ATB422/3

USB Keyboard with Integrated Optical Character Reader and Magnetic Swipe Reader

Product Manual

Access IS
Interfacing Solutions

About this manual

ATB422/423 - Installation and Use

Second Edition (Sep 2009)

Part No. ATB422/423 Series

www.Access-IS.com

Warnings

This manual contains important information regarding the installation and operation of the ATB422/423 keyboard. For safe and reliable operation of the keyboard all users must ensure that they are familiar with and fully understand all instructions contained herein.

Warranty

Access Ltd warrants that this product shall be free from defects in workmanship and materials for a period of one year from the date of original purchase. If the product should fail to operate correctly in normal use during the warranty period, Access will replace or repair it free of charge. No liability can be accepted for damage due to misuse or circumstances outside Access control. Also Access will not be responsible for any loss, damage or injury arising directly or indirectly from the use of this product. Access total liability under the terms of this warranty shall in all circumstances be limited to the replacement value of this product.

If any difficulty is experienced in the installation or use of this product that you are unable to resolve, please contact Access.

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Radio Frequency Energy

European EMC directive 89/336/EEC

This equipment has been tested and found to comply with the limits for a class A computing device in accordance with the specifications in the European standard EN55022. These limits are designed to provide reasonable protection against harmful interference. 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 or television reception. However, there is no guarantee that harmful interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment on and off, the user is encouraged to correct the interference with one or more of the following measures: (a) Reorient or relocate the receiving antenna. (b) Increase the separation between the equipment and the receiver. (c) Connect the equipment to an outlet on a circuit different from that to which the receiver is connected. (d) Consult the supplier or an experienced radio / TV technician for help.

CE

FCC Compliance Statement (United States)

This equipment generates, uses and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a class A computing device in accordance with the specifications in Subpart J of part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area may cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference. Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Canadian Department of Communications RFI statement

This equipment does not exceed the class A limits for radio noise emissions from digital apparatus set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le règlement sur le brouillage radioélectriques publié par le ministère des Communications du Canada.

Revision History

Rev 1	December 2006	Original	MG
Rev 2	September 2009	Revised	TE

Contents

Access IS Interfacing Solutions

1. Overview

The Access ATB422/423 keyboard is a compact standard Windows layout keyboard with integrated electronics to capture data from a variety of sources.

A durable steel document guide for the optional OCR Reader and 4-track MSR provides exceptional wear characteristics and long life. All documents can be read within the footprint of the housing. The document exit is inboard of the keyboard so that the unit can be operated where space is limited.

The key switches, each rated for fifty million operations, are securely mounted into a steel plate which sits above the rigid printed circuit board. This steel plate protects the printed circuit board from ingress of staples, paper clips, etc… as well as providing a product which is rugged enough for the rigorous demands of airport and industrial environments.

An auxiliary serial port is provided for connection to external readers, for example the Access LSR120 2D barcode reader for e-Tickets and other barcoded travel documents.

A bi-colour LED provides user feedback of the keyboard status and successful document reads, and a buzzer is also provided which may be configured.

Options:

The ATB422/423 has a range of options:

- An integrated “Trackpoint” USB Mouse compatible pointing device.
- A dual illumination OCR reader to read passports, visas and identity documents as well as stock control numbers and document numbers from thermally printed ATB coupons and stock control numbers and barcodes from TAT’s.
- A bi-directional 4-track MSR (Magnetic Swipe Reader) for reading Credit Cards, Frequent Flier Cards and ATB2 documents.
- An auxiliary RS-232 serial input port, for attachment to external devices (for example, the Access LSR120 2D barcode imager for Airline e-Tickets).

Connections

The ATB422/423 is connected to its host computer via a cable fitted with a USB connector. The keyboard is powered from a powered USB port and does not require an external power supply.

All data (keyboard, mouse, OCR, MSR and auxiliary serial port) is routed via the USB connector.

The keyboard and mouse will appear as Human Interface Devices under Windows XP and Windows Vista.

OCR, MSR and auxiliary serial port data will appear as defined in the SITA, ARINC or Unformatted data protocols. A driver is available from the Access Ltd website to allow this data to originate either from a virtual COM: port, or from the keyboard. The origin can be individually selected for each of the following types of data:

- OCR Passport
- OCR Ticket
- OCR ATB Coupon
- MSR Credit Card
- MSR ATB Coupon
- Barcode

2. Integrated Device Specifications

2.1 Keyboard

Data Source	Manual keyboard entry
Construction	Matrix assembly supported by a robust steel chassis plate which provides protection from dust and staples.
Individual key switches	Cherry MX Gold cross-point key switch
	Rated life 50 million operations
Connection	USB 2.0
Power Requirements	5 Volts <250mA (Excludes power for bar code scanner and optional USB 1.1 hub ports)
Environment	Operating Temperature 5 - 50 °C.
	Humidity 20 - 90% non condensing
	Storage Temperature 0 - 55 °C.
	Humidity 5 - 95% non condensing
MTBF	In excess of 90,000 operating hours
Diagnostics	Internal self test upon power up
Data standards	Standard 104/105 key AT scan codes Sets 1, 2 and 3
Size	Desk footprint 439mm x 194 mm
Language support	US 104 key layout & 105 key International Layouts available
	Other International language layouts can also be specified. Please contact Access' sales department for details.

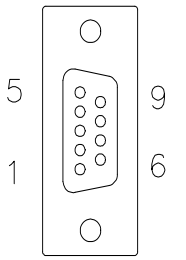
2.2 Integrated Magnetic Swipe Reader (MSR)

Data Source	ATB1 and ATB2 documents, bank and credit cards, frequent flyer cards, employee travel and identity cards
Data Standards	IATA 1722c, 722e, ISO 7811/2-5
Data Output	Standard ASCII
Magnetic tracks	4 magnetic tracks
Swipe Velocity	10 - 60 cm/sec

Read response time	0.3 seconds
Read direction	Bi-directional
Construction	Integrated into keyboard housing
MTBF	100,000 operating hours
Read head life	500,000 passes
Diagnostics	Internal self test upon power up
	Red and Green LED for data read and audible sounder.

2.3 Auxiliary RS232 Interface Port

Data Input	Standard ASCII RS232
	Configurable settings
	9600 Baud,
	7 Bit or 8 bit
	None or Even Parity One Stop



9 pin D type Male

Pin NO	Signal
1	Free
2	RXD input
3	TXD output
4	DTR output
5	Ground
6	DSR input
7	RTS output
8	CTS input
9	+5V

The auxiliary R232 port connection of industry standard external OCR reader, decoded barcode scanner or RS232 device. A +5 Volt, 150mA power supply is available on pin 9 of a 9 PIN D type connector

2.4 Integrated 'Dual Illumination' OCR Reader

Data Source

Machine Readable Passports (MRP)

2 lines of 44 characters

Machine Readable Visas (MRV)

2 lines of 44 characters

2 lines of 36 (size II)

Machine Readable Travel Cards

	2 lines of 36 (size II) & 3 lines of 30 (size I) characters
	Stock control number and document number of ATB 2's
	IATA 2 of 5 barcode of TAT's
Data Standards	Conforming to ICAO Document 9303
	IATA Recommended Practice 1720a
Data Output	Standard ASCII
Media thickness	1.25mm
Swipe Velocity	10 - 40 cm/sec
Response time	0.9 – 1.4 seconds
Read direction	Right to left
Construction	Integrated into keyboard housing
MTBF	100,000 operating hours
Read head life	500,000 passes
Diagnostics	Internal self test upon power up
	Red and Green LED for data read and audible sounder.

The OCR reader outputs data read from a machine readable document in ASCII. If a letter is not readable it will substitute this character with an *. If the OCR reader is unable to decode a document it will output a single line of 30 * characters.

2.5 Bi-colour LED

The Bi-colour LED is used to provide status indication to the user.

Red

When the keyboard is powered through its keyboard connection the indicator will show Red if the RS232 control lines CTS and DSR are not detected at an Active (High) level. In this mode no data can be transmitted from an MSR, OCR or Bar Code input. The keyboard operates normally.

Single Green Flash

A single green flash of approximately one second is given when valid MSR, OCR or Bar Code data is transmitted.

Single Red Flash

A single red flash of approximately one second is given when invalid MSR or OCR data is detected and no data transmitted.

There are also three LED keyboard status indicators; Num Lock, Caps Lock and Scroll Lock which are located above the Numeric Pad and are designated by International symbols.

2.6 Internal Sounder

The sounder emits a single Beep when valid MSR, OCR or Bar Code data is transmitted. The sounder emits three short beeps when OCR data includes one or more "*" characters. When invalid MSR data is read the sounder does not sound.

2.7 Integrated Mouse Pointer (Option)

An integrated "Trackpoint" USB mouse is available as an option. This uses Windows standard Mouse drivers. The Trackpoint is located unobtrusively above the left cursor key and may be used by right and left hand operators. The actuator is secured by the enclosure and a collar and cannot be removed without disassembly of the keyboard. The pointing module is highly durable and secured by screws internally to the keyboard chassis plate.

3. Installation

3.1 Connecting the keyboard

The ATB422/423 keyboard has a single cable, terminated with a “Y” adapter comprising a USB plug and an inline coaxial power connector.

The USB plug may be connected to any available powered USB port on the host PC.

The coaxial power connector is only required if an external barcode reader (for example, the Access LSR120) is connected to the Auxiliary Serial Port of the keyboard. It may be connected to a 5V >500mA regulated power supply, or it may be connected to a spare powered USB port on the host PC using an Access “USB Power Stealer” cable, part number 5KBD133402.

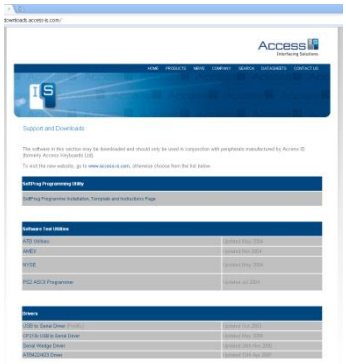
The keyboard, and the mouse (if fitted), will be recognised as plug-and-play keyboard and mouse respectively.

3.2 Installing and configuring the driver

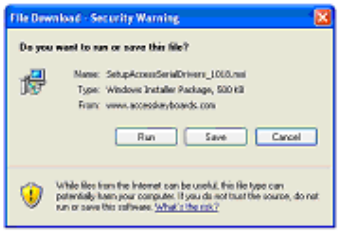
The Access Serial Port Driver must be installed in order to read data from the OCR (if fitted), the MSR (if fitted) and the Auxiliary Serial Port (if fitted). This driver may be found on the Access Ltd website at the following URL:

Visit the Access Website Downloads Page

http://downloads.access-is.com/ and Click on ATB422/423 Driver

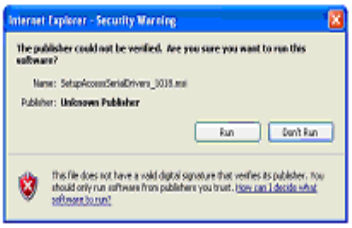


You will be prompted to either run the installation immediately from the website, or to save the .MSI file to your hard disk for offline installation at a later date.

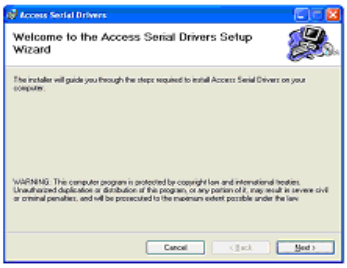


Both options are valid. The remaining instructions are based on the assumption that you install immediately.

You will then receive the following warning. Click RUN:

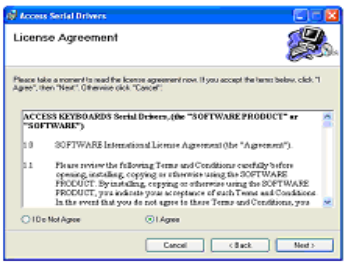


A welcome screen will now appear. Click NEXT:

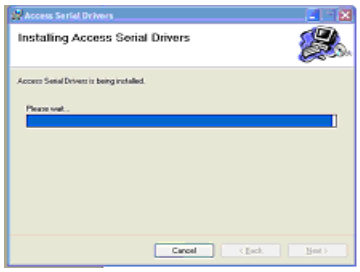


You will be prompted to agree to the licence terms and conditions.

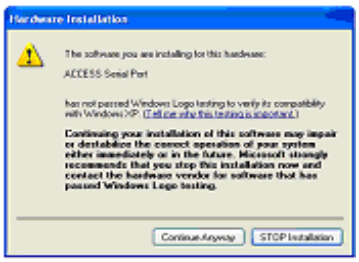
Check AGREE and click NEXT:



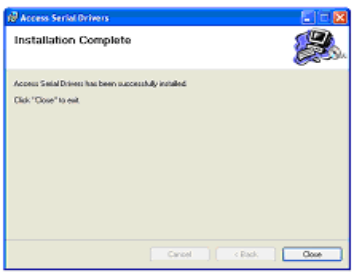
The installation progress will be shown with a bargraph.



You may receive the following warning. Press CONTINUE:



The installation should now be complete.



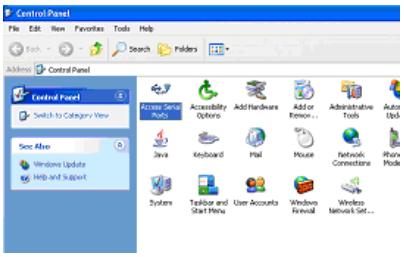
You can now continue with configuration of the driver.

Click START followed by CONTROL PANEL.

The Access Serial Ports driver will now be visible.

It will probably be at the top left hand side of the page,

as the icons are usually displayed in alphabetical order.



Double click the Access Serial Port driver.

You should now see this screen:

The COM Port pull down shows the virtual serial port that has been assigned to the OCR, MSR and Barcode data.

The default value is COM6: (if it is not already in use).

It may be changed if required.

By default, data from Passports, Tickets, ATB Coupons, Credit Cards and Barcoded Documents will all be redirected to the virtual COM: port. By clicking on the individual tabs, each type of document may be individually disabled, or directed as keyboard output instead.

The Protocol check list selects the communications protocol.

If you require a different protocol then please contact Access IS on sales@access-is.com or call us on +44 (0) 118 966 3333

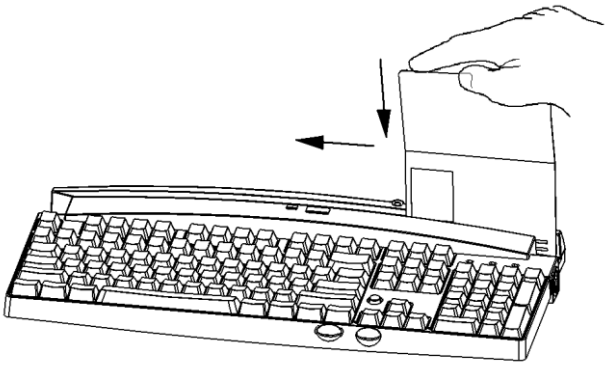
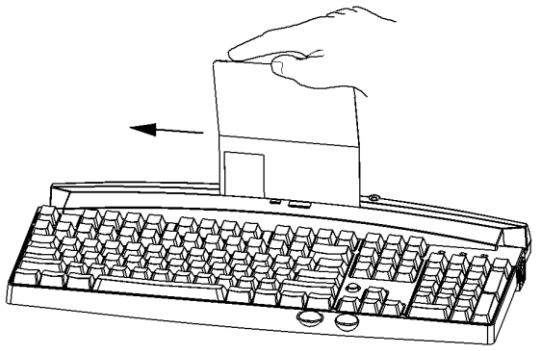
4. Operation

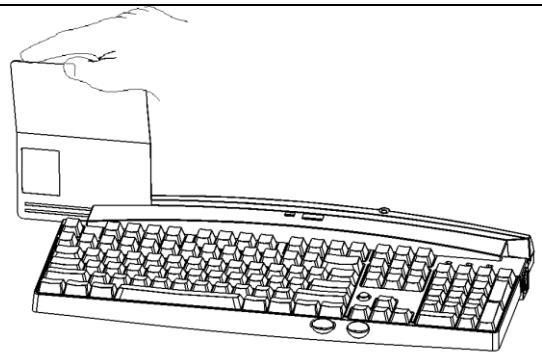
4.1 OCR

The OCR reader operates with a broad range of swipe speeds. To maintain data integrity, very fast swipe speeds are ignored completely and swipe speeds slightly exceeding the maximum allowed by the ATB422/423 will result in a bad read message of 30 “*” characters, a Red light indication from the Bi-Colour LED and 3 beeps from the sounder.

A label is attached to the slot area to assist operators/agents to the swipe direction and position of passports and other travel documents

Operators should follow the following procedure.

	Insert the document at the right hand end of the slot, orientated with the OCR data to be read facing the operator. Swipe from right to left.
	Continue swipe, at a steady speed, along the slot.

	Ensure swipe action continues to the end of the slot before lifting the document.