

White paper

August 2008

TM506

Web communication phone



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

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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

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Product overview

TM506 is a compact and elegant clamshell phone with a large 2.2-inch 262k QVGA color screen. It delivers highly integrated Web functionalities like Media and My Album. Fast HSDPA access, personalisation of RSS and Internet email make the phone an optimum choice for Web communication.

Memory capacity is up to 35 MB internally and includes a reader for memory cards. The 2.0 megapixel camera can capture high quality pictures. Share photos and video clips with My Album, email or MMS. With the preloaded TeleNav GPS Navigator™ Mobile application, the latest maps and directions are available, straight from the phone.

Features include:

- 2.0 megapixel camera with fixed focus
- Easy-to-use digital camera menu
- Photo fix to improve an under-exposed picture immediately
- 2.2-inch mineral glass high resolution screen
- Built-in GPS (Global Positioning System)
- T-Mobile™ My Album service
- Web browser supporting HTML
- Dynamic Web pointer for Web browsing
- PictBridge™ to print pictures directly on a printer
- Slide shows with music, transitions and more
- 3D gaming
- Handsfree provided in the kit
- Memory card reader for Memory Stick Micro™ (M2™) memory cards

Gain access to a variety of features and services only available through T-Mobile™, such as:

- TeleNav GPS Navigator
- myFaves 1.5
- Audio Postcard
- Quicksend
- T-Mobile Mobile Backup
- My Album
- t-zones™
- T-Mobile email
- Voice Notes

Key features

Stereo widening

The Stereo Widening and Mega Bass™ effects improve the sound experience when listening to music through a stereo Bluetooth headset, external stereo speakers or a stereo portable handsfree.

2.0 Megapixel camera

The main camera is 2.0 megapixel and includes 2.5x digital zoom to take quality pictures with ease. The vertical user interface allows for easier camera handling. The main camera records video clips with 4x digital zoom, and saves them in the phone or on a memory card. A picture or video clip can be shared as a picture message, email message or on My Album with friends or family. Pictures can also be transferred to another phone or computer using any available transfer method, such as Bluetooth™ or a USB cable.

2.2-inch color screen

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

Built-in GPS (Global Positioning System)

With the built-in GPS, and location based services such as preloaded TeleNav GPS Navigator for mobile, location and directions are available from the phone. The built-in GPS supports geo tagging. When a photo is taken it is tagged with geo data, meaning that the location where the photo was taken can be shown on a map.

Video camera

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

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.

My Album

My Album is a personal online picture album, that makes it easier to store and share pictures, video, and voice messages. Add picture, voice, and video messages from a T-Mobile camera or video phone using the My Album link built into the send menu. Users can also upload pictures, video, or sound from a home computer.

Photo tags

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.

PictBridge™ – Camera printing

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

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.

Music player

Located in Media. Play downloaded music and audio. The navigation system allows users to browse through favourite tracks and create simple playlists.

Video player

Located in Media. Play saved and downloaded video clips.

Sony Ericsson Media Manager

Music, photo and video clip management software is available from www.sonyericsson.com/support. Transfer music, video clips and photos to and from the phone. Prepare files for transfer even when the phone is not connected to the computer. Search for and select music on the computer or audio CDs and convert existing audio tracks to formats that are suitable for mobile use before transferring them to the phone. Users can also subscribe to feeds such as video and music podcasts.

3D Gaming

Gaming is a very popular feature in mobile phones. At purchase there are premium quality 3D games preloaded. With Java™, users can download new games and skill levels to further enhance their entertainment experience.

Java™

Download additional applications which are information- and entertainment-based. This gives users a chance to personalize the functions and features in their phones, and developers the opportunity to create new applications. Java Platform 9 (JP-9), supports a range of new Java programming features including 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 and 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, users 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 users to control the music 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 along with other disks and drives in the computer. Users 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 users can transfer media files and synchronize playlists when the phone is connected to the computer using the USB cable. It is possible to use MTP in Media transfer mode or Phone mode. MTP is supported by Windows Media Player 11 and higher in Windows XP and in Windows Vista™ it is also supported.

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 USB cable which comes with the phone, or the built-in Bluetooth feature can be used together with the synchronization software which is available from www.sonyericsson.com/support. Smart search 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 users to copy and move files between the PC and the server. Users 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 TM506.

Functions and features

The following includes short descriptions of the technologies available in TM506.

Feature	TM506
3D games	Yes
3G enabled	Yes
A-GPS Assisted GPS. Support for control plane and SUPL (Secure User Plane Location) protocol	Yes
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
Adobe™ Flash Lite™ For animated wallpapers, menus and other graphic elements	No
Alarm clock Set up to five individual times for single or recurring weekly alarms	Yes
Audio postcard	Yes
Auto rotate The picture appears as a landscape or portrait picture, as it was originally taken	No
Backlight White backlight to illuminate the phone screen	Yes
Battery	BST-33 3.6V, 950 mAh, Lithium Polymer

Feature	TM506
Battery charging time	At least 90% charged within 2 hours. Fully charged within 2.5 hours
<p data-bbox="161 524 730 792">BestPic™</p> <p data-bbox="161 591 730 792">Enhance picture taking by automatically capturing a range of nine pictures ranging from when the camera is pressed until the shutter sound. Select the best picture to catch the moment. Users can also save more than one picture.</p> <p data-bbox="161 815 730 882">Select BestPic™ speed BestPic™ with light</p>	<p data-bbox="730 524 904 815">No</p> <p data-bbox="730 815 904 882">No No</p>
Bluetooth™ audio streaming	Yes
Listen to audio in compatible devices	
Bluetooth™ audio video remote control	Yes
Control music player functions from a Bluetooth™ accessory and control the volume in the accessory from the phone	
Bluetooth™ PAN	Yes
Connect the phone to Internet using Bluetooth™ technology	
Bluetooth™ wireless technology	Yes
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	
Business card exchange	Yes
Exchange contact information	
Calculator	Yes
Calendar	Yes
Calendar with day, week and month views and reminders	

Feature	TM506
Call list View calls made and received	Yes
Camera 2.0 Megapixel	
Camera active lens cover Open the cover and camera functionality starts automatically	No
Camera auto focus The camera automatically focuses on the subject in a focus area in the screen/ viewfinder	No
Camera face detection The camera brings an off-centre face into focus	No
Camera file browser Browse the picture folder without leaving the camera function	Yes
Camera flash	No
Camera image stabilizer Picture and video image stabilizer functionality used to keep the image steady	No
Camera key A dedicated camera key	No
Camera keys on top When the camera is used in horizontal mode, the side keys with camera functionality are on top, for a digital still camera feel. For photo key functionality, see also “Keys – side and other” on page 20	No
Camera menu Easy-to-use horizontal digital camera menu	No
Camera mode switch Use to switch between picture, video and play modes	No

Feature	TM506
Camera on/off key A dedicated camera on/off key. Press and hold to activate the integrated camera and to open the lens cover	No
Camera red eye reduction	No
Camera scene modes Use predefined settings when taking pictures in different environments, for example, at night or fast-moving objects	No
Camera settings bar Settings bar with options and info texts	Yes
Camera touch keys Above and below the camera viewfinder there are eight touch keys, acting as shortcuts to commonly used camera features	No
Chinese input method Chinese input methods: Text input methods based on Simplified or Traditional Chinese, Bopomofo, Pinyin or Stroke	No
Circuit Switched Data CSD HSCSD, a communications standard enabling GSM data transfer at 14.4 Kbps	Yes Yes
Clock On-screen clock that keeps the time even when the phone is off	Yes
Co-branding area	TBI
Code memo A safe place to save all PIN codes and other information. To access Code memo, only one PIN code is needed	Yes
Colors	Amethyst Silver Grand Onyx

Feature	TM506
<p>Contacts</p> <p>Phonebook with fields for name, phone, fax and instant messaging information, presence information, email address, Web site, title, company address info, personal address info and birthday</p>	Yes
<p>Conference calls</p> <p>Support for multiparty calling</p>	Yes
<p>Connector A1 (Fast port)</p>	Yes (bottom)
<p>Content online</p> <p>Downloadable pictures, games, themes, ringtones available online</p>	Yes
<p>Copyright protection - DRM</p> <p>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)</p>	Yes OMA DRM 1.0, 2.0 and 2.1, Microsoft DRM Janus
<p>Device Management (DM)</p> <p>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</p>	Yes
<p>Digital zoom</p>	2.5x for pictures (VGA mode) 4x for video clips
<p>Email</p> <p>Built-in email client with inbox, outbox, compose/send and other functions</p>	Yes

Feature	TM506
<p>EMS (Enhanced messaging)</p> <p>Text messaging (SMS) with support for pictures and sounds</p> <p>Note: EMS is not available for operators who use unified messaging</p>	Yes
<p>Exterior description</p> <p>Size mm (length x width x thickness)</p>	95 x 47.5 x 17.4
<p>External antenna connector</p> <p>For use with an advanced car handsfree accessory</p>	No
<p>Fast port</p> <p>A system connector which enables faster data transfer between the phone and a computer</p>	Yes
<p>File manager</p> <p>Folder structure storage to help save and organize pictures, sounds and other phone content</p>	Yes with enhanced functionality for camera content
<p>Flash themes</p>	No
<p>Flight mode</p> <p>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</p> <p>Bluetooth™ function availability in Flight mode</p>	Yes Yes
<p>Form factor</p>	Clamshell
<p>Games download</p> <p>Add more games to the phone</p>	Yes
<p>Games embedded</p>	Yes

Feature	TM506
<p>Geo tagging</p> <p>Photos are tagged with geo data and can be shown on a map</p>	Yes
<p>TeleNav GPS Navigator for mobile</p> <p>Preloaded application with support for cell-id and GPS. View satellite imagery, find locations and calculate routes</p>	Yes
<p>GPRS</p> <p>General Packet Radio Services - a communications standard, enabling packet data transfer of 21.4 Kbps per time slot. Multislot class 10 supported (max 5 simultaneously)</p>	Yes
<p>GPS</p> <p>A built-in Global Positioning System receiver</p>	Yes
<p>High Speed Data</p> <p>HSDPA - High Speed Downlink Packet Access</p>	Yes
<p>Icon Desktop 12</p> <p>A graphic icon desktop with 12 interactive icons</p>	Yes
<p>Image formats</p> <p>5 MP (2592x1944 pixels)</p> <p>3 MP (2048x1536 pixels)</p> <p>2 MP (1632x1224 pixels)</p> <p>1 MP (1280x960 pixels)</p> <p>VGA (640x480 pixels)</p> <p>Note: MP = Megapixel. When the picture stabilizer is on, the image size may be slightly reduced</p>	<p>No</p> <p>No</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>

Feature	TM506
<p>Infrared port</p> <p>A wireless connector enabling the user to connect the phone to a laptop or another infrared device in order to share pictures, synchronize the calendar or use the phone as a modem</p>	No
<p>Instant messaging (AIM, Yahoo!, Windows Live Messenger support)</p> <p>Chat – several people can take part in a mobile messaging session.</p>	Yes
<p>Internet browser</p> <p>Full HTML support, ECMA script, DOM level 1 & 2, CSS 1 & 2 etc.</p> <p>Support for AJAX (Asynchronous JavaScript and XML)</p> <p>Progressive download of video files.</p> <p>Direct access to Bookmarks, Search Internet and Enter address</p>	<p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p> <p>Yes</p>
<p>Internet security</p> <p>Encrypts confidential information such as credit card and bank account numbers. Necessary for mobile banking and shopping</p>	Yes SSL/TLS
<p>Java™</p> <p>Support for J2ME™ technology</p> <p>Java Platform 9 (JP-9) Support for new Java programming features including instant messaging/chat, banking, payment transactions, user identification and authentication through secure encryption technology.</p>	<p>Java 2, Micro Edition (J2ME™), Java 3D™</p> <p>Yes</p>

Feature	TM506
Keys – navigation and more	4+1 navigation key multimedia (play/stop) on navigation key centre 2 (left + right) selection keys C (Clear) key Activity menu/ camera key Red end key Green call key On/off key
Keys – keypad	12 alphanumeric
Keys – side and other	Volume
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	No
Media A centre for all media content with horizontal and vertical navigation. Users can view photos, listen to music and watch video clips	Yes

Feature	TM506
Media player	See Music player and Video player
Mega Bass™ An audio feature which enhances bass frequencies for better overall music experience	Yes
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	TBI
Memory card reader (slot) A slot for inserting a micro peripheral storage device Memory card support: Memory Stick Micro™ (M2™)	Yes Yes
Menu layout options Possibility to change the layout of the icons in the main menu	Yes
Menu shortcuts A function making it possible to dedicate shortcuts to the most-used phone functions	Yes
MMS (Multimedia messaging) Picture messaging with text and sound	Yes
MMS video Support in the phone for sending video clips using MMS	Yes
Modem Circuit Switched/Packet Switched Internet dial-up support	Yes

Feature	TM506
<p>MusicDJ™</p> <p>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</p>	Yes
<p>Music listening time</p>	Up to 8 hours
<p>Music player 3.0</p> <p>A digital music player with horizontal navigation. Play music that was transferred or downloaded. The list structure system enables users, for example, to organize favourite songs into groups and create simple playlists</p>	Yes
<p>Music tones</p> <p>Music tones, also called master tones, are DRM protected music by original artists. Various digital audio formats are supported</p>	Yes
<p>My Album</p> <p>My Album is a personal online picture album, that makes it easier for users to store and share pictures, video, and voice messages</p>	Yes
<p>myFaves 1.5</p> <p>T-Mobile myFaves gives users unlimited calling to their five favorite people (with some restrictions).</p>	Yes
<p>Networks</p> <p>3G/HSDPA</p> <p>GSM/GPRS/EDGE</p>	<p>UMTS/ HSDPA 1700, 2100</p> <p>GSM (R99) 850, 1800, 1900</p>
<p>OMA Data Synchronization (SyncML)</p> <p>A device communications standard that enables remote synchronization between devices</p>	<p>Yes</p> <p>OMA DS 1.2</p>

Feature	TM506
OTA settings	Yes
Internet and other settings can be sent over the air to the phone	OMA CP 1.1
Photo light (built-in)	No
When lighting conditions are poor, activate the picture light	
PhotoDJ™	Yes
A drawing tool in the phone where existing pictures can be altered	
Photo fix	Yes
Improves an under-exposed picture by calculating and adjusting the light balance	
PictBridge™	Yes
Transfer images from the phone via the USB cable directly to a printer, without a computer or photo editing software	
Picture gallery	Yes
A thumbnail image gallery where sections of several pictures can be viewed at the same time	Use photo tags
Picture phonebook	Yes
Add a picture to a saved contact. The picture appears on the screen when the saved contact calls	
Polyphonic voices	72
Powersave	Yes
Default setting for display light	
Predictive text input	Yes
RSS reader	See Web feeds

Feature	TM506
<p>Screen</p> <p>Type: Size: Resolution:</p> <p>Technology: Colors displayed together:</p> <p>Backlight color:</p>	<p>Full graphical 2.2 inches 320x240 pixels TFT, QVGA 262,000 (18 bit) White</p>
<p>Screen saver</p>	<p>Yes</p>
<p>SensMe™</p> <p>Sort music tracks by mood</p>	<p>No</p>
<p>Settings download (Ready to run)</p> <p>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</p>	<p>Yes</p>
<p>Shake control</p> <p>Shake control for music and gaming</p>	<p>No</p>
<p>SIM card lock</p> <p>The possibility to protect the SIM card with a four-digit PIN code</p>	<p>Yes</p>
<p>Smart search</p> <p>Search for numbers and contacts from standby by using the number keys. Call or send messages from a filtered list of search results</p>	<p>No</p>
<p>SMS long (Text messaging)</p> <p>Concatenated SMS text messaging</p>	<p>Yes</p>
<p>Sleep mode</p> <p>A power-saving feature that minimizes the battery power consumed when the phone is in standby</p>	<p>Yes</p>

Feature	TM506
Sound recorder A recording device in the phone that can record voice messages or other sounds	Yes
Speakerphone	Yes
Speed dialling Allocate contacts in the phone book to specific keys on the keypad	Yes
Standby time GSM UMTS	Up to: 350 hours 350 hours
Status view The screen shows the network being used, the time and other status information	Yes
Stereo microphone	No
Stereo speakers	No
Stopwatch	Yes
SVG Tiny Scalable Vector Graphics for impressive animated wallpapers, menus and other graphic elements	Yes
Synchronization PC Synchronize and share phone content with a computer	Yes
Talk time GSM UMTS	Up to: 9.5 hours 4.5 hours
Tasks Keeps track of important things to do	Yes
TeleNav GPS Navigator Users can always find their way with turn-by-turn voice and onscreen driving directions. Find whatever is needed on the road, locate and navigate to restaurants, Wi-Fi hotspots and more from over 10 million business listings	Yes

Feature	TM506
Themes Phone menu texts and background graphics	Yes
Timer Set the phone to alert after a specific time	Yes
T-Mobile Mobile Backup Add or edit contact info online, store it on our server, and then synchronize the changes with the phone.	Yes
t-zones Users can make the phone truly their own. Shop t-zones on the phone or on the Web, and buy practical options like messaging, or personal expressions like music, ringtones, or games. It's all at their fingertips, free to visit and see what's new.	Yes
UMTS	Yes
USB connectivity support Connect the phone to a computer using the USB cable provided.	Yes USB 2.0 Full-Speed
USB ethernet emulation Connect to the Internet using the phone or the computer	Yes
Vibrating alert The phone vibrates when a call comes in	Yes
Video call camera	No
Video calling When the user makes a video call, the other party can be seen on the screen. The service requires UMTS/WCDMA	No
Video call talk time	N/A
VideoDJ™ Create video sequences by combining different clips and adding music and images	Yes

Feature	TM506
<p>Video player</p> <p>Play video clips that were transferred or downloaded. Transfer video clips to another phone or a computer using an available transfer method</p>	Yes
<p>Video streaming</p> <p>Real-time streaming of video clips, for example, live cam. Media can also be downloaded and saved in the phone memory</p>	Yes
<p>Viewfinder</p> <p>When using the camera, a picture can be previewed before it is captured</p>	Yes
<p>Voice control</p> <p>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</p>	Yes
<p>Voicemail</p> <p>Support for a voicemail operator service including automatic answering and message recording</p>	Yes
<p>Voice Notes</p> <p>The Voice Notes feature provides a quick and easy method to record a one-minute audio message and send it over MMS.</p>	Yes
<p>Walkman™ key</p> <p>Get direct access to music files without having to browse the menus. Press the Walkman™ key to gain direct access to the Walkman™ player</p>	No
<p>Walkman™ player</p> <p>A digital music player with horizontal navigation. Play music that was transferred or downloaded. Play music files in the folder system, organize favourite tracks into groups and create various playlists.</p>	No

Feature	TM506
WAP 2.0 XHTML A mobile Internet standard to access specially designed Internet sites. WAP 2.0 supports color and interactive lists	Yes
Weight	96 g (including battery)

Facts and figures

This chapter offers readers 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	Tri band GSM/GPRS/EDGE 850, 1800, 1900 supported Dual band UMTS/HSDPA 1700, 2100 supported
Speech coding	HR, FR, EFR, AMR, supported where available, for high speech quality
GSM SIM/ UMTS USIM 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 35 MB internal (depending on software configuration/file content) plus an 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 1700	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 1700	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
Frequency range (MHz)	TX: 824-849 RX: 869-894
Channel spacing	200 kHz
Number of channels	124 Carriers *8 (TDMA)
Modulation	GMSK
TX phase accuracy	< 5° RMS Phase error (burst)
Duplex spacing	45 MHz
Frequency stability	+/- 0.1ppm
Voltage operation (nominal)	3.6 V
Transmitter RF power output	33 dBm Class 4 (2 W peak)
Transmitter output impedance	50 ohm
Transmitter spurious emission (according to specification)	< -36 dBm up to 1 GHz < -30 dBm over 1 GHz
Receiver RF sensitivity	Better than - 104 dBm
Receiver RX bit error rate	< 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	+/- 0.1ppm	+/- 0.1ppm
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)

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	<ul style="list-style-type: none"> It is possible to scroll the text up and down in USSD messages. It is possible 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 2
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: network feature
Support of ciphering algorithms	GEA1, GEA2
Support of compression algorithms	Yes, V42bis and IP header compression
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 via application in the phone, AT-command or via 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

Service	Mode	Support
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	Yes
	1 = high priority	Yes
	bit 8: 0 = clear message after a delay	Yes
	1 = wait for user to clear message	Yes
GET INKEY	General: The GET_INKEY requires that the user confirms his/her choice	Yes
	bit 1: 0 = digits (0-9, *, # and +) only	Yes
		1 = alphabet set
	bit 2: 0 = SMS default alphabet	Yes
		1 = UCS2 alphabet
	bit 3: 0 = character sets defined by bit 1 and bit 2 are enabled	Yes
		1 = character sets defined by bit 1 and bit 2 are disabled and the Yes/No response is requested
GET INPUT	General: No. of hidden input characters	252
	bit 1: 0 = digits (0-9, *, # and +) only	Yes
		1 = alphabet set
	bit 2: 0 = SMS default alphabet	Yes
		1 = UCS2 alphabet
	bit 3: 0 = ME may echo user input on the display	Yes
		1 = user input not to be revealed in any way (see note)
	bit 4: 0 = user input to be in unpacked format	Yes
		1 = user input to be in SMS packed format
bit 8: 0 = no help information available	Yes	
	1 = help information available	Yes
LAUNCH BROWSER		Yes
MORE TIME		Yes
PLAY TONE		Yes
POLLING OFF		Yes
POLL INTERVAL		Yes

Service	Mode	Support	
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' = SIM/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	Yes
	Set up speech call CallParty Subaddress	No
	DTMF support	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
SET UP EVENT LIST	'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
	'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	
'0A' = 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

Service	Mode	Support
SEND DATA		Yes
GET CHANNEL STATUS		Yes

User Interaction with SIM AT

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: Proactive session terminated by user
- Back: Backward move in proactive session

The center selection key 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: terminates the proactive session
- Back: Backward move in the proactive session
- Ok: Command performed successfully

Get input

Prompt for character input. The phone will refuse 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: terminates 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: 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 or Back ends the proactive session

Set up call

If the user is on a call when the commands "Set up Call, "Putting all other calls on hold" are sent, the user will see the "Let SIM card setup call" user confirmation text. If Ok is pressed, the current call will be put on hold and the new call set up. If the phone is on a call when the command "Set Up Call, disconnecting all other calls" is sent, the user will see the "Let SIM card setup call" user information text. If the Ok is pressed the current call will be disconnected and the new call set up.

Set up menu

Incorporates a SIM Application Toolkit Menu Item into the ME 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 ME 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)	MP4 MP3 M4A 3GPP™ AMR-NB AMR-WB WAV General MIDI (GM) SP-MIDI RealAudio® 8 iMelody XMF WMA WMA Pro (profile M0)	.mp4 .mp3 .m4a .3gp .amr .awb, .amr .wav .mid .mid .ra, .rm .imy .xmf .wma .wma
Video (including audio part)	MP4 (video: MPEG4, audio: AAC or AMR) 3GPP™ (video: MPEG4 or H.263, H.264, audio: AAC or AMR) 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 Simple Visual Profile Level 3	
Video decoding	MPEG-4 Simple Visual Profile Levels 0, 1, 2 H.263 Profile 0, Levels 10, 20, 45 H.264 Baseline Profile (Main subset), Levels 1b, 1.1 RealVideo 8	

File types	Formats	Extensions
Audio encoding	AMR-NB AAC (for video recording only)	
Audio decoding	MP3 (MPEG-1/2/2.5, audio layer 3) AAC AAC+ eAAC+ AMR-NB AMR-WB RealAudio 8 (depending on configuration) WMA version 2,7,8: Class 1 WMA version 9: Level 3 WMA Pro (profile M0) GM GML SP-MIDI	

Java™

Feature	Functionalities
Java™ Platform, Micro Edition	<ul style="list-style-type: none"> • JSR-75 PDA/File • JSR-82 Bluetooth Wireless Technology API • JSR 118 MIDP 2.1 • JSR-120 Wireless Messaging API • JSR-205 Wireless Messaging API 2.0 • JSR-135 MMAPAPI 1.1 • JSR 139 CLDC 1.1 • JSR-172 Web Services • JSR-177 Security and Trust Services • JSR-179 Location API (built-in GPS) • JSR-180 SIP • JSR-184 Mobile 3D Graphics • JSR 185 Java™ Technology for the Wireless Industry • JSR-211 Content Handler • JSR-226 SVG • JSR-229 Payment • JSR-234 Adv Multimedia Supplements • JSR-238 Mobile Internationalization • JSR-239 OpenGL ES • JSR-248 Mobile Service Architecture • Nokia UI API
Java 3D	<ul style="list-style-type: none"> • Mascot Capsule Ver.3 • JSR-239 OpenGL ES • JSR-184 Mobile 3D Graphics API for J2ME™

Imaging

2.0 Megapixel camera

Digital still camera (DSC)	
True color	Yes
Digital zoom	Main camera: 2.5x zoom for pictures (in VGA mode)
Photo fix	Improves an under-exposed picture by calculating and adjusting the light balance
Still camera settings bar	
Shoot modes	Normal, Burst, Panorama, Frames
Scenes	Auto, Twilight landscape, Twilight portrait, Landscape, Portrait, Beach/Snow, Sports, Document
Picture sizes (resolution)	2 MP (1600x1200 pixels) 1 MP (1280x960 pixels) VGA (640x480 pixels) Note: MP = Megapixel
Focus	No
Flash (Xenon)	N/A
Self-timer	Off, On
Effects	Off, Black & white, Negative, Sepia
White balance	Auto, Daylight, Cloudy, Fluorescent, Incandescent
Still camera setup	
Picture quality	Normal, Fine
Shutter sounds	Yes
Image stabilizer	No
Reset file number	Yes
Save to memory	Memory card, phone memory
Video recorder	
Video size (resolution)	QVGA (320x240 pixels)
Frame rate	30 fps (frames per second)
Video camera settings bar	
Video clip length	Up to 2 hours for picture message
Focus	Fixed
Night mode	Off, On

Self-timer	Yes, same as camera
Effects	Yes, same as camera
White balance	Yes, same as camera
Turn on/off microphone	Off, On

Images

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

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

Messaging

Short Messaging Service

Feature	Support
SMS Service Centre Number	It is possible to pre-load the SMS Service Centre Number
Pictures	It is possible to insert a picture or an icon into the text message. EMS compliant mobile phones can see the picture correctly
Reply to messages	It is possible to reply to received messages by 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 delivery time and date	Yes
Options of the previously sent message:	
Delivery report of the message	Yes (if requested when sending)
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 of the previously received message:	
Reply to the sender	Yes
Save the message in the inbox	Yes

Feature	Support
Forward the message	Yes
Know the remaining capacity storage	Yes, > 95% full warning, capacity on SIM when saving to SIM
Options for replying to a received SMS via:	
SMS, MMS, voice message, email	Yes
phone call (set up a call to the number contained in the message body)	Yes
Web browser (go to the Web address contained in the message body)	Yes
USSD session	No
Print via infrared	No
Enable the user to send a text message to a list of recipients	Yes
Write an email address as a recipient address	Yes, if email gateway is present
SMS storage	In the phone memory, on the SIM card, or on memory card
Nokia Picture Messaging	Yes

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
Pre-configure the MMS parameters in the factory	<ul style="list-style-type: none"> • MMS/CSD: Yes • MMS/GPRS: Yes
Configure the MMS parameters by OTA provisioning	<ul style="list-style-type: none"> • MMS/CSD: Yes • MMS/GPRS: Yes
Option for all the parameters from the parameters set to be OTA provisioned at the same time	<ul style="list-style-type: none"> • MMS/CSD: Yes • MMS/GPRS: Yes
Option for only one parameter, in the set of parameters, to be OTA provisioned	<ul style="list-style-type: none"> • 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

Feature	Support
Support of a standard procedure for OTA provisioning of MMS parameters	OMA Client Provisioning 1.1
Functionalities the user is able to set during message composition:	<ul style="list-style-type: none"> • 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
From 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 phone memory	Yes
Actions that the user can perform after message retrieval:	<ul style="list-style-type: none"> • 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 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:	<ul style="list-style-type: none"> • 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

Feature	Support
Maximum number of objects supported in a message	30 objects is standard. It is possible to increase the number through configuration
Maximum text size	5,000 characters/text

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
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

Dimension	Support
Power consumption	GSM host processor excluded: <ul style="list-style-type: none"> • 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: 27mA at 172.8 Kbps symmetrical (DH1)
Data transmission rate	<ul style="list-style-type: none"> • Data speed at least 800 Kbps on a Dial-up Networking connection (requires access to HSDPA network and may be limited by capacity situation on the 3G base station) • Data speed typically 1.0 Mbps on an Object Push connection between two phones (in case of using similar phones and if no other Bluetooth devices are connected)

OMA Data Synchronization (SyncML™) technical data

Feature	Support for Sync ML
SyncML compliance	The phone is fully SyncML compliant, having passed SyncML Conformance testing. OMA DS 1.2 or OMA DS 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
Possibility 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 will be used
Transport method for SyncML messages	HTTP, HTTPS, OBEX (USB, Bluetooth)
Possibility 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	Yes
Support for T-Mobile Mobile Backup	Yes

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	<p>The Web browser is compliant with the following standards:</p> <p>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 Document Object Model Level 2 (DOM 2) Scalable Vector Graphics, Mobile SVG Profile: SVG Tiny, version 1.2</p> <p>For further details, see the <i>WAP User Agent strings and profiles for Sony Ericsson mobile phones</i> Developers guidelines at Developer World http://developer.sonyericsson.com/</p>
Browser version	Access NetFront 3.4
Cache	Yes (size 2 MB)
Character sets *	<p>Most standard character sets, among others UTF-8 (Default), UTF-16, USASCII, Latin1, UCS2.</p> <p>For updated and detailed information, see the <i>WAP User Agent strings and profiles for Sony Ericsson mobile phones</i> Developers guidelines at Developer World http://developer.sonyericsson.com/</p> <p>* When creating pages, it is recommended to always save the page contents as UTF-8.</p>
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	

Feature	Support in the browser
User Agent Profiles	Yes, list of client characteristics - for example screen size. For details, see the <i>WAP User Agent strings and profiles for Sony Ericsson mobile phones</i> 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 <i>WAP User Agent strings and profiles for Sony Ericsson mobile phones</i> 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
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

Feature	Support in the browser
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
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	

Feature	Support in the browser
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)
Parameter set list	See the <i>Device Management v3 Developers Guideline</i> at Developer World http://www.sonyericsson.com
Factory pre-configuration	Yes. This provides the option to lock a setting
Bearer	
SMS	Uses security mechanism (SEC) methods according to OMA-WAP-ProvCont-v1_1-20050428-C(see www.openmobilealliance.org). 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
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 wireless security, both SSL/TLS connections and digital signatures
Applicative provisioning	
Preferred bearer customization	Yes
Other applications/features	Yes (MMS, Email, OMA Data Synchronization, Wireless Village, OMA Device Management, Streaming)
Technologies	
OMA Client Provisioning	Yes, Client Provisioning version 1.1

Feature	Support
Nokia/Ericsson OTA	No
Openwave OTA	No
Other	No
Provisioning bearer	SMS

Abbreviations

3GPP™

3rd Generation Partnership Project

A-GPS

Assisted GPS

AAC

Advanced Audio Coding

AAC+

High Efficiency AAC v.1

AJAX

Asynchronous JavaScript and XML

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

FR

Full Rate. Speech coding.

GIF

Graphics Interchange Format

GPS

Global Positioning System

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. 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

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 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.memorystick.org
- www.memorystick.com
- www.sonyericsson.com/support

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