

SONY®

# White paper

November 2012



XPERIA ion  
LT28h

# 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		
October 2012	Third released version	Version 3
November 2012	Fourth released version	Version 4

## Sony Mobile Developer World

---

For the latest technical documentation and development tools, go to [www.sonymobile.com/developer](http://www.sonymobile.com/developer).

This White paper is published by:

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

[www.sonymobile.com](http://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.

Third released version (October 2012)  
Publication number: 1266-2415.1

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

<b>Product overview .....</b>	<b>2</b>
Sony Xperia™ ion HSPA – Experience big screen HD .....	2
Signature features .....	4
Facts – dimensions, weight, performance and networks .....	5
Categorized feature list .....	7
<b>Technologies in detail .....</b>	<b>9</b>
Device-to-device communications (local) .....	9
Bluetooth™ wireless technology .....	9
Wi-Fi® .....	10
DLNA Certified® (Digital Living Network Alliance) .....	11
Messaging .....	12
MMS (Multimedia Messaging Service).....	12
Email .....	12
Positioning – location based services .....	13
Provisioning (OMA CP) .....	13
Multimedia (audio, image and video) .....	14
Synchronisation (OMA DS, EAS, Google Sync™) .....	15
Web browser .....	16
Trademarks and acknowledgements .....	17

# Product overview

## **Sony Xperia™ ion HSPA – Experience big screen HD**

---

The premium HD smartphone that brings an everything in HD experience to a 4.6" screen.

### **See every detail**

Watch the latest movies, TV shows or your own HD videos in razor sharp clarity on the stunning 4.6" HD Reality Display with Mobile BRAVIA® Engine. Crisp images. No jagged edges. With reduced light reflection, the picture stays clear when you're outdoors too. Merely the best entertainment experience in HD.

### **From sleep to snap – in just over a second**

Happy faces. Spectacular scenery. Capture it all with Xperia™ ion HSPA's fast capture 12 megapixel camera. Keep shooting with only one second between shots. Or record vacation videos in full HD. View in vibrant colors on the 4.6" touchscreen. Or wirelessly share your memories on your choice of HD screen.

### **Show it like it is**

Connect your Xperia™ ion HSPA to an HDTV using DLNA or an HDMI cable. Now relive those moments from the comfort of your couch, or pump up the volume on your playlist at the party. It's up to you.

**Sony Entertainment Network\* – Your ultimate source for digital entertainment.**

Feasts for film fans, masses of music. Enjoy millions\*\* of songs from Music Unlimited™. Or download your favourite hit movies from Video Unlimited™. It's all on Sony Entertainment Network. No trips to the store. No late fees. Just pure entertainment.

*\* Sony Entertainment Network with Video Unlimited™ and Music Unlimited™ are not available in all markets.*

*\*\* The number of tracks available varies by country.*



## Signature features

---

The Sony Xperia™ ion HSPA 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™, Twitter™, email and text 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 Sony 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>	1.5 GHz Qualcomm APQ8060 Dual Core
<b>GPU</b>	Adreno 220
<b>Size</b>	133 x 68 x 10.8 mm
<b>Weight</b>	144 grams
<b>Available colours</b>	Black Red
<b>SIM card</b>	Micro SIM
<b>Main screen</b>	
Colours	16,000,000 colour TFT
Resolution	1280x720 pixels
Size (diagonal)	4.55 inches
Scratch-resistant	Shatter proof sheet on scratch-resistant glass
<b>Input mechanisms</b>	
Text input	On-screen QWERTY keyboard
Touch screen	Capacitive
Touch gesture	Yes – multi-touch, up to 4 fingers supported
<b>Memory</b>	
Internal phone storage	13.2 GB* (up to 11.24 GB user-accessible memory)
RAM	1 GB
Expansion slot	microSD™ card, up to 32 GB
<b>Camera</b>	
Camera resolution	12 MP
Digital zoom	16x
Photo light	Yes
Video recording	Yes – HD 1080p
Front Camera	Yes – HD 720p for video chat and 1.3 MP for camera capture
<b>Sensors</b>	
Accelerometer	Yes
Proximity sensor	Yes

Ambient light sensor	Yes
Magnetometer	Yes
Gyroscope	Yes
<b>Networks</b>	
LT28h	UMTS HSPA+ 850 (Band V), 900 (Band VIII), 1700 (Band IV), 1900 (Band II), 2100 (Band I) GSM EDGE 850, 900, 1800, 1900
<b>Data transfer speeds</b>	
GSM EDGE	Up to 237 kbps
UMTS HSPA cat 6 (upload)	Up to 5.8 Mbps
UMTS HSPA cat 24(download)	Up to 42 Mbps
<b>Talk time (GSM)</b>	Up to 10 hours**
<b>Standby time (GSM)</b>	Up to 400 hours**
<b>Talk time (UMTS)</b>	Up to 4 hours**
<b>Standby time (UMTS)</b>	Up to 350 hours**
<b>Music listening time</b>	Up to 12 hours**
<b>Video playback time</b>	Up to 3 hours**
<b>Embedded Battery</b>	1900 mAh typical 1840 mAh minimum

\* Internal phone storage comprising 2 GB Phone memory for downloadable applications, and 11.2 GB Internal storage used for music, pictures and movies, and some application data.






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




**NOTE:** All performance metrics are measured under laboratory conditions.

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



## Categorized feature list

 <p><b>Camera</b>            3D Sweep Panorama            12 megapixel camera            16x digital zoom            Auto focus            Face detection            Flash/Photo light            Front-facing camera (HD 720p)            Geotagging            HD video recording (1080p)            Image stabiliser            Red-eye reduction            Self-timer            Scene recognition            Send to web            Smile detection            Sony Exmor R™ for mobile image sensor            Sweep Panorama            Sweep Multi Angle            Touch capture            Touch focus            Video light            Video recording</p>	 <p><b>Music</b>            Album art            Bluetooth™ stereo (A2DP)            TrackID music recognition*            “WALKMAN” application            xLoud™ Experience</p>	 <p><b>Internet</b>            Bookmarks            Google Play™            Google™ search*            Google Voice™ Search*            Google Maps™ for Mobile with Navigation, Places and Latitude™*            Pan &amp; zoom            Web browser (WebKit™)</p>
 <p><b>Communication</b>            Call list            Facebook™ application*            Google Talk™ application*            Noise suppression            Speakerphone            Twitter™ (Timescape™ integration)*            Xperia™ Timescape™            Xperia™ with Facebook™</p>	 <p><b>Messaging</b>            Conversations            Email            Google Mail™*            Messaging            Multimedia messaging (MMS)            Predictive text input            Sound recorder            Text messaging (SMS)</p>	 <p><b>Design</b>            Auto rotation            Gesture input            Gyroscope            on-screen QWERTY keyboard            HD Reality Display with Sony            Mobile BRAVIA® Engine            Screenshot capturing            Voice input            Wallpaper</p>

 <p><b>Entertainment</b>  3D Album  3D games  Media browser  Motion gaming  PlayStation® Certified  Radio (FM radio with RDS)  Sony Entertainment Network*  TV launcher  YouTube™*</p>	 <p><b>Organiser</b>  Airplane mode  Alarm clock  Calculator  Calendar  Contacts  Document readers  eCompass™  Infinite button  LiveWare™ manager  Notes  OfficeSuite  Setup guide</p>	 <p><b>Connectivity</b>  3.5 mm audio jack (CTIA)  aGPS*  ANT+ sports fitness  Bluetooth™ wireless technology  DLNA Certified®  GLONASS*  HDMI support  Media Go™  Media Transfer Protocol support  Micro USB support  Native USB tethering  NFC  PC Companion  Synchronising via Facebook™  Synchronising via Google™  Synchronisation via Microsoft®  Exchange ActiveSync®  Synchronising via SyncML™  USB High speed 2.0 support  USB host  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 Mobile 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 supporting at least one of the profiles above.

More information:

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

[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-SIM EAP-TLS EAP-TTLS/MSCHAPv2 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

**DLNA Certified® (Digital Living Network Alliance)**

Supported Device Classes	<p><b>M-DMS – Mobile Digital Media Server</b>  Media Types: images  Summary: The digital media server exposes the media files in your phone to a Wi-Fi® network. The files can then be accessed from other DLNA Certified® clients.</p> <p><b>+PU+</b>  Media Types: image, video and music  Summary: Play media in the phone on another device, such as a TV or computer using 2 box push technology. +PU+ is integrated in the Gallery and Music applications.</p> <p><b>M-DMP – Mobile Digital Media Player</b>  Media Types: image, video and music  Summary: Play content stored on another device, for example, a server or a PC, directly on the phone.</p>
Supported Bearers	Wi-Fi®
DRM Support	The DLNA Certified® implementation does not support DRM-protected content.

## Messaging

---

### MMS (Multimedia Messaging Service)

According to OMA Multimedia Messaging Service v1.0 + SMIL

### Email

Bearer type (IP)	GPRS, EGPRS, UMTS
Character sets	BIG5 Traditional Chinese GB18030 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:

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

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

## Positioning – location based services

---

Supported standards:

- OMA Secure User Plane Location (SUPL) v1.0
- 3GPP™ Control Plane location (including Emergency location)
- Qualcomm® GPSOneXtra™

Supported satellite systems:

- GPS
- GLONASS\*

\* **NOTE:** GPS and GLONASS are used together to calculate the position. Positioning is more robust and accurate in most conditions, if both systems are active. The benefits of using GLONASS are automatically available for all applications using the Satellite Positioning API ("GPS Provider" in Android terminology).

## Provisioning (OMA CP)

---

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)
	General MIDI (GM)	SMF (.mid)
	Linear PCM 16bit	WAV (.wav)
	OTA	OTA (.ota)
	vorbis	Ogg (.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 Simple Profile Level 6, Advanced Simple Profile Level 5	3GPP (.3gp), MP4 (.mp4), Matroska (.mkv), AVI (.avi, .xvid), (.mov)
	H.264 High Profile Level 3.2	3GPP (.3gp), MP4 (.mp4), Matroska (.mkv)
	H.263 Profile 0 Level 70	3GPP (.3gp)
	VP8	WebM (.webm)



<b>Video Recording</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	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)
<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 Marlin DRM

## **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

Microsoft® Exchange ActiveSync® protocol version 12.1

Microsoft® Exchange ActiveSync® protocol version 14

Microsoft® Exchange ActiveSync® protocol version 14.1

Google Sync™

Related information:

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

## Web browser

---

Browser version	Android 4.0 Browser (Based on WebKit™)
Browser Application	Bookmark synch Desktop mode Full-page PC rendering Internet search Landscape/portrait rendering NFC Link Sharing Off-line reading Pan & Zoom
Browser compliancy	CSS 2.0 CSS 2.1 CSS 3.0 DOM 2.0 DOM 3.0 HTML version. 4.0 HTML version. 5.0 JavaScript 1.7/ECMA-script 262 3rd edition WebGL 1.0 XHTML Basic version 1.0 XHTML 1.1 SVG 1.1
Supported Device API	Device orientation API File reader API Geo-location API Touch events API (including multi-touch)
Protocol compliancy	Gzip HTTP/1.1 OMA Download 1.0 TLS 1.0 and SSL 3.0

Related information:

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

## Trademarks and acknowledgements

---

All product and company names mentioned herein are the trademarks or registered trademarks of their respective owners. Any rights not expressly granted herein are reserved. All other trademarks are property of their respective owners.

Visit [www.sonymobile.com](http://www.sonymobile.com) for more information.