

Spectrum III Tribrid

USER'S MANUAL

CE
Version X.X Rev. A
XXXXXXXX-XXX
5/05
#XXX

Warning

Caution: The user is cautioned that changes and modifications made to the equipment without the Approval of manufacturer could void the user's authority to operate this equipment.

Notes: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection 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 to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

FCC Warning:

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.

Limited Warranty

ID TECH warrants this product to be in good working order for a period of one year from the date of purchase. If this product is not in good working order as warranted above, or should this product fail to be in good working order at any time during the warranty period, repair or replacement shall be provided by ID TECH.

This warranty does not cover incidental or consequential damages incurred by consumer misuse, or modification of said product. For limited warranty service during the warranty period, please contact ID TECH to obtain an RMA number and instructions for returning the product.

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Section 1
INTRODUCTION



The coil has 4 circle power cable, the coil part number: HFB160093-300



The Rs232 cable has no coil.

Description

The reader has a choice of communication interfaces to a host. Communications are through an interface cable. The cable can exit from the end or from the bottom of the base. A slot or channel in the base provides for in-field orientation of the cable exit direction and provides a strain relief function. Compatibility: The reader operates with major POS and ECR terminals old or new, providing the terminals have a compatible interface with the reader and a third party provides a software application and communication protocol layer to accomplish the required operations.

The reader addresses several retail applications for ISO14443 compliant identification technology. The reader supports major financial contactless programs, such as MasterCard's PayPass, American Express's ExpressPay and Visa's Contactless, & Discover Card. The reader reads data from a variety of contactless sources, including credit cards, key fobs, and NFC devices and must support the RF requirements for ISO/IEC 14443A, ISO/IEC 14443 B as outlined in the relevant parts in ISO 18092. In particular, the reader shall meet the MasterCard, PayPass - ISO/IEC 14443 Implementation Specification. In addition, the reader shall be compatible with NFC for POS applications. The reader has the operability & functionality defined in the PayPass Implementation Specification. The reader shall be certified by a PayPass qualified test lab; the reader must meet the criteria to "Function Properly" and pass the test process.

In addition, the reader supports reading and writing to Mifare cards. Mifare cards supported are Standard, Classic, & UltraLite. This support is intended for access control applications, including transportation.

Section 2

INSTALLATION

RS232 Interface

As with a standard serial interface, the host must be configured to accept the data and perform the appropriate processing. For the RS232 interface device, the end user needs care that the host application's RS-232 parameters (baud rate, data bits, Start/Stop characters, parity, and handshaking method) match those expected by the reader. The magnetic reader's output can be formatted with terminating characters and special preamble and/or postamble character strings to match the data format expected by the host.

Section 3

DEFINITIONS

The following are definitions of common terms and abbreviations used throughout this manual.

COMPANY CONFIDENTIAL - ID TECH INTERNAL USE ONLY

ISO/IEC 14443 - Identification cards, Physical Characteristic
ISO/IEC 14443 - Identification cards, Contactless integrated circuit(s) cards/Proximity cards
PayPass - ISO/IEC 14443 Implementation Specification
Mifare - Philips' Contactless Mifare® Smart Card Ics & operations
PayPass - ISO/IEC 14443 Implementation Specification, Version 1.1 3-31-06
Visa qVSDC & MSD Document Version 1.0.1, May 2006
Visa Cross Reference Guide: ISO14443 versus PayPass, V1.0, January 2005
PayPass - Mag Stripe, Technical Specifications, Version 3.2, October 2006
PayPass - Mag Stripe, Vendor Testing, Version 2.0, November 2005
PayPass - Terminal Implementation Guide, Latest Revision
AMEX - Compatibility Requirements for PCDs, Version 1.0
AMEX - Application Level Interface Spec, Version 1.7
AMEX - Terminal Application Spec, Version 1.5

Section 4

CONFIGURATION PARAMETERS

Processing a command may take a while. During command processing, the reader will not respond to a new command. Caution must be taken to maintain at least 250 ms between two commands if no response has been received.

Once communication between the host and the reader has been established, changes to the reader's settings can be entered by sending the appropriate setup commands to the reader from the host application.

Following are explanations and examples of the proper format and command content to send commands to the reader. All commands and characters are expressed in hex format and contained in brackets:

Command protocol

This command protocol is used to control the device.

Command protocol:

Host to device: STX LenL LenH CommandData Lrc1 Lrc2 ETX

STX: 0x02. 1 byte.

LenH+LenL : sizeof(CommandData). 2 bytes.

CommandData: main command string. Several bytes needed.

Lrc1: Exclusive or of CommandData. 1 byte.

Lrc2: Sum of CommandData. 1 byte.

ETX: 0x03. 1 byte.

Device to host: STX LenL LenH ResponseData Lrc1 Lrc2 ETX

STX: 0x02. 1 byte.
LenH+LenL : sizeof(CommandData). 2 bytes.
ResponseData: main response string. Several bytes needed.
Lrc1: Exclusive or of ResponseData. 1 byte.
Lrc2: Sum of ResponseData. 1 byte.
ETX: 0x03. 1 byte.

RS232 interface command

RS232 interface command is used to set or/and get the device's RS232 communication parameters.

The default parameters are: 38400bps, 8 data bits, 1 stop bit, no parity, no handshaking.

<SET_BAUDRATE>

Command string: 0x70 0x01 NewBaudrate.

This command is used to set the device's baudrate.

The total length is 3 bytes

Parameters:

0x70 0x01 is the command head. 2 bytes.

NewBaudrate is the required serial port communication baudrate.

0x01 for 1200, 0x02 for 2400, 0x03 for 4800, 0x04 for 9600, 0x05 for 14400,

0x06 for 19200, 0x07 for 38400, 0x08 for 57600, 0x09 for 115200.

Return data: OldBaudrate.

OldBaudrate is the old baudrate if succeed, 0xED if failed.

<SET_STOPBITS>

Command string: 0x70 0x02 NewStopBits.

This command is used to set the device's stop bits.

The total length is 3 bytes

Parameters:

0x70 0x02 is the command head.

NewStopBits is the required serial port communication stop bits.

0x01 for 1 stop bit, 0x02 for 2 stop bits, 0x03 for 1.5 stop bits.

Return data: OldStopBits.

OldStopBits is the old stop bits if succeed, 0xED if failed.

<SET_PARITY>

Command string: 0x70 0x03 NewParity.

This command is used to set the device's parity style.

The total length is 3 bytes

Parameters:

0x70 0x03 is the command head.

NewParity is the required serial port communication parity.

0x00 for no parity, 0x01 for odd parity, 0x02 for even parity, 0x03 for mark parity, 0x04 for space parity.

Return data: OldParity.

OldParity is the old parity if succeed, 0xED if failed.

<SET_HANDSHAKING>

Command string: 0x70 0x05 NewHandShakingMode.

This command is used to set the device's hand shaking style.

The total length is 3 bytes.

Parameters:

0x70 0x05 is the command head.

NewHandShakingMode is the required serial port communication hand shaking mode.

0x00 for no hand shaking mode, 0x01 for XON/XOFF hand shaking mode, 0x02 for RTS/CTS hand shaking mode.

Return data: OldHandShakingMode.

OldHandShakingMode is the old hand shaking mode if succeed, 0xED if failed.

<SET_XON_CHAR>

Command string: 0x70 0x06 NewXONChar.

This command is used to set the device's XON char.

The total length is 3 bytes.

Parameters:

0x70 0x06 is the command head.

NewXONChar is the required serial port communication XON char.

Return data: OldXONChar.

OldXONChar is the old XON char if succeed, 0xED if failed.

<SET_XOFF_CHAR>

Command string: 0x70 0x07 NewXOFFChar.

This command is used to set the device's XON char.

The total length is 3 bytes.

Parameters:

0x70 0x07 is the command head.

NewXOFFChar is the required serial port communication XOFF char.

Return data: OldXOFFChar.

OldXOFFChar is the old XOFF char if succeed, 0xED if failed.

System command

<GET_VERSION>

Command string: 0x01.

This command is used to get the system's version.

The total length is 1 byte.

Parameters:

0x01 is the command.

Return data: version string. The length is 42 bytes.

<GET_SERIAL_NUMBER>

Command string: 0x02.

This command is used to get the system's serial number.

The total length is 1 byte.

Parameters:

0x02 is the command.

Return data: serial number string. The length is 32 bytes.

<BEEP>

Command string: 0x04 Duration.

This command is used to let the system's beeper to beep for a designated time.

The total length is 2 bytes.

Parameters:

0x04 is the command header.

Duration is the beeper's beep last time. The unit is 100ms.

Return data: 0xE0.

<LED_CONTROL>

Command string: 0x05 LED ON/OFF.

This command is used to control the system's led.

The total length is 3 bytes.

Parameters:

0x05 is the command header.

LED is the led's id. 0x00--0x07 is acceptable.

ON/OFF: 0x01(ON) means let led to light on and 0x00(OFF) means let led to light off.

Return data: 0xE0.

