4. Follow the directions on the screen. You will need to synchronise your phone with your computer and then tap **My Channels** to complete the AvantGo setup.

When synchronisation is complete, tap the **AvantGo Channels** link in the list of favourites to see a few of the most popular channels. To add or remove channels, tap the **Add** or **Remove** link.

WAP

Using **WAP**, you can browse the WAP (Wireless Application Protocol) sites on your phone.

Connecting to a web site

1. From the **Start** menu, tap **WAP**.

   The main screen of the WAP displays, as follows.

Address bar

Tap to access the Website after entering a URL.

Toolbar

2. To open one of your favorite sites, tap on the toolbar and then select a Website in the list. You can also enter an address of Website in the Address bar and tap .

3. While you are navigating through the WAP pages, you can use the following options by tapping icons on the toolbar:

Tap	To
	Display the list of favorites.
	Search for a word in the current page.
	Go to the previously visited page.
	Go to the next page.
	Go to the homepage.
	Stop loading the current page.
	Refresh the current page.

Opening multiple window

You can open multiple URLs at the same time in different windows. WAP provides options to clone a page, open a new window and to close a window.

To open a new window, on the WAP screen, tap **View** → **Window** → **New Window**.

To open a new window with the same contents as the current window, on the WAP screen, tap **View** → **Window** → **Clone Page**.

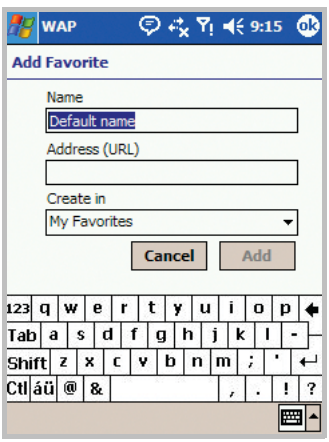
To close the current window, on the WAP screen, tap **View** → **Window**→ **Close Window**.

Using Favorites

You can store your favourite Websites and then access them easily. Categorising them enables you to find them more quickly.

To add a favorite:

1. On the WAP screen, tap **Menu** → **Favorites** → **Add To Favorites**. You can also access this feature by tapping → **Add / Delete** tab → **Add**.



2. Enter a name for the favourite site and the URL of the site, and select a category from the list under which you want to save the favorite. You can also create a new category or delete a category on this screen.

3. Tap **Add**.

To open a page through favorites:

1. On the WAP screen, tap on the toolbar. The favorites under the selected category are displayed on the Favorite screen.

2. Select a category, if necessary, and select the site you want.

To delete a favorite under a particular category:

1. On the WAP screen, tap → **Add / Delete** tab.

2. Select the site you want to delete and tap **Delete**.

Using the history

The history list keeps track of all of the Websites you visited.

To view the history:

On the WAP screen, tap **Menu** → **History**. The History screen displays all of the recently visited URLs. The history entries are displayed by page title or page URL according to your choice.

To open a page in the history, select the URL you want.

To clear all entries in the history list, tap and hold an entry and select **Clear All** from the pop-up menu.

To add the history to the Favorites list, tap and hold the page and select **Add to Favorite**.

Setting the WAP options

Display options

You can select the following display options:

To hide toolbar on the WAP screen, tap **View** → **Display** and deselect **Toolbar**.

To hide the address bar, tap **View** → **Display** → **Address Bar**.

To enable graphics contents in your browser skin, on the WAP screen, tap **View** → **Display** → **Image**.

To wrap the contents within the width of the screen, on the WAP screen, tap **View** → **Display** → **Fit to screen**. You have to refresh the screen after selecting this option.

Statistics

WAP provides statistical information about the data transfer over the web server. To view the statistical information, on the WAP screen, tap **View** → **Statistics**.

The information about the pages viewed, objects fetched, the number of bytes sent and received, and the average page size are displayed.

You can also view the statistical information as a chart in the **Chart** tab.

Connection settings

You can view the current connection settings for WAP. You can change an active profile or edit a selected profile.

To access this feature, on the WAP screen, tap **Menu** → **Tools** → **Options** → **Preference** tab.

Cache / Cookie

Viewed pages can be cached for faster downloads, Cookies store information related to a session. You can select to enable or disable cache or cookie.

To access this feature, on the WAP screen, tap **Menu** → **Tools** → **Options** → **Cache / Cookie** tab. You can also clear cache or cookie on this screen.

Using WAP help

On the WAP screen, tap **Menu** → **Help** → **Online Help**. You can access the online help for the WAP features.

MSN Messenger

MSN® Messenger on your phone is an instant messaging programme that lets you:

- see who is online.
- send and receive instant messages.
- have instant message conversations with groups of contacts.

To use **MSN Messenger**, you must have a Microsoft Passport™ account, Hotmail account, or a Microsoft Exchange e-mail account. If you have a Hotmail® or MSN account, you already have a Passport. Once you have obtained either a Microsoft Passport or a Microsoft Exchange account, you are ready to set up your account.

Note: Sign up for a Microsoft Passport account at http://www.passport.com. Get a free Microsoft Hotmail e-mail address at http://www.hotmail.com.

To open MSN Messenger:

From the **Start** menu, tap **Programs** → **MSN Messenger**.

Setting up

Before you can connect, you must set up the instant messaging account(s) to use. For MSN Messenger Service, you must enter a Microsoft Passport or Hotmail account. For Exchange Instant Messaging, you must enter an Exchange account.

To set up an account and sign in:

1. On the MSN Messenger main screen, tap **Tools** → **Options**.

2. In the **Accounts** tab, enter your Microsoft Passport, Hotmail account, or Exchange account information. For details, see the online help.

3. To sign in, tap the screen, or tap **Tools** → **Sing In** on the MSN Messenger main screen.

To change from your exchange instant messaging to your MSN Messenger service, and sign in:

1. On the MSN Messenger main screen, tap **Tools** → **Options** → **Accounts** tab → **Settins**.

2. Tap **Enable MSN Messenger Service**, enter your Microsoft Passport, Hotmail account information; under **Sign in using this account first**, tap **MSN Messenger Service**.

3. Tap ok.

4. To sign in, tap tap the screen, or tap **Tools** → **Sing In** on the MSN Messenger main screen.

Note: If you already use MSN Messenger on your computer, your contacts will show up on your device without being added again.

Working with contacts

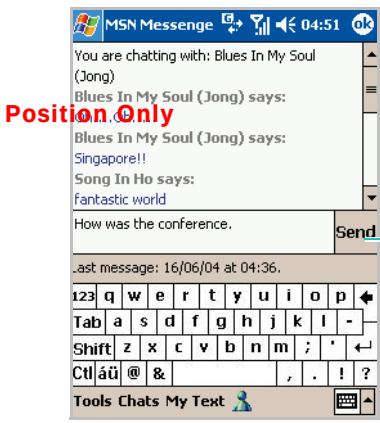
The MSN Messenger screen shows all of your messenger contacts at a glance, divided into **Online** and **Not Online** categories. From this view, while connected, you can start a chat by tapping a contact in the list.

If you tap and hold a contact in the list, a pop-up menu displays. You can send e-mail, block the contact from chatting with you, or delete contact from your list using the pop-up menu.

Note: To see others online without being seen, on the MSN Messenger screen, tap **Tools** → **My Status** → **Appear Offline**. If you block a contact, you will appear offline but will remain on the blocked contact's list. To unblock a contact, tap and hold the contact and select **Unblock** from the pop-up menu.

Chatting with contacts

Tap a contact name to open a chat window. Enter your message in the text entry area at the bottom of the screen, or tap **My Text** to enter a preset message, and tap **Send**. To invite another contact to a multi user chat, in the **Tools** menu, tap **Invite** and tap the contact you want to invite.



Position Only

To switch back to the main window without closing a chat, tap on the toolbar. To revert back to your chat window, tap **Chats** on the toolbar and select the person whom you were chatting with.

To know if the contact you are chatting with is responding, look for the message under the text entry area.

Using the **Tools** menu, you can add or block a contact, customise my text, and invite a contact into a contact.

For more information on using MSN Messenger, see the online help by tapping the **Start** menu → **Help**.

MMS

With MMS, you send and receive multimedia messages via Multimedia Message Service (MMS). In addition to the familiar text content of text messages, multimedia messages can contain images, video clips, and audio clips. MMS is sent as a multimedia presentation in a single entry, not as a text file with attachments.

Using this MMS feature, you can receive and send multimedia messages that contain images, such as photos or graphics you've downloaded from the Internet.

MMS provides support for e-mail addressing, so that messages can be sent from phone to e-mail, or vice versa.

This function is available only if it's supported by your service provider. Only phones that offer the MMS features can receive and display the multimedia messages.

To open MMS:

From the **Start** menu, tap **MMS**. The MMS main screen displays.

Sending a multimedia message

You can create and send a message containing text, photos, audio, and/or videos stored in your phone.

Creating and sending a message with one media file

1. On the MMS main screen, tap **Send Photo**, **Send Audio**, or **Send Video**.

2. Select the photo, audio, or video you want and tap **Menu** → **Insert** to insert the selected file to the message.

Notes:
- You can create and insert a new item to a message. Tap **Camera** in **Send Photo**, tap **Menu** → **Record** in **Send Audio**, or tap **Camcorder** in **Send Video**.
- The maximum size allowed for a message can differ, depending on the outgoing message size you have specified. To change the outgoing message size, tap **Setting** from the MMS main screen.

---

3. Enter your message in the text box.

   If you want to preview the message you created, tap **Menu** → **Preview**.

4. When finished composing the message, tap **Send**.

   If you want to save the message in the **Drafts** folder, tap **Menu** → **Save Message**.

5. On the MMS Recipient screen, enter the recipient's phone numbers or e-mail addresses.

   You can retrieve numbers or addresses from **Contacts** by tapping **TO**, **CC**, or **BCC**.

   If you want to change the message options, such as priority and expiry time, tap **Option**. For details, see page 166.

6. Enter the message subject in the **Subject** field.

7. Tap **Done** to send the message.

Creating and sending a message with a combination of media files

1. On the MMS main screen, tap **Compose**.

2. Tap and enter your message, and tap .

3. Tap and select the photo you want to insert, and tap **Menu** → **Insert**.

4. Tap and select the audio you want to insert, and tap **Menu** → **Insert**.

5. Tap and select the video you want to insert, and tap **Menu** → **Insert**.

6. To add a new page, tap . You can move to another page by tapping **Menu** → **Previous Page** or **Next Page**. You can also set the page to automatically move to the next by tapping **Menu** → **Page Duration**.

7. When you have finished composing the message, tap **Send**.

   If you want to save the message in the **Drafts** folder, tap **Menu** → **Save Message**.

8. On the MMS Recipient screen, enter the recipient's phone numbers or e-mail addresses.

   You can retrieve numbers or addresses from **Contacts** by tapping **TO**, **CC**, or **BCC**.

   If you want to change the message options, such as priority and expiry time, tap **Option**. For details, see page 166.

9. Enter the message subject in the **Subject** field.

10. Tap **Done** to send the message.

Receiving multimedia messages

When a new multimedia message comes in, the message is stored in **Message Box**.

To open Message Box, on the MMS main screen, tap **Message Box**.

When you access **Message Box**, the list of multimedia messages are displayed with the information about the sender and subject. In the Detailed view mode, the received date and expiry time of the message are displayed.

The messages can be sorted in any of the fields displayed, by clicking on the corresponding column head.

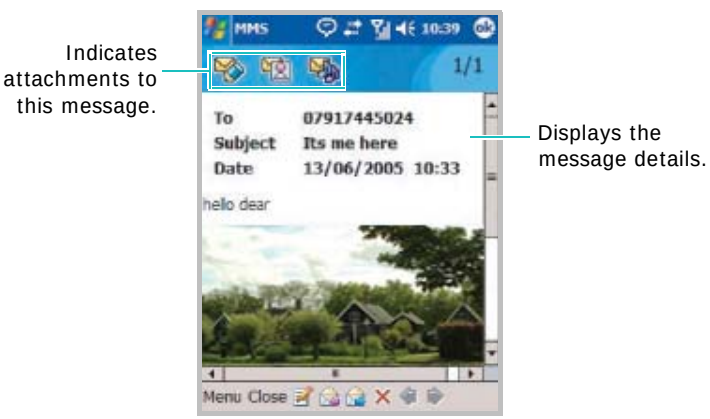
Viewing messages

You can access the messages you sent, you received, and you composed but not sent yet.

1. On the MMS main screen, tap **Message Box**. The messages in Message Box are displayed.

   If you want to find a message you sent or composed but not sent, tap the drop-down arrow at the top left and select **Sent Items** or **Drafts**.

2. Select the message you want to read and tap **Menu** → **View**.



3. While viewing the message, you can use the following options:
   - To forward the message to other people, tap .
   - To send a reply message to the sender, tap . You can also tap **Menu** → **Reply**. To send a reply message to all receipients, tap **Menu** → **Reply All**.

- To forward the message to other people, tap . You can also tap **Menu** → **Forward**.
- To delete the message, tap . You can also tap **Menu** → **Delete**.
- To download the message from the MMS server, tap tap **Menu** → **Download**.
- To extract attachments from the messages and save them in your phone, tap tap **Menu** → **Save Objects**.
- To view the previous or next page, tap or . You can also tap **Menu** → **Next Page** or **Previous Page**.

4. Tap or **Close** to close the message.

Configuring MMS settings

Sending options

You can change the default settings for sending MMS messages. On the MMS Recipient screen, before sending a message, tap **Option**.

- **Delivery Report**: When this option is selected, the network informs you whether or not your message has been delivered.
- **Read Reply Report**: When this option is selected, your phone sends a read-reply request along with your message to the recipient.
- **Delivery After**: Selects the time delay before messages are sent.
- **Priority**: Selects the priority level of your messages.
- **Class**: Selects a message class.
- **Expiry**: Selects the length of time messages are stored in the MMS server.

Profile settings

On the MMS main screen, tap **Setting** → **Profile** tab.

- **Profile**: Displays the current connection profile. To change the profile, tap **Edit Profile**.
- **Creation Mode**: Selects an MMS creation mode. To send messages using unsupported formats, select **Free**. To send messages using only supported formats, select **Restricted**. To inform you when sending messages using unsupported formats, select **Warning**.

Configuration

On the MMS main screen, tap **Setting** → **Configuration** tab.

- **Home Reception**: Determines if your Phone retrieves new messages automatically when you are in your home service area.
- **Roaming Reception**: Determines if your Phone retrieves new messages automatically when you are roaming in another network.
- **Reject Anonymous**: Rejects messages from unknown senders.
- **Message Class Allowed**: Selects a message class you want to receive.

chapter 8

Pocket outlook

Microsoft® Pocket Outlook includes **Calendar**, **Contacts**, **Tasks**, **Inbox**, and **Notes**. You can use these programmes individually or together. For example, e-mail addresses stored in **Contacts** can be used to address e-mail messages in **Inbox**.

Using ActiveSync®, you can synchronise information in Microsoft Outlook or Microsoft Exchange on your computer with your phone. You can also synchronise this information directly with a Microsoft Exchange server. Each time you synchronise, ActiveSync compares the changes you made on your phone and computer or server and updates both with the latest information. For information on using ActiveSync, see “ActiveSync Help” on the computer.

You can switch to any of these programmes by tapping on them in the **Start** menu.

Calendar

Use **Calendar** to schedule appointments, including meetings and other events. You can check your appointments in one of several views (Agenda, Day, Week, Month, and Year) and easily switch views by using the icons on the command bar of the Calendar main screen.

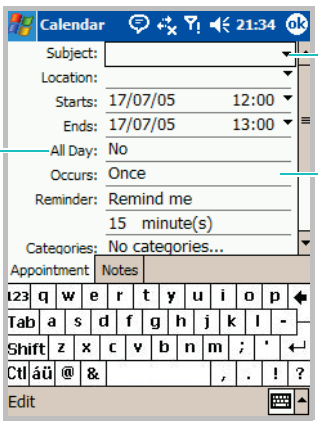
To open Calendar:

From the **Start** menu, tap **Programs** → **Calendar**. You can view the list of appointments that you have created in the Agenda view.

Creating an appointment

1. On the Calendar main screen, tap **New**.

   If you are in Day or Week view, tap the desired date and time for the appointment.



Tap the down arrow to choose from predefined text.

Tap and select **Yes** to last the appointment all day.

Tap to select the repeat interval to set how often the event repeats.

2. Tap first to select the field and enter a description and a location.

3. If needed, tap the date and time to change them.

4. Enter other desired information. You will need to hide the input panel to see all available fields.

5. To assign the appointment to a category, hide the input panel and tap the **Categories** field and then select a category from the list. In the calendar list, you can display appointments by category.

   You can also create a new category or delete it in the **Add/Delete** tab.

6. To prevent other people from viewing the appointment, tap the **Sensitivity** field and select **Private**. The private appointment is marked with a key icon when you view it.

7. To add notes, tap the **Notes** tab. You can enter text, draw, or create a recording. Note is a good place for maps and directions.

8. When finished, tap ok to return to the list of appointments.

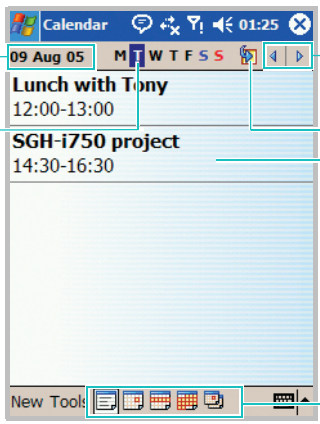
Note: If you select **Remind me** in the **Reminder** field of an appointment, your phone will remind you according to the options set in the **Start** menu → **Settings** → **Personal** tab → **Sounds & Notifications**.

Viewing and editing an appointment

On the Calendar screen, you can view and edit your appointments using the different views: Agenda, Day, Week, Month, or Year. By default, the Calendar first appears in the Agenda view, which provides the most detail about your appointment.

Note: You can customise the Calendar display, such as changing the first day of the week, by tapping **Options** from the **Tools** menu on the Calendar main screen. For details, see the online help.

1. On the Calendar main screen, select the date of the appointment in the date field at the top of the screen.



Tap to display the calendar.

Tap to select the day of the week.

Tap the left arrow to see the week previous or the right arrow to see the next week.

Tap to go to today.

Tap to display the summary screen for the appointment.

OR

Tap and hold to display a pop-up menu of actions.

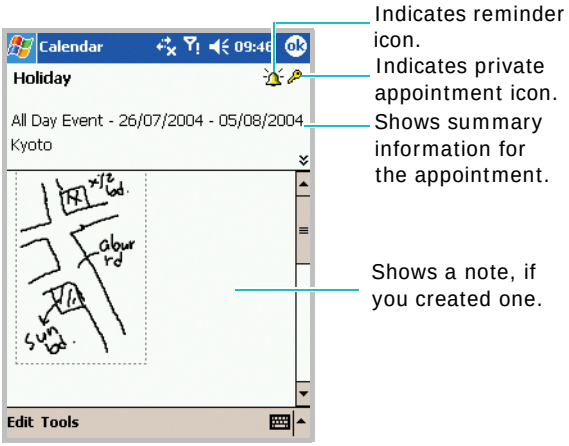
Select your calendar view from Agenda, Day, Week, Month, and Year.

2. Select the calendar view using the five icons on the command bar at the bottom of the screen.

   Each event type is assigned a different colour to help you find it more easily.

3. Tap the appointment you want to view.

   A summary screen is displayed.



4. Tap **Edit** and edit the appointment information.

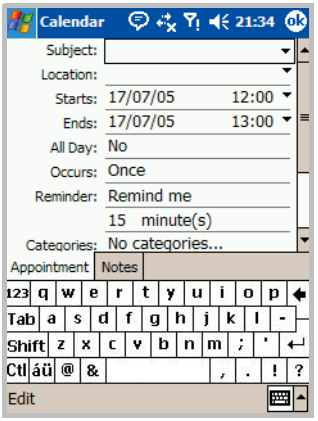
5. Tap ok to save the changes.

Creating meeting requests

You can use Calendar to set up meetings with users of Outlook or Pocket Outlook. The meeting request will be sent automatically either when you synchronise Inbox or when you connect to your e-mail server.

Scheduling a meeting

1. Create an appointment.



2. In the appointment details, scroll to and tap the **Attendees** field.

3. From the list of e-mail addresses you have saved in **Contacts**, tap the meeting attendees you want.

4. Tap ok.

5. Messaging automatically creates a meeting request and sends it to the attendees the next time you synchronise with your computer. Any textual notes entered in the **Notes** tab (excluding writings or recordings) will be also sent.

Note: If you are sending the meeting request through a connection to an ISP or the network, rather than through synchronization with your computer, tap **Tools** → **Options** → **Appointments** tab. In **Send meeting requests via**, tap the service you want to use to send the meeting request.

For more information on sending and receiving meeting requests, see the Calendar online help and Inbox online help.

Deleting an appointment

1. On the Calendar main screen, tap and hold the appointment you want to delete.

2. Select **Delete Appointment** from the pop-up menu.

3. Tap **Yes** to permanently delete the appointment.

Beaming an appointment

1. On the Calendar main screen, tap and hold the appointment you want to beam.

2. Select **Beam Appointment** from the pop-up menu.

3. When using the infrared connection, align the infrared ports according to the instructions on page 252 so that they are unobstructed and within a close range.

Contacts

Contacts maintains a list of your friends and colleagues so that you can easily find the information you're looking for, whether you're at home or on the road. Using the device's infrared (IR) port, you can quickly share Contacts information with other device users.

To open Contacts:

From the **Start** menu, tap **Contacts**. You can view the list of the contacts that you have created.

Creating a contact

You can create a new contact in Contacts and on the SIM card.

Creating a contact in Contacts

1. On the Contacts main screen, tap **New**.

2. Enter a name and other contact information. You will need to scroll down to see all available fields.

3. To assign the contact to a category, scroll to and tap the **Categories** field and then select a category from the list. In the contact list, you can display contacts by category.

   You can also create a new category or delete it in the **Add / Delete** tab.

4. To add notes, tap the **Notes** tab. You can enter text, draw, or create a recording.

Note: If you enter a name with more than 2 words, the middle word will be recorded as a middle name. If your contact has a double first or last name, tap the down arrow in the Name field and enter the names in the proper box.

5. When finished, tap ok to return to the contact list.

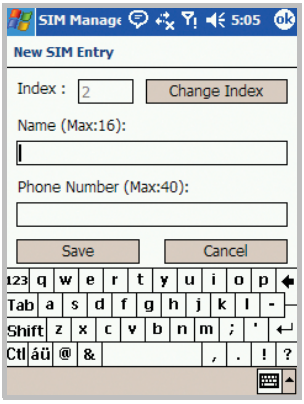
Creating a contact on the SIM card

1. On the Contacts main screen, tap **Tools** → **SIM Manager**.

   The SIM Manager application displays.

2. Tap to create a new SIM entry.

3. On the New SIM Entry screen, enter the name of the person you want to add.



   If necessary, tap **Change Index** to change the location number.

4. Enter the number you want to store in the **Phone Number** field.

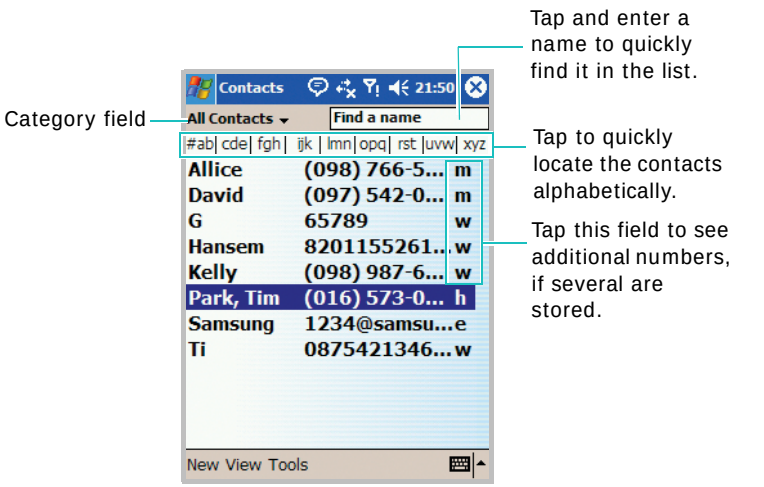
5. Tap **Save**.

Viewing and editing a contact

When you access Contacts, the contact list displays the names of your contacts alphabetically, along with an abbreviation for the primary contact number or E-mail address, such as the person's work phone number (w) or mobile phone number (m).

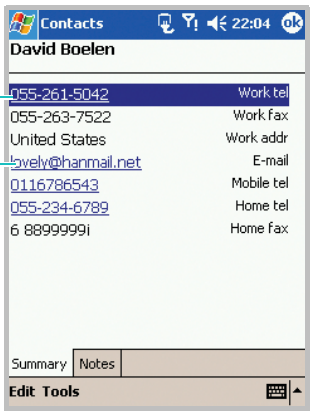
Note: To change the way information is displayed in the list, tap **Tools** → **Options**.

1. In the contact list, tap the contact's name you want to view.



If the contact is assigned to a certain category, tap the category field and select the category from the list. A list of contacts placed in that category displays.

2. Tap a contact's name or a phone number. A summary screen is displayed.



3. Tap **Edit** and edit the contact information.

4. Tap ok to save the changes.

Making a call from the contact list

1. In the contact list, tap and hold the contact you want to call.

2. Tap **Call Work**, **Call Home**, or **Call Mobile**.

You can also call the contact while viewing the selected contact's information. Tap the phone number you want to call.

Sending a message to a contact

1. In the contact list, tap and hold the contact to which you want to send a message. To select multiple contacts, tap and drag.

2. On the pop-up menu, tap **Send Email**, **Send MMS**, or **Send Text Message**, depending upon the type of message to send.

Note: To send an e-mail message, you must have an e-mail address configured for the contact. To send a text message, you must have a text message number for the contact, which is usually the mobile phone number.

Deleting a contact

Note: If you delete a contact on your phone and synchronise **Contacts** with your computer, you also delete the contact in Outlook on your computer.

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1. In the contact list, tap and hold the contact you want to delete.

   If the contact is assigned to a certain category, tap the category field and select the category from the list.

2. Tap **Delete Contact**.

3. Tap **Yes** to permanently delete the contact.

You can also delete the contact by selecting **Delete Contacts** from the **Tools** menu.

Notes

Quickly capture thoughts, reminders, ideas, drawings, and phone numbers with **Notes**. You can create a written note or a recording. You can also include a recording in a note. If a note is open when you create the recording, it will be included in the note as an icon. If the note list is displayed, it will be created as a stand-alone recording.

To open notes:

From the **Start** menu, tap **Programs** → **Notes**. You can view the list of your notes that you have created.

Creating a note

1. On the Notes main screen, tap **New**.

Tap to write on the screen.

Tap to add a recording to the note.

2. Create your note by writing, drawing, typing, using the keypad, and/or recording. For more information about, see Chapter 3.

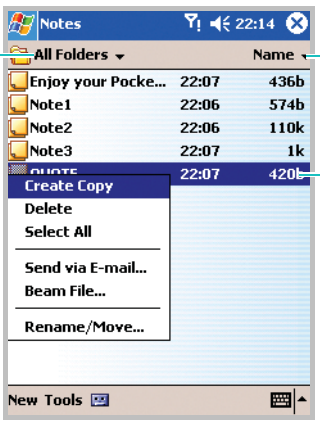
Viewing and editing a note

When you access the Notes application, the note list displays the first line of each note you create. This makes it easy to locate and review your notes. You can easily sort notes on the note list.

1. In the Notes list, tap the note you want to view.

   If the note is assigned to a certain category, tap the category field and select the category from the list.

Category field



Tap to change the sort order of the list.

Tap to view the note details.

OR

Tap and hold to display a pop-up menu of actions.

2. A summary screen is displayed.

3. Tap **Edit** and edit the note information.

4. Tap ok to save the changes.

Deleting a note

1. In the note list, tap and hold a note and select **Delete** from the pop-up menu.

   You can also tap **Tools** → **Delete Note**.

2. Tap **Yes** to permanently delete the note.

Tasks

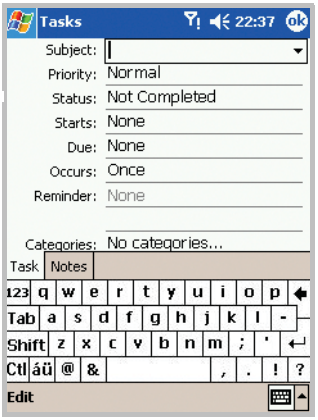
Tasks is a convenient place to create reminders of the things that you have to do. A task can be entered to occur once or repeatedly, depending on the demands of the task.

Creating a task

1. From the **Start** menu, tap **Programs** → **Tasks**. You can view the list of tasks that you need to do.

2. To quickly create a task with only a subject, tap **Tap here to add a new task** box at the top of the screen. Then enter your task information. If you cannot see the box, tap **Entry Bar** on the **Tools** menu.

3. To create a task, tap **New**.



4. Enter a description of the task.

5. To set a reminder for the task, tap the **Due** field and set a due date. Then tap the **Reminder** field and select **Remind me**. You will be reminded at 8:00 in the morning on the due date.

Note: To be automatically reminded of new tasks with a due date, in the task list, tap **Tools** → **Options** → **Set reminders for new items**.

---

6. To assign the task to a category, scroll to and tap the **Categories** field and then select a category from the list. In the task list, you can display tasks by category.

   You can also create a new category or delete it in the **Add / Delete** tab.

7. To prevent other people from viewing the task, tap the **Sensitivity** field and select **Private**. The private task is marked with a key icon when you view it.

8. To add notes, tap the **Notes** tab. You can enter text, draw, or create a recording.

9. When finished, tap ok.

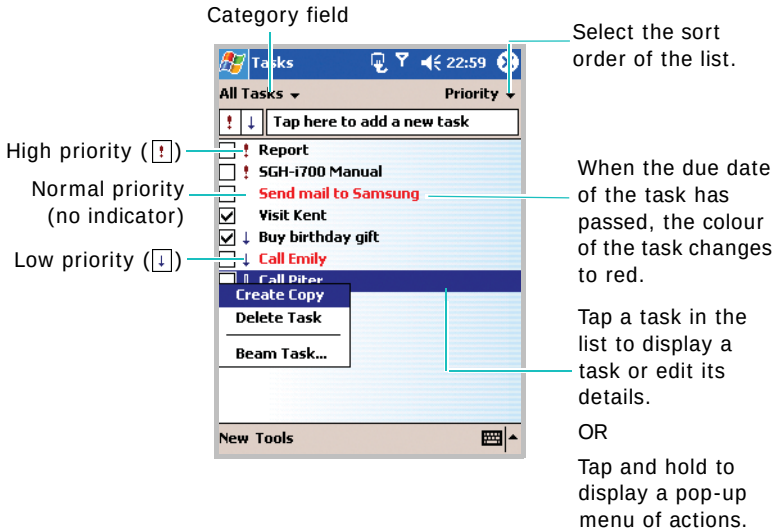
Viewing and editing a task

When you access the Tasks application, the task list displays. The task list shows your “things to do” list. You can also change the task information.

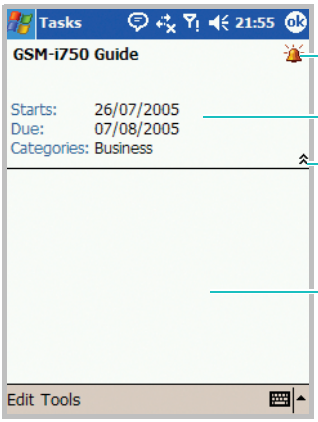
Note: To change the way information is displayed in the list, tap **Tools** → **Options**.

1. Tap the task you want to view.

If the task is assigned to a certain category, tap the category field and select the category from the list.



2. A summary screen is displayed.



Indicates the reminder icon.

Shows summary information of the task.

Tap to show and hide additional summary information.

Shows a note, if you created.

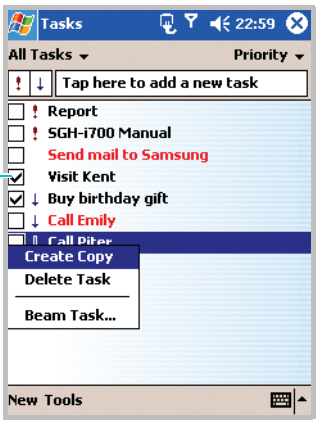
3. Tap **Edit** and edit the task information.

4. Tap ok to save the changes.

Completing or deleting a task

1. To mark a task as completed, in the task list, tap the check box next to the task.

When a task is completed, tap this check box to indicate that the item is done.



2. To delete a task, in the task list, tap and hold the task.

3. On the pop-up menu, tap **Delete Task**. The next time you synchronise, the task will be deleted from the computer.

4. Tap **Yes** to permanently delete the task.

chapter 9

Multimedia

Camera

With the built-in camera on your phone, you can take pictures of people or events while on the move. You can view and edit photos. Your phone supports JPEG, GIF, PNG, and BMP pictures.

To open Camera:

From the **Start** menu, tap **Camera**. You can also press on the right side of the phone.

Taking pictures

1. From the **Start** menu, tap **Camera** to turn on the camera. You can view the image to be captured.

2. Adjust the camera settings using the following onscreen icons.

Icon	Description
1632	Selects an image resolution.
B	Selects an image quality setting: B (Best), H (High), or E (Economy).
A	Adjusts the image brightness: from 3 (+3) to 3 (-3) or A (Auto).
AWB	Adjusts the white balance: AWB (Auto), (Daylight), (Cloudy), (Tungsten), or (Fluorescent).
A	Changes the flash setting: A (Auto), (Forced), or (Off).
	Changes a storage location: (Safe Store or Storage Card) or (Phone's memory).

Tap the up arrow or down arrow on the right side of the screen to zoom in or out.

You can also access camera options by tapping **Menu**. See the next section.

3. Tap to take a picture. The taken picture displays on the preview screen.

4. To save a photo, tap **Save**. The picture is saved in the **My Pictures** folder.

   To delete it and return to the Camera preview screen, tap **Cancel**.

   To send the picture via MMS, tap **MMS**. See page 162.

Options available in Camera mode

When you tap **Menu** from the Camera preview screen, the following options are available:

- **Shot Mode**: allows you to change the camera shooting mode. If you select **BCR Shot**, see the **BCR** application. See page 216.
- **Resolution**: allows you to select an image resolution.
- **Quality**: allows you to select an image quality setting.
- **White Balance**: allows you to customise the white balance to make your photo warmer or cooler, depending on lighting conditions.
- **Flash**: allows you to change the flash settings.
- **Brightness**: allows you to adjust the image brightness.
- **Self Timer**: allows you to set a time delay before the camera takes a photo.
- **Photo Effect**: allows you to apply a special effect.
- **Go to**: allows you to move to Camcorder mode or the **My Pictures** folder in **MyItems**.
- **Settings**: allows you to configuring Camera mode. See page 191.

Viewing photos

To view all of your photos, tap ▶ at the bottom of the screen or press O+ from the Camera preview screen. The **My Pictures** folder in **MyItems** opens and displays the photos you have taken.

Configuring Camera mode

From the Camera preview screen, tap **Menu** → **Settings** → **Camera** tab to access the following options for Camera mode.

- **Default image directory**: allows you to select the default memory location.
- **File name prefix**: allows you to set the default name prefix for photos.
- **Shutter sound**: allows you to select the sound produced when you press the camera shutter.
- **Timer sound**: allows you to select the sound produced when the timer counts down.
- **Multi-shot number**: allows you to select the number of shots the camera will take in Multi Shot mode.
- **Auto save**: allows you to set the camera to automatically save photos after taking.

Recording a video

1. From the **Start** menu, tap **Camera** to turn on the camera.

2. Switch to Camcorder mode by tapping at the bottom of the screen.

3. Adjust the camcorder settings using the onscreen icons.

Icon	Description
176	Selects an image resolution.
B	Selects an image quality setting: B (Best), H (High), or E (Economy).
A	Adjusts the image brightness: from +3 (+3) to -3 (-3) or A (Auto).
AWB	Adjusts the white balance: AWB (Auto), (Daylight), (Cloudy), (Tungsten), or (Fluorescent).
A	Changes the flash setting: A (Auto), (Forced), or (Off).
	Turns audio on or off: (Audio on) or (Audio off).
	Changes a storage location: (Safe Store or Storage Card) or (Phone's memory).

Tap the up arrow or down arrow on the right side of the screen to zoom in or out.

You can also access camera options by tapping **Menu**. See the next section.

4. Tap to start recording.

To pause recording, tap .

To resume recording, tap .

5. When you have finished recording, tap [■].

6. To save a video, tap **Save**. The video is saved in the **My Videos** folder.

   To delete it and return to the Camcorder preview screen, tap **Cancel**.

   To send the video via MMS, tap **MMS**. See page 162.

Options available in Camcorder mode

When you tap **Menu** from the Camcorder preview screen, the following options are available:

- **Resolution**: allows you to select an image resolution.
- **Quality**: allows you to select an image resolution.
- **White Balance**: allows you to customise the white balance to make you video image warmer or cooler, depending on lighting conditions.
- **Flash**: allows you to change the flash settings.
- **Brightness**: allows you to adjust the video image brightness.
- **Sound on**/**Sound off**: allows you to turn audio on or off.
- **Self Timer**: allows you to set a time delay before the camera record a video.
- **Movie effect**: allows you to apply a special effect.
- **Go to**: allows you to move to Camera mode or the **My Videos** folder in **MyItems**.
- **Settings**: allows you to configure Camcorder mode.

Playing videos

To access all of your videos, tap ▶ at the bottom of the screen or press O+ from the Camcorder preview screen. The **My Videos** folder in **MyItems** opens and displays the videos you have recorded.

Configuring Camcorder mode

On the Camcorder preview screen, tap **Menu** → **Settings** to access the following options for Camcorder mode:

- **Default video directory**: allows you to select the default memory location.
- **File name prefix**: allows you to set the default name prefix for videos.
- **Start sound**: allows you to select the sound produced when the camcorder start recording.
- **End sound**: allows you to select the sound produced when the camcorder ends recording.
- **Auto save**: allows you to set the camcorder to automatically save a video after recording.

MyItems

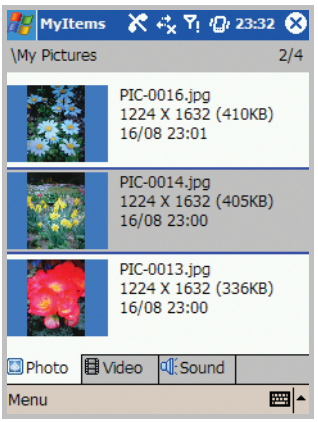
In **MyItems**, you can access photos, videos, sounds you have stored in your phone. You can also delete or send the items.

Photos

Viewing photos

1. From the **Start** menu, tap **MyItems** → **Photo** tab.

2. The photos you have taken display with the file name and time and date when it was taken.



3. Tap the photo you want to view.

4. To view the previous or next photo, tap the left arrow or right arrow on the screen, or press the Left or Right key.

   For the options available when you are viewing a photo, see the following section.

Options available while viewing a photo

Zooming

- Tap or to zoom in out.
- To enlarge the photo, tap . To return to Best fit view mode, tap .

Viewing a slide show

A slide show is a sequential presentation of each of the photos.

1. While viewing a photo, tap at the bottom of the screen, or tap **Menu** → **Slide Show** to view a slide show.

2. To stop the slide show, tap the screen and then .

Deleting a photo

1. On the My Pictures screen, tap and hold the photo you want to delete.

2. Tap **Delete** from the pop-up menu.

3. When the confirmation message appears, tap **Yes**.

Editing a photo

You can edit the photos using general editing tools.

1. From the My Pictures screen, select a photo you want to edit and tap **Menu** → **Edit**.

2. Edit the photo by tapping **Tools**, **Edit**, and editing tool icons at the bottom of the screen.

   - Use to rotate the image 90 degrees counter-clockwise.
   - Use to crop the image.

     Tap and then draw a box with the stylus pen around the area you wish to crop. Tap once inside the box you have drawn and your picture will be cropped.

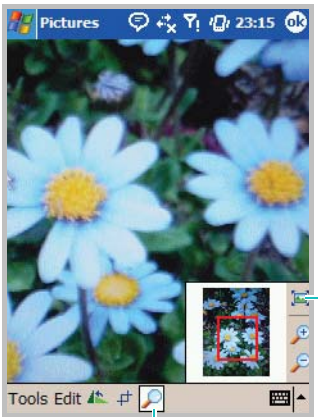
Crop icon

   - Use to open the zoom panel.

     By default your image is in Best Fit view mode when you open the image.

     Pan around the red boxed area to focus a portion of the picture into view. Press panel buttons to zoom in or out of the area highlighted by the red box.

Tap on the zoom panel to return to Best Fit view mode.



For details, see the online help.

3. Tap ok.

4. When a confirm message appears, tap **Yes** to save the edited photo.

Sending a photo

You can send a photo to another phone via MMS, e-mail, or the infrared (IR) port.

From the My Picture screen, tap **Menu** → **Send** → a sending method.

- If you want to send a photo via MMS, see page 162.
- If you want to send a photo via e-mail, see page 141.

- If you want to send a photo via the infrared (IR) port, see page 252.

Videos

Playing videos

1. From the **Start** menu, tap **MyItems** → **Video** tab.

2. The videos you have recorded display with the file name and time and date when it was saved.

3. Tap the video you want to play.

Deleting a video

1. From the My Videos screen, tap and hold the video you want to delete, and tap **Delete**. You can also delete a video by tapping **Menu** → **File** → **Delete**.

2. When a confirm message appears, tap **Yes**.

Sending a video

You can send a video via MMS, e-mail, or the infrared (IR) port.

From the My Videos screen, tap **Menu** → **Send** → a sending method.

- If you want to send a video via MMS, see page 162.
- If you want to send a video via e-mail, see page 141.
- If you want to send a video via the infrared (IR) port, see page 252.

Sounds

Playing sounds

1. From the **Start** menu, tap **MyItems** → **Sound** tab.

   The sounds display with the file name and time and date when it was recorded.

2. Tap the sound you want to play. You can also tap **Menu** → **Play**.

   To stop playing, tap .

   To resume playing, tap .

Deleting a sound

You can delete a sound stored in the **My Music** folder.

1. From the My Music screen, tap and hold the sound you want to delete, and tap **Delete**. You can also delete a sound by tapping **Menu** → **File** → **Delete**.

2. When a confirm message appears, tap **Yes**.

Sending a sound

You can send a sound via MMS, e-mail, or the infrared (IR) port.

From the My Music screen, tap **Menu** → **Send** → a sending method.

- If you want to send a sound via MMS, see page 162.
- If you want to send a sound via e-mail, see page 141.
- If you want to send a sound via the infrared (IR) port, see page 252.

Pictures

Using **Pictures**, you can view photos stored in the **My Pictures** folder on your phone or a memory card, if inserted into the phone.

To open Pictures:

From the **Start** menu, tap **Programs** → **Pictures**. The photos display in Thumbnail mode.

- To view photos in a memory card, tap .
- To view photos in the **My Pictures** folder, tap .
- To view a slide show of photos, tap . You can set the length of time each photo remains on the screen by tapping **Tools** → **Options** → **Slide Show** tab. For details, see the online help.
- To edit a photo, tap the photo you want. The photo opens in Edit mode. See “Editing a photo” on page 196.
- To set a photo as wallpaper for the Today screen, while viewing the photo, tap **Tools** → **Set as Today Wallpaper**.

Windows Media player

Your phone is equipped with Microsoft Windows Media Player 10 for Pocket PC. With Windows Media Player, you can play Windows Media Audio, Windows Media Video, and MP3 audio files that are stored on your phone, a memory card, or on the Web (network).

To open Windows Media Player:

From the **Start** menu, tap **Programs** → **Windows Media**.

The Library screen opens. For more information on using libraries, see page 205.

About DRM, licenses, and protected files

Some digital media files, such as songs downloaded from online stores, are encrypted to prevent the files from being unlawfully distributed or shared. Content providers use a technology called Digital Rights Management (DRM), to encrypt the files. During the encryption process, the content provider creates a license which specifies how and when the file can be used.

For example, a content provider could create a license that allows you to play a certain file on your computer, but not on your phone. Or, a license that allows you to play a certain file on your phone, but only for a month, or perhaps only a certain number of times. Files that have licenses associated with them are called protected files.

If you want to copy a protected file from your computer to your phone, use the desktop Media Player to synchronise the file to your phone. This will ensure that the license is copied along with the protected file. In the desktop version of Windows Media Player 10 or later, you can use ActiveSync to automatically copy your audio files, video files, and play lists to your phone every time you connect.

Copy media files using the desktop player

In addition to ActiveSync (page 89), you can use the desktop player to copy media files. Using the desktop player ensures that licenses are copied with protected files.

Make sure that you have Windows Media Player 10 or later versions on your computer. Depending on the version of your desktop player, the procedure to copy files may vary.

Selecting synchronisation mode

When you synchronise your phone with Windows Media Player on a computer for the first time, you need to set up synchronisation for your phone.

1. Connect your phone to your computer.

2. Open Windows Media Player on your computer. The Device Set up Wizard starts.

3. Select a synchronisation method:
   - **Automatic**: The player synchronises content to the device when you connect it to your computer or when you change synchronisation settings.

- **Manual**: You can select specific files or play lists you want to synchronise each time you want changes to the content on your phone.

You can switch between automatic and manual synchronisation.

To change the synchronisation method:

1. In Windows Media player, click **Library**.

2. In the Contents pane, right-click the device, and then click **Change Sync Settings**.

3. In the **Synchronization Settings** dialogue box, clear or select the **Synchronize device automatically** check box to select the mode you want.

Using automatic synchronisation

If you set automatic synchronisation from the Device Set up Wizard, the synchronisation automatically begins when you connect your phone to the computer.

Using manual synchronisation

If you set manual synchronisation from the Device Setup Wizard, you must specify the content you want to synchronise before starting synchronisation.

1. Connect your phone to the computer and start synchronisation using a PC data link cable.

2. Open Windows Media Player on the computer.

3. Click Library, click ***<List Name>*** **List**, and then click **Sync List**.

   If necessary, to clear the list before beginning, click **Sync List**, and then click **Clear List**.

4. Drag items from the Contents or Details pane in your library to the List pane to add them to the list of items to be synchronised.

5. In the List pane, verify that the items you have selected to synchronise will all fit on the device.

6. Click **Start Sync**.

Using libraries

A library is a file list provided by Windows Media Player to retrieve media files in the phone's memory or a memory card.

The Library screen contains categories, such as My Music, My Videos, My TV, and My Playlists. Using the Library screen, you can sort your content by criteria, such as artist name, album title, or genre.

From the Windows Media Player main screen, tap **Menu** → **Library**.

On the Library screen, you can use the following options by tapping **Menu**.

- **Queue Up**: Adds the selected file to the end of the current play list.
- **Delete from Library**: Deletes the selected file from the library.

- **Library**: Allows you to select the library that you want to view (for example, the library of files stored on your phone or a memory card).
- **Update Library**: Adds new files to the library by searching your phone or a memory card. Tap **Search** to start searching for new media files and add them to the corresponding library. When adding files has been finished, tap **Done**.
- **Open File**: Allows you to search for media files you want to play from the file system.
- **Properties**: Displays information about the selected file.

Playing music and video files

If you have copied media files in your phone's memory or memory card, you can play them from Windows Media Player.

Playing media files from a library

1. On the Library screen, if necessary, tap **Menu** and select **Library** and then select the memory that you want to use.

2. Select a category, such as **My Music** or **My Videos**.

3. Scroll to the library you want to play and tap **Play**.

Note: If the file does not appear in a library, on the Library screen, tap **Menu** → **Open File**. On the File System screen, select the file you want to play.

The player screen displays and the selected file plays.

To play the files in the play list randomly or repeatedly, tap **Menu** → **Shuffle**/**Repeat**.

Playing media files on a network

1. On the Windows Media Player screen, tap **Menu** → **Open URL**.

2. Enter a URL in the **URL** field.

   Or scroll to a URL that you have used in the **History** field.

3. Tap **OK**.

Note: To play streaming media, you must be connected to a network. For more information on creating a remote connection between your portable phone and a network, see the Connection online help.

Setting up a play list

You can add media files on the Library screen to a temporary play list. It lists the currently playing file, as well as any files that have been queued up to play next.

Creating a play list

1. On the Library screen, select the category you want and scroll to the file you want to play.

2. If the file does not appear on the list, tap **Menu** → **Update Library**. You can also select **Open File** to display the File System screen and search the files you want.

3. Tap **Menu** → **Queue Up**.

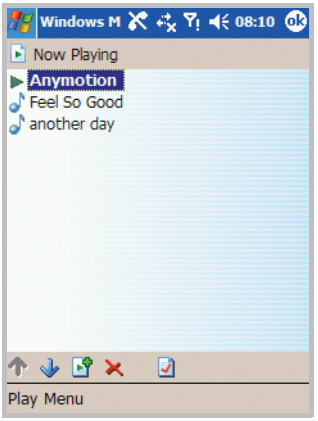
4. Repeat from step 1 to add more files.

5. Tap ok to return to the player screen.

Viewing the play list

On the Windows Media Player screen, tap **Now Playing**.

The Now Playing screen displays.



To scroll through files, tap or .

To go to the library, tap .

To delete the selected file from the current play list, tap .

To display the file information, tap .

Editing the play list

- To change the play order, tap **Menu** → **Move Up** or **Move Down**.
- To delete the selected files, tap **Menu** → **Delete from Playlist**.
- To clear the play list, tap **Menu** → **Clear Now Playing**.

Changing Window Media Player settings

You can customise the appearance and functionality of Windows Media Player. On the Windows Media Player screen, tap **Menu** → **Options**.

You can use the following options:

- **Playback**: Selects the options for playback. You can select the way time is displayed on the player screen, or whether or not to pause playback when you launch another programme, and resume playback after a phone call.
- **Audio**/**Video**: Selects the viewing options for playing videos, such as shrinking oversized videos and playing videos in a full screen.
- **Network**: Changes network connection settings to be used for playing streaming videos.
- **Library**: Selects whether the player screen or the Library screen is displayed when you open Windows Media Player.
- **Skins**: Changes the appearance of the player screen by selecting a new skin.
- **Buttons**: Assigns Windows Media Player functions to the keys on your phone to quickly control playback without having to use the menus.

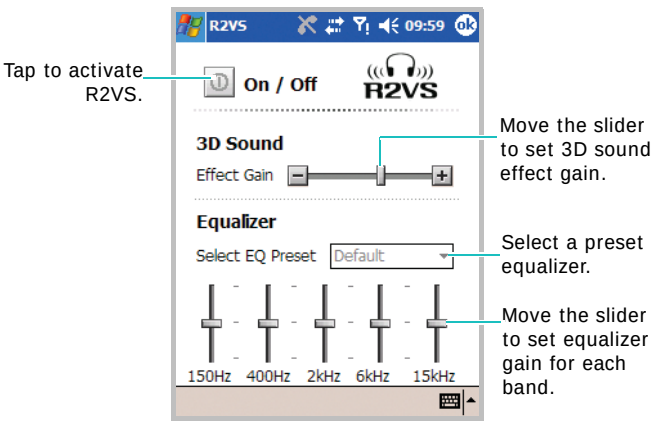
R2VS

Samsung R2VS is a suite of audio enhancement technologies designed to improve the quality of mobile audio, e.g., cellular phone sound quality.

The R2VS feature provides great audio performance with 3D sound effect and 5-band graphic equaliser allowing both a headset and speaker to deliver natural 3D sound image in rich and clear tones.

To open R2VS:

Tap R2VS on the bottom right in Idle mode. You can also open it by tapping the **Start** menu → **Settings** → **System** tab → **R2VS**.



chapter 10

Extra programmes

Games

Your phone includes fun games, such as Jawbreaker and Solitaire in the **Games** application.

To open Games:

From the **Start** menu, tap **Programs** → **Games**.

Note: For details about game, see the online help.

Playing jawbreaker

1. On the Games screen, tap **Jawbreaker**.
2. On the Jawbreaker screen, tap **Game** → **New Game** → **Yes**. The game starts.

Tap **Info** to view statistics or information about the game.

You can set the game options by tapping **Options** from the **Game** menu.

Playing solitaire

On the Games screen, tap **Solitaire** → **New**. The game starts.

When you want to restart the game, tap **New**. To stop the game, tap ⊗ at the top right of the screen.

You can set the game options by tapping **Options** from the **Tools** menu.

Calculator

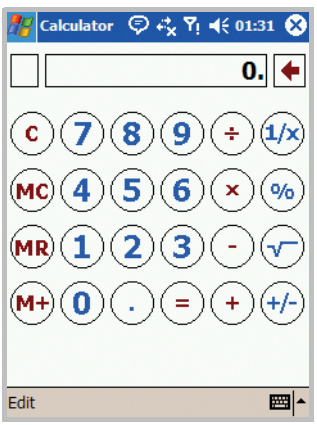
The calculator allows you to perform general mathematical functions, such as addition, subtraction, multiplication, and division.

You can use the calculator to:

- perform basic calculations.
- store and retrieve values.
- display the last series of calculations.

Using the calculator

1. From the **Start** menu, tap **Programs** → **Calculator**.



2. Enter the first number by using the Calculator buttons on the screen.

   To clear the displayed numbers, tap **C**.

   To clear the last digit entered in a multi digit entry, tap the arrow to the right of the entry box.

3. Tap the math function.

4. Enter the second number.

5. To view the result, tap **=**.

Storing a number

1. In Calculator, tap the box to the left of the entry box. An **M** will appear in the box.

2. To add the displayed number to the number that's already in memory, tap **M**+.

3. To display the number in memory, tap **MR**.

4. To clear memory, tap **MC**.

World Clock

The World Clock enables you to check the time and date in many cities all over the world.

To open World Clock:

From the **Start** menu, tap **Programs** → **World Clock**.

- To change the view mode, tap **Menu** and select the view mode you want.
- To change the city, tap the city you want from the list and tap **Select**.
- To move to the world map, tap .

BCR

BCR allows you to take a photo of a name card and extract contact information from the card, and save it as a new contact in Contacts.

To open BCR:

From the **Start** menu, tap **Programs** → **BCR**.

Select a language

Before using this programme, you can change the language in which BCR recognises name cards.

From the BCR View screen, tap **Setting** and select a language.

Taking a name card photo

1. From the BCR View screen, tap **Capture Image**.

   The camera turns on in Landscape mode.

2. To change the shooting mode, tap **Menu** → **Shot Mode**.

3. Center the name card within the green frame and tap to take the photo.

4. If you are in Single Shot mode, your phone automatically recognises the photographed name card and converts it to contact card format.

   If you are in Multi Shot mode, your phone allows you to take photos of additional name cards. Tap **MORE** to take more photos. When you have finished, tap **OK** to convert all name cards you have photographed.

5. The contact card preview displays.

6. Tap **File** → **Save** or **Save all** to save the contact card(s).

Selecting and converting name card photos from the file directory

You can convert a single name card photo or all of the photos in a folder at one time.

1. From the BCR View screen, tap **Load image** or **Load Image Folder**.

2. Open the image or folder you want from the file directory.

3. Tap the image you want or tap **OK**.

VoiceSignal

VoiceSingal is a speech recognition application that enables you to launch applications or dial contacts by speaking an associated command or name into the microphone.

To open VoiceSignal:

From the **Start** menu, tap **Programs** → **VoiceSignal**.

When the phone prompts you with displaying “Say a command,” say one of the commands:

- Call [person’s name or phone number]
- Lookup [person’s name]
- Open [application]

Voice tips

- Speak clearly, naturally, and continuously. Try to avoid hesitations, such as “er” and “um”, at the beginning and in the middle of phrases.
- If in a very noisy environment, use the headset. If not using the headset, address the internal microphone at the bottom of the phone at a distance of about 10-20 cm from your mouth.
- Speak when VoiceSignal is ready to listen, as indicated by the progress bar.
- If VoiceSignal doesn’t clearly hear what you said, try repeating your voice command. If problems persist, try the Adaptation setting to optimise the speech engine for your voice.

Name dialling

You can make a phone call by saying the name that has been assigned to a contact card in the Contacts directory.

Note: To use the Name Dial feature, the name and number that you want to dial must be in your Contacts directory. For details about **Contacts**, see page 175.

1. From the **Start** menu, tap **Programs** → **VoiceSignal**. The VoiceSingal main screen opens and the phone says “Say a command.”

2. Say “Call.” You can also “Call” and then a person’s name or number stored in Contacts after a beep sounds; for example, say “Call James Bond.”

3. Say the full name of the contact card, the first name followed by the last name.

4. If there are similar names, the phone displays the 3 best candidates.

5. At a prompt, say “Yes” to dial, or say “No” until you hear the name you want.

6. If you cannot find what you want, tap **Repeat** to try again.

Searching for contacts

VoiceSingal lets you retrieve contact information for any name in the Contacts directory by saying that name. Your phone displays the information.

To view contact information by a person's name:

1. From the **Start** menu, tap **Programs** → **VoiceSignal**. The VoiceSingal main screen opens and the phone says "Say a command."

2. Say "Lookup." You can also say "Lookup" and a person's name after a beep sounds.

3. Say the full name of the contact card, the first name followed by the last name.

4. If there are similar names, follow step 4 in "Name dialling" on page 219.

5. If you cannot find what you want, tap **Repeat** to try again.

Opening applications by voice

Anyvoice lets you use your voice to launch applications on your phone. By default, you can launch the applications displayed on the Anyvoice screen by voice. You can customise the application list by adding or removing the applications to be launched by voice.

To open an application by saying the name of the application:

1. From the **Start** menu, tap **Programs** → **VoiceSignal**. The VoiceSingal main screen opens and the phone says "Say a command."

2. Say "Open." You can also say "Open" and then the name of the application that you want to open; for example, say "Open Contacts."

Note: To specify applications to be launched by voice, tap **Settings** → **Application Launcher** from the VoiceSignal main screen.

3. If there are similar names, follow step 4 in "Name dialling" on page 219.

4. If you cannot find what you want, tap **Repeat** to try again.

Configuring the voice recognition settings

You can configure the settings for using VoiceSingal. When the VoiceSingal main screen opens, tap **Settings** to access the following options:

- **Choice Lists**: You can set whether or not the phone will display the best candidates when there are similar names in **Contacts**.
- **Sensiitivity**: You can adjust the sensitivity in which your phone recognises a voice command. Change the setting if your phone has difficulty recognising your voice command.

- **Digit Dialling**: You can adapt your phone to recognise your voice style and pronunciation for each digit or return the default settings.
- **Sound**: You can configure the sound settings for voice command.
- **Application Launcher**: You can select applications you want to launch by voice command.
- **Contacts Update**: You can set the VoiceSingal to automatically or manually update contact cards in Contacts or update Contacts immediately.
- **About**: You can view information about the VoiceSignal programme.

Remote Control

With the Remocon application, you can control and operate infrared supported office, entertainment, and home automation equipment, such as TVs, DVDs, VCRs, casette players, or other devices.

Note:
- Before opening Remocon, you must deactivate the IrDA service.
- Your phone may not be able to learn a remote control devices depending on the model.
- Your phone cannot learn universal remote controllers, which are able to control several devices.

To access Remocon:

From the **Start** menu, tap **Programs** → **Remote Control**. By default, you can set the phone as a remote control for a Samsung TV.

Adding a device

1. From the Remote Control main screen, tap **Options** → **Add device**.

2. If you select **By brand**, select the device type you want to control and then a manufacturer from the brand list.

   If you select **Self-learn**, select the device type you want to control, and tap **Next**. Enter the device name.

3. Tap **Done** to add the device.

Learning a device

1. From the Remote Control main screen, select the device you have set.

   The Remote Control Keypad screen for operating the device displays.

2. Tap any button to learn the buttons on the device.

   You can also add a new button and learn the button by tapping **Options** → **Learn key**.

3. Align the infrared port on your phone with the infrared port on the remote control of the device.

4. Tap **Next**.

5. Tap the button that you want to programme. For example, if you want your phone to learn “Power”, tap it first.

6. Press the corresponding button on the remote control of the device you add. For example, if you tapped **Power** on your phone, press the power button on your remote control.

7. If you want to Continue the learning for additional buttons on your remote control, repeat from step 2.

Using a device

1. From the Remote Control main screen, select the device you have set.

2. Tap a remote button on the screen.

3. When you have finished, tap ✕.

Resetting a device

You can reset the remote control settings of a device or all devices you have set up.

To delete a device from the device list:

1. From the Remote Control main screen, tap **Options** → **Delete device**.

2. Select the device you want to delete and tap **Delete**.

To reset all of the devices:

1. From the Remote Control main screen, tap **Options** → **Reset all**.

2. Tap **Yes**.

Picsel Browser

Picsel Browser enables you to browse document on thin-client computing platforms or access the Internet using the HTML browser. Use Picsel Browser to do the following:

- View content on your phone without any file-conversion or loss of contents.
- Access HTML websites.

To access Picsel Browser:

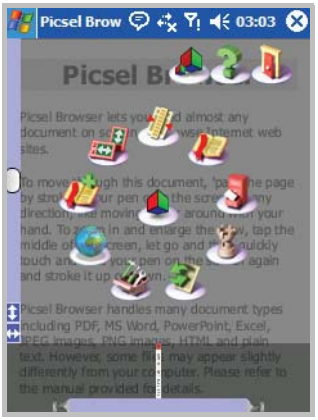
From the **Start** menu, tap **Programs** → **Picsel Broswer**. By default, the Picsel Browser help opens.

Viewing a document

Picsel Browser supports most common desktop document formats including PDF, Word, Excel, PowerPoint, and so on.

Opening a document

1. Tap the Picsel Browser Menu icon ( ) on the bottom right of the screen.



2. Tap the Folder View icon ( ).

3. Select the directory you want to open.

The name of the current folders path location is shown at the top of the screen and the folders and documents on the selected folder appear.

Returns to the previous directory level.

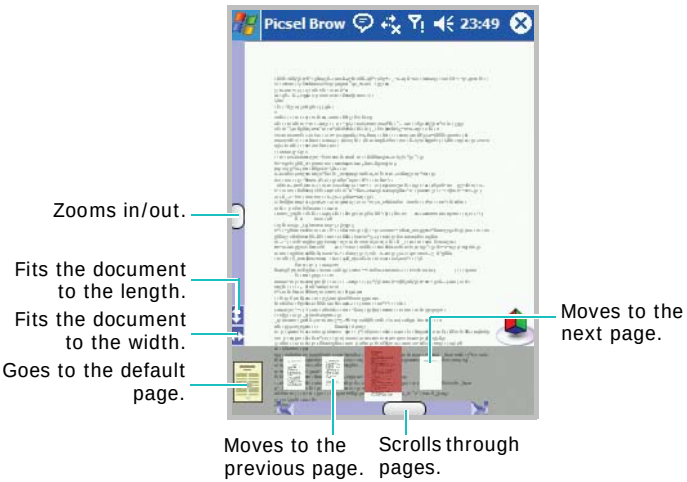
Documents looks like sheets of paper in various other colours, depending on their type.

The following document formats are supported:

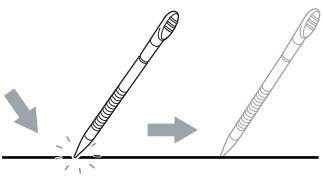
Adobe PDF: , Microsoft Word: , Microsoft Power Point: , Microsoft Excel: , Plain Text: .

4. Tap the document you want to open.

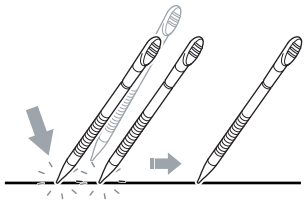
While viewing the document, tap to open the control bar.



- To move through the document, tap and hold the stylus pen, and draw a line on the screen in the direction you want.



- To zoom in or out of the document, tap and drag the slider on the left of the screen. You can also zoom in or out by double-tapping and dragging.



- To rotate the screen on 90 degrees counterclockwise, tap and then .
- To fit the width of the page on screen, tap and then , or press the **OK/Confirm** key.

Opening a document by entering the file path or URL

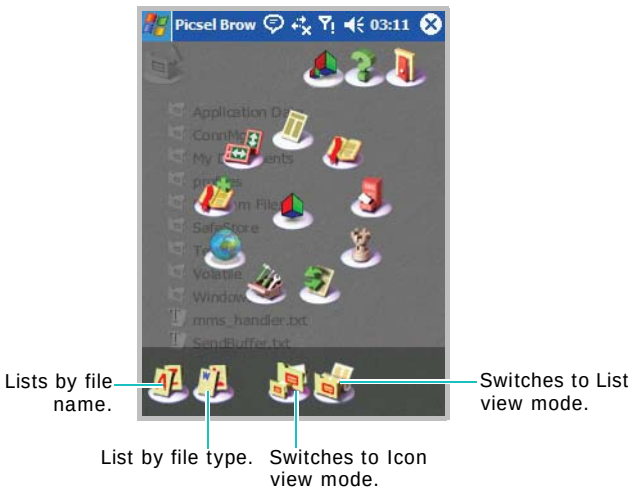
1. Tap .
2. Tap the Enter URL icon ( ).
3. Enter the file path or URL address in the **Go To Address** box.

   You can enter or select one of preset URL components on the screen.
4. Tap **OK** to open the document or the website.

Changing the file list view

1. On the file directory screen, tap .

2. Select the appropriate icon.



Viewing history

Picsel Browser shows you previously visited documents as a small thumbnail image, and the document's name, location, and the date of your visit.

Opening a document in history

1. On the Picsel Browser screen, tap .

2. Tap the History View icon ( ).

3. Tap the document you want to open twice.

Changing the order of the history list

1. On the History screen, tap .

1. Tap the appropriate icon.

   - : lists by date.
   - : lists by file type.
   - : lists by file name.

2. Tap to hide the option icons.

Making and viewing bookmarks

Picsel Browser keeps a list of documents you have bookmarked.

Making a bookmark

1. While viewing the document, tap .

2. Tap the Bookmark this page icon ( ).

3. Enter a bookmark name.

4. Tap **OK**.

Viewing a bookmark

1. On the Picsel Browser screen, tap .

2. Tap the Bookmark View icon ( ).

   The documents you have explicitly added with a bookmark appear.

3. Tap the document you want to view twice.

Deleting a bookmark

1. On the Picsel Browser screen, tap .
2. Tap the Bookmark View icon ( ).

   The documents you have bookmarked appear.

3. Tap the document you want to delete.
4. Tap .
5. Tap **OK** to confirm the deletion.

Changing Picsel Browser settings

On the Picsel Browser screen, tap → the Preferences icon ( ).

Set each tab and change the settings as needed:

- **Home**: Selects the item what is displayed on the startup screen of Picsel Browser when you launch it.
- **Preferences**: Selects the page options and set the period of times after which thumbnail images and descriptions of pages are purged from the history memory. You can also customise the key.

- **Internet**: Sets the options for Internet connections and character setting.
- **Compatibility**: Selects the compatibility mode in which the Picsel Browser opens.
- **File**: Selects file types Picsel Browser will support.
- **About**: Display the information of the Picsel Browser.

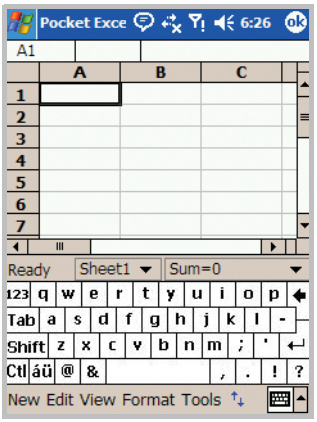
Pocket Excel

Pocket Excel works with Microsoft Excel on your computer to give you easy access to copies of your workbooks. You can create new workbooks on your phone, or you can copy workbooks from your computer to your phone. Synchronise workbooks between your computer and your phone so that you have the most up-to-date content in both locations.

Creating a workbook

1. From the **Start** menu, tap **Programs** → **Pocket Excel**.

2. Tap **New** to create a new workbook. You'll see either a blank workbook or template, depending on what you've selected in the **Options** dialogue box.



Note: To open dialogue box on the file list, tap **Tools** → **Options**.

3. Select a cell. If the cell is not visible, tap **Tools** → **Go To**. Type the reference (example:A4) and tap **OK**.

4. Type the value or text and tap ↵ in the input panel.

   Text is automatically aligned to the left.

5. You can edit and format data by tapping **Edit**, **Format**, and **Tools**. For more details, see the online help.

6. Tap ok to save the workbook.

   The workbook is automatically saved as a Pocket Excel workbook named **Book1**. Depending on how many workbooks you have created since opening Pocket Excel, you may want to rename it.

Using Pocket Excel workbooks

Pocket Excel contains a list of the files stored on your phone. Tap a file in the list to open it. To delete a file, make copies of a file, or send a file, tap and hold the file in the list. Then select the appropriate action from the pop-up menu. Pocket Excel provides fundamental spreadsheet tools, such as formulas, functions, sorting, and filtering. To display the toolbar, tap **View** → **Toolbar**.

Note: If your workbook contains sensitive information, you can protect it with a password. To do so, open the workbook; tap **Tools** → **Password**. Every time you open the workbook, you will need to enter the password, so choose one that is easy for you to remember but hard for others to guess.

Tips for working in Pocket Excel

Note the following when working with large worksheets in Pocket Excel:

- View in the Full screen mode to see as much of your worksheet as possible. Tap **View** → **Full Screen**. To exit the Full screen mode, tap **View** → **Full Screen** again.
- Show and hide window elements. Tap **View** and then tap the elements you want to show or hide.
- Freeze panes on a worksheet. First select the cell where you want to freeze panes. Tap **View** → **Freeze Panes**. You might want to freeze the top and leftmost panes in a worksheet to keep the row and column labels visible as you scroll through a sheet. To exit, tap **View** → **Unfreeze Panes**.

- Split panes to view different areas of a large worksheet. Tap **View** → **Split**. Then drag the split bar to where you want it. To remove the split, tap **View** → **Remove Split**.
- Show or hide rows and columns. To hide a row or column, select a cell in the row or column you want to hide. Then tap **Format** → **Row** or **Column** → **Hide**. To show a hidden row or column, tap **Format** → **Row** or **Column** → **Unhide**.

Pocket Word

Pocket Word works with Microsoft Word on your computer to give you easy access to copies of your documents. You can create new documents on your phone, or you can copy documents from your computer to your phone. Synchronise documents between your computer and your phone so that you have the most up-to-date content in both locations.

Use Pocket Word to create documents, such as letters, meeting minutes, and trip reports.

Creating a document

From the **Start** menu, tap **Programs** → **Pocket Word** → **New**.

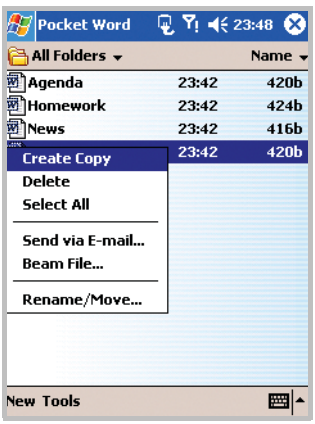
A blank document appears. Or, if you've selected a template for new documents in the **Options** dialogue box in the **Tools** menu, that template appears with appropriate text and formatting already provided.

You can open only one document at a time; when you open a second document, you'll be asked to save the first.

You can save a document you create or edit in a variety of formats, including Word (.doc), Pocket Word (.psw), Rich Text Format (.rtf), and Plain Text (.txt).

Pocket Word contains a list of the files stored on your phone. Tap a file in the list to open it.

To delete a file, make copies of a file, or send files, tap and hold the file in the list. Then, select the appropriate action on the pop-up menu.

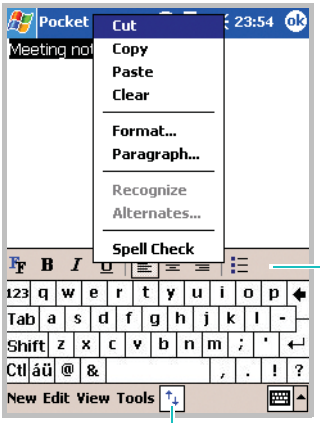


Note: You can change the zoom magnification by tapping **View** → **Zoom**. Then select the percentage you want. Select a higher percentage to enter text and a lower one to see more of your document.
If you're opening a Word document created on a computer, select **Wrap to Window** on the **View** menu so that you can see the entire document.

You can enter information in Pocket Word in one of four modes (typing, writing, drawing, and recording), which are displayed on the **View** menu. Each mode has its own toolbar, which you can show or hide by tapping **Show / Hide Toolbar** (↑↓) on the command bar.

Typing mode

Using the input panel, enter typed text into the document. For more information on entering text, see Chapter 3.



Toolbar

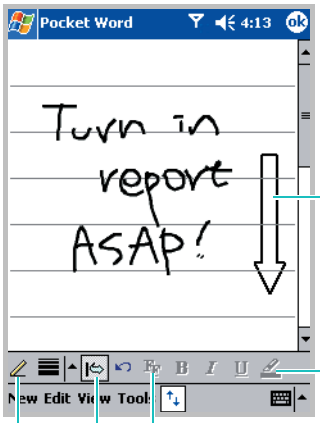
Tap to show or hide the toolbar.

To format existing text and/or to edit text, first select the text. You can select text as you do in an MS-Word document, using your stylus instead of the mouse to drag through the text you want to select. You can search for a document by tapping **Edit** → **Find / Replace**.

Writing mode

In the Writing mode, use your stylus pen to write directly on the screen. Ruled lines are displayed as a guide, and the zoom magnification is higher than in the Typing mode to allow you to write more easily.

To switch to the Writing mode, tap **View** → **Writing**.



With the **Space** button selected, drag to insert space. An arrow appears showing the space direction and size.

Tap to highlight the selected text.

Pen button

Space button

Tap to select formatting options, such as pen weight and line colour.

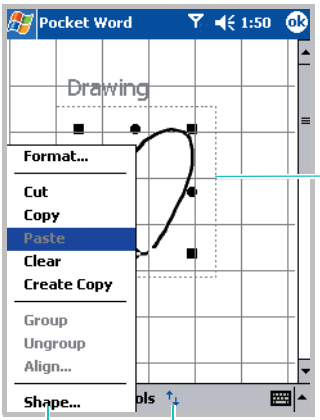
For more information on writing and selecting writing, see Chapter 3.

Note: If you cross three ruled lines in a single stylus stroke, the writing becomes a drawing, and can be edited and manipulated as described in the following section. Written words are converted to graphics (metafiles) when a Pocket Word document is converted to a Word document on your computer.

Drawing mode

In the Drawing mode, use your stylus pen to draw on the screen. Gridlines appear as a guide. When you lift your stylus pen off the screen after the first stroke, you'll see a drawing box indicating the boundaries of the drawing. Every subsequent stroke within or touching the drawing box becomes part of the drawing.

To switch to the Drawing mode, tap **View** → **Drawing**.



Resize an object by dragging the selection handles.

Tap to select formatting options, such as line weight, fill colour, and line colour.

Select **Shape** on the pop-up menu to convert objects to proper shapes.

For more information on drawing and selecting drawings, see Chapter 3.

Recording mode

In the Recording mode, embed a recording into your document.

To switch to the Recording mode, tap **View** → **Recording**

For more information on recording, see “Recording a message” in Chapter 3.

Changing options

To change defaults for creating and storing Pocket Word documents, in the document list, tap **Tools** → **Options**.

- **Default template**: Selects a template to be used for new documents. You can change this default when creating specific documents. Only documents saved in the **Templates** folder are listed.
- **Save to**: Selects a location for storing documents.
- **Display in list view**: Selects the type of documents you want displayed in the document list.

Terminal Services Client

Using **Terminal Services Client**, you can log onto a computer that is running Terminal Services or Remote Desktop and use all of the programmes that are available on that computer from your phone. For example, instead of running Microsoft Pocket Word, you can run the computer version of Microsoft Word and access all of the .doc files on that computer from your phone.

Connecting to a terminal server

Start a remote connection to the server via your wireless modem connection or network (Ethernet) card.

1. From the **Start** menu, tap **Programs** → **Terminal Services Client**.

2. To connect to a server you have previously connected to, tap the server in the **Recent servers** box.

   To connect to a new server, enter the server's name in the **Server** box.

   Tap the **Limit size of server desktop to fit on this screen** check box only when using applications that have been specifically sized for use with the phone.

3. Tap **Connect**.

Note: If the network administrator has configured Terminal Services Client to reconnect to disconnected sessions, and you previously disconnected from a Terminal Server without ending the session, the Terminal Services Client reconnects to that session.

Disconnecting without ending a session

The following commands must be accessed from the **Start** menu in the Terminal Services window used to access the computer's commands. Do not use the **Start** menu on your phone.

1. On the Terminal Services screen, tap **Start** → **Shutdown**.

2. Tap **Disconnect**.

Note: If the network administrator has configured Terminal Services Client to reconnect to disconnected sessions, you will be reconnected to this session the next time you connect to this server.

Disconnecting and ending a session

1. In the **Terminal Services Client** window, tap **Start** → **Shutdown**.

2. Tap **Log Off**.

Navigating within terminal services client

Once connected to the server, the computer's screen may more than fill your phone's screen. If scroll bars are displayed on the server's screen, you will see more than one set of scroll bars on your phone:

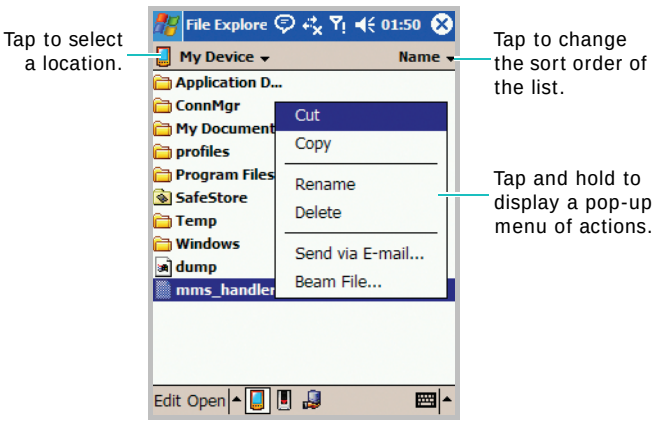
- One to scroll information on the computer, and one to scroll the computer display through the Terminal Services window in Terminal Services Client.
- To ensure you are scrolling the computer display through Terminal Services Client, use the four directional buttons at the bottom of the Terminal Services Client screen.
- To better-fit information on your phone's screen, tap the **Limit size of server desktop to fit on this screen** check box. For the best effect, programmes on the computer should be maximised.

File Explorer

The File Explorer application allows you to open an explorer window similar to a desktop Windows based system. The explorer window allows you to navigate through your phone to locate desired folders and files.

You can also quickly manage, delete, copy, or edit any files and folders on your phone. You can create new folders.

1. From the **Start** menu, tap **Programs** → **File Explorer**.



2. If you want to see the files or folders stored in the SafeStore folder or a memory card, if inserted in your phone, tap .

   To view the files in the phone's memory, tap .

   To open a file on a network, tap .

3. Tap the folder list (labelled **My Document** by default) and then the folder that you want to view.

4. To open an item, tap it.

   To quickly delete, rename, copy, or move an item, tap and hold. To select multiple items, tap and drag. Then, tap and hold the selected items. On the pop-up menu, tap **Copy**, **Rename**, **Delete**, and etc.

SIM Manager

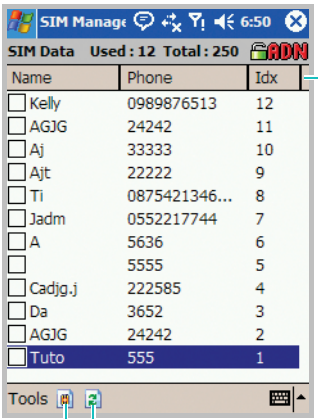
The SIM Manager application enables you to view the contact list stored in the SIM card and to copy the contact(s) from the SIM card to the contact list on your phone. You can also create a new contact in the SIM card, or edit and delete the contact.

Viewing SIM contacts

You can view the contact list, including the name, phone number, and location number of contacts in the SIM card.

1. From the **Start** menu, tap **Programs** → **SIM Manager**.

2. The contact list displays on the SIM Manager screen.



Copying a contact from the SIM card to Contacts

You can copy a contact or all contacts stored in the SIM card to Contacts on your phone.

1. On the SIM Manager screen, tap the check box next to the contact name you want to copy to your phone.

   If you want to copy all contacts, tap **Tools** → **Check All**.

2. Tap **Tools** → **Copy To Contacts**.

3. If necessary, change the category of the number by tapping **Change(M/H/W)**.

4. Tap **Start Copy**.

5. Tap ok.

6. To verify that your contacts have been copied to your phone, go to **Contacts** and search for the added contacts.

Using SIM Manager options

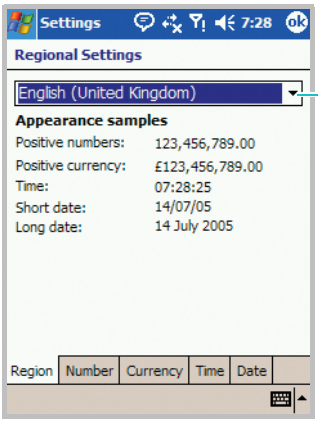
on the SIM Manager screen, tap **Tools**. You can save the selected contact number as an own number, delete the selected or all numbers in the SIM card, and move the SMS messages from SIM to phone, or vice versa. You can connect to service numbers, such as emergency numbers and voicemail server numbers, if your SIM card supports it.

Regional settings

Using **Regional Settings**, you can view number formats, currency, and time and date formats appropriate to the countries in question. You can also change the clock to 24 hour display.

Note: For details about using Regional Settings, see the online help.

From the **Start** menu, tap **Settings** → **System** tab → **Regional Settings**.



Tap to select your region to set the default number formats.

To change the clock to 24 hour display:

1. On the Regional Settings screen, tap the **Time** tab.
2. Select a time style in the **Time style** field.
3. Tap ok.

To customise further:

Tap the tabs at the bottom of the screen and select the option you want in each field. The items available are determined by the region selected on the **Region** tab.

Ringtone Manager

The Ringtone Manager application allows you to manage your ringtones in the phone's memory and in the memory card. You can also set a ringtone as your call ringer melody.

To open Ringtone Manager:

From the **Start** menu, tap **Programs** → **Ringtone Manager**.

Tap to play or stop your current call ringer melody.

Tap to display ringtones in the phone's memory.

Tap to refresh the list.

Tap to display ringtones in a memory card.

Playing a ringtone

1. Access the ringtone category you want by tapping ⬅ or ➡. You can also tap the category title bar and select the category you want from the pop-up menu.

2. Select a ringtone.

3. To play the selected ringtone, tap **Menu** → **Play**.

4. To stop the ringtone, tap **Menu** → **Stop**.

Using ringtone options

To set the selected ringtone as your call ringer melody, tap **Menu** → **Set as ringtone**.

To move the selected ringtone to another category, tap **Menu** → **Move category**.

To create, rename, or delete a category, tap **Menu** → **Edit category**.

SIM Toolkit

The SIM Toolkit service is available if you use a SIM AT card that provides additional services, such as news, weather, sports, entertainment, and location services. Available services may vary, depending on your service provider's plans.

For details, see your SIM card instructions or contact your service provider.

chapter 11

Getting connected

You can use your phone to exchange information with other mobile devices as well as your computer, a network, or the Internet. You have the following connection options:

- Use the infrared (IR) port on your phone to send and receive files between two devices.
- Exchange information between devices with Bluetooth capabilities without a physical connection.
- Connect to your Internet service provider (ISP) or the network at your company. Once connected, you can send and receive e-mail and instant messages, browse the Internet or intranet, and synchronise information using ActiveSync.
- Connect to your computer to synchronise remotely. Once connected, you can synchronise information such as your Pocket Outlook data. For details on ActiveSync, see Chapter 4 “Synchronising information.”

Beaming using infrared connections

Your phone can send and receive files to and from other IR devices. In most cases, you can also receive files from your computer when it is equipped with an infrared port. The two devices must be aimed at each other approximately four inches apart.

If you have difficulty getting the two devices to send or receive data, try the following:

- Transfer only one file at a time. No more than 25 contacts should be transferred at once.

- Make sure that the infrared port windows are clear and free of any dirt or obstructions and that there are no obstacles between the infrared port windows.
- Adjust the room lighting or move to another location. Some types of lighting may interfere with transmission.

By default your phone detects incoming IR transmissions and prompts you to accept them. If you do not want your phone to receive data, take the following steps:

1. From the **Start** menu, tap **Settings** → **Connections** tab → **Beam**.

2. Clear the **Receive all incoming beams** check box.

Receiving data

1. Make sure that the **Receive all incoming beams** check box is selected.

2. Align the infrared port on your phone with the infrared port on another device.

3. Have the other device send the data to your phone. Your phone will automatically receive the data.

4. When prompted to receive an incoming data, tap **Yes**.

Note: If someone attempts to send you data via an infrared connection from an older device, you may be prompted to accept it. In that case, before the data is sent from the other device, prepare your phone by tapping **Receive an infrared beam** at the bottom of the Beam screen.

Sending data

1. Locate the item you want to send, such as an appointment in Calendar, a task in Tasks, a contact in Contacts, or a file in File Explorer.

2. Tap and hold the item and select **Beam** followed by the type of item, such as Contacts or Task, etc.

3. Align the infrared port on your phone with the infrared port on the device.

4. When finished, tap **OK**.

Beaming with Bluetooth

Bluetooth is a short-range wireless communications technology. Devices with Bluetooth capabilities can exchange data over a distance of about 10 meters (30 feet) without requiring a physical connection.

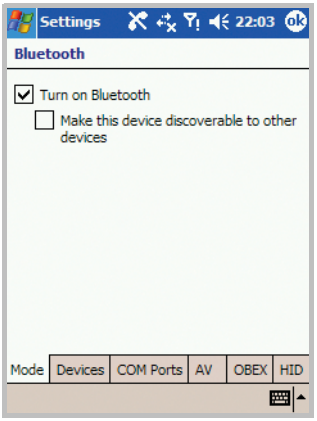
Unlike infrared, you don't need to line up the phone with another device to beam information with Bluetooth.

Activating Bluetooth

To select the operating mode:

1. From the **Start** menu, tap **Settings** → **Connections** tab → **Bluetooth**.

2. Select the operating mode you want:



- In the **Mode** tab, tap the **Turn on Bluetooth** check box to turn on the Bluetooth radio so that you can use Bluetooth features.
- In the **Devices** tab, you can search for Bluetooth devices and connect to them.
- In the **COM Ports** tab, you can select a COM port for sending or receiving data. You can also tap the **Secure Connection** check box to exchange data in a secure manner. For details, please refer to the online help.
- In the **AV** tab, you can change the settings for connecting with a stereo headset. For details, please refer to the stereo headset's guide.
- In the **OBEX** tab, you can use change the settings for using the OBEX FTP server. For details, please refer to the OBEX FTP client device's guide.

- In the **HID** tab, you can change the settings for using the Bluetooth keyboard. For details, please refer to the Bluetooth keyboard's guide.

3. Tap ok.

Receiving data with Bluetooth

1. Make sure that the **Receive all incoming beams** check box is selected. To check it, from the **Start** menu, tap **Settings** → **Connection** tab → **Beam**.

2. Make sure that your phone is within 10 meters (about 30 feet) of the device beaming the information and that the **Make this device discoverable to other devices** check box is selected in the **Mode** tab.

3. When prompted to receive an incoming data, tap **Yes**.

Sending data with Bluetooth

1. Locate the item you want to send, such as an appointment in Calendar, a task in Tasks, a contact in Contacts, or a file in File Explorer.

2. Tap and hold the item and select **Beam** followed by type of item, such as Contact or Task, etc.

3. Tap the device from the list to which you want to send the beam.

   The item is sent to the device you selected.

Note: If the device to which you want to send does not appear on the list, make sure that it is turned on, tap the **Make this device discoverable to other devices** check box, and within 10 meters (30 feet) of your phone. Also, make sure that your Bluetooth radio is turned on.

Using a Bluetooth stereo headset

Using a Bluetooth stereo headset, you can play the audio files or converse with the person on the phone without holding the phone to your ear.

Note: It is recommended that you don't use other applications or multimedia features, such as camera and Media player, for better sound quality.

Connecting your phone with a Bluetooth stereo headset

1. Create Bluetooth bonding between your phone and Bluetooth stereo headset.

   For further information on making a Bluetooth bonding, see the User's Guide of the Stereo headset.

2. From the **Start** menu, tap **Settings** → **Connections** tab → **Bluetooth**.

3. In the **AV** tab, select the name of the headset.

4. Tap and hold the headset and select **Connect** to establish the connection with your phone and the Bluetooth headset.

Disconnecting with Bluetooth stereo headset

Tap and hold the headset and select **Disconnect** from the pop-up menu.

Connecting to an OBEX FTP server

You can access the FTP server via Bluetooth profile (OBEX) so that you can exchange files between your phone and the FTP servers on other Bluetooth devices, and manage files.

To access an OBEX FTP server:

1. From the **Start** menu, tap **Programs** → **OBEX FTP**.
2. To search for Bluetooth devices, tap **Menu** → **Search for FTP server**.

   After searching, a list of devices to which you can connect displays.
3. Select an OBEX FTP server and tap **OK**.
4. When a message appears prompting you to activate Bluetooth mode, tap **Yes** to connect to the OBEX FTP server.
5. Enter a Bluetooth PIN in the **Passkey** field and tap **Next**.

   When the same code is entered on the server, pairing is complete.

6. If necessary, change the display name of the server.

7. Tap **Finish**.

   You are connected to the OBEX FTP server.

Once you are connected to the OBEX FTP server, you can delete, move, copy, or create data on your phone and the server. For details, see the OBEX FTP server device's guide.

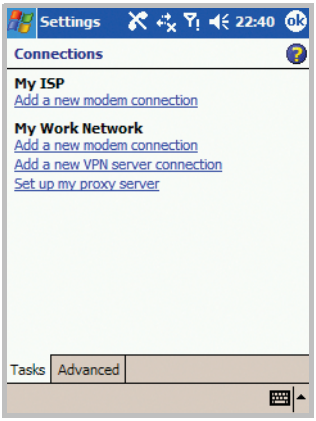
Connecting to the Internet or your network

You can connect to your Internet service provider (ISP) and use the connection to send and receive E-mail and instant messages and to browse the Internet. You can also connect to any private network, such as a corporate network you use at work.

Connecting to my ISP

1. Obtain the following information from your ISP: ISP server phone number, user name, and password.

2. From the **Start** menu, tap **Settings** → **Connections** tab → **Connections**.



3. In **My ISP**, tap **Add a new modem connection**.

4. Create a modem connection. To view detailed information for any screen while changing the setting, tap ?.

5. When connection is successfully configured, run **Internet Explorer** to begin browsing the Internet. Your phone will automatically begin connecting.

Note: To set up a network card or wireless network connection to your ISP, add a new connection under **My Work Network**.

Connecting to work

1. Obtain the following information from your network administrator: server phone number, user name, and password.

2. From the **Start** menu, tap **Settings** → **Connections** tab → **Connections**.

3. In **My Work Network**, set up a modem, VPN server connection, or proxy server. To view detailed information for any screen while changing the settings, tap ?.

4. When connection is successfully configured, run **Internet Explorer** to begin browsing the Internet. Your phone will automatically begin connecting.

Ending a connection

To disconnect, do one of the following:

- When connected via dial-up or VPN, tap the Connection icon, , on your status bar, and then tap **Disconnect**.
- When connected via a cable, detach your phone from the computer by disconnecting the cable.
- When connected via a modem or a network (Ethernet) card, remove the card from your phone.

ModemLink

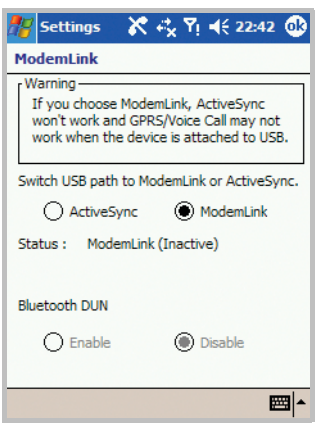
Using **ModemLink**, you can use your phone as an external modem for another device or computer. You can also use your phone as an external Bluetooth modem for another device or computer by using Bluetooth DUN (Dial Up Networking) server.

1. Connect your phone to the device with which you want to use your phone as a modem.

2. From the **Start** menu, tap **Settings** → **Connection** tab → **ModemLink**.

3. To enable ModemLink, tap **ModemLink** on the Switch USB path to ModemLink or ActiveSync field.

   To enable Bluetooth DUN server, tap **Enable** on the Bluetooth DUN field.



Note: You cannot use Bluetooth DUN server and Modem Link simultaneously.

4. If you select **ModemLink**, the USB path will switch to Modem Link.

   If you enable the Bluetooth DUN server, the Data path will switch to Bluetooth modem.

5. Tap ok.

Connecting to wireless networks

Your phone is equipped with Wi-Fi, standards for wireless local area networks (WLANs), which allows the phone to connect local wireless networks, or access the Internet wirelessly. Wi-Fin is faster and has a greater range than Bluetooth wireless technology. Wi-Fi can achieve connection speeds of up to 11 Mbps, which easily allows you to share large files or quickly surf the Internet with your phone.

Configuraring Wi-Fi connection settings

To connect your phone to a wireless network, you first need to set the TCP/IP addresses required to identify the phone on the network.

1. From the **Start** menu, tap **Settings** → **Connections** tab → **Network Cards**.

2. Tap **Wi-Fi** from the Tap an adapter to modify settings: section.

3. Select **User server-assigned IP address** to use the IP address automatically assigned from the server. Skip to step 7.

   Select **Use Specific IP address** to set the network addresses manually. Continue the next step.

4. Enter the IP address, Subnet mask, and Default gateway.

5. Tap the **Name Servers** tab.

6. Enter the DNS addresses and the WINS addresses.

7. Tap ok.

Activating or deactivating Wi-Fi

1. From the **Start** menu, tap **Settings** → **Connections** tab → **Wi-Fi**.

2. Tap **Wi-Fi Enabled** or **Wi-Fi Disabled**. The button changes to **Wi-Fi Disabled** or **Wi-Fi Enabled**.

3. Tap ok.

Selecting data call type

A data (Circuit Switched Data) call enables data transmission rates to a maximum of 9.6 Kbps. For availability and subscription to data services, contact your network operator or service provider.

To select a data call type:

1. From the **Start** menu, tap **Settings** → **Connections** tab → **CSD Data Call Type**.

2. Select the data call type you want.

   Analog or **ISDN** defines whether the phone uses an analogue (Analog) or digital (ISDN) connection. This setting depends on both your GSM network operator and ISP (Internet Service Provider), because some GSM networks do not support certain types of ISDN connections. For details, contact your ISP. If ISDN connections are available, they establish connections more quickly than analogue methods.

chapter 12

Appendix

Troubleshooting

Problem	Solution
The phone does not turn on.	• The battery is completely discharged. Recharge it fully.
The phone does not work properly or does not work at all.	• Remove the battery from the phone and insert it back into the phone. Turn it on again. • Reset your phone.
Images on the screen cannot be seen.	• This may happen when you use the phone in direct sunlight. Use the phone in the shade or in normal indoor lighting conditions.
Lines appear on the display.	• This may happen if the battery is not fully charged when you use the phone for the first time, when you turn on the phone after not using it for a long time, or if you remove the battery carelessly. This will not affect the life span or operation of your phone. • Remove the battery from the phone and insert it back into the phone. Turn it on again. • Reset your phone.

Problem	Solution
I frequently cannot make or receive calls, or calls are cut off without apparent reason.	• This may happen when your connection to a network is unstable. Move to another place try again. • If you touch the antenna during a call, the connection quality worsens. Do not touch the antenna during a call.

Regulatory notices

Regulatory agency identification numbers

For regulatory identification purposes your product is assigned the model number PW10xx.

The following accessories have been evaluated for use with your phone. Their assigned model numbers listed below can identify these approved accessories. To ensure continued reliable and safe operation of your phone, use only the accessories listed below with your PW10xx.

Accessories	Model number
Pocket PC Phone	PW10xx
Cradle	PW15x
External Battery Pack	PW16x

Notes:
- The above "x" may be any alphanumeric character or blank denoting external cosmetic changes.
- This product is intended for use with certified Class 2, rated 5 V dc, minimum 1A power supply units.

Exposure to radio frequency (RF) signals

Your wireless phone is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission (FCC) of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on the safety standards that were developed by independent scientific organizations through periodic and through evaluation of scientific studies.

The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

The exposure standard for wireless phones employs a unit of measurement known as Specific Absorption Rate (SAR). The SAR limit recommended by the FCC is 1.6W/kg.[1]

SAR tests are conducted using standard operating positions specified by the FCC with the phone

1 In the U.S. and Canada, the SAR limit for mobile phones used by the public is 1.6 watts/kg (W/kg) averaged over one gram of tissue. The standard incorporates a substantial margin of safety to give additional protection for the public and to account for any variations in measurements.

transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the phone while operating can be well below the maximum value. This is because the phone is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output of the phone.

Before a new model phone is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government adopted requirement for safe exposure. The tests are performed in positions and locations (e.g., at the ear and worn on the body) as required by the FCC for each model. While there may be differences between the SAR levels of various phones and at various positions, they all meet the government requirement.

The FCC has granted an Equipment Authorization for this model phone with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this model phone is on file with the FCC and can be found under the Display Grant section of http://www.fcc.gov/oet/fccid after searching on FCC ID printed in the label on the phone.

For body operation

For body-worn operation, this model phone has been tested and meets the FCC RF exposure guidelines when used with a Samsung-supplied or approved accessory designated for this product, or when used with an accessory that contains no metal and that positions the handset a minimum 1.5 cm from the body as follows.

The minimum distance for this model phone is written in the FCC certification information, and below in Appendix A. Non-compliance with the recommended body-worn operating conditions may violate FCC RF exposure guidelines.

For more Information concerning exposure to radio frequency signals, see the following websites:

Federal Communications Commission (FCC)
http://www.fcc.gov

Cellular Telecommunications Industry Association (CTIA):
http://www.wow-com.com

U.S.Food and Drug Administration (FDA)
http://www.fda.gov/cdrh/consumer

World Health Organization (WHO)
http://www.who.int/peh-emf/en

Precautions when using batteries

- Never use any charger or battery that is damaged in any way.
- Use the battery only for its intended purpose.
- If you use the phone near the network's base station, it uses less power; talk and standby time are greatly affected by the signal strength on the cellular network and the parameters set by the network operator.
- Battery charging time depends on the remaining battery charge, the type of battery and the charger used. The battery can be charged and discharged hundreds of times, but it will gradually wear out. When the operation time (talk time and standby time) is noticeably shorter than normal, it is time to buy a new battery.

- If left unused, a fully charged battery will discharge itself over time.
- Use only Samsung-approved batteries and recharge your battery only with Samsung-approved chargers. When a charger is not in use, disconnect it from the power source. Do not leave the battery connected to a charger for more than a week, since overcharging may shorten its life.
- Extreme temperatures will affect the charging capacity of your battery: it may require cooling or warming first.
- Do not leave the battery in hot or cold places, such as in a car in summer or winter conditions, as you will reduce the capacity and lifetime of the battery. Always try to keep the battery at room temperature. A phone with a hot or cold battery may temporarily not work, even when the battery is fully charged. Li-ion batteries are particularly affected by temperatures below 0 °C (32 °F).
- Do not short-circuit the battery. Accidental short-circuiting can occur when a metallic object (coin, clip or pen) causes a direct connection between the + and – terminals of the battery (metal strips on the battery), for example when you carry a spare battery in a pocket or bag. Short-circuiting the terminals may damage the battery or the object causing the short-circuiting.
- Dispose of used batteries in accordance with local regulations. Always recycle. Do not dispose of batteries in a fire.

Road safety

Your wireless phone gives you the powerful ability to communicate by voice, almost anywhere, anytime. But an important responsibility accompanies the benefits of wireless phones, one that every user must uphold.

When driving a car, driving is your first responsibility. When using your wireless phone behind the wheel of a car, practice good common sense and remember the following tips:

- Get to know your wireless phone and its features, such as speed dial and redial. If available, these features help you to place your call without taking your attention off the road.
- When available, use a hands-free device. If possible, add an extra layer of convenience and safety to your wireless phone with one of the many hands-free accessories available today.
- Position your wireless phone within easy reach. Be able to access your wireless phone without removing your eyes from the road. If you get an incoming call at an inconvenient time, let your voice mail answer it for you.
- Let the person you are speaking with know you are driving; if necessary, suspend the call in heavy traffic or hazardous weather conditions. Rain, sleet, snow, ice, and even heavy traffic can be hazardous.
- Do not take notes or look up phone numbers while driving. Jotting down a To Do list or flipping through your Address Book takes your attention away from your primary responsibility, driving safely.
- Dial sensibly and assess the traffic; if possible, place calls when you are not moving or before pulling into

traffic. Try to plan calls when your car will be stationary. If you need to make a call while moving, dial only a few numbers, check the road and your mirrors, then continue.

- Do not engage in stressful or emotional conversations that may be distracting. Make the people with whom you are talking aware that you are driving and suspend conversations that have the potential to divert your attention from the road.
- Use your wireless phone to call for help. Dial the emergency number in the case of fire, traffic accident or medical emergencies. Remember, it is a free call on your wireless phone!
- Use your wireless phone to help others in emergencies. If you see a car accident, crime in progress or other serious emergency where lives are in danger, call the emergency number, as you would want others to do for you.
- If you see a broken-down vehicle posing no serious hazard, a broken traffic signal, a minor traffic accident where no one appears injured, or a vehicle you know to be stolen, call roadside assistance or any other special non-emergency wireless number.

Operating environment

Remember to follow any special regulations in force in any area and always switch off your phone whenever it is forbidden to use it, or when it may cause interference or danger.

When connecting the phone or any accessory to another device, read its user’s guide for detailed safety instructions. Do not connect incompatible products.

As with other mobile radio transmitting equipment, users are advised that for the satisfactory operation of the equipment and for the safety of personnel, it is recommended that the equipment should only be used in the normal operating position (held to your ear with the antenna pointing over your shoulder).

Electronic devices

Most modern electronic equipment is shielded from radio frequency (RF) signals. However, certain electronic equipment may not be shielded against the RF signals from your wireless phone. Consult the manufacturer to discuss alternatives.

Pacemakers

Pacemaker manufacturers recommend that a minimum distance of 15 cm (6 inches) be maintained between a wireless phone and a pacemaker to avoid potential interference with the pacemaker. These recommendations are consistent with the independent research and recommendations of Wireless Technology Research.

Persons with pacemakers:

- should always keep the phone more than 15 cm (6 inches) from their pacemaker when the phone is switched on.
- should not carry the phone in a breast pocket.
- should use the ear opposite the pacemaker to minimize potential interference.

If you have any reason to suspect that interference is taking place, switch off your phone immediately.

Hearing aids

Some digital wireless phones may interfere with some hearing aids. In the event of such interference, you may wish to consult your hearing aid manufacturer to discuss alternatives.

Other medical devices

If you use any other personal medical devices, consult the manufacturer of your device to determine if it is adequately shielded from external RF energy. Your physician may be able to assist you in obtaining this information. Switch off your phone in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF energy.

Vehicles

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles. Check with the manufacturer or its representative regarding your vehicle. You should also consult the manufacturer of any equipment that has been added to your vehicle. You should also consult the manufacturer of any equipment that has been added to your vehicle.

Posted facilities

Switch off your phone in any facility where posted notices require you to do so.

Potentially explosive environments

Switch off your phone when in any area with a potentially explosive atmosphere and obey all signs and instructions. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death.

Users are advised to switch off the phone while at a refueling point (service station). Users are reminded of the need to observe restrictions on the use of radio equipment in fuel depots (fuel storage and distribution areas), chemical plants or where blasting operations are in progress.

Areas with a potentially explosive atmosphere are often but not always clearly marked. They include the areas below deck on boats, chemical transfer or storage facilities, vehicles using liquefied petroleum gas (such as propane or butane), areas where the air contains chemicals or particles, such as grain, dust or metal powders, and any other area where you would normally be advised to turn off your vehicle engine.

Emergency calls

This phone, like any wireless phone, operates using radio signals, wireless and landline networks as well as user-programmed functions, which cannot guarantee connection in all conditions. Therefore, you should never rely solely on any wireless phone for essential communications (medical emergencies, for example).

Remember, to make or receive any calls the phone must be switched on and in a service area with adequate signal strength. Emergency calls may not be possible on

all wireless phone networks or when certain network services and/or phone features are in use. Check with local service providers.

To make an emergency call:

If the phone is not on, switch it on.

1. Key in the emergency number for your present location (for example, 911 or other official emergency number). Emergency numbers vary by location.

2. Press .

If certain features are in use (call barring, for example), you may first need to deactivate those features before you can make an emergency call. Consult this document and your local cellular service provider.

When making an emergency call, remember to give all the necessary information as accurately as possible. Remember that your phone may be the only means of communication at the scene of an accident; do not end the call until given permission to do so.

FCC Notice and Cautions

FCC Notice

Notes:

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 may cause undesired operation.

The phone may cause TV or radio interference if used in close proximity to receiving equipment. The FCC can require you to stop using the phone if such interference cannot be eliminated.

Vehicles using liquefied petroleum gas (such as propane or butane) must comply with the National Fire Protection Standard (NFPA-58). For a copy of this standard, contact the National Fire Protection Association, One Battery march Park, Quincy, MA 02269, Attn: Publication Sales Division.

Cautions

Changes or modifications made in the radio phone, not expressly approved by Samsung, will void the user's authority to operate the equipment.

Only use approved batteries, antennas and chargers. The use of any unauthorized accessories may be dangerous and void the phone warranty if said accessories cause damage or a defect to the phone.

Although your phone is quite sturdy, it is a complex piece of equipment and can be broken. Avoid dropping, hitting, bending or sitting on it.

Other important safety information

- Only qualified personnel should service the phone or install the phone in a vehicle. Faulty installation or service may be dangerous and may invalidate any warranty applicable to the device.
- Check regularly that all wireless phone equipment in your vehicle is mounted and operating properly.

- Do not store or carry flammable liquids, gases, or explosive materials in the same compartment as the phone, its parts or accessories.
- For vehicles equipped with an air bag, remember that an air bag inflates with great force. Do not place objects, including both installed or portable wireless equipment in the area over the air bag or in the air bag deployment area. If wireless equipment is improperly installed and the air bag inflates, serious injury could result.
- Switch off your phone before boarding an aircraft. The use of wireless phones in aircraft is illegal and may be dangerous to the aircraft's operation.
- Failure to observe these instructions may lead to the suspension or denial of telephone services to the offender, or legal action, or both.

Care and maintenance

Your phone is a product of superior design and craftsmanship and should be treated with care. The suggestions below will help you fulfill any warranty obligations and allow you to enjoy this product for many years:

- Keep the phone and all its parts and accessories out of the reach of small children's.
- Keep the phone dry. Precipitation, humidity and liquids contain minerals that will corrode electronic circuits.
- Do not use the phone with a wet hand. Doing so may cause an electric shock to you or damage to the phone.

- Do not use or store the phone in dusty, dirty areas, as its moving parts may be damaged.
- Do not store the phone in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the phone in cold areas. When the phone warms up to its normal operating temperature, moisture can form inside the phone, which may damage the phone's electronic circuit boards.
- Do not drop, knock or shake the phone. Rough handling can break internal circuit boards.
- Do not use harsh chemicals, cleaning solvents or strong detergents to clean the phone. Wipe it with a soft cloth slightly dampened in a mild soap-and-water solution.
- Do not paint the phone. Paint can clog the device's moving parts and prevent proper operation.
- Do not put the phone in or on heating devices, such as a microwave oven, a stove or a radiator. The phone may explode when overheated.
- Use only the supplied or an approved replacement antenna. Unauthorized antennas or modified accessories may damage the phone and violate regulations governing radio devices.
- If the phone, battery, charger or any accessory is not working properly, take it to your nearest qualified service facility. The personnel there will assist you, and if necessary, arrange for service.

Acknowledging special precautions and the FCC and industry canada notice

Cautions

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

FCC Compliance information

This device complies with Part 15 of 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 may cause undesired operation.

Information to user

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful

interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

Appendix A: CERTIFICATION INFORMATION (SAR)

THIS MODEL PHONE MEETS THE GOVERNMENT'S REQUIREMENTS FOR EXPOSURE TO RADIO WAVES.

Your wireless phone is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on safety standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The

standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

The exposure standard for wireless mobile phones employs a unit of measurement known as the Specific Absorption Rate (SAR). The SAR limit set by the FCC is 1.6 W/kg. SAR Tests are conducted using standard operating positions accepted by the FCC with the phone transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the phone while operating can be well below the maximum value. This is because the phone is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output.

Before a new model phone is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government adopted requirement for safe exposure. The tests are performed in positions and locations(e.g., at the ear and worn on the body) as required by the FCC for each model.

The highest SAR values of this model phone as reported to FCC are Head: 0.318W/kg, Body-worn: 0.676W/kg.

Body-worn operations are restricted to Samsung-supplied, approved or none Samsung designated accessories that have no metal and must provide at least 1.5cm separation between the device, including its

antenna whether extended or retracted, and the user's body. None compliance to the above restrictions may violate FCC RF exposure guidelines.

The FCC has granted an Equipment Authorization for this model phone with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines. SAR information on this model phone is on file with the FCC and can be found under the Display Grant section of http://www.fcc.gov/oet/fccid after searching on FCC ID A3LSGHI750.

In the United States and Canada, the SAR limit for mobile phones used by the public is 1.6 watts/kilogram (W/kg) averaged over one gram of tissue. The standard incorporates a substantial ma gin of safety to give additional protection for the public and to account for any variations in measurements.

Appendix B: Guide to safe and responsible wireless phone use

Cellular Telecommunications & Internet Association
"Safety is the most important call you will ever make."

A guide to safe and responsible wireless phone use

TENS OF MILLIONS OF PEOPLE IN THE U.S. TODAY TAKE ADVANTAGE OF THE UNIQUE COMBINATION OF CONVENIENCE, SAFETY AND VALUE DELIVERED BY THE WIRELESS TELEPHONE. QUITE SIMPLY, THE WIRELESS PHONE GIVES PEOPLE THE POWERFUL ABILITY TO COMMUNICATE BY VOICE-ALMOST ANYWHERE, ANYTIME-WITH THE BOSS, WITH A CLIENT, WITH THE KIDS, WITH EMERGENCY PERSONNEL OR EVEN WITH THE POLICE. EACH YEAR, AMERICANS MAKE BILLIONS OF CALLS FROM THEIR WIRELESS PHONES, AND THE NUMBERS ARE RAPIDLY GROWING.

But an important responsibility accompanies those benefits, one that every wireless phone user must uphold. When driving a car, driving is your first responsibility. A wireless phone can be an invaluable tool, but good judgment must be exercised at all times while driving a motor vehicle whether on the phone or not.

The basic lessons are ones we all learned as teenagers. Driving requires alertness, caution and courtesy. It requires a heavy dose of basic common sense-keep your head up, keep your eyes on the road, check your mirrors frequently and watch out for other drivers.

It requires obeying all traffic signs and signals and staying within the speed limit. It means using seat belts and requiring other passengers to do the same.

But with wireless phone use, driving safely means a little more. This brochure is a call to wireless phone users everywhere to make safety their first priority when behind the wheel of a car. Wireless telecommunications is keeping us in touch, simplifying our lives, protecting us in emergencies and providing opportunities to help others in need. When it comes to the use of wireless phones, safety is your most important call.

Wireless phone "Safety Tips"

Below are safety tips to follow while driving and using a wireless phone which should be easy to remember:

1. Get to know your wireless phone and its features such as speed dial and redial. Carefully read your instruction manual and learn to take advantage of valuable features most phones offer, including automatic redial and memory. Also, work to memorize the phone keypad so you can use the speed dial function without taking your attention off the road.

2. When available, use a hands free device. A number of hands free wireless phone accessories are readily available today. Whether you choose an installed mounted device for your wireless phone or a speaker phone accessory, take advantage of these devices if available to you.

3. Position your wireless phone within easy reach. Make sure you place your wireless phone within easy reach and where you can grab it without removing your eyes from the road. If you get an incoming call at an inconvenient time, if possible, let your voice mail answer it for you.

4. Suspend conversations during hazardous driving conditions or situations. Let the person you are speaking with know you are driving; if necessary, suspend the call in heavy traffic or hazardous weather conditions. Rain, sleet, snow and ice can be hazardous, but so is heavy traffic. As a driver, your first responsibility is to pay attention to the road.

5. Do not take notes or look up phone numbers while driving. If you are reading an address book or business card, or writing a "to do" list while driving a car, you are not watching where you are going. It's common sense. Don't get caught in a dangerous situation because you are reading or writing and not paying attention to the road or nearby vehicles.

6. Dial sensibly and assess the traffic; if possible, place calls when you are not moving or before pulling into traffic. Try to plan your calls before you begin your trip or attempt to coincide your calls with times you may be stopped at a stop sign, red light or otherwise stationary. But if you need to dial while driving, follow this simple tip-dial only a few numbers, check the road and your mirrors, then continue.

7. Do not engage in stressful or emotional conversations that may be distracting. Stressful or emotional conversations and driving do not mix-they are

distracting and even dangerous when you are behind the wheel of a car. Make people you are talking with aware you are driving and if necessary, suspend conversations which have the potential to divert your attention from the road.

8. Use your wireless phone to call for help. Your wireless phone is one of the greatest tools you can own to protect yourself and your family in dangerous situations-with your phone at your side, help is only three numbers away. Dial 9-1-1 or other local emergency number in the case of fire, traffic accident, road hazard or medical emergency. Remember, it is a free call on your wireless phone!

9. Use your wireless phone to help others in emergencies. Your wireless phone provides you a perfect opportunity to be a "Good Samaritan" in your community. If you see an auto accident, crime in progress or other serious emergency where lives are in danger, call 9-1-1 or other local emergency number, as you would want others to do for you.

10. Call roadside assistance or a special wireless non emergency assistance number when necessary. Certain situations you encounter while driving may require attention, but are not urgent enough to merit a call for emergency services. But you still can use your wireless phone to lend a hand. If you see a broken-down vehicle posing no serious hazard, a broken traffic signal, a minor traffic accident where no one appears injured or a vehicle you know to be stolen, call roadside assistance or other special non-emergency wireless number.

Careless, distracted individuals and people driving irresponsibly represent a hazard to everyone on the road. Since 1984, the Cellular Telecommunications Industry Association and the wireless industry have conducted educational outreach to inform wireless phone users of their responsibilities as safe drivers and good citizens. As we approach a new century, more and more of us will take advantage of the benefits of wireless telephones.
And, as we take to the roads, we all have a responsibility to drive safely.

"The wireless industry reminds you to use your phone safely when driving."

Cellular Telecommunications & Internet Association For more information, please call 1-888-901-SAFE.
For updates: http://www.wow-com.com/consumer/issues/driving/articles.cfm?ID =85

Appendix C: consumer update on wireless phones

U.S. Food and Drug Administration

1. What kinds of phones are the subject of this update?

The term wireless phone refers here to hand-held wireless phones with built-in antennas, often called cell, mobile, or PCS phones. These types of wireless phones can expose the user to measurable radio frequency energy (RF) because of the short distance between the phone and the user s head. These RF exposures are limited by Federal Communications Commission safety

guidelines that were developed with the advice of FDA and other federal health and safety agencies. When the phone is located at greater distances from the user, the exposure to RF is drastically lower because a person's RF exposure decreases rapidly with increasing distance from the source. The so-called "cordless phones," which have a base unit connected to the telephone wiring in a house, typically operate at far lower power levels, and thus produce RF exposures well within the FCC's compliance limits.

2. Do wireless phones pose a health hazard?

The available scientific evidence does not show that any health problems are associated with using wireless phones. There is no proof, however, that wireless phones are absolutely safe. Wireless phones emit low levels of radio frequency energy (RF) in the microwave range while being used. They also emit very low levels of RF when in the stand-by mode. Whereas high levels of RF can produce health effects (by heating tissue), exposure to low level RF that does not produce heating effects causes no known adverse health effects. Many studies of low level RF exposures have not found any biological effects. Some studies have suggested that some biological effects may occur, but such findings have not been confirmed by additional research. In some cases, other researchers have had difficulty in reproducing those studies, or in determining the reasons for inconsistent results.

3. What is FDA's role concerning the safety of wireless phones?

Under the law, FDA does not review the safety of radiation emitting consumer products such as wireless phones before they can be sold, as it does with new drugs or medical devices. However, the agency has authority to take action if wireless phones are shown to emit radio frequency energy (RF) at a level that is hazardous to the user. In such a case, FDA could require the manufacturers of wireless phones to notify users of the health hazard and to repair, replace or recall the phones so that the hazard no longer exists.

Although the existing scientific data do not justify FDA regulatory actions, FDA has urged the wireless phone industry to take a number of steps, including the following:

- Support needed research into possible biological effects of RF of the type emitted by wireless phones;
- Design wireless phones in a way that minimizes any RF exposure to the user that is not necessary for device function; and
- Cooperate in providing users of wireless phones with the best possible information on possible effects of wireless phone use on human health

FDA belongs to an interagency working group of the federal agencies that have responsibility for different aspects of RF safety to ensure coordinated efforts at the federal level. The following agencies belong to this working group:

- National Institute for Occupational Safety and Health
- Environmental Protection Agency Federal Communications Commission
- Occupational Safety and Health Administration
- National Telecommunications and Information Administration

- The National Institutes of Health participates in some interagency working group activities, as well.

FDA shares regulatory responsibilities for wireless phones with the Federal Communications Commission (FCC). All phones that are sold in the United States must comply with FCC safety guidelines that limit RF exposure. FCC relies on FDA and other health agencies for safety questions about wireless phones.

FCC also regulates the base stations that the wireless phone networks rely upon. While these base stations operate at higher power than do the wireless phones themselves, the RF exposures that people get from these base stations are typically thousands of times lower than those they can get from wireless phones. Base stations are thus not the primary subject of the safety questions discussed in this document.

4. What is FDA doing to find out more about the possible health effects of wireless phone RF?

FDA is working with the U.S. National Toxicology Program and with groups of investigators around the world to ensure that high priority animal studies are conducted to address important questions about the effects of exposure to radio frequency energy (RF).

FDA has been a leading participant in the World Health Organization International Electromagnetic Fields (EMF) Project since its inception in 1996. An influential result of this work has been the development of a detailed agenda of research needs that has driven the establishment of new research programs around the world. The Project has also helped develop a series of public information documents on EMF issues.

FDA and the Cellular Telecommunications & Internet Association (CTIA) have a formal Cooperative Research and Development Agreement (CRADA) to do research on wireless phone safety. FDA provides the scientific oversight, obtaining input from experts in government, industry, and academic organizations. CTIA-funded research is conducted through contracts to independent investigators. The initial research will include both laboratory studies and studies of wireless phone users. The CRADA will also include a broad assessment of additional research needs in the context of the latest research developments around the world.

5. What steps can I take to reduce my exposure to radio frequency energy from my wireless phone?

If there is a risk from these products—and at this point we do not know that there is—it is probably very small. But if you are concerned about avoiding even potential risks, you can take a few simple steps to minimize your exposure to radio frequency energy (RF). Since time is a key factor in how much exposure a person receives, reducing the amount of time spent using a wireless phone will reduce RF exposure.

If you must conduct extended conversations by wireless phone every day, you could place more distance between your body and the source of the RF, since the exposure level drops off dramatically with distance. For example, you could use a headset and carry the wireless phone away from your body or use a wireless phone connected to a remote antenna

Again, the scientific data do not demonstrate that wireless phones are harmful. But if you are concerned about the RF exposure from these products, you can use measures like those described above to reduce your RF exposure from wireless phone use.

6. What about children using wireless phones?

The scientific evidence does not show a danger to users of wireless phones, including children and teenagers. If you want to take steps to lower exposure to radio frequency energy (RF), the measures described above would apply to children and teenagers using wireless phones. Reducing the time of wireless phone use and increasing the distance between the user and the RF source will reduce RF exposure.

Some groups sponsored by other national governments have advised that children be discouraged from using wireless phones at all. For example, the government in the United Kingdom distributed leaflets containing such a recommendation in December 2000. They noted that no evidence exists that using a wireless phone causes brain tumors or other ill effects. Their recommendation to limit wireless phone use by children was strictly precautionary; it was not based on scientific evidence that any health hazard exists.

7. Do hands-free kits for wireless phones reduce risks from exposure to RF emissions?

Since there are no known risks from exposure to RF emissions from wireless phones, there is no reason to believe that hands-free kits reduce risks. Hands-free kits can be used with wireless phones for convenience and comfort. These systems reduce the absorption of RF energy in the head because the phone, which is the source of the RF emissions, will not be placed against the head. On the other hand, if the phone is mounted against the waist or other part of the body during use, then that part of the body will absorb more RF energy. Wireless phones marketed in the U.S. are required to meet safety requirements regardless of whether they

are used against the head or against the body. Either configuration should result in compliance with the safety limit.

8. Do wireless phone accessories that claim to shield the head from RF radiation work?

Since there are no known risks from exposure to RF emissions from wireless phones, there is no reason to believe that accessories that claim to shield the head from those emissions reduce risks. Some products that claim to shield the user from RF absorption use special phone cases, while others involve nothing more than a metallic accessory attached to the phone. Studies have shown that these products generally do not work as advertised. Unlike "hand-free" kits, these so-called "shields" may interfere with proper operation of the phone. The phone may be forced to boost its power to compensate, leading to an increase in RF absorption. In February 2002, the Federal trade Commission (FTC) charged two companies that sold devices that claimed to protect wireless phone users from radiation with making false and unsubstantiated claims. According to FTC, these defendants lacked a reasonable basis to substantiate their claim.

9. What about wireless phone interference with medical equipment?

Radio frequency energy (RF) from wireless phones can interact with some electronic devices. For this reason, FDA helped develop a detailed test method to measure electromagnetic interference (EMI) of implanted cardiac pacemakers and defibrillators from wireless telephones. This test method is now part of a standard sponsored by the Association for the Advancement of Medical instrumentation (AAMI). The final draft, a joint effort by

FDA, medical device manufacturers, and many other groups, was completed in late 2000. This standard will allow manufacturers to ensure that cardiac pacemakers and defibrillators are safe from wireless phone EMI.

FDA has tested hearing aids for interference from handheld wireless phones and helped develop a voluntary standard sponsored by the Institute of Electrical and Electronic Engineers (IEEE). This standard specifies test methods and performance requirements for hearing aids and wireless phones so that no interference occurs when a person uses a compatible phone and a compatible hearing aid at the same time. This standard was approved by the IEEE in 2000.

FDA continues to monitor the use of wireless phones for possible interactions with other medical devices. Should harmful interference be found to occur, FDA will conduct testing to assess the interference and work to resolve the problem.

10. What are the results of the research done already?

The research done thus far has produced conflicting results, and many studies have suffered from flaws in their research methods. Animal experiments investigating the effects of radio frequency energy (RF) exposures characteristic of wireless phones have yielded conflicting results that often cannot be repeated in other laboratories. A few animal studies, however, have suggested that low levels of RF could accelerate the development of cancer in laboratory animals. However, many of the studies that showed increased tumor development used animals that had been genetically engineered or treated with cancer causing chemicals so as to be pre-disposed to develop cancer in the absence

of RF exposure. Other studies exposed the animals to RF for up to 22 hours per day. These conditions are not similar to the conditions under which people use wireless phones, so we don t know with certainty what the results of such studies mean for human health.

Three large epidemiology studies have been published since December 2000. Between them, the studies investigated any possible association between the use of wireless phones and primary brain cancer, gioma, meningioma, or acoustic neuroma, tumors of the brain or salivary gland, leukemia, or other cancers. None of the studies demonstrated the existence of any harmful health effects from wireless phone RF exposures. However, none of the studies can answer questions about long-term exposures, since the average period of phone use in these studies was around three years.

11. What research is needed to decide whether RF exposure from wireless phones poses a health risk?

A combination of laboratory studies and epidemiological studies of people actually using wireless phones would provide some of the data that are needed. Lifetime animal exposure studies could be completed in a few years. However, very large numbers of animals would be needed to provide reliable proof of a cancer promoting effect if one exists. Epidemiological studies can provide data that is directly applicable to human populations, but 10 or more years follow-up may be needed to provide answers about some health effects, such as cancer. This is because the interval between the time of exposure to a cancer-causing agent and the time tumors develop - if they do - may be many, many years. The interpretation of epidemiological studies is hampered by difficulties in measuring actual RF exposure during day-to-day use of wireless phones.

Many factors affect this measurement, such as the angle at which the phone is held, or which model of phone is used.

12. Which other federal agencies have responsibilities related to potential RF health effects?

Additional information on the safety of RF exposures from various sources can be obtained from the following organizations.

FCC RF Safety Program:
http://www.fcc.gov/oet/rfsafety/

Environmental Protection Agency (EPA):
http://www.epa.gov/radiation/

Occupational Safety and Health Administration's (OSHA):
http://www.osha-slc.gov/SLTC/radiofrequencyradiation/index.html

National Institute for Occupational Safety and Health (NIOSH):
http://www.cdc.gov/niosh/emfpg.html

World health Organization (WHO):
http://www.who.int/peh-emf/

International Commission on Non-Ionizing Radiation Protection:
http://www.icnirp.de

National Radiation Protection Board (UK):
http://www.nrpb.org.uk

Updated 4/3/2002: US Food and Drug Administration
http://www.fda.gov/cellphones