

**SONY**<sup>®</sup>

# White paper

June 2012



Xperia<sup>™</sup> tipo  
ST21a, ST21i

# Purpose of this document

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Sony 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

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# Sony Mobile Developer World

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

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# Product overview

## **Xperia™ tipo – Smart has never been this simple**

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### **The new Xperia™ tipo**

Buy the phone. Switch on. Relax. Xperia™ tipo 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 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 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 every market.



## Signature features

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The Sony Xperia™ tipo 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

<b>Operating system</b>	Google™ Android™ 4.0 (Ice Cream Sandwich)
<b>Processor</b>	800 MHz Qualcomm Snapdragon™ MSM7225AA
<b>Size</b>	103x 57x13 mm
<b>Weight</b>	99.4 grams
<b>Available colours</b>	Classic Black Classic White Deep Red Navy Blue
<b>Main screen</b>	
Colours	262,000 colour TFT
Resolution	320x480 pixels
Size (diagonal)	3.2 inches
Scratch resistant	Yes – Shatter proof sheet on PMMA
<b>Input mechanisms</b>	
Text input	On-screen QWERTY keyboard
Touch screen	Capacitive
Touch gesture	Yes – multi-touch, up to 2 fingers supported
<b>Memory**</b>	
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
<b>Camera</b>	
Camera resolution	3.2 MP
Digital zoom	4x
Video recording	Yes - VGA
<b>Sensors</b>	
Accelerometer	Yes
Proximity sensor	Yes
<b>Networks</b>	
ST21i	UMTS HSPA 900 (Band VIII), 2100 (Band I) GSM GPRS/EDGE 850, 900, 1800, 1900

ST21a	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 86 kbps (download and upload)
GSM EDGE	Up to 237 kbps (download and upload)
UMTS HSDPA cat 8(download)	Up to 7.2 Mbps
<b>Talk time (GSM)</b>	Up to 5 hours*
<b>Standby time (GSM)</b>	Up to 470 hours*
<b>Talk time (UMTS)</b>	Up to 4 hours 30 min.*
<b>Standby time (UMTS)</b>	Up to 545 hours*
<b>Music listening time</b>	Up to 30 hours*
<b>Video playback time</b>	Up to 3 hours*
<b>Battery</b>	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><b>Camera</b>            3.2 megapixel camera            4x digital zoom            Geotagging            Self-timer            Send to web            Touch capture            Video recording</p>	 <p><b>Music</b>            Album art            Bluetooth™ stereo (A2DP)            PlayNow™ service*            Music Player            TrackID™ music recognition application*            xLoud™ Experience</p>	 <p><b>Internet</b>            Bookmarks            Google Play™            Google™ search*            Google Voice™ Search*            Google Maps™ for mobile with Street View and Latitude™            NeoReader™ barcode scanner            Pan &amp; zoom            Web browser (WebKit™)</p>
 <p><b>Communication</b>            Call list            Conference calls            Facebook™ inside Xperia™            Google Talk™ application            Speakerphone</p>	 <p><b>Messaging</b>            Conversations            Email            Google mail™            Handwriting recognition            Instant messaging            Picture messaging (MMS)            Predictive text input            Text messaging (SMS)</p>	 <p><b>Design</b>            Auto rotate            on-screen 12 key keyboard            on-screen QWERTY keyboard            Picture wallpaper            Touch screen            Wallpaper animation</p>



### Entertainment

3D games  
 Media browser  
 Motion gaming  
 Radio (FM radio with RDS)  
 Sony Entertainment Network\*  
 Video streaming  
 YouTube™ \*



### Organiser

Alarm clock  
 Airplane mode  
 Calculator  
 Calendar  
 Contacts  
 E-Manual  
 Infinite button  
 Setup Wizard



### 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

\*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)

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### 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](http://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

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

## **Positioning – location based services**

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Supported standards:

OMA Secure User Plane Location (SUPL) v1.0

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

Qualcomm® GPSOneXtra

## **Provisioning (OMA CP)**

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OMA CP version 1.1

## Multimedia (audio, image and video)

<b>Audio Playback</b>	<b>Decoder format</b>	<b>Supported in file format</b>
	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)
<b>Audio Recording</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	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)
<b>Image Playback</b>	<b>Decoder format</b>	<b>Supported in file format</b>
	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 Bitmap mask support	PNG (.png)
	Wireless Bitmap	WBMP (.wbmp)
<b>Image Capture</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	Joint Photographic Experts Group	JPEG (.jpg)
<b>Video Playback</b>	<b>Decoder format</b>	<b>Supported in file format</b>
	MPEG-4 Visual Simple Profile	3GPP (.3gp); MP4 (.mp4)
	H.264	3GPP (.3gp); MP4 (.mp4)
	H.263 Profile 0	3GPP (.3gp)

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

## **Synchronisation (OMA DS, EAS, Google Sync™)**

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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

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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>

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