

SONY®

White paper

June 2012



XPERIA tipo_{dual}
ST21i2, ST21a2

Purpose of this document

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

Document history

Version

June 2012	First released version	Version 1
-----------	------------------------	-----------

Sony Mobile Developer World

For the latest technical documentation and development tools, go to <http://developer.sonymobile.com/wp>.

This White paper is published by:

Sony Mobile Communications AB,
SE-221 88 Lund, Sweden

www.sonymobile.com

© Sony Mobile Communications AB, 2009-2012.
All rights reserved. You are hereby granted a license to download and/or print a copy of this document.
Any rights not expressly granted herein are reserved.

First released version (June 2012)
Publication number: 1266-2417.1

This document is published by Sony Mobile Communications AB, without any warranty*. Improvements and changes to this text necessitated by typographical errors, inaccuracies of current information or improvements to programs and/or equipment may be made by Sony Mobile Communications AB at any time and without notice. Such changes will, however, be incorporated into new editions of this document. Printed versions are to be regarded as temporary reference copies only.

*All implied warranties, including without limitation the implied warranties of merchantability or fitness for a particular purpose, are excluded. In no event shall Sony or its licensors be liable for incidental or consequential damages of any nature, including but not limited to lost profits or commercial loss, arising out of the use of the information in this document.

Table of contents

Product overview	2
Xperia™ tipo dual – Smart has never been this simple	2
The new Xperia™ tipo dual	2
Signature features	4
Categorised feature list	7
Technologies in detail	9
Device-to-device communications (local)	9
Bluetooth wireless technology	9
Wi-Fi®	10
Messaging	11
MMS (Multimedia Messaging Service).....	11
Email	11
Positioning – location based services	12
Provisioning (OMA CP)	12
Multimedia (audio, image and video)	13
Synchronisation (OMA DS, EAS, Google Sync™)	15
Web browser	16
Trademarks and acknowledgements	17

Product overview

Xperia™ tipo dual – Smart has never been this simple

The new Xperia™ tipo dual

Buy the phone. Switch on. Relax. Xperia™ tipo dual makes it easy to set up your Google™ and Facebook™ accounts and much more. It's easy to use too. The latest apps and music are just a click away from your home screen. Worried about data costs? Don't be. Simply switch to the other SIM card, or set the limits you want to use data to surf, chat or game online. Fancy an all-nighter? The long lasting battery gives you 24 hours of service when you're on-the go.

made to make life easy

Open the box. Switch on the phone. Enjoy the entertainment. Xperia™ tipo dual is so easy to use. Simply follow the guide to set up your accounts, such as Google and Facebook, and transfer contacts from your phone. Running on the latest Android platform, it makes web browsing quicker and easier too. Enjoy.

made to control your costs

Enjoy shock horror on-screen. Not on your phone bill. With two SIM cards and the data usage app, which lets you set limits on how much data you transfer, you never need to spend more than you want to.

made to keep in touch – for longer

Chat on the phone. Or have an all-night gossip using Facebook™ inside Xperia™. For longer. With the powerful battery you can charge your phone and then use it for 24 hours without having to charge it again. Long battery life means you'll never miss that important call – or funny status update again.

made to match your moods

Xperia™ tipo dual is a smartphone. It gives you instant access to the web and online content, and a whole host of apps, like email, Google Maps™ and Google Search™. Make your phone your own with hundreds of thousands of apps to choose from. All apps appear on the home screen, so they're easy to get to.

Music Unlimited™*. We've got what you want to hear.

Millions and millions of songs on demand from Music Unlimited™. Listen offline and with no annoying ads. Enjoy dozens of preset channels and easily sync with your own music collection. Get the most from your music with Music Unlimited™.

- Enjoy millions and millions of songs
- No ads
- Offline playback
- Preset channels

**Music Unlimited™ is a subscription service, please refer to Terms Of Service for details of fees. Music Unlimited™ is not available in all markets.*



Signature features

The Sony Xperia™ tipo dual comes with a range of features as standard. Below is a summary of the key signature features.

Xperia™ Timescape™

Communication made easy

The Timescape™ application manages all your communication with one person in one place. You can effortlessly browse by category your Facebook™ and Twitter™ communications, as well as view your photos. Now everything is all together and in chronological order, so you don't have to open different applications to see what's going on.

Xperia™ Infinite button

Everything you want – from everywhere

Tap the infinite button in the Timescape™ application and smart filter each category of communication by person. For example, when viewing a text message from a friend in Timescape™, tap the infinite button to view a list of all chat messages with that friend.

Xperia™ Local connectivity

More control over your media

Using Xperia™ Local connectivity, you can exercise more control over how media files get transferred and stored. For example, you can select MTP mode to transfer files if you want to limit the risk of data corruption or select MSC mode if you want to have more control over the data storage.

Xperia™ Home screen application

The place you call Home

Customise your Home screen with widgets, shortcuts, folders, themes, wallpaper and other items.

Where's best for you? Email top right? Music player bottom left? You decide. With four extensions to your Home screen, you've got plenty of space to put things where you want. Just remember to flick left or right to find them.

Facts – dimensions, weight, performance and networks

Operating system	Google™ Android™ 4.0 (Ice Cream Sandwich)
Processor	800 MHz Qualcomm Snapdragon™ MSM7225AA
Size	103x 57x13 mm
Weight	99.4 grams
Available colours	Serene black Classic silver
Main screen	
Colours	262,000 colour TFT
Resolution	320x480 pixels
Size (diagonal)	3.2 inches
Scratch resistant	Yes – Shatter proof sheet on PMMA
Input mechanisms	
Text input	On-screen QWERTY keyboard
Touch screen	Capacitive
Touch gesture	Yes – multi-touch, up to 2 fingers supported
Memory**	
Internal phone storage	2.9 GB (up to 2.5 GB user-accessible memory)
RAM	512 MB
Expansion slot	microSD™ card, up to 32 GB
Camera	
Camera resolution	3.2 MP
Digital zoom	4x
Video recording	Yes - VGA
Sensors	
Accelerometer	Yes
Proximity sensor	Yes

Networks	
ST21i2	UMTS HSPA 900 (Band VIII), 2100 (Band I) GSM GPRS/EDGE 850, 900, 1800, 1900
ST21a2	UMTS HSPA 850 (Band V), 1900 (Band II), 2100 (Band I) GSM GPRS/EDGE 850, 900, 1800, 1900







Data transfer speeds	
GSM GPRS	Up to 86 kbps (download and upload)
GSM EDGE	Up to 237 kbps (download and upload)
UMTS HSDPA cat 8 (download)	Up to 7.2 Mbps
Talk time (GSM)	Up to 5 hours*
Standby time (GSM+GSM)	Up to 350 hours*
Talk time (UMTS)	Up to 6 hours and 18 min.*
Standby time (UMTS+GSM)	Up to 360 hours*
Music listening time	Up to 36 hours and 30 min.*
Video playback time	Up to 8 hours and 18 min.*
Battery	1500 mAh Typical 1460 mAh Minimum




**Values are according to GSM Association Battery Life Measurement Technique as performed in controlled laboratory conditions. Actual time may vary.*

Note: Battery performance may vary depending on network conditions and configurations, and phone usage.

Note: Performance metrics measured under laboratory conditions.

Categorised feature list

 <p>Camera 3.2 megapixel camera 4x digital zoom Geotagging Self-timer Send to web Touch capture Video recording</p>	 <p>Music Album art Bluetooth™ stereo (A2DP) Manual equalizer PlayNow™ service* Music player TrackID™ music recognition application** xLoud™ Experience</p>	 <p>Internet Bookmarks Google Play™ Google™ search* Google Voice™ Search* Google Maps™ for mobile with Street View and Latitude™ NeoReader™ barcode scanner Pan & zoom Web browser (WebKit™)</p>
 <p>Communication Call list Conference calls Facebook™ inside Xperia™ Google Talk™ application Speakerphone</p>	 <p>Messaging Conversations Email Google mail™ Handwriting recognition Instant messaging Picture messaging (MMS) Predictive text input Text messaging (SMS)</p>	 <p>Design Auto rotate on-screen 12 key keyboard on-screen QWERTY keyboard Picture wallpaper Touch screen Wallpaper animation</p>

 <p>Entertainment 3D games Media browser Motion gaming Radio (FM radio with RDS) Sony Entertainment Network* Video streaming YouTube™*</p>	 <p>Organiser Alarm clock Airplane mode Calculator Calendar Contacts E-Manual Infinite button Setup Wizard</p>	 <p>Connectivity 3.5 mm audio jack (CTIA) aGPS* Bluetooth™ wireless technology Media Transfer Protocol support Micro USB support Native USB tethering Synchronisation via Facebook™ Synchronisation via Google™ Synchronisation via Exchange ActiveSync® Synchronisation via SyncML™ USB High speed 2.0 support USB mass storage Wi-Fi® Wi-Fi® Hotspot functionality</p>
---	--	---

*This service is not available in all markets.

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 Developer World or your Sony contact person where applicable.

Device-to-device communications (local)

Bluetooth wireless technology

Bluetooth™ profiles supported	Advanced Audio Distribution Profile v1.2 Audio/Video Remote Control Profile v1.0 Handsfree Profile v1.5 Headset Profile v1.1 Object Push Profile v1.1 Phonebook Access Profile v1.0
Core version and supported core features	Advanced Audio 2.1+EDR
Connectable devices	Products which support at least one of the profiles above.

More information:

<http://developer.sonymobile.com/wp/>

www.bluetooth.com

Wi-Fi®

Supported standards	IEEE 802.11b/g/n and Wi-Fi®
Connectable devices	Wi-Fi® access points
Frequency band	2.4 GHz
Data transfer rate	Up to 72 Mbit/s
Security	WEP 64 bit WEP 128 bit TKIP CCMP (AES) Open Authentication Shared Authentication EAP-TLS EAP-TTLS/MSCHAPv2 EAP-SIM PEAPv0/EAP-MSCHAPv2 PEAPv1/EAP-GTC WPA Personal and WPA2 Personal WPA Enterprise and WPA2 Enterprise
Encryption	WEP, TKIP and AES
Power save	WMM-UAPSD QoS, WMM

Messaging

MMS (Multimedia Messaging Service)

According to OMA Multimedia Messaging Service v1.0 + SMIL

Email

Bearer type (IP)	GPRS, EGPRS, UMTS, Wi-Fi
Character sets	BIG5 Traditional Chinese GB2312 Simplified Chinese ISO-2022-JP Japanese ISO-8859-1 ISO-8859-2 Eastern Europe ISO-8859-5 Cyrillic ISO-8859-7 Greek ISO-8859-9 Turkish ISO 8859-11 KOI8-R Cyrillic Shift_JIS Japanese USASCII UTF-16 UTF-8 Windows® 874 Windows® 1251 Cyrillic Windows® 1252 Windows® 1254 Turkish Windows® 1258 Vietnamese
Protocols	POP3 and IMAP4
Push email	Microsoft® Exchange ActiveSync® (EAS)
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and START-TLS
HTML mail	Yes (read only)

More information:

<http://developer.sonymobile.com/wp/>

www.openmobilealliance.org

Positioning – location based services

Supported standards:

OMA Secure User Plane Location (SUPL) v1.0

3GPP™ Control Plane location (including Emergency location), only support E911.

Qualcomm® GPSOneXtra

Provisioning (OMA CP)

OMA CP version 1.1

Multimedia (audio, image and video)

Audio Playback	Decoder format	Supported in file format
	Audio decoding MPEG-1/2/2.5, audio layer 3	MP3 (.mp3), 3GPP (.3gp) MP4 (.mp4, .m4a)
	AAC, AAC+, eAAC+	3GPP (.3gp), MP4 (.mp4)
	AMR-NB, AMR-WB	3GPP (.3gp), MP4 (.mp4)
	General MIDI (GM)	SMF (.mid)
	Linear PCM 16bit	WAV (.wav)
	OTA	OTA (.ota)
	Ogg vorbis	Ogg vorbis (.ogg)
Audio Recording	Encoder format	Supported in file format
	AMR-NB, AMR-WB	3GPP (.3gp), MP4 (.mp4), AMR(.amr)
	AMR-NB, AMR-WB, AAC-LC stereo Sample rate: 48 kHz Bit rate: 128 kbps	3GPP (.3gp), MP4 (.mp4)
Image Playback	Decoder format	Supported in file format
	1, 4, 8, 16, 24 and 32 bpp and RLE encoded formats	BMP (.bmp)
	Single and multi frame, bitmap mask support (GIF87a format and GIF89a format)	GIF (.gif)
	Joint Photographic Experts Group	JPEG (.jpg)
	Portable Network Graphics Bit-map mask support	PNG (.png)
	Wireless Bitmap	WBMP (.wbmp)
Image Capture	Encoder format	Supported in file format
	Joint Photographic Experts Group	JPEG (.jpg)
Video Playback	Decoder format	Supported in file format
	MPEG-4 Visual Simple Profile	3GPP (.3gp); MP4 (.mp4)
	H.264	3GPP (.3gp); MP4 (.mp4)
	H.263 Profile 0	3GPP (.3gp)

Video Recording	Encoder format	Supported in file format
	<ul style="list-style-type: none"> - Video H.263 Profile 0, H.264 Baseline Profile - Audio: AAC-LC stereo, sample rate 48 kHz bit rate 128 kbps, AMR-NB 	3GPP (.3gp), MP4 (.mp4)
Audio/Video Streaming	Streaming transport	RTSP according to 3GPP™ HTTP streaming
DRM	DRM (Digital Rights Management) — features the rights and copy protection of downloaded content.	OMA DRM 1.0

Synchronisation (OMA DS, EAS, Google Sync™)

OMA Data Synchronisation protocol versions 1.1.2 and 1.2.

OMA Data Formats: vCard 2.1, vCalendar 1.0.

Microsoft® Exchange ActiveSync® protocol version 2.5

Microsoft® Exchange ActiveSync® protocol version 12.0

Microsoft® Exchange ActiveSync® protocol version 12.1

Microsoft® Exchange ActiveSync® protocol version 14.0

Microsoft® Exchange ActiveSync® protocol version 14.1

Google Sync™

Related information:

<http://developer.sonymobile.com/wp>

Web browser

Browser version	Android 4.0 Browser (Based on WebKit™)
Navigation/rendering	Pan & Zoom Landscape/portrait rendering Full page PC rendering
Search	Internet Search
Browser compliancy	HTML version 4.0 HTML version 5.0 XHTML Basic version 1.0 XHTML 1.1 CSS 2.0 CSS 2.1 CSS 3.0 V8 JavaScript Engine/ECMA-script 262 5rd edition DOM 2.0 DOM 3.0
Supported Device API	Geo-location API
Protocol compliancy	HTTP/1.1 TLS 1.0 and SSL 3.0 Gzip OMA Download 1.0

Related information:

<http://developer.sonymobile.com/wp/>

Trademarks and acknowledgements

The PlayNow, TrackID, Xperia and Timescape are trademarks or registered trademarks of Sony Ericsson Mobile Communications AB. Sony, "make.believe" and xLOUD are trademarks or registered trademarks of Sony Corporation. Ericsson is a trademark of Telefonaktiebolaget LM Ericsson.

The Bluetooth word mark and logos are owned by the Bluetooth SIG, Inc. and any use of such marks by Sony Ericsson is under licence. TrackID is powered by Gracenote Mobile MusicID. Gracenote and Gracenote Mobile MusicID are trademarks or registered trademarks of Gracenote, Inc.

Google, Google Calendar, Google Gallery 3D, Google Latitude, Google Maps, Google Places, Google Talk, Google Search, Google Sync, Google Mail, Picasa, YouTube, Google Voice, Android and Google Play™ are trademarks or registered trademarks of Google, Inc. Facebook is a trademark or registered trademark of Facebook, Inc. Twitter is a trademark or a registered trademark of Twitter, Inc.

Wi-Fi is a trademark or registered trademark of the Wi-Fi Alliance. DLNA is a trademark or registered trademark of the Digital Living Network Alliance. microSD is a trademark or registered trademark of SanDisk Corporation. XHTML is a registered trademark of the W3C.

Microsoft, Windows, Exchange ActiveSync are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

3GPP™ is a trademark of ETSI.

Qualcomm is a trademark or registered trademark of Qualcomm, Inc.

All other trademarks and copyrights are the property of their respective owners.