

## Digital Voice Scrambler DVS-3000X

The DVS-3000X meets the stringent requirements for speech security in modern communication media such as radio, cables and combined networks.

The DVS-3000X is a three dimensional narrow band scrambler, using time division, time inversion and frequency dispersion. The DVS-3000X concept ensures transmission of scrambled signals over all radio transceivers and telephone lines with a minimum bandwidth of 2.7 kHz. Transmission path length and the differential time delays are uncritical.

The DVS-3000X incorporates a sophisticated synchronization scheme which will maintain long-term synchronization on the one hand and will adapt automatically to multi-user communication network. It will also cope with relay operated networks.



## Portable Digital Voice Scrambler DVS-3000XP

The DVS-3000XP is a portable unit which is fully compatible to the DVS-3000X for use on narrow band radio equipment. The DVS-3000XP incorporates the digital scrambler, loudspeaker and microphone. It is designed as a direct replacement of a standard radio mono-phone.

The DVS-3000XP is connected to the auxiliary micro and phone connectors of the radio equipment, requiring no modification.

The DVS-3000XP uses CMOS components for low power consumption. All in- and outputs are carefully RF-filtered to prevent any radiation or interference.



### **Full Duplex Telephone Scrambler DVS-3600**

The Secure Voice Telephone Terminal DVS-3600 is a state-of-the-art scrambling device which provides the capability to transmit and receive secure voice simultaneously using advanced processing and scrambling techniques. The terminal DVS-3600 operates fully duplex on cellular radio telephone and standard 2-wire public telephone systems using two dimensional scrambling concept in the frequency domain. The user selected key variables exceed  $10^{12}$  combinations. The only required controls for the user are two buttons for "Secure" and "Clear" operation.



### **Digital Voice Cipher Terminal Vodacoder 2400**

The digital voice terminal Vodacoder 2400 uses an enhanced linear predictive coding algorithm LPC-10 to convert analogue speech signals to a continuous digital bit stream of 2400 bits/sec. The Vodacoder 2400 is designed to operate fully duplex on standard public 2-wire telephone networks.

The Vodacoder 2400 has very high intelligibility of the deciphered speech signal enabling positive voice recognition. The Vodacoder 2400 incorporates a sophisticated non-linear cipher algorithm which is based on a three level key system. Data transmission encryption capability for data rates of 2400 bits/sec is offered as an option.

Additional cipher equipment for:

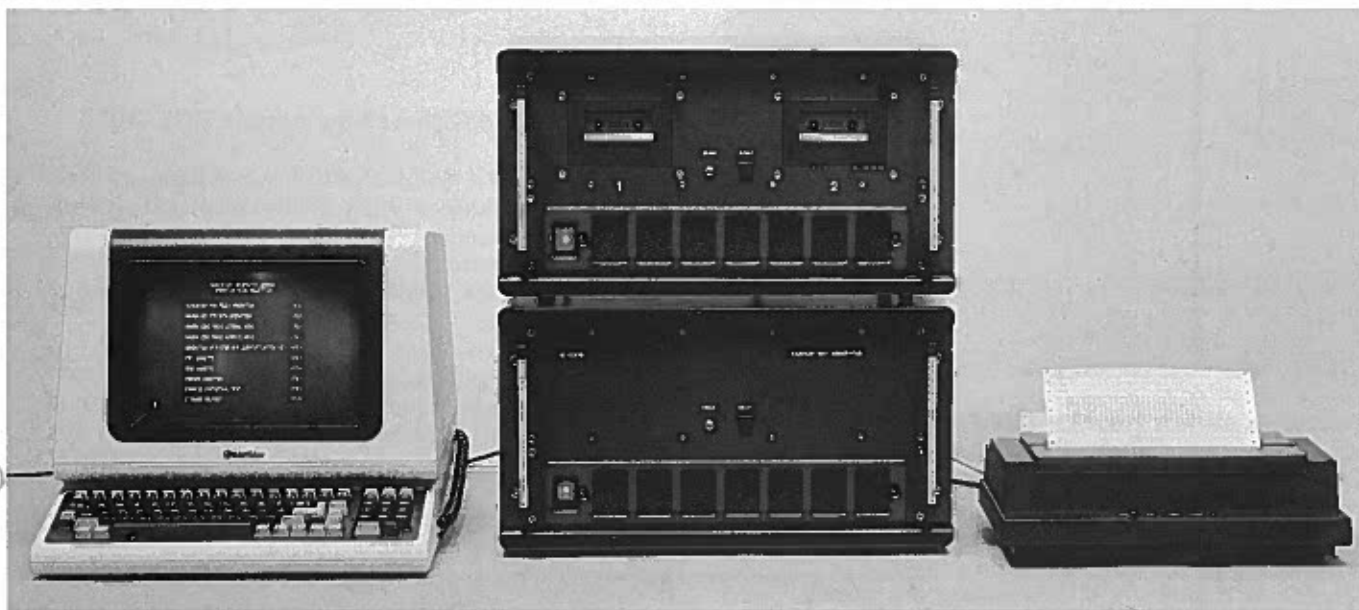
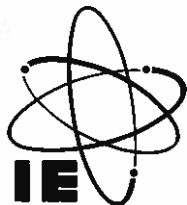
- facsimile
- computer
- Text/Telex
- customer specific designs



are available. For further information please contact our local representative or

**INTER ELEKTRONIK AG**

Zug, Switzerland



## Key Generator RKG-8500

The RKG-8500 is a state-of-the-art design of a One Time Key (OTK) generator. Our own experience in developing and building OTK equipment has resulted in our paying special attention to ensuring the best human-engineered operational procedures and straight forward repair and maintenance philosophies.

The RKG-8500 is designed to produce random key sequences for both Telex code (CCITT No. 2) or ASCII code with one particular white noise generator per bit level which, since they are unrelated to each other, avoid any relationship between the key sequences for each bit level. Sophisticated statistical test routines insure an output of non deterministic random sequences.



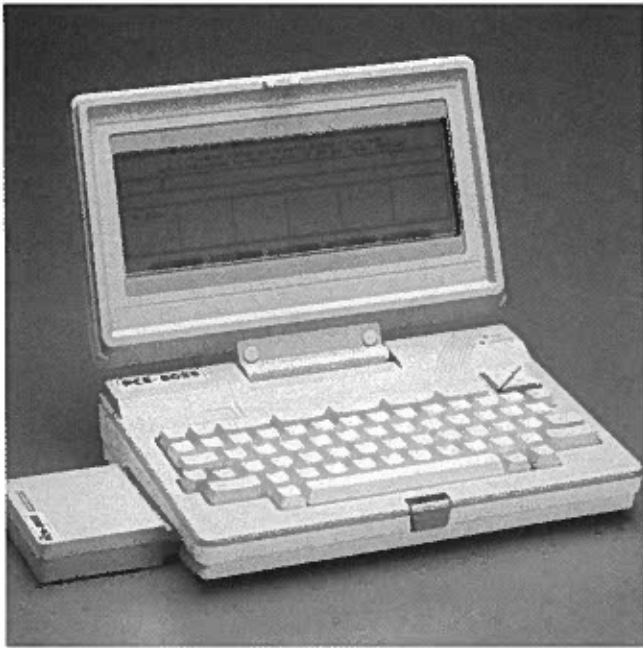
## Digital Telex Cipher Equipment DCE-8000C

The DCE-8000C is designed with modern microprocessor technology to meet with highest security requirements of professional users.

The One Time Key cipher concept is based on a non deterministic, completely random key sequence which is used once and only once to encipher a message. Since the basis of the keystream is not a mathematical algorithm, it

is impossible to break or penetrate the cipher message by either presently known or future code breaking methods.

The DCE-8000C can work both On- or Off-Line. In the On-Line mode sophisticated synchronization schemes automatically synchronize between the two stations. In the Off-Line mode the DCE-8000C provides cryptogram start marks and end of text information.



### Portable cipher terminal PCE-8025

The PCE-8025 is a portable cipher terminal with high level security designed to meet the requirements of government organizations and businesses.

The PCE-8025 cipher terminal has been designed for easy operation. All functions and operations are selected by one of the function keys. Due to this straight forward operator guidance, training is reduced to an absolute minimum. "User Friendliness" is the Byword.

The PCE-8025 incorporates a sophisticated electronic key generator which uses two new concepts in cryptographic design. First, it includes multiple separate and independent generator modules. Each bit level of plain text is assigned to a single module on a random basis for every new message to be enciphered. The second major innovation used by the electronic key generator is a new form of dynamic non-linear shift register control resulting in an entirely new key generator algorithm for each plain text message.

The standard PCE-8025 incorporates a powerful word processor, the cipher program and a telecommunication software. In addition the PCE-8025 can be compatible either to the telex (CCITT No.2) or ASCII alphabet.

Additional cipher equipment for:

- facsimile
- computer
- voice
- customer specific designs

are available. For further information please contact our local representative or



**INTER ELEKTRONIK AG**

Zug, Switzerland



### On-/Off-Line Cipher Equipment DCE-8035

The DCE-8035 is a high quality cipher equipment for either telex or data terminal applications designed for use by government services. The operational mode is selected by a switch. Since the cipher concept is identical to the PCE-8025, the two equipments are fully compatible.

The DCE-8035 is designed for easy operation with functions and operational modes selected directly from the keyboard by command sequences. LED's indicate the selected mode on the front panel.

The DCE-8035 is equipped with an internal test feature which checks out all vital components of the system for proper operations.



### Digital Cipher Unit DCE-8045

The DCE-8045 is a data cipher unit designed with micro-processor technology to meet the requirements of modern data communication, protecting text and data against unauthorized access. Without the knowledge of the secret keys, intercepted transmissions cannot be interpreted. Modern technology has enabled us to reach a milestone with regard to both security and price/performance ratio. The DCE-8045 offers an economic solution to enclose your valuable and private message in a secure shell.

The DCE-8045 uses the industry standard RS-232C interface and supports the most widely used transmission protocols such as Xon/Xoff, Modem 7, HDLC and SDLC.



### **Full Duplex Telephone Scrambler DVS-3600**

The Secure Voice Telephone Terminal DVS-3600 is a state of-the-art scrambling device which provides the capability to transmit and receive secure voice simultaneously using advanced processing and scrambling techniques. The terminal DVS-3600 operates fully duplex on cellular radio telephone and standard 2-wire public telephone systems using two dimensional scrambling concept in the frequency domain. The user selected key variables exceed  $10^{12}$  combinations. The only required controls for the user are two buttons for "Secure" and "Clear" operation.



### **Digital Voice Cipher Terminal Vodacoder 2400**

The digital voice terminal Vodacoder 2400 uses an enhanced linear predictive coding algorithm LPC-10 to convert analogue speech signals to a continuous digital bit stream of 2400 bits/sec. The Vodacoder 2400 is designed to operate fully duplex on standard public 2-wire telephone networks.

The Vodacoder 2400 has very high intelligibility of the deciphered speech signal enabling positive voice recognition. The Vodacoder 2400 incorporates a sophisticated non-linear cipher algorithm which is based on a three level key system. Data transmission encryption capability for data rates of 2400 bits/sec is offered as an option.

Additional cipher equipment for:

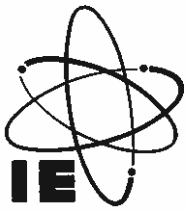
- facsimile
- computer
- Text/Telex
- customer specific designs



are available. For further information please contact our local representative or

**INTER ELEKTRONIK AG**

Zug, Switzerland



## Digital Voice Scrambler DVS-3000X

The DVS-3000X meets the stringent requirements for speech security in modern communication media such as radio, cables and combined networks.

The DVS-3000X is a three dimensional narrow band scrambler, using time division, time inversion and frequency dispersion. The DVS-3000X concept ensures transmission of scrambled signals over all radio transceivers and telephone lines with a minimum bandwidth of 2.7 kHz. Transmission path length and the differential time delays are uncritical.

The DVS-3000X incorporates a sophisticated synchronization scheme which will maintain long-term synchronization on the one hand and will adapt automatically to multi-user communication network. It will also cope with relay operated networks.

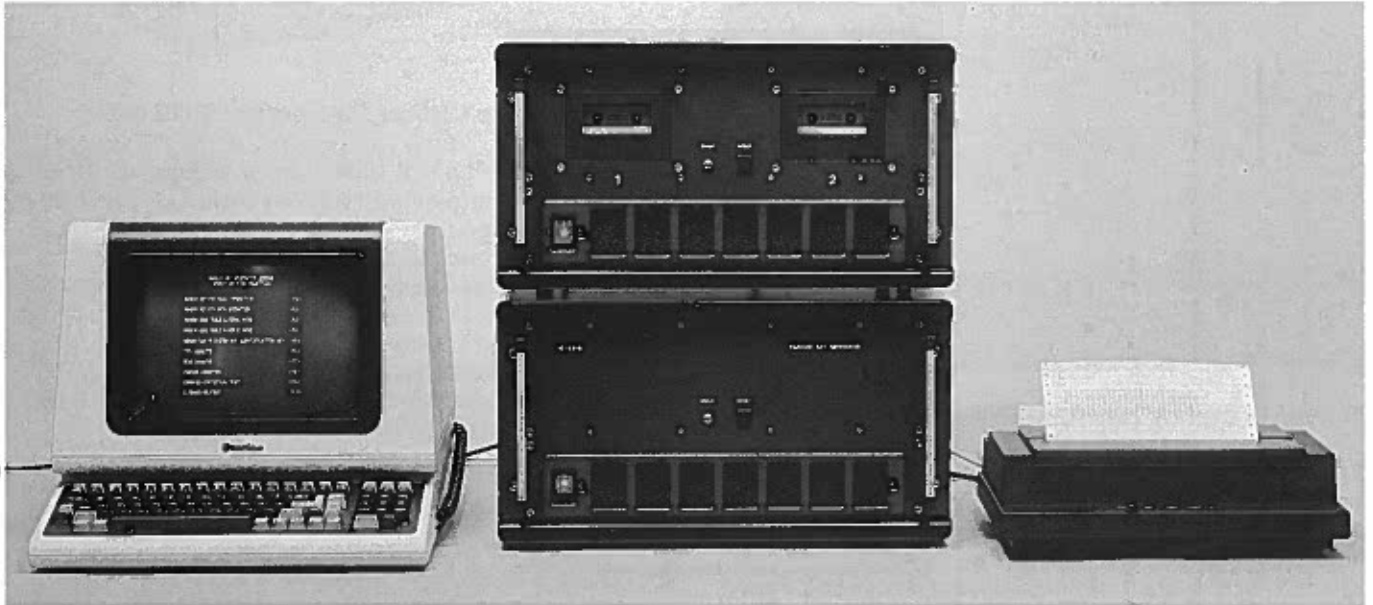
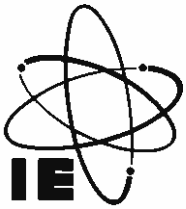


## Portable Digital Voice Scrambler DVS-3000XP

The DVS-3000XP is a portable unit which is fully compatible to the DVS-3000X for use on narrow band radio equipment. The DVS-3000XP incorporates the digital scrambler, loudspeaker and microphone. It is designed as a direct replacement of a standard radio mono-phone.

The DVS-3000XP is connected to the auxiliary micro and phone connectors of the radio equipment, requiring no modification.

The DVS-3000XP uses CMOS components for low power consumption. All in- and outputs are carefully RF-filtered to prevent any radiation or interference.



## Key Generator RKG-8500

The RKG-8500 is a state-of-the-art design of a One Time Key (OTK) generator. Our own experience in developing and building OTK equipment has resulted in our paying special attention to ensuring the best human-engineered operational procedures and straight forward repair and maintenance philosophies.

The RKG-8500 is designed to produce random key sequences for both Telex code (CCITT No. 2) or ASCII code with one particular white noise generator per bit level which, since they are unrelated to each other, avoid any relationship between the key sequences for each bit level. Sophisticated statistical test routines insure an output of non deterministic random sequences.



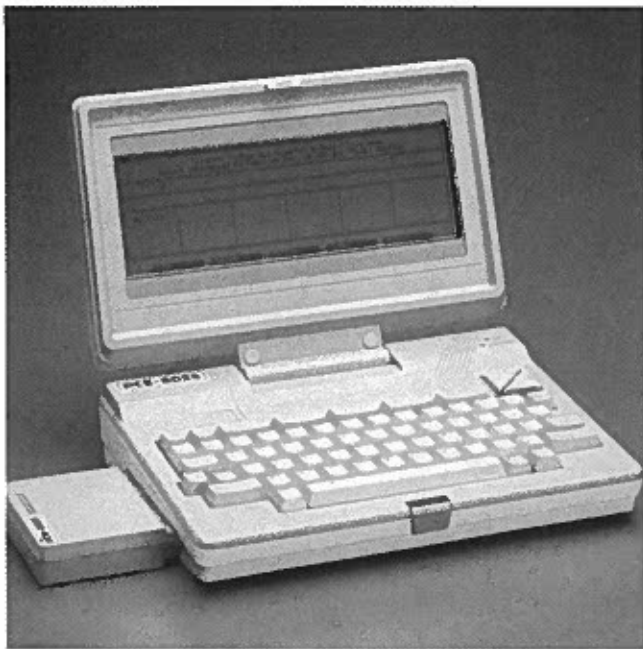
## Digital Telex Cipher Equipment DCE-8000C

The DCE-8000C is designed with modern microprocessor technology to meet with highest security requirements of professional users.

The One Time Key cipher concept is based on a non deterministic, completely random key sequence which is used once and only once to encipher a message. Since the basis of the keystream is not a mathematical algorithm, it

is impossible to break or penetrate the cipher message by either presently known or future code breaking methods.

The DCE-8000C can work both On- or Off-Line. In the On-Line mode sophisticated synchronization schemes automatically synchronize between the two stations. In the Off-Line mode the DCE-8000C provides cryptogram start marks and end of text information.



### Portable cipher terminal PCE-8025

The PCE-8025 is a portable cipher terminal with high level security designed to meet the requirements of government organizations and businesses.

The PCE-8025 cipher terminal has been designed for easy operation. All functions and operations are selected by one of the function keys. Due to this straight forward operator guidance, training is reduced to an absolute minimum. "User Friendliness" is the Byword.

The PCE-8025 incorporates a sophisticated electronic key generator which uses two new concepts in cryptographic design. First, it includes multiple separate and independent generator modules. Each bit level of plain text is assigned to a single module on a random basis for every new message to be enciphered. The second major innovation used by the electronic key generator is a new form of dynamic non-linear shift register control resulting in an entirely new key generator algorithm for each plain text message.

The standard PCE-8025 incorporates a powerful word processor, the cipher program and a telecommunication software. In addition the PCE-8025 can be compatible either to the telex (CCITT No.2) or ASCII alphabet.

Additional cipher equipment for:

- facsimile
- computer
- voice
- customer specific designs

are available. For further information please contact our local representative or



**INTER ELEKTRONIK AG**

Zug, Switzerland



### On-/Off-Line Cipher Equipment DCE-8035

The DCE-8035 is a high quality cipher equipment for either telex or data terminal applications designed for use by government services. The operational mode is selected by a switch. Since the cipher concept is identical to the PCE-8025, the two equipments are fully compatible.

The DCE-8035 is designed for easy operation with functions and operational modes selected directly from the keyboard by command sequences. LED's indicate the selected mode on the front panel.

The DCE-8035 is equipped with an internal test feature which checks out all vital components of the system for proper operations.

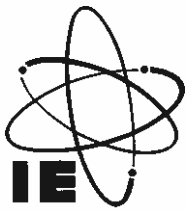


### Digital Cipher Unit DCE-8045

The DCE-8045 is a data cipher unit designed with micro-processor technology to meet the requirements of modern data communication, protecting text and data against unauthorized access. Without the knowledge of the secret keys, intercepted transmissions cannot be interpreted. Modern technology has enabled us to reach a milestone with regard to both security and price/performance ratio. The DCE-8045 offers an economic solution to enclose your valuable and private message in a secure shell.

The DCE-8045 uses the industry standard RS-232C interface and supports the most widely used transmission protocols such as Xon/Xoff, Modem 7, HDLC and SDLC.





## Digital Voice Scrambler DVS-3000X

The DVS-3000X meets the stringent requirements for speech security in modern communication media such as radio, cables and combined networks.

The DVS-3000X is a three dimensional narrow band scrambler, using time division, time inversion and frequency dispersion. The DVS-3000X concept ensures transmission of scrambled signals over all radio transceivers and telephone lines with a minimum bandwidth of 2.7 kHz. Transmission path length and the differential time delays are uncritical.

The DVS-3000X incorporates a sophisticated synchronization scheme which will maintain long-term synchronization on the one hand and will adapt automatically to multi-user communication network. It will also cope with relay operated networks.



## Portable Digital Voice Scrambler DVS-3000XP

The DVS-3000XP is a portable unit which is fully compatible to the DVS-3000X for use on narrow band radio equipment. The DVS-3000XP incorporates the digital scrambler, loudspeaker and microphone. It is designed as a direct replacement of a standard radio mono-phone.

The DVS-3000XP is connected to the auxiliary micro and phone connectors of the radio equipment, requiring no modification.

The DVS-3000XP uses CMOS components for low power consumption. All in- and outputs are carefully RF-filtered to prevent any radiation or interference.



### **Full Duplex Telephone Scrambler DVS-3600**

The Secure Voice Telephone Terminal DVS-3600 is a state-of-the-art scrambling device which provides the capability to transmit and receive secure voice simultaneously using advanced processing and scrambling techniques. The terminal DVS-3600 operates fully duplex on cellular radio telephone and standard 2-wire public telephone systems using two dimensional scrambling concept in the frequency domain. The user selected key variables exceed  $10^{12}$  combinations. The only required controls for the user are two buttons for "Secure" and "Clear" operation.



### **Digital Voice Cipher Terminal Vodacoder 2400**

The digital voice terminal Vodacoder 2400 uses an enhanced linear predictive coding algorithm LPC-10 to convert analogue speech signals to a continuous digital bit stream of 2400 bits/sec. The Vodacoder 2400 is designed to operate fully duplex on standard public 2-wire telephone networks.

The Vodacoder 2400 has very high intelligibility of the deciphered speech signal enabling positive voice recognition. The Vodacoder 2400 incorporates a sophisticated non-linear cipher algorithm which is based on a three level key system. Data transmission encryption capability for data rates of 2400 bits/sec is offered as an option.

Additional cipher equipment for:

- facsimile
- computer
- Text/Telex
- customer specific designs



are available. For further information please contact our local representative or

**INTER ELEKTRONIK AG**

Zug, Switzerland



### Portable cipher terminal PCE-8025

The PCE-8025 is a portable cipher terminal with high level security designed to meet the requirements of government organizations and businesses.

The PCE-8025 cipher terminal has been designed for easy operation. All functions and operations are selected by one of the function keys. Due to this straight forward operator guidance, training is reduced to an absolute minimum. "User Friendliness" is the Byword.

The PCE-8025 incorporates a sophisticated electronic key generator which uses two new concepts in cryptographic design. First, it includes multiple separate and independent generator modules. Each bit level of plain text is assigned to a single module on a random basis for every new message to be enciphered. The second major innovation used by the electronic key generator is a new form of dynamic non-linear shift register control resulting in an entirely new key generator algorithm for each plain text message.

The standard PCE-8025 incorporates a powerful word processor, the cipher program and a telecommunication software. In addition the PCE-8025 can be compatible either to the telex (CCITT No.2) or ASCII alphabet.

Additional cipher equipment for:

- facsimile
- computer
- voice
- customer specific designs



are available. For further information please contact our local representative or

**INTER ELEKTRONIK AG**

Zug, Switzerland



### On-/Off-Line Cipher Equipment DCE-8035

The DCE-8035 is a high quality cipher equipment for either telex or data terminal applications designed for use by government services. The operational mode is selected by a switch. Since the cipher concept is identical to the PCE-8025, the two equipments are fully compatible.

The DCE-8035 is designed for easy operation with functions and operational modes selected directly from the keyboard by command sequences. LED's indicate the selected mode on the front panel.

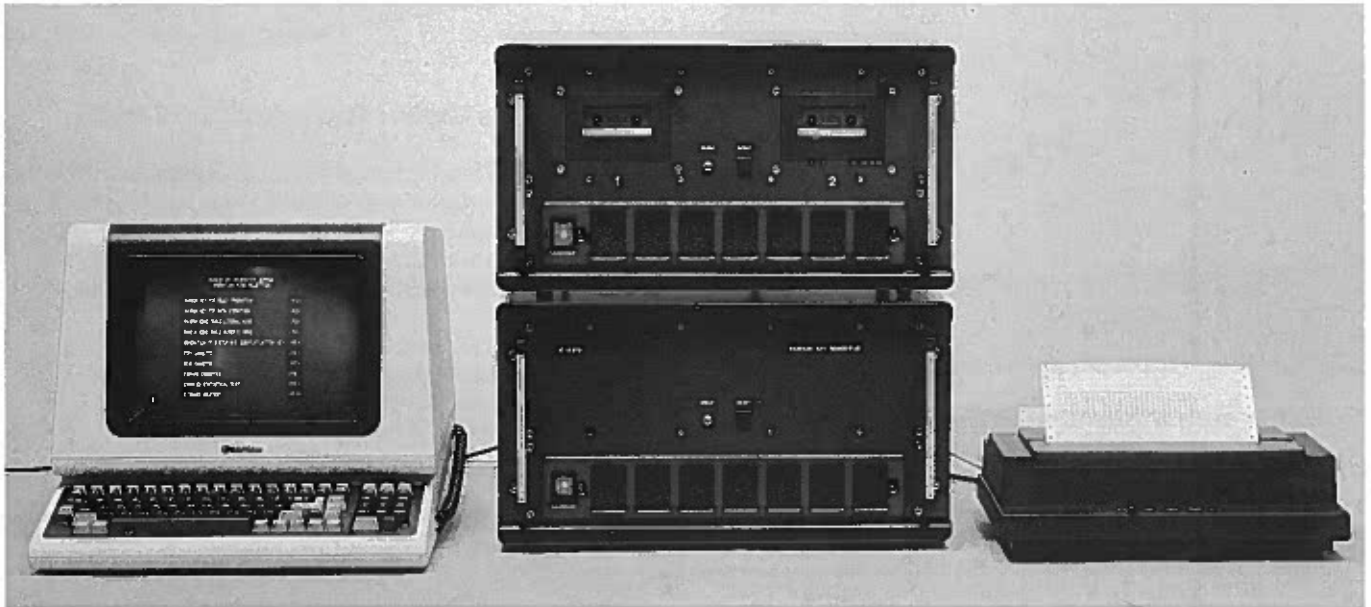
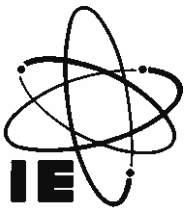
The DCE-8035 is equipped with an internal test feature which checks out all vital components of the system for proper operations.



### Digital Cipher Unit DCE-8045

The DCE-8045 is a data cipher unit designed with micro-processor technology to meet the requirements of modern data communication, protecting text and data against unauthorized access. Without the knowledge of the secret keys, intercepted transmissions cannot be interpreted. Modern technology has enabled us to reach a milestone with regard to both security and price/performance ratio. The DCE-8045 offers an economic solution to enclose your valuable and private message in a secure shell.

The DCE-8045 uses the industry standard RS-232C interface and supports the most widely used transmission protocols such as Xon/Xoff, Modem 7, HDLC and SDLC.



## Key Generator RKG-8500

The RKG-8500 is a state-of-the-art design of a One Time Key (OTK) generator. Our own experience in developing and building OTK equipment has resulted in our paying special attention to ensuring the best human-engineered operational procedures and straight forward repair and maintenance philosophies.

The RKG-8500 is designed to produce random key sequences for both Telex code (CCITT No. 2) or ASCII code with one particular white noise generator per bit level which, since they are unrelated to each other, avoid any relationship between the key sequences for each bit level. Sophisticated statistical test routines insure an output of non deterministic random sequences.



## Digital Telex Cipher Equipment DCE-8000C

The DCE-8000C is designed with modern microprocessor technology to meet with highest security requirements of professional users.

The One Time Key cipher concept is based on a non deterministic, completely random key sequence which is used once and only once to encipher a message. Since the basis of the keystream is not a mathematical algorithm, it

is impossible to break or penetrate the cipher message by either presently known or future code breaking methods.

The DCE-8000C can work both On- or Off-Line. In the On-Line mode sophisticated synchronization schemes automatically synchronize between the two stations. In the Off-Line mode the DCE-8000C provides cryptogram start marks and end of text information.