AKB500 Series

Integrated Keyboard with OCR and MSR

Getting Started Guide

Warnings

This manual contains important information regarding the installation and operation of the AKB500 series keyboard. For safe and reliable operation of the keyboard, installers must ensure that they are familiar with, and fully understand, all instructions contained herein.
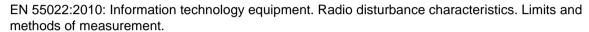
Warranty

Access Ltd warrants that this product shall be free from defects in workmanship and materials for a period of two years 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. 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.

Radio Frequency Energy

European EMC Directive 2014/30/EU

This product complies with the requirements of this directive by meeting the following standards:

EN 55022:2010: Information technology equipment. Radio disturbance characteristics. Limits and methods of measurement.

BS EN 55024:2010+A1:2015: Information technology equipment. Immunity characteristics. Limits and methods of measurement.

FCC Compliance Statement (United States)

Supplier's Declaration of Conformity

47 CFR §2.1077 Compliance Information

Unique Identifier: AKB500

Responsible Party – US contact information:

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FCC Compliance Statement (Products subject to Part 15):

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.

NOTE: 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 communications. 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.

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.

Contents

1. Overview

The Access-IS AKB500 series of keyboards integrate Optical Character Recognition (OCR) and Magnetic Stripe Reader (MSR) functionality to deliver a solid, multi-function device with a compact footprint, ideal for airline passenger check-in and card reading, retail/POS and in security environments for quickly establishing customer identity.

The keyboard can be adapted to add a new host or to support non-standard cards, such as loyalty or frequent flyer and special dedicated formats. To ensure flexibility for the future, new firmware to add and modify features can be downloaded to the unit.

- 104-key US or 105-key European standard versions; custom keyboard layouts are available.

- Integrated TrackPoint pointing device (optional).

- One or two USB hub ports (optional).

- Cherry mechanical key switches rated at 50 million operations, securely-mounted into a height adjustable steel chassis, which protects the circuit board from ingress of staples, paper clips, etc.

- Rugged design, suitable for the rigorous demands of airport and industrial environments.

- USB and RS232 connection for thin client solutions.

- Single USB connection to host. Power injector cable supplied for use with auxiliary port.

- New OCR engine that is more than 50% faster than its predecessors.

- Durable stainless steel document guide, which provides exceptional wear characteristics and long life.

- Centrally-placed read camera for bi-directional reading within the footprint of the device, saving valuable desk space.

- Auxiliary serial port to connect external readers for e-Tickets and other barcoded travel documents.

- Visual and audible good/bad read indication.

Figure 1: AKB500 series keyboard, with optional OCR and MSR

2. Installation

2.1 Unpack the AKB500 series keyboard

Unpack the AKB500 series keyboard and ensure that you have the following items:

- Advisory notice card.
- AKB500 series keyboard with attached USB cable or serial cable.

Report any missing items or damage immediately to your Sales Representative.

2.2 Connections

The AKB500 series keyboard is connected to its host computer via a cable with a USB connector. The serial version also has a 'D' type RS232 connector. No external power is required for the keyboard, but an inline coaxial power connector is supplied to provide power to an external barcode reader if one is connected to the auxiliary serial port.

The keyboard and mouse each appear as a standard Human Interface Device (HID) under Windows and use the standard drivers.

The OCR, MSR and Aux serial data can be transmitted as:

- USB custom HID

  The mode is normally used with the Access Serial Ports Service (ASPS) driver, which makes the data appear to come from a virtual serial port, or as if typed on a keyboard.

  Download ASPS from the ***Access-IS website*** (***http://www.access-is.com/gettingstarted/***). The download (ASPS Software) includes full instructions for use.

  Once installed, you can configure the driver. To do this, start the **Access Serial Port Configuration** program (from the Windows Start menu).

  The specified COM port is the virtual serial port assigned to the OCR, MSR and barcode data. You can change the port number, if required.

  By default, data from passports, credit cards and barcoded documents is redirected to the virtual COM port. You can also redirect keyboard output. For more information, refer to the *ASPS manual*.

  ASPS supports commonly used protocols, if you require a custom protocol, contact your Access-IS sales representative.

- RS232

  The data is transmitted over a standard RS232 connection. This option is used in thin client applications where drivers cannot be installed.

- Keyboard data

  The data is transmitted as if it were typed on the keyboard.

Please see ***Model numbers*** (on page 12) to specify the interface you require.

2.3   Connect the keyboard

The AKB500 series keyboard has a single cable, terminated with a 'Y' adapter, comprising a USB connector or serial connector and an inline coaxial power connector.

The coaxial power connector is only required if you connect an external barcode reader (for example, the Access-IS LSR120) to the keyboard's auxiliary serial port. Connect this to a 5 V >500 mA regulated power supply, or to a powered USB port on the host PC using an Access-IS power injector cable (part number 5KBD133402).

Once connected, you can begin to use the keyboard and mouse (if fitted).

USB connection

Connect the keyboard to a powered USB port on the host PC. Windows recognises the keyboard, and the TrackPoint (if fitted), as a plug-and-play keyboard and mouse respectively.

Serial connection

Connect a serial AKB500 series keyboard using an RS232 interface directly into a COM port.

2.4   Integrated mouse pointer (option)

An integrated TrackPoint USB mouse is available as an option. This uses standard Windows mouse drivers, which are installed when the keyboard is connected to the host.

3. Read a document

The OCR reader and MSR operate with a broad range of swipe speeds and in any direction.

To maintain data integrity, very fast swipe speeds are ignored completely. Swipe speeds slightly exceeding the maximum allowed by the AKB500 series keyboard result in a bad read message of 30 '*' characters, a red light indication from the LED and three beeps from the sounder.

To use the OCR or MSR facility, use the following procedure:

1. Insert the document at either end of the slot, orientated with the OCR or MSR data to be read facing the operator.

   Swipe from right to left, or left to right.

2. Continue the swipe, at a steady speed, along the slot.

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

3.1 LED status indicators

The LED provides useful feedback of keyboard status and successful document reads when you are using the keyboard in OCR, MSR or barcode mode.

Red

When the keyboard is powered through its keyboard connection, the indicator illuminates Red. In this mode no data can be transmitted from an MSR, OCR or barcode input. The keyboard operates normally.

Single Green Flash

A single green flash is given when valid MSR, OCR or barcode data is transmitted.

Single Red Flash

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

3.2 Internal sounder

The sounder emits a single beep when valid MSR, OCR or barcode 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.

Note: The sounder can be disabled as a factory option.

A. Specifications

A.1 Keyboard

Specification	Details
Size	Desktop footprint (W x D x H) 439 mm x 197 mm x 50 mm
Weight	1.75 kg
Cable length	2.0 m
Environment	Operating temperature: 0°C–50°C Humidity: 20–90% non-condensing Storage temperature: -20°C–55 °C. Humidity: 5–95% non-condensing
Power requirements	5 V DC <350 mA (Excludes power for barcode scanner and optional USB 1.1 hub ports)
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: Full speed RS232 (Optional)
MTBF	In excess of 90,000 operating hours
Diagnostics	Internal self-test upon power up
Language support	US 104 key layout and 105 key International layouts available Other International language layouts can also be specified
Approvals (P = Pending)	Safety: EN 60950-1 EMC: FCC 47CFR Part 15/Sub-part B/Class A; EN 55022 Class B; EN 55024 Air IT: EASE (P) Amadeus: ACUS (P) ARINC iMuse and vMuse Edge-airport: Airport Manager Cupp-T (P) RESA CREWS (P) SABRE EGR (P) SITA CUTE AirportConnect TravelSky 'Angel Cue' (P) Ultra CUSE (P)

A.2 Integrated MSR

Specification	Details
Data source	Bank and credit cards, frequent flyer cards, employee travel and identity cards
Data standards	Accepts 1-2, 3 track to ISO 7811/2-5, AAMVA
Data output	Standard ASCII
Magnetic tracks	Three magnetic tracks
Swipe velocity	13–140 cm/second
Read response time	< 1 second
Read direction	Bi-directional, central location
Construction	Integrated into keyboard housing
MTBF	100,000 operating hours
Read head life	> 500,000 passes
Diagnostics	Red and green LED for data read and audible sounder

A.3 Integrated OCR reader

Specification	Details
Data source	Machine Readable Passport (MRP): Two lines of 44 characters Machine Readable Visa (MRV): Two lines of 44 characters, two lines of 36 characters ID Documents: One line of 30 characters, two lines of 36 characters, three lines of 30 characters
Data standards	Conforms to ICAO Document 9303
Standard OCR fonts	OCR B and E13B
Data output	Standard ASCII
Media type	International passports, VISAs, ID cards, resident, alien and green cards
Swipe speed	Up to 100 cm/second
Response time	0.9–1.4 seconds
Read direction	Bi-directional, central location
Construction	Integrated into keyboard housing
MTBF	100,000 operating hours
Read head life	> 500,000 passes
Diagnostics	Internal self-test on 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.

A.4 Auxiliary RS232 interface port

The auxiliary R232 port connection allows you to connect an industry-standard external OCR reader, decoded barcode scanner or RS232 device.

Specification	Details
Data input	Standard ASCII RS232 Configurable settings 9600 baud 7-bit or 8-bit None or even parity One stop

A +5 V, 150 mA power supply is available on pin 9 of a 9-pin D-type connector.

Pin No.	Signal
1	Free
2	RXD input to keyboard
3	TXD output from keyboard
4	DTR output from keyboard, etc.
5	Ground
6	DSR input
7	RTS output
8	CTS input
9	+5V

B. Model numbers

The AKB500 series is available with a number of functionality options commonly required by airports and airlines. Options include:

- An integrated mouse-compatible pointing device.

- One or two USB hub ports for connection of USB-powered mice, fingerprint scanner, and so on.

Product	Colour	Country	Interface		Options			Hubs
	White / Grey		Serial port	USB HID	OCR	3-track MSR	Pointer	USB hub ports
AKB500	W / G	US, UK, ES, SE, DK, DE, FI, NO, FR, CY (Cyrillic), AR (Arabic), SE/FI (Sweden/Finland)	S	U	O	M	P	1
								2

Example
AKB500-G-US-S-OMP-1

C. Document history

Issue	Date	Description
1.0	08.06.2016	First issue.
1.1	01.02.2021	Updated FCC Compliance Statement.