MSRE 206 Magstrip Card

Terminal

User Manual

(ENGLISH VER 1.0)

January, 2005.

Content

NOTICE

General

MSRE 206 is an ideal magnetic stripe card read/write device designed for Banking System. It can encode and read data of stripe in the bank passbook and card. Obtaining read/write parity functions together.

MSRE 206 can be operated easily with reliable performance. It is a perfect magnetic stripe read/write device for computer system in financial department.

MSRE 206 primarily includes three types: Single Strip, Double Strips and Triple Strips, and every series include reading & writting and single reading model.

Type	Function	Notes
MSRE-206-44L	Double tracks reader & writer, for 1&2 tracks	**Encode for Lo-Co**
MSRE-206-55L	Double tracks reader & writer, for 2&3 tracks	**Encode for Lo-Co**
MSRE-206-66L	**Triple tracks reader & writer, for 1&2&3 tracks**	**Encode for Lo-Co**
MSRE-206-44H	Double tracks reader & writer, for 1&2 tracks	**Encode for Hi-Co or Lo-Co**
MSRE-206-55H	Double tracks reader & writer, for 2&3 tracks	**Encode for Hi-Co or Lo-Co**
MSRE-206-66H	**Triple tracks reader & writer, for 1&2&3 tracks**	**Encode for Hi-Co or Lo-Co**

Technology Speciality

Supply power

AC100~240V input, 24V/DC output, 2.5A or 5V/DC, 500MA

Speed

10 ~ 100cm/s

Lifetime

5 Million

Register standard

Compatible with ISO、ANSI、CUSTOM

Register density

1/2/3 tracks 75BPI/210BPI is optional

Environment

- Temperature: 0~40℃
- Humidity: 10%~90%

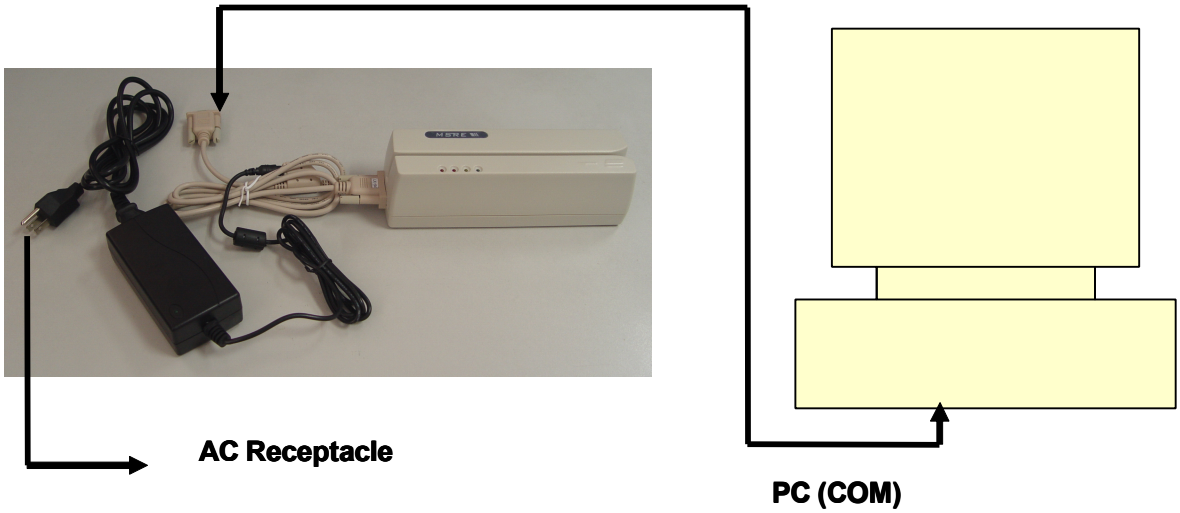
Dimension

(L*W*H mm): 215*65*65

Installation

1. Power off your system (PC).

2. Connect PC and MSRE 206 as below.



3. Connect DB9 of signal cable to a free serial port;
4. Connect outer plug of Power-out cable to the power inlet of the cable.
5. Connect Power-in cable to Power supply and AC receptacle (110V~240V).
6. Power on your system (PC).

Interface Signal

Interface signal definition:

Host port (9 core hole head DB9F)	
2	TXD
3	RXD
5	GND

DIP Switch Setting

There is a 4 bit DIP switch under the bottom cover board of MSRE 206 to set factory parameters.

SW1	MSR206/LKE2300emulational module selected	SW2	Data bit selected
ON	Reserved	ON	7 bit
OFF	Emulational MSR206	OFF	8 bit

SW3	SW4	Parity bit selected
ON	ON	ODD

OFF	ON	MARK
ON	OFF	EVEN
OFF	OFF	SPACE

Note:

1、MSRE 206 baud rate fixed as 9600BPS;

2、If emulational module is MSR206, communication parameter fixed as 9600BPS, 8 bit no parity, 1 stop bit;

3、SW2~SW4's setup is effective while in LKE-2300 module.

Control Command

MSR206 command Set

Command: **RESET**

- Command code: <ESC> a
- Hex code: 1B 61
- Response: none
- Description: This command reset the MSRE206 to initial state.

Command: **READ**

- Command code: <ESC> r
- Hex code: 1B 72
- Response: [Data Block] <ESC> [State Byte]
- Description: These command requests MSRE206 to read a card swiped and respond with the data read.

Command: **WRITE**

- Command code: <ESC> w [Data Block]
- Hex code: 1B 77 [Data Block]
- Response: <ESC> [State Byte]
- Description: This command request MSRE206 to write the Data Block into the card swiped.

Command: **Communication test**

- Command code: <ESC> e
- Hex code: 1B 65
- Response: <ESC> y ([1B] [79])
- Description: This command is used to verify that the communication link between computer and MSRE206 is up and good.

Command: **All LED off**

- Command code: <ESC> <81>
- Hex code: 1B 81

- Response: none
- Description: This command is used to turn off all the LEDs.

Command: **All LED on**

- Command code: <ESC> <82>
- Hex code: 1B 82
- Response: none
- Description: This command is used to turn on all the LEDs.

Command: **GREEN LED on**

- Command code: <ESC> <83>
- Hex code: 1B 83
- Response: none
- Description: This command is used to turn on Green LED.

Command: **YELLOW LED on**

- Command code: <ESC> <84>
- Hex code: 1B 84
- Response: none
- Description: This command is used to turn on Yellow LED.

Command: **RED LED on**

- Command code: <ESC> <85>
- Hex code: 1B 85
- Response: none
- Description: This command is used to turn on Red LED.

Command: **Sensor test**

- Command code: <ESC> <86>
- Hex code: 1B 86
- Response: <ESC> 0 (1B 30) if test ok
- Description: This command is used to verify that the card sensing circuit of MSRE206 is working properly MSRE206 will not response until a card is sensed or receive a RESET command.

Command: **Ram test**

- Command code: <ESC> <87>
- Hex code: 1B 87
- Response: <ESC> 0 (1B 30) ram test ok; <ESC> A (1B 41) ram test fail
- Description: This command is used to request MSRE206 to perform a test on its on board RAM.

Command: **Get firmware version**

- Command code: <ESC> v
- Hex code: <ESC> 76

- Response: <ESC> [version]
- Description: This command can get the firmware version of MSRE206. [Version] is a 5 bytes version number; format is “REV? X.XX”. MSR206? = 0 MSR206HC? = H MSR206HL? = U MSRE 206U=U

Command: **Set Hi-Co**

- Command code: <ESC> x
- Hex code: 1B 78
- Response: <ESC> 0
- Description: This command is used to set MSRE206 status to write Hi-Co card.

Command: **Set Low-Co**

- Command code: <ESC> y
- Hex code: 1B 79
- Response: <ESC> 0
- Description: This command is used to set MSRE206 status to write Low-Co card.

Command: **Get Hi-Co or Low-Co status**

- Command code: <ESC> d
- Hex code: 1B 64
- Response: <ESC> H -----> to write Hi-Co <ESC> L -----> to write Low-Co
- Description: This command is to get MSRE206 write status.

Command: **Select BPI (only for TK2)**

- Command code: <ESC> b [Density]
- Hex code: 1B 62 [D2 or 4B]
- Response: <ESC> 0 [1B] [30] select ok <ESC> A [1B] [41] select fail
- Description: This command is used to select the density of TK2.
- [D2]: TK2 BPI=210 [4B]: TK2 BPI=75

Command: **Erase card**

- Command code: <ESC> c [Select Byte]
- Hex code: 1B 63 [Select Byte]
- Response: <ESC> 0 [1B] [30] command Select Byte ok <ESC> A [1B] [41] command Select Byte fail
- Description: This command is used to erase the card data when card swipe.
- *[Select Byte] format:
  00000001: Track 1 only
  00000010: Track 2 only
  00000100: Track 3 only
  00000011: Track 1 & 2
  00000101: Track 1 & 3
  00000110: Track 2 & 3
  00000111: Track 1, 2 & 3

Command: **Select BPI (only for TK1&TK3)**

- Command code: <ESC> g [Density]
- Hex code: 1B 67 [D2 or 4B]
- Response: <ESC> 0 [1B] [30] select ok <ESC> A [1B] [41] select fail
- Description: This command is used to select the density of TK1&TK3.
- [D2]: TK2 BPI=210 [4B]: TK2 BPI=75

Command: **Select BPI (for every Track)**

- Command code: <ESC> j [TK1Density] [TK2Density] [TK3Density]
- Hex code: 1B 6A [D2 or 4B] [D2 or 4B] [D2 or 4B]
- Response: <ESC> 0 [1B] [30] select ok <ESC> A [1B] [41] select fail
- Description: This command is used to select the density of TK1, TK2, and TK3.
- [D2]: TK2 BPI=210 [4B]: TK2 BPI=75

Command: **Select BPC**

- Command code: <ESC> o [TK1 Bit] [TK2 Bit] [TK3 Bit]
- Hex code: 1B 6F [05~08] [05~08] [05~08]
- Response: <ESC> 30 [TK1 Bit] [TK2 Bit] [TK3 Bit]
- Description: This command is used to set the bit per character of every track.

Command: **Set leading zero**

- Command code: <ESC> z [leading zero of track 1 & 3] [leading zero of track 2]
- Hex code: 1B 7A [00~ff] [00~ff]
- Response: <ESC> 0 (1B 30) set ok <ESC> A (1B 41) set fail
- Description: This command is used to set how many leading zeros will be written before the card data starts, and the space should calculated as [leading zero] X25.4 / BPI (75 or 210) = mm Default setting of leading zero: [3D] [16]
- TK1 & TK3: [3D] means leading zero = 61
- TK2: [16] means leading zero = 22

Command: **Check leading zero**

- Command code: <ESC> 1
- Hex code: 1B 6C
- Response: 1B [00~ff] [00~ff]
- Description: This command is used to ask MSRE206 the present setting number of leading zeros.

Command: **Read raw data**

- Command code: <ESC> m
- Hex code: 1B 6D
- Response: [Raw Data Block] <ESC> [Status Byte]
- Description: This command requests MSRE206 to read a card swipe but send without ASCII decode.
- Refer to [Raw Data Block] & [Raw Data] format.

Command: **Write raw data**

- Command code: <ESC> n [Raw Data Block]
- Hex code: 1B 6E [Raw Data Block]
- Response: <ESC> [Status Byte]
- Description: This command requests MSRE206 to write Raw Data
- Block into the card swiped.
- Refer to [Raw Data Block] & [Raw Data] format.

Command: **Get device model**

- Command code: <ESC> t
- Hex code: 1B 74
- Response: <ESC> [Model] S
- Description: This command is used to get the model of MSRE206. There are four models. Model 1, 2, 3, & 5

Models Description

1 Track 2
2 Tracks 2 & 3
3 Tracks 1, 2 & 3
5 Tracks 1 & 2

Command: **Extended ISO Format READ**

- Command code: <ESC> R [TK1][TK2][TK3]
- Hex code: 1B 52 [01or11] [02or12] [03or13]
- Response: [Data Block] <ESC> [State Byte]
- Description: This command request MSRE206 to read a card swiped and responds with the data read according to Extended ISO Format.
- If TK1/TK2/TK3 is 01/02/03, it means 5 Bit Data String
- If TK1/TK2/TK3 is 11/12/13,it means 7 Bit Data String

Command: **Extended ISO Format WRITE**

- Command code: <ESC> W <ESC> s <ESC> [TK1] [string1] <ESC> [TK2] [string2] <ESC> [TK3] [string3]? <FS>
- Hex code: 1B 57 1B 73 1B [01or11] [string1] 1B [02or12] [string2] 1B [03or13] [string3] 3F 1C
- Response: <ESC> [State Byte]
- Description: This command request MSRE206 to write the Data Block into the card swiped according to Extended ISO Format.
- If TK1/TK2/TK3 is 01/02/03, it's means String is 5 Bit Data String
- If TK1/TK2/TK3 is 11/12/13, it's means String is 7 Bit Data String

DATA format

	Start Field	R/W Data Field	Ending Field
Command code	<ESC> s	[Card data]	? <FS> <ESC> [Statu

			s]
HEX code	1B 73	[Card data]	3F 1C 1B [Status]

*[Card data] format:

	Card Data
Char code	<ESC> 1[string] <ESC> 2[string] <ESC> 3[string]
HEX code	1B 01 [string] 1B 02 [string] 1B 03 [string]

*[Status Byte] format:

Status	description	HEX	ASCII
OK	If read, write or command ok	30h	0
Error	Write or read error	31h	1
	Command format error	32h	2
	Invalid command	34h	4
	Invalid card swipe when in write mode	39h	9

Note:

1. When [Status Byte] equal 39h means card moving error
2. None available and none data tracks will not be transmitted when swipe of card.
   For example, when read card with data encoded on track 2 only for MSR206-5, it will transmit data like **1B 73 1B 01 1B 02 [string] 3F 1C,** for no data on track 1 so it shown 1B 01 only.

*[Raw Data Block] format:

	Start Field	R/W Data Field	Ending Field
Command code	<ESC> s	[Raw data]	? <FS> <ESC> [Status]
HEX code	1B 73	[Raw data]	3F 1C 1B [Status]

*[Raw Data] format:

	Raw Data
Char code	<ESC> 1[L1][string] <ESC> 2[L2][string] <ESC> 3[L3][string]
HEX code	1B 01 [L1] [string] 1B 02 [L2] [string] 1B 03 [L3] [string]

Note:

1. [L1], [L2], [L3] is the length of [string1], [string2], and [string3]
2. None available and none data tracks will not output when swipe of card,
   For example, when read card (encoded data on track 2 only) on MSR206-5, it will transmit data like 1B 73 1B 01 00 1B 02 [L2] [string] 3F 1C

Maintenance

Daily maintenance

MSRE 206 is a complex integrated product, in order to keep stable working, daily maintenance is need.

Cleaning the magnetic head

When reading and writing fault happened for many times, the magnetic head should be cleaned.

a. Pull the cleaning card backwards and forwards 5-10 times,;

b. If the magnetic head is very dirty, firstly make the cleaning card wet through alcohol then to pull cleaning card some times, after then using the dry cleaning card to pull some times.

Cleaning the roller of the encoder

a. Firstly make the cleaning card wet through alcohol then to pull cleaning card 5-10 times;

b. Using the dry cleaning card to pull some times。

Append command:

Command: **Set leading zero for extended**

- Command code: <ESC> Z [leading zero of track 1] [leading zero of track 2]
- [Leading zero of track 3]
- Hex code: 1B 5A [00~ff] [00~ff][00~ff]
- Response: <ESC> 0 (1B 30) set ok <ESC> A (1B 41) set fail
- Description: This command is used to set how many leading zeros will be written before the card data starts, and the space should calculated as [leading zero] X25.4 / BPI (75 or 210) = mm
- Default setting of leading zero: [3D] [16] [3D] TK1 / TK3: [3D] means leading zero = 61 TK2: [16] means leading zero = 22

Command: **Check leading zero for extended**

- Command code: <ESC> L
- Hex code: 1B 4C
- Response: 1B [00~ff] [00~ff][00~ff]
- Description: This command is used to ask MSRE206 the present setting number of leading zeros.