SONY

White paper

April 2024   Version 3

Xperia (TBD)

XQ-EC54

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

November 2023	Version 1
March 2024	Version 2
April 2024	Version 3

Facts

Operating system		Android™ 14 (U)
Processor		Qualcomm SM8650, Prime core: 3.3GHz* (MAX), Gold APC2 3cores: 3.2 GHz (MAX), Gold 2 cores: 3.0GHz(MAX), Silver 2cores: 2.3 GHz (MAX) *Exact speed measured at 3.3024 GHz
GPU		Adreno
Size		162 x 74 x 8.2 mm
Weight		192 g
Available colors *[1]		Black / Platinum Silver / Khaki Green / Scarlet
SIM type		nanoSIM / eSIM
Main screen		
Size (diagonal)		6.5(6.46) inches, 19.5:9
Colors		16777216
10 bit tonal gradation		Yes (8 bit display with 2 bit software smoothing)
Resolution		FHD+ 1080x2340
Pixel density		398ppi
Cover glass		Corning® Gorilla® Glass Victus® 2
Type of display		OLED
Brightness		TYP 800nit (SDR / White Balance: Medium)
Input mechanisms		
Text input		On-screen QWERTY keyboard
Touch screen		Capacitive
Touch gesture		Up to 10 fingers
Memory		
RAM		12GB
Flash memory		UFS 256GB
Internal storage for user *[2]		231GB
Expansion slot *[3]		microSD™ card, microSDHC, microSDXC
Max capacity of external slot		Up to 1.5 TB
Camera		
Main Camera		
Main Camera(1)	Active pixel	52MP (Full aspect) / 48MP (Effective)
	Still image recording pixel	48MP
	Aperture	F1.9
	Focus distance	100mm
	OIS	Yes
	Auto focus	Yes(OctaPD)
Main Camera(2)	Active pixel	12MP
	Still image recording pixel	12MP
	Aperture	F2.3(85mm) F3.5(170mm)
	Focus distance	500mm
	OIS	Yes
	Auto focus	Yes(PDAF)
Main Camera(3)	Active pixel	12MP
	Still image recording pixel	12MP
	Aperture	F2.2
	Focus distance	100mm
	OIS	No
	Auto focus	Yes(DualPDAF)
Optical zoom		7.1x
Flash		Yes
ISO		12800
Video Recording		4K 24fps, 4K 30fps, 4K 60fps, 4K 120fps, 1080p 24fps, 1080p 30fps, 1080p 60fps, 1080p 120fps, 720p 24fps, 720p 30fps, 720p 60fps, 720p 120fps
Front Camera		
Active pixels		12MP
Aperture		F2.0
Focus distance		380mm
Optical zoom		No
OIS		No
Auto focus		No
Flash		Yes (Display Flash)
ISO		3200
Video Recording		4K 24fps, 4K 30fps, 4K 60fps, 1080p 24fps, 1080p 30fps, 1080p 60fps, 720p 24fps, 720p 30fps, 720p 60fps

Sensors	
Accelerometer	Yes
Ambient light sensor	Yes
Barometer sensor	Yes
eCompass™	Yes
Game rotation vector	Yes
Geomagnetic rotation vector	Yes
Gyroscope	Yes
Magnetometer	Yes
Step counter	Yes
Step detector	Yes
Significant motion detector	Yes
Proximity sensor	Yes
Networks	
2G *4	850, 900, 1800, 1900
3G *4	2100(Band1), 1900(Band2), 1700(Band4), 850(Band5), 800(Band6), 900(Band8), 800(Band19)
LTE *4	1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 19, 20, 25, 26, 28, 29, 32, 34, 38, 39, 40, 41, 46, 66
5G(Sub6) *4	[NSA] n1, n3, n5, n7, n8, n20, n28, n38, n40, n41, n75, n77, n78 [SA] n1, n3, n7, n8, n20, n28, n38, n40, n75, n77, n78
5G(mmW) *4	No
Data transfer speeds	
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
Peak *4	DL: Up to 5.3Gbps UL: Up to 352Mbps * Theoretical value * Actual Throughput depends on NW
Connectivity	
HDMI micro port (type-D) Input	No
Battery performance	
Talk time (GSM) *5	Up to 1310 minutes
Standby time (GSM) *5	Up to 650 hours
Talk time (UMTS) *5	Up to 1500 minutes
Standby time (UMTS) *5	Up to 750 hours
Standby time (LTE) *5	Up to 660 hours
MP3 Music Playback w/ headset *5	Up to 133hours
Full HD Video playback (H.264) *5	Up to 2080 minutes
Battery (Embedded)	TYP 5000mAh
Battery Cell Type	Li-polymer
Wireless charging	Yes(Qi)
Charge to other phone	Yes

*1 Color handling plan is depending on each area/operator.

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

*3 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.

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

*5 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

Call		Organiser		Hardware	
Noise suppression	Yes	ActiveSync®	Yes	Fingerprint sensor	Yes (Side, Combined with Power button)
		Airplane mode	Yes	3.5 mm audio jack (CTIA 4 pole)	Yes
				FM Radio	No
Camera		**Text Input**		**Connectivity**	
Geo tagging	Yes	Gesture input	Yes	aGNSS	Yes
Self-timer(Photo)	Yes	On-screen QWERTY keyboard	Yes	Bluetooth® Core version	5.4
Touch capture	No	Predictive text input	Yes	HDCP	No
				Media Transfer Protocol	Yes
		Display		NFC	Yes
				Quick Charger	No
		Screenshot capturing	Yes	USB Power Delivery	Rev. 3.0 Ver. 2.0
				USB charging	Yes
				USB version	SuperSpeed USB 5Gbps (USB 3.2)
				USB Host	Yes
				Wi-Fi®	Yes
				Wi-Fi® Hotspot functionality	Yes
				Wi-Fi CERTIFIED Miracast™	No
				Screen Mirroring	Yes
				Cast	Yes
				DLNA support	No
				DLNA version	No

These services are not available in all markets.

Technologies in detail

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

Hearing Aid Compatibility (HAC) [*1]	Yes
Teletypewriter (TTY) [*2]	Yes
SERVICES	
Live Transcribe	Yes
Sound notifications	Yes
SCREEN READERS	
Select to Speak	Yes
TalkBack	Yes
Text-to-speech output	Yes
DISPLAY	
Font size	Yes
Display size	Yes
Bold text	Yes
Dark theme	Yes
Magnification	Yes
Color correction	Yes
Color inversion	Yes
Large mouse pointer	Yes
Extra dim	Yes
Remove animations	Yes
INTERACTION CONTROLS	
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
Time to take action (Accessibility timeout)	Yes
Vibration & haptic strength	Yes
System navigation	Yes
One-handed mode	Yes
AUDIO & ON-SCREEN TEXT	
Audio description	Yes
Camera flash notification	Yes
Screen flash notification	Yes
Mono audio	Yes
Audio balance	Yes
Caption preferences	Yes
EXPERIMENTAL	
High contrast text	Yes
Accessibility button	Yes
Shortcut from lock screen	Yes

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

[*1] Available in specific regions.

[*2] The TTY feature is for deaf or hearing-impaired users.

Device-to-device communications (local)

Bluetooth® wireless technology

Bluetooth® profiles supported	A2DP (Advanced Audio Distribution Profile)	Yes(v1.3)
	AVRCP (Audio/Video Remote Control Profile)	Yes(v1.6)
	DID (Device ID Profile)	Yes(v1.3)
	HFP (Hands-Free Profile)	Yes(v1.8)
	HID (Human Interface Device Profile)	Yes(v1.0)
	HSP (Headset Profile)	Yes(v1.2)
	MAP (Message Access Profile)	Yes(v1.4)
	OPP (Object Push Profile)	Yes(v1.2)
	PAN (Personal Area Networking Profile)	Yes(v1.0)
	PBAP (Phone Book Access Profile)	Yes(v1.2)
	SPP (Serial Port Profile)	Yes(v1.2)
	HOGP (HID over GATT Profile)	Yes(v1.0)
	TMAP (Telephony and Media Audio Profile)	Yes(v1.0)
	HAP (Hearing Access Profile)	No
	PBP (Public Broadcast Profile)	Yes(v1.0)
	GMAP (Gaming Audio Profile)	No
Core version and supported core features	Version 5.4 Bluetooth® Low Energy Bluetooth® LE Audio	
Other supported features	aptX™, aptX™ HD, aptX™ Adaptive, LDAC™	

More information can be seen in following site (when officially announced):
www.sony.net/
www.bluetooth.com

* Email access of Bluetooth MAP doesn't work

Wi-Fi®

Supported standards	IEEE802.11	a/b/g/n/ac/ax
	MIMO	Yes, 2x2
	Wi-Fi®	Yes
	Wi-Fi Direct®	Yes
Frequency band *	2.4 GHz	Yes
	5 GHz	Yes
	6 GHz	Yes
Data transfer rate		Up to 2402Mbps
Security	Open Authentication	Yes
	WEP	Yes
	WPA™-Personal, WPA2™-Personal and WPA3™-Personal	Yes
	WPA™-Enterprise, WPA2™-Enterprise and WPA3™-Enterprise / 802.1x	Yes
	Wi-Fi Enhanced Open™	Yes
Authentication method	EAP-SIM	Yes
	EAP-AKA	Yes
	EAP-AKA'	Yes
	EAP-TLS	Yes
	EAP-TTLS	Yes
	PEAP	Yes
	EAP-PWD	Yes
Encryption	WEP 64 bit	Yes
	WEP 128 bit	Yes
	TKIP	Yes
	AES	Yes
	CNSA	Yes
QoS	WMM®, WMM®-Power Save (including Unschedule auto PS)	Yes

* This service is not available in all markets.

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)	The email app delivered is Gmail. Gmail supports Microsoft® Exchange ActiveSync® (EAS). The support for IMAP4 IDLE (RFC2177) is partial. It is supported for Gmail accounts, but not for other accounts.
Secure email	SSL/TLS, both port methods (POPS/IMAPS) and STARTTLS	Yes
HTML mail		Yes (read only)

Positioning – location based services

Supported standards	OMA Secure User Plane Location (SUPL) version	2.0.0
	3GPP™ Control Plane location (incl. Emergency location)	Yes
Supported satellite systems	GPS	Yes
	GLONASS	Yes
	BeiDou*	Yes
	Galileo	Yes
	QZSS*	Yes

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

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

Provisioning (OMA CP)

OMA CP version 1.1

Multimedia (audio, image and video)

Audio Playback	Decoder format	Supported in file format
	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	N/A
	AMR-NB	3GPP(.3gp, .3gpp), 3GPP2(.3g2, .3gpp2), AMR(.amr)
	AMR-WB	3GPP(.3gp, .3gpp), 3GPP2(.3g2, .3gpp2), AWB(.awb)
	DSD	N/A
	FLAC	FLAC(.flac)
	MIDI	SMF(.mid, .midi, .smf), XMF(.xmf), Mobile XMF(.mxmf), RTTTL(.rtttl), RTX(.rtx), iMelody(.imy)
	MP3	MP3(.mp3)
	PCM	WAVE(.wav)
	Opus	Matroska(.mkv), WebM(.webm), MatroskaAudio(.mka), Ogg(.ogg, .oga)
	Vorbis	Matroska(.mkv), WebM(.webm), MatroskaAudio(.mka), Ogg(.ogg, .oga)
	WMA	N/A
	Dolby Atmos	MP4(.mp4), M4A(.m4a)
	Dolby AC-4	MP4(.mp4), M4A(.m4a)
	360 Reality Audio Music Format	MP4(.mp4), M4A(.m4a)
Audio Recording	Encoder format	Supported in file format
	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)
Image Playback	Decoder format	Supported in file format
	ARW	ARW(.arw)
	AVIF	AVIF(.avif)
	BMP	BMP(.bmp)
	CR2	CR2(.cr2)
	DNG	DNG(.dng)
	GIF	GIF(.gif)
	JPEG	JPEG(.jpg, jpeg)
	NEF	NEF(.nef)
	NRW	NRW(.nrw)
	ORF	ORF(.orf)
	PEF	PEF(.pef)
	PNG	PNG(.png)
	RAF	RAF(.raf)
	RW2	RW2(.rw2)
	SRW	SRW(.srw)
	WBMP	WBMP(.wbmp)
	WebP	WebP(.webp)
	HEIF	HEIF(.heic, .heif)

Image Capture	Encoder format	Supported in file format
	JPEG	JPEG (.jpg)
	PNG	PNG (.png)
	WebP	WebP (.webp)
	HEIF	HEIF(.heic)
Video Playback	Decoder format	Supported in file format
	MPEG-4 Video	MP4(.mp4), M4V(.m4v), 3GPP(.3gp, .3gpp), 3GPP2(.3g2, .3gpp2)
	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), Matroska(.mkv)
	H.265	MP4(.mp4), Matroska(.mkv)
	AV1	WebM(.webm)
	VP8	Matroska(.mkv), WebM(.webm)
	VP9	Matroska(.mkv), WebM(.webm)
Video Recording	Encoder format	Supported in file format
	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)
	VP9	WebM (.webm)
Audio/Video Streaming	Streaming transport	HLS HTTP progressive streaming RTSP