White paper

W595 Walkman™

Music is for sharing

Sony Ericsson

Preface

Purpose of this document

This White paper will be published in several revisions as the phone is developed. Therefore, some of the headings and tables in this document contain limited information. Additional information and facts will be forthcoming in later revisions.

The aim of this White paper is to give the reader an understanding of the main functions and features of the phone.

People who can benefit from this document include:

• Operators
• Service providers
• Software developers
• Support engineers
• Application developers

Sony Ericsson Developer World

At www.sonyericsson.com/developer, developers find the latest technical documentation and development tools such as phone White papers, Developers guidelines for different technologies, Getting started tutorials, SDKs (Software Development Kits) and tool plugins. The Web site also features news articles, moderated discussion forums offering free technical support and a Wiki community sharing expertise and code examples.

For more information about these professional services, go to the Sony Ericsson Developer World Web site.

Document history

Change history		
2008-07-21	Version 1	First version

Contents

July 2008

Product overview

W595 is a slim, slider Walkman™ phone that offers an enhanced music experience, featuring the third generation Walkman™ player. TrackID™, PlayNow™ and Enhanced Shake control are all part of the complete music package. There is a 3.2 megapixel camera for the user to capture high quality pictures. Pictures and video clips can be shared using picture and video blogging, email or MMS.

Features include:

- Latest Walkman™ player 3.0
- Playful illuminations with flash themes
- Enhanced Shake control for music
- FM radio with RDS and track identification
- Photo fix to improve an under-exposed picture immediately
- 3.2 megapixel camera with fixed focus
- A memory card reader for Memory Stick Micro™ (M2™) memory cards
- 2 GB M2™ provided in the kit
- The ability to share images using mobile blogging
- Video blogging
- Web browser supporting HTML
- Magnetic mouse pointer for Web browsing
- PictBridge™ for printing pictures
- 3G/HSDPA/EDGE technology for voice and video telephony
- Slide shows with music, transitions and more
- 3D gaming
- Web feeds

- A stereo share headset and USB cable provided in the kit

Key features

Walkman™ player 3.0

Located in Media, the Walkman™ player converts the phone into a portable music player that supports AAC, AAC+, eAAC+, MP3, MP4, M4A, 3GP, WAV, RealAudio 8 and WMA audio formats. The user can access audio books and podcasts he/she has transferred from a computer. Use SensMe™ to discover music by mood. The phone knows the mood of each song without the user needing to enter information such as slow, fast, major, minor, acoustic, electric and so on. Mark a song, a circle appears around this and any other songs in the same mood creating a selection. There is no need to choose artist or album, just mood.

Stereo share headset

The user can share music with a friend by connecting the additional headset to the share jack.

Top/Down Stereo speakers

The user can experience a great sound from the top/down stereo speakers.

Stereo widening

The Stereo widening effect improves the sound experience when listening to music through a stereo Bluetooth™ headset, external stereo speakers or stereo portable handsfree headsets.

TrackID™

TrackID™ can identify a track playing on the built-in radio, or a track playing in the room. The phone samples a few seconds of the song, then connects to an online database, which identifies the song and returns title, artist and album information.

3.2 Megapixel camera

The camera has 3.2-megapixels and includes 2.5x digital zoom with fixed focus, auto rotate and Photo fix to take quality pictures with ease. The vertical user interface allows for easier camera handling. The main camera captures video clips with 4x digital zoom, and stores them in the phone or on a memory card. A picture or video clip can be shared as a picture message or email message, or using any available transfer method, such as Bluetooth™.

Enhaced Shake control

Shake the phone to shuffle the playlist, jump to another song, or control gaming functions. The user can change the volume by pressing the Walkman™ key and bend its arm upwards or downwards. This feature is hardware-dependent and currently only available in selected Sony Ericsson phones.

2.2-inch colour screen

The large 2.2-inch (240x320 pixels) full graphic QVGA 262k colour screen enhances viewing, facilitating high quality multimedia and entertainment.

Video camera

The camera captures a video recording and saves it in the phone. A video clip can be shared via a MMS message or email with friends and family, and can also be shared using any available transfer method, such as Bluetooth™ wireless technology. The phone supports QVGA size video recording.

Web feeds

A RSS (Really Simple Syndication) reader is used in combination with the Internet browser. When browsing, the phone can receive feeds of frequently updated content, such as news headlines or podcasts.

Web feeds ticker

News headlines subscribed through Web feeds can be seen with the phone in standby mode.

YouTube application

A preloaded application with video support. The user can upload and view video clips.

HTML Web browser support

Browse the Internet and look at Web sites in a different way with Access NetFront™ 3.4, an HTML browser which supports a complete Web standard suite.

Landscape browsing support

View Web pages in landscape mode.

Mobile blogging

The user can send pictures and video clips using the Internet to show on a personal blog, allowing people easy access to view and comment on pictures and video clips.

Photo tags

The user can tag photos to find them faster, when navigating through thousands of images. Photos and video clips are shown in an intuitive timeline view, and slide shows can play with music and moods.

The user can navigate through captured photos and thousands of downsized photos transferred from a computer. View captured photos and video clips in an intuitive timeline view. Play animated slide shows with music and different moods. Tag photos to find them faster.

Geo tagging

When a photo is taken it is tagged with cell-id information, meaning the approximate location where the photo was taken can be shown on a map.

PictBridge™ – Camera printing

Print pictures from the phone using the USB cable directly to a printer, without a computer or photo editing software.

Push email

The phone supports push email, a method of pushing new email messages automatically to mobile devices. Push email increases mobile email usability, with email being delivered in the background (similar to SMS or MMS).

Media

A unique Sony Ericsson media experience. All media can be accessed directly from the desktop. Navigate seamlessly through captured photos and video clips, pictures, photo tags, music, videos and more.

Video player

Located in Media. Play saved and downloaded video clips.

Sony Ericsson Media Manager

Music, photo and video clip management software is available on the CD included in the kit. Transfer music, video clips and photos to and from the phone. Prepare files for transfer even when the phone is not connected to a computer. Search for and select music on a computer or audio CDs and convert the existing audio tracks to formats suitable for mobile use, before transferring them to the phone. The user can also subscribe to feeds such as video and music podcasts.

PlayNow™ 5.0

A unique and easy-to-use direct link for downloading ringtones, full track music, games, themes and wallpapers. PlayNow™ offers best-selling content for mobile download. Users can preview content before purchase. Users have access to a catalogue of millions of tracks from both international and local labels.

By combining the PlayNow™ catalogue with unique applications like TrackID™, users are presented with a My TrackID™ list and TrackID™ Charts by country, created by TrackID™ users around the world. These charts are based on what songs other users are searching for and want to hear the most. PlayNow™ supports MP3 and Windows Media DRM file formats for music.

Gaming

Gaming is a very popular feature in mobile phones. At purchase there are premium quality 3D games preloaded. Shake or tilit the phone to control gaming functions. With Java™, users can download new games and skill levels to extend their entertainment experience.

Java™

Users can download additional information and entertainment applications. This gives users a chance to personalize the functions and features in their phones, and developers the opportunity to create new applications. Java Platform 8.3.0 (JP-8.3.0) supports a range of new Java programming. These features include instant messaging (chat) and presence-based functionality, handling banking, payment transactions, user identification and authentication, through secure encryption technology.

Bluetooth™ wireless technology

Several devices (simultaneous Bluetooth™ connections) can be connected up to 10 metres (33 feet) away using Bluetooth wireless technology. For example, when the phone rings, it can be answered with a Bluetooth headset, and images can be sent to another phone at the same time. Several mobile phones can take part in a Bluetooth-supported game. The phone and a computer can exchange data such as images, video clips, vCards, music files and calendar data. Bluetooth version 2.0 and Enhanced Data Rate (EDR) is supported.

Bluetooth™ audio streaming

Listen to audio in compatible devices. By connecting a Bluetooth Advanced Audio Distribution Profile (A2DP) compatible accessory, such as a stereo Bluetooth headset or a Bluetooth music receiver, the user can enjoy high quality stereo audio streaming wirelessly from the phone. Many A2DP accessories also support the Bluetooth Audio Video Remote Control Profile (AVRCP), allowing the user to control the Walkman™ player in the phone using the accessory interface.

USB 2.0 mass storage

When connecting the phone to a computer using the provided USB cable, the memory in the phone appears on the computer screen as a removable disk. The user can then quickly and easily drag and drop

items such as images, documents, music and video clips between folders in the phone and the computer.

Media Transfer Protocol (MTP)

With Media Transfer Protocol the user can transfer media files and synchronize playlists when the phone is connected to the computer using the USB cable. The user can use MTP in Media transfer mode or Phone mode. MTP is supported by Windows Media Player 11 and higher in Windows XP and Windows Vista™.

Personal Information Management (PIM)

Stay up-to-date with everyday events by synchronizing phone contacts, calendar appointments, tasks and notes in the phone with similar programs in a computer. The user can connect the phone to their computer with the included USB cable or the built-in Bluetooth feature. The synchronization software is available from the CD or from www.sonyericsson.com/support. The user can then smart search their contacts and call list for phone numbers or names from standby.

Common Internet File System (CIFS)

The Common Internet File System enables file transfer to and from the phone. The phone acts as a file server which allows the user to copy and move files between their PC and the server. The user can use this feature when connected using the USB cable or the Bluetooth connection.

Images

Technologies in detail

This chapter includes short descriptions of the technologies available in this product compared to other Sony Ericsson products.

Functions and features

The following includes short descriptions of the technologies available in W595 compared to W910 and W580.

Feature	W595	W910	W580
3D games	Yes	Yes	Yes
3G enabled	Yes	Yes	No
Activity menu (multi-tasking) The user can easily handle missed calls, new text and picture messages, task reminders, shortcuts and get quick access to favourite Internet bookmarks	Yes, with enhanced functionality for background applications	Yes, with enhanced functionality for background applications	Yes
Alarm clock Set up to five individual times for single or recurring weekly alarms	Yes	Yes	Yes
Auto rotate The picture appears as a landscape or portrait picture, as it was originally taken	Yes	Yes	No
Backlight White backlight to illuminate the phone screen	Yes	Yes	Yes
Battery	BST-33 3.6 V, 950 mAh, Lithium Polymer	BST-39 3.6 V, 920 mAh, Lithium Ion	3.6 V, 900 mAh, Lithium Polymer
Battery charging time At least 90% charged within 2 hours. Fully charged within 2.5 hours	Yes	Yes	Yes
Bluetooth™ audio streaming Listen to audio in compatible devices	Yes	Yes	Yes
Bluetooth™ audio video remote control Control music player functions from a Bluetooth™ accessory and control the volume in the accessory from the phone	Yes	Yes	Yes
Bluetooth™ PAN Connect the phone to the Internet using Bluetooth™ technology	Yes	Yes	Yes

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Feature	W595	W910	W580
Bluetooth™ wireless technology Wireless connectivity between devices within a range of up to 10 metres (33 feet). Support for specification of the Bluetooth System, version 2.0 and EDR	Yes	Yes	Yes
Business card exchange Exchange contact information	Yes	Yes	Yes
Calculator	Yes	Yes	Yes
Calendar Calendar with day, week and month views and reminders	Yes	Yes	Yes
Call list View calls made and received	Yes	Yes	Yes
Camera	3.2 megapixel	2.0 megapixel	2.0 megapixel
Camera file browser Browse the picture folder without leaving the camera function	Yes	Yes	TBI
Camera shortcut key	No	Yes	Yes
Chinese input method Text input methods based on Simplified or Traditional Chinese: Bopomofo, Pinyin or Stroke	Yes	Yes	Yes
Clock On-screen clock that keeps the time even when the phone is off	Yes	Yes	Yes
Co-branding area	34.9 x 11 mm	47.4 x 6.75 mm	7.02 x 28.36 mm
Code memo A safe place to save all PIN codes and other information. To access Code memo, only one PIN code is needed	Yes	Yes	Yes
Colour	Active Blue Cosmopolitan White Jungle Grey Ruby Black Lava Black	Noble Black Hearty Red	Style White Urban Grey

Feature	W595	W910	W580
Contacts Phonebook with fields for name, phone and fax numbers, instant messaging and presence information, email and Web site addresses, business title and company address, and personal address and birthday date	Yes	Yes	Yes
Conference calls Support for multiparty calling	Yes	Yes	Yes
Connector A1 (Fast port)	Yes	Yes	Yes
Content online Downloadable pictures, games, themes and ringtones	Yes	Yes	Yes
Copyright protection - DRM DRM (Digital Rights Management) features the rights and copy protection of downloaded content (audio, pictures, music tones, video clips and entertainment features such as games, Java applications and so on)	Yes, OMA DRM 1.0 and OMA DRM 2.0, Microsoft DRM Janus, Windows DRM 10	Yes, OMA DRM 1.0 and OMA DRM 2.0	Yes, OMA DRM 1.0 and OMA DRM 2.0
Device Management (DM) DM utilizes GPRS as a bearer (basic network connectivity needs to be in place) of the provisioning data and allows the operator to access the phone, check and send out different settings such as network connectivity (GPRS), email, MMS, Internet settings and Java™. Device Management is achieved by supporting OMA Client Provisioning 1.1 (CP) and OMA Device Management (DM) 1.2	Yes	Yes	Yes
Email Email client with inbox, outbox, compose, send and other functions	Yes	Yes	Yes
EMS (Enhanced messaging) Text messaging (SMS) with support for pictures and sounds Note: EMS is not available for operators who use unified messaging	Yes	Yes	Yes

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Feature	W595	W910	W580
Exterior description Size mm (length x width x thickness)	100 x 47 x 14.1	99.5 x 50 x 12.5	99 x 47 x 14
Fast port A system connector which enables faster data transfer between the phone and a computer	Yes	Yes	Yes
File manager Folder structure storage to help save and organize pictures, sounds and other phone content	Yes, with enhanced functionality for camera content	Yes	Yes
Flash themes	Yes	Yes	Yes
Flight mode All phone radio transceivers are inactivated. Flight mode starts the phone so that only certain functions are available, such as the calendar, the music player or a game. The phone may then be used in some areas, such as aeroplanes or hospitals, where full mobile phone functionality is not allowed Bluetooth™ function availability in Flight mode	Yes Yes	Yes Yes	Yes Yes
FM radio with RDS FM radio with presets, auto and manual search	Yes, 100 kHz tuning interval	Yes	Yes
FM radio with TrackID™ Identify tracks playing on the radio	Yes	Yes	Yes
Form factor	Slider	Slider	Slider
Games download Add more games to the phone	Yes	Yes	Yes
Games embedded	Yes	Yes	Yes
Geo tagging Photos are tagged with geo data and can be shown on a map	Yes, geo data from cell-id	No	No

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Feature	W595	W910	W580
Google Maps™ for mobile Preloaded application with support for cell-id and GPS. View satellite imagery, find locations and calculate routes	Yes, no built-in GPS, but support for GPS Enabler HGE-100	Yes, no built-in GPS, but support for GPS Enabler HGE-100	Yes, no built-in GPS, but support for GPS Enabler HGE-100
GPRS General Packet Radio Services – a communications standard, enabling packet data transfer of 21.4 Kbps per time slot. Multislot class 10 supported (4 timeslots max for RX, 2 timeslots max for TX, timeslot allocation limited to 5 for both RX, TX)	Yes	Yes	Yes
GPS Support for GPS Enabler HGE-100	Yes	Yes	Yes
High Speed Data HSDPA – High Speed Downlink Packet Access	Yes	Yes	No
Icon Desktop 12 A graphic icon desktop with 12 interactive icons	Yes	Yes	Yes
Image formats			
5 MP (2592×1944 pixels)	No	No	No
3 MP (2048x1536 pixels)	Yes	No	No
2 MP (1632x1224 pixels)	Yes	Yes	Yes
1 MP (1280x960 pixels)	Yes	Yes	Yes
VGA (640x480 pixels)	Yes	Yes	Yes
Wireless Village/My friends Chat – several people can take part in a mobile messaging session.	Yes	Yes	Yes
Internet blogging Share over the Internet on a personal Web site. The size of uploaded pictures is dependent on customizations	Yes	Yes	Yes

Feature	W595	W910	W580
Internet browser	Yes	Yes	Yes
Full HTML support, ECMA script, DOM level 1&2, CSS 1&2 and so on.	Yes	Yes	Yes
Support for AJAX.	Yes	Yes	No
Progressive download of video files.	Yes	Yes	Yes
Direct access to Bookmarks, Search Internet and Enter address	Yes	Yes	Yes
Internet security Encrypts confidential information such as credit card and bank account numbers. Necessary for mobile banking and shopping	Yes, SSL/TLS	Yes, SSL/TLS	Yes, SSL/TLS
Java™ Support for J2ME™ technology	Java 2, Micro Edition (J2ME™), Java 3D™	Java 2, Micro Edition (J2ME™), Java 3D™	Java 2, Micro Edition (J2ME™), Java 3D™
Java Platform 8.3.0 (JP-8.3.0) Support for new Java programming features including banking, payment transactions, user identification and authentication through secure encryption technology	Yes	Yes	Yes
Keys – front (navigation and more)	4+1 navigation key multimedia (play/ stop) on navigation key centre 2 (left + right) selection keys C (Clear) key Activity menu key End key and On/ off key Call key	8+1 navigation key multimedia (play/ stop) on navigation key centre 2 (left + right) selection keys C (Clear) key Activity menu key End key Call key	4+1 navigation key 2 (left + right) selection keys C (Clear) key Activity menu key On/off key Walkman™ key
Keys – keypad	12 alphanumeric	12 alphanumeric	12 alphanumeric

Feature	W595	W910	W580
External keys – side and top	Volume/zoom key Walkman™ key on right	Volume/zoom key Walkman™ key on top On/off key Camera key A/B gaming keys. A/B keys using the camera (landscape orientation): Upper key: - camera shoot mode - video clip length Lower key: - night mode on/off	Volume keys
Lunar calendar A calendar system used in China and other parts of Asia. A lunar month is determined by the period required for the moon to complete its full cycle of 29.5 days and is available in Chinese phone variants	Yes	Yes	Yes
Media A centre for all media content with horizontal and vertical navigation. You can view photos, listen to music and watch video clips	Yes	Yes	No
Media player	See Walkman™ player and Video player	See Walkman™ player and Video player	See Music player and Video player
Mega Bass™ An audio feature which enhances bass frequencies for better overall music experience	Yes	Yes	Yes

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Feature	W595	W910	W580
Memory (built-in) Phone memory that is free to use (depending on software configuration and file content). Many applications share phone memory. The maximum amount of storage available for any one application, such as calendar entries, is affected by the amount of memory used by other applications, such as messaging, music, pictures and so on	Up to 40 MB	Up to 35 MB	Up to 12 MB
Memory card reader (slot) A slot for inserting a micro peripheral storage device. Memory card support: Memory Stick Micro™ (M2™)	Yes Yes	Yes Yes	Yes Yes
Menu shortcuts A function giving the ability to dedicate shortcuts to the most-used phone functions	Yes	Yes	Yes
MMS (Multimedia messaging) Picture messaging with text and sound	Yes	Yes	Yes
MMS video Support in the phone for sending video clips using MMS	Yes	Yes	Yes
Modem Circuit Switched/Packet Switched Internet dial-up support	Yes	Yes	Yes
MusicDJ™ A sampler music tool with MIDI drum, guitar, keyboard, bass and brass loops in different music styles, which can be combined to create polyphonic ringtones	Yes	Yes	Yes
Music listening time	Up to 26 hours	Up to 20 hours	Up to 20 hours
Music player 3.0 A digital music player with horizontal navigation. Play music the user has transferred or downloaded. The list structure system enables the user to, for example, organize favourite songs into groups and create simple playlists	See Walkman™ player	See Walkman™ player	See Walkman™ player

Feature	W595	W910	W580
Music tones Music tones, also called master tones, are DRM protected music by original artists. Various digital audio formats are supported	Yes	Yes	Yes
My friends See Instant messaging	Yes	Yes	Yes
My Timezone Select the time zone manually by country or city.	Yes	Yes	Yes
Networks 3G HSDPA GSM/GPRS/EDGE	 UMTS 2100 HSDPA 2100 GSM/GPRS 850/ 900/1800/1900 MHz, E-GSM 900 EDGE 850/900/ 1800/1900 MHz	 UMTS 2100 HSDPA 2100 GSM 850/900/ 1800/1900 MHz, E-GSM 900	 GSM/GPRS 850/ 900/1800/1900 MHz, E-GSM 900 EDGE 850/900/ 1800/1900 MHz
Notes Make notes of things to remember. A note can be shown in standby.	Yes	Yes	Yes
OMA Data Synchronization (SyncML) A device communications standard that enables remote synchronization between devices	Yes OMA DS 1.2 OMA DS 1.1.2 SyncML 1.2 SyncML 1.1	Yes SyncML 1.2 SyncML 1.1	Yes
OTA (Over The Air) settings Internet, email and other settings can be sent over the air to the phone	Yes OMA CP 1.1	Yes OMA CP 1.1	Yes OMA CP 1.1
PhotoDJ™ A drawing tool in the phone where existing pictures can be altered	Yes	Yes	Yes

Feature	W595	W910	W580
Photo fix Improves an under-exposed picture by calculating and adjusting the light balance	Yes	Yes	No
PictBridge™ Transfer images from the phone using the USB cable directly to a printer, without a computer or photo editing software	Yes	Yes	Yes
Picture gallery A thumbnail image gallery where several pictures can be viewed at the same time	Yes Use photo tags	Yes Use photo tags	Yes Use photo tags
Picture phonebook Add a picture to a saved contact. The picture appears on the screen when the saved contact calls	Yes	Yes	Yes
PlayNow™ (direct link) Listen to music before purchasing and downloading it to the phone	Yes	Yes	Yes
PlayNow™ Games (direct link) Download and purchase games straight from the phone desktop	No	Yes	Yes
Polyphonic voices	72	72	72
Powersave Default setting for display light	Yes	Yes	Yes
Predictive text input	Yes	Yes	Yes
Push email	Yes	Yes	Yes
RSS reader	See Web feeds	See Web feeds	See Web feeds
Web feeds ticker View news headers in standby	Yes	Yes	Yes
Screen Type: Size: Resolution: Technology: Colours displayed together: Backlight colour:	Full graphical 2.2 inches 320x240 pixels TFT, QVGA 262,000 (18 bit) White	Full graphical 2.36 inches 320x240 pixels TFT, QVGA 262,000 (18 bit) White	Full graphical 2.0 inches 320x240 pixels TFT, QVGA 262,000 (18 bit) White

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Feature	W595	W910	W580
Screen saver	Yes	Yes	Yes
SensMe™ Sort music tracks by mood	Yes	No	No
Settings download (Ready to run) Set up functions that require a connection to the Internet such as the Internet browser and picture messaging. This function runs in the setup wizard or can also be chosen in the Settings menu. This function is not included in the setup wizard for customized phones	Yes	Yes	Yes
Shake control Shake control for music	Yes	Yes	Yes
Shake control Shake control for gaming	No	Yes	Yes
SIM card lock The ability to protect the SIM card with a four-digit to eight-digit PIN code	Yes	Yes	Yes
Smart search Search for numbers and contacts from standby by using the number keys. Call or send messages from a filtered list of search results	Yes	No	No
SMS long (Text messaging) Concatenated SMS text messaging	Yes	Yes	Yes
Sleep mode A power-saving feature that minimizes the battery power consumed when the phone is in standby	Yes	Yes	Yes
Sony Ericsson Remote Update service Download the latest operator-approved software over the air	Yes	Yes	Yes

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Feature	W595	W910	W580
Sony Ericsson Update service Connect the phone to an Internet-connected computer and download the latest operator-approved software from www.sonyericsson.com/support	Yes	Yes	Yes
Sound recorder A recording device in the phone that can record voice messages or other sounds	Yes	Yes	Yes
Speakerphone	Yes	Yes	Yes
Speed dialling Allocate contacts in the phone book to specific keys on the keypad	Yes	Yes	Yes
Standby time GSM UMTS	Up to: 385 hours 365 hours	Up to: 350 hours 340 hours	Up to: 400 hours 350 hours
Status view The screen shows the network being used, the time and other status information	Yes	Yes	Yes
Stereo speakers	Yes	No	No
Stopwatch	Yes	Yes	Yes
SVG Tiny Scalable Vector Graphics for impressive animated wallpapers, menus and other graphic elements	Yes	Yes	Yes
Synchronization PC Synchronize and share phone content with a computer	Yes	Yes	Yes
Talk time GSM UMTS	Up to: 9 hours 4.5 hours	Up to: 9 hours 3.5 hours	9 hours 3.5 hours
Tasks Keeps track of important things to do	Yes	Yes	Yes
Themes Phone menu texts and background graphics	Yes	Yes	Yes

Feature	W595	W910	W580
Timer Set the phone to alert after a specific time	Yes	Yes	Yes
TrackID™ Music recognition and text search for artist, album, track, lyrics and so on	Yes	Yes	Yes
USB connectivity support Connect the phone to a computer using the USB cable provided	Yes USB 2.0 Hi-Speed	Yes USB 2.0 Hi-Speed	Yes USB 2.0 Hi-Speed
USB ethernet emulation Connect to the Internet using the phone or a computer	Yes	Yes	Yes
Vibrating alert The phone vibrates when a call comes in	Yes	Yes	Yes
Video blogging Share video clips over the Internet on a personal Web site. The size of uploaded video clips is dependent on customizations	Yes	Yes	Yes
Video call camera	No	Yes	No
Video calling	Yes (main camera only)	Yes	No
VideoDJ™ Create video sequences by combining different clips and adding music and images	Yes	Yes	Yes
Video player Play video clips that have been transferred or downloaded. Transfer video clips to another phone or a computer using an available transfer method	Yes	Yes	Yes
Video streaming Real-time streaming of video clips, for example, live cam. Media can also be downloaded and saved in the phone memory	Yes	Yes	Yes
Viewfinder When using the camera, a picture can be previewed before it is captured	Yes	Yes	Yes

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Feature	W595	W910	W580
Voice control Voice answer, reject and call. Assign voice commands to items in the phonebook. When a call is made, the voice command can be used instead of pressing keys	Yes	Yes	Yes
Voicemail Support for the voicemail operator service including automatic answering and message recording	Yes	Yes	Yes
Walkman™ key Get direct access to music files without having to browse the menus. Press the Walkman™ key to gain direct access to the Walkman™ player	Yes	Yes	Yes
Walkman™ player A digital music player with horizontal navigation. Play music that has been transferred or downloaded. Play music files in the folder system, organize favourite tracks into groups and create various playlists	Yes, version 3.0	Yes, version 3.0	Yes, version 2.0
WAP 2.0 XHTML™ A mobile Internet standard to access specially designed Internet sites. WAP 2.0 supports colour and interactive lists	Yes	Yes	Yes
Web feeds Frequently updated content delivered as feeds using a Web site, for example, news headlines in the browser	Yes	Yes	Yes
Weight	104 g including battery	86 g including battery	94 g including battery

Facts and figures

This chapter offers a detailed listing of all the technical data relating to the product. Comprehensive descriptions of performance and technical characteristics are presented in table format for quick and easy access.

Technical specifications

General technical data

System	Quad-band GSM Release 99 recommendations, GSM 850, GSM 900, e-GSM 900, GSM 1800, GSM 1900. Single band UMTS/HSDPA Release 5 recommendations, UMTS/HSDPA 2100 supported
Speech coding	HR, FR, EFR, AMR, supported where available, for high speech quality
GSM SIM/ UMTS USIM or ISIM card	GSM SIM-GSM 11.11, UMTS SIM-3GPP™ TS 31.101. Small plug-in card, 1.8 V and 3 V
Memory	Up to 40 MB internal (depending on software configuration/file content) plus extra slot for supported memory cards
Data transfer speeds	Up to 3.6 Mbps (downlink, HSDPA, cat 6) Up to 384 Kbps (uplink, WCDMA R99)

Performance and technical characteristics

Property	WCDMA 2100
Frequency range (MHz)	TX:1920-1980 RX: 2110-2170
Channel spacing	5 MHz with 200 kHz channel rasters
Number of channels	277
Modulation	QPSK (WCDMA R99) QPSK/16 QAM (HSDPA)
TTI	10 ms (WCDMA R99) 2 ms (HSDPA)
TX phase accuracy	Error Vector Magnitude: <17.5%
Duplex spacing	190 MHz
Frequency stability	+/- 0.1 ppm
Voltage operation (nominal)	3.6 V
Transmitter RF power output	24 dBm Class 3 (0.25 W peak)
Transmitter output impedance	50 ohm
Transmitter spurious emission (according to specification)	< -36 dBm up to 1 GHz < -30 dBm over 1 GHz (according to 3GPP™ spec.)

Property	WCDMA 2100
Receiver RF sensitivity	Better than -106.7 dBm @ 12.2 kbps CS voice
Receiver RX bit error rate	< 0.1%

Property	GSM 850	GSM 900/ E-GSM 900
Frequency range (MHz)	TX: 824-849 RX: 869-894	TX: 880-915 RX: 925-960
Channel spacing	200 kHz	200 kHz
Number of channels	124 Carriers *8 (TDMA)	174 Carriers *8 (TDMA)
Modulation	GMSK	GMSK
TX Phase accuracy	< 5° RMS phase error (burst)	< 5° RMS Phase error (burst)
Duplex spacing	45 MHz	45 MHz
Frequency stability	+/- 0.1 ppm	+/- 0.1 ppm
Voltage operation (nominal)	3.6 V	3.6 V
Transmitter RF power output	33 dBm Class 4 (2 W peak)	33 dBm Class 4 (2 W peak)
Transmitter output impedance	50 ohm	50 ohm
Transmitter spurious emission (according to specification)	< -36 dBm up to 1 GHz < -30 dBm over 1 GHz	< -36 dBm up to 1 GHz < -30 dBm over 1 GHz
Receiver RF sensitivity	Better than –104 dBm	Better than –102 dBm
Receiver RX bit error rate	< 2.4%	< 2.4%

Property	GSM 1800	GSM 1900
Frequency range (MHz)	TX: 1710-1785 RX: 1805-1880	TX:1850-1910 RX:1930-1990
Channel spacing	200 kHz	200 kHz
Number of channels	374 Carriers *8 (TDMA)	299 Carriers *8 (TDMA)
Modulation	GMSK	GMSK
TX phase accuracy	< 5° RMS Phase error (burst)	< 5° RMS Phase error (burst)
Duplex spacing	95 MHz	80 MHz
Frequency stability	+/- 0.1 ppm	+/- 0.1 ppm
Voltage operation (nominal)	3.6 V	3.6 V
Transmitter RF power output	30 dBm Class 1 (1 W peak)	30 dBm Class 1 (1 W peak)

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Property	GSM 1800	GSM 1900
Transmitter output impedance	50 ohm	50 ohm
Transmitter spurious emission (according to specification)	< -30 dBm	< -30 dBm
Receiver RF sensitivity	Better than -102 dBm	Better than -102 dBm
Receiver RX bit error rate	< 2.4%	< 2.4%

USSD technical data

Feature	Support
USSD support	GSM Phase 1/2 (cross-phase compatibility)
Mode support	• UI-mode supported • SAT initiated USSD supported
UI-mode details	• Ability to scroll the text up and down in USSD messages • Ability to highlight embedded numbers and take actions accordingly

GPRS technical data

Property	Support
Compatible GPRS/EDGE and SMG specifications	Release 99 according to ETSI specification
Data rates GPRS (per time slot)	Coding scheme CS-1: 9 Kbps CS-2:13.4 Kbps CS-3:15.6 Kbps CS-4:21.4 Kbps (network-dependent).
Data rates EDGE (per time slot)	Modulation & coding scheme (MCS) MCS-1 (GMSK): 8.0 Kbps MCS-2 (GMSK): 11.4 Kbps MCS-3 (GMSK): 14.8 Kbps MCS-4 (GMSK): 17.6 Kbps MCS-5 (8-PSK): 22.4 Kbps MCS-6 (8-PSK): 29.4 Kbps MCS-7 (8-PSK): 44.8 Kbps MCS-8 (8-PSK): 54.4 Kbps MCS-9 (8-PSK): 59.2 Kbps
Medium Access Modes	Dynamic allocation
Support of Packet Control Channels (PBCCH/PCCCH)	Yes
Network operation mode	NOM I, II, III

Property	Support
Support of GPRS/CS combined procedures	Yes
Network control mode	NC0 and NC2
Support of access in 2 phases	Yes
Support of PRACH on 11 bits	Yes
Support of GPRS re-selection C31/C32	Yes
Support of static and dynamic addressing	Yes
Support of power control uplink and downlink	Uplink: yes. Downlink, is a network feature
Support of ciphering algorithms	GEA 1 and GEA 2
Support of compression algorithms	Yes, V42bis and IP header compression as defined in RFC 2507
Mode of operation	Class B and Class C modes of operation supported
R reference point	• Physical layer: support of RS232 • PPP is supported as L2 layer in the R reference point • Authentication algorithms PAP, CHAP supported
IP connectivity	• PDP type IP is supported • IP termination in mobile or TE (laptop, PDA) is supported
PDP context	• 10 PDP context descriptions saved in the phone • PDP context description is edited using application in the phone, AT-command or using OTA • Simultaneous PDP contexts are supported, maximum 4
SIM	GPRS aware, as well as non-GPRS aware, SIM cards are supported
AT commands	Some of the supported commands: AT+CGDCONT - DEFINE PDP CONTEXT AT+CGEQREQ - Quality of Service Profile (REQUESTED) AT+CGEQMIN - Quality of Service Profile (Minimum Acceptable) AT+CGATT - PACKET DOMAIN SERVICE ATTACH OR DETACH AT+CGACT - PDP CONTEXT ACTIVATE OR DEACTIVATE AT+CGDATA - ENTER DATA STATE For more information, see www.sonyericsson.com/developer

SIM AT services supported

Service	Mode		Support
CALL CONTROL BY SIM			Yes
MO SMS CONTROL			Yes
DATA DOWNLOAD TO SIM	Cell Broadcast		Yes
	SMS		Yes
DISPLAY TEXT	Text of up to 240 characters (120 UCS2 coded)		Yes
	bit 1:	0 = normal priority 1 = high priority	Yes
			Yes
	bit 8:	0 = clear message after a delay 1 = wait for user to clear message	Yes
			Yes
GET INKEY	General: The GET_INKEY requires that the user confirms his/her choice		Yes

	bit 1:	0 = digits (0-9, *, # and +) only
		1 = alphabet set
			Yes

			Yes
	bit 2:	0 = SMS default alphabet 1 = UCS2 alphabet	Yes
			Yes
	bit 3:	0 = character sets defined by bit 1 and bit 2 are enabled 1 = character sets defined by bit 1 and bit 2 are disabled and the Yes/No response is requested	Yes
			Yes
GET INPUT	General: no. of hidden input characters		252

	bit 1:	0 = digits (0-9, *, # and +) only
		1 = alphabet set
			Yes

			Yes
	bit 2:	0 = SMS default alphabet 1 = UCS2 alphabet	Yes
			Yes
	bit 3:	0 = ME may echo user input on the display 1 = user input not to be revealed in any way (see note)	Yes
			Yes
	bit 4:	0 = user input to be in unpacked format 1 = user input to be in SMS packed format	Yes
			Yes
	bit 8:	0 = no help information available 1 = help information available	Yes
			Yes
LAUNCH BROWSER			Yes
MORE TIME			Yes

Service	Mode		Support
PLAY TONE			Yes
POLLING OFF			Yes
POLL INTERVAL			Yes
PROVIDE LOCAL INFORMATION	00 = Location information (MCC, MNC, LAC and Cell Identity)		Yes
	01 = IMEI of the ME		Yes
	02 = Network Measurement results		Yes
	03 = Date, time and time zone (DTTinPLI)		Yes
	04 = Language setting		Yes
	05 = Timing advance		Yes
REFRESH	General: The reset option requests the user to wait while the phone restarts		Yes
	00 = (U)SIM Initialization and Full File Change Notification		Yes
	01 = File Change Notification		Yes
	02 = (U)SIM Initialization and File Change Notification		Yes
	03 = (U)SIM Initialization		Yes
	04 = (U)SIM Reset		Yes
	05 = USIM Application Reset		Yes
	06 = 3G Session Reset		Yes
SELECT ITEM			Yes
SEND DTMF			Yes
SEND SHORT MESSAGE	bit 1:	0 = packing not required	Yes
		1 = SMS packing by the ME required	Yes
SEND SS			Yes
SEND USSD			Yes

Service	Mode	Support
SET UP CALL	General: capability configuration Set-up speech call CallParty Subaddress DTMF support	Yes No Yes
	00 = set up call, but only if not currently busy on another call	Yes
	01 = set up call, but only if not currently busy on another call, with re-dial	Yes
	02 = set up call, putting all other calls (if any) on hold	Yes
	03 = set up call, putting all other calls (if any) on hold, with re-dial	Yes
	04 = set up call, disconnecting all other calls (if any)	Yes
	05 = set up call, disconnecting all other calls (if any), with re-dial	Yes
SET UP EVENT LIST	00 = MT call	Yes
	01 = Call connected	Yes
	02 = Call disconnected	Yes
	03 = Location status	Yes
	04 = User activity	Yes
	05 = Idle screen available	Yes
	06 = Card reader status	Not Applicable
	07 = Language selection	Yes
	08 = Browser termination	Yes
	09 = Data available	Yes
	OA = Channel status	Yes
SET UP IDLE MODE TEXT		Yes, 1 row of text is supported
SET UP MENU		Yes
TIMER MANAGEMENT		Yes
OPEN CHANNEL		Yes
CLOSE CHANNEL		Yes
RECEIVE DATA		Yes

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Service	Mode	Support
SEND DATA		Yes
GET CHANNEL STATUS		Yes

User Interaction with SIM AT

BIP – Open Channel:

A user confirmation is displayed by the default text "Open channel", when no alpha identifier is present. Alpha identifier text replaces the default text when the Alpha Identifier is present & not null. No user indication is provided (transparent mode) when the alpha identifier is present and null.

Display text

Text of up to 240 characters (120 UCS coded) is supported.

Text clearing times are 5-20 seconds with a 60-second time-out limit for the user to clear the text. Key responses:

- End key – Proactive session terminated by user
- Back – Backward move in proactive session

MSK clears the screen if the command is performed successfully.

Get inkey

Prompt for a one-character input. Pressing OK without entering a character gives warning message "Text too short". Key responses:

- C – Clears current character
- End key – Terminates proactive session
- Back – Backward move in the proactive session
- OK – Command performed successfully

Get input

Prompt for character input. The phone refuses to accept further input when maximum response length is exceeded. UI maximum response lengths:

- Digits only – 160 characters
- SMS default alphabet characters – 160 characters
- Hidden characters (digits only) – 20 characters

Key responses:

- C – Clears current character
- End key – Terminate the proactive session
- Back – Backward move in proactive session
- OK – Command performed successfully

Select item

Scroll to highlight item for selection. Key responses:

- Navigational key press down – Scroll down list
- Navigational key press up – Scroll up list
- End key – Terminates proactive session
- Back – Backward move in proactive session
- OK – Command performed successfully

Send short message

Alpha Identifier text is displayed, if it is present. Otherwise, there is no user indication if the customization for default text is not enabled. If the customization for default text is enabled, and there is no Alpha Identifier, the default message "Sending message" is displayed. Default responses are "Message failed" or "Message sent" for the customization enabled case with no Alpha Identifier.

Key responses:

- End key or Back ends the proactive session

Set up call

If the user is on a call when the "Set up call, putting all other calls on hold" command is sent, the user sees the text "Let SIM card setup call". The user can press OK for the current call to be put on hold and the new call to be set up.

If the user is on a call when the "Set up call, disconnecting all other calls"command is sent, the user sees the text "Let SIM card setup call". The user can press OK for the current call to be disconnected and the new call to be set up.

Set up menu

Incorporates a SIM Application Toolkit menu item into the main menu structure.

If an Alpha Identifier is supplied in the Set Up Menu command, this is used as the SIM AT entry in the main menu. If null alpha identifier is supplied and several items are found in the menu, the default title "ONLINE SERVICES" is used. If the SIM AT Menu Item is selected by pressing Select, all the items sent in the Set Up Menu command are available for selection, in the same way as the Select Item command.

Entertainment

Audio and video

File types	Formats	Extensions
Audio (all listed audio file formats are supported ringtone file formats)	3GPAAC MP4 M4A MP3 AMR AMR-WB WAV SMF (Standard MIDI File format) RealAudio® 8 iMelody XMF (Mobile XMF supported) WMA	.3gp .aac .mp4 .m4a .mp3 .amr .awb .wav .mid .ra, .rm .imy .xmf, .mxmf .wma
Video (including audio part)	MP4 (Video: MPEG4 or H.264, Audio: AAC or AAC+ or eAAC+) 3GPP™ (Video: MPEG4, H.263or H.264, Audio: AMR-NB, AMR-WB, AMR-WB+, AAC, AAC+ or eAAC+) RealVideo® 8, 9, 10 WMV	.mp4 .3gp .rv, .rm .wmv, .asf
Streaming transport	RTSP according to 3GPP™	
Video encoding	H.263 Profile 0, Level 10 MPEG-4 Visual Simple Profile Level 3	
Audio encoding	AMR-NB AAC (for video recording only)	

File types	Decoder format	Supported in file format
Video decoding	MPEG-4 Visual Simple Profile H.264 Baseline Profile H.263 Profile 0 H.263, Profile 3 RealVideo 8, 9, 10 VC-1 (WMV9)	3GP/MP4 3GP/MP4 3GP 3GP RealVideo 8, 9, 10 WMV
Audio decoding	MPEG-1/2/2.5, audio layer 3 AAC AAC+ eAAC+ AMR-NB AMR-WB AMR-WB+ RealAudio Gecko/Sipro WMA version 2,7,8: Class 1 WMA version 9: Level 3 WMA Pro (profile M0a) General MIDI (GM) GML SP-MIDI DLS (Mobile DLS supported) Linear/A-law/μ-law PCM	MP3 3GP/AAC/MP4/M4A 3GP/AAC/MP4/M4A 3GP/AAC/MP4/M4A 3GP/AMR 3GP/AMR/AMR-WB 3GP RealAudio 8 WMA WMA WMA SMF SMF SMF, XMF XMF WAV

Java™

Feature	Functionalities
Java™ Platform, Micro Edition	JSR-75 PDA Optional Packages for J2ME™ JSR-82 Bluetooth Wireless Technology API JSR 118 MIDP 2.0 JSR-120 Wireless Messaging API JSR-205 Wireless Messaging API 2.0 JSR-135 Mobile Media API 1.1 JSR 139 CLDC 1.1 JSR-172 J2ME™ Web Services Specification JSR-177 Security and Trust Services API for J2ME™ JSR-180 SIP API for J2ME™ JSR-184 Mobile 3D Graphics API for J2ME™ JSR 185 Java™ Technology for the Wireless Industry JSR-211 Content Handler API JSR-226 SVG API for J2ME™ JSR-229 Payment API JSR-234 Advanced Multimedia Supplements JSR-238 Mobile Internationalization API JSR-239 OpenGL ES JSR-248 Mobile Services Architecture JSR-256 Mobile Sensor API (accelerometer) Nokia UI Extension API
Java 3D	Mascot Capsule Micro3D Version 3 JSR-239 OpenGL ES JSR-184 Mobile 3D Graphics API for J2ME™

Imaging/Messaging

3.2 Megapixel camera

Facts and figures	
Digital still camera (DSC)	
True colour	Yes
Digital zoom	Main camera: 2.5 x zoom Main camera when used for video call 4x zooom
Photo fix	Improves an under-exposed picture by calculating and adjusting the light balance
Still camera settings bar	
Shoot modes	Normal, Burst, Panorama, Frames

Picture sizes (resolution)	**3.2 MP** (2048x1536 pixels) **2 MP** (1632x1224 pixels) **1 MP** (1280x960 pixels) **VGA** (640x480 pixels) Note: MP = Megapixel
Night mode	Off, On
Self-timer	Off, On
White balance	Auto, Daylight, Cloudy, Fluorescent, Lightbulb
Effects	Off, Black & white, Negative, Sepia, Solarize
Still camera setup	
Picture quality	Normal, Fine
Review	On, Off
Add position	On, Off
Save to	Memory card, phone memory
Auto rotate	On, Off
Shutter sounds	Yes
Reset settings	Yes
Reset counter	Yes
Video recorder	
Video size (resolution)	QVGA 320x240 pixels
Frame rate	15 fps (frames per second)
Video camera settings bar	
Video clip length	For video, For picture message
Focus	No, same as camera
Night mode	Off, On
Self-timer	Yes, same as camera
Effects	Yes, same as camera
White balance	Yes, same as camera
Metering mode	No, same as camera
Turn on/off microphone	Off, On
Video camera setup	
Review	Off, On
Save to	Memory card, phone memory

Reset settings	Yes
Reset counter	Yes

Video telephony (main camera only)

Picture sizes (resolution)	QCIF (176x144 pixels) SQCIF (128x96 pixels)
Night mode	Yes
White balance	Auto
Brightness	Yes
Video coding	H.263 MPEG-4 (Simple Visual Profile Level 0)
Audio coding	AMR

Images

Images can be shared using a Bluetooth connection, MMS, email message or computer file transfer.

The image size is limited by the amount of free RAM.

Formats	Details
JPEG	• ISO/IEC JPEG • Baseline DCT • Progressive DCT • Non-differential • Unlimited size
GIF	• 87a, 89a, support for interlacement, animation and transparency • Unlimited size
BMP	Windows® bitmap format
PNG	Unlimited size
SVG	SVG Tiny 1.2
WBMP	• Wireless bitmap • Unlimited size

Supported character set

Decoding text (Incoming MMS)	
US-ASCII	UTF-16
ISO-8859-1	KOI8-R
ISO-8859-2	GB2312
Windows-1251	GB 18030
ISO 10646 (UCS-2)	GB 13000
UTF-7	BIG-5
UTF-8	

Coding text (Outgoing MMS)
UTF-8

Short Messaging Service

Feature	Support
SMS service centre number	The SMS service centre number can be preloaded
Pictures	A picture or icon can be inserted into the text message. EMS compliant mobile phones can see the picture correctly
Reply to messages	Received messages can be replied to SMS, MMS, voice message and email
Input methods	Predictive writing and multitap
Copy and paste words	Yes
Teaching of predictive words that are not in the predictive dictionary	Yes
Options when creating a message	
Save a sent message in a Sent items folder	Yes
Insert a line in the message	Yes
Assign a validity period to the message	Yes
Use predefined messages	Yes
Options when receiving a message	
Reply to the sender	Yes
Forward the message	Yes
Save the message on the SIM card	Yes
Get the delivery time and date	Yes
Options for the previously sent message	
Delivery report of the message	Yes (if requested when sending)

Feature	Support
Forward the message	Yes
Save the message on the SIM card	Yes
Know the remaining capacity storage	Yes, > 95% full warning, capacity on SIM when saving to SIM
Options for the previously received message	
Reply to the sender	Yes
Save the message in the inbox	Yes
Forward the message	Yes
Know the remaining capacity storage	Yes, > 95% full warning, capacity on SIM when saving to SIM
Supported ways for replying to a received SMS	
Using SMS, MMS, voice message, email	Yes
Using phone call (set up a call to the number contained in the message body)	Yes
Using Web browser (go to the Web address contained in the message body)	Yes
Using a USSD session	No
Print using infrared	No
Option to enable the user to send a text message to a list of recipients	Yes
Option to write an email address as a recipient address	Yes, if email gateway is present
SMS storage	In the phone memory or on the SIM card
Capacity	Up to a 1,000 messages
Nokia Picture Messaging	Yes

Enhanced Messaging Service

Feature	Support
Level of compliance supported by the phone regarding the specifications described in release 99	Enhanced Messaging Service (EMS) according to the standard 3GPP™ TS 23.040 v4.3.0, with the addition of the ODI feature from 3GPP™ TS 23.040 v5.0.0
Number of messages that the phone is able to handle to generate a concatenated message	10

Feature	Support
Outgoing messages	See how many short messages an EMS message consists of before sending it. Choose whether to send the message or not after writing it
Incoming messages	A signal is heard when all parts of the message have been received or when a time-out occurs. Option to re-use the content of an EMS message. Sounds, pictures, and animations can be inserted in a new message, if the object is not protected using ODI
Delivery report for concatenated messages	A receipt is received in the phone when all parts of a concatenated message have been delivered, if a delivery report is requested when it is being sent
Insert objects	Options to add pictures, animations and sounds to an EMS message
Sounds	Chimes high, chimes low, ding, tada, notify, drum, claps, fanfare, chords high, chords low
I-melody	Yes, version 1.2
Melodies	Receive (always), send using EMS (if not copyright protected). Download melodies and commercial tunes from the Web
WBMP	Yes
Picture sizes	16x16, 32x32 pixels, variable size in black and white
Pictures	Edit pictures using PhotoDJ™. Receive (always), send using EMS (if not copyright protected). Download pictures from the Web
Animations	There is support for the following animations: Angry, Crying, Flirty, Happy, Kiss, Sad, Tongue, Wow, Confused, Devil, Glasses, Indifferent, Laughter, Sceptical and Wink, as defined in 3GPP™ TS 23.040 v4.3.0. It is possible to send and receive animations
TP-PID field value given by the phone before sending an EMS message	0 x 00
EMS storage	In the phone memory or on the SIM card
Capacity	Up to a 1,000 messages

Multimedia Messaging Service

Feature	Support
MMS/CSD parameters and MMS/GPRS parameters placement	MMS is bound to an MMS profile. A MMS profile is bound to a Data account. A data account contains either CSD parameters or GPRS parameters and possibly proxy settings
Option to pre-configure the MMS parameters in the factory	MMS/CSD: Yes MMS/GPRS: Yes
Option to configure the MMS parameters by OTA provisioning	MMS/CSD: Yes MMS/GPRS: Yes
Option for all the parameters from the parameters set to be OTA provisioned at the same time	MMS/CSD: Yes MMS/GPRS: Yes
Option for only one parameter, in the set of parameters, to be OTA provisioned	MMS/CSD: No MMS/GPRS: No
Supplier indication of realized interoperability tests between its MMS User Agent and MMS Relay/Server from other suppliers	Yes
Support of a standard procedure for OTA provisioning of MMS parameters	Yes, OMA Client Provisioning 1.1
Functionalities that the user is able to set during message composition	Message subject Message priority Email recipient address Message Cc, Bcc recipient(s) address(es) Delivery report request Read report request MSISDN recipient address Delivery time Validity period
Where can the user insert multimedia elements into multimedia messages	File Manager Photo album Camera Contacts Calendar Task Note Browser (vBookmark) VideoDJ™ PhotoDJ™ MusicDJ™ Sound recorder
Option for sent messages to be memorized in a folder in the phone memory	Yes

Feature	Support
Actions the user can perform after message retrieval	Reply to the sender of the message SMS/MMS Reply to the sender and to Cc, Bcc people SMS/MMS Forward the message Delete the message Save the message in a dedicated folder Call the sender of a message Save item Mark as unread Details
Multimedia codecs/formats supported for audio	AAC, AMR, MPEG Layer 3, Real 8, AWB, WAV, MP4, MIDI, iMelody, 3GPP™, XMF, M4A, WMA
Multimedia codecs/formats supported for video	MPG4, 3GPP™, SDP, Real 8, WMV
Multimedia codecs/formats supported for image	JPEG, GIF87, GIF89A, PNG, SVG, WBMP, BMP
Supported formats for message presentation	Message body plus attachments (email presentation). SMIL version as described in OMA MMS IOP document version 1.2
Maximum message size that can be handled by the phone	Content Class and Creation mode are applied. Maximum size can also be customized
Maximum number of objects supported in a message	30 objects is standard. This number can be increased through configuration
Maximum text size	5,000 characters/text
Storage capacity	Up to 500 messages

Email client technical data

Feature	Support
Bearer type (IP)	Yes
Bearer type GSM Data (IP)	Yes, GPRS and HSCSD
Character sets	• ISO: ISO-8859-1, ISO-8859-2, ISO-8859-5, ISO-8859-7, ISO-8859-9, ISO-8859-10 • Windows: Windows-1251, Windows-1252, Windows-1254, Windows-1255, Windows-1258 • US-ASCII • Unicode: UTF-7, UTF-8, UTF-16 • Japanese: Shift_JIS, ISO-2022-JP • Cyrillic: KOI8-R • Simplified Chinese: GB2312, GB18030 • Traditional Chinese: Big5 • Thai: TIS-60
OTA provisioning solution	Yes, OMA Client Provisioning 1.1

Feature	Support
Protocols	POP3 and IMAP4
Push email	IMAP IDLE (extension of IMAP4 Rev1), OMA Email Notification 1.0 and scheduled checking, Exchange ActiveSync® (EAS)
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and STARTTLS
HTML mail	Yes (tags removed)
Thumbnailed image attachments	Yes
Message management	User selectable inbox size, save messages to the phone memory, arrange messages by date, size and email address
ESMTP	Yes
Background sending	Yes

Connectivity

Bluetooth™ technical data

Dimension	Support
Bluetooth™ capability statement	This phone supports Bluetooth Specification, version 2.0 with enhanced data rate (EDR)
Bluetooth profiles	• Advanced Audio Distribution Profile • Audio/Video Remote Control Profile • Basic Imaging Profile • Dial-up Networking Profile • File Transfer Profile • Generic Access Profile • Generic Object Exchange Profile • Handsfree Profile • Headset Profile • Human Interface Device Profile • Object Push Profile • Personal Area Networking Profile • Phonebook Access Profile • Serial Port Profile • Synchronization Profile • SyncML OBEX binding
Connectable devices	All products supporting Bluetooth spec. 1.1, or higher, and at least one of the profiles above

Dimension	Support
Coverage area	Varies due to radio performance between the connected devices and the occurrence of obstacles. Up to 10 metres (33 feet)
Transmission power	Class 1, typical +3 dBm or 2 mW
Frequency band	2.4 GHz – the unlicensed ISM band
Power consumption	GSM host processor excluded: • Standby, Bluetooth On mode: <0.6 mA • Voice to headset (HV3 master): 11 mA (7 mA with EDR functionality, 2EV3 master). Dependent on various parameters such as if the phone is master or slave • Data mode average: 27 mA at 172.8 Kbps symmetrical (DH1)

OMA Data Synchronization (SyncML™) technical data

Feature	Support for Sync ML
SyncML compliance	The phone is fully SyncML compliant, having passed SyncML Conformance testing. SyncML 1.2 or SyncML 1.1.2 is used depending on configuration and both are supported in server-alerted synchronization.
Basic data formats	Contacts: vCard 2.1, Calendar: vCalendar 1.0 (vEvent) Tasks: vCalendar 1.0 (vTodo) Notes: text/plain, Bookmarks:vBookmark 1.0
Option for operators to extend SyncML functionality	The device may be configured to include preset SyncML settings and to control whether SyncML 1.1 or SyncML 1.2 is used
Transport method for SyncML messages	HTTP, HTTPS, OBEX (USB, Bluetooth)
Option for the user to configure login parameters (for example, username and password) to access the remote database	Yes
Configuration parameters that can be entered/modified by the user	Server URL, Username, User PWD, Paths to databases (Calendar, Contacts, Notes, Tasks and Bookmarks), UserID and PWD for databases, Databases to be synchronized (On/Off), Internet profile, Synchronization interval, Server ID and Server PWD, permission to allow server-alerted synchronization and roaming options. Can be provisioned with OMA Client provisioning v1.1 and OMA Device Management v1.2
Ability to deal with multiple servers	Yes
Ability to perform conflict resolution actions	No

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Microsoft® Exchange ActiveSync®

Feature	Support for Exchange ActiveSync
Protocol version	The phone supports version 2.5 of Microsoft Exchange ActiveSync
Supported applications	Email, Calendar, Phonebook
Transport method used	HTTP, HTTPS
Possibility for the user to configure login parameters for remote server	Yes
Configuration parameters that can be entered/modified by the user	Server URL, username, domain name, password, applications to sync, email message size, email attachment size, email date range, message alert sound, calendar date range, interval sync, secure connection, roaming option
Ability to use multiple servers	No
Ability to perform conflict resolution	No

Web browser technical data

Feature	Support in the browser
Bookmarks	Yes, with folders and sorting supported
Bookmark Export/Import	Yes, can be sent and received using vBookmark format using Bluetooth™, SMS, MMS and email
Browser compliancy	- HTML ver. 4.01 - XHTML Basic 1.0 - XHTML 1.1, Module-based XHTML - XHTML Mobile profile - WML 1.3 - Cascading Style Sheets, level 2 revision 1, CSS 2.1 Specification - Wireless CSS Specification, Version 26-Oct-2001 (WAP-239-WCSS-20011026-a) - ECMA-script according to specifications found at http://www.ecma-international.org/publications/standards/Stnindex.htm - ECMAScript Mobile Profile - AJAX (Asynchronous JavaScript and XML) - Document Object Model Level 2 (DOM 2) - Scalable Vector Graphics, Mobile SVG Profile: SVG Tiny, version 1.2 For further details, see the *WAP User Agent strings and profiles for Sony Ericsson mobile phones* Developers guidelines at Developer World http://developer.sonyericsson.com
Browser version	Access NetFront 3.4
Cache	Yes (size 2 MB 300 KB and 1 MB flash)

Feature	Support in the browser
Character sets *	Most standard character sets, among others UTF-8 (Default), UTF-16, USASCII, Latin1, UCS2. For updated and detailed information, see the *WAP User Agent strings and profiles for Sony Ericsson mobile phones* Developers guidelines at Developer World http://developer.sonyericsson.com * When creating pages, always save the page contents as UTF-8.
Clear cache	Yes, persistent. By user interaction, at SIM card change or master reset
Frames	Full Frame support: Frames, IFrames
Image formats and animations	GIF (interlaced and non-interlaced) WBMP, JPEG, PNG, BMP and SVG. Animated GIFs, animated SVG and Flash
Schemes	Wtai, mailto:, smsto:, tel, rtsp, http, https
Streaming	Progressive download, RTSP, Java script controls
Web feeds	Ticker, podcasts, enclosures, OPML import. No support for ATOM
User agent profile	
User Agent Profiles	Yes, list of client characteristics, for example, screen size. For details, see the *WAP User Agent strings and profiles for Sony Ericsson mobile phones* Developers guidelines at Developer World http://developer.sonyericsson.com
URL sent pointing to the UA profile at the beginning of browser session	Yes. For details, see the *WAP User Agent strings and profiles for Sony Ericsson mobile phones* Developers guidelines at Developer World http://developer.sonyericsson.com
Download	
OMA download functionality	Yes
HTTP GET solution to download content. Uses browser for download	Yes
Other download content	Yes. No download limit when using HTTP protocol
Download application/product memory check	Yes
Downloaded object solution	Yes. The user is informed where the content is saved and asked if it should be used at once or later
UAP indication for downloading	Yes
Other features	Yes. Save, delete, forward, use, manage
Object formats	All formats can be downloaded and saved, but only formats supported by the phone can be used by the phone
Resume	Yes
Background download	Yes

Feature	Support in the browser
Progressive download	Yes
Streaming	Yes
Browser navigation	
Selection keys	Yes. Two selection keys and centre navigation key
Separate/dedicated back or erase keys	Yes
Display backlight on when browsing	Yes
Predictive writing	Yes
"http://" string displayed automatically when entering URLs	Not displayed but the "http://" is added automatically to the URL
"www" added automatically when entering URLs	No
Combined Search/Go To input field	Intelligent input field changes appearance (Search or Go to) depending on user input. "www", ".com" and other URL syntax can be used to trigger the Go To appearance
Internet network features	
Bluetooth (as local connection)	Yes
Infrared (as local connection)	No
Network settings	Yes
PPP Authentication	PAP, CHAP supported
Security	HTTPS authentication TLS version 1 SSL version 3 WIM on SIM ICC X.509 certificate support, Mobile Profile WPKI OTA download of trusted certificates
USB (as local connection)	Yes
PUSH	
Content types	
Service Indication (SI)	Yes
Service Loading (SL)	Yes
Cache Operation (CO) content type	No
Session Initiation Application (SIA)	Yes

Feature	Support in the browser
Man Machine Interface	
SI/content retrieval postponing	Yes
SI menu structure accessibility	Messaging, Inbox
SL reception warning	The user can make a choice if a dialogue is wanted or not before loading the SL
SIA reception warning	Yes
Cache size limitations	The oldest push in the inbox is discarded
Number of push messages	Depends on the size of the push messages. Around 20 push messages with a size of 1024 bytes URL and 1024 bytes Indications for Service Indication can be saved
Push deactivate	Yes
Dynamic push menu changes	No, there are no changes in the menus when activating/deactivating push
Security	
Mechanisms for push	None
Trust with PPG	Sending a SIA is the most reliable
WSP push sessions	No
HTTP push sessions	The White List (a setting to allow push messages only from certain addresses) is supported for IP address
SMS connection-less push	The White List (a setting to allow push messages only from certain addresses) is supported for SMS Center
Denial of service/spoofing	Setting to select when to allow push messages: Always, always ask or never. There is also a setting to select whether to allow push messages from all senders or only from certain addresses (the White List)

Client provisioning

Feature	Support
Provisioning types	OMA Client provisioning (v1.1)
Total Parameter sets	10 (shared between the provisioning types) < or = 10 (total number of data accounts)

Feature	Support	
Parameter set list	name homepage and homepage title (1st bookmark element) proxy/GW address bookmarks (remaining bookmark elements) CSD phone number CSD data rate CSD dial type GPRS APN protocol authentication GW authentication secure connection on/off	name homepage proxy/GW address CSD phone number CSD data rate CSD dial type CSD response timer GPRS APN protocol authentication GW authentication GPRS QoS
Parameter sets include	CSD, GPRS (different sets)	
Factory pre-configuration	CSD (option to lock a setting) GPRS	
Factory pre-configuration	CSD, GPRS (configuration possible)	
OTA	CSD, GPRS configuration	
Security mechanism		
Bearer	**OMA Client provisioning**	
OTA via SMS	Uses security mechanism (SEC) methods according to OMA-WAP-ProvCont-v1_1-20050428-C (see www.openmobilealliance.org)	
Interface		
Bearer	**OMA Client provisioning**	
OTA via SMS	For NETWPIN the user is asked to accept to install received settings. For USERPIN, USERNETWPIN and USERPINMAC the user is subsequently asked to enter a PIN code that is a shared secret between the service provider and the user	
Re-provisioning Interface	OMA Client provisioning	
OTA via SMS	If the settings previously installed were privileged or have higher priority, it might not be possible to install the settings again unless the terminal is reset, otherwise as above	
Carrier reset/provisioning	Yes, but not if the set is pre-configured in the factory and locked	
SWIM	Not used for provisioning. The SWIM is only used for WAP security, both SSL/TLS connections and digital signatures	
Applicative provisioning		
Preferred bearer customization	Yes	

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Feature	Support
Other applications/features	Yes. MMS, OMA Data Synchronization, Wireless Village, OMA Device Management, Streaming
Technologies	
OMA Client provisioning	Yes, Client provisioning version 1.1
Openwave OTA	No
Other	No
Provisioning bearer	SMS
Parameter sets available	Yes
Parameter sets for OTA modification	Yes

Abbreviations

3GPP™

3rd Generation Partnership Project

AAC

Advanced Audio Coding

AAC+

High Efficiency AAC v.1

AMR

Adaptive Multi Rate. Audio format for speech sounds

AMR-NB

Adaptive Multi Rate Narrow Band

AMR-WB

Adaptive Multi Rate Wide Band. A more efficient codec that supports speech with higher quality

API

Application Programming Interface

Bluetooth PAN

Bluetooth Personal Area Network

CS

Circuit Switched

CSD

Circuit Switched Data

DRM

Digital Rights Management. Controlling copying and distribution of contents, with respect to intellectual property rights

DTMF or Touch Tone

Dual Tone Multi-Frequency signal. Codes sent as tone signals. Used for telephone banking, accessing an answering machine and so on

EDGE

Enhanced Data Rates for GSM Evolution

e-GSM

Extended GSM. New frequencies specified by the European Radio Communications Committee (ERC) for GSM use when additional spectrum is needed (network-dependent). It allows operators to transmit and receive just outside the GSM core 900 frequency band. This extension provides increased network capability

eAAC+

High Efficiency AAC v.2

EDR

Enhanced Data Rate

EFR

Enhanced Full Rate. Speech coding

EMS

Enhanced Messaging Service. Allows the user to add simple pixel pictures and animations, sounds and melodies to a text message. The EMS 3GPP™ standard also includes text formatting

ETSI

European Telecommunications Standards Institute

FM

Frequency Modulation of the (radio) carrier wave

FR

Full Rate. Speech coding

GIF

Graphics Interchange Format

GPRS

General Packet Radio Services

GSM

Global System for Mobile Communications. GSM is the most widely used digital mobile phone system in the world, now operating in over 100 countries, particularly in Europe and Asia-Pacific.

The GSM system family includes GSM 850, GSM 900, GSM 1800 and GSM 1900. There are different phases of roll-out for the GSM system and GSM phones are either phase 1 or phase 2 compliant

HR

Half Rate. Speech coding

HSCSD

High Speed Circuit Switched Data

HSDPA

High Speed Downlink Packet Access

HTML

HyperText Markup Language

HTTP

HyperText Transfer Protocol

IrDA

Infrared Data Association

JPEG

Joint Photographer Expert Group

MIDI

Musical Instrument Digital Interface

ME

Mobile Equipment

MMI

Man-Machine Interface. See UI

MP

Megapixel

MP3

MPEG-1 layer 3". An audio coding scheme

MPEG4/MPG4

Moving Picture Experts Group. MPEG-4 is a standard used primarily to compress audio and visual digital data

MT

Mobile Termination

ODI

Object Distribution Indicator

OMA

Open Mobile Alliance

OTA

Over The Air

PDA

Personal Digital Assistant

PDP

Packet Data Protocol

PIM

Personal Information Management

PNG

Portable Network Graphic

QCIF

Quarter Common Intermediate Format

RDS

Radio Data System

RSS

Really Simple Syndication

RTSP

Real Time Streaming Protocol session control

SI

Service Indication

SL

Service Loading

SIM card

Subscriber Identity Module card. A card that must be inserted in any GSM-based mobile phone. It contains subscriber details, security information and memory for a personal directory of numbers. The card can be a small plug-in type or credit card-sized, but both types have the same functions. The phone uses the small plug-in card

SMS

Short Messaging Service. Allows messages of up to 160 characters to be sent and received via the network operator's message centre to a mobile phone

SP-MIDI

Scalable Polyphony MIDI

SS

Supplementary Services

SSL

Secure Socket Layer

TLS

Transport Layer Security

TTI

Transmission Time Interval

UI

User Interface

URL

Uniform Resource Locator. The global address of documents and other resources on the World Wide Web

USSD

Unstructured Supplementary Services Data

vCard

vCard automates the exchange of personal information typically found on a traditional business card, for use in applications such as Internet mail, voicemail, Web browsers, telephony applications, call centres, conferences, PIMs /PDAs, pagers, fax, office equipment and smart cards. vCard is specified by IETF

VGA

Video Graphics Array

WAV

Waveform Audio Format

WMA

Windows Media Audio

WMA Pro

Windows Media Audio Professional

WBMP

Wireless BitMap. A graphic format optimized for mobile computing devices

WCDMA

Wideband Code Division Multiple Access

WML

Wireless Markup Language. A markup language used for authoring services, fulfilling the same purpose as HyperText Markup Language (HTML) does on the World Wide Web (WWW). In contrast to HTML, WML is designed to fit small handheld devices

WWW

World Wide Web

XHTML

Extensible HyperText Markup Language

XML

Extensible Markup Language

Related information

Documents

- Sony Ericsson User guide
- Sony Ericsson FAQ
- AT Command Reference Manual
- WAP 2.0 Specifications

Links

- www.sonyericsson.com
- www.ericsson.com/mobilityworld
- www.midi.org
- www.extendedsystems.com
- www.gsmworld.com
- www.bluetooth.com
- www.imc.org
- www.3gpp.org
- www.irda.org
- www.etsi.fr
- www.openmobilealliance.org
- www.imc.org/pdi
- www.w3.org/TR/xhtml-basic
- www.java.sun.com
- www.sonyericsson.com/updateservice
- www.sonyericsson.com/support

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