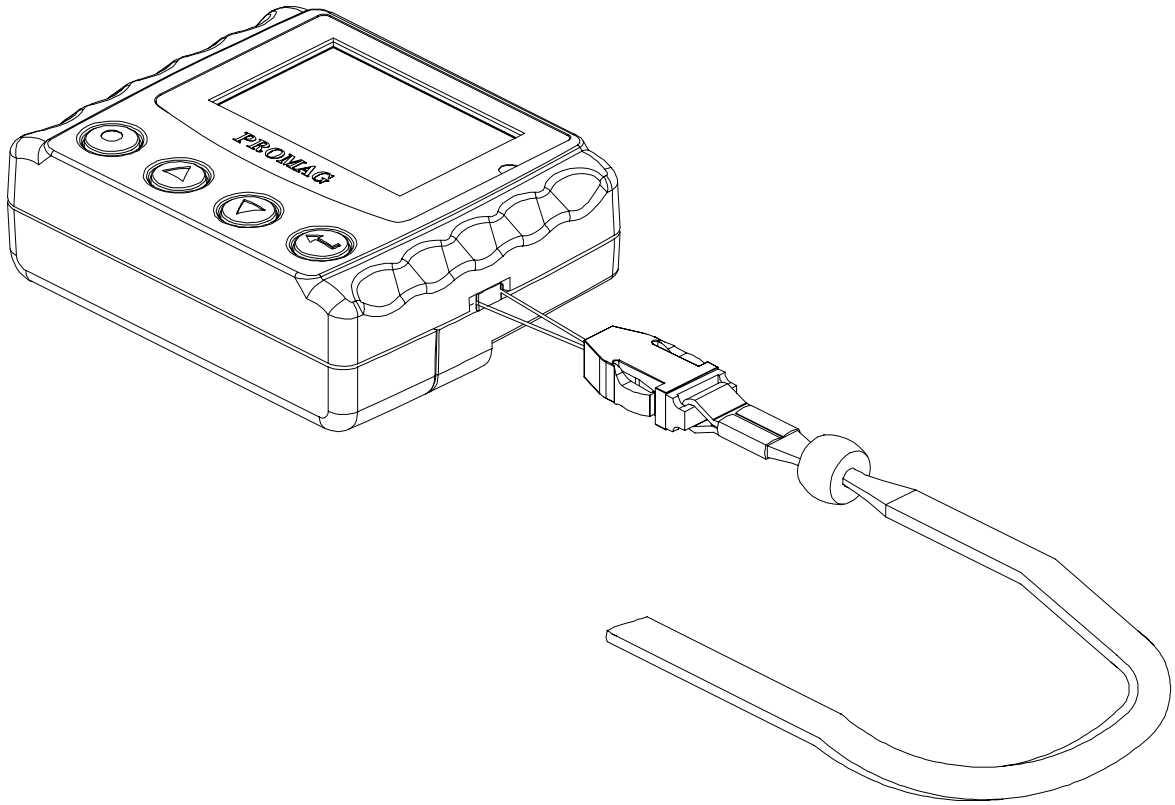
# MSR120 Series




# Portable 3 Tracks Magnetic Card Reader with LCD User's Manual

**Manual Part Number : TM951087 Rev : 02**

**November 2005**

**REGISTERED TO ISO 9001:2000**

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## REVISIONS

| Rev Number | Date | Notes |
|---|---|---|
| 01 | 8 Oct 04 | Initial Release |
| 02 | 14 Nov 05 | Add data text file (P.18) and Setting Parameter (P.16) |

# Contents

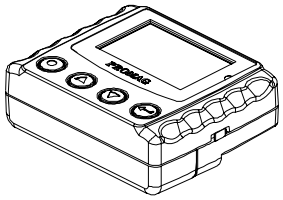
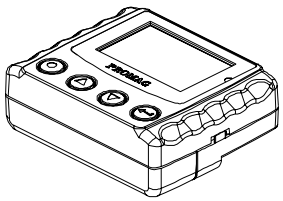


**FCC COMPLIANCE STATEMENT**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communication. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

# Information

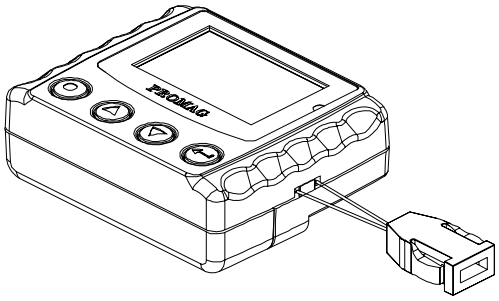
## MSR120 Series Magnetic Swipe Reader

| MACHINE TYPE | FUNCTION |
|---|---|
|  **MSR120** **RS232 Interface** | MC 123 · Single Cell LR03 / AAA · Muti-Battery NiHM / NiCd ALKALINE · F - MEM 512 KB · RS-232 · 2048 REC QUEUE · BEEP · RTC · AUTO OFF · GNET VER 1.2 · FFM · LCD 101 X 67 |
|  **MSR120U** **USB Interface** | MC 123 · Single Cell LR03 / AAA · Muti-Battery NiHM / NiCd ALKALINE · F - MEM 512 KB · USB Ver 1.1 · 2048 REC QUEUE · BEEP · RTC · AUTO OFF · GNET VER 1.2 · FFM · LCD 101 X 67 |

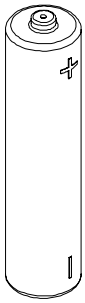
## Read the instructions on your device before installing batteries

1. Insert batteries into your device properly, with the (+) and (-) terminals aligned correctly.
2. Discharged batteries should be removed from equipment to prevent possible damage.
3. Store the batteries in a cool and dry place. [Batteries should be stored at temperatures between 50˚F (10˚C) and 77˚F (25˚C), with relative humidity not exceeding 65 percent. Refrigeration of alkaline batteries is not necessary because of their very good capacity retention. Excessive temperature cycling and storage at temperatures greater than 77˚F (25˚C) should be avoided to maximize shelf life.]
4. Remove batteries from the electrical device if the device is not going to be used for a long time.
5. Keep battery contact surfaces and battery compartment contacts clean by rubbing them with a clean pencil eraser or a rough cloth each time you replace batteries.
6. Keep batteries away from children. If swallowed, contact a physician at once.
7. Don't recharge a battery unless it is specifically marked "rechargeable". Attempts to recharge an alkaline battery may cause an imbalance within the cell, leading to gassing and possibly explosion on either charge or discharge cycles.
8. Don't dispose of batteries in a fire—they may rupture or leak.
9. Don't carry loose batteries in a pocket or purse with metal objects like coins, paper clips, etc. This will short-circuit the battery, generating high heat.

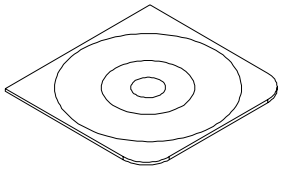
## Standard Package



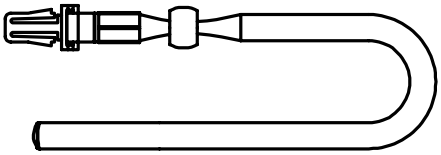
**Main unit**
**( MSR120 )**



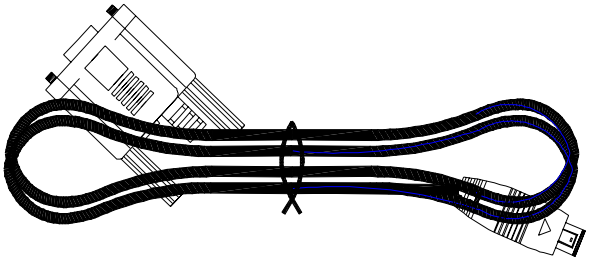
**LR03-AAA ALKALINE 1.5V Battery**
**( BAT-T0010 )**



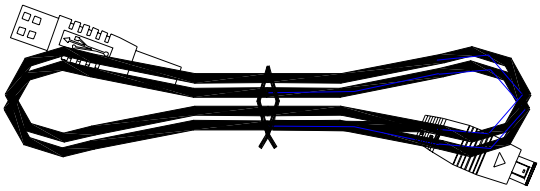
**CD-ROM**
**( DISK5216 )**



**Chain Sling**
**( TM09F1001 )**



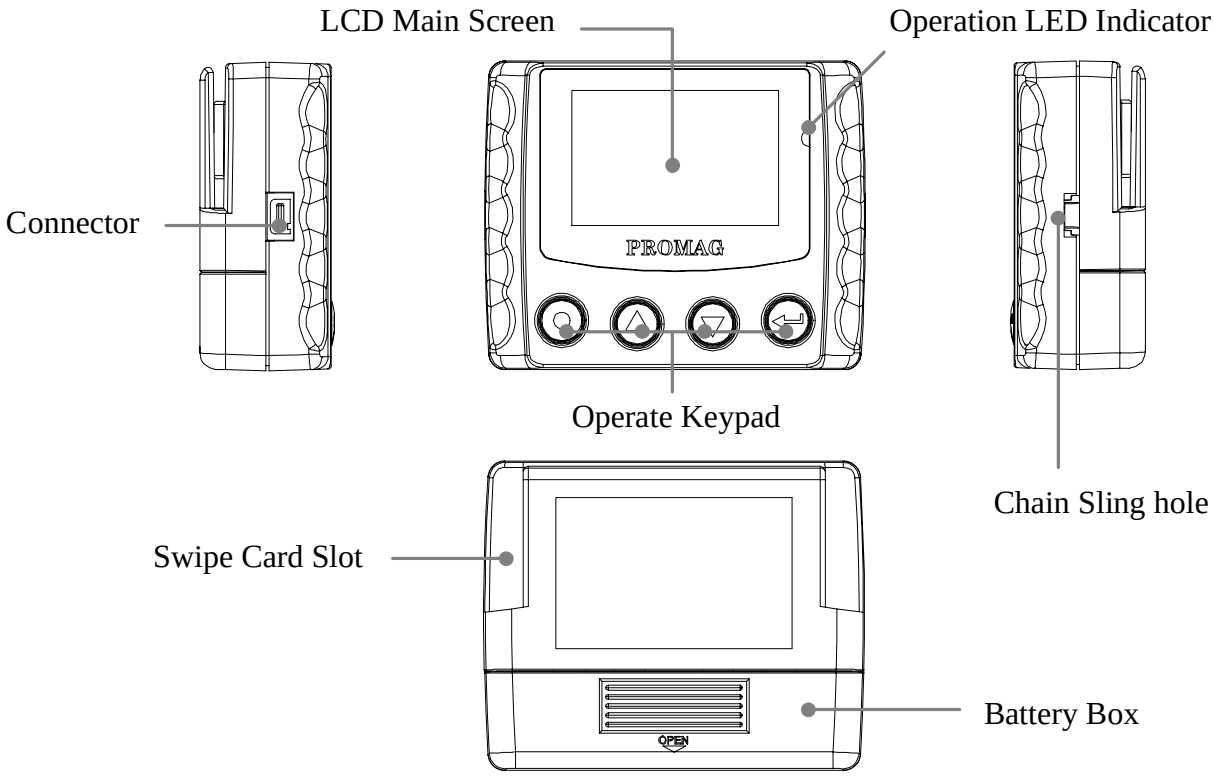
**RS232 Cable for MSR120 series**
**( WAS-T0017 )**



**USB Cable for MSR120U series**
**( WAS-1571 )**

# Technical And Operational Description

## Front Panel and Operations




- **Swipe Card Slot**
  Swipe the card through the entire length of the slot to read.

- **Operation LED Indicator**
  When encountering erroneous input, defective card, misread,bad memory or incorrectly encoded data and so on, the device will turn on the ERROR indicator .

- **LCD Main Screen**
  Indicating the battery is ready ,charging progress , charge done, charge suspend in charge mode or low battery in operational mode.

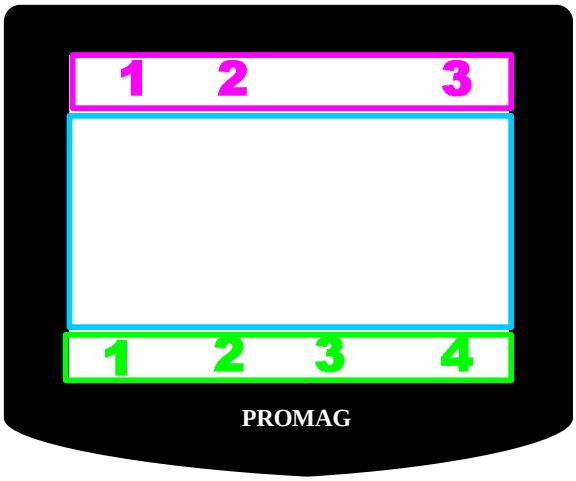
- **Connector**
  For connection to host computer and external Power .

- **Battery Box**
  Put the battery in box and hold battery .

- **Operate Keypad**
  Turn the MSR120 on/off power and Operate.

- **Chain Sling Hole**
  Connect to chain sling.

# ■ LCD Display




**Status Function Area**

**Main Display Area**

**Keypad Guidance Area**

## ● Status Function Area

### 1. Power Status

Battery Power Supply

Low Battery Power Supply

External Power Supply

### 2. Decode Status

Track 1 be Decoded

Track 2 be Decoded

Track 3 be Decoded

### 3. Guidance Number

| | |
|---|---|
| **000003** | Current Record Number of Display or Store |
| **2** | Main Menu Item |
| **2-1** | Sub-Menu Item |

## ● Main Display Area

Display Date & Week & Time , Menu Item , Record Data , Parameter Setting , Other Information

## ● Keypad Guidance Area

### 1. Corresponding Key -

Power /Exit / Back / Cancel / No Key Function

### 2. Corresponding Key -

Up / Up scroll / Decrease Key Function

### 3. Corresponding Key -

Down / Down scroll / Increase Key Function

### 4. Corresponding Key -

Menu / Enter / Save / Next / Yes Key Function

# ■ Function Menu

| | | |
|---|---|---|
| **1. Profiles** | **1-1. Machine ID** | Display Machine ID -<br>2 Character |
| | **1-2. User Name** | Display User Name -<br>16 Character |
| | **1-3. Display Format** | Set Display Mode -<br>Track Series<br>Track Parallel<br>Credit Card |
| **2. Setting** | **2-1. BackLight** | Set Back Light Duration -<br>00 ~ 255 Second |
| | **2-2. Auto Power Off** | Set Auto Power Off Duration -<br>00 ~ 255 Second |
| | **2-3. Power Mode** | Set Power Mode -<br>Switch Mode<br>Auto Power Off Mode |
| | **2-4. Sound** | Set Operate Sound -<br>ON<br>OFF |
| | **2-5. Reset** | Reset Default -<br>BackLight = 15 second<br>Auto Power Off = 30 second<br>Power Mode = Switch Mode<br>Sound = ON |
| **3. Database** | **3-1. Status** | Display Memory Status -<br>Used Space, Unused Space, Total Space |
| | **3-2. View** | Display all records in memory |
| **4. Calendar** | **4-1. Date Format** | Set Date Format Select -<br>Year / Month / Date<br>Date / Month / Year<br>Month / Date / Year |
| | **4-2. Set Date/Time** | Set Date -<br>Year, Month, Date<br>Set Time -<br>Week, Hour, Minute, Second |
| **5. Information** | **5-1. Product Name, Product Description, Firmware Version** | |

# ■ Display Information

## Exceptional Indicator

| LCD Display message | Description | Counterplot |
|---|---|---|
| **Check RTC !** | The RTC is malfunctioning<br>( After swipe card ) | Setting Date and Time |
| **FLASH Full !** | The record already is full.<br>( After swipe card ) | Download Record<br>and Erase Record |
| **Check FLASH !** | The record can't write into the FLASH memory.<br>( After swipe card ) | Connect Agent |
| **Decode Error !** | Swipe Card can't decode.<br>( After swipe card ) | Swipe Card again<br>or Change Card |
| **No Record !** | No Record in FLASH memory.<br>( Enter Database -View function ) | Swipe Card |
| **Recode not empty !** | The FLASH memory not empty.<br>( Enter Calendar function ) | Download Record<br>and Erase Record |
| **ISP MODE** | Enter FMM Mode<br>( By communication command ) | Update New Firmware |

## LED Indicator

| Status | Green LED | Red LED | Buzzer | Read Card |
|---|---|---|---|---|
| **Power On** | **Take turns blink<br>2 times** | | **Beep. Beep.** | **X** |
| **Auto Power Off** | **Take turns blink<br>2 times** | | **Beep. Beep.** | **X** |
| **Ready** | **Off** | **Off** | **X** | **O** |
| **Read OK** | **Blink<br>1 times** | **Off** | **Beep.** | **X** |
| **Read Error** | **Off** | **Blink<br>1 times** | **Beep. Beep. Beep.** | **X** |
| **Firmware Management mode** | **Off** | **On** | **X** | **X** |

# ■ Operational Description

### 1. Powered by Battery

For normal use, the unit is powered by battery. Push the Power Switch Button "⊙" for about 2 seconds to turn on the unit. Also push the Power Switch Button "⊙" for about 2 seconds to turn off the unit at Switch Mode. After the unit is turned on, the power would be turned off automatically if there is no swiping a card on the unit in 30 seconds (default) at Auto Power Off Mode. This means the unit would be turned off if no swiping a card again in every 30 seconds (default) after every card swiping. It would have Low Battery Detect/Warning indication when the unit is powered by battery.

### 2. Powered by Cable

When MSR120 is connected/disconnected to external power adapter by the WAS-T0017 RS232 cable or USB port by the WAS-1571 USB cable,, it would be turned On/Off automatically. When the unit is connected with the PC through the communication Cable (WAS-T0017 or WAS-1571) and the PC is running MSR120 software and then the unit will be turned on. Then you can do the unit Setting, Configuration or data downloading. When powered by cable from PC, the Power Switch "⊙" would have no function and the unit would have no Low Battery Detect/Warning function.

### 3. Real Time Clock Setting

Before start using the unit, you must set the Real Time Clock (RTC) inside the unit to your local time. If there is no battery for quite a while or it is powered by cable for quite a while this would cause Real Time clock (RTC) malfunctioned due to no power supply. When put on the battery to turn on the unit and the Red/Green LED take turns blinking, this means the RTC is malfunctioning and you must do the RTC time setting before you use the unit.

### 4. Low Battery Detect

When powered by battery, it would have Low Battery Detect function. When the battery goes low, the LCD would display " ▭ " and you must change battery immediately, otherwise, the unit would shut down any time without pre-warning.

### 5. Swipe Card

When MSR120 is showing the status of any function on the screen, after swiping magnetic card to MSR120 reader, MSR120 is display magnetic card ID and record(s) information on the screen immediately. When MSR120 in not work for next magnetic card swipe, MSR120 reader will back to default screen automatically.

### 6. Operate for Calendar

Before setting calendar function, please delete remaining records from MSR120 reader, if there are records in the memory of MSR120, your operate setting for Calendar, MSR120 reader will display " Record no empty" on the screen.

### 7. Memory Full Warning

Log database memory is full. You not be able to add any new records. Free the log database memory by uploading the data to the PC.

### 8. Communication by WAS-T0017

You must use external power when the PC connect to MSR120 by WAS-T0017 cable, or else the communication is not action. You should be press any key on MSR120 until the communication is finished, if you don't use external power.

### 9. Firmware Management mode (FMM)

FMM allows you to quickly upgrade your MSR120's internal firmware via com port and also check validity of currently loaded firmware. Contact your dealer for most recent firmware upgrade files.

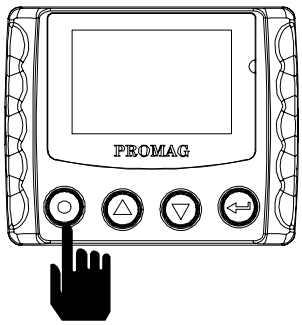
### 10. Database in memory

The MSR120 allows you to manage database by software . The Logical Erase Database will logic clean the database. The Physical Erase Database will physical clean the database and it's can't recover the database. The Recovery Database will recover the previous erase and not yet covered database. The record pointer has retune to the top of the database after any erase.

# ■ Replace Battery

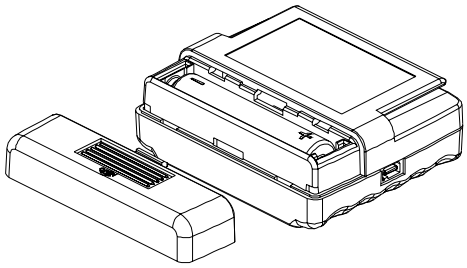
**Note:**

1. Read the instructions on your device before replace new battery.
2. MSR120 can used Single-cell alkaline, nickel-cadmium (NiCd), or nickel-metal hydride (NiMH) Battery

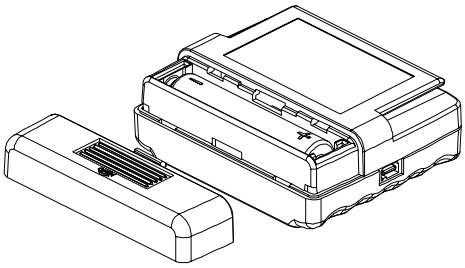



**1. Power turn off**

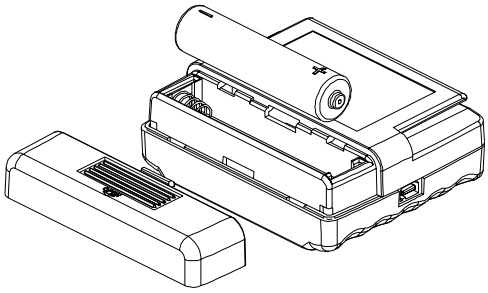
**4. Take new battery**



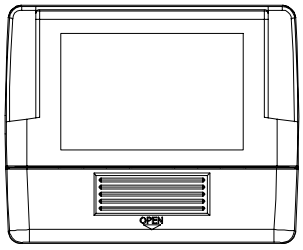
**2. Take the cover away**



**5. Put new battery in**



**3. Take the battery away**




**6. Fix the battery cover**

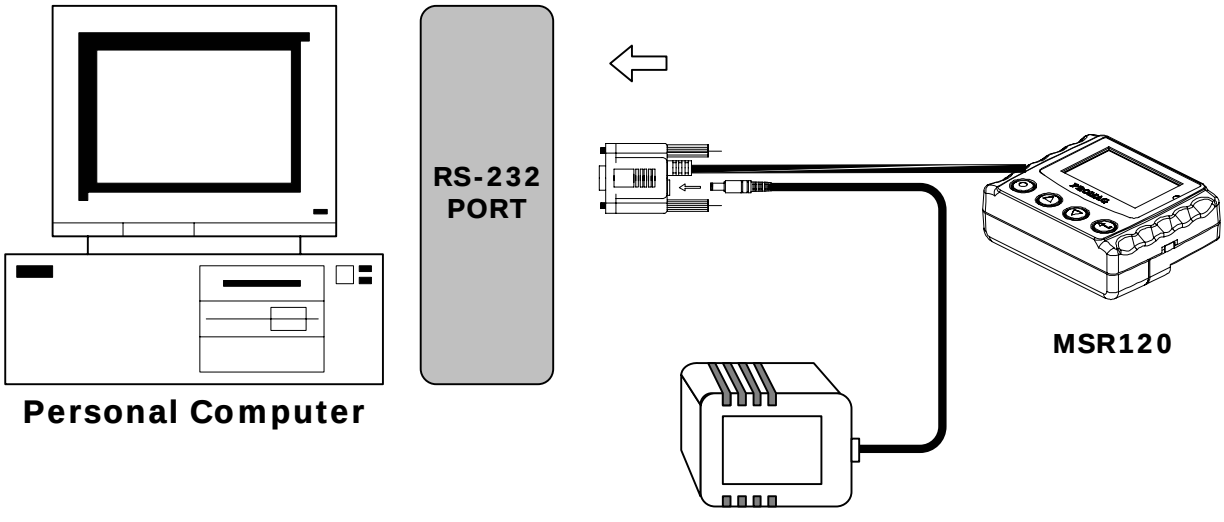
# Connections

## WAS-T0017

| DSUB 9P POWER JACK | DSUB 9P FEMALE PIN | FUNCTION | MINI USB 4P |
|---|---|---|---|
| + | | VCC | 1 |
| | 2 | TXD | 2 |
| | 3 | RXD | 3 |
| - | 5 | GND | 4 |

No use

## Connect to PC




**Note:**

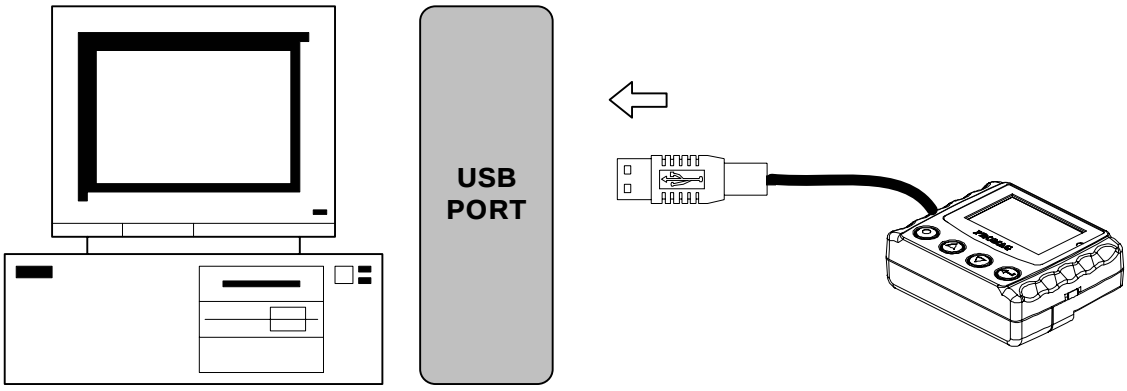
1. When MSR120 is connected/disconnected with external power adapter, it would be turned On/Off automatically.
2. When MSR120 is not connected with external power adaptor , the corresponding key for power on MSR120 needs to be pressed all the time during the communications with the PC.

## WAS-1571


| USB 4P FEMALE PIN | FUNCTION |
|---|---|
| 1 | VCC |
| 3 | D - |
| 2 | D + |
| 4 | GND |

| MINI USB 4P | FUNCTION |
|---|---|
| 1 | VCC |
| 2 | RXD |
| 3 | TXD |
| 4 | GND |

## Connect to PC




**Note:**
1. When MSR120 is connected/disconnected with USB port, it would be turned On/Off automatically.

# Card Data Format

## CARD DATA STRING

| TRACK 1 | TRACK 2 | TRACK 3 | DATE & TIME & WEEK |
|---|---|---|---|

| M1 | SS | *TRACK1 DATA* | ES | M2 | SS | *TRACK2 DATA* | ES | M3 | SS | *TRACK3 DATA* | ES | M4 | DATE | SP | TIME | SP | WEEK |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 01 | % | *TRACK1 DATA* | ? | 02 | ; | *TRACK2 DATA* | ? | 03 | + | *TRACK3 DATA* | ? | FE | DATE | | TIME | | WEEK |

## TRACK 1

| 01h | % | CARD ID | ? |
|---|---|---|---|

1. 01h is the physical track 1
2. SS is the start sentinel ( % ).
3. ES is the end sentinel ( ? ).
4. Card Id up to 76 alphanumeric data characters.

| Track 1 IATA | |
|---|---|
| Bits Per Inch | 210 |
| Bits Per Character | 7 |
| Alphanumeric Characters | 79 |

## TRACK 2

| 02h | ; | CARD ID | ? |
|---|---|---|---|

1. 02h is the physical track 2
2. SS is the start sentinel ( ; ).
3. ES is the end sentinel ( ? ).
4. Card Id up to 37 numeric data characters.

| Track 2 ABA | |
|---|---|
| Bits Per Inch | 75 |
| Bits Per Character | 5 |
| Numeric Characters | 40 |

## TRACK 3

| 03h | + | CARD ID | ? |
|---|---|---|---|

1. 03h is the physical track 3
2. SS is the start sentinel ( + ).
3. ES is the end sentinel ( ? ).
4. Card Id up to 104 numeric data characters.

| Track 3 Thrift | |
|---|---|
| Bits Per Inch | 210 |
| Bits Per Character | 5 |
| Numeric Characters | 107 |

## DATE&TIME&WEEK

| M4 | DATE | SP | TIME | SP | WEEK |
|---|---|---|---|---|---|
| FEh | YYYY/MM/DD | SP | HH:MM:SS | SP | W |
| FEh | MM/DD/YYYY | SP | HH:MM:SS | SP | W |
| FEh | DD/MM/YYYY | SP | HH:MM:SS | SP | W |

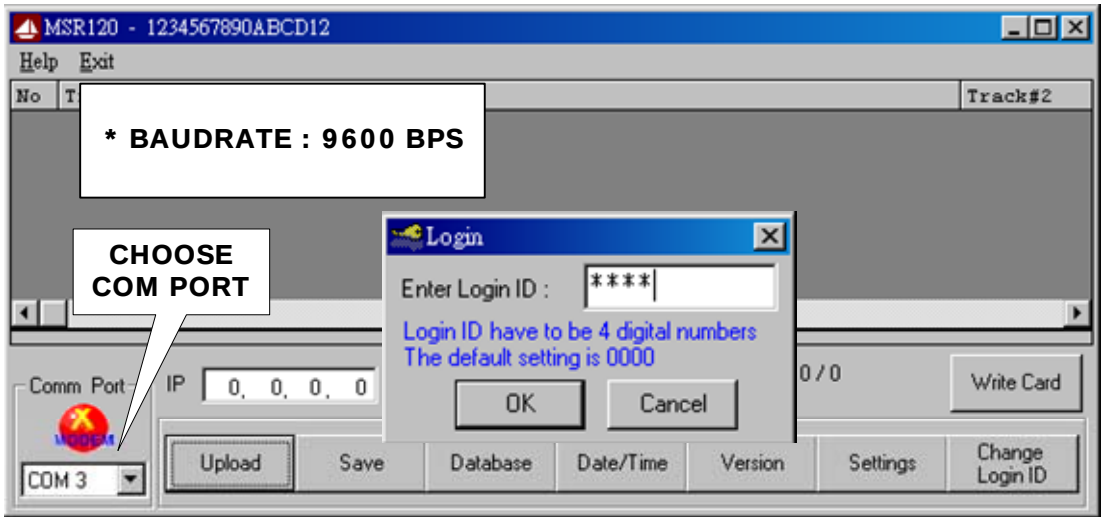
1. FEh is the Separate Character.
2. Date have 3 formats - YYYY/MM/DD, MM/DD/YYYY, DD/MM/YYYY
3. SP is the SPACE characters ( 20h ).
4. TIME is 24hr .

| WEEK | |
|---|---|
| SUN | 0 |
| MON | 1 |
| TUE | 2 |
| WED | 3 |
| THU | 4 |
| FRI | 5 |
| SAT | 6 |

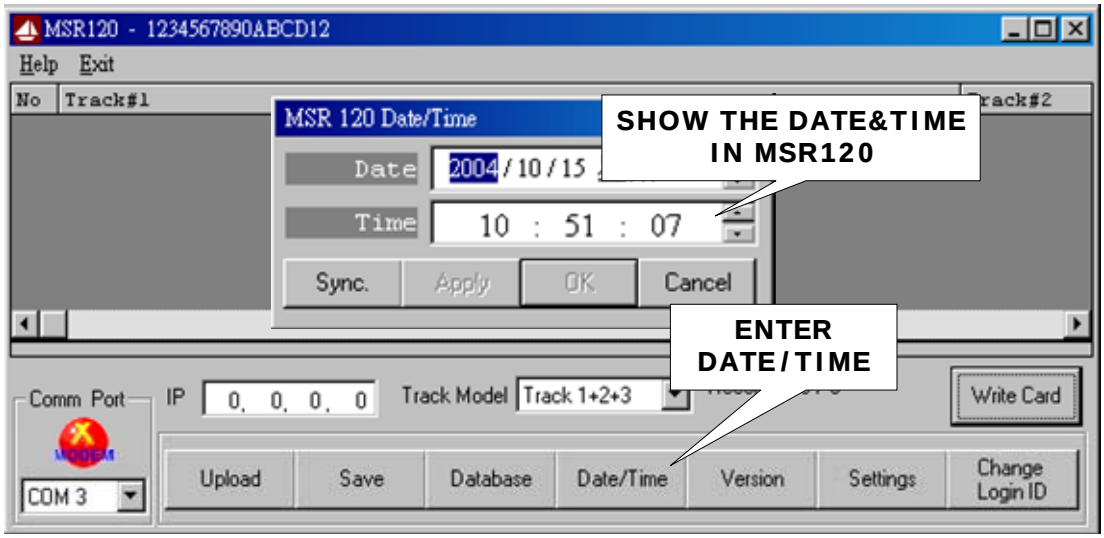
# Demo Software

## STEP 1 : RUN MSR120 DEMO

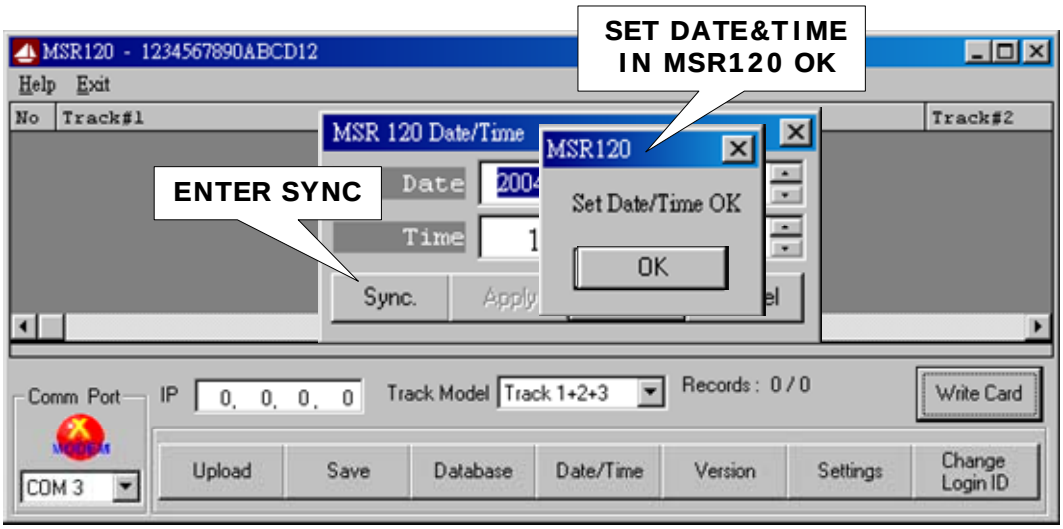

## STEP 2 : CHOOSE COM PORT (Do not choose TCP / IP)



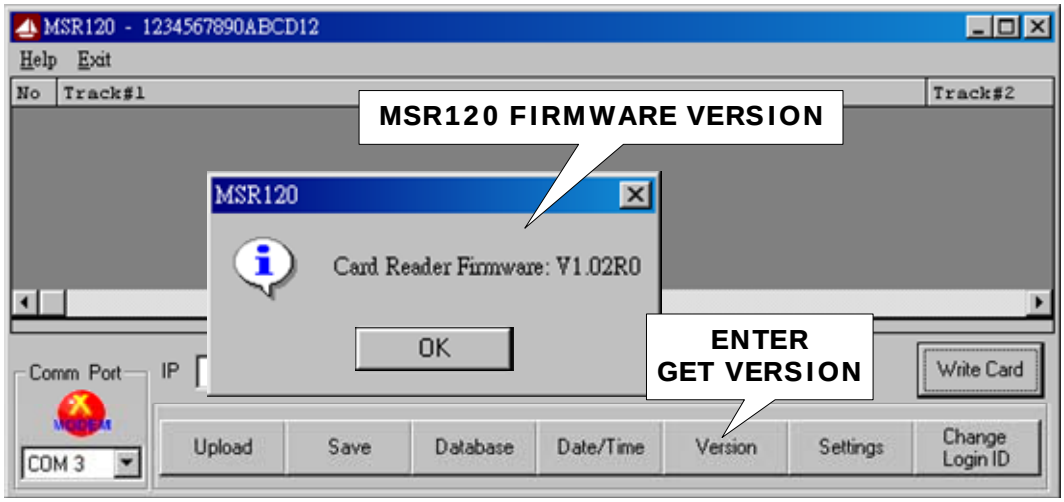

## STEP 3 :ENTER DATE/TIME TO GET DATE/TIME ( TO SHOW THE DATE&TIME IN MSR120 WHEN NEEDED)



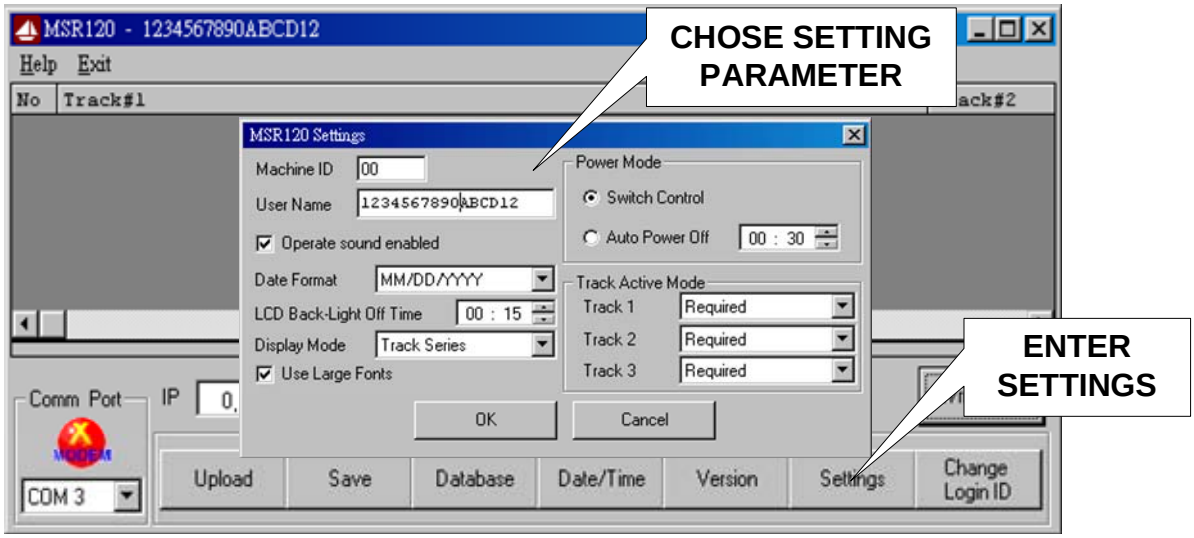
**STEP 4 : ENTER DATE/TIME TO SET DATE/TIME ( WHEN NEEDED)**
**NOTE: MAKE SURE YOUR PC CURRENT TIME IS CORRECT BEFOR YOU SET PC TIME TO MSR120.**



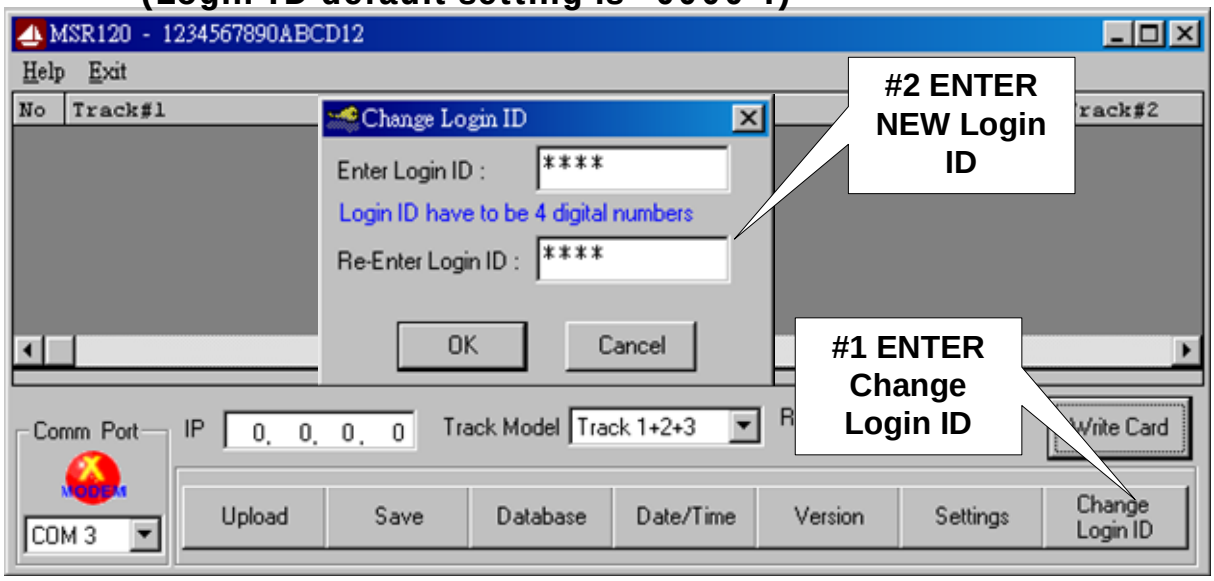

**STEP 5 : ENTER GET VERSION**
**( TO SHOW MSR120 FIRMWARE VERSON WHEN NEEDED)**



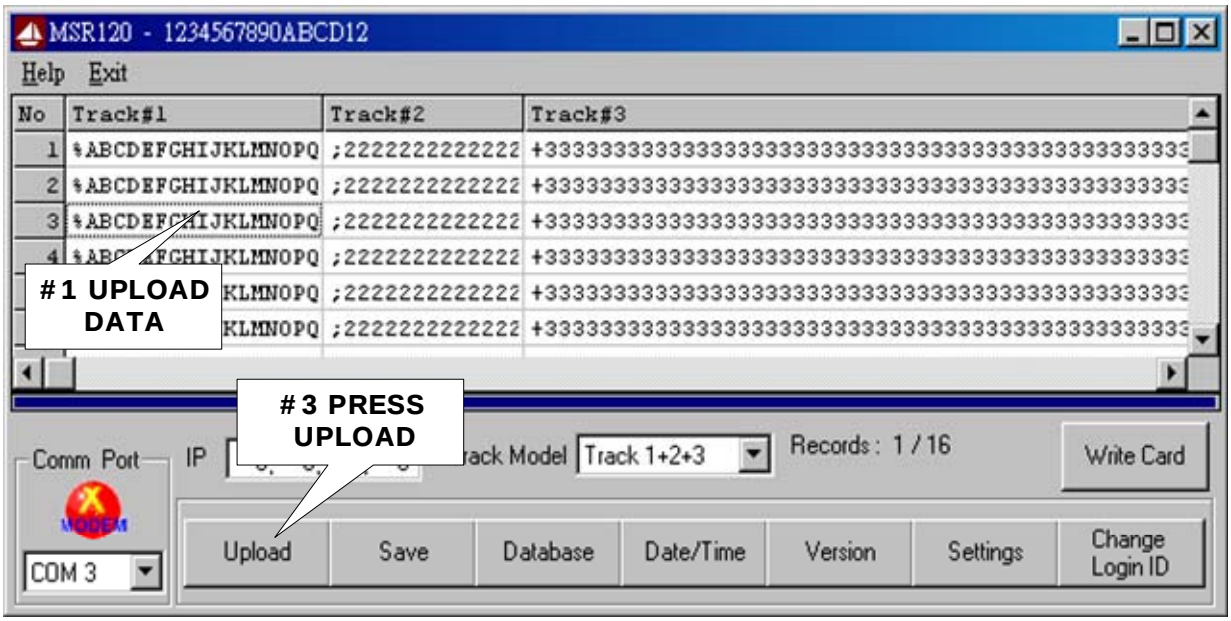

**STEP 6 : ENTER SETTING MSR120 PARAMETER.**



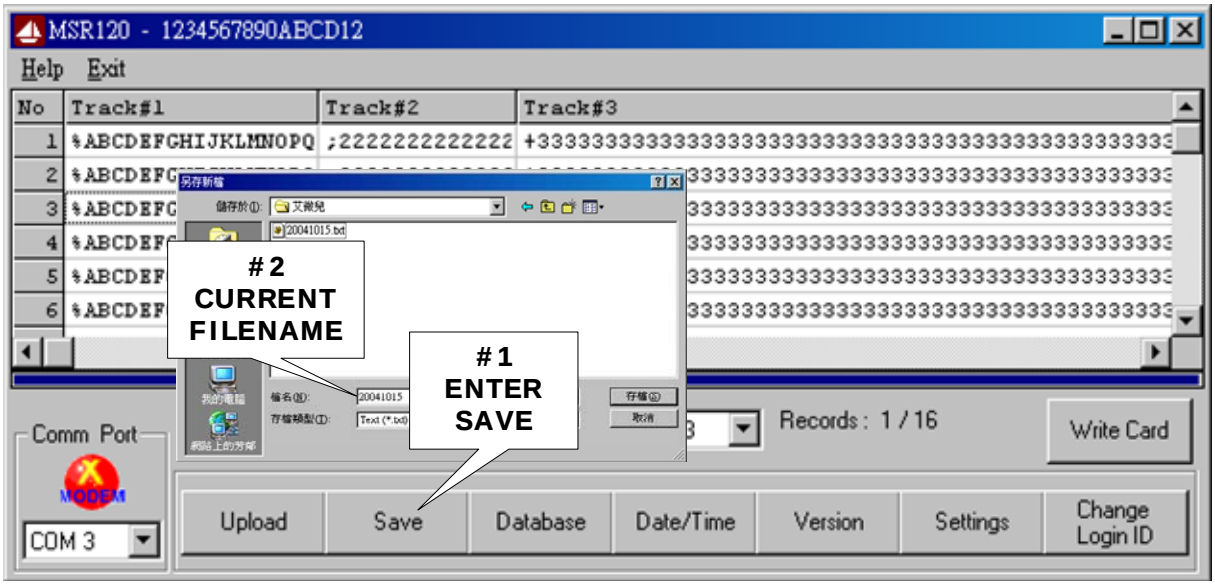
## STEP 7 : ENTER Change Login ID TO Change Login ID
## (Login ID default setting is “0000”.)



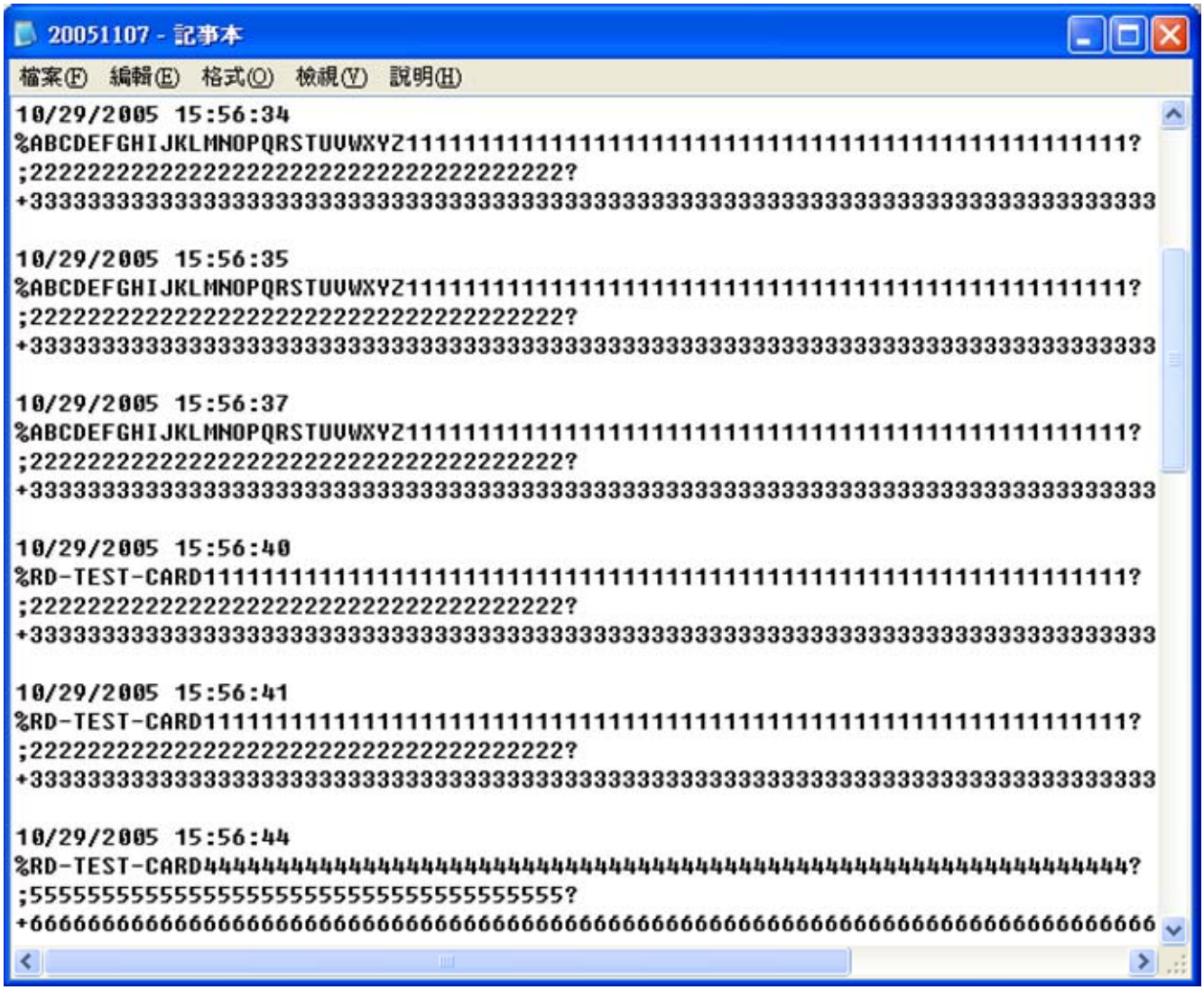

## STEP 8 : ENTER UPLOAD TO UPLOAD DATA



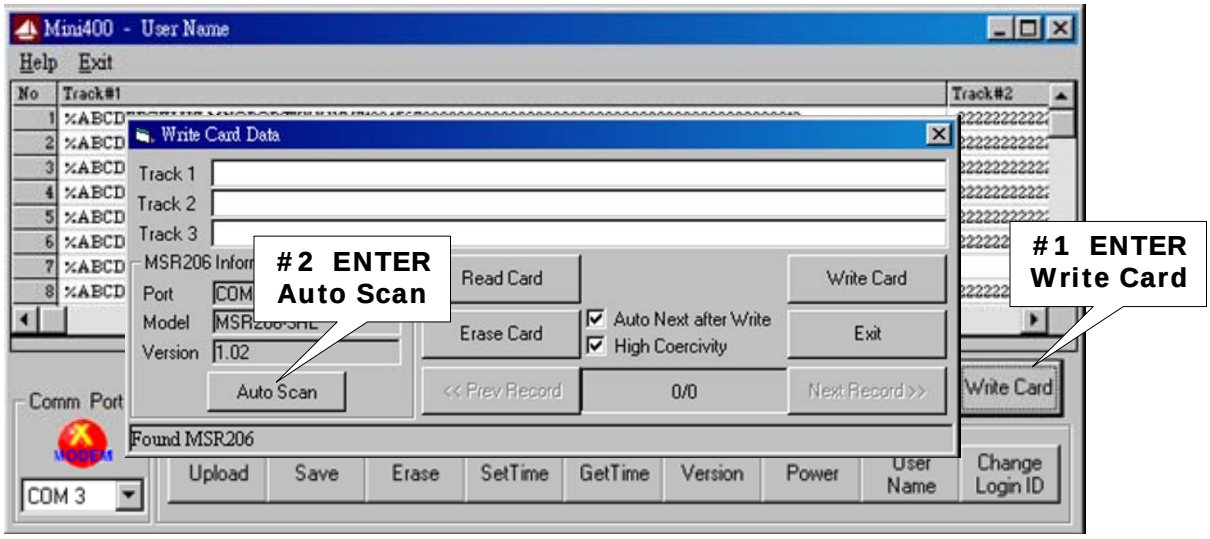

## STEP 9 : ENTER SAVE TO SAVE DATA



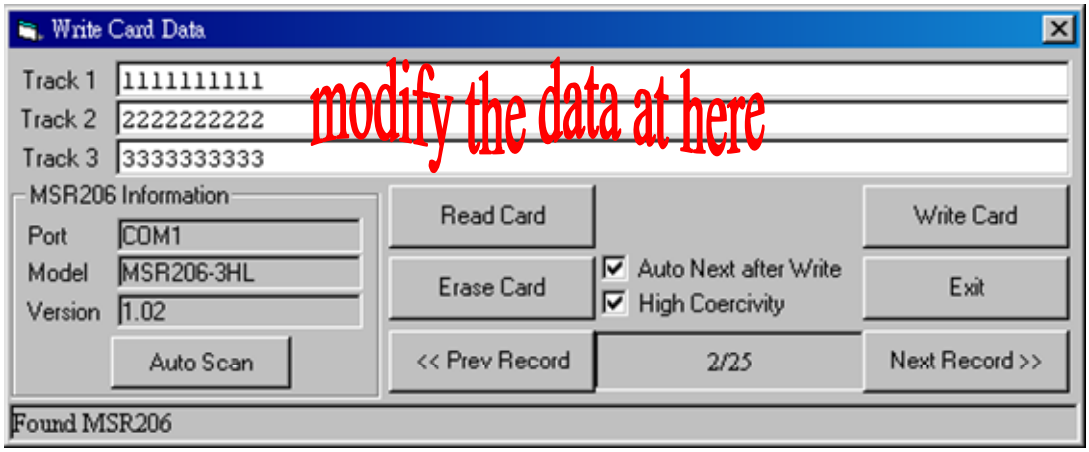
## SAVE DATA TEXT FILE



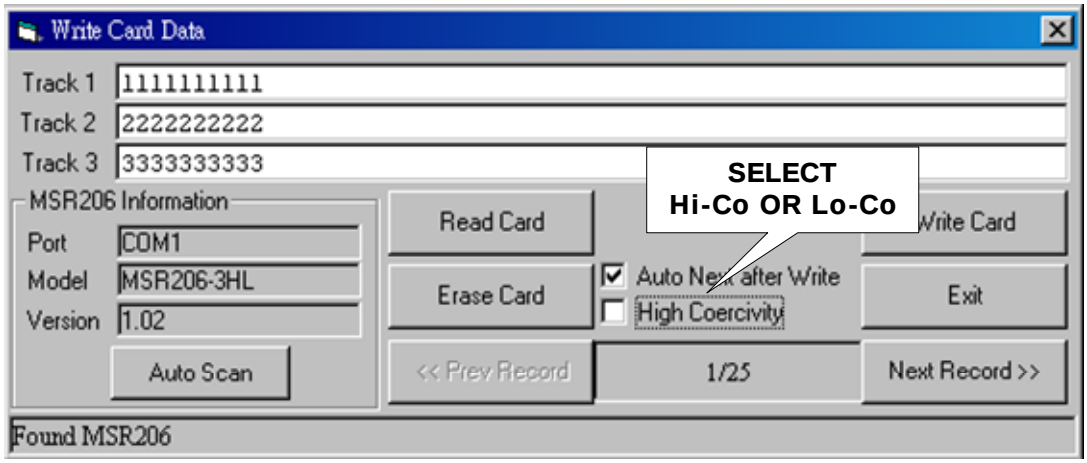
## STEP 10 : ENTER Write Card
## (This function is for model MSR206 only)



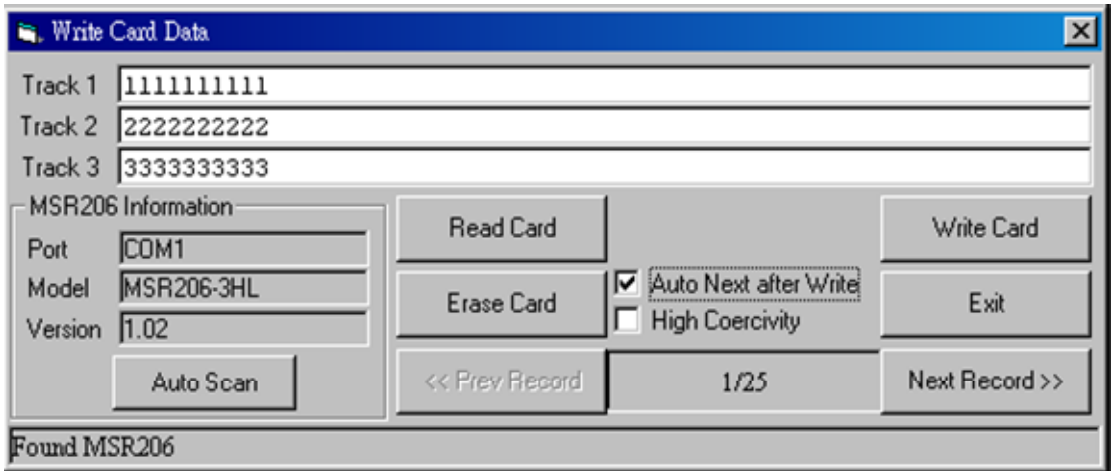

**Write Card - Step 1: Select the data**
Click [Prev Record] and [Next Record] to select the data from upload data. All three tracks data can be edited by user if necessary.



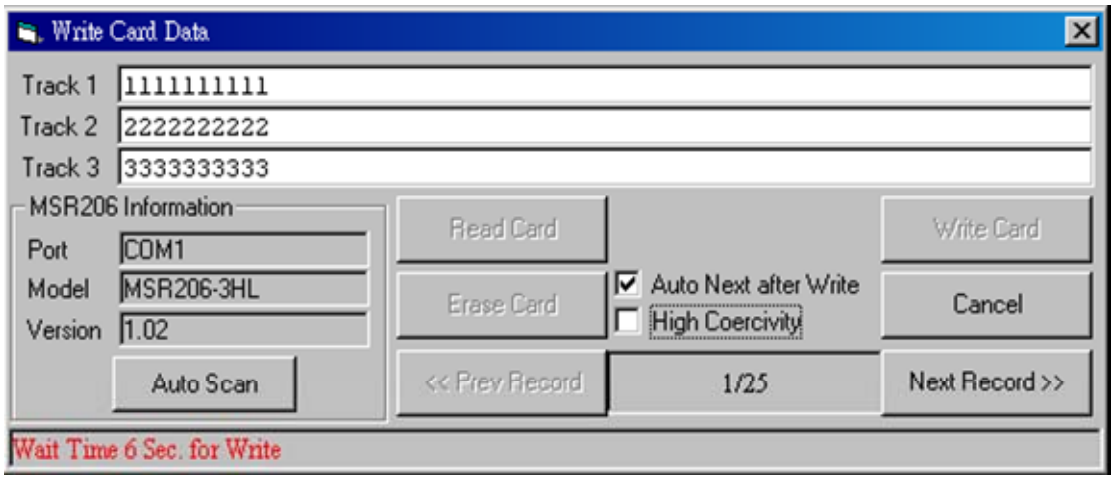

**Write Card - Step 2: Select High/Low coercivity**
Write Hi-Co card - Check the Hi-Co box; Write Lo-Co card - Uncheck the Hi-Co box.



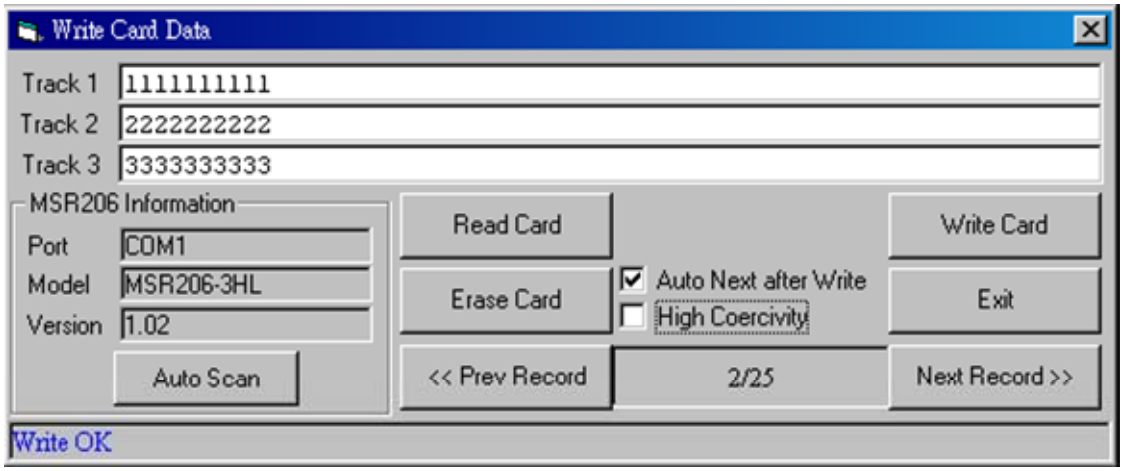
**Write Card - Step 3: Select Auto Next after Write**
The default setting of the [Auto Next after Write] check box is checked. User can click [Prev Record] or [Next Record] to select data that you need. Also, it allows user to uncheck [Auto Next] after write then select your own data.



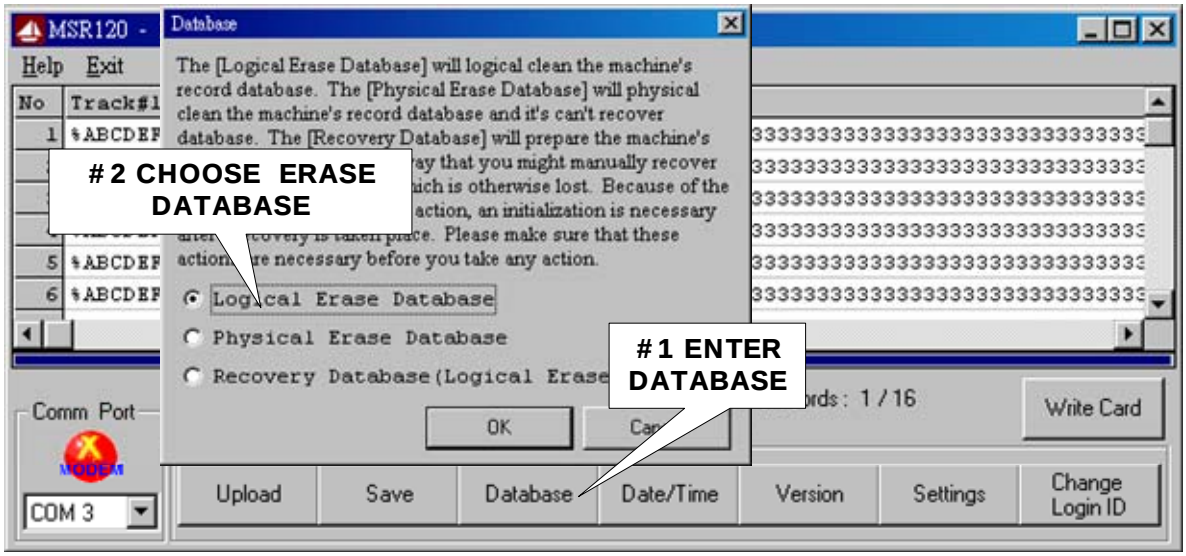

**Write Card - Step 4: Click [Write Card]**
Click [Write Card] button to write card. Click [Cancel] to stop write card function.



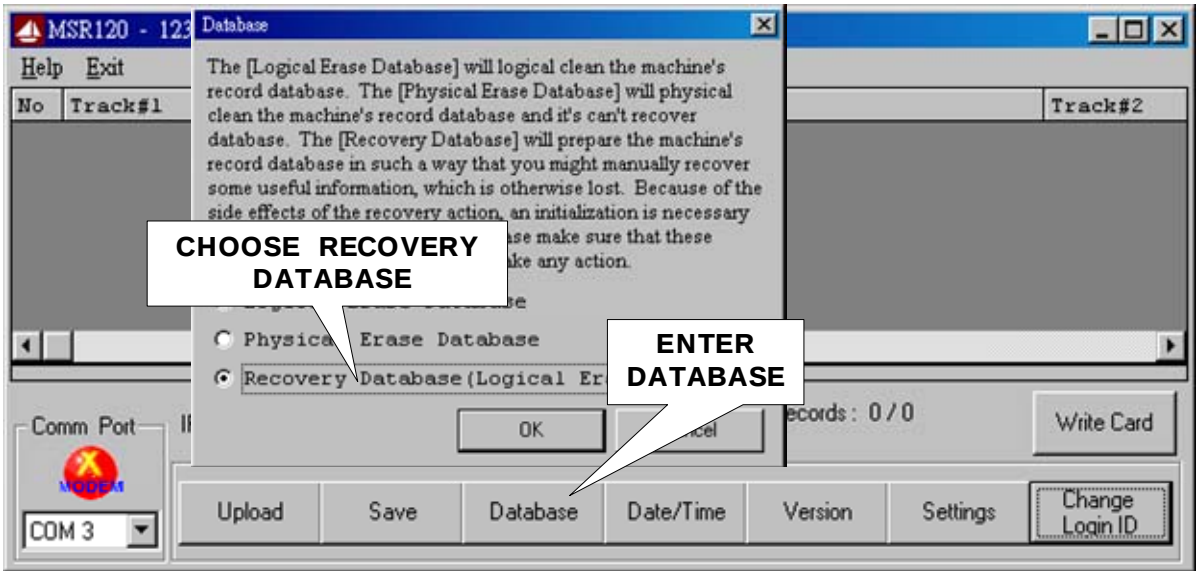

**Write Card - Step 5: Finish Write Card**
Swipe card, If the message is “Write OK”, the card has been written successfully. If the message is “Write Error”, Please make sure that you have selected right card type Hi-Co or Lo-Co.



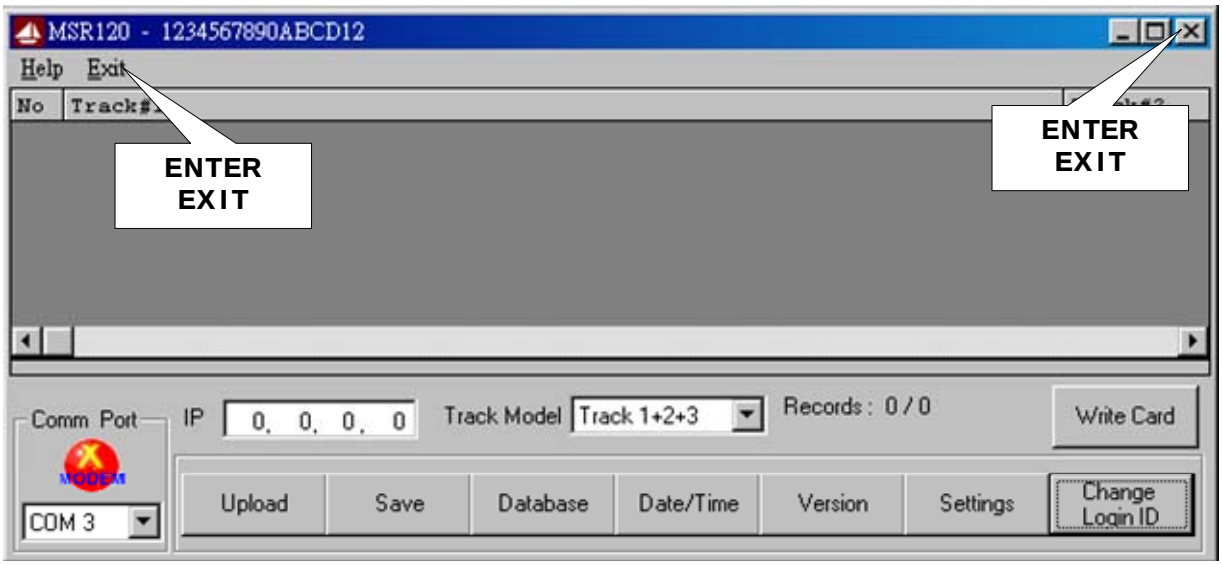
**STEP 11 : ENTER Database to erase the memory records of MSR120**
**(Note : Always [Save] the data before [Erase])**




**STEP 12 : ENTER Database to recovery the memory records of MSR120**
**(Note : Database must empty)**




**STEP 13 : EXIT MSR120 SOFTWARE**



# Specifications


**Magnetic Stripe Card**

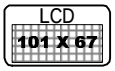
TRACK 1 / IATA / 210 bpi / 79 Alphanumeric Characters
TRACK 2 / ABA / 75 bpi / 40 Numeric Characters
TRACK 3 / Thrift / 210 bpi / 107 Numeric Characters


**RS232 Interface**

RS232 , Half-Duplex , 8N1 , 9600 bps


**USB Interface**

Full compliance with the USB Specification V 1.1
The device uses a Virtual Serial Port Driver, making it appear to have the software like a standard RS232 Serial Port.




**LCD Display**

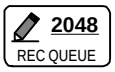
LCD type : FSTN
Dot arrangement :101 x 67 Dots Matrix LCD Module
Viewing direction : 6 O'clock


**Communication Protocol :**

Version 1.2 (GNET V1.2)

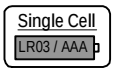

**CLOCK**

Real Time Clock (RTC) module and back-up capacitor




**Memory Size for Storing Data**

CMOS Serial Flash Memory 512K bytes
Up to 2048 records ( 256 Bytes / Record )

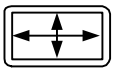



**Battery Power**

Single-cell alkaline, nickel-cadmium (NiCd), or nickel-metal hydride (NiMH) battery .

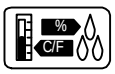

**Power Supply from Cable**

DC 5V , 200mA ( for RS-232 ) or USB Powered



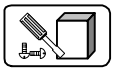
**Dimensions**

L 58 x W 20 x H 47 mm




**Environment**

Operating Temp : -0 ~ +55℃
Storage Temp : -10 ~ +60℃
Humidity : 10 ~ 90 % relative



**Mounting**

Portable or Any surface

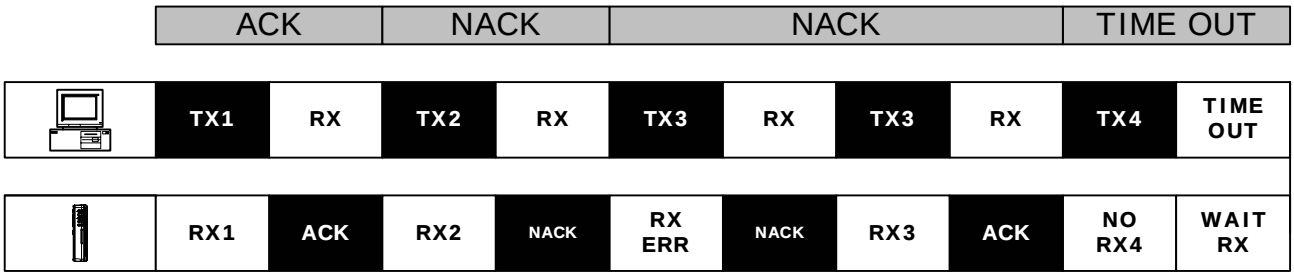
# Communication Protocol

## GNET FEATURES

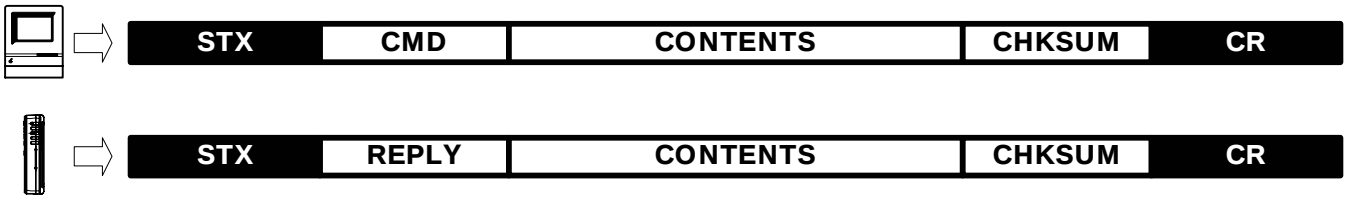

- Support TTY (TELE TYPE) OPERATION -
  Use TTY to send commands and messages.
- Simple handshaking -
  One enquiry one answer back.
- Multi-link capability
- Expandability -
  GNET provides 4 major functions:
  1. POLLING
  2. LOGIN / LOGOUT
  3. DATABASE
  4. INFORMATION

  Also can be expandable.
- Simple format
  Use ASCII value for each field and use Separator "," between two Fields.

## GNET Handshaking




## GNET PACKET




| ITEM | Dec | Hex | Control Key | Function |
|---|---|---|---|---|
| **STX** | 2 | 02 | ^B | Start of Text |
| **CMD** | Ascii | Ascii | Ascii | Command Code |
| **CONTENTS** | Ascii | Ascii | Ascii | Contents Data |
| **CHKSUM** | Ascii | Ascii | Ascii | Check Sum |
| **CR** | 13 | 0d | ^M | Carriage Return |
| **REPLY** | (78) 65 | (4e) 41 | (N) A | (Negative) Acknowledge |

## Command Index Table

| Topic | Command | Contents | Description |
|---|---|---|---|
| SETTING | L | 4 Characters for Login(0000) | Login |
| | O | - | Logout |
| | P | New four digit password | Set Password |
| | X | - | Enter Firmware Management Mode |
| | B | - | Get Register |
| | C | - | Set register |
| | F | - | Get Product Version |
| | S | Date,Time,Week | Set Date,Time and Week |
| | T | - | Get Date and Time |
| DATABASE | N | - | Get Number of Record |
| | G | Number | Read Record by Number |
| | E | - | Erase All Record ( Logical ) |
| | ER | - | Erase All Record ( Physical ) |
| | M | - | Recovery All Record |

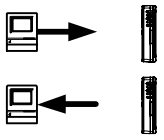
## Reply Index Table

| Topic | Reply | Contents | Description |
|---|---|---|---|
| ACK | A | Reply Information | ACK+Information |
| NAK | N | See Error Index Table | NAK+Information |

## Error Index Table ( For Reply NAK )

| Topic | Error Index | Description |
|---|---|---|
| ACCESS LEVEL | 00 | Access Denied or Password Error |
| COMMAND CODE | 01 | Command packet is too long |
| | 02 | Command packet is empty |
| | 03 | Command code is out of range |
| | 04 | Illegal Command or Data |
| DATABASE | 05 | Database and Register is Empty |
| | 06 | Record number is out of range |
| | 07 | Check Sum Error |
| | 08 | Memory Not Enough |
| | 09 | Action Failure |
| FILE | 0A | File Not Exist |

## 1. GET NUMBER OF RECORD :

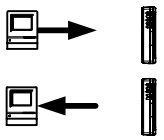


| STX | N | CR |
|---|---|---|

| STX | A | NUMBER | CHKSUM | CR |
|---|---|---|---|---|

| NUMBER | Record Count . 4 Bytes Width ( 0000h ~ 0800h ) |
|---|---|

**EXAMPLE**

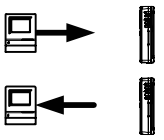


| 02 | N | 0d |
|---|---|---|

| 02 | A | 000C | 14 | 0d |
|---|---|---|---|---|

**The Total of Record Count : 12**

## 2. READ RECORD BY NUMBER :

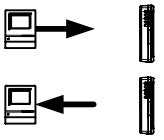


| STX | G | NUMBER | CR |
|---|---|---|---|

| STX | A | NUMBER | , | DATA | DATE TIME WEEK | CHKSUM | CR |
|---|---|---|---|---|---|---|---|

| NUMBER | Record Count . 4 Bytes Width ( 0000h ~ 07FFh ) |
|---|---|
| DATA | Record Data ( 01h+TRACK1 , 02h+TRACK2 , 03h+TRACK3 ) |
| DATA TIME WEEK | FEh+DATE+20h+TIME+20h+WEEK |

**EXAMPLE**



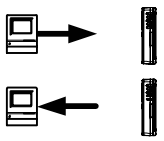
| 02 | G | 0002 | 0d |
|---|---|---|---|

| 02 | A | 0002 | , | 01 | % | ABCDEF | ? | 02 | ; | 123456 | ? | 03 | + | 654321 | ? |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

| FE | 11/10/2004 | | 10:39:23 | | 3 | 7A | 0d |
|---|---|---|---|---|---|---|---|

**Read Record Number : 12**
**TRACK1 ID : ABCD , TRACK2 ID : 2222 , TRACK3 ID : 3333**

## 3. ERASE ALL RECORD : ( Logical Erase )

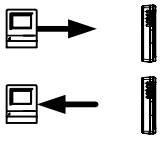


| STX | E | CR |
|---|---|---|

| STX | A | CR |
|---|---|---|

*** ( Erase Duration : < 60 second )**

**EXAMPLE**

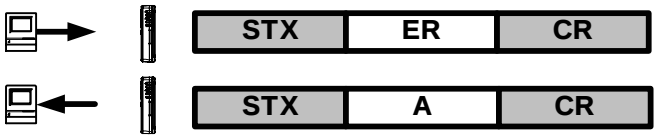


| 02 | E | 0d |
|---|---|---|

| 02 | A | 0d |
|---|---|---|

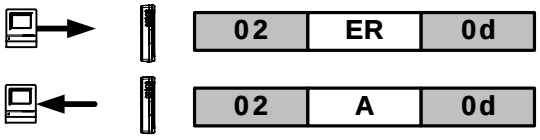
**ERASE ALL RECORD**

## 4. ERASE ALL RECORD : ( Physical Erase )



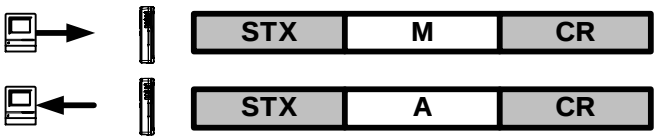

* ( Erase Duration : < 3 second )

**EXAMPLE**



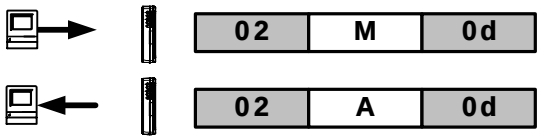

Erase all record ( Can't use the "M" command to recover )

## 5. RECOVER ALL RECORD :



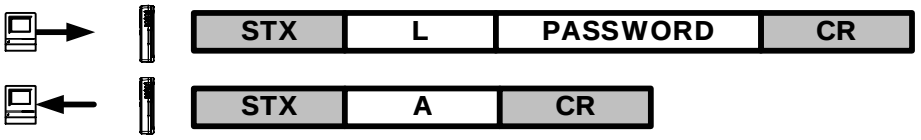

* ( Recover Duration : < 60 second )

**EXAMPLE**



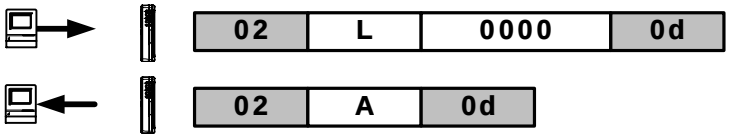

Recover all record

## 6. LOGIN :



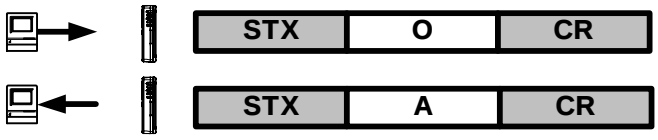

| PASSWORD | 4 Characters for Login. 0000=Initial value |
|---|---|

**EXAMPLE**

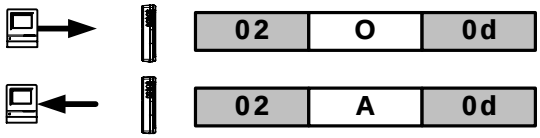



Login password : 0000

## 7. LOGOUT :

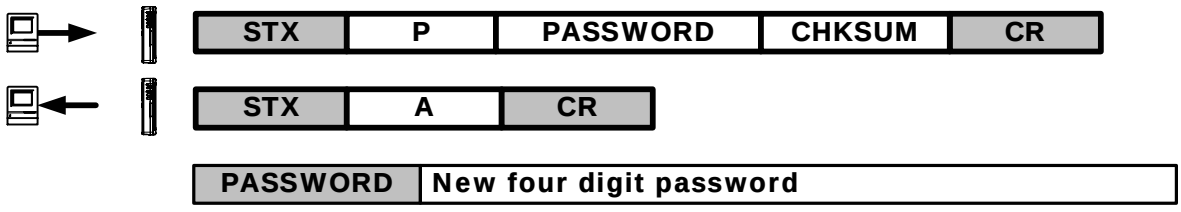



**EXAMPLE**

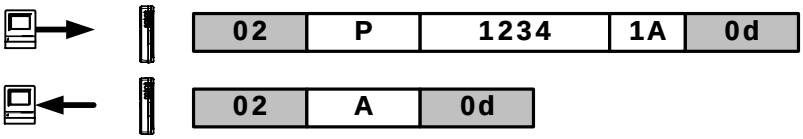



Logout

## 8. SET PASSWORD :

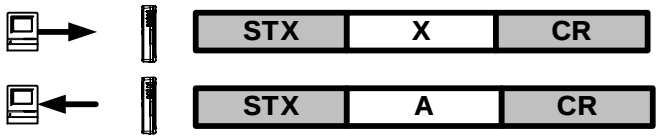



**EXAMPLE**

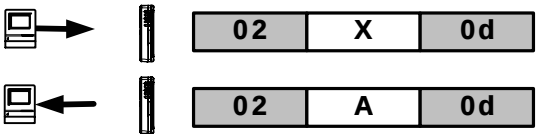



Set new password : 1234

## 9. ENTER FIRMWARE MANAGEMENT MODE :

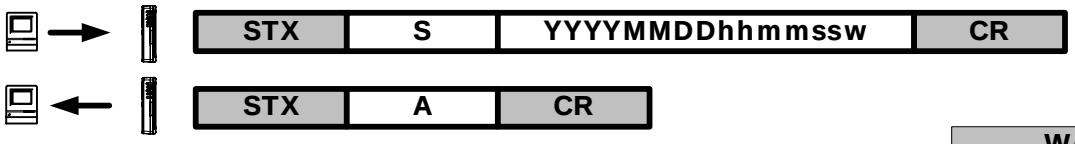



**EXAMPLE**




Enter firmware management mode

## 10. SET DATE AND TIME :



| STX | S | YYYYMMDDhhmmssw | CR |
|---|---|---|---|

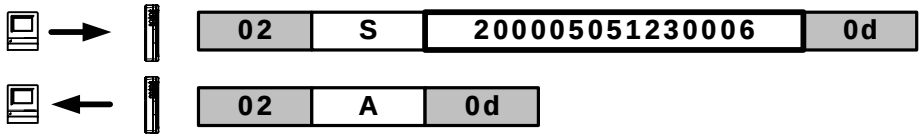


| STX | A | CR |
|---|---|---|

| YYYY | Year (2000 - 20xx ) |
|---|---|
| MM | Month (01 - 12 ) |
| DD | Date ( 01 - 31 ) |
| hh | Hour ( 00 - 23 ) |
| mm | Mintue ( 00 - 59 ) |
| ss | Second ( 00 - 59 ) |
| W | Week ( 0 - 6 ) |

| Week | |
|---|---|
| SUN | 0 |
| MON | 1 |
| TUE | 2 |
| WED | 3 |
| THU | 4 |
| FRI | 5 |
| SAT | 6 |

**EXAMPLE**



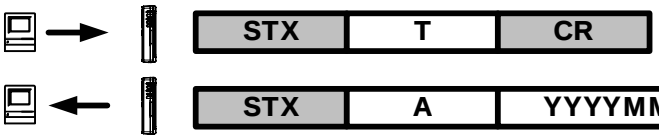
| 02 | S | 200005051230006 | 0d |
|---|---|---|---|



| 02 | A | 0d |
|---|---|---|

**Set Date = 2000 / 5 / 5**
**Set Time = 12 : 30 : 00 , Saturday**

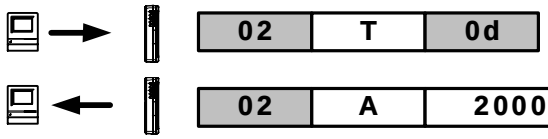
## 11. GET DATE AND TIME:



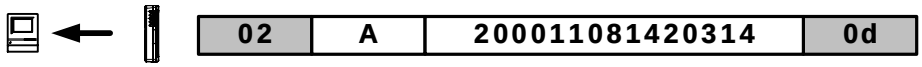
| STX | T | CR |
|---|---|---|

| STX | A | YYYYMMDDhhmmssw | CR |
|---|---|---|---|

**EXAMPLE**



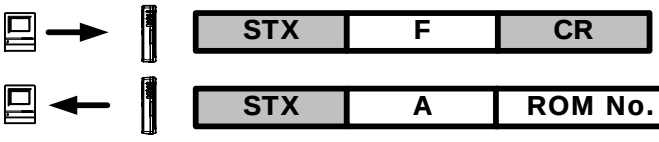
| 02 | T | 0d |
|---|---|---|



| 02 | A | 200011081420314 | 0d |
|---|---|---|---|

**Get Date : 2000 / 11 / 8**
**Get Time : 14 : 20 : 31 , Thursday**

## 12. GET PRODUCT VERSION :



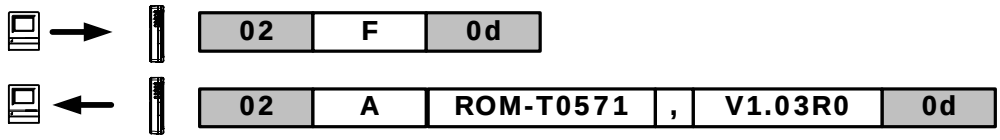
| STX | F | CR |
|---|---|---|



| STX | A | ROM No. | VERSION | CR |
|---|---|---|---|---|

| ROM No. | ROM-Txxxx , xxxx : Rom serial number |
|---|---|
| VERSION | Vx.xxRm , Vx.xx : Firmware version x.xx , Rm : Modify m times |

**EXAMPLE**

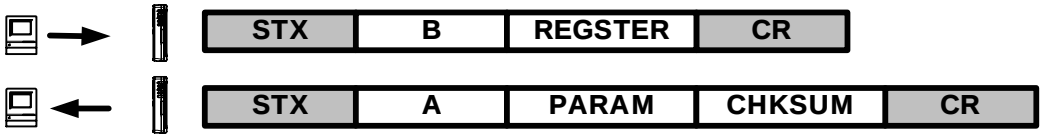



**ROM serial number = ROM-T0571**
**Firmware Version = 1.03**
**Modify times = 0**

## 7. SET REGISTER :


| | |
|---|---|
| REGISTER | Register Address . 2 Bytes Width ( 00h ~ FFh ) |
| PARAM | Set Parameters of Register |
| CHKSUM | C + REGISTER + , + PARAM |

## 8. GET REGISTER :




| | |
|---|---|
| REGSTER | Register Address . 2 Bytes Width ( 00h ~ FFh ) |
| PARAM | Set Parameters of Register |

## REGISTER TABLE

| Register | Function | Description |
|---|---|---|
| 10h | Auto Off Duration(Low byte) | 00~FFh (0~ 255 second ) |
| 11h | Auto Off Duration(High byte) | - |
| 12h | Power Mode | 00h: Auto Power Off<br>FFh: Switch<br>Other: Real time |
| 13h | Machine ID (High byte) | 2 Characters |
| 14h | Machine ID (Low byte) | |
| 15h | RTC cal. value | 00 ~ FFh |
| 16h | * | * |
| 17h | * | |
| 18h | Back Light Duration | 00~FFh (0~ 255 second ) |
| 19h | Buzzer | 00h: Off<br>FFh: On |
| 1Ah | Date Format | 00h: mm/dd/yyyy<br>FFh: yyyy/mm/dd<br>other: dd/mm/yyyy |
| 1Bh | Display Mode | 00h: Tracks Parallel<br>01h: Credit Card Mode<br>other: Tracks Series |
| 1C~1Fh | * | * |
| 20~2Fh | User Name | 16 Characters |
| 30h | Track 1 Active Mode | 00h: Disable<br>01h: Required<br>FFh: Enable |
| 31h | Track 2 Active Mode | |
| 32h | Track 3 Active Mode | |
| 33~1FBh | * | * |
| 1FC~1FFh | Password | 4 Characters |