

**SONY**

# White paper

December 2018

Version 1.1

Xperia™ (TBD)

I3223

# Purpose of this document

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

## Document history

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4-12-3 Higashi-Shinagawa, Shinagawa-ku,  
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## Facts

<b>Operating system</b>	Android™ 9 (P)
<b>Processor</b>	Snapdragon 636, Kryo Gold x4 +Kryo Silver x4, 64-bit (1.8GHz x4 + 1.6 GHz x4)
<b>GPU</b>	Adreno 509
<b>Size</b>	167 x 73 x 8.3 mm
<b>Weight</b>	180 grams
<b>Available colours</b>	Black, Silver, Navy, Gold
<b>SIM card</b>	nanoSIM
<b>Main screen</b>	
Size (diagonal)	6.5 inches
Colours	16.7M
Resolution	FHD++ (2520x1080)
Pixel density	422ppi
Cover glass	Corning® Gorilla® Glass 5
Type of display	LTPS
Brightness	TYP 500 cd/m2
<b>Input mechanisms</b>	
Text input	On-screen QWERTY keyboard
Touch screen	Capacitive
Touch gesture	Up to 10 fingers
<b>Memory</b>	
RAM	4GB DDR4X
Flash memory	64GB
Internal storage for user *	48GB
Expansion slot **	microSD™ card, microSDHC, microSDXC
Max capacity of external slot	Up to 512GB
<b>Camera</b>	
<b>Main Camera</b>	
Effective pixels	12MP 8MP
Aperture	Main F 1.8 Sub F 2.4
Focus distance	12M: 100mm~Inf 8M: 500mm~Inf
Optical zoom	x2
OIS	No
Auto focus	Yes
Flash	Yes
ISO	12800
Video Recording	4K
<b>Front Camera</b>	
Effective pixels	8MP
Aperture	F2.0
Focus distance	8M: 400mm
Optical zoom	No
OIS	No
Auto focus	No
Flash	Yes (Display Flash)
ISO	3200
Video Recording	Full HD

<b>Sensors</b>	
Accelerometer	Yes
Ambient light sensor	Yes
Barometer sensor	No
eCompass™	Yes
Game rotation vector	No
Geomagnetic rotation vector	Yes
Gyroscope	No
Magnetometer	Yes
Step counter	Yes
Step detector	Yes
Significant motion detector	Yes
Proximity sensor	Yes
<b>Networks</b>	
I3223	UMTS HSPA+ 2100(Band 1), 1900(Band 2), 1700(Band 4), 850(Band 5), 900(Band 8) MHz GSM GPRS/EDGE 850, 900, 1800, 1900 MHz LTE (Bands 1,2,3, 4,5,7,8,12, 13,17,25,28,29,66,) Wi-Fi® 2.4 GHz/5 GHz
<b>Data transfer speeds</b>	
GSM GPRS	Up to 107 kbps
GSM EDGE	Up to 296 kbps
HSUPA (upload)	Category 6, Up to 5.76Mbps
HSDPA (download)	Category 24, Up to 42.2Mbps
LTE (4G) ***	DL: Up to 600 Mbps (Cat.12), UL: Up to 150Mbps (Cat.13)
<b>Battery performance</b>	
Talk time (GSM) ****	Up to 31 hrs
Standby time (GSM) ****	Up to 702 hrs
Talk time (UMTS) ****	Up to 25 hrs
Standby time (UMTS) ****	Up to 792 hrs
Talk time (LTE) ****	Up to 29 hrs
Standby time (LTE) ****	Up to 727hrs
Talk time (Wi-Fi) ****	Up to 24 hrs
MP3 Music Playback w/ headset ****	Up to 34 hrs
Full HD Video playback (H.264) ****	Up to 15 hrs
Battery (Embedded)	TYP 3000 mAh
Battery Cell Type	Li-Polymer
Wireless charging	No
Charge to other phone	Yes

\* Internal storage for user depends on the size of firmware, firmware update, preloaded contents and variant.

\*\* Flash memory performance is dependent on the application and task being performed on the device. If you would like to know about your memory card, refer to the technical specifications that came with the card.

\*\*\* This service is not available in all variants or markets.

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

NOTE: The battery performance may vary depending on network conditions and configurations, external environment and device usage.

NOTE: The performance metrics are all measured under laboratory conditions.

## Categorised feature list

<b>Call</b> Noise suppression	Yes	<b>Organiser</b> ActiveSync® Airplane mode	Yes Yes	<b>Hardware</b> Fingerprint sensor 3.5 mm audio jack (CTIA 4 pole) FM Radio	Yes Yes Yes
<b>Camera</b> Geo tagging Self-timer(Photo) Touch capture	Yes Yes Yes	<b>Text Input</b> Gesture input On-screen QWERTY keyboard SwiftKey™ Predictive text input	Yes Yes Yes Yes	<b>Connectivity</b> aGNSS Bluetooth® Core version HDCP Media Transfer Protocol NFC Quick Charger USB Power Delivery USB charging USB version USB Host Wi-Fi® Wi-Fi® Hotspot functionality Wi-Fi CERTIFIED Miracast™ Screen Mirroring Cast DLNA support DLNA version	Yes BT 5.0 Yes Yes Yes No Rev. 2.0 Ver. 1.3 Yes High speed 2.0 Yes Yes Yes No Yes Yes No N/A
		<b>Display</b> Screenshot capturing	Yes		

These services are not available in all markets.

# Technologies in detail

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The information presented in this section is a general overview of the technology incorporated into the product. However, hardware and software levels of compliance to standards and specifications vary between products and markets. For more information, contact the relevant Sony representative.

## Accessibility

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Hearing Aid Compatibility (HAC)*	Yes
Teletypewriter (TTY)**	Yes
Volume key shortcut	Yes
<b>Screen readers</b>	
Select-to-Speak	Yes
TalkBack	Yes
Text-to-speech output	Yes
<b>Display</b>	
Font size	Yes
Display size	Yes
Magnification	Yes
Colour correction	Yes
Colour inversion	Yes
Large mouse cursor	Yes
Remove animations	Yes
<b>Interaction controls</b>	
Accessibility Menu	Yes
Switch Access	Yes
Click after mouse pointer stops moving	Yes
Power button ends call	Yes
Auto-rotate screen	Yes
Touch & hold delay	Yes
Vibration	Yes
<b>Audio &amp; on-screen text</b>	
Mono audio	Yes
Captions	Yes
<b>Experimental</b>	
High-contrast text	Yes

**NOTE:** The information listed above contains Android features and they are subject to change in future releases of Google™ Android™.

\* Available in specific regions.

\*\* The TTY feature is for deaf or hearing-impaired users.

## Device-to-device communications (local)

### Bluetooth® wireless technology

Bluetooth® profiles supported	Advanced Audio Distribution Profile	v1.3
	Audio/Video Control Transport Protocol Profiles	v1.4
	Audio/Visual Distribution Profiles	v1.3
	Audio/Video Remote Control Profile	v1.6
	Bluetooth Network Encapsulation Protocol	v1.0
	Device ID Profile	v1.3
	Generic Access Profile	-
	General Audio/video Distribution Profile	v1.3
	Hands-Free Profile	v1.7
	Human Interface Device Profile	v1.0
	Headset Profile	v1.2
	Message Access Profile	v1.2
	Multi-Channel Adaptation Protocol	-
	Object Push Profile	v1.2
	Personal Area Networking Profile	v1.0
	PhoneBook Access Profile	v1.2
	RFCOMM with TS 07.10	v1.1
	Serial Port Profile	v1.2
	HID over GATT Profile	v1.0
Core version and supported core features	Version BT 5.0 Bluetooth Low Energy	
Other supported features	aptX®, aptX® HD, LDAC	

More information can be seen in following site (when officially announced):

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

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

## Wi-Fi®

Supported standards	IEEE802.11	a/b/g/n/ac
	MIMO	No
	Wi-Fi®	Yes
	Wi-Fi Direct®	Yes
	Wi-Fi Protected Setup™	No
	Wi-Fi CERTIFIED Passpoint™	Yes
Connectable devices	Wi-Fi CERTIFIED Miracast™	No
	Wi-Fi® compatible devices	Yes
	Wi-Fi® access points	Yes
Frequency band	Wi-Fi Direct® compatible devices	Yes
	2.4 GHz	Yes
	5 GHz	Yes
Data transfer rate		Up to 433.3 Mbps
Security	Open Authentication	Yes
	Shared Authentication	Yes
	WPA™ Personal and WPA2™ Personal	Yes
	WPA™ Enterprise and WPA2™ Enterprise / 802.1x	Yes
Authentication method	EAP-SIM	Yes
	EAP-AKA	Yes
	EAP-AKA'	Yes
	EAP-TLS	Yes
	EAP-TTLS/MSCHAPv2	Yes
	PEAPv0/EAP-MSCHAPv2	Yes
Encryption	PEAPv1/EAP-GTC	Yes
	WEP 64 bit	Yes
	WEP 128 bit	Yes
	TKIP	Yes
Power save	AES	Yes
	WMM®-UAPSD	Yes
QoS	WMM®, WMM® Power Save	Yes

# Messaging

## MMS (Multimedia Messaging Service)

According to OMA Multimedia Messaging Service v1.0 + SMIL

### Email

Character sets	BIG5 Traditional Chinese	Yes
	GB18030	Yes
	GB2312 Simplified Chinese	Yes
	ISO-2022-JP Japanese	Yes
	ISO-8859-1	Yes
	ISO-8859-2 Eastern Europe	Yes
	ISO-8859-5 Cyrillic	Yes
	ISO-8859-7 Greek	Yes
	ISO-8859-9 Turkish	Yes
	ISO 8859-11	Yes
	KOI8-R Cyrillic	Yes
	Shift_JIS Japanese	Yes
	USASCII	Yes
	UTF-16	Yes
	UTF-8	Yes
	Windows® 874	Yes
	Windows® 1251 Cyrillic	Yes
Windows® 1252	Yes	
Windows® 1254 Turkish	Yes	
Windows® 1258 Vietnamese	Yes	
Protocols	POP3 and IMAP4	Yes
Push email	Microsoft® Exchange ActiveSync® (EAS) IMAP4 IDLE (RFC2177)	Yes
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and STARTTLS	Yes
HTML mail		Yes (read only)

## Positioning – location based services

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Supported standards	OMA Secure User Plane Location (SUPL) version	2.0
	3GPP™ Control Plane location (incl. Emergency location)	Yes
Supported satellite systems	GPS	Yes
	GLONASS	Yes
	BeiDou*	No
	Galileo*	No
	QZSS*	No

**NOTE1:** When needed, the device automatically uses a combination of all available satellite system to accurately provide location information

\* BeiDou, Galileo and QZSS satellites are not used for providing location information in U.S. territory.

## 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>
	AAC-LC	MP4(.mp4), M4V(.m4v), 3GPP(.3gp, .3gpp), 3GPP2(.3g2, .3gpp2), MPEG-2 TS(.ts), ADTS(.aac), M4A(.m4a)
	AAC+	MP4(.mp4), 3GPP(.3gp, .3gpp), 3GPP2(.3g2, .3gpp2), MPEG-2 TS(.ts), ADTS(.aac)
	eAAC+	MP4(.mp4), 3GPP(.3gp, .3gpp), 3GPP2(.3g2, .3gpp2), MPEG-2 TS(.ts), ADTS(.aac)
	AAC-ELD	MP4(.mp4), 3GPP(.3gp, .3gpp), 3GPP2(.3g2, .3gpp2)
	ALAC	M4A(.m4a)
	AMR-NB	3GPP(.3gp, .3gpp), 3GPP2(.3g2, .3gpp2), AMR(.amr)
	AMR-WB	3GPP(.3gp, .3gpp), 3GPP2(.3g2, .3gpp2), AWB(.awb)
	DSD	DSF(.dsf), DSDIFF(.dff)
	FLAC	FLAC(.flac)
	MIDI	SMF(.mid, .midi, .smf), XMF(.xmf), Mobile XMF(.mxmf), RTTTL(.rtttl), RTX(.rtx), OTA(.ota), iMelody(.imy)
	MP3	AVI(.avi), MP3(.mp3)
	PCM	WAVE(.wav), AIFF(.aiff, .aif, .aifc)
	Opus	Matroska(.mkv), WebM(.webm), MatroskaAudio(.mka), Ogg(.ogg)
	Vorbis	Matroska(.mkv), WebM(.webm), MatroskaAudio(.mka), Ogg(.ogg)
WMA	Not supported	
<b>Audio Recording</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	AAC-LC	MP4(.mp4), ADTS(.aac)
	AAC+	MP4(.mp4)
	AAC-ELD	MP4(.mp4)
	AMR-NB	3GPP(.3gp), AMR(.amr)
	AMR-WB	3GPP(.3gp), AWB(.awb)
<b>Image Playback</b>	<b>Decoder format</b>	<b>Supported in file format</b>
	ARW	Not supported
	BMP	BMP(.bmp)
	CR2	Not supported
	DNG	Not supported
	GIF	GIF(.gif)
	JPEG	JPEG(.jpg, jpeg)
	NEF	Not supported
	NRW	Not supported
	ORF	Not supported
	PEF	Not supported
	PNG	PNG(.png)
	RAF	Not supported
	RW2	Not supported
	SRW	Not supported
	WBMP	WBMP(.wbmp)
	WebP	WebP(.webp)

<b>Image Capture</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	JPEG	JPEG (.jpg)
	PNG	PNG (.png)
	WebP	WebP (.webp)
<b>Video Playback</b>	<b>Decoder format</b>	<b>Supported in file format</b>
	MPEG-4 Video	MP4(.mp4), M4V(.m4v), 3GPP(.3gp, .3gpp), 3GPP2(.3g2, .3gpp2), AVI(.avi)
	H.263	MP4(.mp4), 3GPP(.3gp, .3gpp), 3GPP2(.3g2, .3gpp2)
	H.264	MP4(.mp4), M4V(.m4v), 3GPP(.3gp, .3gpp), 3GPP2(.3g2, .3gpp2), MPEG-2 TS(.ts), AVI(.avi), Matroska(.mkv)
	H.265	MP4(.mp4), Matroska(.mkv)
	VP8	Matroska(.mkv), WebM(.webm)
	VP9	Matroska(.mkv), WebM(.webm)
<b>Video Recording</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	MPEG-4 Video	MP4 (.mp4), 3GPP (.3gp)
	H.263	MP4 (.mp4), 3GPP (.3gp)
	H.264	MP4 (.mp4), 3GPP (.3gp)
	H.265	MP4 (.mp4)
	VP8	WebM (.webm)
<b>Audio/Video Streaming</b>	Streaming transport	HLS HTTP progressive streaming RTSP