

**XPERIA™**  
**X2**

White paper  
X2, X2a

October 2009

**Sony Ericsson**  
make.believe

# Purpose of this document

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Sony Ericsson product White papers are intended to give an overview of a product and provide details in relevant areas of technology.

## Document history

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Version		
September 2009	First released version	Revision 1
October 2009	Second released version	Revision 2

## Sony Ericsson Developer World

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# Product overview

## **Xperia™ X2: Make a day at the office a walk in the park**

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Find more friends on Facebook™. Check out the news on CNN – or buzz your mates on Skype™. Connect, communicate, have fun – the way you want to with Xperia™ X2 and flexible panels. How do you want to play today? Personalize your panels the way you want them, and download many more from the web. With Xperia™ X2 you'll find living surprisingly less work.

### **How's business?**

Pull Xperia™ X2 out of your pocket and find out directly. One touch on SlideView and you see directly who's trying to grab your attention. Your mails, calendar, contacts, tasks and notes are instantly updated so you never miss a trick –or a deal. Download attachments, rework then resend from wherever you are.

### **Pitch it perfect**

Fatigue in your thumbs? Stay in touch with your customers the easy way. Use the full-touch display, or the QWERTY keyboard for messaging without the mess. And wouldn't your pitches be even more perfect when you deliver them direct from your phone to a projector via the TV out? We even added the cable.

### **Fancy a film at the takeout?**

Watch your favourite clips shine off the 3.2" DVD quality high-resolution screen. Or snap the action when the party's in full swing. One press to the web and your friends will be crawling with envy when they see your shots from the 8.1 megapixel camera. Going out? Working out? Or fancy a film at the takeout? Enjoy all the latest applications and content direct from PlayNow™.



## Xperia™ X2 panel interface

The Xperia™ panel interface gives you one-touch access to several desktop interfaces. For business or pleasure, use the Xperia™ panels to enjoy multimedia and working efficiency on the go.









## Facts – dimensions, weight, performance and networks

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<b>Size</b>	110 x 54 x 16 mm
<b>Weight</b>	155 grams
<b>Available colours</b>	Elegant Black Modern Silver
<b>Main screen</b>	
Colours	65,536 colour
Resolution	480x800 pixels (WVGA) TFT
Size (diagonal)	3.2 inches
<b>Memory</b>	
Available user flash	Up to 110 MB
Total flash	512 MB
RAM	288 MB
Memory card support	microSD™ and microSDHC support
<b>Networks</b>	
Xperia™ X2	UMTS HSPA 900 (Band VIII), 1900 (Band II), 2100 (Band I) GSM GPRS/EDGE 850, 900, 1800, 1900
Xperia™ X2a	UMTS HSPA 850 (Band V), 1900 (Band II), 2100 (Band I) GSM GPRS/EDGE 850, 900, 1800, 1900
<b>Data transfer speeds</b>	
GSM GPRS	Up to 85 kbps (downlink) Up to 42 kbps (uplink)
GSM EDGE	Up to 225 kbps (downlink) Up to 112 kbps (uplink)
UMTS HSPA (upload)	Up to 2 Mbps (uplink, HSUPA, cat 5)
UMTS HSPA (download)	Up to 7.2 Mbps (downlink, HSDPA, cat 8)
<b>Talk time (GSM)</b>	Up to 10 hours
<b>Standby time (GSM)</b>	Up to 500 hours
<b>Talk time (UMTS)</b>	Up to 6 hours
<b>Standby time (UMTS)</b>	Up to 300 hours
<b>Music listening time</b>	Up to 20 hours
<b>Battery</b>	1500mAh Lithium Polymer

## Full feature list – categorized list of features

 <p><b>Camera</b>        8.1 megapixel camera        16x digital zoom        Auto focus        Geo tagging        Image stabilizer        Multishot        Picture blogging        Self timer        Smart contrast        Touch focus        Video blogging        Video light        Video recording</p>	 <p><b>Music</b>        Album art        Bluetooth™ stereo (A2DP)        Equalizer        Sony Ericsson media player        Music tones (MP3/AAC)        PlayNow™        Stereo speakers        Windows Media® Player Mobile</p>	 <p><b>Web</b>        Bookmarks        Google™ search        Internet Explorer® Mobile        Pan &amp; zoom        Web feeds        HTML 4.01        XHTML 1.1</p>
 <p><b>Voice</b>        Call list        Conference calls        Polyphonic ringtones        Speakerphone        Vibrating alert</p>	 <p><b>Messaging</b>        Conversational messaging        Email        Microsoft Exchange ActiveSync®        Handwriting recognition        Instant messaging        Picture messaging (MMS)        Predictive text input        Sound recorder        Text messaging (SMS)        Unified SMS/MMS messaging composer</p>	 <p><b>Design</b>        Windows Mobile® 6.5        Auto rotate        Media browser        Optical joystick        Picture wallpaper        QWERTY keyboard        Touchscreen        Wallpaper animation        Flight mode</p>



### Entertainment

3D games  
Capuchin version 1.0  
Adobe™ Flash Lite™ 3.1 support  
Java™  
Motion gaming  
Video streaming  
Video viewing  
YouTube™



### Organiser

Alarm clock  
Calculator  
Calendar  
Adobe PDF reader  
Microsoft Office® mobile  
Notes  
Outlook® Mobile  
Phone book  
Tasks



### Connectivity

3.5 mm audio jack  
A-GPS  
Bluetooth™ technology  
Google Maps™  
Micro USB connector  
Modem  
Synchronisation  
TV out  
USB support  
Wi-Fi™



# Technologies in detail

**\*NOTE:** The information outlined below is general and levels of compliance to standards and specifications may vary between products and markets. For more information, contact Sony Ericsson Developers World or your Sony Ericsson contact person where applicable.

## Windows mobile support

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Windows Mobile 6.5 Professional	Microsoft Outlook Mobile Microsoft Office Mobile: Word, Excel, PowerPoint® and OneNote Microsoft Internet Explorer Mobile Windows Media Player 10 Mobile Windows Live™ ActiveSync client File Explorer Direct Push email MSFT Voice command
Platform components	.NET CF v2, SQL CE Windows Mobile Marketplace Windows Mobile Update

## Device-to-device communications (local)

### Bluetooth™ wireless technology

Bluetooth™ 2.1 profiles supported	Advanced Audio Distribution Profile Audio/Video Remote Control Profile Generic Access Profile Generic Audio/Video Distribution Profile Generic Object Exchange Profile Handsfree Profile Headset Profile Object Push Profile Personal Area Networking Profile Phonebook Access Profile Serial Port Profile Sony Ericsson Watch Profile ActiveSync over Bluetooth
Core version and supported core features	2.1+EDR
Connectable devices	All products supporting Bluetooth spec. 1.1, or higher, and at least one of the profiles above

More information: [www.sonyericsson.com/developer](http://www.sonyericsson.com/developer)

[www.bluetooth.com](http://www.bluetooth.com)

### Wi-Fi™

Wi-Fi™ is a popular wireless networking technology that uses radio waves to provide wireless high-speed Internet and network connections. Wi-Fi™ hotspots exist in an increasing number of locations e.g airports, hotels, cafés and bistros. If a mobile phone supports Wi-Fi™, it can be used to utilize high data transfer rates and lower calling costs.

Supported standards	Wi-Fi™ certified Support: 802.11g/802.11b
Connectable devices	Wi-Fi™ access points Wi-Fi™ ad-hoc mode
Frequency band	2.4 GHz
Data transmission rate	Up to 54 Mbits/s
Security	Open Open WEP Shared WEP WPA Personal and WPA2 Personal WPA Enterprise and WPA2 Enterprise WAPI
Encryption	TKIP and AES

## Messaging

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### **(MMS) Multimedia Messaging Service**

According to OMA Multimedia Messaging Service v1.2 + SMIL

## Email

Bearer type (IP)	GSM Data (IP) GPRS and HSCSD
Character sets	USASCII UTF-7 UTF-8 UTF-16 UTF-17LE UTF-16BE UCS-2 / ISO10646 UCS2 ISO-8859-1 ISO-8859-2 Eastern Europe ISO-8859-5 Cyrillic ISO-8859-7 Greek ISO-8859-9 Turkish ISO-8859-10 Nordic ISO-8859-11 Thai ISO-8859-15 Western MR5 KOI8 GB18030 Simplified Chinese GB2312 Simplified Chinese BIG5 ISO2022JP Windows 1251 Cyrillic Windows 1252 Windows 1254 Turkish Windows 1255 Hebrew Windows 1258 Vietnamese Shift JIS  Note: GB2312 is only available in Simplified Chinese variants only, that is, Mainland China variants.  BIG5 is only available in Traditional Chinese variants, that is, Hong Kong and Taiwan variants.
OTA provisioning solution	OMA Client Provisioning 1.1
Protocols	POP3, SMTP, IMAP4 and Microsoft Exchange
Push email	IMAP IDLE (extension of IMAP4 Rev1), OMA Email Notification 1.0 and scheduled checking, Exchange Active-Sync® (EAS)
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and START-TLS
HTML mail	Yes

### More information:

[www.sonyericsson.com/developer](http://www.sonyericsson.com/developer)

[www.openmobilealliance.org](http://www.openmobilealliance.org)

## Java™

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Java™ Platform, Micro Edition	JSR-75 PDA Optional Packages for J2ME™ JSR-118 MIDP 2.1 JSR-120 Wireless Messaging API 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-179 Location API for J2ME JSR-184 Mobile 3D Graphics API for J2ME™ JSR-185 Java™ Technology for the Wireless Industry JSR-205 Wireless Messaging API 2.0 JSR-211 Content Handler API JSR-234 Advanced Multimedia Supplements JSR-238 Mobile Internationalization API JSR-248 Mobile Services architecture JSR-256 Mobile Sensor API (accelerometer)  Nokia UI Extension API Capuchin version 1.0 (This application framework makes it possible to bridge Flash technology with Flash.)
Java 3D	JSR-184 Mobile 3D Graphics API for J2ME™

## Provisioning (OMA CP, OMA DM)

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OMA CP version 1.1 (TBD)

OMA DM version 1.1.2, 1.2

Related information:

[www.sonyericsson.com/developer](http://www.sonyericsson.com/developer)

## Synchronisation (OMA DS, EAS)

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OMA Data Synchronization protocol versions 1.1.2 and 1.2

OMA Data Formats: vCard 2.1, vCalendar 1.0, vBookmark 1.0, notes as text/plain

Microsoft Exchange ActiveSync® and Windows Mobile Device Center

# Multimedia

## Audio and Video

<b>Audio Playback</b>	<b>Decoder format</b> Audio decoding MPEG-1/2/2.5, audio layer 3 AAC, AAC+, eAAC+  AMR-NB AMR-WB  AMR-WB+  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/-law PCM	<b>Supported in file format</b> MP3 (.mp3)  3GP (.3gp); AAC (.aac); MP4 (.mp4, .m4a) 3GP (.3gp); AMR (.amr) 3GP (.3gp); AMR (.amr) ; AMR-WB (.awb) 3GP (.3gp); AMR (.amr) ; AMR-WB (.awb) WMA (.wma) WMA (.wma) WMA (.wma) SMF (.mid) SMF (.mid) SMF (.mid); XMF (.xmf, .mxmf) XMF (.xmf) WAV (.wav)
<b>Audio Recording</b>	<b>Encoder format</b> AMR-NB AAC-LC	<b>Supported in file format</b> AMR (.amr) MP4 (.m4a)
<b>Video Playback</b>	<b>Decoder format</b> MPEG-4 Visual Simple Profile MPEG-4 Advanced Simple Profile H.264 Baseline Profile H.263 Profile 0 VC-1 (WMV9) Xvid MPEG4 Advanced Simple Profile	<b>Supported in file format</b> 3GP (.3gp); MP4 (.mp4) 3GP/MP4  3GP/MP4/FLV/F4V 3GP (.3gp) ASF (.asf, .wmv) AVI
<b>Video Recording</b>	<b>Encoder format</b> - Video: H.263 Profile 0 - Audio: AMR-NB" - Video: MPEG-4 Visual Simple Profile - Audio: AAC-LC"	<b>Supported in file format</b> 3GP (.3gp)  MP4 (.mp4)
<b>Audio/Video Streaming</b>	Streaming transport	RTSP/RTP/RTCP/SDP according to 3GPP™
<b>DRM</b>	DRM (Digital Rights Management) features the rights and copy protection of downloaded content.	OMA DRM 1.0, 2.0, 2.1 Microsoft DRM Janus

## Web browser

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<b>Browser version</b>	<p>Internet Explorer Mobile</p> <p>HTML - 4.01</p> <p>XHTML - Basic, XHTML 1.01</p> <p>WAP - 1.2.1, 2.0</p> <p>CSS - Level 1, Level 2 (partial), Mobile Profile 1.0, Wireless (WAP) CSS 1.1</p> <p>Scripting/DOM - JScript 5.6, DOM Level 0, DOM Level 1 (partial), DOM Level 2 (partial)</p> <p>cHTML - A mobile device adapted version of the standard Internet communications protocol HTML</p> <p>Full HTML support, JScript, Progressive download of video files</p> <p>Direct access to Search Internet and Enter address</p> <p>HTML - 4.01 (with some exceptions)</p> <p>XHTML - Basic, 1.0, 1.1 (both with some exceptions)</p> <p>XHTML Mobile Profile 1.0, 1.1, 1.2 (with some exceptions)</p> <p>WML 1.3, 2.0 (both with some exceptions)</p> <p>CSS - Level 1, Level 2 (partial), Mobile Profile 1.0, Wireless (WAP) CSS 1.0, 1.1</p> <p>XSLT 1.0, XPath 1.0, XML Namespaces, XML ID, XML Events</p> <p>Scripting/DOM - JScript 5.6, DOM Level 0, DOM Level 1 (partial), DOM Level 2 (partial)</p>
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Related information:

[www.sonyericsson.com/developer](http://www.sonyericsson.com/developer)

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