

# SONY®

## White paper

June 2015



## Xperia™ Z3 Tablet Compact

SGP621/SGP641

Note: Screen images are simulated.

# 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		
September 2014	First released version	Version 1
February 2015	Second released version	Version 2
June 2015	Third released version	Version 3

## Sony Mobile Developer World

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

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# Product overview

## Xperia™ Z3 Tablet Compact

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- Ultra slim, ultra light and waterproof IP65 and IP68\*
- 8-inch Full HD display
- Fast leading processor
- Long-lasting battery

### Greater than its size

Meet the tablet that re-defines lightness, and re-imagines power. Years of Sony engineering have gone into creating a tablet where might isn't held back by measurements.

### The lightest waterproof tablet

The Xperia™ Z3 Tablet Compact is more than a design marvel. It's a feat of engineering. The most advanced Sony technologies were used to create a super-powerful tablet that's 6.4 mm and weighs in at just 270 grams. Crafted from the highest quality materials, with clean lines and a uniquely designed power button, the Xperia™ Z3 Tablet Compact captures Sony's exquisite attention to detail. Stainless steel corners, an ultra slim frame and a tempered glass front give an elegant and durable finish. The result is an ultra-portable tablet that weighs virtually nothing in your hand.

Sony's passion for perfection takes the design of this compact tablet even further – adding market-leading waterproofing to beauty. The IP 65/68 rating means preventing water or dust getting in the way of performance. Take your Xperia™ Z3 Tablet Compact poolside, find your way in the rain, and keep scrolling your recipe next to the kitchen sink. And other compact tablets are officially blown out of the water.

### Best-in-class speed and stamina

The Xperia™ Z3 Tablet Compact brings you the greatest Sony entertainment, backed up by the latest advancements in performance and speed. Running on LTE, it features an ultra-fast Qualcomm® Snapdragon™ 801 Quad-core processor. Every interaction is super fluid, browsing is lightning-quick, and multi-tasking is so easy. And since the asynchronous processor makes sure that each core is powered independently, you get the precise amount of power when you need it, without wasting power when you don't.

The Xperia™ Z3 Tablet Compact uses the latest Adreno 330 GPU, delivering fast graphics and the most realistic mobile 3D gaming, so you'll be more absorbed than ever in your games.

*\* In compliance with IP65 and IP68 standards, the Xperia™ Z3 Tablet Compact is protected against the ingress of dust and water. Provided that all ports and covers are firmly closed, the phone is (i) protected against low pressure jets of water from all practicable directions in compliance with IP65; and/or (ii) can be kept under 1.50 metres of freshwater for up to 30 minutes in compliance with IP68. The phone is not designed to float or work submerged underwater outside the IP65 or IP68 classification range, and such use may lead to your warranty being void. To find out more, go to [www.sonymobile.com/testresults](http://www.sonymobile.com/testresults).*

## **Entertainment**

Whether you're playing a game or watching a movie, your entertainment is enhanced with the latest Sony TV technologies. Combining with Sony's TRILUMINOS™ Display for mobile technology with X-Reality for mobile and intuitive contrast enhancement, the 8-inch display is sharp and vivid, even in bright sunlight.

Sony's rich audio expertise also comes through in every beat heard through the Xperia™ Z3 Tablet Compact. Discover the difference of Hi-Res audio, and hear every track like you're right there in the recording studio. The Xperia™ Z3 Tablet Compact's DSEE HX™ technology upscales low-res songs to near High-Resolution quality, and the front speakers play everything loud and crystal clear. With Sony's Digital Noise Cancelling (DNC) technology, exterior noise can be reduced when paired with a DNC headset.

## Facts – dimensions, weight, performance and networks

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<b>Operating system</b>	Google™ Android™ 4.4 (KitKat)
<b>Processor</b>	Qualcomm Snapdragon 801 Quad-core with 2.5 GHz
<b>GPU</b>	Adreno 330
<b>Size</b>	213.4 x 123.6 x 6.4 mm
<b>Weight</b>	270 grams
<b>Available colours</b>	SGP621 Black, White
	SGP641 Black, White
<b>SIM card</b>	nano SIM
<b>Main screen</b>	
Colours	16,777,216 colour TFT
Resolution	WUXGA 1920x1200 pixels
Size (diagonal)	8.0 inches
Scratch-resistant	Chemical tempered glass + Anti-fingerprint coating
<b>Input mechanisms</b>	
Text input	On-screen QWERTY keyboard
Touch screen	Capacitive
Touch gesture	Yes – multi-touch, up to 10 fingers supported
<b>Memory</b>	
RAM	3 GB
Flash memory	Up to 16 GB*
Expansion slot	microSD™ card, up to 128 GB (SDXC supported)
<b>Camera</b>	
Camera resolution	8.1 MP
Digital zoom	8x
Video recording	Yes – HD 1080p
Front Camera	Yes – HD 1080p for video chat and 2.2 MP for camera capture
<b>Sensors</b>	
Accelerometer	Yes
Ambient light sensor	Yes

Barometer	Yes
Magnetometer	Yes
Gyroscope	Yes
<b>Networks</b>	
SGP621	UMTS HSPA+ 850 (Band V), 900 (Band VIII), 1700 (Band IV), 1900 (Band II), 2100 (Band I) MHz GSM GPRS/EDGE 850, 900, 1800, 1900 MHz LTE Band I, Band II, Band III, Band IV, Band V, Band VII, Band VIII, Band XIII, Band XVII Band XX
SGP641	UMTS HSPA+ 850 (Band V), 900 (Band VIII), 1900 (Band II), 2100 (Band I) MHz GSM GPRS/EDGE 850, 900, 1800, 1900 MHz LTE Band I, Band III, Band V, Band VII, Band VIII, Band XXVIII TD-LTE Band XL
<b>Data transfer speeds</b>	
GSM GPRS	Up to 107 kbps
GSM EDGE	Up to 296 kbps
HSUPA (upload)	Cat 6, up to 5.8 Mbps
HSDPA (download)	Cat 24, up to 42 Mbps
LTE (upload)	Cat 4, up to 50 Mbps
LTE (download)	Cat 4, up to 150 Mbps
<b>Talk time (GSM)</b>	Up to 19 hours**
<b>Standby time (GSM)</b>	Up to 1100 hours**
<b>Talk time (UMTS)</b>	Up to 23 hours**
<b>Standby time (UMTS)</b>	Up to 1300 hours**
<b>Standby time (LTE)</b>	Up to 1100 hours**
<b>Music listening time</b>	Up to 170 hours**
<b>Video playback time</b>	Up to 15 hours**
<b>Battery (Embedded)</b>	4500 mAh minimum

\* Memory comprises approximately 5 GB of firmware, plus 11 GB of “Internal storage” for music, pictures and movies, and downloaded applications and their data. For more details about memory, see “Memory in Android™ devices” on page 19.

\*\* 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 device usage.

**NOTE:** Performance metrics measured under laboratory conditions.

## Categorised feature list

 <p><b>Camera</b></p> <ul style="list-style-type: none"> <li>8.1 MP camera with Sony Exmor RS™ for mobile image sensor</li> <li>8x digital zoom</li> <li>AR Effect</li> <li>AR Fun</li> <li>Auto focus</li> <li>Burst mode</li> <li>Creative Effect</li> <li>HDR for photos and movies</li> <li>Face detection</li> <li>Face in</li> <li>Front-facing camera (2.2 MP 1080p) with Sony Exmor R™ for mobile image sensor</li> <li>Geotagging</li> <li>HD video recording (1080p)</li> <li>Image stabiliser</li> <li>Live on YouTube™</li> <li>Multi-camera</li> <li>Object tracking</li> <li>Quick Launch</li> <li>Red-eye reduction</li> <li>Scene recognition</li> <li>Self-timer</li> <li>Send to web</li> <li>Sequential video recording</li> <li>Smile Shutter™</li> <li>Social live*</li> <li>Sound Photo</li> <li>SteadyShot™</li> <li>Superior Auto</li> <li>Sweep Panorama</li> <li>Timeshift burst</li> <li>Touch capture</li> <li>Touch focus</li> <li>White balance</li> </ul>	 <p><b>Music</b></p> <ul style="list-style-type: none"> <li>3D Surround Sound (VPT)</li> <li>Album art</li> <li>Bluetooth® stereo (aptX®, A2DP)</li> <li>ClearAudio+</li> <li>Clear Bass™</li> <li>Clear Phase™</li> <li>DSEE HX™***</li> <li>Dynamic normaliser</li> <li>High-Res audio (LPCM, FLAC, ALAC, DSD)</li> <li>Low power audio playback***</li> <li>Music tones (MP3/AAC)</li> <li>PlayNow™ service*</li> <li>S-Force Front Surround</li> <li>SensMe™</li> <li>Stereo speakers</li> <li>TrackID™ music recognition*</li> <li>Walkman® application</li> <li>xLOUD™ Experience</li> </ul>	 <p><b>Internet</b></p> <ul style="list-style-type: none"> <li>Bookmarks</li> <li>Google Chrome™*</li> <li>Google Play™*</li> <li>Google™ search*</li> <li>Google Voice™ Search*</li> <li>Google Maps™ for Mobile with Street view*</li> <li>Info-eye™*</li> <li>Play Books</li> <li>Play movies &amp; TV</li> <li>Play Games</li> <li>Sony Select</li> <li>Xperia™ Home</li> <li>Xperia™ Lounge</li> <li>Web browser (WebKit™)*</li> <li>What's New</li> </ul>
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 <p><b>Communication</b></p> <ul style="list-style-type: none"> <li>Answering machine*</li> <li>Call list</li> <li>Facebook™ application*</li> <li>Google+*</li> <li>Hangouts™*</li> <li>Noise suppression</li> <li>Polyphonic ringtones</li> <li>Speakerphone</li> <li>Slow talk</li> <li>Talk equaliser</li> <li>Twitter™ application*</li> <li>Voice enhancement</li> <li>Xperia™ Socialife*</li> </ul>	 <p><b>Messaging</b></p> <ul style="list-style-type: none"> <li>Email</li> <li>Google Mail™*</li> <li>Handwriting recognition</li> <li>Multimedia messaging (MMS)</li> <li>Predictive text input</li> <li>Sound recorder</li> <li>Text messaging (SMS)</li> </ul>	 <p><b>Design/Other features</b></p> <ul style="list-style-type: none"> <li>Auto rotation</li> <li>Battery STAMINA mode</li> <li>Bluetooth® unlock</li> <li>Direct touch</li> <li>Face Unlock</li> <li>Gesture input</li> <li>IPX5 and IPX8 (waterproof)**</li> <li>IP6X (Dust tight)</li> <li>On-screen QWERTY keyboard</li> <li>Screenshot capturing</li> <li>Screen video recording</li> <li>Small Apps</li> <li>Smart screen rotation</li> <li>Smart backlight control</li> <li>Super-vivid mode</li> <li>Throw</li> <li>X-Reality™ for mobile picture engine</li> <li>Touch screen</li> <li>TRILUMINOS™ Display for mobile</li> <li>Voice input</li> <li>Wallpaper</li> </ul>
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 <p><b>Entertainment</b>          Google Wallet™*          Lifelog application          Media browser          Motion gaming          Movie creator          PlayMemories          Radio (FM radio with RDS*)          Reader mode*          SensMe™ slideshow          Sony Entertainment Network*          TV launcher          Video streaming          YouTube™*</p>	 <p><b>Organiser</b>          Airplane mode          Alarm clock          Calculator          Calendar          Contacts          Document readers/editors          eCompass™          Setup guide          Sketch          Stopwatch          Timer</p>	 <p><b>Connectivity</b>          3.5 mm audio jack Digital Noise-Cancelling (DNC)          ANT+™ sport, fitness, health support          aGPS*          BeiDou          Bluetooth® 4.0 wireless technology          Cast screen          Charging Dock Connector          DLNA Certified®          GLONASS          HDCP          MHL 3.0 support + 5-pin support          Media Go™          Media Transfer Protocol support          Micro USB support          Native USB tethering          NFC          PC Companion          Screen mirroring          Smart Connect          Synchronisation via Facebook™          Synchronisation via Google™*          Synchronisation via SyncML™          Synchronisation via Exchange          ActiveSync®          USB charging          USB High speed 2.0 support          USB Host          Wi-Fi®          Wi-Fi® Hotspot functionality          Xperia Link™          Wi-Fi CERTIFIED Miracast™</p>
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\* This service is not available in all markets.

\*\* In compliance with IP65 and IP68 standards, the Xperia™ Z3 Tablet Compact is protected against the ingress of dust and water. Provided that all ports and covers are firmly closed, the phone is (i) protected against low pressure jets of water from all practicable directions in compliance with IP65; and/or (ii) can be kept under 1.50 metres of freshwater for up to 30 minutes in compliance with IP68. The phone is not designed to float or work submerged underwater outside the IP65 or IP68 classification range, and such use may lead to your warranty being void. To find out more, go to [www.sonymobile.com/testresults](http://www.sonymobile.com/testresults).

\*\*\* This feature is only available when you play music using the Walkman® application.

# 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.

## Accessibility and Usability

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<b>Accessibility and Usability</b>	
Talkback*	Yes
Captions*	Yes
Magnifications gestures*	Yes
Large Text*	Yes
High Contrast Text*	No
Power button ends call*	Yes
Auto-rotation*	Yes
Speak Passwords*	Yes
Accessibility Shortcuts*	Yes
Text – to – Speech*	Yes
Touch and hold delay*	Yes
Color Inversion*	No
Color correction*	No

\* Android Lollipop feature. Subject to possible change in future releases of Google™ Android™.

## Device-to-device communications (local)

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### ANT+™ wireless technology

Connectable devices	ANT+™ devices require the download of a supporting application
Frequency band	2.4 GHz
Data transfer rate	Up to 60 Kbps
Encryption	AES-128
Topologies	One to Many, Many to One, Peer to Peer, Star, Practical Mesh

### Bluetooth® wireless technology

Bluetooth® profiles supported	Advanced Audio Distribution Profile v1.2 Audio/Video Remote Control Profile v1.3 Device Identification Profile v1.3 Generic Attribute Profile Client/Server over LE Handsfree Profile v1.6 (Wide band speech) Headset Profile v1.2 Health Device Profile v1.1 HID over GATT Profile v1.0 Human Interface Device Profile, Host role v1.1 Messaging Access Profile v1.0 Object Push Profile v1.1 Personal Area Networking Users v1.0 Phonebook Access Profile v1.1 Serial Port Profile v1.1
Core version and supported core features	Version 4.0 Bluetooth Low Energy
Other supported features	aptX® CD quality audio streaming over Bluetooth® connection
Connectable devices	Products support at least one of the Bluetooth® profiles listed above. Bluetooth® 4.0 accessories generally require installation of a supporting application.

More information:

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

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

**Wi-Fi®**

Supported standards	IEEE 802.11a/b/g/n/ac MIMO and Wi-Fi® Wi-Fi Direct™, Wi-Fi Protected Setup (STA and AP modes), Wi-Fi CERTIFIED Miracast™, Wi-Fi CERTIFIED ac™, Wi-Fi CERTIFIED Passpoint™
Connectable devices	Wi-Fi® access points Wi-Fi Direct compatible devices
Frequency band	2.4 GHz / 5 GHz
Data transfer rate	Up to 867 Mbit/s
Security	WEP Open Authentication WEP Shared Authentication WPA Personal and WPA2 Personal WPA Enterprise and WPA2 Enterprise EAP-SIM EAP-AKA EAP-TLS EAP-TTLS/MSCHAPv2 PEAPv0/EAP-MSCHAPv2 PEAPv1/EAP-GTC
Encryption	WEP 64 bit, WEP 128 bit, TKIP and CCMP (AES)
Power save	WMM-PS
QoS	WMM

## DLNA Certified® (Digital Living Network Alliance)

Supported Device Classes	<p><b>M-DMS – Mobile Digital Media Server</b> Media Types: images, music and video Summary: The digital media server exposes the media files in your device to a Wi-Fi® network. The files can then be accessed from other DLNA Certified™ clients.</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 your device.</p> <p><b>M-DMC – Mobile Digital Media Controller</b> Media Types: image, video and music Summary: A remote controller that locates media files and plays them on your device.</p> <p><b>+PU+</b> Media Types: image, video and music Summary: Play media in your device on another device, such as a TV or a PC using 2 box push technology. +PU+ is integrated in the Album, Movies and Walkman® applications.</p> <p><b>+DN+</b> Media Types: image, video and music Summary: Download content stored on another device, for example, a server or a PC, and play the downloaded content directly on your device.</p>
Supported Bearers	Wi-Fi® Wi-Fi Direct™
DRM Support	The DLNA Certified® implementation does not support DRM-protected content.

## 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, LTE, Wi-Fi®
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) IMAP4 Idle
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

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Supported standards:

- OMA Secure User Plane Location (SUPL) v1.0 & v2.0
- 3GPP™ Control Plane location
- Qualcomm® GPSOneXtra™

Supported satellite systems:

- GPS
- GLONASS
- BeiDou

**NOTE:** GPS, GLONASS and BeiDou are used together to calculate the position. Positioning is available at more locations and more *accurate if all three systems are used. The benefits of using GLONASS and BeiDou are automatically available for all applications using the positioning APIs.*

## 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 (AAC-LC, AAC+, eAAC+, AAC-ELD)	3GPP (.3gp, 3gpp), MP4 (.mp4, .m4a), ADTS (.aac)
	ALAC	MP4 (.m4a)
	AMR-NB, AMR-WB	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4a), AMR (.amr, .awb)
	DSD	DSF (.dsf), DSDIFF (.dff)
	FLAC	FLAC (.flac), Matroska (.mka)
	MIDI	SMF (.mid), XMF (.xmf), Mobile XMF (.mxmf), OTA (.ota), RTTTL (.rtttl), RTX (.rtx), iMelody (.imy)
	MP3	MP3 (.mp3)
	PCM	WAV (.wav)
	Vorbis	OGG (.ogg), Matroska (.mkv)
	WMA	ASF (.wma)
<b>Audio Recording</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	AAC (AAC-LC, AAC+, AAC-ELD)	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4a)
	AMR (AMR-NB, AMR-WB)	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4a), AMR (.amr)
<b>Image Playback</b>	<b>Decoder format</b>	<b>Supported in file format</b>
	BMP	BMP (.bmp)
	GIF	GIF (.gif)
	JPEG	JPEG (.jpg, .jpeg)
	PNG	PNG (.png)
	WebP	WebP (.webp)
	Windows bitmap	BMP (.bmp)
<b>Image Capture</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	JPEG	JPEG (.jpg)

<b>Video Playback</b>	<b>Decoder format</b>	<b>Supported in file format</b>
	MPEG-4	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4v) Matroska (.mkv), AVI (.avi), Xvid (.xvid)
	H.263	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4v)
	H.264	3GPP (.3gp, .3gpp), MP4 (.mp4, .m4v), Matroska (.mkv)
	H.265*	MP4 (.mp4, .m4v)
	VP8	WebM (.webm), Matroska (.mkv)
	VP9	WebM (.webm)
<b>Video Recording</b>	<b>Encoder format</b>	<b>Supported in file format</b>
	MPEG-4	3GPP (.3gp), MP4 (.mp4)
	H.263	3GPP (.3gp), MP4 (.mp4)
	H.264	3GPP (.3gp), MP4 (.mp4)
<b>Audio/Video Streaming</b>	Streaming transport	HLS HTTP progressive streaming MPEG-DASH RTSP
<b>DRM</b>	DRM (Digital Rights Management) – features the rights and copy protection of downloaded content	OMA DRM v1.0 Marlin DRM Widevine Level 1 PlayReady DRM (available in specific regions)

\* H.265 is not available in all markets.

## **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

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**

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Google Chrome™ for Android™ is pre-installed in markets/regions where no restrictions apply.

Related information:

*<https://play.google.com/store/apps/details?id=com.android.chrome>*

## Memory in Android™ devices

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To use Android devices efficiently, users should be aware of the different types of device memory. This knowledge is important in order to understand, for example, where music, photos and videos are saved; how many apps can be downloaded from Google Play™; and how photos can be copied to a PC.

The below information is also of interest to developers who want to optimise their programs to make the best possible use of the resources in the device.

Generally, all Android devices share the same basic memory setup. What differs is how much memory is available to you via the different types of memory, and whether your device uses an external SD card or an internal memory chip. Any information specific to the particular device model described in this White Paper is noted as such.

### Types of memory

The types of memory described and numbered below are consistent with the terminology used in Sony mobile device menus and in other content relating to 2014 Xperia™ devices:

1. **Dynamic Memory** (also known as RAM) is used by applications that run when the device is turned on. The amount of Dynamic Memory influences how many applications and operating system services can run at the same time. The Android operating system automatically closes applications and services that are not being used.

However, such automatic functionality has limits. For example, if a lower amount of free RAM is available to applications after a new release of the operating system (due to increased capabilities in the system), device speed will eventually be impacted. This is the main reason that a device cannot be indefinitely upgraded to newer releases of Android™.

If you experience problems with RAM, for example, if the device runs slower than usual or if the Home application restarts frequently when you leave an application, you should minimise the use of apps that run all the time. Such apps could include, for example, applications that frequently download social networking service updates. You could also consider using a static wallpaper instead of a live wallpaper.

To see which apps and services are currently active, go to **Settings > Apps > Running**. You should have at least 50 MB, and ideally 100 MB or more, of free RAM to avoid slowdowns and application restarts.

You should also be aware that if you update the device to a later Android release, the load on the built-in Dynamic Memory will increase due to the addition of more features, as mentioned above. As a result, the device may run slower after an update.

The Xperia™ Z3 Tablet Compact has about 3 GB of RAM available to the Android OS and applications, of which about 200 MB is already used out of the box.

2. **System Memory** (also known as “System partition” or “/system”) is used for the Android OS and for most applications that are pre-loaded from the factory. This type of memory is normally locked, and can only be changed through a firmware upgrade. There is usually some free space available in this section of memory. However, since it is locked, you cannot save apps, photos or any other content to this memory. System Memory is reserved for future firmware upgrades, which almost always need more memory than the original firmware. You cannot see or influence the use of this memory.
3. **Internal Storage** is memory used as “working” memory. It can be compared to the C: drive on a PC or to the startup disk on a Mac.

This type of memory is used to store all application downloaded from the Google Play™ Store (and other sources) as well as their settings and data (such as emails, messages and calendar events, for example). All applications have an allocated area which no other applications can access and where the application data can be stored.

Some game applications also store content such as game music and game level information outside their own designated area. In most cases, an application can choose to save its data in a location of its own choosing (outside the protected application settings area). Generally, such content is not deleted when an application is uninstalled; it must be removed manually by connecting the device to a computer with a USB cable, or by using a file manager application.

Internal Storage is also used for all user content added, for example, as a result of the user taking photos with the camera, downloading media files, and performing file transfers. Typical user content includes:

- photos
- movies
- music
- downloaded documents (as email attachments, for example)

Internal Storage will tend to fill up as a result of normal usage. Examples of such usage are the saving of data by applications; the downloading and installation of new applications; the downloading of free or paid content; and the shooting of pictures and movies. Therefore, the larger this memory is from the start, the more applications you can download and use, and the more pictures and movies you can shoot.

If the Internal Storage starts to get full, the device slows down, and in some cases it might no longer be possible to install more apps. You should always ensure that you have at least 100 MB of free Internal Storage. If not, you should consider removing some apps that you seldom use, or move content that you do not frequently access to safe storage.

You can see approximately how much Internal Storage is free in **Settings > Storage > DEVICE MEMORY**. You can also view more detail about how much memory is used by applications under **Settings > Apps**. In the Xperia™ Z3 Tablet Compact, about 11 GB of Internal Storage is available out of the box.

Please note that in Sony Mobile 2014 products, “Internal Storage” is now the combination of what was previously known as “Device Memory” or “Phone Memory” (for applications and their data – also previously known as “/data”) and “Internal Storage” (for user’s content – also previously known as “/sdcard”). The reason for this change is to make the use of available memory more flexible, and also to enable the optional encryption of user’s content.

### Memory card slot

In some products you may find both a large internal memory and a memory card reader slot. However, on the current Android platform, the card reader slot does not work in the same manner in a device with a large internal memory as it does in a device with ONLY a memory card slot.

Generally, since most applications expect only a single location for storage, such applications will not generally allow you to SAVE anything to the memory card (i.e., they do not offer the option to choose a storage location). However, some applications (for instance, the Sony Mobile “Camera” application) may actually allow you to do so. Other applications, for example, backup applications such as the Sony Mobile “Memory” application, will by definition be configured to copy content from the Internal Storage to the external SD card.

On the other hand, when it comes to reading from an external SD Card, you will be able to access content (for example, videos, photos and music) on a memory card inserted in this slot without any special consideration since the Android system searches all available memory for content. Therefore, such products may be regarded as supporting a fourth type of memory, called “External Card” or “SD Card”.

4. **SD Card** (known as “/ext\_card” from a programmer’s point of view, or by other names in other Android products) is the name for the removable SD memory card in all 2014 Sony Mobile products. As described above, this External Card memory is generally more limited in that any application can read from it, but many applications cannot save to this card. Only a few applications, including backup applications and file manger applications, have the capability to save to this card.

#### **Backing up data to different memory types**

Generally, you should not save photos, videos and other personal content solely on the internal memory of a device. If something should happen with the hardware, or if the device is lost or stolen, the data stored on the device’s internal memory is gone forever.

In a device where an SD card reader is the main memory, it is relatively easy to take the card out and copy all content to a PC or Mac, or to an entertainment device with a memory card slot. In a product featuring Internal Storage as the main memory, it is not possible to physically remove the memory. Instead, any critical or high-value content must either be copied to an external SD card by a special backup application, transferred to remote storage over a network (mobile or Wi-Fi), or to a computer via a USB cable.

To facilitate the transfer of data via a cable, the Xperia™ Z3 Tablet Compact supports the Microsoft standard, Media Transfer Protocol (MTP), which makes it possible to easily transfer content back and forth between your device and a Windows PC. For Apple Mac computers, a special application called Sony™ Bridge for Mac is available with built-in support for MTP. This application can be downloaded from the relevant Xperia™ Z3 Tablet Compact Support page.

Note that you do not need to back up or make a copy of applications that you have downloaded from the Google Play™ Store. They can normally be downloaded again after you have set up your Google account to work in a new device (or in a device where the memory has been completely erased).

#### **Note 1:**

As noted above, some Android devices, including Sony Mobile devices from 2012 and Sony Ericsson devices from 2011 and earlier, do not use a single “Internal Storage” for both applications (and their data) and user content. Instead, these devices use either an external SD card for user content, or a corresponding area of internal memory to reproduce the functionality of an SD card. In such devices, there is a fixed limit between the application area (“/data”) and the user content area (“/sdcard”), with the result that user content can build up and reach this limit. The consequence of such a limit being reached, for example, for the camera application, would be that no new pictures could be taken even if there was still a considerable amount of free space in the application area (or in the user content area). In such an instance, the download and installation of new applications would also not be possible, even if there was enough free memory in the content area.

#### **Note 2:**

Some devices with integrated storage have abandoned the distinction between the application area and the content area when it comes to a Factory Data Reset. As a result, there is no option in such devices to perform a Factory Data Reset and preserve content. In such devices, all content is mandatorily and completely deleted from the device when a reset is performed.

In contrast, Sony Mobile’s memory integration solution makes it possible to preserve user content in this situation. Therefore, when performing a Factory Data Reset, the default action will still be to only remove applications and their data, and an option box must be checked if all content is to be removed as well (as might be desirable when selling the device second-hand, for instance).

**Note 3:**

For a developer, it is important to note that from a programming point of view the location names used to refer to the different memory areas described in Note 1 are still valid, i.e., the area used for applications (“/data”) is still present, as is the area used for content (“/sdcard”).

In reality, “sdcard” is a so-called “symbolic link” to “/data/media”. However, from inside an Android application, “/sdcard” can still be used. For example, you can use “sdcard/DCIM/100Android” to find all camera images. The continued use of “/sdcard” to access the content area ensures compatibility across different products and Android releases in this regard.

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