



Sec-Line/Phone 2000Xe

Users manual



Sec-Line/Phone 2000Xe is a high-level security encryption telephone from Ardy Electronics Ltd. This encryption phone can be installed to analogue phone lines worldwide. The telephone is a Siemens 2415 phone connected internally to the SLP2000Xe module. Green or Red indication for Secure or Insecure connection. The SLP2000Xe is fully compatible to the SLP2000Xe encryption unit.

Sec-Line/Phone 2000Xe uses Diffie Hellman with 1024 bit PKI handshake to start the secure connection and triple DES as per ANSI specification X9.52 as encryption algorithm with a 168-bit unique random synchronous encryption key negotiated for each call.

Sec-Line/Phone 2000Xe has to be installed at both sides of the communication in order to establish a secure connection. The unit can be used for both secure and clear phone calls. The internal rechargeable 6 volt battery makes it possible to place Secure calls even when the main power is lost.

Sec-Line/Phone 2000Xe connects in moments and offers the following features: Strong Encryption Technology, Clear Voice Quality, One Button Operation, Universal Telephone line Compatibility, and Portable in suite case.

SLP-2000Xe

Technical Data

Modem: 9600 bps CCITT V.32 full duplex, echo canceling
Voice encoder: ITU G.729 AS-CELP at 8kbps
Connection: analogue telephone line
Operation: full duplex
AC-power requirements: adapter 240/110VAC 50/60 Hz
DC-power requirements: 12 VDC 1000 mA

Encryption Data

Algorithm: Triple DES as per ANSI specification X9.52
Symmetric key length: 168-bit unique, random key
Symmetric key combinations: 10^{51}
PKI algorithm: Diffie-Hellman exponentiation
PKI encryption key length: 1024 bits
Public Key length: 256 bits
PKI Key combinations: 10^{308}

Other Data

Temperature range operating: 0 to 50 C
Temperature range storage: -20 to 75 C
Size: 280 x 190 x 60 mm
Weight: 2.0 kg
Cover: Plastic
Information display against "man in the middle attack": Option
Internal rechargeable Battery: 6 Volt 500mAh, Option

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SLP2000Xe

USERS MANUAL

SLP2000Xe

Sec-Line Phone 2000Xe

Personal Telephone Security



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1. Introduction

Overview

Congratulations on your purchase of your new personal telephone security device.

The SLP2000Xe is a standard analogue phone from Siemens EuroSet 2015 and has been designed to economically provide convenient and reliable secure voice communications through advanced voice compression and digital techniques.

The voice compression algorithm in the SLP2000Xe provides toll-quality communications between calling parties, making secure calls nearly transparent.

For ease of use, a single pushbutton alternately activates and de-activates the SLP2000Xe secure mode. The external OPTION display indicates in which mode the SLP2000Xe is operating. In secure mode the light diode on the front is GREEN. In non-secure mode the light diode is RED.

Parts Checklist

Upon unpacking your SLP2000Xe, inspect the contents for damage that may have occurred during shipping. Save all packing material until the unit is installed and working properly. Visually confirm that there are no broken parts and that the SLP2000Xe housing is free of obvious defects. If you suspect that parts are damaged or missing call your local rep.

A complete SLP2000Xe system includes:

1. SLP2000Xe device
2. SLP2000Xe to-telephone interface cord
3. AC Power adapter
4. Users manual

Optional international power adapter 110VAC is available. Please e-mail your local rep for pricing and delivery.

2. Installation and set-up

Introduction

This section provides information for installing your SLP2000Xe, configuring it for your specific telephone type and removing it from your telephone.

Installing the SLP2000Xe

To install your SLP2000Xe follow these steps:

- 1) Plug the supplied interface cord to the TELEPHONE jack on the rear of the SLP2000Xe.
- 2) Plug the AC power adapter cord into the SLP2000Xe POWER jack at the rear of the unit. Plug in the AC power adapter into a standard wall outlet (240 VAC, 50 Hz. Option 110 VAC, 60Hz).
- 3) If the SLP2000Xe is not on, press the **on/off** button at the back side of the SLP2000Xe.
- 4) The SLP2000Xe will display the power ON with the "RED" light diode on the front of the SLP2000Xe.
- 5) The internal Battery backup is 6 V with 500 mAh which will power the unit for about appr.1 hour if the main power is lost.

6)The internal battery is charging even if the SLP2000Xe unit is turned OFF.

3. Operation

Introduction

This section contains a description of the operation controls and provides operating instructions for the SLP2000Xe. The basic operations covered in this portion of the manual are:

- 1) Placing unencrypted telephone calls.
- 2) Securing a telephone call.

Operating controls

The SLP2000Xe has two keys for controlling its operation as follows



Figure 1. SLP2000Xe Operating controls

Power On/Off Switch at the rear of the unit – turns the SLP2000Xe power on and off.

Secure key – when in non-secure mode this key is used to secure a telephone call; when in secure mode this key returns the SLP2000Xe to non-secure mode.

Light Diode on the Secure key. When the unit is in secure mode the light diode is **GREEN**, when non-secure mode the light diode is **RED**.

Turning on the SLP2000Xe

To turn the SLP2000Xe on, push the **ON/OFF** switch at the rear of the unit. The light diode on the front of the SLP2000Xe will be red.

Non-secure calls

Non-secure calls can be placed whenever the SLP2000Xe is powered off or on.

Securing a call

To place a secure call, follow these steps:

1. Pick-up your telephones handset and dial your phone number normally. Make sure that your SLP2000Xe is turned on and the light diode on

the front of the SLP2000Xe is RED. Next, ensure that the far-end party has a SLP2000Xe or SLR2000Xe connected to his/her phone and that their unit is also powered on. **Hands free calls from your phone can not be done in secure mode.**

2. Set your telephones handset volume control if present to its normal (middle) position.
3. Agree on which one of you will press the **Secure** key to initiate secure mode.
Important: Only one party may initiate secure mode.

To enter secure mode, press the **secure**-key on the SLP2000Xe. If the far-end party is the initiator, you should not press the **secure**-key. Voice communications will be blocked while the SLP2000Xe is securing your phone call.

4. After 8 to 15 seconds the SLP2000Xe light diode placed at the Secure key will in **Secure mode** show **GREEN** colour.



5. If the external Display (Option) is installed to the SLP2000Xe the user can ask the far-end party to read the 5-digit key fingerprint displayed on

their SLP2000Xe. **If their key-fingerprint number is the same as yours, then the call is secured.** If the key fingerprints are not identical, press the **Secure**-key and repeat steps 3 through 6. If the key-fingerprints continue to differ from each other, then your call is most likely under a cryptographic attack by a malicious third party and your privacy may be compromised. If you find yourself in this situation, you and the far-end party should both attempt to move to different locations before trying to place another secure call.

5. To return to non-secure mode **one** party must press the **Secure**-key (this need not be the same party that initiated the transition to secure mode). The other party will then be alerted by the presence of a non-secure warning tone (3 beeps in rapid succession). The SLP2000Xe will briefly display a message indicating that it is transitioning to non-secure mode. When the transition is complete, the display will read, **"Non-secure mode"**.

Occasionally, drastic changes in telephone line conditions can occur during a typical phone call. If this happens the SLP2000Xe may not be able to maintain line security, in which case it will alert both users with a non-secure warning tone (3 beeps in rapid succession). At this point steps 3

through 7 should be repeated in order to re-establish security.

NOTES:

To prevent the interruption of call security described above, observe the following restrictions when attempting to activate or operate the SLP2000Xe in secure mode:

- Do not use the speakerphone on your telephone.
- Do not press any dialling keys on your telephone.
- Do not place the secure call on hold.
- Do not pick up an extension on the same line.

Performing a Self-Test

Your SLP2000Xe automatically performs a self-test whenever it is powered ON. The light diode on the front of the SLP2000Xe shall be red and then press the SECURE button the light diode shall be green for 12 seconds and then go back to red, then the self test is done. If the light diode doesn't change to green the unit need service.

4. Maintenance/troubleshooting

Maintenance

The only maintenance that the SLP2000Xe requires is periodic cleaning of the display and exterior surfaces. These surfaces may be cleaned using a non-abrasive cleaner and a soft lint-free cloth. Do not apply cleaner directly to the SLP2000Xe surfaces but rather apply cleaner to the cloth and then wipe the SLP2000Xe.

Troubleshooting

Your SLP2000Xe has been designed and manufactured to provide years of trouble-free operation. If a problem develops during a secure call, it can usually be resolved by pressing the **Secure**-key and re-initiating the secure call.

When either party presses the **Secure**-key to enter non-secure mode, the other party will be alerted by the presence of a non-secure warning tone (3 beeps in rapid succession). This ensures that both parties are aware that the call is no longer secured. The light diode at the front of the SLP2000Xe will show RED colour when this transition is complete.

If you experience problem with your SLP2000Xe, re-check all connections and attempt operation again. If the problem persists, call your local rep. Table 1 provides additional troubleshooting guidelines.

Table 1. Troubleshooting Guidelines

Problem	Possible Cause
The Option display remain blank	<ol style="list-style-type: none"> 1.The power is off 2.Power adaptor is not plugged into AC outlet 3. Power cord is not connected to the unit
SLP2000Xe is not able to secure your call.	<ol style="list-style-type: none"> 1.The phone volume settings are set to high. 2. Another phone is installed to the same line is in use. 3.The phone code is incorrect. Check the settings using the table in Appendix A 4.The phone connection is poor quality, place the call again. 5. Both parties are attempting to initialize secure mode. 6.The remote phone is cordless or has a switch in the handset.
Far end party can not hear you during a secure call	<ol style="list-style-type: none"> 1.The far end party's earpiece volume is set too low

	<p>3.The SLP2000Xe phone type cord is incorrect.</p> <p>4.The two party's don't use the same SLP2000Xe system.</p>
	1.The earpiece volume is not adjusted
Secure speech sounds noisy or raspy	<p>1.The earpiece volume is adjusted to high</p> <p>2.The far-end party's code on the SLR2000Xe is incorrect, see table for change of codes.</p>
Self test Failure	Turn OFF the unit on the rear of the SLP2000Xe and turn it on again. If this problem remain please contact your local rep.

APPENDIX B - SPECIFICATIONS

Security Features

Traffic Algorithm:

Triple DES as per ANSI specification X9.52

Traffic key :

168-bit unique, random key negotiated for each call

Public key algorithm:

Diffie-Hellman exponentiation.

Public key modulus:

1024 bits

Public key exponent:

256 bits.

Key fingerprint display (Option) prevents man-in-the-middle attacks.

Modem

9600 bps CCITT V.32 full duplex, echo cancelling.

Vocoder

ITU G.729 ASA-Celp at 8kbps

Physical characteristics

280mm x 190mm x 6 mm 2.0 kg

Environmental

Operating temperature: 10 gr C to 40 gr C

Storage temperature: -20 gr C to 50 gr C

Humidity: 10-95% non-condensing.

Power

Wall mount power adapter

220-240 VAC, 50 Hz

Power dissipation < 6 watts

Optional wall mount international power adapter

115VAC, 60 Hz

Internal Battery 6 V rechargeable.

2004-09-29