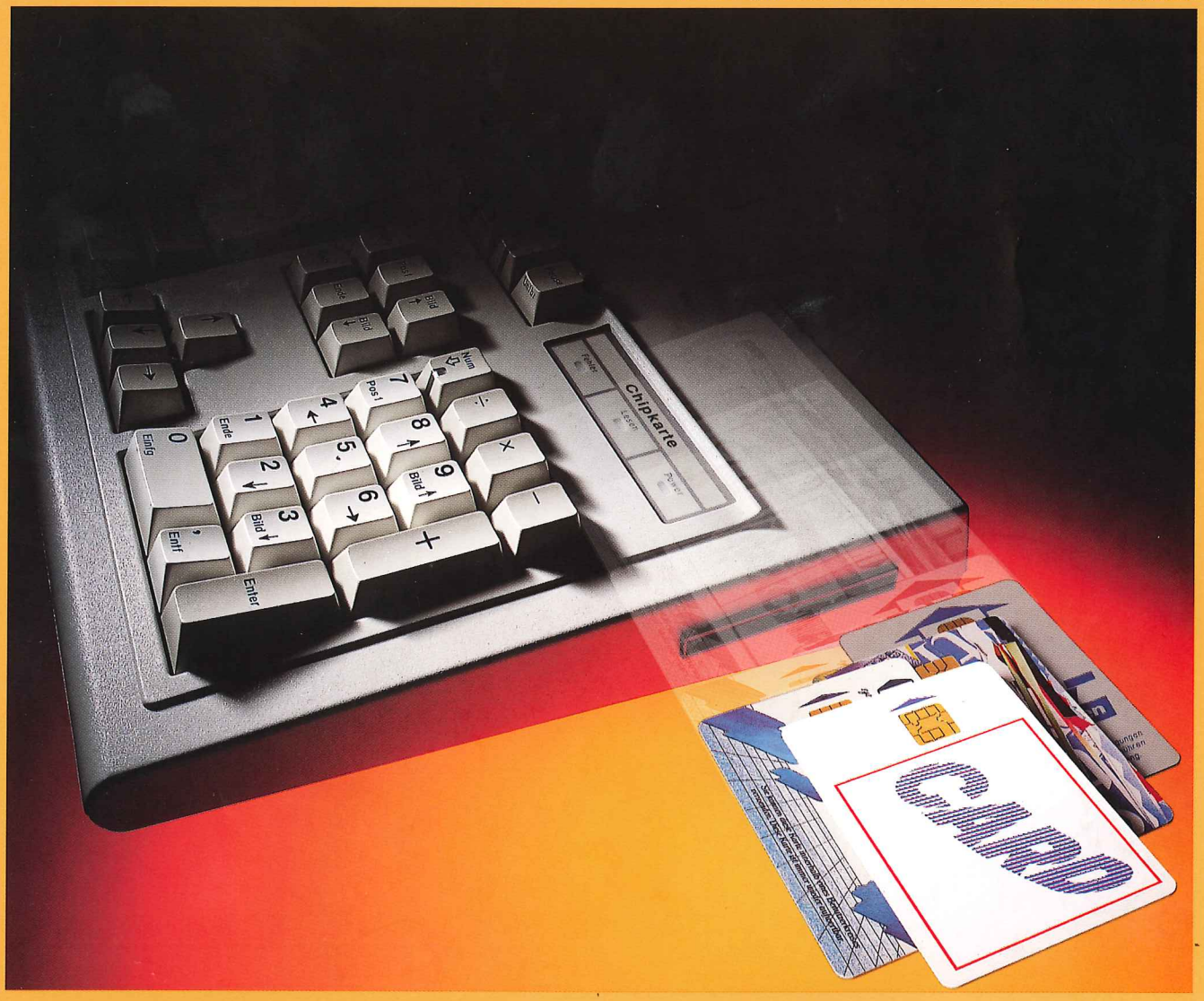
CHERRY

G80-1500

IBM* Multi-Function Keyboard with integrated Smart Card Interface.

* IBM is the registered trademark of the International Business Machines Corporation.

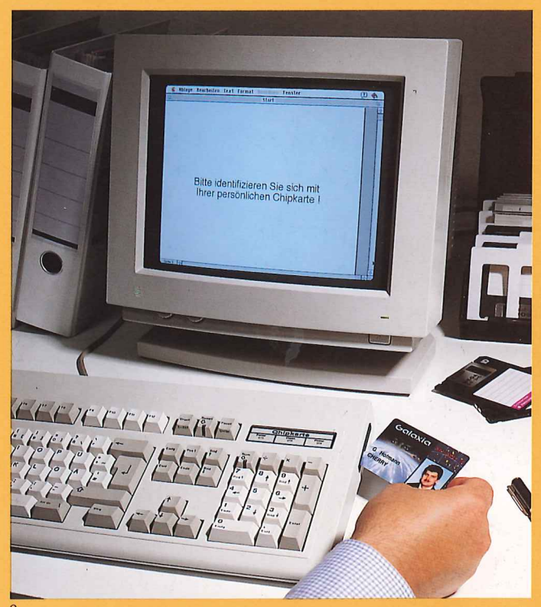


Printed on special environmentally friendly paper.

General Aspects

So-called smart cards, or cards with built-in chips, are growing in importance in many areas of modern life. This new technology holds great promise for the future owing to its great flexibility and high degree of data security. The physical properties of smart cards make them inherently superior to other technologies for use as personal data storage media.
Cherry's G80-1500 HA* keyboard, which is equipped with an integrated smart card reader, unites two functions in a single device. On the one hand, it works as an IBM-multi-function-II-compatible PC keyboard, and on the other it possesses a serial smart card interface that allows communication with chip cards. That means that smart cards can be both written onto and read from.
All of the functions offered by smart cards, including chip-specific security functions (e.g. PIN numbers and error counters) are supported by this keyboard, letting users access them freely. The keyboard can communicate with all smart cards complying with ISO 7816.
Data are exchanged between the computer and a smart card via the serial interface.

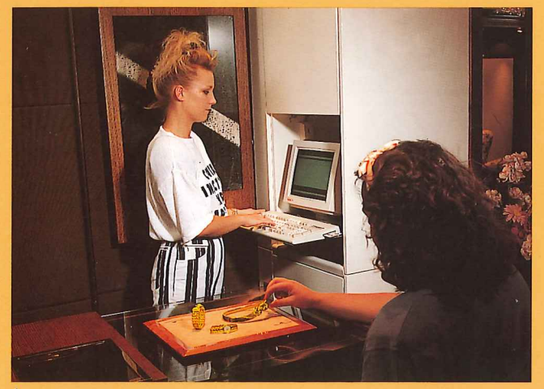
1



2

The protocol used is the block transmission protocol (T=1) developed specially for chip cards. The use of a push-pull spring-loaded reader minimises mechanical wear of the contact pins on the card, thus achieving lastingly reliable operation and long service lives for both smartcards and the card reader.

Picture 1
Storage of medical data in health cards.
Picture 2
Access authorization for hardware and software



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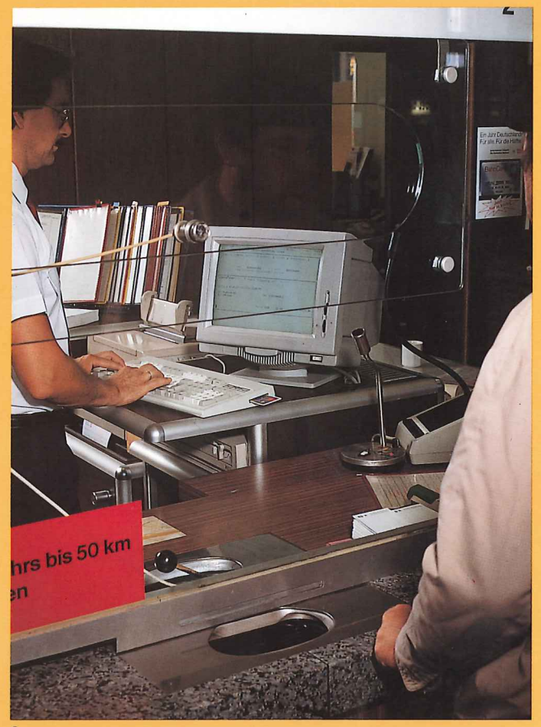


3

Applications

This keyboard is particularly well-suited for all applications in which personalised data needs to be written back onto smart cards, e.g. health-care cards holding medical data that must be repeatedly updated or modified. But it can also be employed very successfully in a host of other applications, for example access control systems, POS, customer data registration, etc.

Picture 1
POS (Point of Sale) applications.
Picture 2
"Electronic" entrance ticket, e.g. in theaters.
Picture 3
"Electronic" ticket for short and long distance public transport.

Reliability, long life, precise contact closure, and ergonomic design are the primary criteria for developing keyboards. Without such input devices, it would be impossible, even in the future, to communicate efficiently and painlessly with computers or multifunctional terminals. In addition to the usual Cherry quality this keyboard combines modern technology with comfort and offers the eye-catching design of a self-contained system, in which various functions are united.
All our keyboards are now available in European CFC-free environmentally friendly quality.
With 100% testing.
90% recyclable.
In all language versions.
All approvals and certifications applied for.

The bottom line is:
Cherry quality won´t stand for compromises.

Outstanding Advantages

- Space savings.
- No additional interface required.
- User-friendly.
- Easy to install.
- Simple to use.
- Cost-effective.
- Ergonomic.
- No extra cables needed.
- No manual setting.
- No additional transformer required.
- Long life.

Smartcard Reader

- Smartcard interface for all popular synchronous memory card types.
- International contact configuration in compliance with ISO 7816, part 2.
- Contactor unit has spring contacts to minimise surface wear.
- "Push-pull" contacting device.
- Long life (> 200.000 operations).

Approvals applied for

- Safety
  DIN VDE 0805/05.90
  EN 60 950:1988
  IEC 950:1986
  UL 1950
  CSA C 22.2 No. 950.

Post Vfg. 1046/1984 (VDE 0871, Klasse B)

EN 550 22

FCC Part 15 Subpart J Class B

- Ergonomy: ZH 1/618.
- Electro Magnetic Compatibility (EMC):
  -ESD (in compliance with IEC 801-2): 15kV
  -Burst (IEC 801-4): 500V
  -RFI/EMI:
  BMPT-Vfg. 243
  EN 55 022 B
  FCC Part 15,
  Subpart B, Class B.
  -Radiated Fields:
  (IEC 801-3:10V/m)

Technical Data

Electronics
Power supply:
+5V±5%SELV.

Current consumption:
typical: 200mA max.

Interface:
bidirectional, serial synchronous

Status indicators:
NumLock, CapsLock and ScrollLock LEDs integrated into the corresponding keys. The smartcard states ERROR, DATA and POWER are indicated by LEDs.

Compatibility:
IBM AT and PS/2-Systems.

Communications:
The systems communicates via the keyboard interface, the smartcard via the serial interface.

Protocol:
character format and command structure based on T=1 block transfer protocol.

Smartcards supported:
-Synchronous memory cards
-Synchronous memory cards with security logic

Mechanical Features

Enclosure dimensions
(LxWxH in mm)
486x207,5x42.

Linear actuation.

Storage temperature:
-25° C to +65° C
Operating temperature:
0° C to +50° C.

Incorporates Cherry MX-keymodules with »Gold Crosspoint« contacts.

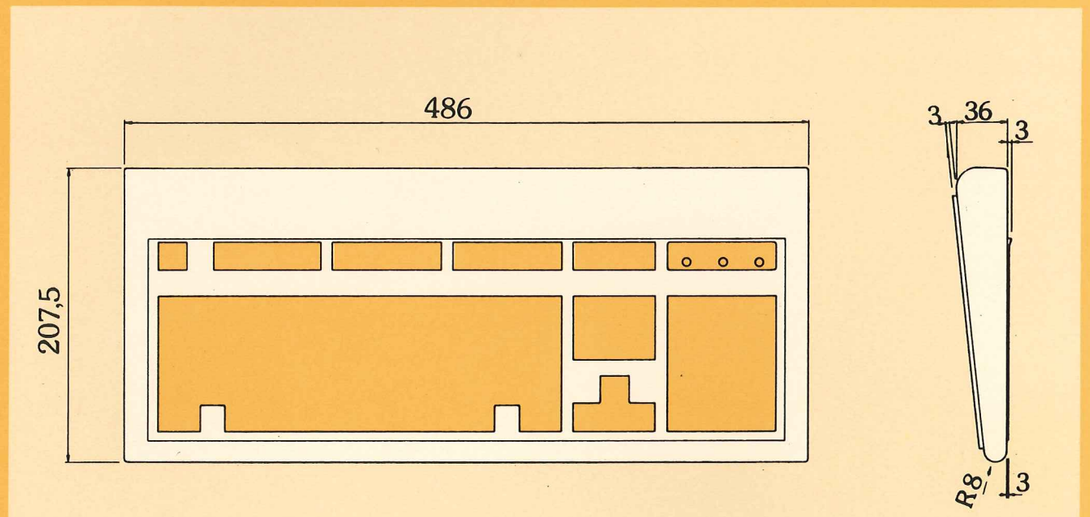
Environmental Data

- Environmentally friendly packaging made entirely of recyclable cardboard.
- Modern manufacturing methods used to minimise energy consumption.
- CFCs, chlorinated hydrocarbons and a number of other environmentally harmful substances have been eliminated from our final products. Agreements to this effect have also been reached with our suppliers.
- The plastic parts in the keyboard are recyclable.
- Sophisticated designs to minimise consumption of raw materials.

Ordering Numbers

German	French	US-International	UK-English
G80-1500 HAD	G80-1500 HAF	G80-1500 HAU	G80-1500 HAG

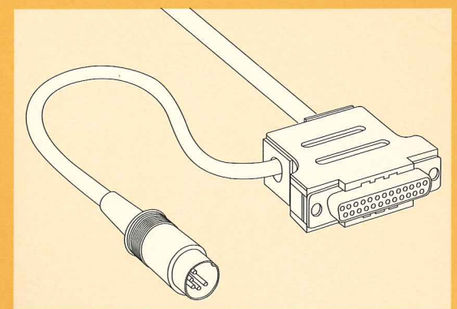
Housing Dimensions



Pin Assignment

Keyboard interface

Pin	Assignment TTL
1	CLOCK
2	DATA
3	free
4	GND
5	+5V



Pin Assigment

Asynchronous interface
25 pole SUB-D socket plug

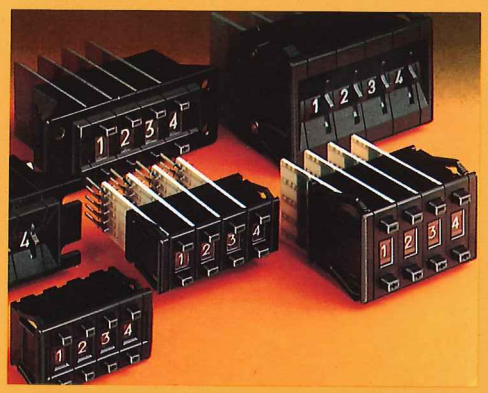
Pin	Assignment
2	TXD
3	RXD
4	RTS
5	CTS
6	DSR connected to 20
7	GND
20	DTR connected to 6

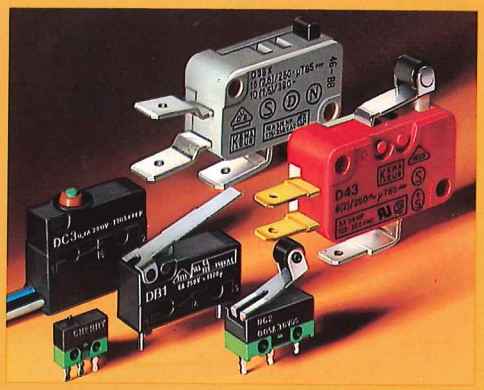
Errors, omissions and technical modifications excepted. Technical specifications provided herein constitute specifications only; they do not guarantee that actual products do possess these characteristics. Exact figures can only be taken from drawings in connection with product specifications. The life of products and the definitions applied to technical informations are based on tests that have been performed in-house by Cherry along the lines of generally acknowledged standards and/ or codes.
If products are to be used under conditions deviating from those of the tests, then it is up to the user to make sure that they operate reliably under the actual conditions of use. Improper handling, storage, manipulation, alteration or integration in other equipment can cause damage and/ or impaired functioning.

Electrotechnical and Electronic Products for the Future.

Keyboards of high technology and excellent quality.
With high switching reliability even during speed typing. Standard or customized, intelligent or non-encoded versions. Connectable to all popular EDP systems. Modern design. Harmoneous colours. Variety of sizes and heights. Ergonomic styling. With or without housing.

Keymodules. For high technology keyboards.
M 8, M 9, MX. Keyswitches with exceptional performance. High switching reliability through »Gold Crosspoint« contacts. Low profile design. Excellent touch feeling. Variety of keycap styles and colours. Ideal for ergonomically designed keyboards.





Selector switches with proven reliability and long life.
Available in many standard and customized codes. Thumbwheel, leverwheel or pushwheel versions. Gang assemblies. Solderpins, connectors or plain soldering. Standard, miniature and subminiature sizes. Also illuminated through LEDs or lamps. Customized lettering and stop limitation available.

Snap switches for the future.
For precise switching and high reliability. Large range of standard and non-standard models. Many different connecting possibilities. Standard, miniature and subminiature sizes. And a large number of auxiliary actuators.

New generation displays.
For text and graphic applications. With continuous brightness of all letters. Stable display picture. Long life. Slim profile. Light weight. Low power consumption.

Printed in Federal Republic of Germany/Imprimé en République fédérale d'Allemagne · 1675 · E · February 1994 · 10 · Mün · ©1993 by Cherry Mikroschalter GmbH

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