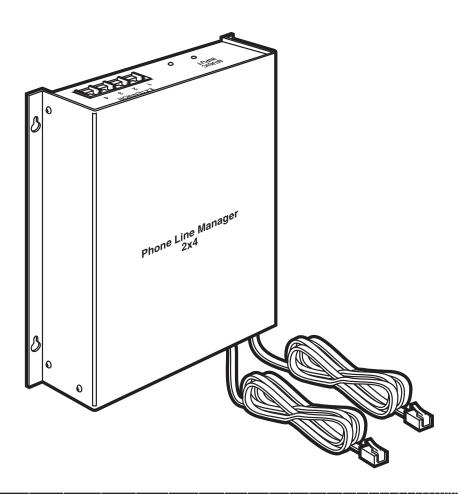# BLACK BOX®
NETWORK SERVICES

Phone Line Manager 2 x 4

FEDERAL COMMUNICATIONS COMMISSION
AND
INDUSTRY CANADA
RADIO FREQUENCY INTERFERENCE STATEMENTS

FCC Registration Number: 6DAUSA-32390-KH-E

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

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

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

FCC PART 68 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.

UL Compliance

The Phone Line Manager is UL listed in the U.S. and Canada: ITE 58 NL, File Number E188176.

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.

TRADEMARKS

The trademarks mentioned in this manual are the sole property of their owners.

CONTENTS

1. Specifications

Ringer Equivalency — 0.28

Temperature — Operating: 32 to 120°F (0 to 49°C);
   Storage: 32 to 150°F (0 to 66°C)

Connectors — (4) RJ-11 female; (2) 6-ft. (1.8-m) pigtail cables

Music — Mono, 2.5 mm jack

Programming — DTMF

Fuse — 250 V, 0.5 Amp

Power — 110 VAC, 60 Hz, 0.5 A

Size — 2.5"H x 9"W x 8.5"D (6.4 x 22.9 x 21.6 cm)

Weight — 3.8 lb. (1.7 kg)

2. Setup and Preparation for Use

2.1 Choosing a Suitable Place to Put Your Phone Line Manager 2x4

The Phone Line Manager 2x4 is designed to be mounted on a wall. Select a place conveniently near where the telephone company lines enter the building residence in which you wish to install it, with a 3-pin, 115-VAC, 60-Hz mains power outlet. Place the equipment indoors in an upright position in a dry, cool place that permits constant air circulation around the unit.

We recommend that you install lightning surge protectors on each of the 2 incoming telephone lines and connect a power surge protector between the AC power outlet and the Phone Line Manager.

CAUTION

The Phone Line Manager 2x4 is intended for indoor use only, in a dry, cool, well-ventilated environment.

2.2 Where Not to Install Your Phone Line Manager 2x4

Do not install your Phone Line Manager horizontally on a shelf or other place where it can be covered by clothing, other material, or objects that will stop air circulation around the unit.

Do not install the unit near heaters, air-conditioners, water, chemicals, or refrigerators.

Do not install the equipment in direct sunlight, or where it might be exposed to excessive heat, moisture, or dust.

Do not connect your Phone Line Manager to electrical outlets that are controlled by wall switches or automatic timers. Disruption of power will interrupt your telephone service.

Do not connect your Phone Line Manager to electrical outlets on the same circuit as large appliances or other equipment that might disturb the power supply.

Do not install the equipment near TV or radio receiving equipment; the unit may cause interference. See FCC notice on **pages 1** and **2**.

3. Connecting the Phone Line Manager

The Phone Line Manager has two 6-ft (1.8-m) telephone cords, marked Line 1 and 2, on the cabinet, with modular connectors for connection to the incoming telephone company lines. A bank of 4 modular telephone jacks, marked EXTENSION 1 through 4, are located at the other end of the cabinet. These are used to connect the telephone instruments to the Phone Line Manager via telephone line cords or other direct wiring.

CAUTION

NEVER connect the extension jacks 1 through 4 to the telephone-company wires or jacks or to PBX station lines.

Only a qualified telephone installation technician should install direct extension wiring or modify the existing telephone wiring for connection of telephone sets or other equipment to the extension line jacks.

Telephone Sets

Use only modern push-button telephone sets. The heavy, older type push button sets with mechanical ringers are not recommended for use with this equipment.

4. Operation: Making and Receiving Calls

4.1 General

The Phone Line Manager 2x4 is designed to provide simple user-friendly operation without using special numerical codes to activate features. The four inside lines are numbered 1 through 4, and the access digits for the two telephone-company lines are "7" for line 1, "8" for line 2, or "9" for automatic seizure of the first available line. All other operations require either a single or double flash of the hook-switch, or flash button, if there's one on the phone you're using.

4.2 Generating A Flash

The hook-switch is the mechanical switch, present on most standard analog telephone sets, on which the handset rests when not in use. You can generate a flash when the handset is in use by pressing the hook-switch manually and releasing it. In order to create a flash that the Phone Line Manager can recognize, don't press and release the hook-switch very rapidly, or hold it down for more than half a second.

You can also generate a flash by pressing the "flash button" found on many types of phones.

A double flash is required for many operations. Don't generate the two flashes in rapid succession, but execute them as two distinct operations, allowing the first flash to be completed before the second flash is generated. This is particularly important when a flash-button is used, since a single flash only may be generated if they are run together.

4.3 Internal Calls: Lines 1 to 4

INTERNAL LINE-TO-LINE CALL

Lift the telephone handset and listen for dial tone. Dial the single-digit internal line number (1–4) you wish to call. The called line will ring, and you will hear ringback tone in the your receiver. When the called party picks up the ringing line extension, the call is completed.

4.4. External Calls: Telephone-Company Lines 1 and 2

4.4.1 INCOMING CALLS

Incoming calls from either line 1 or line 2 will ring all idle phones, unless otherwise restricted in accordance with one or more programmable features.

The first extension to answer will seize the call. All other phones will cease ringing and return to their former idle state.

4.4.2 OUTGOING CALLS

You may originate a call to an outside (telco) line by dialing "9" to seize the first available line. On seizing a line, a second dial tone will be returned by the telephone company central office. When you receive the external dial tone, you may proceed to set up a call in the usual manner. If both lines 1 and 2 are in use, a busy tone will be returned to you.

4.4.3 CALL TRANSFER

Flash the hook-switch, or flash button, once, to receive internal dial tone and place the other party, or outside line, on hold. On an internal call, either party can initiate this feature. However, on an outside-line call, only the inside line can originate a call transfer. When you receive a dial tone, dial the required extension number. You can transfer the call by flashing the hook-switch twice with about 1 second between each flash All three parties will be joined together, and the caller can hang-up, thus transferring the call. Alternatively, if, during the conversation with the first party on hold, the second called party hangs up, the two original parties will be reconnected.

4.4.4 CONSULTATION HOLD

If you're connected to another extension or line, you may be placed on hold by a single flash. When you receive a dial tone, dial the required new extension number. You may return to the original connection with a single flash. You may go back and forth between the two parties by using a single flash each time.

4.4.5 CONFERENCE CALL

Up to four extensions may be included in either an internal conference call or a conference with an outside line. An extension may be added to the call by using a single flash to get dial tone, then dialing the required extension number. All three parties may be connected by a double-flash. Further inside lines may be added to the conference by repeating the foregoing steps. Any party may leave the

conference at any time by hanging up the handset. If an outside line is part of the conference and hangs up, all inside lines in the conference will remain connected.

4.4.6 CANCELING A CALL

If you dial an inside line and wish to cancel for any reason, you can cancel the call by a single flash, to receive dial tone. When you receive dial tone, flash once more to return to a party on hold, or dial again as required.

After dialing the access digit for a line ("9", "7," or "8"), cancel the call by hanging up and not by using a flash, as the line will not be released.

4.5 Internal and External Calls

4.5.1 UNATTENDED CALL TRANSFER

When you answer an internal call, or incoming call from an outside line, and you wish to transfer the call to another Extension without waiting to see if the party answers before making the connection as described under Call Transfer, the call may be transferred in the following manner. Flash once; when you hear the dial tone, dial the required extension, then hang up. The called extension will ring, ringback will be returned to the original caller, and the call will be transferred when the called extension picks up the handset. You may repeat unattended transfer as required.

4.5.2 CALL WAITING (TELEPHONE-COMPANY FEATURE)

If call waiting is provided on either line by the interconnecting telephone company, you can access a second call on the line when you receive the call waiting signal by a single flash for local dial tone. When you receive a dial tone, dial "9," and a timed flash signal will be sent to connect the waiting call and put the first caller on hold. The original connection can be resumed by a single flash of the hook-switch or flash button. Note that the transmitted signal to switch the connection is delayed approximately 1½ seconds, so you must wait a short time for the switch to take place. In this mode you can toggle back and forth between the two callers via a single flash. Double flash to return to the normal mode of operation while remaining connected to the present party, thus ending the Telco call waiting feature access.

4.5.3 CENTREX OPERATION

The Phone Line Manager is fully compatible with Centrex operation offered by the Regional Bell Operating Companies. To invoke the various Centrex features, you must extend a timed flash to the central office. When connected to the line, single-flash to receive dial tone and dial "9" to extend the timed flash to the central office to invoke Centrex feature operation. Proceed with the Centrex feature code as normal. For the next flash required by Centrex, flash the hook-switch once (a delay of approximately 1 1/2 seconds occurs before the flash is transmitted). Further flashes may be generated in this manner as required. To end the Centrex feature sequence, double-flash the hook-switch.

4.6 User-Selectable Features

4.6.1 GENERAL

The Phone Line Manager has a number of "user-selectable" features for use in operating the system. One feature, local do not disturb, may be enabled or disabled from any phone connected to the specific extension line to which the feature is to be applied. Other selectable features may only be enabled or disabled from a phone connected to extension line 1. These features may not be controlled by any other phone.

4.6.2 LOCAL DO NOT DISTURB

The local do not disturb feature, when enabled, prevents the phone from ringing in response to any incoming calls from either of the two outside lines. You can make outgoing calls in the normal manner. Internal calling remains in operation.

To enable local do not disturb, lift the telephone handset and wait for inside dial tone, then dial "* *" (Star-Star) and hang up. To disable the feature and return to normal service, dial "* #" (Star-Pound). Local do not disturb will only affect the specific phone from which the feature was invoked, and any other phone connected to that specific extension line.

4.7 Master User-Selectable Features

4.7.1 GENERAL

There are six master user-selectable features by which use of the phones connected to each extension line can be determined, plus a feature applying distinctive ringing for incoming calls from each of the two outside lines. These features may only be enabled or disabled from a phone connected to extension line 1. **Table 4-1** contains a list of the features applicable to extension lines 1 through 4.

Table 4-1. List of Features that Apply to Lines 1 through 4.

Feature Number	Feature
1	Incoming Line 1 Calls only
2	Incoming Line 2 Calls only
3	No Incoming Calls from Lines 1 or 2
4	Restrict Outgoing Calls to Line 1 only
5	Restrict Outgoing Calls to Line 2 only
6	No Outgoing Calls Lines 1 or 2

To select a feature to apply to a specific phone, input the following sequence:

Star (*)
Extension Line (1 - 4)
Feature Number (1 - 6)
Star (*) for Enable, or Pound (#) for disable

For example, to enable Feature 4 (Restrict Outgoing Calls to Line 1 only) on phones on Extension Line 3, enter * 3 4 *, then hang up . To disable the same feature on the same phone, enter * 3 4 #. A number of features can be enabled or disabled for any phones in sequence by flashing the hook-switch once after you enter each sequence. If a mistake is made during entry, flash the hook-switch once to cancel. After each flash, wait for dial tone before commencing the next sequence.

NOTE
When Features 1 though 6 are enabled, internal calling between all extension lines remains fully operational for all phones.

4.7.2 DISTINCTIVE RINGING

The default setting for ringing for incoming calls from both Lines 1 and 2 is standard North American ringing cadence of 2 seconds on and 4 seconds off. Activating the distinctive ringing feature will result in standard ringing for incoming calls on line 1, and European style (double ring) ringing for incoming calls on line 2. To enable distinctive ringing, enter * 9 1 *. To disable this feature, enter * 9 1 #.

4.8 Music on Hold

4.8.1 MUSIC CONNECTION

Music or a recorded message can be made available to both internal, and external users using the outside lines, when on hold. The music or message source, typically a radio or tape recorder, should be connected to the Phone Line Manager using a 2.5-mm mono phono plug (a plug with 2 contacts) inserted into the jack labeled MUSIC on the end panel of the unit.

4.8.2 SETTING THE VOLUME

Use two phones connected to any two convenient extension lines—for example, extension lines 1 and 2. Use phone 1 to call phone 2. Answer phone 2 to complete the call. Flash the hook-switch once to put phone 2 on hold, and receive dial tone on phone 1. Listen to phone 2 while you set the music or message volume to a comfortable background listening level.

4.9 Caller ID

You may order Caller ID from the local telephone company to which the Phone Line Manager is connected. Caller ID is passed directly to the extension lines for operation with analog caller ID display units or with caller ID display telephones.

The Phone Line Manager is designed to work only with caller ID provided by central offices employing standard North American ringing cadence of 2 seconds on and 4 seconds off.

4.10 Dial Tone Timeout

When a phone is receiving dial tone, the dial-tone signal will time out and change to busy tone after approximately 40 seconds. You can restore dial tone by a single flash.

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