D I G I T A L C I P H E R U N I T

D C E - 8 0 4 5

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The DCE - 8045 is a state-of-the-art Data Cipher Unit designed with modern microprocessor technology to meet with high level security requirements of governmental services.

Outstanding features of the DCE - 8045 can be summarized as follows :

* Sophisticated modern key generator
* Compatible serial interface RS - 232C
* Compatible with electronic mail systems
* Full duplex Encryption / Decryption
* Designed to cope with modern data communication traffic
* Built-in diagnostic program to verify proper operation (SELFTEST)
* Extremely easy to operate
* Small in dimensions

The cipher unit DCE - 8045 is especially designed for encryption of data messages. The DCE - 8045 protects text and data against unauthorized access and interception. Without the knowledge of the secret keys intercepted transmissions cannot be interpreted. Utilizing most modern

technology a milestone has been set with regard to both security and price/performance ratio.

Since the standardization of data and computer networks more and more electronic mail systems are used worldwide to transmit private and confidential data. However without adequate protection of the transmitted document over public open channels it's like sending a letter without an envelope.

The DCE - 8045 offers an economic solution to enclose your valuable and private message in a secure shell.

CIPHER CONCEPT

The DCE - 8045 incorporates a sophisticated electronic key generator which uses non-linear algorithms. The data cipher unit DCE - 8045 is based on a stream cipher encryption comparable to the methods used in military and diplomatic applications.

CLEAR- CIPHER MODE

The digital cipher unit DCE - 8045 can be easily switched between clear and cipher mode. In the cipher mode a transmitted document is encrypted using the standard ASCII character set. Special attention has been given to ensure a high degree of compatibility of the cryptogram with modern electronic mail systems.

The clear mode enables the sender to transmit a document in clear. This is essential in case the receiver is not equipped with a DCE - 8045 unit.

In any case it is the operator at the transmitting station who decides to send a message in clear- or cipher mode. On the receiving end ciphered or clear messages are automatically recognized.

INTERCONNECTION to DATA SYSTEMS

The digital cipher unit DCE - 8045 has been developed for direct interface of data equipment, PC's and computers using serial RS - 232C ports. The DCE - 8045 uses two RS - 232C ports, one on the data equipment side the other for the modem.

KEY MANAGEMENT

The digital cipher unit DCE - 8045 algorithm is based on a multi-key philosophy. These secret keys can be generated in the DCE - 8045 device and stored in key modules. Key modules with identical key information are then distributed to authorized users. Using this method the key information is unknown even to the operators.

In the alternative the key is selectively determined on a partner to partner basis. In this case the specific key are entered via the data equipment.

EASY to OPERATE

The DCE - 8045 data cipher equipment has been specially designed for easy operation. All functions and modes are selected by the touch of a button. Special software routines monitor proper system operation. If an erroneous function is detected, the DCE - 8045 will alert the operator.

Due to straight forward mode selection, operator workload is reduced to an absolute minimum. USER FRIENDLINESS is the byword.

PROTOCOLS

The DCE - 8045 supports all the hardware lines as specified by the RS - 232C interface. In addition the DCE - 8045 will also support most of the widely use transmission protocols such as Xon/Xoff, Modem 7, HDLC and SDLC. The DCE - 8045 is optional available for the X.25 packed protocol for working as a Cipher Packet Switch or a Ciphered Assembler Disassembler.

EASY MAINTENANCE

The DCE - 8045 data cipher unit is equipped with diagnostic software routines which test all vital components of the system for proper operation.The selftest is activated when the DCE - 8025 is switched on. When a malfunction is encountered by the diagnostic program the DCE - 8025 will alert the operator.

HUMAN ENGINEERING

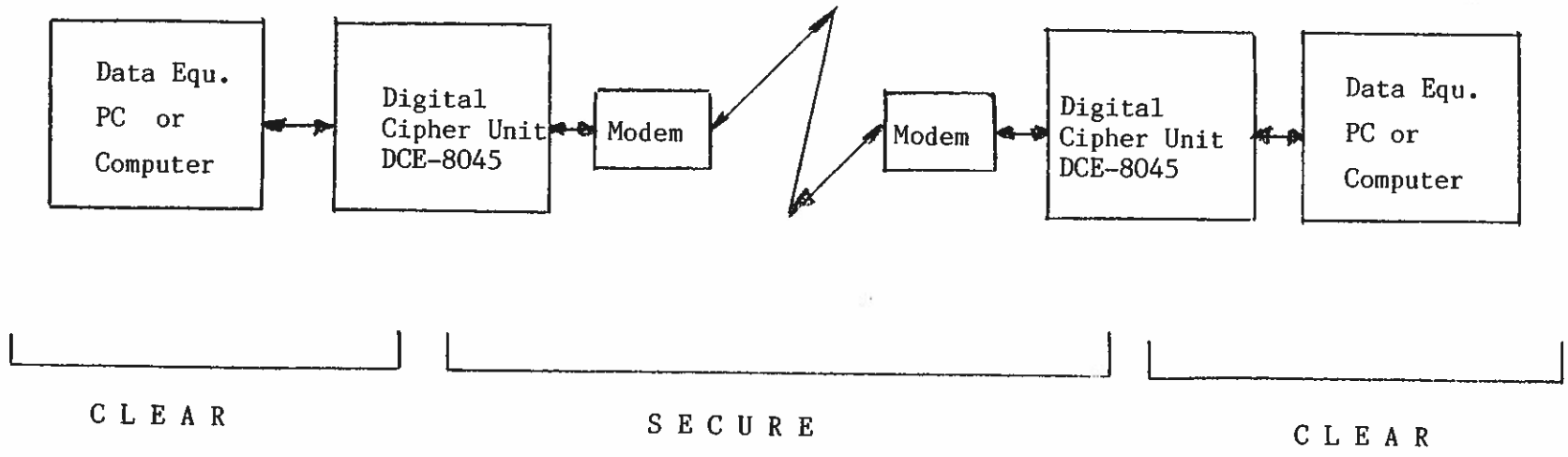
During the design great care was taken to achieve a good human engineering standard. Modular structuring philosophies have been observed for both hard- and software. Logical function groups have been combined to subsystems to facilitate the understanding of the system for repair and maintenance.

TECHNICAL PARAMETER DCE - 8045

Cipher concept	: - Electronic Key Generator system
Cycle length	: - greater than 10^{17}
System key	: - in excess of 7×10^{16}
Message key	: - in excess of 2×10^{19}
Random key	: - in excess of 7×10^{16} automatically generated at beginning of a data transmission
Number of key storage	: - 256
Data rates	: up to 69.6 Kbps asynchronous/synchronous different rates for plain or cipher channel are possible
Clock	: from modem of data unit
Synchronization	: error protected
Interface	: - RS - 232C, CCITT V.24 - CCITT X.25 - Current loop 20 mA - customer specific interfaces for various data units
Test	: - Selftest at power on

Power	:	- 110 VAC +/- 10% 220 VAC +/- 10% 45 to 65 Hz - +/- 12 VDC
Temperature	:	- -35° C to + 65° C; operation - -55° C to + 85° C; storage
Humidity	:	- 90 % relative humidity, 25° C non-condensing
Dimensions	:	- 145 mm width 220 mm depth 32 mm height
Weight	:	- appr. 1 Kg

The manufacturer reserves the right to undertake modifications and changes of technical specifications which improve quality and function of the equipment without further notice.



Typical application of the digital cipher Unit DCE - 8045