Xperia™ acro HD

SO-03D

XPERIA

SONY®

make.believe

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		
May 2012	First released version	Version 1

Sony Mobile Developer World

For the latest technical documentation and development tools, go to *www.sonymobile.com/developer.*

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Product overview

Sony Xperia™ acro HD – Experience everything in HD

Happy faces, remarkable places. Shoot them in full HD video and see them shine back from the crisp clear HD display. Then move on to a wider world of entertainment. Movies, hit music, PlayStation® games. And don't keep all the fun to yourself. Share it on your HD TV, straight from your smartphone.

See every detail
See every inch of that award-winning actor. Zoom in on every detail of your favourite TV show. Experience videos, photos and TV in deep, vivid, colour on the large, bright 4.3" HD Reality Display with Mobile BRAVIA® Engine. Sharp pictures. No jagged edges. Merely the terrific entertainment in HD.

Snap your shots in an instant
Some events are too good to miss. Now you don't have to. Start your camera in just over a second. Pointing and shooting takes one second too. And you can keep on shooting. No delays, no missing the subject. Just you capturing that special moment forever. Then share it direct, on Facebook™ or in a message.

Show it like it is
First day of the summer, last day at the beach. Memories may fade, but Xperia™ acro HD keeps them bright. Record it all in full HD video with the 12.1 megapixel camera, even in low light. The Exmor R™ for mobile camera sensor lightens up any gloomy day.

Got it on your smartphone? Share it on your TV
Want to be entertained? Download a movie from Video Unlimited™*. Connect Xperia ™ acro HD to an HD TV with an HDMI cable and the TV launcher pops up automatically. Now use your phone to play, fast forward, or enjoy your favourite scene again.

*Sony Entertainment Network with Video Unlimited and Music Unlimited are not available in every market. Additionale charges may apply.

The Japanese touch

Stay tuned to the latest news or your favorite program even when you are away from home on the 1 seg TV. Share your personal information by IrDA with friends and use the convenient FeliCa application for all your financial transactions. Xperia™ acro HD will touch the life of every Japanese user..

Signature features

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

Xperia™ Timescape™
The place to meet your friends
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 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

Operating system	Google™ Android™ 2.3 (Gingerbread)
Processor	1.5 GHz Qualcomm MSM8260 Dual Core
GPU	Adreno™ 220
Size	126 x 66 x 11.9 mm
Weight	149 grams
Available colours	Black Aqua Sakura Ceramic
Main screen	
Colours	16,777,216 colour TFT
Resolution	1280x720 pixels
Size (diagonal)	4.3 inches
Scratch-resistant	Shatter proof sheet on scratch-resistant glass
Input mechanisms	
Text input	POBox™ touch (Japanese)
Touch screen	Capacitive (multi-touch, upto 10 fingers supported)
Touch gesture	Yes – multi-touch
Memory	
Internal phone storage	2 GB***
RAM	1 GB
Flash memory	11 GB eMMC
Expansion slot	microSD™ card, expandable up to 32 GB
Camera	
Camera resolution	12.1 MP
Digital zoom	16x
Photo flash	No
Video recording	Yes – HD 1080p
Front Camera	Yes – HD 720p for video chat and 1.3 MP for camera capture
Sensors	
Accelerometer	Yes

Proximity sensor	Yes
Ambient light sensor	Yes**
Magnetometer	Yes
Gyroscope	Yes
Networks	
SO-03D	HSPA+ 800 (Band VI), 800 (Band XIX), 850 (Band V), 1700 (Band IX) and 2100 (Band I) GSM 850/900/1800/1900
Data transfer speeds	
GSM GPRS	Up to 86 kbps
GSM EDGE	Up to 237 kbps
UMTS HSPA cat 6 (upload)	Up to 5.8 Mbps
UMTS HSPA cat 10(download)	Up to 14.4 Mbps
Talk time (GSM)	Up to 6 hours 40 min.*
Standby time (GSM)	Up to 290 hours*
Talk time (UMTS)	Up to 7 hours 10 min.*
Standby time (UMTS)	Up to 310 hours*
Music listening time	23 hours
Video playback time	6 hours 30 min.
Embedded Battery	1910 mAh typical 1840 mAh minimum

*** *Some portion of that capacity may be utilized by pre-installed applications.*

** *There is no API for the light sensor.*

* *Talk time/Standby time(GSM/UMTS) is according to the operator condition for Battery Life Measurement.*

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

Categorised feature list

Camera
3D Sweep Panorama™
12 megapixel camera
16x digital zoom
Auto focus
Aperture f/2.4
Exposure value
Face detection
Front-facing camera (1.3 MP)
Geotagging
HD video recording (1080p)
Image stabiliser
Flash/Pulsed LED
Red-eye reduction
Send to web
Self-timer
Smile detection™
Sony Exmor R™ for mobile image sensor
Touch capture
Touch focus
Video light
Video recording
Video stabiliser
White balance

Music
Album art
Bluetooth™ stereo (A2DP)
Music tones (MP3/AAC)
PlayNow™ service*
Music Player
TrackID™ music recognition*
xLoud™ Experience

Internet
Bookmarks
Google Maps™ for Mobile with Google Latitude™ and Street View*
Google Play™
Google™ search*
Google Voice™ Search*
Pan & zoom
Web browser (WebKit™)

Communication
Call list
Google Talk2™ application*
Facebook™ application*
Noise Suppression
Polyphonic ringtones
SIP
Xperia™ Timescape™
Speakerphone
Twitter™ (Timescape™ integration)*
Vibrating alert

Messaging
Conversations
Email
Gmail™*
Instant messaging
Predictive text input
Sound recorder
Text messaging (SMS)

Design
Auto rotate
Gesture input
Gyroscope
Keyboard (on-screen, 12 key)
Keyboard (on-screen, QWERTY)
Keyboard (on-screen, 50-character)
Reality Display with Sony Mobile BRAVIA® ENGINE
Screenshot capturing
Touch screen
Water resistant
Wallpaper

Entertainment
3D games
Digital TV (1 seg)
Accelerated Adobe Flash Video
Media browser
Motion gaming
PlayStation® Certified
Radio (FM radio with RDS)
Sony Entertainment Network*
TV launcher
Video streaming
YouTube™*

Organiser
Alarm clock
Airplane mode
Calculator
Contacts
Document readers
eCompass™
FeliCa
Google Calendar™*
Google Gallery 3D*
Infinite button
OfficeSuite Pro
Setup guide
Widget manager

Connectivity
3.5 mm audio jack (CTIA)
aGPS*
Bluetooth™ wireless technology
DLNA Certified®
GLONASS*
HDMI support
IrDA™
Media Transfer Protocol support
Micro USB support
Native USB tethering
PC Companion
Synchronisation via Microsoft®
Exchange ActiveSync®
USB mass storage
USB High speed 2.0 support
Wi-Fi®
Wi-Fi® Hotspot functionallity

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 v.1.0 Handsfree Profile v1.5 Headset Profile v1.1 Object Push Profile v1.1 Phonebook Access Profile v1.0 Serial Port Profile v1.1
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

www.bluetooth.com

IrDA

Supported standards	IrReady
Data transfer rate	IrDA SIR: up to 115.2 kbps
Maximum transfer data size	Up to 2 MB

	Data Communication
Sending of Data	**Comment**
Contacts (include MyProfile)	The phone has support for transfer of one or all contacts, including MyProfile. Contacts are transferred in vCard format.
Picture	The phone has support for transfer of single picture files. Supported format is according to Android standard. (vNote format is not supported.)
Movie	The phone has support for transfer of single movie files. Supported format is according to Android standard. (vNote format is not supported.)
Music	The phone has support for transfer of single music tracks. Supported format is according to Android standard. (vNote format is not supported.)
Reception of Data	**Comment**
All file formats can be received.	vCard(Contacts), vCalendar(Schedule), vNote(Picture/ Movie/Music/ToruCa) formats are supported. vMessage format is not supported. Files in non-supported formats are stored in internal memory.

FeliCa™

Mobile FeliCa Client	Ver 2.1.1
Card mode	Yes
R/W	Yes (Internal card / External card)
Ad-hoc	Yes
FALP	Yes

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 Wi-Fi Direct 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
Auto setup	WPS

DLNA Certified® (Digital Living Home Alliance)

Supported Device Classes	**M-DMS – Mobile Digital Media Server** 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. **+PU+** 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. **M-DMP – Mobile Digital Media Player** Media Types: image, video and music Summary: Play content stored on another device, for example, a server or a PC, directly on the phone.
Supported Bearers	Wi-Fi® Wi-Fi Direct
DRM Support	The Sony DLNA Certified® implementation does not support DRM-protected content.

NOTE*:* Only M-DMS/M-DMP/+PU+ for image is used for DLNA Certification.

Messaging

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

www.openmobilealliance.org

Positioning – location based services

Supported standards:

- OMA Secure User Plane Location (SUPL) v1.0

- 3GPP™ Control Plane location (incl. 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)

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)
	PIFF	PIFF (.isma)
Audio Recording	**Encoder format**	**Supported in file format**
	AMR-NB, AMR-WB	3GPP (.3gp)
	AAC-LC stereo, sample rate 48 kHz bit rate up tp 384 kbps	3GPP (.3gp, .3gpp) MP4 (.mp4, .m4a)
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 Bitmap mask support	PNG (.png)
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, Advanced Simple Profile Level 6	3GPP (.3gp), MP4 (.mp4)
	H.264 Baseline/Main/High Profile Level 4	3GPP (.3gp), MP4 (.mp4)
	H.263 Profile 0, Profile 3 Level 70	3GPP (.3gp)
	VP8	WebM (.webm)
	PIFF	PIFF (.ismv)

Video Recording	Encoder format	Supported in file format
	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 Marlin DRM PlayReady™

Digital TV (1seg)

Data Broadcating	Supported
Caption	Supported
Recording	Not supported
Viewing reservation	Not supported
Recording reservation	Not supported
G-Guide application	Supported

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

Google Sync™

Related information:

www.sonymobile.com/developer

Web browser

Browser version	Android 2.3 Browser (Based on WebKit)
Navigation/rendering	Adobe™ Flash™ 11 Full page PC rendering Landscape/portrait rendering Pan & Zoom
Search	Internet Search
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
Supported Device API	Geo-location API
Protocol compliancy	Gzip HTTP/1.1 OMA Download 1.0 TLS 1.0 and SSL 3.0

Related information:

www.sonymobile.com/developer

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