



Preh Tech Bytes Nb.13

Update: 4/26/00

Product Family: Magnetic Stripe Reader (MSR) in Preh Touchscreen
Subject: Protocol for the integrated MSR in Base of Preh Touchscreen
RS-232 Interface ONLY.

Overview

The MSR can be configured to enable or disable Track 1,2 and 3 output, and can be configured to disable auto input and require a request to force data output.
OPOS drivers have been written for the RS-232 interface MSR in Touchscreen and are available under: <http://www.preh.com/>

The MSR electronics are NOT programmable to include a customer definable Header and Terminator string, also sentinels cannot be programmed to be sent or turned off.

Initialization

RS232-Parameter fixed: 9600 Baud, 8 Data bits, 1 Stop bit, even Parity.

Output -parameter:

If Auto input is on you will receive data of Card directly after a card swipe. If Auto input is off you have to send a command Request (02h) to receive data.

Set up

If you change configuration of device you have to send 3 bytes. You will receive a NAK 0x15 (not Acknowledge) or ACK 0x06 (Acknowledge). It is possible to change configuration at any time. The default setting of Set up byte is 0x8F (after Power on).

Set up sequence:

Start byte 01h = '^A'	Set up byte	End byte 04h = '^D'
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Setupbyte:

Bit 0: MSR Track1 enable	default: 1
Bit 1: MSR Track2 enable	default: 1
Bit 2: MSR Track3 enable	default: 1
Bit 3: Autoinput	default: 1
Bit 4: RFU (=0) not used	default: 0
Bit 5: RFU (=0) not used	default: 0
Bit 6: M3, MSR 3 Track fix	default: 0
Bit 7: Format:	default: 1
0: binary output of data; EDC=LRC)	
1: ASCII-output of data; EDC above ASCII-Data)	

Acknowledge HSMSR → Host (Setupsequence i.O.):

Acknowledge 06h

Not Acknowledge HSMSR → Host (Setupsequence was not understood):

Not Acknowledge 15h

Request

Is Bit3 is set to zero the Autoinput is off and you have to send a request to force data:

Request Host → HSMSR:

Request 02h

Data output

The data output sequence starts with 0x02 STX. followed by data of tracks (with start- and endsentinel).

The output starts with track 1, then track 2 and finally track 3. If one track is not enabled you will receive no data for this track. The TAG contains information about the decoded data format.

Then you will receive the data of the track in ASCII or binary format.

At the end of each track there is an Error Detection Code (EDC) above track data, equal LRC of Card. The EDC is XOR above all data including start and end sentinel (Exception: JIS without start sentinel). The identifier for end of sequence is (F0h).

Data:

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Start 02h	TAG1	Data 1	EDC1	TAG2	Data 2	EDC2	TAG3	Data 3	EDC3	End F0h
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TAG:

1	0	T	T	0	0	E	E
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T=Track: 00 = JIS
01 = ISO 1 (ISO Track 1)
10 = ISO 2 (ISO Track 2)
11 = ISO 3 (ISO Track 3)

E=Errorcode: 00 = no error
01 = no Startsentinel detected
10 = Parity-Error
11 = Checksum Error

Example with ISO-Card: Track 1 = '1', Track 2 = '2' Track 3 = '3':

1. Without initialization

after card swipe

02h, 90h, 25h, 31h, 3Fh, 2Bh, A0h, 3Bh, 32h, 3Fh, 36h, B0h, 3Bh, 33h, 3Fh, 37h; F0h
equal ^B É % 1 ? + á ; 2 ? 6 B0h ; 3 ? 7 F0h

2. Initialization: 01h 03h 04h Response: 06h

after card swipe you will not automatically receive data.

After a Request (02h) you will receive the data

02h, 90h, 05h, 11h, 1Fh, 0Bh, A0h, 0Bh, 02h, 0Fh, 06h, F0h

3. Initialization: 01h 89h 04h Response: 06h

after a card swipe with checksum error:

02h, 93h, F0h

For testing you can use a terminal program.