AUGUST 1998

MC119A MC120AE
MC119AE MC121A
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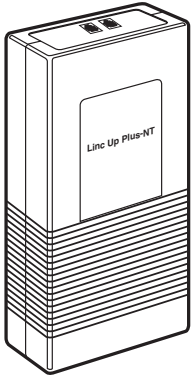
Linc Up Plus–NT
Linc Up Plus–ATT
Linc Up Plus–RLM



CUSTOMER SUPPORT INFORMATION

Order **toll-free** in the U.S.: Call **877-877-BBOX** (outside U.S. call **724-746-5500**)
FREE technical support 24 hours a day, 7 days a week: Call **724-746-5500** or fax **724-746-0746**
Mailing address: **Black Box Corporation**, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: **www.blackbox.com** • E-mail: **info@blackbox.com**

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FEDERAL COMMUNICATIONS COMMISSION
and
CANADIAN DEPARTMENT OF COMMUNICATIONS
RADIO FREQUENCY INTERFERENCE STATEMENT

Class B Digital Device. This equipment has been tested and found to comply with the limits for a Class B computing device pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. This equipment generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or telephone reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult an experienced radio/TV technician for help.

CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To meet FCC requirements, shielded cables and power cords are required to connect this device to a personal computer or other Class B certified device.

This digital apparatus does not exceed the Class B limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe B prescrites dans le Règlement sur le brouillage radioélectrique publié par le ministère des Communications du Canada.

NORMAS OFICIALES MEXICANAS (NOM)
ELECTRICAL SAFETY STATEMENT

INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.

2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.

3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.

4. Todas las instrucciones de operación y uso deben ser seguidas.

5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.

6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.

7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.

8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.

9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.

10. El equipo eléctrico deber ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.

11. El aparato eléctrico deberá ser connectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.

12. Precaución debe ser tomada de tal manera que la tierra fisica y la polarización del equipo no sea eliminada.

13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.

14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.

15. En caso de existir, una antena externa deberá ser localizada lejos de las lineas de energia.

16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.

17. Cuidado debe ser tomado de tal manera que objectos liquidos no sean derramados sobre la cubierta u orificios de ventilación.

18. Servicio por personal calificado deberá ser provisto cuando:

    A: El cable de poder o el contacto ha sido dañado; u

    B: Objectos han caído o líquido ha sido derramado dentro del aparato; o

    C: El aparato ha sido expuesto a la lluvia; o

    D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o

    E: El aparato ha sido tirado o su cubierta ha sido dañada.

FCC REQUIREMENTS FOR TELEPHONE-LINE EQUIPMENT

1. The Federal Communications Commission (FCC) has established rules which permit this device to be directly connected to the telephone network with standardized jacks. This equipment should not be used on party lines or coin lines.

2. If this device is malfunctioning, it may also be causing harm to the telephone network; this device should be disconnected until the source of the problem can be determined and until the repair has been made. If this is not done, the telephone company may temporarily disconnect service.

3. If you have problems with your telephone equipment after installing this device, disconnect this device from the line to see if it is causing the problem If it is, contact your supplier or an authorized agent.

4. The telephone company may make changes in its technical operations and procedures. If any such changes affect the compatibility or use of this device, the telephone company is required to give adequate notice of the changes.

5. If the telephone company requests information on what equipment is connected to their lines, inform them of:

    a. The telephone number that this unit is connected to.

    b. The ringer equivalence number.

    c. The USOC jack required: RJ-11C.

    d. The FCC registration number.

    Items (b) and (d) can be found on the unit's FCC label. The ringer equivalence number (REN) is used to determine how many devices can be connected to your telephone line. In most areas, the sum of the RENs of all devices on any one line should not exceed five (5.0). If too many devices are attached, they may not ring properly.

6. In the event of an equipment malfunction, all repairs should be performed by your supplier or an authorized agent. It is the responsibility of users requiring service to report the need for service to the supplier or to an authorized agent.

CERTIFICATION NOTICE FOR EQUIPMENT USED IN CANADA

The Canadian Department of Communications label identifies certified equipment. This certification means that the equipment meets certain telecommunications-network protective, operation, and safety requirements. The Department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. In some cases, the company's inside wiring associated with a single-line individual service may be extended by means of a certified connector assembly (extension cord). The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be made by an authorized Canadian maintenance facility—in this case, your supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may

give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines, and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas.

CAUTION

Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

The LOAD NUMBER (LN) assigned to each terminal device denotes the percentage of the total load to be connected to a telephone loop which is used by the device, to prevent overloading. The termination on a loop may consist of any combination of devices, subject only to the requirement that the total of the load numbers of all the devices does not exceed 100.

1. Specifications

Standards — V.34

Speed — Up to 33,600 bps

Compliance — UL®, FCC Class B, Part 68, CSA

Power — 18 VAC adapter, available in 110- (MC119A, MC120A, MC121A) or 220-VAC (MC119AE, MC120AE, MC121AE) models

Connection — MC119A: Requires standard digital Northern Telecom® wall jack; MC120A: Requires standard AT&T® or Lucent wall jack; MC121A: Requires standard ROLM® wall jack

Size — 7.4"H x 3.9"W x 1.8"D (18.8 x 9.9 x 4.6 cm)

Weight — 17 oz. (482 g)

2. Introduction

2.1 Linc Up Plus–NT (MC119A)

The Linc Up Plus–NT easily connects to your Northern Telecom phone system wall jack, providing a quick and inexpensive analog connection for your desktop fax modem, fax machine, or any analog device which would normally connect to an analog phone jack. The Linc Up supports full V.34 standards for reliable transmissions up to 33.6 kbps with autodial and auto-answer capabilities.

IMPORTANT

The Linc Up Plus–NT works with Northern Telecom PBXs only. Do not attempt to connect it to anything other than a Northern Telecom PBX.

SPECIFICATIONS

The Linc Up Plus–NT allows analog telephone equipment to be used on a Nortel Meridian 1 or Norstar digital PBX telephone line. It can operate with or without a digital telephone attached. A jumper, which is configured at the factory before the Linc Up is shipped to you, determines whether the Linc Up operates in u-law (US) or A-law mode. This jumper must be set correctly for the PBX equipment being used.

When connected with a telephone to the PBX port, the analog equipment and the digital telephone share the same B channel; only one can be used at a time.

The Linc Up Plus–NT has 3 RJ-11 ports:

- "WALL SOCKET" connects to Meridian 1 PBX (Option 11 to 81) or SL-100 or Norstar digital port (wall jack).
- "DIGITAL PHONE" connects to Meridian digital phone (M2006, M2008, M2616, M2317, M2009, M2112, M2018) or Norstar digital phone.
- "ANALOG MODEM" connects to tone-dialing analog phone equipment including phones and fax/modems.

The power connector, labeled "DC," connects to the supplied AC adapter, 18 VDC @ 250 to 300 ma. output.

When no power is applied to the Linc Up Plus–NT, the digital phone is connected to the PBX line.

2.2 Linc Up Plus–ATT (MC120)

The Linc Up Plus–ATT easily connects to your Lucent Definity or System 75/85 phone system at the office wall jack, providing a quick and inexpensive analog connection for your desktop fax modem, fax machine, or any analog device which would normally connect to an analog phone jack. The Linc Up supports full V.34 standards for reliable transmissions up to 33.6 kbps with autodial and auto-answer capabilities.

IMPORTANT

The Linc Up Plus–ATT works with Lucent (AT&T) Definity or System 75/85 PBXs only. Do not attempt to connect it to anything other than a Lucent (AT&T) Definity or System 75/85 PBX.

SPECIFICATIONS

The Linc Up Plus–ATT allows analog telephone equipment to be used on a Lucent (AT&T) Definity or System 75/85 digital PBX telephone line. The Linc Up can operate with or without a digital telephone attached. A jumper, which is configured at the factory before the Linc Up is shipped to you, determines whether the Linc Up operates in u-law (US) or A-law mode. This jumper must be set correctly for the PBX equipment being used.

When connected with a telephone to the PBX port, the analog equipment and the digital telephone share the same B channel; only one can be used at a time.

The Linc Up Plus–ATT has 2 RJ-45 ports and 1 RJ-11 port:

- "WALL SOCKET" (RJ-45) connects to Lucent (AT&T) Definity or System 75 PBX.
- "DIGITAL PHONE" (RJ-45) connects to Lucent digital phone (7401, 7404, 7405, 7406Plus, 7407, 7407Plus, 7410, 7434, 7444, 8403, 8410, and 8413).
- "ANALOG MODEM" (RJ-11) connects to tone-dialing analog phone equipment including phones and fax/modems.

The power connector, labeled "DC," connects to the supplied AC adapter, 18 VDC @ 300 ma. output.

When no power is applied to the Linc Up Plus–ATT, the digital phone is connected to the PBX line.

2.3 Linc Up Plus–RLM (MC121A)

The Linc Up Plus–RLM easily connects to your Siemens®

Rolm phone system at the office wall jack, providing a quick and inexpensive analog connection for your desktop fax modem, fax machine, or any analog device which would normally connect to an analog phone jack. The Linc Up supports full V.34 standards for reliable transmissions up to 33.6 kbps with autodial and auto-answer capabilities.

IMPORTANT

The Linc Up Plus–RLM works with Siemens Rolm PBXs only. Do not attempt to connect it to anything other than a Siemens Rolm PBX.

SPECIFICATIONS

The Linc Up Plus–RLM allows analog telephone equipment to be used on a Siemens Rolm digital PBX telephone line. The Linc Up can operate with or without a digital telephone attached. A jumper, which is configured at the factory before the Linc Up is shipped to you, determines whether the Linc Up operates in u-law (US) or A-law mode. This jumper must be set correctly for the PBX equipment being used.

When connected with a telephone to the PBX port, the analog equipment and the digital telephone share the same B channel; only one can be used at a time.

The Linc Up Plus–RLM has 3 RJ-11 ports:

- "WALL SOCKET" connects to Siemens Rolm PBX.
- "DIGITAL PHONE" connects to Siemens digital phone (100, 200, 300, 400, and 600 series).
- "ANALOG MODEM" connects to tone-dialing analog phone equipment including phones and fax/modems.

The power connector, labeled "DC," connects to the supplied AC adapter, 18 VDC @ 300 ma. output.

When no power is applied to the Linc Up Plus–RLM, the digital phone is connected to the PBX line.

2.4 Incoming and Outgoing Calls

2.4.1 Incoming Calls

The Linc Up Plus detects a ring signal from the PBX and generates a ring signal for the "ANALOG MODEM" port and for the "DIGITAL PHONE" port. If the digital phone is taken off hook, the ring signal to the "ANALOG MODEM" port is stopped and a normal phone call ensues. If the equipment connected to the

"ANALOG MODEM" port is taken off hook, the ring signal to the "DIGITAL PHONE" port is stopped and the "ANALOG MODEM" port is connected to the PBX until the equipment connected to the "ANALOG MODEM" port goes on hook.

2.4.2 Outgoing Calls (Linc Up Plus–ATT and Linc Up Plus–RLM)

When the equipment connected to the "ANALOG MODEM" port goes off hook, the Linc Up Plus detects this, disables the digital telephone's ability to transmit, generates an off-hook message to the PBX, and connects the analog equipment to the PBX line. If the digital telephone is already in use and the analog equipment goes off hook, the connection established by the digital telephone will not be terminated, but the digital telephone's ability to transmit will be disabled, and anything transmitted by the analog equipment will be sent to the connection established by the digital telephone.

The Linc Up Plus detects the analog equipment going on hook, generates an on-hook message to the PBX, and logically reconnects the digital phone to the PBX. If the digital phone is also off hook, the call is not terminated.

2.4.3 Outgoing Calls (Linc Up Plus–NT)

When the equipment connected to the "ANALOG MODEM" port goes off hook, the Linc Up Plus detects this, disables the digital telephone's media stream to the PBX, generates an off-hook message to the PBX, and connects the analog equipment media stream to the PBX line. If the digital telephone is already in use and the analog equipment goes off hook, the connection established by the digital telephone will not be terminated.

The Linc Up Plus detects the analog equipment going on hook, generates an on-hook message to the PBX, and logically reconnects the digital phone to the PBX. If the digital phone is also off hook, the call is not terminated.

2.4.4 Phone Emulation (Linc Up Plus–NT)

If the Linc Up Plus–NT is operating without a digital telephone attached then it must emulate a phone by replying to certain PBX messages. The Linc Up Plus is set up to reply to the PBX messages as an M2009 telephone for Meridian 1 PBXs.

3. Installation

The Linc Up Plus can be located on the desktop, behind the desk, on the floor, or hung on the wall.

3.1 Connection

Figure 3-1 shows the connection diagram.

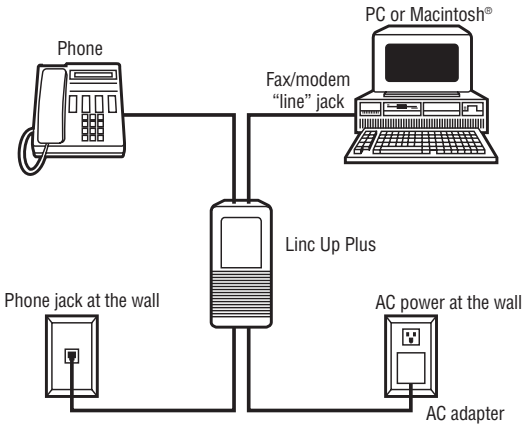

Figure 3-1. Connection Diagram.

3.1.1 For Linc Up Plus–ATT and Linc Up Plus–RLM

1. Connect the PBX wall jack to the Linc Up Plus jack labeled "WALL SOCKET."

2. Connect the digital telephone (if one is being used with the Linc Up Plus) to the Linc Up Plus jack labeled "DIGITAL PHONE."

NOTE

When reconnecting your digital telephone to the Linc Up Plus, the telephone may have to reset itself prior to being used. This reset process should take approximately 30 seconds.

If the handset of the digital phone is taken off hook after the reset process, a dial tone should be heard in the handset. If no dial tone is heard check to ensure that connections are in accordance with steps 1 and 2 above.

3. Connect your analog equipment (modem, fax, etc.) to the Linc Up Plus jack labeled "ANALOG MODEM."

4. Plug the supplied AC adapter into an AC outlet and connect the small round plug to the Linc Up Plus jack labeled "DC."

NOTE

After you apply power to the Linc Up Plus, the telephone will go through another reset cycle. This reset process may take 30 to 60 seconds. Do not try to use the digital phone or your analog device until the phone has finished resetting itself. After the phone has reset, your Linc Up Plus is now connected and ready to use. Lift the handset of the telephone and listen for a dial tone. If you do not hear a dial tone, hang up the phone, check your connections, and make sure they are in accordance with the previously described procedure. If the connections are made as described above, lift the handset again and listen for a dial tone. If you do not hear a dial tone on the digital telephone, contact Technical Support.

3.1.2 For Linc Up Plus–NT

1. Plug the supplied AC adapter into an AC outlet and connect the small round plug into the Linc Up Plus jack labeled "DC."

2. Connect the PBX wall jack to the Linc Up Plus jack labeled "WALL SOCKET."

3. Connect the digital telephone (if one is being used with the Linc Up Plus) to the Linc Up Plus jack labeled "DIGITAL PHONE."

4. Connect your analog equipment (modem, fax/modem, or fax machine) to the Linc Up Plus jack labeled "ANALOG MODEM."

Your Linc Up Plus is now connected and ready to use. Lift the handset of the telephone and listen for a dial tone. If you do not hear a dial tone, check your connections and make sure they are in accordance with the previously described procedure. If the connections are made as described above and you do not hear a dial tone on the digital telephone contact Technical Support.

NOTE

When reconnecting your digital telephone to the Linc Up Plus, the telephone may have to reset itself prior to being used. This reset process should take approximately 60 seconds.

When connecting the Linc Up Plus without a digital telephone to a Meridian 1 PBX port, the PBX port should be set up for connection to a M2009 telephone.

NOTE

Your office PBX jack may be able to be configured to support a digital telephone and Linc Up Plus on two separate ports enabling the use of the telephone and the Linc Up Plus simultaneously. For further information contact Technical Support.

3.2 Incoming Calls

The Linc Up Plus will detect a ring signal from the PBX and generate a ring signal at both the "ANALOG MODEM" and the "DIGITAL PHONE" ports of the Linc Up Plus. The Linc Up Plus will not discriminate between an incoming call from outside the PBX and an intercom call; both will generate a ring signal at the "ANALOG MODEM" and "DIGITAL PHONE" ports. When an incoming call is detected, the call will be answered by the device (either the equipment connected to the "ANALOG MODEM" jack or the phone connected to the "DIGITAL PHONE" jack of the Linc Up Plus) taken off hook first.

If you install the Linc Up Plus with a telephone connected to the "DIGITAL PHONE" jack, and a modem, fax/modem, fax machine, or other analog device that wakes up and answers (goes off hook) when a ring signal is presented, the auto-answer capability should be disabled or set for a high number of rings (4 rings or more). Otherwise when a voice call is coming in, your analog equipment will answer the call and interfere with the receipt of your incoming voice calls. Refer to the manual for your analog equipment or software for procedures to disable or increase the

number of rings the equipment will answer on.

NOTE

The Linc Up Plus will not discriminate between voice and data/fax calls.

4. Operation

4.1 Making Voice Calls

Connecting the digital telephone to the Linc Up Plus will not change or affect the operation of the digital telephone set. You make voice calls exactly the same way you did before you installed the Linc Up.

4.2 Making Data or Fax Calls

Data or fax calls will be made with your modem, fax/modem, or fax machine (analog equipment). When making calls with your analog equipment connected to the Linc Up Plus, the digital telephone (if one is connected to the "DIGITAL PHONE" jack of the Linc Up Plus) should be on hook. The call is made by the analog equipment the same way as if it were connected to an analog phone jack. For example, if you're using a modem, you would use the communication software to place the call. If you have to dial a prefix such as a 9 or some other numbers to make an outside call on the telephone, you must program that prefix in your communication software. See the manual for your communication software for instructions on the use of a dial prefix.

The digital telephone set must remain on hook during the entire data or fax call. Lifting the digital telephone's handset during a data or fax call can interrupt the data or fax transmission.

- You cannot use the telephone set when you are sending data or faxes; the telephone handset must remain on hook.
- The device connected to the Analog Modem jack must be configured for tone dialing. The Linc Up Plus will not recognize pulse or rotary dialing.

4.3 Using The Linc Up Plus for Contact-Management Applications

When using the Linc Up Plus in conjunction with contact-management applications:

1. Leave your digital telephone set on hook.
2. Command your contact-management software to dial the contact's phone number.
3. After the software has dialed the number, lift the handset of the digital telephone from the cradle (take the telephone off hook) and issue a quit or

hang-up command to the modem through the communication software. You will now be able to carry on a voice conversation with the party you called.

- Some contact-management software will have you click the "OK" box or some other icon/box to hang up the modem.

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