

# HID MIFARE® Developers Resource Kit

## Application Development Tools for use with the 6055B HID MIFARE Reader



The HID MIFARE Developers Resource Kit provides professional software engineers with the tools required for writing and testing software applications for the HID MIFARE Reader.

The customer's applications will reside on a PC or dedicated micro-controller, and will communicate with the reader/writer through its RS-232 port.

The HID MIFARE Developers Resource Kit is designed to assist software engineers in the development of stored value or data applications for use in vending, toll roads, airline ticketing, banking cards, city cards, ID cards, university cards, loyalty schemes, phone cards, park and ride, and prepaid metering.

The Developers Resource Kit is intended for professional software engineers with experience in writing software programs in Microsoft® Visual Basic, Borland® C++, or similar high-level software languages, for real-time or process control applications. The Kit assumes a working knowledge of computer science terminology and practice, serial protocols, computer software programs and operating systems, and micro-controllers. It also assumes familiarity with the data structure and operation of the Philips® MIFARE Standard S50 Card IC, the MIFARE Applications Directory, and the basic applications of MIFARE card technology.

### The Kit includes:

- Protocol documentation
- Test software program
- Sales demo program
- Copy of the functional specifications for the Philips S50 IC and MIFARE Applications Directory
- Reader/writer with desktop stand and universal power supply
- Blank MIFARE cards
- Serial cable

Programming software (Microsoft Visual Basic or Borland C++) and DLL files are not included. A software-only version is available for use by those who have already purchased the HID MIFARE Demo Kit (Base Part No. 3013). The Kit does not include the functionality to program Wiegand proximity format access control data. Technical support is provided for registered users.

All trademarks and registered trademarks referenced herein belong to their respective companies.

# HID MIFARE® Developers Resource Kit

## Features

The Developers Resource Kit consists of protocol documentation, a CD-ROM with software examples, a desktop reader/writer with universal power supply, serial cable and blank cards. A Software-Only version is also available.

## Protocol Documents

- Describes the theory of operation of the reader/writer's RS-232 protocol
- Describes each command in the reader/writer's protocol and functionality; includes sample code and demonstrates how the reader will respond.
- Describes commands used in Security Mode.
- An Appendix describes functional behavior of all inputs and outputs in the various modes of operation
- A standard reader/writer installation sheet describes the wiring connections and operating parameters.

## Software

- Includes a "Control Panel" application program (in Visual Basic) which enables the user to:
  - Exercise all functions of the reader, including operation of the beeper and LED
  - Read from/ write to the card
  - Load keys, data and stored value into a MIFARE card by typing into a data field.
  - When writing to a MIFARE card, software uses Philips default keys, or allows other keys to be manually entered.
- Includes code to create and modify the MIFARE Applications Directory (MAD) and to generate the MAD CRC value. This code may be incorporated in the user's software, and conforms with the Philips MIFARE specifications.
- Includes a sales demo program that demonstrates the capabilities of MIFARE

## Reader/Writer

- The reader/writer is a modified HID 6055B MIFARE Reader, mounted in a Desktop Programming Stand.
- A guide holds MIFARE cards in the proper position for programming.
- The DB9S serial connector and DC power jack are located on the rear of the stand.
- A universal power supply is provided with US plug; for international use, just replace the removable power cord or add a local adapter
- Reader will be loaded with Philips default keys (A0, A1, A2...etc)

## Cable

- A 6' (2 meter) cable connects the reader/writer's serial output to a PC COM port. The cable has DB9F and DB9S connectors.

## Cards

- Ten (10) Model 1430 HID MIFARE cards are supplied for testing.
- The cards do not contain access control data, but are programmed with Philips default keys (A0A1A2A3A4A5 & B0B1B2B3B4B5) in all sector trailers.
- The card sectors are programmed with all 00's.

## Specifications

### Software

Reader/Writer Compatibility  
Model 6055B HID MIFARE Reader

### Card Compatibility

- MIFARE Standard cards only, including
- HID 1430 MIFARE cards
  - HID 1431 Prox Cards (dual technology: MIFARE and HID 125 kHz proximity)
  - Any MIFARE card using the Philips S50 Chip or equivalent (ISO 14443, Type A) and having an available sector

### Kit Requires a PC with:

- Pentium 166 MHz or better
- Windows 9X, 2000, or NT4+
- 50 MB of available disk space
- 32 MB RAM
- Available serial COM port

### Desktop Reader/Writer

#### Typical maximum read range:

Up to 1.0" (2.5 cm)

#### Dimensions/ Weight (Demo Stand):

6.25" H x 4.3" D x 5" W (158 cm x 109 cm x 127 cm)  
10.4 oz (295 g)

#### Material:

Stand – Black PVC  
Reader housing - Polycarbonate UL 94

#### Power Supply:

Input: 90-264VAC 50/60 Hz, US Plug  
Output: 12VDC, Connector: 0.0219", Shell: +  
Current Draw: 100mA @ 12VDC

#### Environmental:

Indoor/office environment  
0° to +35°C (32° to 95°F)  
10 – 80% RH, non-condensing

#### Transmit/Excite Frequency:

13.56 MHz

#### Certifications:

UL294/cUL  
FCC Certification – USA  
Canada Certification  
Australia C-Tick  
New Zealand EMC  
CE (all EU Countries)

#### Warranty:

Warranted against defects in materials and workmanship for 2 years from date of shipment. (See complete warranty policy for details.)

#### Part Numbers:

Base Part No.: 3012AKN00 (complete kit)  
Software only: 3012ANS00 (for developers)



An ASSA ABLOY Group company

[www.HIDCorp.com](http://www.HIDCorp.com)

9292 Jeronimo Road  
Irvine, CA 92618-1905 U.S.A.  
+1 (949) 598-1600 (800) 237-7769  
FAX +1 (949) 598-1690



**ASSA ABLOY**