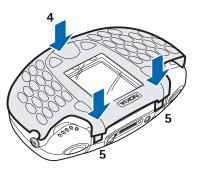
- 4 To replace the front cover, place the catches on the lower part of the cover into the corresponding holes in the phone (4); then gently press the cover into place (5).
- **5** Replace the back cover.



5. Music functions

You can listen to music stored on the memory card in your phone with the *Music player*, or you can listen to the *FM stereo radio*. You can turn the *Music player* on and off with the special music key \Im located on the top left of your phone.



Note: Your phone must be switched on to use this function. Do not switch the phone on when wireless phone use is prohibited or when it may cause interference or danger.

You can use the Nokia Audio Manager software to create and organize digital music files on a compatible PC and transfer them to the memory card in your phone. Playlists appear as track lists in the phone. See <u>Nokia Audio Manager</u> for instructions.

You can also record music from the radio or an external music source, for example, a CD player. See <u>Recorder</u> for instructions.

To adjust the playback volume, use the Volume key on the top right of the phone.



Warning: Listen to music at a moderate level. Continuous exposure to high volume may damage your hearing.

Listen to music

You can listen to music on the loudspeaker or with headphones. To connect the headset to your phone, See <u>Headset</u>.

Press the Music key and select *Music player*. Use the functions of the four-way scroll key as described in the following table.

Four-way scroll key	Music functions
	Play
	Stop
>>	Fast forward, press and hold
K	Rewind, press and hold
>>	Skip to the next track
×	Skip to the previous track

Press **Options** to open a list of available Music player options. For example, from the **Options** list you can select *Loudspeaker* to listen to music with the internal loudspeaker.

To turn the Music player off, press the Music key and select Switch music off.

For more information, see Music player.

Listen to the radio

To listen to the FM radio, you must first connect the headset. The headset functions as the radio antenna. For the best reception, allow it to hang freely.

- 1 Press the Music key and select *Radio*.
- 2 To tune a station, press and hold ≫ or w and the station search starts. Searching stops when a station is found.
- 3 Press Options to open a list of the available options.

For example, from the **Options** list you can select *Set frequency* to manually key in the frequency of a radio station.

For more information, see Radio.

6. Call functions

Make a call

1 The number keys are located on the right side of the keyboard. Key in the phone number, including the area code. If you key in an incorrect number, press Clear to delete it.

For international calls, press for the international prefix (the + character replaces the international access code) and then key in the country code, area code without the leading 0, if necessary, and the phone number.

- 2 Press 🥆 to call the number.
- 3 Press *c* to end the call or to cancel the call attempt.

See Options during a call.



Note: If you are listening to music and receive a call, the music player and the radio are temporarily muted. When you end the call, the music player and radio are automatically turned back on.

Make a call using the Contacts list

Press Contacts and select Find. Scroll to the number you wish to call using the \checkmark on the four-way scroll key. Press \checkmark to call the number on the display. See Search for a contact.

Last number redialing

In standby mode, press \uparrow once to access a list of the last 20 numbers you called or attempted to call. Scroll to the number or name you want, and press \uparrow to call the number. Calls you dialed from numbers stored in your Contacts list will appear with the name you saved for the number. Calls you dialed that are not stored in Contacts will appear with the phone number.

Call your voice mailbox

In standby mode, press and hold $\begin{pmatrix} 1 \\ y \end{pmatrix}$, or press $\begin{pmatrix} 1 \\ y \end{pmatrix}$ and \checkmark . If the phone asks for the voice mailbox number, key in the number (obtained from your service provider) and press OK. See <u>Voice messages</u>.

1-touch dialing

You can assign a phone number to one of the 1-touch dialing keys, from 2 to 9.

- 1 Go to Contacts and select the number you want to assign a 1-touch dialing key.
- 2 Select Details to see the phone number.
- 3 Select Options and scroll to 1-touch dialing. Select a number from 2 to 9 and select Assign.

To call the number in standby mode, press the 1-touch dialing key you wish to call and press \uparrow . If the *1-touch dialing* function is set to *On*: Press and hold the corresponding 1-touch dialing key until the call is started. <u>See 1-touch dialing</u>.

Vanity dialing

You can dial a phone number that is alphanumeric (using both letters and numbers). For example, many 800 numbers are advertised with a name such as +1-888-NOKIA-2U. You can enter the numbers and letters, and the phone will automatically dial the corresponding numbers for the letters you enter.

To use this feature:

- 1 Press the $\begin{pmatrix} + \\ y \end{pmatrix}$ to enter the + symbol.
- 2 Then enter 1 and 888.
- 3 Press the (m) key and enter the letters, such as NOKIA-2U.
- 4 Press 🦴 to make the call.

Voice dialing

The voice dialing feature allows handsfree operation while you place a call. You can dial a phone number by saying one or more words that have been saved as voice tags. Before using this feature, you need to create entries in the contacts list so you can associate a voice tag with a name and number. Voice dialing cannot be used while the phone is sending or receiving data over a GPRS connection.

Add a voice tag to a contact

To create contacts, see Add a contact using the Contacts menu.

- 1 At the start screen, scroll to the name you want to give a voice tag.
- 2 Press Details, then Options.

Add voice tag appears highlighted.

3 Press Select.

The phone displays Press Start, then speak after tone.

4 Press Start.

You will hear several beeps, and Please speak now appears.

- 5 Speak clearly into the microphone.
- 6 The phone automatically stops recording, then saves and replays the voice tag.



Note: Do not press Quit unless you want to cancel the recording.

7 If the recording is not successful, your phone displays Voice system error. Press Options, scroll to Add voice tag, and repeat steps 3–5.



Warning: Do not rely only on a voice tag for dialing emergency numbers. In emergencies, stress causes changes in your voice, which may keep the phone from recognizing the command.

Notes about voice tags

Before using voice dialing, note the following:

- Voice tags are not language-dependent. They are dependent on the speaker's voice.
- Voice tags are sensitive to background noise. Record them and make calls in a quiet environment.
- When recording a voice tag or making a call by saying a voice tag, hold the phone in the normal position near to your ear.
- Very short names are not accepted. Use long names and avoid similar names for different numbers.



Note: You must say the name exactly as you said it when you recorded it. This may be difficult, for example, in a noisy environment or during an emergency, so you should not rely solely upon voice dialing in all circumstances.

Make a call using a voice tag

1 Press and hold Contacts.

You can also press and hold the down volume key.

When you hear several beeps and Please speak now appears, release the button.

2 Pronounce the voice tag clearly into the microphone.

Searching appears. When the phone finds the voice tag, **Found** appears, and the phone automatically dials the number.

If the phone does not locate a number, No match found appears and you return to the start screen.

Voice dial with the headset

After you have assigned voice tags to those entries you wish to dial, you can also voice dial a number using a headset.

- 1 At the start screen, press and hold the remote button on the headset. Your phone beeps and Please speak now appears in the display.
- 2 Pronounce the voice tag into the microphone.

When the phone finds the voice tag, **Found** appears, and the phone automatically dials the number.

Listen to a voice tag

- 1 Press Contacts and scroll to Voice tags.
- 2 Press Select; then scroll to the name with the voice tag you want to hear.
- 3 Press Options, scroll to Playback, and press Select.

Change or delete a voice tag

1 At the start screen, press **Contacts**, scroll to **Voice tags**, and press **Select**. Voice tags appear one at a time in alphabetical order.

- 2 Scroll until the voice tag you wish to change or delete appears in the display; then press **Options**.
- 3 Scroll to Change or Delete and press Select.

Answer or decline an incoming call

Press \uparrow to answer the incoming call and press \checkmark to end the call.

Press 6 to decline the incoming call.

If you press Silence, only the ringing tone is muted. Then either answer or decline the call.

If the HDS-3H or HDS-3 headset is connected to the phone, you can answer and end a call by pressing the headset key.



Note: If the *Forward if busy* function is activated to forward the calls, for example, to your voice mailbox, declining an incoming call will also forward the call. <u>See Call forwarding</u>.

Call waiting

During a call, press \uparrow to answer the waiting call. The first call is put on hold. Press \checkmark to end the active call.

To activate the *Call waiting* function, see <u>Call waiting</u>.

Make a conference call

Conference calling is a system service that allows you to make a conference call with a maximum of six participants, including yourself.

- 1 Make a call to the first participant.
- 2 To make a call to a new participant, press Options and select New call.
- 3 Key in or search the memory for the phone number of the new participant and press Call. The first call is automatically put on hold.
- 4 When the new call has been answered, join the first participant in the conference call. Press **Options** and select *Conference*.
- **5** To add a new person to the call, repeat steps 2 to 4.
- **6** To have a private conversation with one of the participants:

Press **Options** and select *Private* and select the desired participant. Rejoin the conference call as described in step 4.

7 To end the conference call, press *6*.

Options during a call

Many of the options that you can use during a call, are network services. Press **Options** during a call for some of the following options:

Option	Function
Hold Unhold	Place the current call on hold or remove the call from hold status.
Lock keypad	Activate keyguard. See <u>Keypad lock (keyguard)</u> .
Record	Records the conversation for up to three minutes.

Option	Function	
End call End all calls	End a call or all calls within a conference call.	
New call	Place a new call; the first call is put on hold.	
Decline call	Breaks connection or sends call to voicemail.	
Conference	Join participants in a conference call.	
Private	Have a private conversation with one participant in a conference call.	
Swap	Switch between the active call and the call on hold.	
Touch tones	Send touch tones generated by your phone's keypad.	
Contacts	Open the Contacts menu.	
Menu	Display the main menus.	
Mute Unmute	Mute your voice; you can hear the other party but they can't hear you; or return to normal from mute status.	
Loudspeaker Handset Headset	Routes call audio to the loudspeaker, earpiece, or headset (if connected) in your phone.	

Loudspeaker

You can use your phone as a loudspeaker during a call.



Note: Do not hold the phone to your ear during loudspeaker operation.

- To activate the loudspeaker press Loudsp.
- To deactivate the loudspeaker during a call, press Handset.

If a headset is connected, Handset in the options list changes to Headset, and the selection key Handset changes to Handsfr. or Headset respectively.

The loudspeaker is deactivated automatically when you end the call, or connect a headset to the phone.

You can also use the loudspeaker with the music player or stereo radio.

7. Menu functions

Your phone offers an extensive range of functions which are grouped in menus. Most of the menu functions are provided with a brief help text. To view the help text, scroll to the menu function you want and wait for 15 seconds. To exit the help text, press Back. See <u>Help text activation</u>.

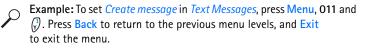
Scroll to a menu

- 1 To access the menu, press Menu.
- 2 Scroll with or through the menu and select, for example, Settings by pressing Select.
- 3 If the menu contains submenus, select the one you want, for example *Call settings*.
- 4 If the selected submenu contains further submenus, repeat step 3. Select the next submenu, for example, *Call forwarding*.
- **5** Select the setting of your choice.
- 6 Press Back to return to the previous menu level, and Exit to exit the menu.

Menu shortcuts

The menus, submenus, and setting options are numbered and you can access them by using their shortcut number.

To access the menu, press Menu. Key in quickly, within two seconds, the index number of the menu function you want to access.



Messages (Menu 1)

Your Nokia 3300 Music phone has a messaging keypad designed to make text messaging fast and easy to use. The



keys are arranged the same as a PC keyboard, with the display screen centered between the left-hand and right-hand keys. The size and shape of the phone make it comfortable to hold and easy to use two hands for keying in characters.



You can read, write, send and save text, multimedia, and e-mail messages. All your messages are organized into separate folders for each type of message.

Before you can send any text or picture messages, you need to save your message center number, given to you by your service provider. See <u>Message</u> <u>settings</u>.

Text messages

A standard text message can be up to 160 characters in length. If you want to send a long text message (more than 160 characters), you can enter 160 characters in up to five messages that are sent as a series of linked messages. The number of available characters and the current part number of a linked message are shown on the top right of the display. For example: 160/1; 125/2; 136/3; 125/4; and 125/5.

Using special (Unicode) characters such as ë, â, á, ì take up more space. If there are special characters in your message, the indicator may not show the message length correctly. Before the message is sent, the device tells you if the message exceeds the maximum length allowed for one message. You can cancel sending by pressing Cancel or you can save the message in the inbox.

When the message is received, it is displayed as one text message. For this feature to work, the receiving phone must also support linked messages. Contact your service provider to subscribe to this type of text messaging.

You can also send and receive text messages that contain pictures. Each picture message is also made up of several text messages. Just like sending linked text messages, sending one picture message may cost more.



Note: Only devices that offer compatible multimedia message can receive and display multimedia messages. Multimedia message objects may contain viruses or otherwise be harmful to your device or PC. Do not open any attachment if you are not sure of the trustworthiness of the sender.

Write and send messages

1 Press Menu, and select *Messages*, *Text messages* and *Create message*.



Note: To quickly open the message editor, press (in standby mode.

- 2 Key in a message. See <u>Write text</u>. To insert text templates or a picture into the message, see <u>Templates</u>.
- 3 To send the message, press Options and select Send.
- 4 Enter the recipient's phone number or search for the phone number in Contacts.
- 5 Press OK to send the message.



Note: When sending messages via the SMS network service, your phone may display the words *Message sent*. This is an indication that the message has been sent by your phone to the message center number programmed into your phone. This is not an indication that the message has been received at the intended destination. For more details about SMS services, check with your service provider.

Write text

When you write text messages, you can use several special keys for capitalizing words and switching to number mode. The following table shows indicators displayed at the top left of the screen in messaging.

Indicator	Function of indicator	Special keys
🔊 АБС	First letter of the word is capitalized	(*) (*)
V ABC	All letters capitalized	Use these keys to change between First
🔌 abc	No capitalized letters	cap, ALL CAPS, and no caps.
№ 123@!	Number mode	Use these keys to change between letter and number mode.

You can lock ALL CAPS mode by pressing the SHIFT key $\cancel{3}$ twice.

You can lock number mode by pressing \oint twice.

Not all characters available are printed on the keys. The characters available depend on the language selected in the *Language* menu. See <u>Language</u>.

- To insert a number while in letter mode, press you want to enter a string of numbers.
- To see all the characters available on a key, press and hold while pressing the key several times in a row.
 For example, press and hold \$\vec{\vec{\vec{P}}}\$. Then press the \$\vec{\vec{P}}\$.

On the first press, 2 is displayed. On the second press, u is displayed.

 The most common punctuation marks and special characters are available by pressing
 when the number mode
 <u>12301</u> is selected.

Or press Options and select Insert symbol.

Use the four-way scroll key to select the character you want and then press Insert.

Tips for writing text

The following functions are also available for writing text:

- To insert a space, press \bigcirc on the left, or O on the right.
- To move the cursor to the left, right, up, or down, press (,), or or on the scroll key, respectively.
- To delete a character to the left of the cursor, press Clear. Press and hold Clear to delete the characters more quickly.

To delete all the characters at once when writing a message, press **Options** and select *Clear text*.

Options for sending a message

After you have written a message, press Options and select Sending options.

- To send a message to one person, use one of the following options:
 - To insert a number while in letter mode, press Options and select *Insert number*. Key in the phone number, or find it in Contacts and press OK.
 - To insert a name from Contacts, press Options and select *Insert* contact. To insert a phone number or a text item attached to the name, press Options and select *View details*.
- To send a message to several recipients, select *Sending options*, *Send to many*. When you have sent the message to everyone you want to send it to, press Done.
- To send a message using a message profile, select *Sending profile* and then the desired message profile, such as *Profile 2* or *Profile 3*.

To define a message profile, see Message settings.

Write and send e-mail

Before you can send e-mail using SMS, you need to save the settings for sending e-mail. See <u>Message settings</u>. For availability and subscription to e-mail service, contact your service provider. To save an e-mail address in **Contacts**, see <u>Save multiple numbers and text items per name</u>.

- 1 Press Menu, and select Messages, Text messages and Create e-mail.
- 2 Key in the recipient's e-mail address or search for it Contacts and press OK.
- 3 If you wish, you can key in the subject for the e-mail and press OK.
- 4 Key in the e-mail message. See <u>Write text</u>. The total number of characters that you can key in is shown on the top right of the display. The e-mail address and subject are included in the total number of characters.

Also see <u>Insert a text template into a message or an e-mail</u>. Pictures cannot be inserted.

5 To send the e-mail, press **Options** and select **Send e-mail**. If you have not saved the settings for sending e-mails, the phone asks for the number of the e-mail server.

Press OK to send the e-mail.

Note: When sending e-mails using the SMS network service, your phone may display *Message sent*. This is an indication that the e-mail has been sent by your phone to the e-mail server. This is not an indication that the e-mail has been received at the intended destination. For more details about e-mail services, check with your service provider.

Read and reply to a message

When you have received a message, the indicator \square and the number of new messages followed by message(s) received is shown.

The blinking \square indicates that the message memory is full. Before you can receive new messages, delete some of your old messages.

The text messages function uses shared memory. See Shared memory.

1 Press Show to view the new message, or press Exit to view it later.

To read a message later, press Menu, and select *Messages*, *Text messages*, and *Inbox*.

- 2 If more than one message has been received, select the one that you want to read. An unread text message is indicated by ☐ in front of it and a picture message that has not been viewed is indicated by ☐.
- 3 While reading or viewing the message, press Options.

You can select an option, for example, to delete, forward or edit the message. You can also move and rename the message you are reading.

Select *Copy to calendar* to copy text at the beginning of the message to your phone's calendar as a reminder note for the current day.

Select *Message details* to view the sender's name and phone number, the message center used, and the date and time of receipt.

Select *Use detail* to extract numbers, e-mail addresses and website addresses from the current message.

When reading a picture message, select *Save picture* to save the picture in the *Templates* folder.

4 Select *Reply* to reply to a message. Select *Original text* to include the original message in the reply, or select a standard answer (to be included in the reply, or select *Empty screen*.

When replying to an e-mail, confirm or edit the address and subject first. Then write your reply message.

5 Press Options, select *Send*, and press OK to send the message to the displayed number.

Inbox and Sent items folders

The phone saves incoming text messages in the *lnbox* folder and sent messages in the *Sent items* folder of the *Text messages* submenu.

Text messages that you wish to send later can be saved in the *Archive*, *My folders* or *Templates* folder.

Templates

Your phone includes text templates, indicated by \square , and picture templates, indicated by \square . Text templates are messages you can use quickly without having to key in all the text, such as "I'm in a meeting, please call me later at." All you need to do is add a time.

To access the template list, press Menu, and select Messages, Text messages and Use template (for text templates), or Insert picture.

Insert a text template into a message or an e-mail

When you are writing or replying to a message or an e-mail, press **Options**. Select *Use template* and select the template that you want to insert.

Insert a picture into a text message

When you are writing or replying to a message, press **Options**. Select *Insert picture* and select a picture to view it. Press **Insert** to insert the picture into your message. The indicator in the header of the message indicates that a picture has been attached. The number of characters that you can enter in a message, depends on the size of the picture.

To view the text and the picture together before sending the message, press **Options** and select *Preview*.

Archive folder and my folders

To organize your messages, you can move some of them to the *Archive* folder, or add new folders for your messages.

While reading a message, press **Options**. Select *Move*, scroll to the folder to which you want to move the message, and press **OK**.

To add or delete a folder, press Menu, and select Messages and My folders.

- To add a folder, press **Options** and select *Add folder*.
- To delete a folder, scroll to the folder that you want to delete, press Options and select *Delete folder*.

Multimedia messages

Note: Only devices that offer compatible multimedia message can receive and display multimedia messages. Multimedia message objects may contain viruses or otherwise be harmful to your device or PC. Do not open any attachment if you are not sure of the trustworthiness of the sender.

A multimedia message can contain text, picture and sound. The phone supports multimedia messages that are up to 45 KB in size. If the maximum size is exceeded, the phone may not be able to receive the message. Depending on the network, you may receive a text message that includes an Internet address where you can view the multimedia message.

If the message contains a picture, the phone scales it down to fit the display area.



Note: The default setting of the multimedia message service is generally on.

Multimedia messaging supports the following formats:

- Picture: JPEG, GIF, PNG, and BMP.
- Sound: MIDI, Scalable Polyphonic MIDI (SP-MIDI), monophonic ringing tones (RGN) and true tones (WB-AMR).

The appearance of a multimedia message may vary depending on the receiving device. If a received message contains any unsupported elements, they may be replaced with the file name and the text *Object format not supported*.

Note that you are not able to receive any multimedia messages if you have a call in progress, a game or another Java application running, or an active WAP connection over GSM data. Because delivery of multimedia messages can fail for a variety of reasons, do not rely solely upon them for essential communications.

Write and send a multimedia message

To add the settings for multimedia messaging, see <u>Settings for multimedia</u> <u>messages</u>. For availability and a subscription to the multimedia messaging service, contact your service provider.

- 1 Press Menu, and select Messages, Multimedia msgs. and Create message.
- 2 Key in a message. See Write text.

You can insert one picture in a multimedia message. To insert a picture, press **Options**, and select *Insert image*. The list of available folders in the *Gallery* is shown. To open a specific folder, select it and then select the desired picture. The **I** indicator in the header of the message indicates that a picture has been attached.

To insert a name from Contacts, press Options, select *More options* and *Insert contact*. Scroll to the desired name, press Options and select *Insert contact*.

To insert a number, press **Options**, select *More options* and *Insert number*. Key in the number or search in **Contacts**, and press **OK**.

- 3 To view the message before sending it, press Options and select Preview.
- 4 To send the message, press Options and select *Send to number* or *Send to e-mail.*
- 5 Enter the recipient's phone number (or e-mail address) or search for it in Contacts. Press OK and the message is moved to the *Outbox* folder for sending.

It takes more time to send a multimedia message than to send a text message. While the multimedia message is being sent, the animated indicator (is displayed and you can use other functions on the phone. If there is an interruption while the message is being sent, the phone tries to resend it a few times. If this fails, the message will remain in the *Outbox* folder and you can try to resend it later.

The messages that you have sent will be saved in the *Sent items* folder if the setting *Save sent messages* is set to *Yes*. See <u>Settings for multimedia</u> messages.

Read and reply to a multimedia message

When your phone is receiving a multimedia message, the animated indicator is displayed. When the message has been received, the indicator the text *Multimedia message received* are shown.

The blinking (indicates that the memory for multimedia messages is full, see <u>Multimedia messages memory full</u>.

The multimedia message function uses shared memory. See Shared memory.

1 Press Show to view the message, or press Exit to view it later.

Reading the message later: Press Menu, and select Messages, Multimedia msgs. and Inbox.

- 2 Scroll to view the message. Press Options and some of the following options may be available.
 - *Delete message* to delete a saved message.
 - *Reply* to reply the message. To send the reply, press Options and select *Send*. The sender's phone number (or e-mail address) is used as the default value.
 - Forward to no. or Forward to e-mail to forward the message to a phone number or e-mail address.
 - *Edit* to edit a message. You can only edit messages you have written. See <u>Write and send a multimedia message</u>.
 - *Message details* to view the subject, size and class of the message.
 - *Play* to listen to the ringing tone that is contained in the message.
 - Save sound clip to save the ringing tone in the Gallery.
 - *Save image* to save the picture in the *Gallery*.



Note: Copyright protections may prevent some images, ringing tones and other content from being copied, modified, transferred or forwarded.

Inbox, Outbox, Saved and Sent items folders

The phone saves the multimedia messages that have been received in the *Inbox* folder of the *Multimedia msgs*. submenu.

Multimedia messages that not yet been sent are moved to the *Outbox* folder of the *Multimedia msgs*. submenu.

The multimedia messages that you wish to send later can be saved in the *Saved items* folder of the *Multimedia msgs.* submenu.

The multimedia messages that have been sent are saved in the *Sent items* folder of the *Multimedia msgs.* submenu.

Multimedia messages memory full

When you have a new multimedia message waiting and the memory for the messages is full, the indicator (blinks and *Multimedia memory full, view waiting msg.* is shown. To view the waiting message, press Show. To save the message, press Options, select *Save message* and delete old messages by first selecting the folder and then an old message to be deleted.

To discard the waiting message, press Exit and Yes. If you press No, you can view the message.

Delete messages

1 To delete text messages, press Menu, and select *Messages*, *Text messages* and *Delete messages*.

To delete multimedia messages, press Menu, and select Messages, Multimedia msgs. and Delete messages.

2 To delete all messages in a folder, scroll to the folder and press OK. Then press OK when *Delete all read messages from folder*? is displayed.

To delete all read messages from all folders, scroll to *All read* and press OK. Then press OK when *Delete read messages from all folders?* is displayed.

E-Mail messages

The Nokia 3300 music phone has two ways to send e-mail: using the SMS system or the Java e-mail application. The method available to you depends on your service provider. Both methods are explained here.

Before you can send and retrieve e-mails,

- You need an active e-mail account and the settings for that account. For the e-mail settings and availability of your e-mail account, contact your e-mail service provider.
- You must set the e-mail settings on your phone. See <u>E-mail settings</u>.
- You must activate the e-mail service settings obtained from your service provider.

Some of these settings my be preset in your phone. Check with your service provider.

Writing and sending an e-mail with the SMS Method

You can send e-mail to anyone with an e-mail address. First, you will need to setup an e-mail profile and modify a few other settings. It takes just a few minutes, and you only need to do this once.



Important:The e-mail address is included in the total character count for an e-mail message. Leave enough space for the e-mail address while composing your message or you will be taken back to the editor, where you will have to delete some text before sending.



Note:You cannot send picture messages with SMS e-mail. Service providers may customize the SMS message settings interface. For more details about SMS services, please contact your service provider.

Write down the e-mail server number

Write down your e-mail server number (also known as the "e-mail gateway" number). You will need this number when setting up an e-mail profile in the next section. Get this number from your wireless service provider.

Setup an e-mail profile

- 1 At the start screen, press **Menu**, select *Messages*, then scroll until *Message settings* appears in the display.
- 2 Press Select, select Text messages, then Sending profile.
- 3 Scroll to an empty profile slot and press Select.
- 4 Choose from the following options:

Message Setting	Function
Message center number	Save the phone number of the message center, which is necessary for sending text messages; obtain this number from your wireless service provider
Default recipient number	For text messages, the default number used to send messages
Delivery reports	Request the network to send delivery reports on your messages
Use GPRS	Set GPRS as the preferred method of sending SMS
Reply via same center	Allow the recipient of your message to send you a reply message using your message center (network service).
Rename sending profile	Change the name of the selected sending profile; the sending profile sets display only if your SIM card supports more than one set

Write and send e-mail



Note:See <u>Write text</u> for ways to write messages faster.

1 At the start screen, press Menu, then select Messages, Text messages and Create e-mail.

After a brief pause, you are prompted to enter the e-mail address.

- 2 Enter the e-mail address, or press Find to retrieve an e-mail address from Contacts, and press OK.
- 3 Enter a subject for the e-mail and press OK.
- 4 Compose your e-mail using the keypad and press **Options**.



- **Note:**Leave enough space in the total character count for the e-mail address.
- 5 Select Send e-mail.
- 6 Enter the e-mail server number (obtained from your service provider).
- 7 Press OK.

Reply to a message or e-mail

When you have received a text message or e-mail, the number of new messages and <u>Message(s) received</u> appears in the display.



Note: The blinking \square indicates that the message memory is full. Before you can receive new messages, delete some of your old messages.

Press Show to view the message now, or Exit to view it later.

Reading the message later:

- 1 Press Menu, and select Messages, Text messages, and Inbox.
- 2 If more than one message is received, select the message you want to read and press Select.

An unread text message is indicated by \square in front of the message, and an unviewed picture message by \square .

Writing and sending an e-mail with the Java[™] Method

Before you can send and retrieve e-mails,

- You need an active e-mail account and the settings for that account. For the e-mail settings and availability of your e-mail account, contact your e-mail service provider.
- You must set the e-mail settings on your phone. See E-mail settings.
- Some of these settings my be preset in your phone by your service provider. If so, you must activate these e-mail service settings.

You can write your e-mail message before connecting to the e-mail service or connect to the service first, and then write and send your e-mail.

- Press Menu, select Messages, scroll to E-mail and press Select.
 Open appears highlighted.
- 2 Press Select.

Create e-mail appears highlighted.

3 Press Select.

4 Enter the recipient's e-mail address one of two ways:

Key in the e-mail address with the keypad. **OR**

Press **Options**, scroll to *Find* and press **Select** to search for the e-mail address in Contacts, then press **Select**.

- 5 Press **Options**, scroll to *Save* and press **Select**.
- 6 Enter the subject of the e-mail, if you want, and press Options, scroll to *Save* and press Select.
- 7 Write the e-mail message. <u>See Write text</u>. The number of characters you can enter appears in the top right of the display.
- 8 To stop writing and save a draft version of the e-mail, press **Options**, and select *Save draft msg*.
- 9 To send the e-mail message, press Options, select Send e-mail, and press Ok.
- 10 Select
 - Send now to send the e-mail immediately. If you are not currently connected to the e-mail account, your phone establishes the connection first and then sends the e-mail.

 Send later saves the e-mail in the Outbox folder. If you want to edit or continue writing your e-mail later, you can save it in Drafts by selecting Save to drafts.

Sending the e-mail later: Press Menu, and select Messages, E-mail, Outbox and Send now.

Other options available for an e-mail application

- *Details* gives additional information about the application.
- Service settings activates the network connection settings for your e-mail function.
 - *Application* activates settings that are used for the e-mail application.
 - *Default* confirms that your e-mail function uses the same settings as the WAP browser. Contact your e-mail service provider, if in doubt.

Downloading e-mail messages from your e-mail account You have two choices when checking your e-mail: **Retrieve**, or **Send and**

retrieve.

1 Press Menu, then select Messages, E-mail, Open.

Scroll to *Retrieve* to download e-mail messages sent to your e-mail account.

OR:

Scroll to *Send and retrieve* to download new e-mail messages and to send e-mails that have been saved in the *Outbox* folder.

Your phone makes a connection to the e-mail service. A waiting bar is shown, while your phone is downloading e-mail messages to your phone. If the message memory is full, delete some of your older messages before you start to download new messages.

- 2 To view a new message, press Select or to view it later, press Back to. To read the e-mail later, press Menu, select Messages, E-mail, Open, and Inbox.
- 3 If more than one message is received, select the message you want to read.

An unread e-mail message is indicated by \square .

Replying to an e-mail message

1 While reading or viewing the message, press **Options**.

You can, for example, select an option to delete, reply, reply to all, forward or archive the message you are reading.

- 2 Select *Reply*.
- 3 Select *Original text* to include the original message in the reply or select *Empty screen*.
- 4 Write your reply.
- 5 When finished, press **Options**, and select *Send e-mail* and *Send now* to send the message to the displayed number.

Inbox, Outbox, Deleted items, Sent items, Drafts, and Archive folders

Your phone has the following folders in the *E-mail* menu:

- Inbox for saving e-mails that you have downloaded from your e-mail account.
- *Outbox* for saving e-mails that have not been sent. See Writing and sending an e-mail with the SMS Method.
- *Deleted items* for e-mails that have been deleted.
- Sent items for saving e-mails that have been sent.
- *Drafts* for saving unfinished e-mails.
- Archive for organizing and saving your e-mails.

E-mail settings

These settings may already be set up in your phone (depending on your service provider). If you must enter the settings manually, refer to the table below.

- 1 Press Menu, then select Messages, E-mail, Open, and Settings.
- 2 Select *Mailbox in use* to view a list of mailboxes, then scroll to the one you want to edit and select it.

You have five mailboxes that you can use for the e-mail settings of your phone for saving and retrieving e-mail messages.

3 Select *Edit active mailbox* and select each of the settings one by one. Enter the required settings according to the information received from your mail service provider.

Setting	Explanation
Mailbox name	The name for the mailbox.
E-mail address	Your e-mail address.
My name	Adds a nickname to your e-mail address.
Outgoing (SMTP) server	Address for the outgoing (SMTP) server. For example, smtp.mail.com.
Outgoing (SMTP) port	SMTP port number for outgoing e-mails (common value is 25).
Use SMTP authorization	Set to On, if required for sending e-mails. If not, select Off.
SMTP user name	User name for outgoing e-mails (if required); found in the first part of your e-mail address.
SMTP password	Password for outgoing e-mails (if required).
Include signature	Personal signature automatically added to e-mail.
Incoming (POP3/IMAP) server	E-mail server type for the incoming e-mail. Changing the server type also changes the incoming port number.

Setting	Explanation
Incoming (POP3/IMAP) port	Port number: 110 for POP3 and 143 for IMAP.
POP3/IMAP user name	User name to access the mailbox; found in the first part of your e-mail address.
POP3/IMAP password	Password to access the mailbox.
Reply-to address	Sends incoming replies to a different mailbox.
Incoming server type	Either POP3 or IMAP4 . If both types are supported, select IMAP4. Changing the server type also changes the incoming port number.
Secure login APOP	For POP3 only: On for the connection requiring an encrypted login, otherwise Off .
Retrieve mails	Enter the maximum number of emails to be retrieved at a time.

Voice messages

Voice mailbox is a network service, and you may need to subscribe to it. Contact your service provider to get your voice mailbox number and more information.

Press Menu, and select Messages and Voice messages. Select:

 Listen to voice messages to call your voice mailbox at the phone number that you have saved in the Voice mailbox number menu.

Each phone line may have its own voice mailbox number, see <u>Line for</u> outgoing calls.

• Voice mailbox number to key in, search for or edit your voice mailbox number and press OK to save it.

If supported by the network, the indicator **OO** will show new voice messages. Press Listen to call your voice mailbox number.



Note: Pressing and holding $\int_{\mathbf{v}}^{1}$ calls your voice mailbox.

Info messages

With the info message network service you can receive messages on various topics from your service provider, for example weather or traffic conditions. For available topics and the relevant topic numbers, contact your service provider.

If the *GPRS connection* is set to *Always online*, the info messages may not be received. In that case, set the *GPRS connection* to *When needed*. See <u>Settings</u> when GPRS is the selected data bearer.

Message settings

The message settings affect the sending, receiving, and viewing of messages.

Settings for text messages

- 1 Press Menu, and select *Messages*, *Message settings*, *Text messages*, and *Sending profile*.
- 2 If more than one message profile set is supported by your SIM card, select the set you want to change.
 - Select *Message center number* to save the phone number of the message center that is required for sending text messages. You will receive this number from your service provider.
 - Select *Messages sent as* to select the message type *Text*, *E-mail*, *Paging*, or *Fax*.
 - Select *Message validity* to select the length of time for which the network should attempt to deliver your message.
 - For message type *Text*, select *Default recipient number* to save a default number for sending messages for this profile.

For message type *E-mail*, select *E-mail server* to save the e-mail server number.

- Select *Delivery reports* to ask the network to send delivery reports for your messages (network service).
- Select *Use GPRS* to set GPRS as the preferred SMS bearer.
- Select *Reply via same center* to allow the recipient of your message to send you a reply using your message center (network service).
- Select *Rename sending profile* to change the name of the selected message profile. The message profile sets are displayed only if your SIM card supports more than one set.

Overwrite settings

When the text message memory is full, the phone cannot receive or send any new messages. However, you can set the phone to automatically replace old text messages in the *lnbox* and *Sent items* folders with the new ones.

Press Menu, and select *Messages*, *Message settings*, *Text messages*, and *Overwriting in inbox* or *Overwriting in sent items*. Select *Allowed* to set the phone to replace the old text messages with new ones in the *Inbox* or the *Sent items* folder, respectively.

Settings for multimedia messages

- 1 Press Menu, and select *Messages*, *Message settings*, and *Multimedia msgs*.
- 2 Select one of the following:
- Save sent messages. Select Yes to set the phone to save sent multimedia messages in the Sent items folder. If you select No, the sent messages are not saved.

- Allow multimedia reception. Choose No, Yes, or In home network to use multimedia service. If you choose In home network, you cannot receive multimedia messages when outside your home network.
- Incoming multimedia messages. Select Retrieve to set the phone to automatically fetch newly received multimedia messages, or select Decline if you do not wish to receive multimedia messages.
- *Connection settings.* Define WAP connection settings for retrieving multimedia messages. Activate the set where you want to save the connection settings and then edit the settings.
 - Settings' name. Key in the new name for the connection set and press OK.
 - *Homepage*. Key in the homepage address of the WAP service that you want to use and press OK.
 - Session mode. Select Permanent or Temporary.
 - Data bearer. Select GPRS.
 - Bearer settings.
 - GPRS access point. Key in the access point name and press OK. An access point name is needed to establish a connection to a GPRS network. You obtain the access point name from your network operator or service provider.
 - *IP address*. Key in the address and press OK. You obtain the IP address from your network operator or service provider.

- Authentication type. Select Secure or Normal.
- User name. Key in the user name and press OK.
- *Password*. Key in the password and press OK.
- Allow advertisements. You can receive or decline advertisements.

Receive multimedia connection settings as a text message

You may receive the service settings as a text message from the network operator or service provider that offers the WAP service that you want to use. For more information, contact your network operator or service provider.

Other settings (font size)

To select the font size for reading and writing messages, press Menu, and select Messages, Message settings, Other settings and Font size.

Service commands

Press Menu, and select *Messages* and *Service commands*. Key in and send service requests (also known as USSD commands), such as activation commands for network services, to your service provider.

Call log (Menu 2)

The phone logs the phone numbers of missed, received and dialed calls, and the approximate length and cost of your calls.



Missed and received calls are logged only if the network supports these functions. The phone must be switched on and within the network's service area.

When you press **Options** in the *Missed calls, Received calls* and *Dialed numbers* menu, you can, for example, view the date and the time of the call, edit or delete the phone number from the list, save the number in **Contacts**, or send a message to the number.

Recent calls lists

Press Menu, and select Call log; then select one of the following:

• *Missed calls* is a system service that allows you to view a list of the last ten phone numbers from which somebody has tried to call you. The number in front of the name or phone number indicates the amount of call attempts from that caller.



- **Note:** When a note about missed calls is displayed, press List to access the list of phone numbers. Scroll to the number you want to call back and press
- Received calls is a system service that allows you to view the list of the last 10 phone numbers from which you have most recently accepted calls.

- Dialed numbers to view the list of the 20 phone numbers that you have most recently called or attempted to call. See also <u>Last number redialing</u>.
- Delete recent call lists to delete the recent calls lists. Select whether you want to delete all the phone numbers in the recent call lists, or only those numbers in the missed calls, received calls or dialed numbers lists. You cannot undo the operation.

Call counters and call timers



Note: The actual invoice for calls and services from your service provider may vary, depending upon network features, rounding-off for billing, taxes and so forth. Some timers may be reset during service or software upgrades.

Press Menu, and select Call log, then Call timers to view:

- Duration of last call, shows the approximate duration of your last call in hours, minutes and seconds. To clear the timers, the security code is needed.
- *Duration of received calls*, shows the approximate duration of your received calls in hours, minutes and seconds since the timers were last reset. To clear the timers, the security code is needed.
- *Duration of dialed calls*, shows the approximate duration of your dialed call in hours, minutes and seconds since the timers were last reset. To clear the timers, the security code is needed.

- Duration of all calls, shows the approximate total of the duration of your last call, received calls, and dialed calls in hours, minutes and seconds since the timers were last reset. To clear the timers, the security code is needed.
- *Clear timers*, resets the timers to zero on each of the call log timers. A security code is needed to clear the timers.

Each phone line has its own call timers and the timers of the selected line are displayed. See <u>Line for outgoing calls</u>.

• *Call costs* (system service). Select *Last call units* or *All calls' units* to check the cost of your last call or all calls in terms of units specified within the *Show costs in* function.

Select *Call cost settings* and select *Clear counters* to clear the counters, or select *Show costs in* to set the phone to show the remaining talk time in terms of charging units, *Units*, or units of currency, *Currency*. Contact your service provider for charging unit prices.

Select *Call cost limit* to limit the cost of your calls to a certain amount of charging units or units of currency. The PIN2 code is needed for the call cost settings.



Note: When no more charging units or currency units are left, calls may only be possible to the emergency number programmed into your phone (e.g. 911).

GPRS data counter

With the GPRS data counter you can check the amount of data sent and received data in last session, data sent and received in total, and to clear the counters. The counters unit is a byte. To clear the counters, the security code is needed.

GPRS connection timer

With the GPRS connection timer you can check the duration of the last GPRS connection or the total GPRS connection since the timers were last reset. You can also clear the timers. To clear the timers, the security code is needed.

Contacts (Menu 3)

You can save up to 500 names in **Contacts**, with multiple numbers and text notes for each name. The amount of



numbers and text entries that you can save may vary, depending on their length and the total number of entries in **Contacts**.

View the Contacts menu

- At the Start screen, press the right selection key under Contacts. The menu items in the left column of the following table appear in the display.
- 2 Scroll to an item. Press Select to activate the feature or enter its submenu.

Menu item	Function
Find	Find a name or select from a list
Add contact	Add a name to your Contacts list
Edit name	Edit an existing name
Delete	Delete a name and its associated numbers

Menu item	Function
Сору	Copy entries from Phone memory to SIM and vice versa
Add number	Add a number to an existing name
Settings	Set memory in use (Phone or SIM), change your contacts list view, and check the memory status of your Phone and SIM card
1-touch dialing	Display the list of 1-touch dialing numbers saved to memory
Voice tags	Display a list of voice tags saved
Service numbers	Display a list of numbers related to your wireless service provider
Own numbers	View the numbers (line 1, Work, HOME) in use by your SIM card
Caller groups	View and edit the properties (such as the ring tone) for any of the caller groups

Find a name in Contacts

- 1 Press Contacts and select Find.
- 2 You can key in the first characters of the name you are searching for in the pop-up window.

Press — and — to scroll through the names in the list, and (or) to move the cursor in the pop-up window.

3 Scroll to the name you want, and press **Details**. Scroll to view the details of the selected name.



Note: To quickly find a contact and phone number, press — or — in standby mode. Key in the first letter(s) of the name, and/or scroll to the name you want.

Add a contact using the Contacts menu

You can save names and numbers to phone memory or to SIM memory.

- 1 At the Start screen, press Contacts, scroll to Add contact and press Select.
- 2 Enter a name using the keypad and press OK.
- 3 Enter a number and press OK.
- 4 Press Done to return to the Start screen. To key in the numbers, see <u>Make</u> <u>a call</u>.



Note: In standby mode, key in the phone number. Press Options, and select *Save*. Key in the name, press OK and Done.

Quickly save a name and number

- 1 At the Start screen, enter the phone number you wish to save.
- 2 Press Options, ensure *Save* is highlighted, and press Select.
- 3 Enter a name for the number and press OK.

A confirmation message appears in the display indicating your entry has been saved.

Quickly save (only) a number

You can save a phone number as a stand-alone entry in Contacts.

- 1 At the Start screen, enter the number you wish to save.
- 2 Press and hold Options.

A message appears in the display confirming your number is saved.

Edit a name, number or text item

Search for the contact name (and number) you want to edit and press **Details**. Scroll to the name, number or text item you want to edit, and press **Options**. Select *Edit name*, *Edit number*, or *Edit detail*, and edit the name, number, or text and press **OK**.

Delete names and numbers

Press Contacts and select Delete.

- To delete contact names and numbers one by one, select One by one and scroll to the name (and number) you want to delete. Press Delete and press OK to confirm.
- To delete contact names and numbers all at once, select *Delete all*. Then select *Phone* or *SIM card* and press Delete. Press OK and confirm with the security code.

Copy Contacts

You can copy names and phone numbers from the phone memory to your SIM card memory and vice versa.

- 1 Press Contacts and select Copy.
- 2 Select the copying direction, *From phone to SIM card* or *From SIM card to phone*.
- 3 Select One by one, All or Primary numbers.

If you select *One by one*, scroll to the name you want to copy and press Copy.

Primary numbers is shown if you copy from the phone to the SIM card. Only the Primary numbers will be copied.

4 To choose whether you want to keep or delete the original names and numbers, select *Keep original* or *Move original*.

If you select *All* or *Primary numbers*, press OK when *Start copying?* or *Start moving?* is displayed.



Caution: Select *Keep original* if you're unsure of which copy method to use. This ensures original entries are merely copied to the new location. *Move original* deletes files after copying.

Add number

Save multiple numbers and text items per name

You can save different types of phone numbers and short text items per name to **Contacts**. The first number you save for any entry is automatically set as the default, or primary number.

- Press
 or
 in standby mode and scroll to the name you wish to add a
 number or text item.
- 2 Press Details, and then press Options.
- 3 Scroll to Add number or Add detail and press Select.
- 4 Scroll to one of the following types and press Select:

<table-cell-rows> General</table-cell-rows>	🚺 Mobile	삼 Home	📶 Work	🖴 Fax
E-mail address	Web address	Street address	27 Note	

5 Enter the number or text for the type you've selected and press OK.

6 To change the type, select *Change type* in the options list.

Change the default (primary) number

- 1 At the Start screen, press or and scroll to the entry you wish to change and press Details.
- 2 Scroll to the number you wish to set as default and press Options.
- 3 Scroll to As primary number and press Select.

Send and receive a business card

You can send and receive a person's contact information as a business card as an Over The Air (OTA) message if supported by the network.

Receive a business card

When you have received a business card as an OTA message, press Show. Press Save to save the business card in the phone's memory. To discard the business card, press Exit and then OK.

Send a business card

You can send a business card as an OTA message to a compatible phone or other handheld device which supports the vCard standard.

- Search for the name and phone number you want to send from Contacts, press Details and Options and select Send bus. card.
- 2 To send the business card as an OTA message, select *Via text message*.

Save addresses and notes

To save an E-mail address, you'll need to add it to an existing entry (name).

- 1 Find the entry (name) in your contacts to which you'd like to add an address or note.
- 2 With the entry highlighted, press Options, scroll to *Add detail* and press Select.
- 3 Scroll to the address or note of your choice and press Select.
- 4 Enter the text for the note or address and press OK.

Settings

Press Contacts and select Settings. Select

- Memory in use to select the Contacts list you want to use. To recall names and numbers from both lists, select *Phone and SIM*. The names and numbers will be saved in the phone and SIM memory. Or you can select to save in either the *Phone* or *SIM card*.
- *Contacts view* to select how the names (and numbers) in the Contacts list are displayed.
- *Memory status* to see how many names and phone numbers are currently saved and how many can still be saved in the selected contacts list.

1-touch dialing

You can associate any entry in your contacts list with keys 2 through 9 and then dial those entries by pressing and holding the assigned key.

Assign a key to 1-touch dialing

- 1 At the Start screen, press Contacts, scroll to 1-touch dialing and press Select.
- 2 Scroll to any empty slot and press Assign.
- 3 Enter the number (including the area code) and press OK, or press Find to retrieve a number from your contacts list.
- 4 Press Select and view the number.
- 5 Press Select and the number is assigned to the empty slot.

OR

6 Enter a name for the number and press OK.

If 1-touch dialing is off, the phone displays a prompt asking if you'd like to turn 1-touch dialing on. Press Yes to activate 1-touch dialing.

7 The entry appears in the slot you've assigned.

Make a call with 1-touch dialing

Press and hold the key to which an entry has been assigned. Your phone dials the entry assigned to the key. See <u>1-touch dialing</u>.

Change 1-touch dialing numbers

- 1 At the Start screen, press Contacts, scroll to 1-touch dialing and press Select.
- 2 Scroll to the 1-touch dialing entry you wish to change and press Options.

- **3** Scroll to *Change* and press **Select**.
- 4 Enter the new number, or press Find to retrieve a number from your Contacts list, and press OK.
- 5 Enter a name for the entry and press OK.

Delete 1-touch dialing numbers

- 1 At the Start screen, press Contacts, scroll to 1-touch dialing and press Select.
- 2 Scroll to the 1-touch dialing location you wish to delete and press Options.
- 3 Scroll to *Delete* and press Select. You're asked to confirm the deletion.
- 4 Press OK to delete the key assignment.

Voice tags

Press **Contacts** and select *Voice tags* to view the list of voice tags you have saved. See <u>Add a voice tag to a contact</u> to use the voice dialing feature which allows handsfree operation while you place a call.

View Info, Service, and Own numbers

Your wireless service provider may have saved your phone's operating number, as well as various information and service numbers to your SIM card.



Note: This feature may not be supported by your SIM card. If so, contact your wireless service provider for more information.

1 Press Contacts at the Start screen, scroll to one of the number types in the following table, and press Select.

Number type	Used this number to
Info numbers	Contact your wireless service provider to obtain information
Service numbers	Contact your wireless service provider to obtain service
Own numbers	Display the operating number, or numbers which have been assigned to your phone by your wireless service provider

2 To view details of any of the number types in the previous table, press Details when the number type appears in the display.

Caller groups

You can add contacts list entries to any of 5 caller groups, and then assign a unique ringing tone or graphic to that group. This enables you to identify callers from the group by their unique ringing tone or graphic. A caller group can be as small as one person or as large as your entire contacts list. Caller groups can be renamed to suit your preference.

Caller group options

1 At the Start screen, press Contacts, scroll to *Caller groups*, and press Select. The following Caller groups are available.

Family VIP Friends Business Other

2 Use the scroll keys to highlight a group. Press Select to display the following caller group options:

Rename group	Rename the group to your preference
Group ringing tone	Set the ringing tone for the group
Group logo	Turn the graphic for the caller group on or off
Group members	Add or remove members from the caller group

Setup a caller group

 At the Start screen, press
 and
 t0 display a list of entries in your Contacts.



- **Note:** Perform a "quick find" when **Contacts** entries are displayed by entering the first letter of a name. \checkmark appears at the bottom of the display to indicate you're performing a search.
- 2 Scroll to a name you'd like to add to a caller group and press Details.
- 3 Press Options, scroll to Caller groups, and press Select.
- 4 Scroll to the caller group to which you'd like to add the name and press Select. A confirmation message appears in the display.