│   Enter Unit ID#        │
│                         │
└─────────────────────────┘
```

7. Selection "6" – Update FlashMEM, the unit configuration settings as programmed in "User Command Menu", "System Command Menu", and Printer Translation Table are normally save in RAM. The setting can be lost if the battery power is completely drained. The "Update FlashMEM" selection will copy these setting to Flash Memory for permanent storage.

```
┌─────────────────────────┐
│  Update FlashMEM        │
│  1=YES   2=NO           │
└─────────────────────────┘
```

8. Selection "7" – RFID Enable

```
┌─────────────────────────┐
│   Turn ON   RFID        │
│  1=YES    2=NO          │
└─────────────────────────┘
```

    1=YES   Turn ON the RFID circuit and starts to process for RFID request
   2=NO   Turn OFF the RFID circuit

Unlike the magnetic card reader which is always enabled, normally the RFID circuit

of the reader is turned off in order to reduce the power consumption. However, if we have to read RFID cards, we have to turn on the circuit through this command menu.
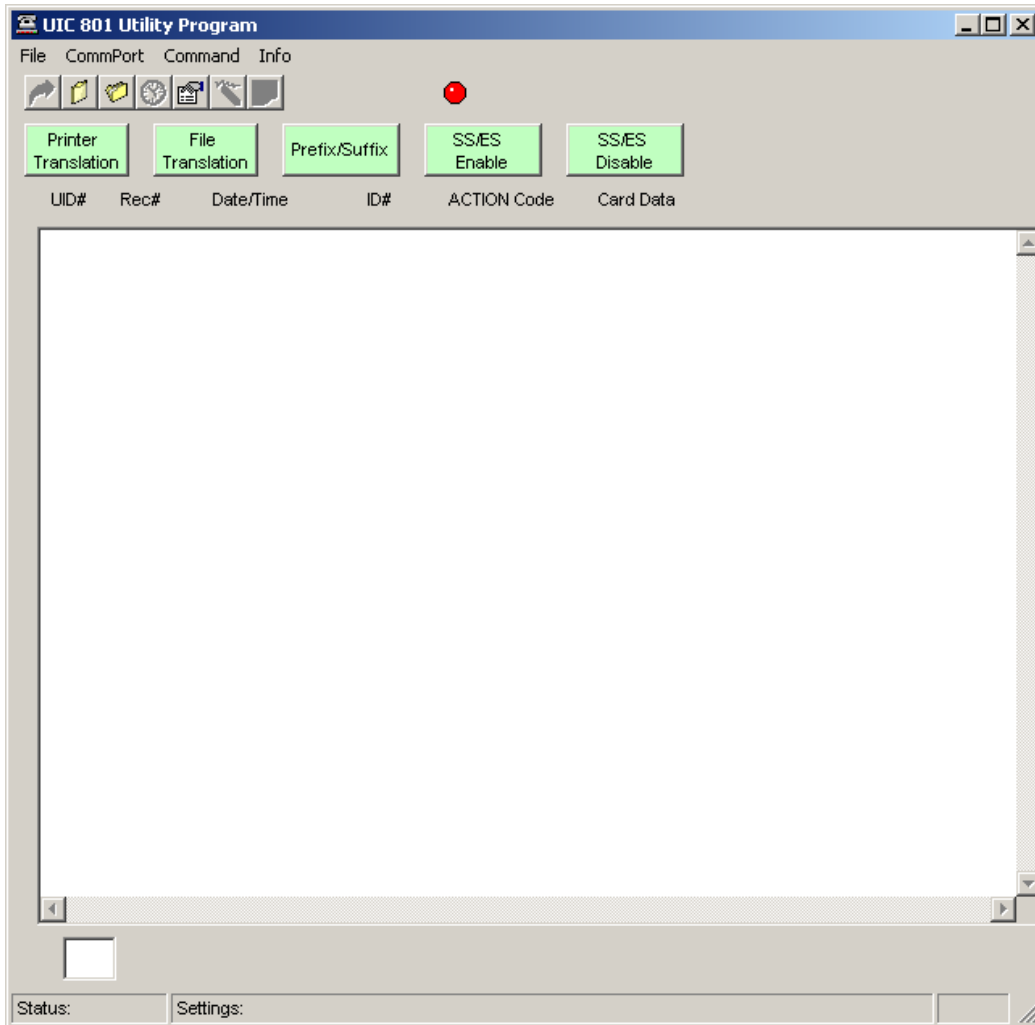
UIC801 Utility Program

The UIC801 Utility Program greatly simplifies and enhances the usage of the UIC802 Portable Reader. The UIC801 Utility Program has the following functionality.

1. Upload Data – retrieve data from the UIC802 reader flash memory to the Utility Program buffer. Depend on the record size, this operation may take a few minutes. The small window on the lower left hand corner displays the data transfer activities.

2. Display Data – display retrieved data on the UIC801 Utility Program window. Activate this function after the Upload Data transfer is completed.

3. Save Data to File – save the retrieved data to a file for export to any spreadsheet or unique application software program.

4. Auto Time Set – automatically set/synchronize the time of the UIC802 reader with the P.C.

5. Erase Memory – erase the flash memory of the UIC802 reader.

6. Printer Translation – translate any character in the card data into printer control command character string, up to 16 2-digit hex numbers.

7. File Translation – translate any character in the card data into special control character string, up to 16 2-digit hex numbers.
8. Track Prefix/Suffix – program track prefix, suffix, and field separator codes to the UIC802 reader.

9. ES & SS Enable – enable tracks SS (Start Sentinel) and ES (End Sentinel)

10. ES & SS Disable – disable track SS (Start Sentinel) and ES (End Sentinel)

Upload Data

Display Data

Save Data to File

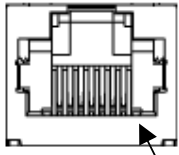Synchronize Time/Date

Erase Memory
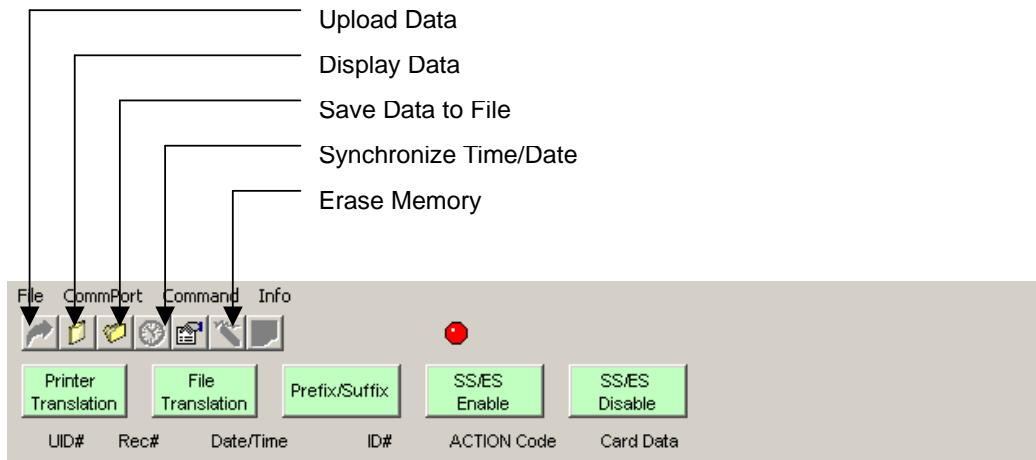
Utility Program Installation

1. Copy the contents of the UIC801 Utility Disk to a newly created folder in the local hard drive.
2. Open the folder and click the program "UIC Utility".
3. Connect the UIC801 to the RS232 COM 1 port of the P.C. Make sure the UIC802 is power on. We recommend setting the sleep timer option to 2 = 300 second.
4. Click the red indicator located above "SS/ES Enable". The red indicator should change to green color. The UIC801 Utility Program ready to communicate with the UIC802 reader.

UIC 801 Utility Program

File   CommPort   Command   Info

Printer Translation | File Translation | Prefix/Suffix | SS/ES Enable | SS/ES Disable

UID#   Rec#   Date/Time   ID#   ACTION Code   Card Data

Status: Settings:

I/O Connector Pin Assignment

Pin 1

PIN NO.	SIGNAL NAME	DESCRIPTION
1	Ground	System Ground
2	TTL Serial Output	TTL Serial Data Output from UIC802
3	TTL Serial Input	TTL Serial Data Input to UIC802
4	BATT Output	+3VDC output from UIC802
5	N.C.	No Connection
6	RS232 Output	RS232 Serial Data Output from UIC802
7	RS232 Input	RS232 Serial Data Input to UIC802
8	Ground	System Ground

Regulatory Information

Federal Communications Commission (FCC) Radio Frequency Interference Statement (USA Only)

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protections 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 one or more of the following measures:

1) Relocate the radio or television antenna.
2) Plug the equipment away from the radio or television.
3) Plug the equipment into a different electrical outlet, so that the equipment and the radio or television are on separate electrical circuits.
4) Make sure that all your peripheral devices are also FCC Class B certified.
5) Make sure you use only shielded cables to connect peripheral devices to your equipment.
6) Consult your equipment dealer, or an experienced radio / television technician for help.

WARNING: The system verification tests were conducted with the UIC802 reader unit. Cables used with this equipment must be properly shields to comply with the requirements of the FCC.

Changes or modifications not expressly approved by Uniform Industrial Corporation could void the user's authority to operate the equipment.