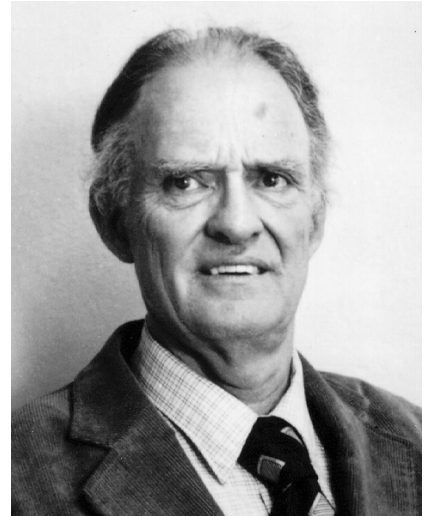


Acknowledgement

In 1963, Dr. Robert H. Weitbrecht, an American physicist who was deaf, developed an acoustic coupler that could send and receive teletypewriter signals over the telephone lines. His invention, the Weitbrecht Modem, enabled people who are deaf to use the telephone for the first time.

While modern technology now makes it possible to build advanced microcomputer devices like your new Ultratec text telephone, the Weitbrecht modem remains the major technological breakthrough that began telecommunications for the deaf.

Ultratec wishes to acknowledge the importance of Dr. Weitbrecht's contribution to the welfare of people who are deaf the world over.



Dr. Robert H. Weitbrecht, 1920–1983, inventor of the first TTY modem.

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SAFETY INSTRUCTIONS

General safety

When using your Minicom IV, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury to persons.

1. Read and understand all instructions.
2. Follow all warnings and instructions marked on the Minicom IV.
3. Unplug the Minicom IV from the wall outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use the Minicom IV near water, for example, near a bath tub, wash bowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool.
5. Do not place the Minicom IV on an unstable cart, stand, or table. The product may fall, causing serious damage to the Minicom IV.
6. This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your dealer or local power company.
7. Do not allow anything to rest on the power cord. Do not locate the Minicom IV where the cord will be damaged by persons walking on it.
8. Do not overload wall outlets and extension cords. This overloading can result in a fire or electric shock.
9. To reduce the risk of electric shock, do not disassemble the Minicom IV, but take it to a qualified service person when service or repair work is required. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect re-assembly can cause electric shock when you use the unit again.
10. Avoid using a telephone (except a cordless type) during an electrical storm. There is a remote risk of electric shock from lightning.
11. Unplug the Minicom IV from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - a. When the power supply cord or plug is damaged or frayed.
 - b. If liquid has been spilled into the Minicom IV.
 - c. If the Minicom IV has been exposed to rain or water.
 - d. If the Minicom IV does not operate normally by following the operating instructions. Adjust only those controls, that are covered by the operating instructions because improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the Minicom IV to normal operation.
 - e. If the Minicom IV has been dropped and/or damaged.
 - f. If the Minicom IV exhibits a distinct change in performance.
12. Do not use the telephone to report a gas leak in the vicinity of the leak.

Battery safety

Caution: To reduce the risk of fire or injury to persons, read and follow these instructions:

1. Use only the type and size battery specified in the battery instructions for your unit.
2. Do not dispose of the batteries in a fire. Cells may explode. Check local codes for possible special disposal instructions.
3. Do not open or mutilate the batteries. Released electrolyte is corrosive and may cause damage to the eyes or skin. It may be toxic if swallowed.
4. Exercise care in handling batteries in order not to short them with conducting materials such as rings, bracelets, and keys. The battery or conductor may overheat and cause burns.

Save these instructions

INTRODUCTION

Welcome to the Minicom IV™ TTY from Ultratec. You can use the Minicom IV with any standard telephone and handset to make and receive text telephone calls. Your new Minicom IV has the following special features:

Turbo Code® communication protocol. This feature transmits signals to other Turbo Code TTYs as fast as you type. Turbo Code also lets you interrupt the other person's typing.

Auto ID™ alerting system. Auto ID automatically alerts the answering party that you are calling by TTY.

The **rechargeable batteries** allow you to use your Minicom IV when you are traveling or during a power failure.

The **signal light** on the left side of the display tells you what is happening on the telephone line, such as whether it is ringing or busy.

The **power light**, below the signal light, glows steadily red when you have power.

Please note that in this manual TTY, TDD, and text telephone all refer to the same device.

Overview of the Minicom IV™

Top view

Acoustic cups

On/Off switch

Display

Signal light

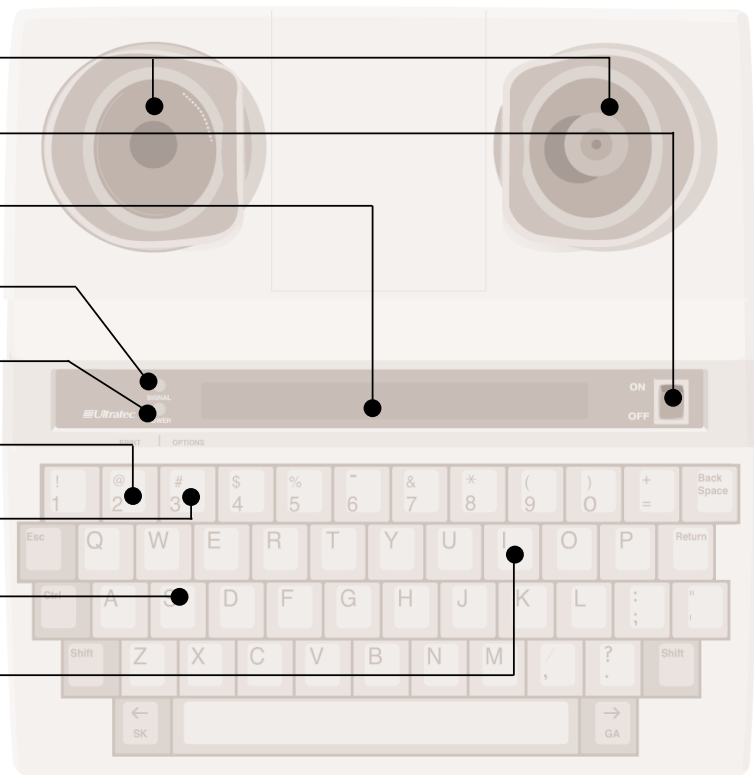
Power light

Printer on/off

Options key

Sensitivity key

Interrupt key

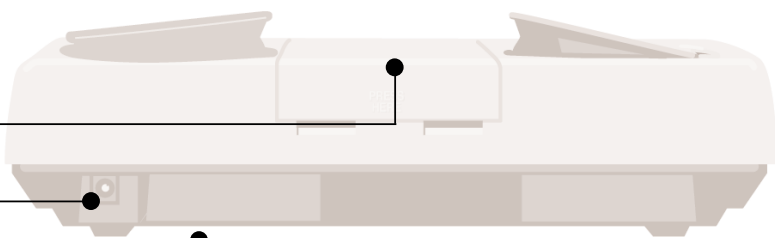


Back view

External printer port
(inside)

AC adapter jack

Battery compartment
(underneath)

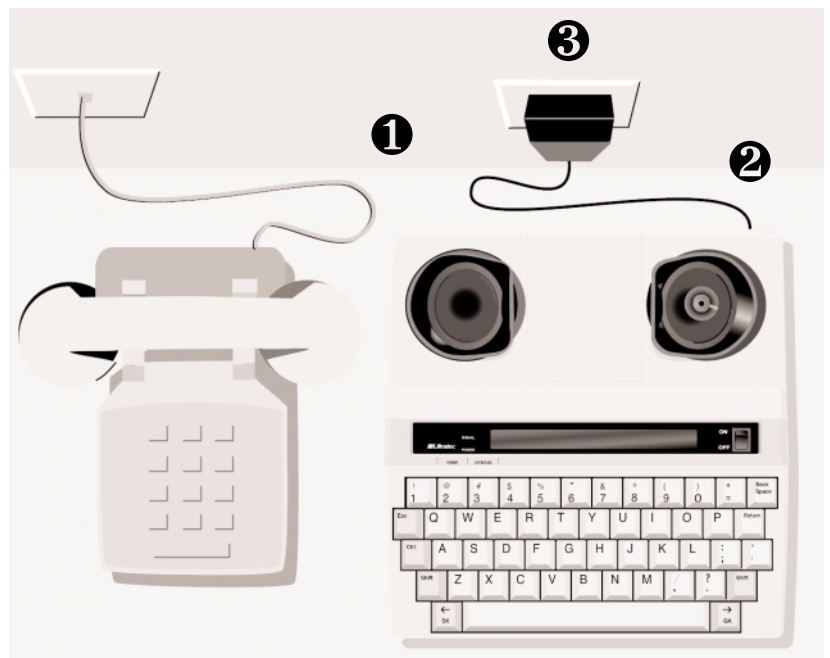


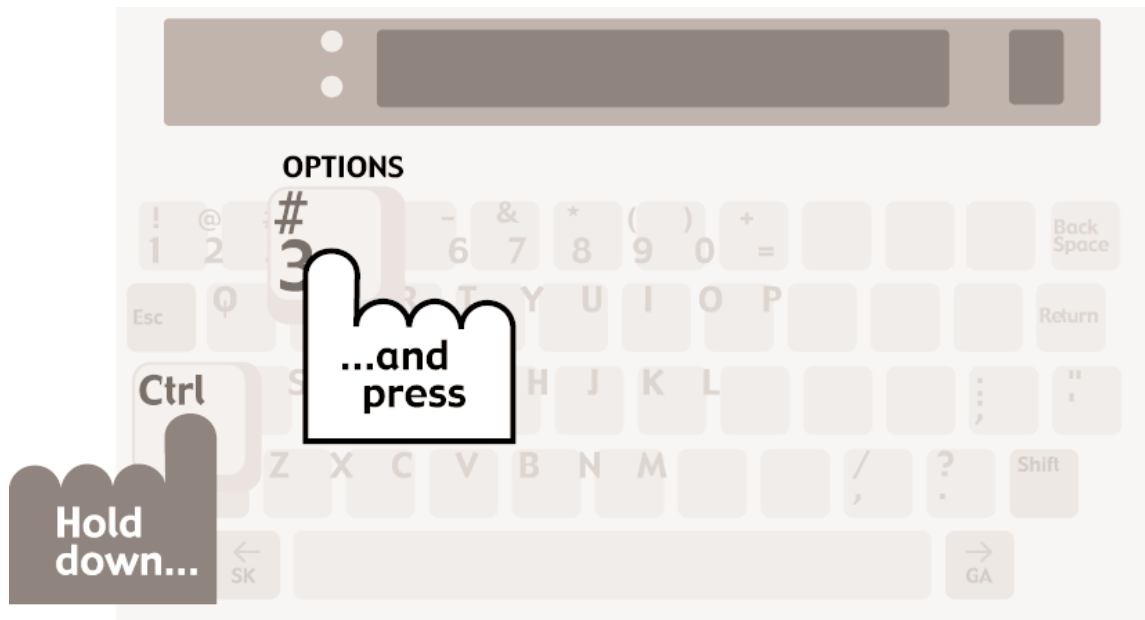
1 SET-UP

All you need to do to set up the Minicom IV is plug it in! You must plug in the AC adapter for 24 hours to charge the batteries. After the batteries are charged, you can leave the AC adapter plugged in all the time unless you need to use the batteries during a power outage or while traveling.

Be sure to pull the plastic tab out of the battery compartment on the bottom of the Minicom IV before you plug in the AC adapter.

1. Place the Minicom IV next to a telephone.
2. Plug the AC adapter cord into the Minicom IV.
3. Plug the AC adapter into a wall outlet.





About the control key Ctrl

The control key Ctrl gives instructions to the Minicom IV when you hold it down and press a function key. There are four function keys: Interrupt, Options, the location of each key.

You must **hold down** the Ctrl key and then press the other key to use a function. For example, to use options, you must hold down the Ctrl key while you press the 3 key.

When you use a function, you can use the **escape key** Esc to quit whatever you are doing and save changes.

About Auto ID™ (Sending ID)

The Auto ID™ feature alerts a hearing person that you are calling from a TTY by sending several audible TTY tones over the telephone line every few seconds. Auto ID helps emergency service centers such as 911 detect that you are calling by TTY.

Auto ID starts up when you turn on your Minicom IV and continues until you begin a conversation. If you are on-line, you will see SENDING AUTO ID every time the Minicom IV sends out tones. Auto ID will also begin sending tones whenever no one types for a few minutes during a conversation. It will continue until someone starts typing.

Turning off Auto ID Ctrl+3

You can turn off Auto ID at any time by following these steps:

1. Press the options key (Ctrl+3). You will see PRINT (UP/LOW) CASE on the display.
2. Press the Return key until you see AUTO ID (ON) on the display.
3. Press the Spacebar to change the setting to OFF.
4. Press the Esc key to save the new setting and leave options or press the Return key to save and go to the next option.

Note: When you turn off Auto ID, it stays off and will not send tones until you turn it on again. This means that an emergency service center such as 911 cannot use Auto ID tones to detect TTY call when Auto ID is off.

2 CALLING

This chapter explains how to make and answer calls. It also describes Turbo Code and how to interrupt the other person during a conversation.

TTY etiquette

During a TTY call, there are four commonly used abbreviations that you and the other person can type to help your conversation along: **GA**, **Q**, **SK**, and **GA or SK**.

GA means “go ahead.” Type **GA** or press the key when you want the other person to begin typing. When you see **GA** on the display, it is your turn to type.

Q means “question.” Some people prefer to type **Q** instead of a question mark because it saves time and is easier to type.

SK means “stop keying.” Type **SK** or press the key when you want to end your conversation. When you see **SK** on the display, it means that the other person is finished with the conversation.

Type **GA or SK** when you are finished with the conversation but think the other person may have something to add. **GA or SK** is a convenient way to tell the other person that you are finished unless he or she has more to add.

For more TTY abbreviations that you can use during a conversation, see *Conversation etiquette* on the back cover of this manual.

Signal light



This is the signal light.

The signal light shows what is happening on the telephone line in the following ways:

| Signal light | Telephone line |
|---------------------|--|
| Steadily on | Dial tone |
| Flashing slowly | Telephone ringing |
| Flashing quickly | Telephone busy |
| Flickering | Person picking up the telephone or speaking. |

Dialing tips

Dial the telephone number on your telephone as you would for any call.

In an office, type a 9 or other number to reach an outside line.

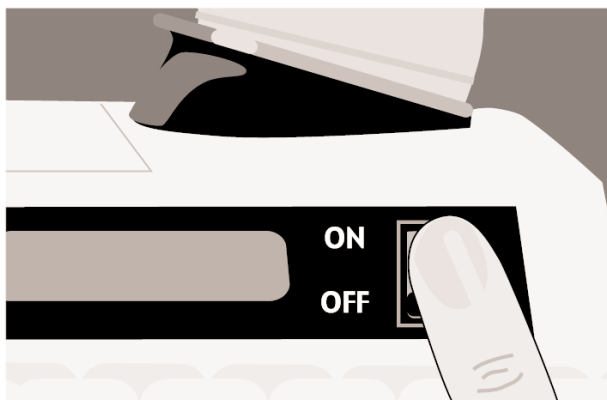
For long distance, include a 1 and the area code.

Making a call

1. Put the telephone handset in the acoustic cups on the Minicom IV. Make sure the telephone cord is on the left side.



-
2. Turn on the Minicom IV.



-
3. Dial the telephone number you are calling.



-
4. When you see an answer on the display, type a greeting.

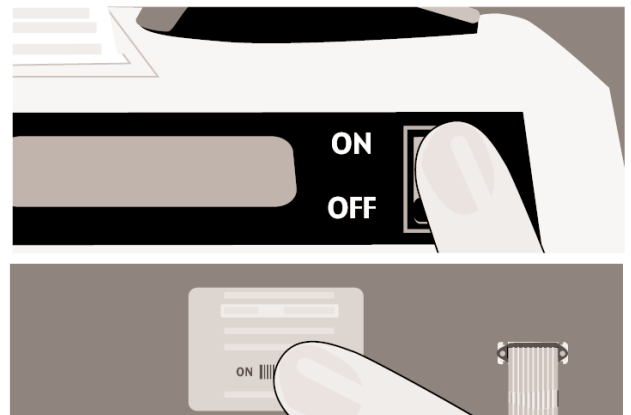
When your conversation is finished, turn off the Minicom IV and replace the telephone handset.

Answering a call

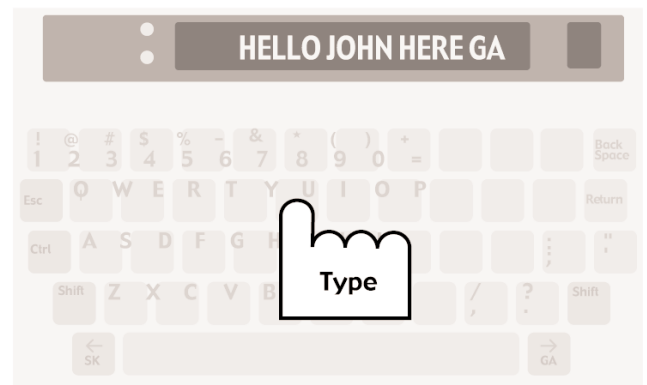
1. Put the telephone handset in the acoustic cups on the Minicom IV. Make sure the telephone cord is on the left side.



2. Turn on the Minicom IV.



3. Type a greeting and wait for an answer. When you are finished with your conversation, turn off the Minicom IV and replace the telephone handset.



3 ADVANCED CALLING

About Turbo Code®

Turbo Code is an enhanced version of Baudot code. It sends and receives signals with other Turbo Code TTYs as fast as you type and allows you to interrupt the other person during a conversation. The Minicom IV automatically connects in Turbo Code or Baudot code, depending on which code the other TTY is using. The Minicom IV uses Turbo Code when you connect with another Turbo Code TTY.



When you see this dot on the display screen, the Minicom IV is connected in Turbo Code.

Using Turbo Code interrupt **Ctrl+I**

When you connect with another Turbo Code TTY, you can interrupt the other person while he or she is typing. To interrupt, hold down the **Ctrl** key and press the **I** key. You will see INTERRUPT REQUESTED on your display screen. The other person will see INTERRUPT on the display. The other person can either stop typing and let you type or ignore your interruption request and continue.

The interrupt feature only works with TTYs that have Turbo Code and when the other person is typing continuously. If nothing happens when you request an interrupt, the other person may not be typing continuously or may not have the TTY interrupt feature.

Turning off Turbo Code interrupt **Ctrl+3**

You can stop the other person from sending interrupts to you by following the steps below:

1. Press the options key (**Ctrl+3**). You will see PRINT (UP/LOW) CASE on the display.
2. Press the **Return** key until you see INTERRUPT (ON) on the display.
3. Press the **Spacebar** to change the setting to OFF.
4. Press the **Esc** key to save the new setting and leave options.

Turning off interrupt does not affect outgoing interrupts. You can still send an interrupt to the other person.

Turning Turbo Code on and off **Ctrl+Shift+B**

Turbo Code is used automatically during a call. However, you can turn Turbo Code off at any time by pressing **Ctrl+Shift+B**. The Minicom IV will use Turbo Code again after you turn the power off.

You can also turn off Turbo Code so that the Minicom IV will not use it until you turn Turbo Code on again. Follow these steps:

1. Hold down the **Ctrl** key and press the **3** key. You will see PRINT (UP/LOW) CASE on the display.
2. Press the **Return** key until you see TURBO CODE (ON) on the display.
3. Press the **Spacebar** to change the setting to OFF.
4. Press the **Esc** key to save the new setting and leave options or press the **Return** key to save and go to the next option.

Follow the steps above to turn Turbo Code on again.

Setting the Baudot code baud rate Ctrl+3

Each time you turn on the Minicom IV, the Baudot code baud rate is set to the auto setting. This setting uses whichever code is needed to answer a call by detecting what code the other TTY is using. If you need to specify the code that the Minicom IV uses, you can set it so that it will only use either 45.5-baud or 50-baud Baudot code. When you do, the Minicom IV will not try to use other codes. Follow these steps to change the Baudot code baud rate setting:

1. Press the options key (Ctrl+3). You will see PRINT (UP/LOW) CASE on the display.
 2. Press the Return key until you see BAUDOT (AUTO) BAUD on the display.
 3. Press the Spacebar to choose one of the following:
 - AUTO to automatically use either 45.5 baud Baudot code or Turbo Code.
 - 45 to use only 45.5-baud Baudot code. Most Baudot TTYs use 45.
 - 50 to use only 50-baud Baudot code. TTYs purchased in Australia, New Zealand, and South Africa use 50-baud Baudot code.
- Note:** In order to use 50-baud Baudot code, you must change the setting to 50. The Auto setting does not use 50-baud Baudot code.
4. Press the Esc key to save the new setting and leave options or press the Return key to save and go to the next option.

The Baudot code baud rate setting always returns to auto when you turn off the Minicom IV.

4 CARE & REPAIR

Ordinary care of your Minicom IV requires replacing the batteries when they no longer hold a full charge. You may be able to solve other problems by reading the troubleshooting section of this manual.

The battery compartment is the only user-serviceable part. Any repair work should be done by a qualified service person. Trying to repair the unit yourself will void your warranty and may damage the Minicom IV. The repair section explains how to get help.

About the batteries

The Minicom IV uses batteries when you unplug the AC adapter or the power fails. The batteries will provide 45 to 60 minutes of normal use when fully charged. When the power light blinks, you have about 10 minutes of battery power left. Use only six AA rechargeable NiCad batteries in your Minicom. Do not use alkaline batteries. They will damage your unit.

Charging the batteries

The AC adapter supplies electricity to the Minicom IV and charges the built-in batteries. Leaving the AC adapter plugged in will not harm the Minicom IV or the batteries.

The first time you set up your Minicom IV, leave the AC adapter plugged in for 24 hours to charge the batteries. You can use the Minicom IV at the same time.

Checking the batteries

The batteries lose their ability to hold a full charge if you keep the Minicom IV plugged in all the time. If you want to be sure the batteries stay fully-charged, check them once a month. Follow these steps to check the batteries:

1. Unplug the AC adapter.
2. Turn on the Minicom IV for 30 minutes. (You can still use it for calls during this time.)
3. If the power light glows steadily after 30 minutes, the batteries are fine. Plug the AC adapter back in and turn off the Minicom IV. If the power light blinks within 30 minutes, exercise the batteries.

Exercising the batteries

1. Leave the Minicom IV on with the AC adapter unplugged until the power light flashes.
2. Plug in the AC adapter for 24 hours. (You can use the Minicom IV for calls during this time.)
3. Unplug the AC adapter and leave the Minicom IV on for 30 minutes.
4. Repeat steps 1 to 3 until the power light glows steadily after 30 minutes without the AC adapter.

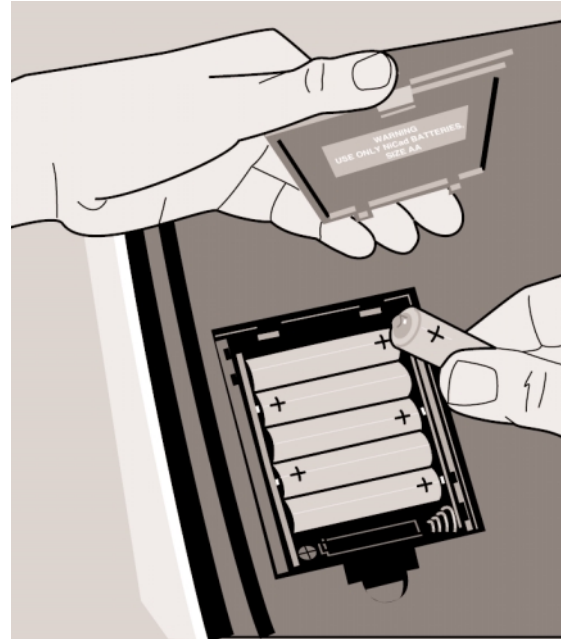
Replacing the batteries

Replace the batteries every two or three years, or when they always run down within 30 minutes and exercising does not help. To change the batteries, turn over the Minicom IV and follow these steps:

1. Take off the battery cover by pushing in on the latch and lifting up.
2. Take out the old batteries and put in new ones. Be sure the + and - ends match the symbols on the holder.
3. Replace the battery cover.

CAUTION! Rechargeable batteries contain nickel and cadmium. Do not burn or puncture them, because they could release toxic material that could injure you.

Do not dispose of them in household trash. For information about recycling or proper disposal, consult your local trash collection or disposal organization.



Troubleshooting

Poor reception

- **The display shows numbers and symbols instead of words.**

Press the `Spacebar`. If that does not help and you have a Turbo Code connection, try changing from Turbo Code to Baudot code by holding down the `Ctrl` and `Shift` keys and pressing the `B` key.

- **An incoming message does not make sense.**

Press the handset down firmly into the acoustic cups on the Minicom IV.

The telephone connection may be weak or the other TTY is sending the wrong signals. If you are using Baudot code, press the sensitivity key (hold down the **Ctrl** key and press the **S** key). The display says HIGH SENSITIVITY. Sensitivity returns to normal when you press the sensitivity key again or turn off the Minicom IV.

Power

- **The batteries run down too soon.**

You may not be regularly using your Minicom IV on battery power, or the batteries are old. See *About the batteries* on page 16.

- **The Minicom IV does not turn on when you press the On/Off switch, or the power light blinks, even when the AC adapter is plugged in.**

Be sure the electrical outlet is working. Be sure you are using the correct AC adapter—it should be a 9VDC, 650 mA AC adapter. If you still have a problem, contact your dealer or Ultratec.

You may have plugged the AC adapter into a switch-controlled outlet. Try an outlet that you are sure is not controlled by a switch.

Resetting the Minicom IV

Resetting the Minicom IV returns all options to their default settings. Follow these steps to reset the Minicom IV:

1. Press the left **Shift** key, the right **Shift** key, and the **Ctrl** key all at the same time. You will see RESET Y/N.
2. Press the **Y** key to reset. You will see MINICOM IV IS RESET!

Press the **N** key if you change your mind and decide not to reset the Minicom IV.

Repair

Calling for help

If your Minicom IV is not working, we may be able to help you solve the problem over the telephone. Call Ultratec at these numbers:

(608) 238-5400 (Voice/TTY)

Fax: (608) 238-3008

You may also contact us via email at the following internet address:

service@ultratec.com

Sending the Minicom IV for repair

If you need to send the Minicom IV to our service center, follow these steps:

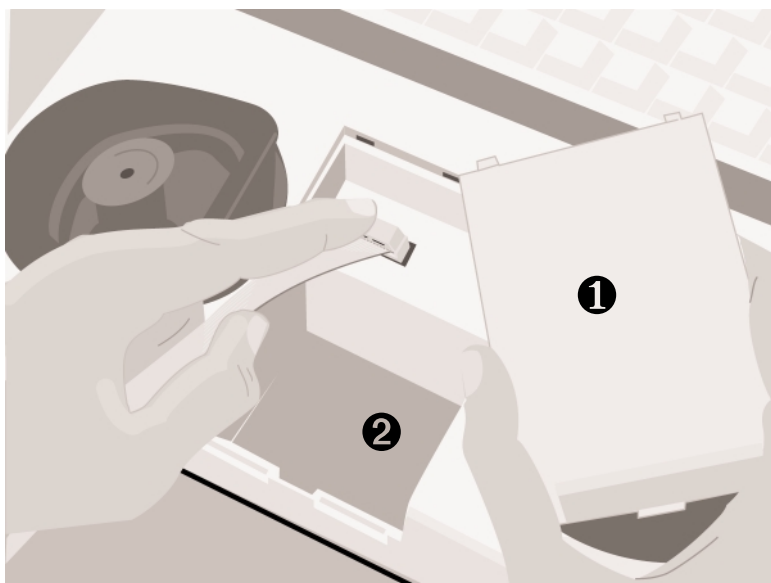
1. Pack it in the original shipping carton or a similar sturdy box.
2. Include a note that describes the problem you are having. The note will help our technicians find the problem.
3. Insure the Minicom IV for shipment. Ultratec or an authorized Ultratec repair center is not responsible for damage during shipping to the center.
4. Send the Minicom IV to:

Ultratec National Service Center

5901 Research Park Blvd.

Madison, WI 53711

5 USING AN EXTERNAL PRINTER



You can connect a parallel dot-matrix printer to your Minicom IV if you want to print out your conversations. A Centronics-type printer with continuous roll feed will work best.

Setting up an external printer

You will need a special cable to connect your external printer to the Minicom IV. Contact Ultratec or your dealer for more information.

Follow these steps to connect your printer to the Minicom IV:

1. Take off the printer port cover on the Minicom IV.
2. Plug the printer cable into the Minicom IV printer port.
3. Plug the other end of the printer cable into your printer.
4. Plug the printer's electrical plug into an electrical outlet.
5. Turn the printer on.

Turning the printer on and off **Ctrl** + **2**

You can turn printing on and off from the Minicom IV keyboard by using the print key (**Ctrl** + **2**). You will see PRINTER ON or PRINTER OFF on the display.

Other printer information

Your printer will not print until it receives a full line of 80 characters. You can start a new printed line by pressing the **Return** key. Also press the **Return** key to print the last line of a conversation before you turn the Minicom IV off.

The printer will print everything you type in lowercase (small) letters and everything the other person types in uppercase (CAPITAL) letters. You can set the Minicom IV so that everything is printed in uppercase letters. Follow these steps:

1. Press the options key (**Ctrl** + **3**). You will see PRINT (UP/LOW) CASE on the display.
2. Press the **Spacebar** to change the setting to UPPER.
3. Press the **Esc** key to save the setting and leave options.

STICKY KEYS

Ordinarily, when you use the **Ctrl** or **Shift** keys, you must hold down either key while you press another key. If you have trouble pressing two keys at once, the Sticky Keys feature lets you use the **Ctrl** and **Shift** keys by pressing one key at a time.

To turn on Sticky Keys, press either **Shift** key five times. The display says STICKY KEYS ON. Now you can type a \$ by pressing and releasing the **Shift** key, then pressing and releasing the **4** key.

When Sticky Keys is on, you can also lock down the **Ctrl** key or a **Shift** key so that it affects every other key until you unlock it. To lock the **Ctrl** key or a **Shift** key, press the key twice. To unlock the key, press it once more.

Press either **Shift** key five times to turn off Sticky Keys. The display says STICKY KEYS OFF.

If you use Sticky Keys all the time, you do not have to turn it on each time you turn on the Minicom IV. After you turn on the Sticky Keys feature, it stays on until you turn it off or reset the machine.

SPECIFICATIONS

Physical Dimensions

Size—10" x 9.5" x 3" (25.4 cm x 24.1 cm x 7.6 cm)

Weight—3.75 lbs (1.7 Kg) with batteries

Power

AC adapter-9VDC, 650 mA
(barrel is positive)

AC adapter is UL/CSA listed

The six AA NiCad rechargeable batteries are user replaceable. They power the unit for 45 to 60 minutes of normal use.

Keyboard

50 ergonomic keys in 5 rows
Control key plus 4 function keys
Sticky Keys for single-handed typists
Character set: A-Z, 0-9, Backspace,
Return/LF, Space, +=-\$'O"/:;?.,*# GA, SK.

Display

Blue/green vacuum-fluorescent
20 characters
0.25" (6mm) character height

Acoustic Coupler

Accepts both circular and square telephone handsets

Communication Codes

Automatic code detection on incoming and outgoing calls (Turbo Code or Baudot)

Baudot Code:

45.5 and 50 baud

Sensitivity = -45 dbm, 67 dBSPL (min)

Output = -10 dbm

Turbo Code:

Enhanced communication protocol with interrupt capability.

100 baud (average)

7 data bits

Approvals

FCC approved. FCC Registration No. (Part 68): D8KUSA-18408-DT-N

FCC Information

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

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

- Connect the Minicom IV to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Should you experience trouble with this TTY equipment, please contact:

Ultratec National Service Center
5901 Research Park Blvd.
Madison, WI 53719
email: service@ultratec.com

For repair or warranty information, please contact Ultratec Inc. Customer Service at (608) 238-5400 (V/TTY). If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

Other than replacing the batteries, the Minicom IV does not have any user-serviceable parts. Modification or changes to the Minicom IV not expressly approved by Ultratec, Inc. can void your authority to operate the TTY.

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Conversation etiquette

- GA When you talk with another person by TTY, you type while the other person reads. When you want the other person to respond, type GA for “Go ahead.”
- GA OR SK To say goodbye, type GA OR SK. This gives the other person a chance to say any last words before ending the conversation.
- SKSK To end the conversation, type SKSK.
- Q Some people prefer to type Q instead of a question mark because it saves time and is easier to type.

You can use punctuation marks such as commas and periods, although many people choose to omit them. You may also abbreviate words, such as:

| | | | |
|-----|---------------|-----|---------------|
| GA | go ahead | OPR | operator |
| SK | stop keying | PLS | please |
| CD | could | Q | question mark |
| CUL | see you later | R | are |
| CUZ | because | SHD | should |
| HD | hold | THX | thanks |
| MTG | meeting | TMW | tomorrow |
| NBR | number | U | you |
| OIC | oh, I see | UR | your |