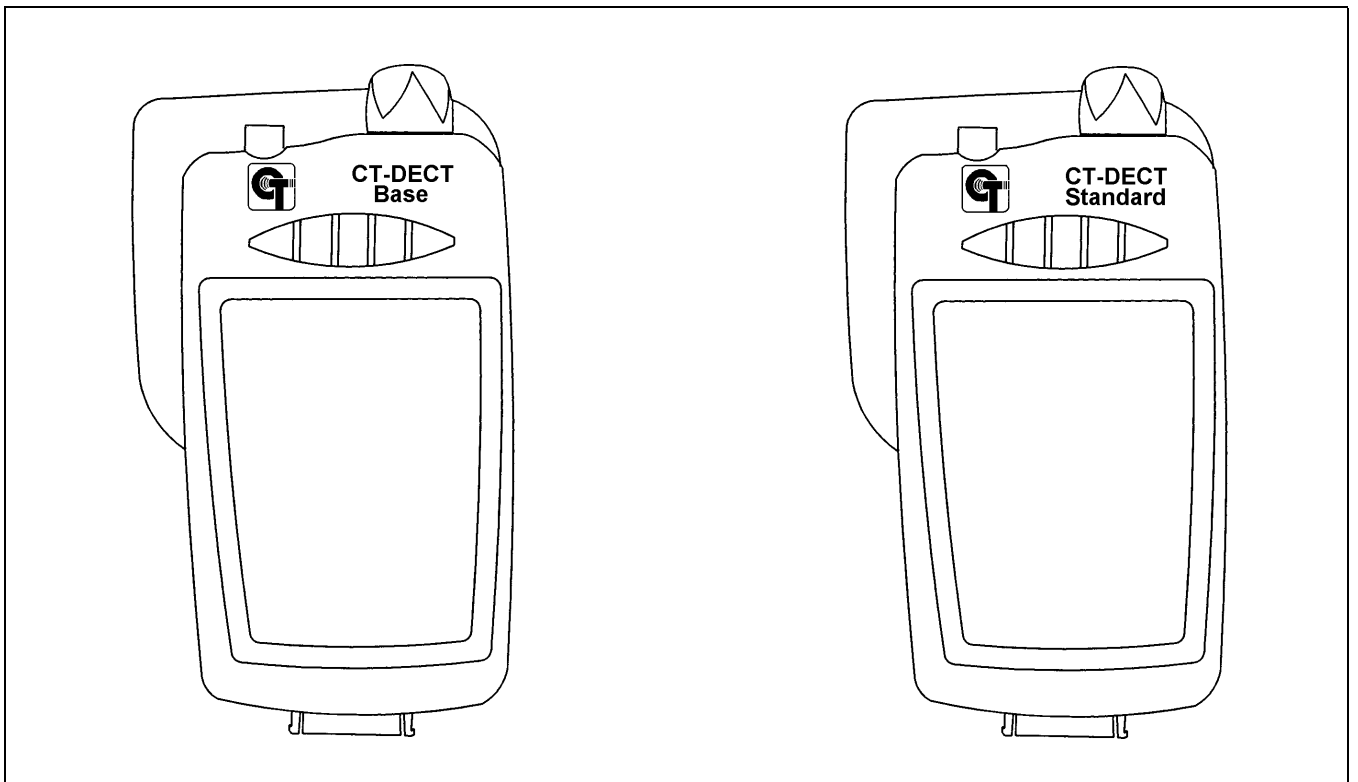


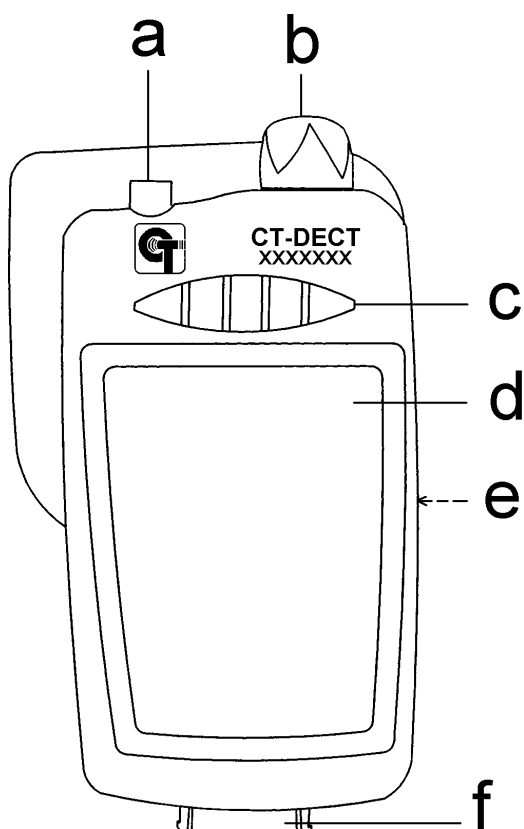
CT-DECT Multi

Transmitter/Receiver Unit for Wireless Duplex Communication

Operating Instructions

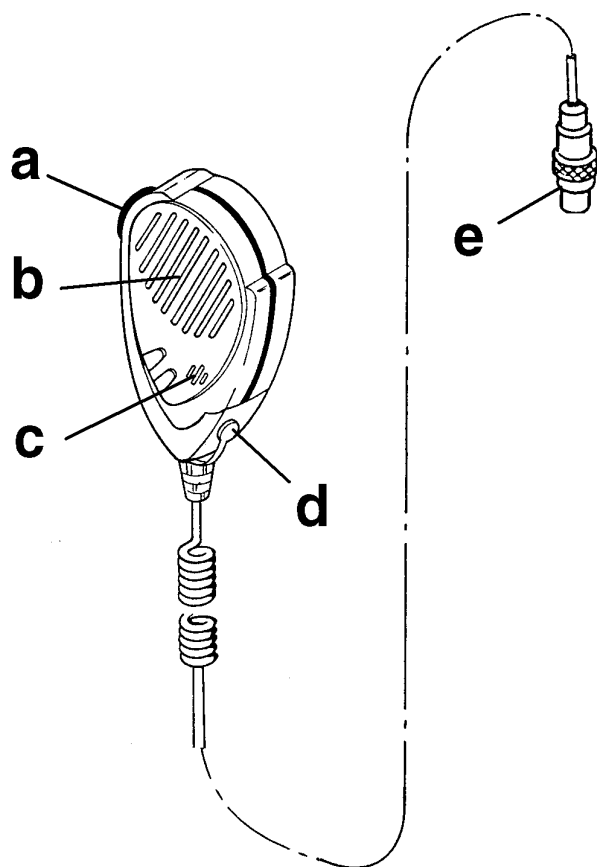


1

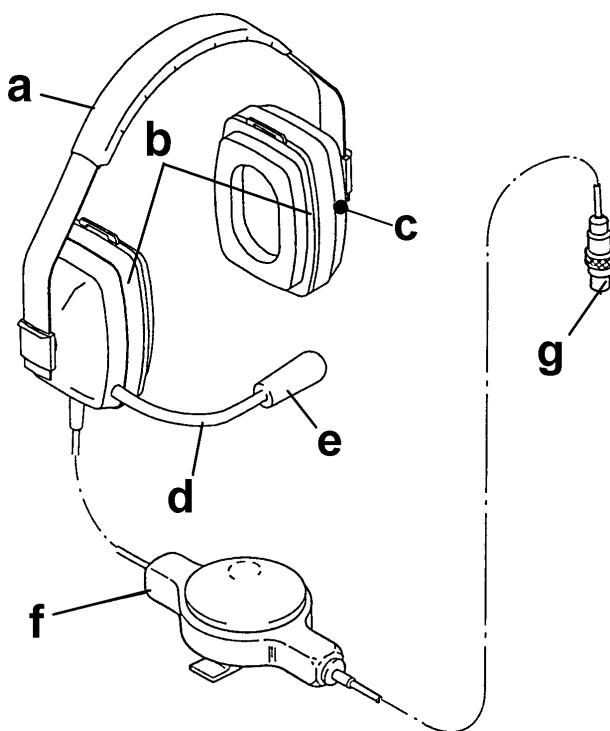


- a 6-pole jack for a CT communication set.
- b On/off switch and volume control (rotary knob). The unit is switched off if the rotary knob is set fully counter-clockwise (position » • «). The volume control is used to adjust the volume for the CT communication set.
- c Bank of 5 push-buttons
The both push-buttons at the begin and end of the push-button bank are for subscription only (press both push-buttons simultaneously). One of the three push-buttons in the middle has to be pressed for connection setup and release.
- d Removable cover for the battery compartment.
- e Fastening clip on the rear.
- f 26-pole multi-purpose jack for connection of CeoTronics accessories, e.g. for a second CT communication set, for battery charging, for programming the unit by the factory.
If a communication set is connected to the 6-pole jack (a), the second CT communication set connected to the multi-purpose jack (f) is automatically switched off.

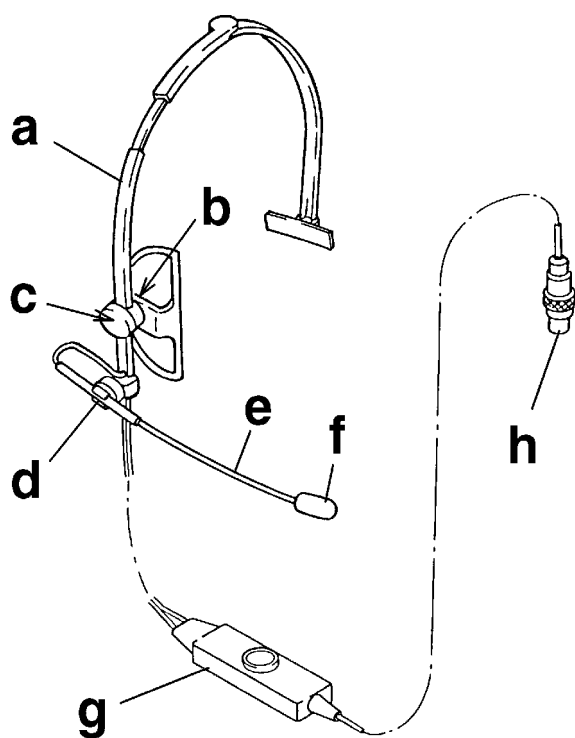
2



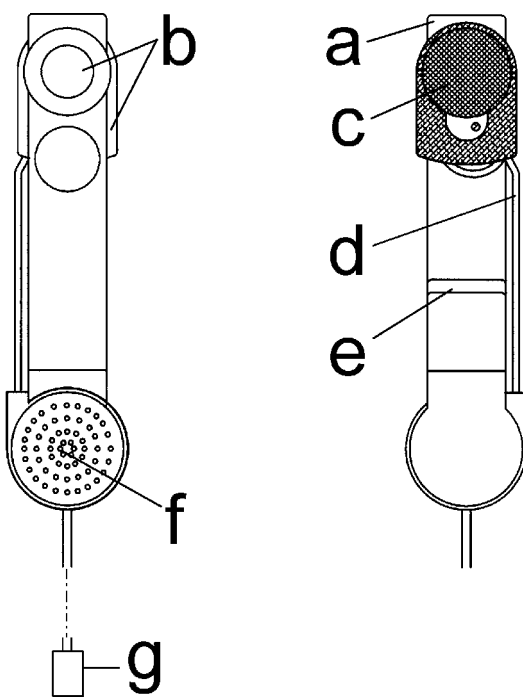
3



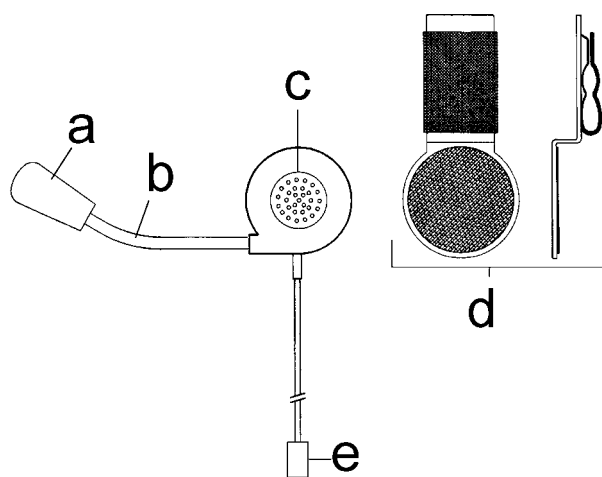
4



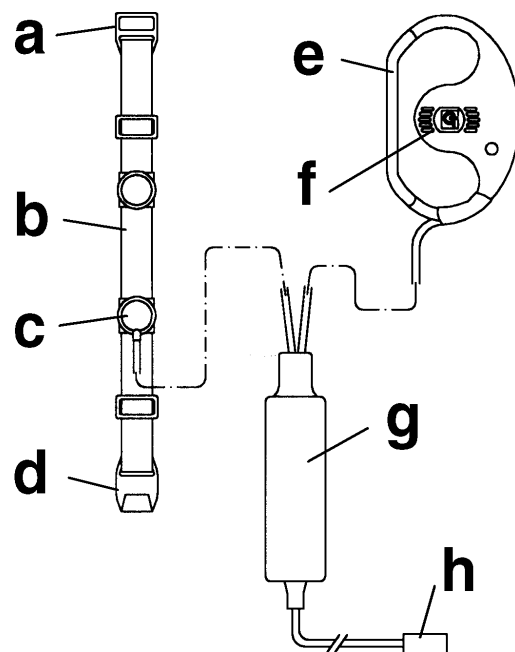
5



6



7



Important Note

Please note that any changes or modifications not expressly approved by the party responsible for compliance will void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that cause undesired operation.

SAFETY INFORMATION

Your wireless headset transceiver contains a low power transmitter. When transmitting it sends out radio frequency (RF) signals. In August 1996, the Federal Communications Commission (FCC) adopted RF exposure guidelines with safety levels for wireless devices.

WARNING

This headset is considered to be a portable device.

Because of the construction of this device the internal transmitter and it's antenna is located in such a way, that a separation distance from the user's body is maintained in compliance with the FCC's RF Exposure Guidelines.

This device and it's antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

Use only the internal antenna. Unauthorized antennas, modifications, or attachments could damage the transmitter and may violate FCC regulations.

1. Important safety instructions



When using CeoTronics products do not fail to comply with the following safety information:

- Before using CeoTronics products read completely the appropriate operating instructions. If in doubt, ask our technical staff.
- If repair work of any kind needs to be done to CeoTronics products, arrange for it to be performed only by the company CeoTronics or by a specialized workshop that is authorized by CeoTronics. In all other cases our warranty and liability for the product shall lapse.
- If products are operated on a mains voltage, always pull the mains plug out of the mains plug socket before opening such products (e.g. for servicing purposes) !
- Do not store CeoTronics products outside or in damp ambient conditions. At all times keep them clean, dry and at normal air humidity. CeoTronics products must not be stored in areas with a temperature of over +80° C (+176° F), e.g. in the summertime on the parcel shelf of a car. If not stated otherwise, the following temperature ranges are allowed for CeoTronics products: -10 to +55° C (+14 to +131° F) for operation, -40 to +80° C (-40 to +176° F) for storage.
- Do not immerse a CeoTronics product into water, if it is not expressly specified for this purpose.
- When using CeoTronics products that are equipped with connection leads ensure that the latter do not get caught up in operational machinery or wheels !
- CeoTronics products that are not intrinsically safe (explosion-proof) and therefore have no special explosion-proof designation must never be operated in potentially explosive environments (e.g. when refuelling cars, aircraft etc.). Devices that are not explosion-proof can unintentionally trigger off explosions in such areas !
- Connect CeoTronics accessories to a device or disconnect them from a device only when the device is switched off.

-
- If you are a cardiac pacemaker carrier, before operating a transmitter/receiver ask the manufacturer of your cardiac pacemaker for information about any impairment that might be caused due to high frequencies.
 - For safety reasons reception volumes in excess of 85 dB(A) are possible with a whole series of CeoTronics products. However, these can be regulated by the user. Do not set the volume any higher than is necessary. A very high volume setting can lead to damaged hearing, particularly if it is continuous. For high volumes or noise levels wear additional ear plugs. If in doubt, ask your safety officer or company doctor.
 - When on board an airplane always keep a transmitter/receiver switched off. Operation of the transmitter/receiver could affect the safety of the airplane and it is therefore prohibited. Never operate electronic devices on board an airplane without the express approval of an authorized member of the cabin crew.
 - Do not leave CeoTronics products lying around loose in cars, e.g. on the parcel shelf. Stow these products in a suitable, safe place in the car so that they do not present a danger to you or to other occupants of the car, if emergency braking is effected.
 - When driving a car, do not use the radio because it may distract you from the other traffic. Never use a CeoTronics product (headset, insert earphone, induction receiver etc.) that will impair your hearing.
 - Charge rechargeable batteries only with the appropriate suitable CeoTronics charger. Observe the voltage and currency specifications, including those on the mains face (e.g. 230 V AC or 115 V AC). Never use the charger to recharge non-rechargeable batteries.
 - When handling rechargeable batteries comply with environmental protection regulations ! Rechargeable batteries contain toxic chemicals (e.g. cadmium). Never attempt to open a rechargeable battery and never throw a rechargeable battery into fire. Expended (defective) rechargeable batteries are subject to compulsory regulated waste disposal. Do not put them in the household waste !
 - Ensure that a short-circuit (risk of fire or injury) is not created across rechargeable battery terminals or charging sockets by a short-out (bent-open paper clip, bunch of keys etc.). In such an event the warranty shall lapse. Transport any spare rechargeable batteries in an electrically non-conducting package in order to avoid short-circuiting the rechargeable batteries.
 - Keep CeoTronics products and rechargeable batteries out of the reach of children and any other persons who are not familiar with the handling and operation thereof.
 - Packaging materials, e.g. filling materials and plastic bags are not toys and have to be kept out of the reach of children. There is a risk of children ingesting them and choking !
 - Safe operation requires clean devices. Ensure that the devices (microphones, connectors etc.) are clean and in good condition at all times.
 - CeoTronics products may only be used for the specific application envisaged.
 - If the device is to be put out of operation definitively, bring it to a local recycling plant for disposal or send it to CeoTronics.

2. Description

2.1 General

The CT-DECT Multi is together with a CeoTronics communication headset or hand microphone or other communication devices a transmitter/receiver unit for wireless duplex communication between a max. of three communication parties over short distances. The range depends on the local circumstances. Up to two standard units are allocated to a base unit. Channel selection is effected automatically. Protection against eavesdropping and interference is ensured.

The unit is fitted with a connector for various CeoTronics communication sets which are available as an accessory. Frequently used communication sets are described in sections 2.4...2.9. The CT-DECT Multi can be used as a hand-held unit or is worn on belt by means of the fastening clip on the rear.

The minimum version of the system comprises one base unit and one standard unit. A second standard unit can also be operated in conjunction with the base unit. The base and standard units are marked by an imprint, as follows:

- CT-DECT Base
- CT-DECT Standard

➔ NOTE

The base unit and the standard unit(s) can also be used in conjunction with other CeoTronics DECT units and DECT systems. Notice the special CeoTronics operating instructions for these units and systems.

2.2 Power supply and operating time

Power is supplied by a 3.6 V/2300 mAh Li-Ion rechargeable battery in the battery compartment of the unit. With a fully charged battery the operating time for continuous operation is approx. 20 hours.

2.3 Audio signals used

Two different audible tones are used for signalling the operating status via the communication set connected to the unit. The tone for the indication of positive responses (P-tone) has a higher frequency than the tone for the indication of negative responses (N-tone). Signalling of the various events is effected by a varying number of consecutive P-tones or N-tones.

Positive acknowledgement tone

All positive responses are indicated by a high P-tone.

Negative acknowledgement tone and error tone

All negative responses and error status are indicated by a low N-tone.

Battery warning

If the battery has an undervoltage a low 3-beep N-tone sequence »N-N-N« sounds approximately every 10 seconds.

Range warning

If the range limit is reached, a high 3-beep P-tone sequence »P-P-P« sounds approx. every 5 seconds.

2.4 Unit with hand microphone SM 3

The hand microphone SM 3 (for example see Fig. 2) consists of a PTT button (Fig. 2/a), loudspeaker (b), microphone (c), and connection cable with plug (e) for connection to the transmitter/receiver unit. An earphone can be connected to the 3.5 mm (d) jack. The hand microphone can be fastened to a suitable place on the clothing by means of the fastening clip on the rear. The best distance for speaking into the microphone is approx. 10 cm (approx. 4 in.).

2.5. Unit with HeavyDuty Headset with level limited ambient sound reception

The HeavyDuty Headset with level limited ambient sound reception (for example see Fig. 3) protects against harmful ambient noise. It might be equipped as follows: adjustable headband (Fig. 3/a), one speaker for radio reception in the right-hand and in the left-hand ear muff (b) respectively, noise cancelling microphone with windshield (e) and flexible goose neck (d), without or with PTT button (f), connecting cable and plug (g) for connection to the unit.

HeavyDuty Headsets with level limited ambient sound reception are used mainly where ambient sounds, warning signals etc. have to be heard alongside duplex communication. The external sounds are received by the microphone (c) on the front side of the left-hand headset muff and are audible inside this headset muff via the ambient sound speaker. If the external sounds exceed 85 dB(A), the sound level emitted to the ear by the ambient sound speaker is limited electronically to a maximum of 85 dB(A).

2.6 Unit with Lightweight Headset

The Lightweight Headset (for example see Fig. 4) is a particularly lightweight, foldable headset with one or optionally two speakers. It might be equipped as follows: adjustable headband (Fig. 4/a), noise cancelling microphone with windshield (f) and flexible goose neck (e), speaker on one side (b), connecting cable without or with PTT button (g) and plug (h) for connection to the unit.

The microphone mounting (d) and the speaker mounting (c) are rotatable on the headband. The goose neck (e) is slidable and turnable in the microphone mounting.

2.7 Unit with ContactCom Communication Set

ContactCom is a communication set, e.g. for use with helmets, headbands, respirator masks. Fig. 5 shows a ContactCom communication set with an universal-type helmet adapter that is preferably installed into helmets, the helmet insert of which is fitted with an all round headband. Installation can be effected on the right or left inside the helmet.

It consists of the following: universal aluminium fastening with spring steel strip (Fig. 5/a) and metal clip (e), contact microphone (b), speaker (f), connecting cable with plug (g) for connection to the unit. The contact microphone and speaker are normally attached by the factory to the universal fastening and connected to each other via a cable (d). The universal fastening is fastened to the headband inside the helmet by means of the metal clip (e). Other ContactCom communication sets with special fastening components are available

2.8 Unit with BoomMike Speaker Unit

The BoomMike Speaker Unit with universal metal clip (for example see Fig. 6) is preferably built into helmets in which the helmet insert is equipped with an all-round headband. The BoomMike Speaker Unit can be equipped as follows: metal clip (Fig. 6/d) for fastening the microphone/speaker unit to the headband inside the helmet, noise cancelling microphone with windshield (a) and flexible goose neck (b), speaker (c) in a plastic housing, connecting cable with plug (e) for connection to the unit.

2.9 Unit with Throatmike Comfort

The Throatmike Comfort (for example see Fig. 7) is preferably used for communication in conjunction with protective suits, helmets and masks. It can be equipped as follows: throat microphone (Fig. 7/c) with an elastic stretch necklet (b) and connecting cable to the matching unit (g), earphone (f) and flexible earhanger (e), connecting cable to the matching unit (g), matching unit and connecting cable with plug (h) for connection to the unit.

2.10 Communication sets with PTT button

In the case of communication sets with PTT button (see examples Fig. 2, 3, 4) for speaking the PTT button (PTT = push-to-talk) has to be pressed down. By pressing the PTT button the microphone of the communication set is switched on. You can speak into the microphone as long as you keep the PTT button pressed and at the same time you can receive a message. Upon release of the PTT button the microphone is switched off and you can receive only.

3. On-air subscription

3.1 General

➔ NOTE

The on-air subscription is a procedure which has to be performed once only by the factory. It must be performed only in the case of an error or if another CT-DECT Multi will be used in the system. If this is not the case skip the sections 3....3.2.2 and start with section 4.

Each unit is equipped with a DECT module and has its own identification number. First of all an allocation must always take place between the base unit and the maximum of two standard units. This subscription procedure, which has to be performed once only, is performed on the base unit and the maximum of two standard units manually by means of a procedure carried out by the operator.

If a third standard unit is subscribed to the base unit, the standard unit that was subscribed in first is deleted from the data base of the base unit.

Once the subscription procedure has been successfully concluded, the identity of the communication partner is stored in the data base of the unit. The standard unit stores one base unit. The base unit stores the last two successfully subscribed standard units.

Time Out

If a base unit or a standard unit is set to subscription mode and this is terminated or not completed after 2 minutes without the subscription procedure having been successfully concluded a »Time Out« occurs. The »Time Out« effects that the data bases of a max. of two stored standard units available in the base unit and in the case of the standard unit the available data base for the stored base unit are deleted. After a »Time Out« the subscription procedure must be restarted.

3.2 On-air subscription

➔ NOTES

- ***Two standard units can never be simultaneously subscribed to the base unit, they must always be subscribed one after the other. If two standard units are used in conjunction with the base unit always both standard units must to be subscribed one after the other to the base unit, never one standard unit only.***
- ***After subscription the units have to be switched off again.***

3.2.1 On-air subscription of the first standard unit

- a. Connect the communication set to the jack (Fig. 1/a) on the upper side of the unit.
- b. On the base unit simultaneously press the both subscription buttons located at the begin and end of the push-button bank (Fig. 1/c). Keep the two subscription buttons pressed and switch on the base unit by means of the on/off switch and volume control (rotary knob Fig. 1/b). The on-air subscription procedure will be signalled by a 5-beep tone sequence via the communication set. Then immediately carry out step »c«, otherwise a »Time Out« may occur (see section 3.1).
- c. On the standard unit simultaneously press the both subscription buttons located at the begin and end of the push-button bank (Fig. 1/c). Keep the two subscription buttons pressed and switch on the standard unit by means of the on/off switch and volume control (rotary knob Fig. 1/b).

After approx. 30 seconds a high double-beep tone can be heard in the communication set of the base unit and in the communication set of the standard unit. This indicates that the on-air subscription has been successfully completed. A second high double-beep tone finally reports that the standard unit has synchronized itself with the base unit. Afterwards switch off both units.

3.2.2 On-air subscription of the second standard unit

Ensure that the standard unit that was subscribed in first (section 3.2.1) is switched off. Repeat the subscription procedure for the base unit and for the second standard unit as described in section 3.2.1. Afterwards switch off all units.

4. Commissioning and operation

4.1 Connecting the headset or hand microphone

- a. Connect the communication set to the jack (Fig. 1/a) on the upper side of the unit.
- b. If a communication headset is used – Put on the headset and adjust it so that it fits comfortably and correctly.
If the hand microphone SM 3 is used – Fasten the hand microphone, if desired, with the clip on the rear to a suitable place on your clothing.
- c. Place the unit on a suitable place of your clothing.

➔ NOTE

Protect the unit against dampness.

4.2 Switching on, synchronization, adjusting the speaker volume

- a. Switch on the units by means of the on/off switch and volume control (rotary knob Fig. 1/b).

Synchronization: A high beep tone is audible in the communication set connected to the base unit and to the standard unit approx. 10 seconds after switching on. The synchronization procedure then begins, i.e. the base unit seeks its standard unit. This synchronization procedure can last approx. 30 seconds.

Upon completion of synchronization – i.e. the base unit has found its standard unit – a high double-beep tone sounds in the communication set of the standard unit and of the base unit. Subsequently the connection setup between the units is effected automatically and the units are ready for duplex communication. In the case of two standard units two high double-beep tones are audible in the communication set of the base unit upon successful completion of synchronization.

- b. On voice reception adjust the speaker volume for your communication set by means of the on/off switch and volume control knob (rotary knob).

➔ NOTE

Always leave the units switched on as long as you work with the communication system so that immediate availability of the system is provided.

- c. Connection setup and release see sections 4.3...4.3.3.

4.3 Connection setup and release and duplex communication

4.3.1 Automatic connection setup after switching on

After the base unit and the standard unit(s) are switched on the first connection setup between the units is effected automatically (see section 4.2). Subsequently duplex communication (speech and simultaneous listening) is possible via the communication sets connected to the units.

In the case of communication sets with PTT button, press the PTT button and keep it pressed while speaking (see section 2.10).

4.3.2 Connection setup and release by the base unit

(1) Prerequisites

- Units subscribed (see sections 3...3.2.2)
- Units switched on and synchronized (see section 4.2)

(2) Two-party conference

Connection setup

Press one of the three the push-buttons in the middle of the push-button bank on the base unit. When the connection is set up a high beep tone sounds in the communication set of the calling base unit and of the called standard unit. Subsequently duplex communication (speech and simultaneous listening) is possible for both parties. In the case of communication sets with PTT button, press the PTT button and keep it pressed while speaking (see section 2.10).

Connection release

Press one of the three push-buttons in the middle of the push-button bank on the base unit. The base unit is disconnected from the standard unit. A high beep tone then sounds in the communication set of the base unit and of the standard unit.

(3) Three-party conference

Below the designations standard unit 1 and standard unit 2 are used only for the purpose of better differentiation in the operating instructions. Both standard units operate with equal entitlement.

Connection setup

Press one of the three push-buttons in the middle of the push-button bank on the base unit. The base unit sets up automatically a connection with the active standard units 1 and 2. Upon setup of the connection a high beep tone sounds in the communication set of the calling base unit and of the called standard units 1 and 2, and the base unit switches over automatically to three-party conference mode. Subsequently duplex communication (speech and simultaneous listening) is possible for the three parties. In the case of communication sets with PTT button, press the PTT button and keep it pressed while speaking (see section 2.10).

Connection release

Press one of the three push-buttons in the middle of the push-button bank on the base unit. The base unit disconnects itself from the standard units 1 and 2. A high beep tone then sounds in the communication sets of the three units.

4.3.3 Connection setup and release by the standard unit

(1) Prerequisites

- Units subscribed (see sections 3...3.2.2)
- Units switched on and synchronized (section 4.2)

(2) Two-party conference

Connection setup

Press one of the three push-buttons in the middle of the push-button bank on the standard unit. When the connection is set up a high beep tone sounds in the communication set of the calling standard unit and of the called base unit. Subsequently duplex communication (speech and simultaneous listening) is possible for both parties. In the case of communication sets with PTT button, press the PTT button and keep it pressed while speaking (see section 2.10).

Connection release

Press one of the three push-buttons in the middle of the push-button bank on the standard unit. The standard unit is disconnected from the base unit. A high beep tone then sounds in the communication set of the standard unit and of the base unit.

(3) Three-party conference

Below the designations standard unit 1 and standard unit 2 are used only for the purpose of better differentiation in the operating instructions. Both the standard units operate with equal entitlement.

Connection setup

Press one of the three push-buttons in the middle of the push-button bank on the standard unit 1. Standard unit 1 sets up a connection with the active base unit. Upon setup of the connection a high beep tone sounds in the communication set of the standard unit 1 and of the called base unit.

The base unit does not automatically set up a connection with standard unit 2. Not until one of the three push-buttons in the middle of the push-button bank on the standard unit 2 has been pressed, does standard unit 2 set up a connection with the base unit. If a connection exists between standard unit 1 and the base unit, the base unit then switches over automatically to three-party conference mode.

If a connection already exists between standard unit 2 and the base unit when standard unit 1 sets up a connection with the base unit, the connection between standard unit 2 and the base unit is retained and the base unit switches over automatically to three-party conference mode.

Subsequently duplex communication (speech and simultaneous listening) is possible for the three parties. In the case of communication sets with PTT button, press the PTT button and keep it pressed while speaking (see section 2.10).

Connection release

Press one of the three push-buttons in the middle of the push-button bank on the standard unit 1. The standard unit 1 disconnects itself from the base unit. A high beep tone then sounds in the communication set of the standard unit 1 and of the base unit. If a connection still exists at this time between the base unit and standard unit 2, the connection between the base unit and standard unit 2 is retained. Not until one of the three push-buttons in the middle of the push-button bank on the standard unit 2 has been pressed does standard unit 2 disconnect itself from the base unit.

4.4 Range warning

If the range limit is reached a high 3-beep P-tone sequence »P-P-P« is audible in the communication set approx. every 5 seconds. In the case the range limit is crossed the connection will be released. Not until the base unit and the standard unit(s) have synchronized within the range limit (see section 4.2, item »a«) the connection can be set up again.

4.5 Battery warning

If the battery has an undervoltage a low 3-beep N-tone sequence »N-N-N« is audible in the communication set approximately every 10 seconds.

4.6 End of operation

Switch off the unit with the on/off switch and volume control knob (position » ● «). This guarantees a longer usage from the rechargeable battery. If necessary recharge the battery.

5. Safekeeping – storage

After use, keep the cleaned unit in a clean and dry place at normal room temperature and at normal relative air humidity.

6. Recharging batteries

The rechargeable Li-Ion battery 3.6 V/2300 mAh in the unit should only be charged with the charger supplied with the system. Otherwise the battery may be damaged. The charger is neither water-tight nor dust-tight. Protect it against water, rain and dirt. The charger may only be used in rooms with normal relative air humidity and temperature. Do not cover up the charger.

CAUTION

- ***Never use battery chargers to charge non-rechargeable batteries. Never open rechargeable batteries or throw them into fire. Used (defective) rechargeable batteries are subject to special waste disposal. Do not put them in the household refuse !***
- ***Never charge rechargeable NiCd or NiMH batteries with the charger.***
- ***Never charge a rechargeable battery in areas with an explosion risk – an explosion may result. Charge rechargeable batteries only within a building or similar environment that does not contain dangerous concentrations of volatile vapors.***

Always switch off the unit before you start charging. For charging connect the charger to the multi-purpose jack located on the bottom of the unit. Notice the special CeoTronics Operating Instructions for the charger.

7. Maintenance

7.1 Visual inspection

Examine the units and in particular the cables and connectors regularly for signs of fractures, cracks and wear. Send defective devices to CeoTronics for repair.

7.2 Cleaning



WARNING

When cleaning ensure that no moisture penetrates inside the unit. Do not use any solvents (e.g. benzine, alcohol, etc.) for cleaning purposes !

Remove any loose dust with a soft brush. Clean, if necessary, the outside with a suitable clean cloth that has been slightly moistened with clear water, and rub the parts dry afterwards. If heavily soiled, some dishwashing liquid can be used in addition. Clean the contacts of connectors with a commonly available contact cleaning agent.

8. Accessories

Designation and description	Art. No.
Single-unit charger for Li-Ion rechargeable batteries, charging time approx. 5 hours For a mains voltage of 90...240 V 50/60 Hz	40 06 529

Notes



**Germany and
International Sales**

CeoTronics AG
Adam-Opel-Str. 6
63322 Rödermark (Germany)
Tel. +49-(0) 6074/87 51-0
Fax +49-(0) 6074/87 51-676
E-Mail verkauf@ceotronics.com

USA/Canada/Mexico

CeoTronics, Inc.
533 Byron Street, Suite E
Chesapeake, VA 23320-6603
Tel. (757) 549-6220
Fax (757) 549-6230
E-Mail sales@ceotronicsusa.com

Great Britain and Ireland

CeoTronics Ltd.
1 Highview • High Street
BORDON, Hampshire
GU35 0AX
Tel. 01420-47 93 53
Fax 01420-47 93 72
E-Mail ceotronics@winweb.com

France

CeoTronics Sarl
Z.A. des Arpents
16, Rue du Pré aux Aulnes
77340 PONTAULT-COMBAULT
Téléphone 01 60 18 33 00
Télécopie 01 60 28 60 60
E-Mail ceotronics@worldonline.fr

Spain

CeoTronics S.L.
C/Antonio Vicent 23-1°
28019 Madrid
Tel. 91-460 82 50/51
Fax 91-460 31 93
E-Mail ceotronics.gil@mad.canalpyme.com

Switzerland

CeoTronics AG
Grundstr. 16
6343 Rotkreuz
Tel. 041/790 58 38
Fax 041/790 58 39
E-Mail ceotronics@tic.ch