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ANDROID ADVISOR

ISSUE 41

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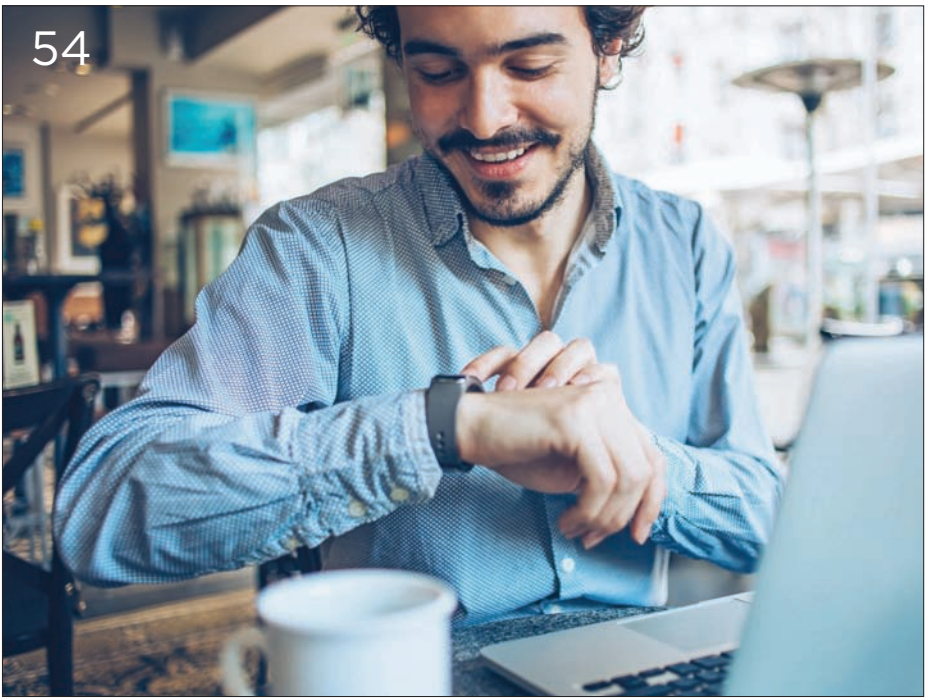

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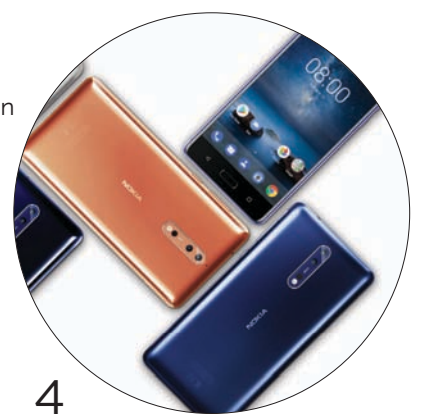

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NEWS

Credit: Nokia

First look: Nokia 8

Nokia unveils its latest handset. MARIE BLACK reports

Nokia has confirmed its Nokia 8, pitched squarely at content creators with 360-degree spatial Ozo Audio recording, three premium Carl Zeiss cameras, and a new 'Bothie' photography mode that lets you capture the entire picture from both the front and rear cameras.

Release date

It's due to go on sale in September.

Price

The Finnish firm has so far only confirmed the Europe pricing, which will be €599. We'd expect to pay around £549 in the UK.

New features

Carl Zeiss cameras

Front and rear cameras are Carl Zeiss branded, with a dual 13Mp camera at the rear that has one colour lens and one mono. There's also a 13Mp selfie camera on the front, and all three have an f/2.0 aperture.

Dual-Sight

Nokia talks about 'Bothie' photos, which are created by combining snaps from the front and rear cameras to get the whole picture. Meanwhile Dual-Sight allows you to stream photos and video over live services.

Credit: Nokia

Ozo Audio

Ozo Audio captures 360-degree audio thanks to three mics and the company's own acoustic algorithms. This sound can then be enjoyed in high-fidelity even on devices that don't support Ozo.

Operating system

Nokia offers a virtually pure Android experience. While the phone currently runs Android Nougat, it will be one of the first to receive Android O.

NEWS

Specifications

- 5.3in Quad-HD (2560x1440 pixels) IPS display with 700 nits brightness and Gorilla Glass 5
- Android 7.1.1 Nougat
- Qualcomm Snapdragon 835 processor
- 4GB RAM
- 64GB storage plus microSD support up to 256GB
- Dual 13Mp rear cameras (one colour, one mono), f/2.0, 1.12µm, OIS, Laser autofocus, dual-LED flash
- 13Mp selfie camera, f/2.0
- IP54 splashproof
- 3,090mAh battery with Quick Charge
- 802.11a/b/g/n/ac Wi-Fi
- Bluetooth 5.0
- NFC
- Fingerprint scanner
- USB-C
- 3.5mm headphone jack
- 151.5x73.7x7.9mm
- 160g
- Available in Polished Blue, Polished Copper, Tempered Blue and Steel

Credit: Nokia

BEST BUY LAPTOPS, TABLETS, WEARABLES

TechAdvisor

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FULL REVIEW

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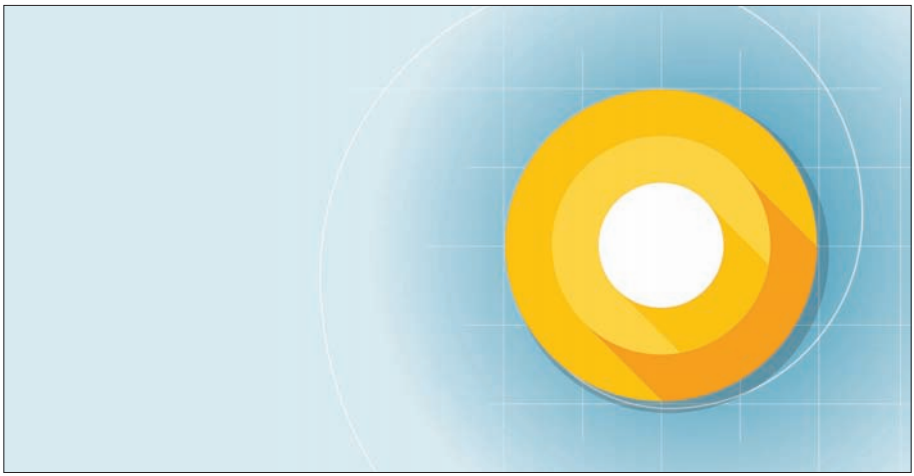


Credit: Google

Android O team hold Reddit AMA session

Google's engineering team answered Android fans questions at the firm's annual Reddit AMA, writes MICHAEL SIMON

1. Dark mode isn't coming, so stop asking

Google teased us with dark mode on both the Android N and O developer previews, but it's not making it into the full release anytime soon. The reason? "Reliable and consistent theming is hard."

Numerous questions about themes and dark mode stacked up on the Reddit board, and Android engineer Alan Viverette addressed it thusly: "There are technical and logistical issues with theming. The technical side is largely solved in O with Runtime Resource Overlay

support (a Sony framework that allows the system to modify the look and feel of an app while it is running); however, we still don't have stable APIs for describing what can be themed or adequate ways to verify that existing applications properly support theming."

Instead Viverette thinks it's more of a per-app issue: "We have seen many apps adopt standalone dark mode, which I think is a clear message that users want this feature and developers are willing to put in the effort to support it."

2. Desktop mode might be coming... someday

Samsung's DeX dock for the Galaxy S8 has us all dreaming of a desktop version of Android. It's not going to arrive in Android O, but there's hope. Dianne Hackborn's response to a question about 'laptop mode' for Android left the door open: "We don't have any plans to announce at this point. Window management improvements is an areas we are still very interested in and will continue to work on in the future."

3. Lock-screen quick replies are gone for good

Early on in the Android N beta, Google allowed super-quick lock screen replies that let you respond to messages without entering a PIN or passcode. That feature was removed before the general release and now we know why: security.

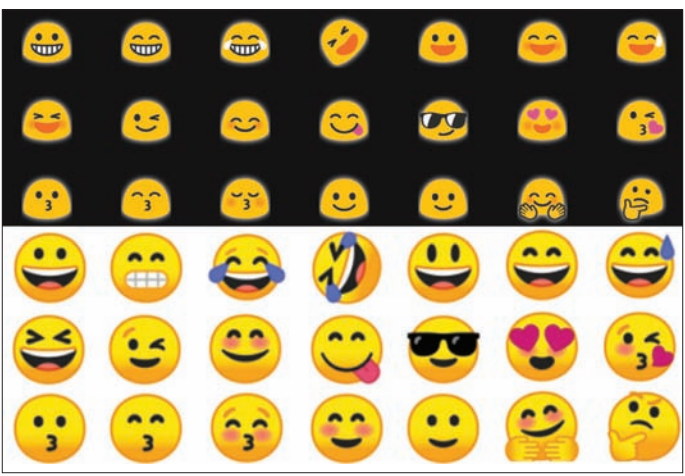
And that means it's not coming back. Selim Cinek writes: "Direct reply on the lock screen is still present

in Android O. For security reasons, we are requesting the user to enter their password when doing so. We tried to find a balance between security and usability, since a lot of users are not aware of the security implications when unconditionally allowing a user to reply from the lock screen."

4. No blobs equals better emoji

Google is killing off the blob emoji in Android O. While it held something of a funeral for them during July's World Emoji Day, we never learned why the squishy gumdrops were being retired. Now we know (and it's not because of their looks).

Apparently, the blob was holding back the expansion of Android emoji: "Over the last few years Unicode has expanded the range of emoji



Credit: IDG

Google's long-standing blob emoji (top) will be replaced by more cartoonish ones in Android O (bottom)

considerably and created new categories of emoji," Google explained. "In parallel new messaging use cases have emerged (i.e. larger emoji used as stickers). The current design system did not lend itself well to supporting the expanding emoji set and these new use cases, so we needed a significant visual refresh." With this change, new emoji should arrive more quickly.

5. Bluetooth audio will be much improved

Pixel users have experienced more than a few issues with Bluetooth audio under Android N. While the improvements have yet to hit the Android O beta, rest assured, Android O's engineers have been working to rectify them. As Tim Murray explains, "We could see cases where random scheduler delay would cause BT audio artifacts, so we tried working our way through the entire BT pipeline to figure out exactly what guarantees were needed where to ensure that audio quality was perfect."

What that means to all of us: Bluetooth audio will be much improved in Android O. "Our testing shows that BT audio reliability is drastically better versus N because of these changes," Murray says. "We're happy with how it's turned out, and we hope you see the same kind of improvements."

6. Wide colour gamut won't be available on current Pixel

Among the many features in Android O is support for colour profiles, letting you customize your display with AdobeRGB, Pro Photo RGB, and DCI-P3 standards usually reserved for professional photographers and

video editors. However, current Pixel owners will be bummed to learn their phone won't be supported.

"It's a device-specific feature that requires calibration of the display on the factory floor," Romain Guy explains. "It's thus optional and cannot really be retro-fitted on older devices (it would also have a potentially negative impact for users as the displayed colours would appear to have changed)."

7. Tablets aren't dead

It's been a while since Google paid much attention to Android tablets. Engineer Mike Cleron wants us all to know the platform isn't dead, but it sounds like

Credit: Google

The dream of a new Pixel tablet is still alive

it's going to be a while before there's anything to talk about. "We are continuing to invest in productivity use cases (keyboard-driven UI, multi-window, and so on) but also – along with lots of other folks in the industry – working on what the next evolution of tablets should be. For Android, there are some interesting overlaps with tablets given the increasing success of Chromebooks and the recent addition of the ability to run Android apps on Chrome OS. We are working to make the Android developer stories for both form factors (tablets, Chromebooks) identical."

8. The name is still under wraps

The name of the next Android release is always as exciting as the release itself, but the Android O engineers refused to spill the beans: "There are so many snacks to choose from... you'll just have to wait for the unveiling later this summer."

But a few of the engineers gave their own ideas on what they wanted the name be. So at least we know what it won't be called:

Mike Cleron: Okra Pudding
Alan Viverette: Oak Tree Cookie
Selim Cinek: Android On to P
Anwar: Ovaltine
Benjamin Poiesz: Android Oobleck

REVIEW

Credit: Xiaomi

Xiaomi Mi Max 2

£216 inc VAT from fave.co/2gZ7OnD ★★★★☆

Xiaomi recently updated its giant 6.44in-screen Mi Max with a second version that offers even more battery capacity, more storage, more memory and an improved camera.

Price

Xiaomi phones aren't officially sold in the UK, so you won't find them through any high-street mobile operators. However, they're easy to get hold of via Chinese importers such as GearBest, which supplies

all our Xiaomi phones for review. The only thing is you'll need to buy them upfront and pair them with a SIM-only deal, but prices are good.

GearBest lists two versions of the Mi Max 2: one with 64GB (£216) storage and the other 128GB (£299 from fave.co/2gZeguy). Both are international models, which means they support Google Play out of the box and are easy to get on with for UK users with none of the Chinese-language apps and notifications you often see on Xiaomi phones. We're reviewing the 64GB model in gold here, though there is also a black version available elsewhere.

Shipping is free (unless you opt for an express service), but you should factor into your budget import duty – you may be contacted before the phone is delivered and asked to pay 20 percent of the value on the shipping paperwork, plus an administration fee of around £11.

Before you dive in with the purchase, O2, Giffgaff, Sky Mobile and Tesco Mobile customers should note that they will not be able to receive 4G LTE connectivity on the Mi Max 2. That's because it does not support the 800MHz band (Band 20), which is the only frequency on which those operators offer LTE. If 3G isn't fast enough for your needs you will need to connect to Wi-Fi or look elsewhere.

New features

The original Mi Max featured a hexa-core Qualcomm Snapdragon 650 processor with 3GB of RAM, 32GB of storage and a 4,850mAh battery. These core specs have been updated, so now you get the octa-core

Snapdragon 625 with 4GB of RAM, 64GB (or 128GB) of storage and a 5,300mAh battery that can now be charged significantly faster using Quick Charge 3.0.

Performance is lower, but efficiency is improved and the Mi Max 2 is much less likely to overheat. As it stands you'll easily get two days of use from the Mi Max 2, but some users could get a lot longer.

Potentially more interesting for consumers is the fact the Mi Max 2 also features some upgrades in the camera department. Whereas previously the Max featured a 16Mp (f/2.0) camera at the rear, the Mi Max 2 now has a 12Mp camera. (It has the same 5Mp selfie camera as its predecessor.)

The primary camera might sound like a downgrade, but in fact it uses the same Sony IMX386 image sensor as the flagship Xiaomi Mi 6. It's not quite the same camera setup, since the Mi 6 also has a secondary telephoto lens, but in Xiaomi's flagship it does a fine job. The Mi 6 does a grand job of producing sharp, well-exposed images that are very detailed in good light. In low-light it manages to retain detail yet also do a good job of keeping noise at bay. All in all that's a good sign for the Mi Max 2.

Design

With a massive 6.44in screen and a giant 5,300mAh battery, the Mi Max is one of the largest phones we've ever reviewed. It is a perfect fit for those who admire the larger screens of tablets for consuming media, but don't feel they need a second mobile device.

Xiaomi has done its best to prevent it from becoming unwieldy, and the chassis is just 7.6mm

thick. It's a flat slab with rounded corners and slim bezels to the left and right – the screen-to-body ratio is just under 75 percent. There's also 2.5D curved glass atop the display, and all these things combined can give the impression of a smaller phone than what you're actually seeing.

There are the usual software tweaks to make one-handed use possible too, with a special mode that lets you shrink down the display size to 4.5-, 4- or 3.5in.

The metal unibody design has been enhanced so that no longer do you see separate panels top and bottom on the rear, but a truly one-piece body. There are new antenna lines top and bottom, but these are virtually unnoticeable thanks to the way they border the extreme edges of the phone.

Credit: Xiaomi

REVIEW

Also gone are the chamfered edges, and the new Mi Max 2 displays much smoother, more rounded curves. It's ever so slightly larger, now measuring 174.1x88.7x7.6mm and tipping the scales at 211g.

The new camera now lies flush to the rear of the phone, with its dual-tone flash sitting to the left rather than the right. There's also a new USB-C charging port on the bottom, with the original Mi Max specifying Micro-USB.

You still get a series of drilled-out holes that allow sound to escape from a speaker on the right, but now there are just six holes on each side of the USB port rather than the previous eight.

In all other respects you could be forgiven for mistaking this Xiaomi for the original Mi Max. You see the same black border running the circumference of the screen, which remains a 6.44in full-HD IPS panel with realistic colours and strong viewing angles. Brightness is pretty good, given the price, and we measured a maximum 430cd/m^2.

You might think stretching so few pixels (many of today's flagship phones are smaller but with Quad-HD resolutions) over such a large area would result in a terribly fuzzy, pixellated appearance, but actually the Mi Max 2 is very sharp, and with a 342-pixel density every bit as good as the iPhone in this regard.

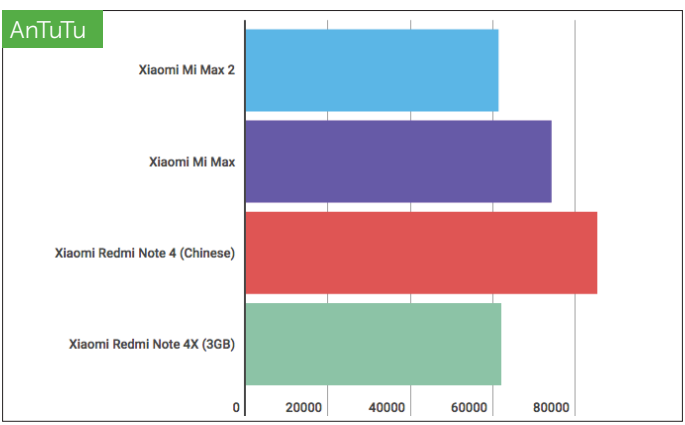
The build quality is, again, difficult to fault. It feels very sturdy and the Gorilla Glass 4 screen protection is another comfort, knowing this phone is more likely to end up falling out of your hands than most. A rear fingerprint scanner is in a useful position and works well. And we like the fact Xiaomi has retained

the IR blaster at the top, since these are becoming increasingly rare.

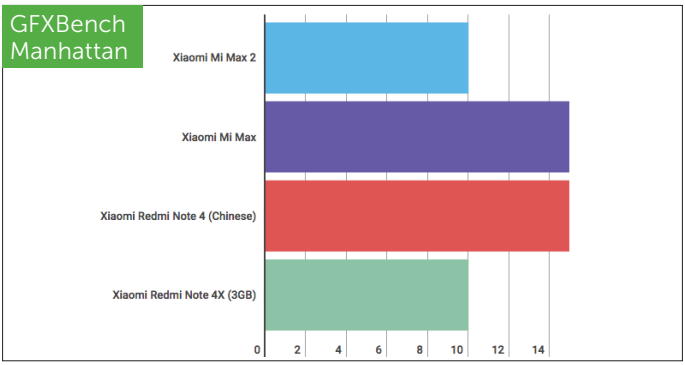
Performance

As we touched on earlier, the Mi Max 2 features upgrades in the processor, memory, RAM and battery departments. Obviously these things are all welcome – the bumped up storage, for example, makes it much more likely that you'll be able to get away without inserting a microSD card and thereby losing the phone's dual-SIM functionality (it has a hybrid slot).

Our benchmarks don't exactly tally with those of the Mi Max, since the applications have all been updated in the year that has passed in between their respective launches, but it's fairly evident that the Mi Max 2 is not as fast as the original Mi Max. Rather, it's on par with the Redmi Note 4 and Note 4X, which use the same processor. (Unfortunately you'll need to take our word for that, given that we tested the Chinese version of the Note 4 and the 3GB RAM Note 4X.)



REVIEW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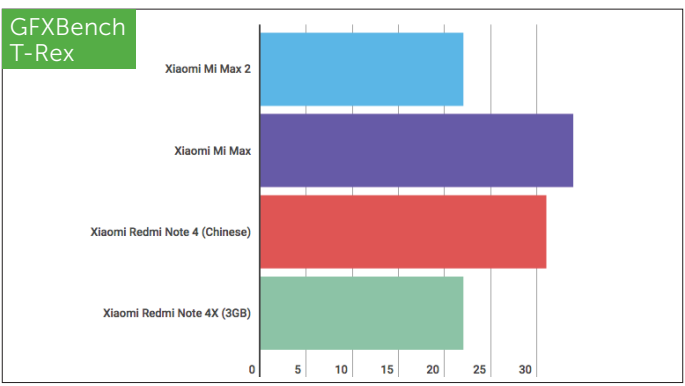
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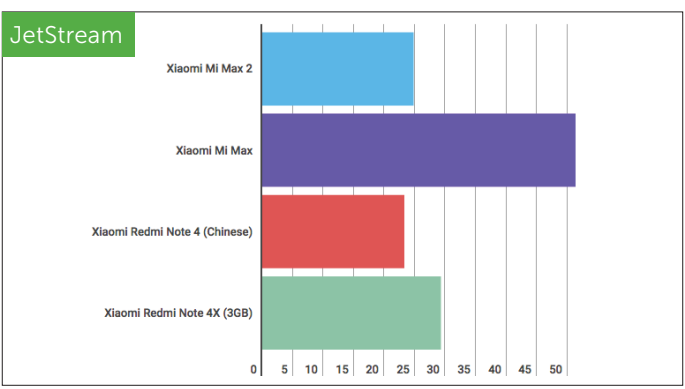
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Of course we're only talking about synthetic benchmarks here, and it's real-world performance that matters most. With an extra couple of cores (now up to eight) the Xiaomi Mi Max 2 can handle multitasking, and so is capable of doing several things at once. We didn't notice any lag in our testing, and think few users will be left feeling frustrated by performance.

So why is it slower in our benchmarks? Consider that the Mi Max ran a hexa-core processor with four Cortex-A53 cores clocked at 1.4GHz and two Cortex-A72 cores clocked at 1.8GHz. In this setup the four A53s are tuned for efficiency, and the A72s for performance. Now consider that the Mi Max 2 has more cores in the octa-core Snapdragon 625, each of which are clocked faster at 2GHz. Sounds ideal, except all eight of these cores are A53s and not A72s.

As a result performance may be slower in benchmarks but efficiency is much greater, and in the real world that should prove victorious. The Mi Max could last most users two days; the Mi Max 2 can do this and more, and light users may be able to achieve significantly longer from the device.

We're also happy to see Quick Charge 3.0 support, especially given the now higher-capacity battery that would otherwise take much longer to charge. Xiaomi says you'll now get up to 68 percent in an hour.

Cameras

We noted earlier that the Mi Max 2 now has the same Sony IMX386 camera sensor as the flagship Mi 6, though not in quite the same setup since this phone lacks the secondary lens. We took a variety of shots

REVIEW

Auto settings

on the Mi Max 2, and were largely impressed with its photography skills.

First up is a shot of St. Pancras International Renaissance Hotel, with automatic settings and then with HDR engaged. We were really pleased with the accuracy of colours on these shots, although to be fair everything tends to look better in the sun. The clouds were rendered perfectly, and nothing about the image caused us any particular concern.

A lot of detail was retained, right up to the extreme edges of the image, and though it's not quite possible to make out the characters on the road sign when captured from our seventh-floor roof terrace, sharpness on the whole is very good.

With HDR engaged the Mi Max 2 does a better job of dealing with highlights and shadows, though not as obviously as some cameras.

Next we tried a low-light shot (see overleaf), and admired how much detail and colour accuracy the Mi Max 2 managed to retain without suffering from too much noise. This is not the best representation of this scene we have seen, but most of the colours are accurate and the text on the bottle remains readable. Some detail is lost in the shadows on the digger truck, but a good effort.

The 5Mp selfie camera is acceptable but nothing special. The beauty mode has three settings: smart, pro or off. Pro mode offers a slider for 'Slim' and

REVIEW

Low-light shot

another for 'Skin', though we didn't think either made much difference. We do like the fact the real-time filters are available for the selfie camera as well as the main camera, though. There's also a GroupShot option here that will take multiple images so you can choose the best one.

Software

Out of the box our Mi Max 2 runs MIUI 8.5, which is a customized version of Android 7.1.1 Nougat. It is the international version of the phone, so Google Play is preinstalled. You can pretty much pick it up and start using it as you would any other Android phone, though you might notice a handful of differences.

The most obvious of these is the lack of an app tray, with everything laid out on the home screen in an iPhone-esque fashion. You'll also see some changes in the Settings menu, so take full advantage of the Search bar at the top to find what you're looking for (it works well).

Some new features new to MIUI 8 include Dual apps, which in essence lets you run two instances of one app (this might come in handy if you make use of the dual-SIM functionality, for example), and

in a similar vein you can also set up a second space on the phone – it's almost like having two phones. There's a Child mode, too.

You can individually lock any app on the phone, should you rather not lock the phone itself or you want a second layer of security, and you can tweak various things such as the theme and which side of the home button your back and multitasking options sit. You can make use of a Quick ball, which places on screen a shortcut to options such as screenshot and lock, and there's the one-handed mode we mentioned earlier. It will likely come in handy on a phone of this size.

Verdict

It might not be as fast as the original Mi Max, but performance isn't the main reason you'll be buying the Xiaomi Mi Max 2. Crossing the boundary between phone and tablet, the gigantic 6.44in screen will leave those of you who like your phones big all hot under the collar. With more storage, an improved camera and longer battery life, the Mi Max 2 is a no-brainer of an upgrade. **Marie Black**

Specifications

- 6.44in full-HD (1920x1080) IPS display with Gorilla Glass 4
- MIUI 8.0 OS
- 2GHz Qualcomm Snapdragon 625 octa-core processor
- 650MHz Adreno 506 GPU
- 4GB RAM

REVIEW

- 64/128GB storage, microSD support up to 128GB or dual-SIM dual-standby functionality
- Dual-band 802.11a/b/g/n/ac Wi-Fi
- Bluetooth 4.2
- GPS, GLONASS
- NFC
- IR port
- USB-C
- 12Mp Sony IMX386, f/2.2 rear camera
- 5Mp f/2.0 selfie camera
- Rear fingerprint scanner
- 3.5mm headphone jack
- Stereo speakers
- 5,300mAh battery with Quick Charge 3.0
- 174.1x88.7x7.6mm
- 211g

Credit: Xiaomi

REVIEW

Credit: Motorola

Moto Z2 Play

£379 inc VAT from fave.co/2vbN1lM ★★★★☆

The Moto Z2 Play is the mid-range smartphone you've been waiting for: it's sleek, sexy and offers a range of Moto Mods that extend the functionality of the smartphone. But is it enough to tempt users away from the likes of the flagship-killing OnePlus 5? We've spent some time with the Moto Z2 Play, and here's what we think.

REVIEW

Design

As we mention above this is a stunning device. Crafted from brushed aluminium, the Moto Z2 Play looks more like a high-end smartphone rather than a mid-range handset, and feels great in the hand too. From the chamfers around the edge of the display to the slight curvature at the edges to make it more comfortable to hold, every design element has been carefully considered.

It has an impressively sleek form factor, measuring in at a rather impressive 156.2x76.2x6mm and weighing a lightweight 145g. It's even more impressive when you consider it houses a 5.5in display. Take the 5.5in iPhone 7 Plus, for example: while it's almost double the price of the Moto Z2 Play, the phone is both thicker at 7.3mm and heavier at 188g. This, however, comes at a price, as the battery is smaller than that included in 2016's Moto Z Play. While a slim smartphone is great, we'd prefer an extra few hours of battery life instead of a saving of a few millimetres.

On the left side of the phone, you'll find two pill-shaped volume buttons alongside the power button. Our main issue with this is that it becomes easy to mistake the power button for the volume button and vice versa – as we have done on several occasions while using the smartphone. Lenovo tries to alleviate the issue by adding texture to the power button, making it easier to feel the difference between it and the volume button, but we don't feel it's enough.

Admittedly, the rear-facing camera isn't flush with the rest of the body – in fact, without the removable back plate attached the camera sticks out pretty

far. It's not a huge issue as many of the Moto Mods available (which we come to below) will fully engulf that camera bump, but it's worth pointing out to potential users.

The Moto Z2 Play has a solid-state touch-sensitive Home button similar to that used on Huawei's flagship, the Huawei P10, with a built-in fingerprint scanner. While the idea of using the Home button for multiple functions (Home, Back, Multitasking menu and Power) seems like a good idea, we couldn't get used to the functionality – we'd accidentally access the multitasking menu instead of going back, and we'd end up locking the smartphone when trying to go back to the Home screen. It can become frustrating, but Lenovo offers the ability to switch to the standard Android on-screen controls for those that can't get used to it.

Credit: Motorola

The phone has a USB-C port at the bottom of the smartphone, alongside a 3.5mm headphone jack – another design benefit compared to the iPhone 7 Plus. In terms of colour options, it's available in three shades: Lunar Gray, Fine Gold and Nimbus Blue.

The Z2 Play, like 2016's Z Play, is splash- and dust resistant, but Lenovo doesn't provide anything in the way of an IP rating so we're not sure how resistant the smartphone is.

If you remove the magnetic back plate of the Moto Z2 Play, you'll notice

a connection strip that runs along the lower-rear of the smartphone. This allows Moto Mods to be used, extending the functionality of the phone depending on what you want to use it for.

Moto Z2 Play: Moto Mods

Moto Mods extend the functionality of the Z2 Play depending on what you use the handset for. It's a smart idea on Lenovo's behalf: make the smartphone mid-range and save on the base cost, then offer bespoke upgrades for the camera, battery, speaker and more, depending on what is required by the user.

They are incredibly easy to install and use too – thanks to embedded magnets within the Z2 Play, you simply remove the default back plate and replace it with one of the Moto Mods. It should snap into place and be automatically recognized by the phone with no need to pair. Some may require you to download an additional app to get the most out of the Mod, but beyond the first time setup, it's a breeze.

The complete range of Moto Mods available for the Moto Z2 Play includes:

- Moto Insta-Share Projector (£249 from fave.co/2wlAFWx)
- Moto Style Shell with Wireless Charging (£TBC)
- Moto TurboPower Pack (£TBC)
- JBL SoundBoost 2 (£TBC)
- JBL SoundBoost (£69 from fave.co/2vbXUE3)
- Hasselblad True Zoom (£199 from fave.co/2vbvutZ)
- Moto Style Shell (£16 from fave.co/2vbYQZ5
- Moto Gamepad (£TBC)

REVIEW

Credit: JBL

JBL SoundBoost

- Incipio offGRID Power Pack (£59 from fave.co/2wmhFY4)

Display

The Z2 Play has a crisp 5.5in Super AMOLED display with a Full HD (1920 x 1080) resolution. That equates to roughly 401ppi – not bad for a mid-range smartphone – and a 70.1 percent screen-to-body ratio. The use of Super AMOLED rather than IPS LCD provides a brighter, more vivid image and is the same display tech used by flagship smartphones like the Samsung Galaxy S8.

Moving beyond the specification, it's a decent display. It's bright enough to be used outside in sunlight and displays colours beautifully without the over-saturation seen on other smartphones. It's also protected by Corning's Gorilla Glass 3 and while it isn't shatterproof like the Moto Z2 Force, it should protect against scratches and low-level impacts.

REVIEW

Hardware

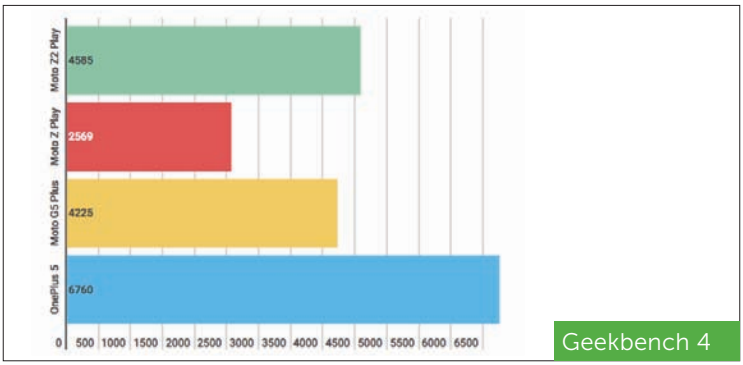
Inside there's an octa-core 2.2GHz Qualcomm Snapdragon 626. The amount of RAM that is included depends on the storage capacity you opt for; you'll get 3GB of RAM with the 32GB variant, while the 64GB variant will get 4GB of RAM. For reference, we've been using (and have benchmarked) the higher tier Moto Z2 Play with 4GB of RAM. The storage is also expandable by up to 256GB thanks to the microSD card slot.

Alongside the Snapdragon 626, you'll find an Adreno 506 GPU. It's a decent mid-range GPU designed to work with the Snapdragon 626, and is found on similarly priced smartphones including the Moto G5 Plus and Redmi Note 4. It won't compete with flagship smartphones, but it should provide decent performance for the price.

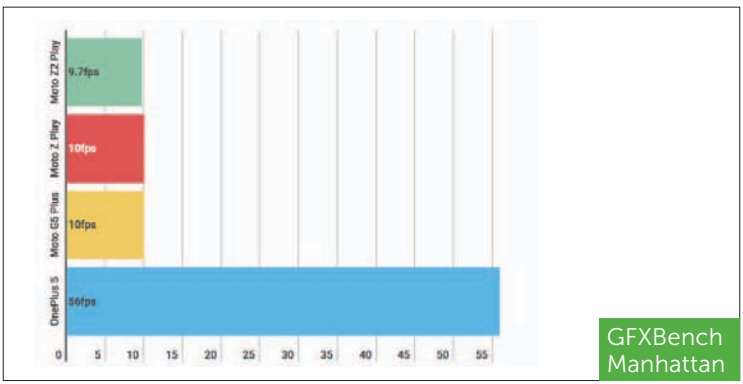
Performance

Let's get down to the nitty-gritty and discuss the benchmark results. While benchmark results don't always reflect real-world usage, it gives us a much easier way to quantify and compare performance amongst smartphones. We're comparing it to the first-generation Moto Z Play alongside the similarly priced Moto G5 Plus and the OnePlus 5 to show what you can get if you want to pay a little more.

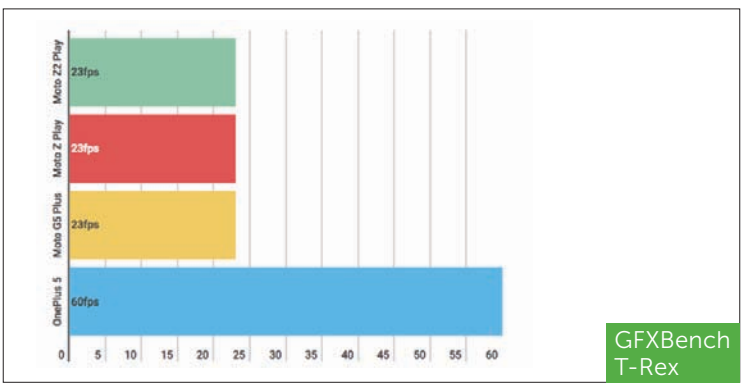
Let's start with Geekbench 4. This is used to test the CPU of the smartphone, and is a good indicator of general performance. As with all tests we performed, a higher number is better. The Moto Z2 Play scored 911 and 4585 in single- and multi-core respectively, beating both the Moto Z Play (790 and



Geekbench 4

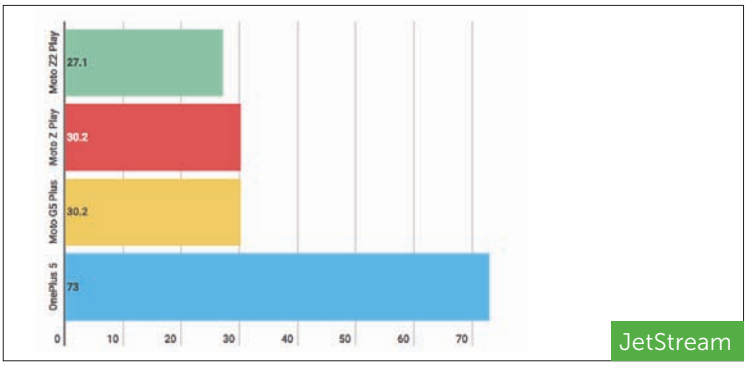


GFXBench Manhattan



GFXBench T-Rex

REVIEW



2569) and the Moto G5 Plus (843 and 4225), although it couldn't quite compete with the 'flagship killing' OnePlus 5 (1967 and 6760).

Next up is GFXBench which, as you might have guessed by the name, tests the graphical power of the smartphone and helps determine what kind of quality you'll get when mobile gaming.

We ran multiple tests of varying levels of quality to determine where the Z2 Play performs best and worst, but we'll only mention two here: T-Rex (lowest quality) and Car Chase (highest quality). Those who want more information can look at our graphs.

In GFXBench T-Rex, the Moto Z2 Play managed a stable 23fps. That puts it in line with the Moto G5 Plus (23fps) and last year's Moto Z Play (23fps), suggesting that there isn't much in terms of a graphical upgrade compared to last year's model.

As with Geekbench, the OnePlus 5 outperformed the Moto Z2 Play by a long-shot. In T-Rex, the OnePlus 5 scored a perfect 60fps and even managed a whopping 25fps in Car Chase. Considering you can

pick up a OnePlus 5 for £449 (the Moto Z2 Play is £379), it might be worth saving a little more money and investing in something a little more powerful, especially if you're into mobile gaming.

The final benchmark we ran was JetStream, a browser-based benchmark that tests the speed of the built-in browser. In the case of the Moto Z2 Play, it's Google Chrome. While it'll never be able to compete with the blistering speeds provided by Safari on iOS, the Moto Z2 Play scored 27.1, in line with both the Moto G5 Plus (30.2) and Moto Z Play (30.2) but way behind the OnePlus 5 (73).

Despite the above results, it's worth mentioning that in real-world usage we experienced nothing in the way of lag when gaming or using the phone. It should be able to power many of the games available on Google Play. Sure, it might fall over slightly when playing AAA-rated mobile games, but what more do you want from a mid-range smartphone?

Battery

In terms of battery life, the Moto Z2 Play comes with a 3,000mAh battery, plus offers fast charging technology that provides around 50 percent of the total battery capacity in only 30 minutes, somewhat negating the issue of a smaller battery. Besides, if you find the battery life isn't enough for you, there's a Moto Mod that will provide the smartphone with extra battery life.

During testing we found that the battery won't last days on a single charge, but it will comfortably last a day with average usage. You might be able to squeeze

more out of it if you're careful with brightness, location services and other battery-draining features, but we didn't feel we really needed to.

Connectivity

The Z2 Play offers the usual range of connectivity options including Wi-Fi 802.11 a/g/b/n, Bluetooth 4.2, GPS, NFC (which also means it supports Android Pay) and even FM Radio for those that still use the functionality. As mentioned earlier, it also offers a USB-C port and a 3.5mm headphone jack.

Camera

The Moto Z2 Play has a 12Mp rear-facing camera that's capable of decent low-light photography (f/1.7, 1.4µm pixel size) with facial detection, phase detection and laser autofocus and a dual-LED flash to brighten the photo up.

Generally speaking, the phone produces decent images with great exposure and colour representation, although, as with many mid-range smartphones, details are a little softer than we'd like.

Take the opposite image of St. Pancras Hotel; while the image looks impressive on the whole, as you start to zoom in you'll notice the aggressive noise reduction come into play, making smaller details such as the individual bricks and paving stones much less noticeable.

The aggressive noise reduction is more apparent when taking low-light photos like the one below, but overall, it captures enough light to make out details of the photo. You can easily read the writing on the glass

Auto settings

bottle and iPhone case, although Batman starts to disappear into the darkness in places.

In terms of video quality, you've got a handful of options to choose from: 4K at 30fps, 1080p at 60fps, 1080p at 30fps and 720p at 120fps for slow-mo capabilities. While we initially had reservations about the quality of 4K video on a mid-range smartphone, we were surprised by just how detailed and vibrant the 4K

Low light shot

videos we captured were (see tinyurl.com/y7xt8cx7). It's worth mentioning the lack of optical- or digital image stabilisation here though, as videos taken were fairly shaky even with sturdy hands.

The front-facing camera is a 5Mp snapper capable of recording 1080p video. While the quality is standard for a selfie camera in 2017 and more than enough for the likes of Skype and Snapchat, the addition of a dual-LED flash should help to capture those selfies in darkened environments.

Software

The Moto Z2 Play features Nougat, Google's latest iteration of Android. It comes with all the operating system's benefits, including split-screen viewing and the ability to quickly switch apps, and there isn't much in the way of preinstalled bloatware either. You'll find a Moto app for customizing software features specific to Moto phones, but not much else.

This app gives you access to a range of Moto Actions, a range of shortcuts and actions that Lenovo think will make your smartphone life a little easier. It includes options such as twisting your phone twice to activate the camera and a nifty feature that turns your display on when it thinks you're reaching for it, along with tweaks like Moto Display and Moto Voice.

Credit: Motorola

While it's not for everyone, we found ourselves using more and more of these Moto-specific shortcuts the longer we used the smartphone. Lewis Painter

Verdict

The Moto Z2 Play is a great mid-range smartphone; it features a gorgeous design, premium build and the Moto Mods support provides extended functionality based on what you require from the smartphone, from extra battery power to an improved speaker and even a built-in projector. Despite the smaller battery, the Snapdragon 626 processor is incredibly efficient and we comfortably lasted a day on a single charge, and when we did run out it was quick to top up thanks to the included fast charging tech. It holds its own against competitors in our benchmark tests, and real world use is decent.

The Moto Style Shell with Wireless Charging does what it says on the tin – provides the Moto Z2 Play with wireless charging without adding any bulk to the smartphone. It's a no-thrills charging experience and it's worth noting that the Mod doesn't include a wireless charger, so you'll still have to invest in one if you're thinking about getting the wireless charger mod. **Lewis Painter**

Specifications

- 5.5in (1920x1080, 401ppi) Super AMOLED display with Gorilla Glass 3
- Android 7.1.1 (Nougat)
- Qualcomm MSM8953-Pro Snapdragon 626
- Octa-core 2.2GHz Cortex-A53 CPU

REVIEW

- Adreno 506 GPU
- 3/4GB RAM
- 32/64GB storage, microSD support up to 256GB
- Dual-band 802.11a/b/g/n Wi-Fi
- Bluetooth 4.2
- GPS, GLONASS
- NFC
- USB-C
- 12Mp f/1.7 phase detection and laser focus
- 5Mp f/2.2 selfie camera
- Front fingerprint scanner
- 3.5mm headphone jack
- Stereo speakers
- 3,000mAh non-removable lithium-ion battery
- 156.2x76.2x6mm
- 145g

Credit: Motorola

REVIEW

Credit: Nokia

Nokia 3

£129 inc VAT from fave.co/2wPMo07 ★★★☆☆

Nokia is back, and with it comes new Android phones. HMD Global, a Finnish startup, is using the Nokia brand to bring the new phones to the market, as well as a reboot of the famous and much-loved Nokia 3310. Here, we take a closer look at the Nokia 3, the cheapest in the new range.

Design

The Nokia 3 has a 5in, 1280x720 Gorilla Glass screen housed in a compact polycarbonate body, with a

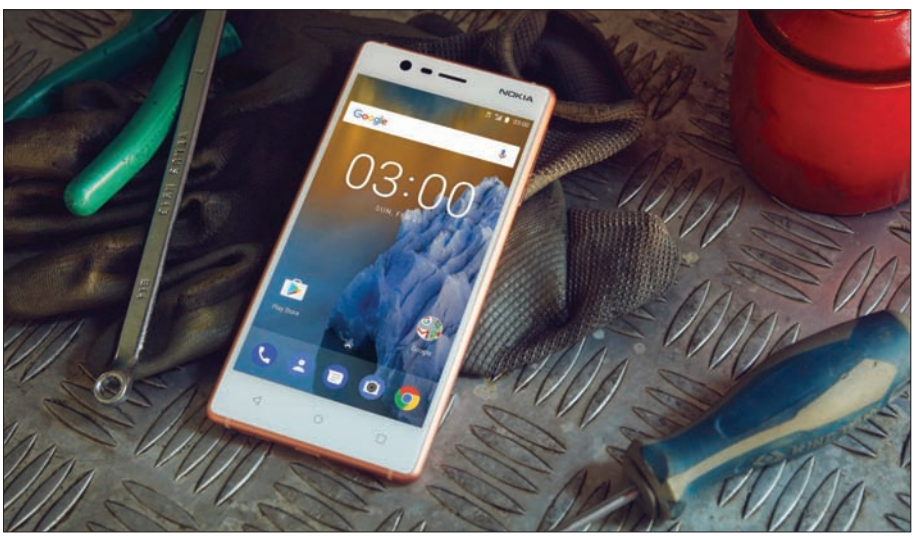
REVIEW

rounded aluminium frame that looks impressively premium considering its price tag, and a soft-touch finish to the back of the body.

Obviously that resolution is a little lower than you might hope for these days, but once you factor in the smaller form factor it still delivers 294 pixels per inch, and the visuals are still crisp and bright – this display is only likely to disappoint if you were hoping for a phone to watch movies on.

You might find you prefer the 5in screen size to some of the bigger screens in flagship phones, because it means you can fit the phone comfortably in the palm of your hand. At 143.4x71.4x8.5mm and 143g, most people should find they can use the Nokia 3 one-handed without running into any problems.

The Nokia 3 is available in Tempered Blue, Silver, Matte Black or Copper, and is 8.48mm thick. There



Credit: Nokia

is a very, very slight camera bump, but we love how symmetrical the camera, flash and Nokia logo are on the rear of the device, continuing the deceivingly premium look and feel even in those smaller details.

In terms of ports, you've got the usual headphone jack, Micro-USB (no USB-C here, we're afraid), and a microSD slot to expand the on-board storage – though there's no fingerprint sensor or waterproofing to be found here.

Overall, we're big fans of the design of the Nokia 3. It's simple, but it looks great, and people who saw the phone were consistently surprised at how little it cost – this is a phone that looks premium, even if it isn't.

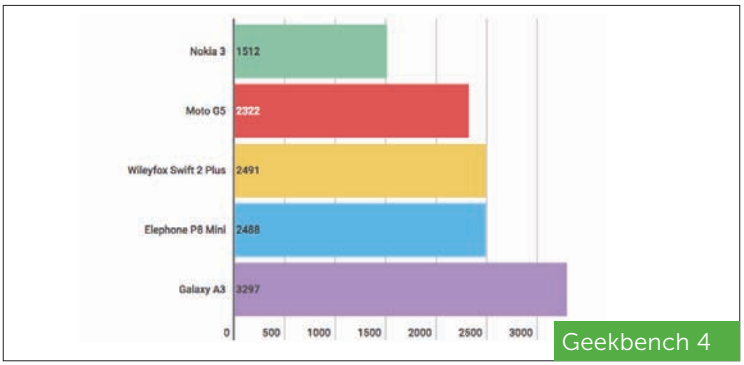
Performance

Inside the Nokia 3 is the MediaTek MTK 6737 quad-core 1.4GHz processor paired with 2GB RAM, which is definitely a budget chipset, so don't expect anything particularly speedy from this handset. In fact you should expect it to run noticeably slowly – we experienced lag running all but the least demanding apps, and any attempt at multitasking is nothing more than an exercise in frustration.

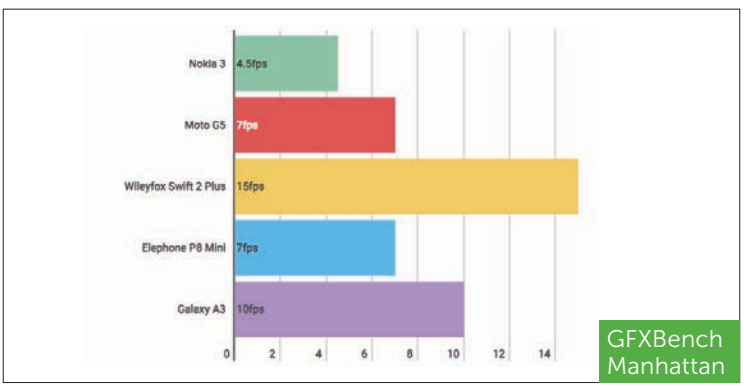
That experience is borne out by our benchmarks, which show a phone that struggles to keep up even compared to budget rivals. At only £20 to £30 more both the Moto G5 and Wileyfox Swift 2 Plus deliver consistently better performance – both in the raw benchmarks and in actual daily use.

Going beyond processing power, there's 16GB built-in memory with support for up to 256GB more thanks to the microSD card slot.

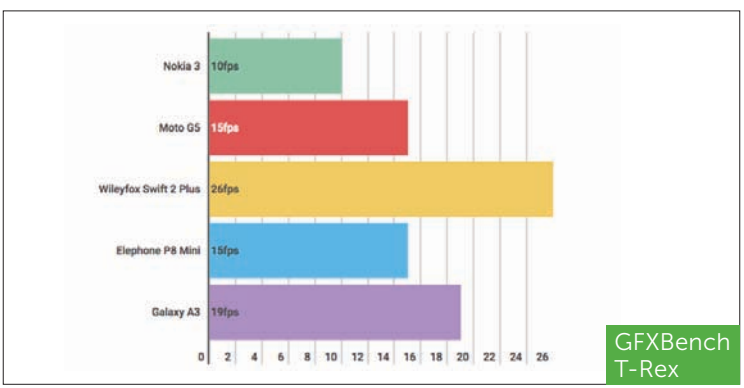
REVIEW



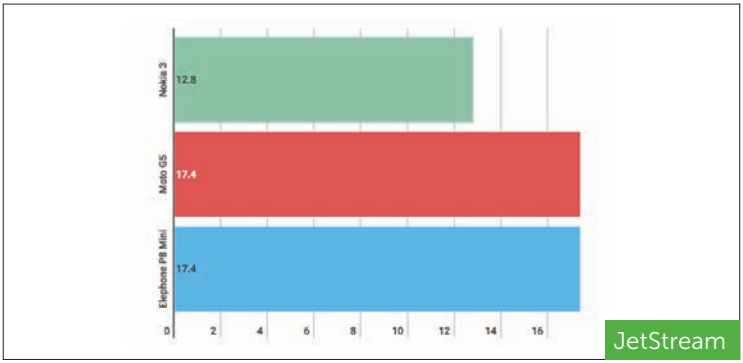
Geekbench 4



GFXBench Manhattan



GFXBench T-Rex



The non-removable battery is 2,650mAh, which manages a day or so of typical usage without too much trouble, but not much more than that – this is definitely a phone where you'll be aware of the need to get back to your charger on a daily basis.

Connectivity is better. Micro-USB remains fairly standard for the budget market, and it's no surprise to see 802.11a/b/g/n Wi-Fi – though Bluetooth 4.0 is a little less expected, rather than the more modern 4.2 standard. Still, there's one pleasant surprise too: NFC, which drives services like Android Pay, and is rare at this price range. So if you're on a tight budget but want to pay for coffee with your phone, the Nokia 3 might be your best bet.

The cameras are another serious compromise for the Nokia 3, which features near-identical 8Mp f/2.0 shooters on both the front and rear of the device – the only difference is an LED flash on the back.

The selfie camera will get the job done fine, and is high enough quality for most purposes, but the rear camera is likely to disappoint. Sluggish autofocus

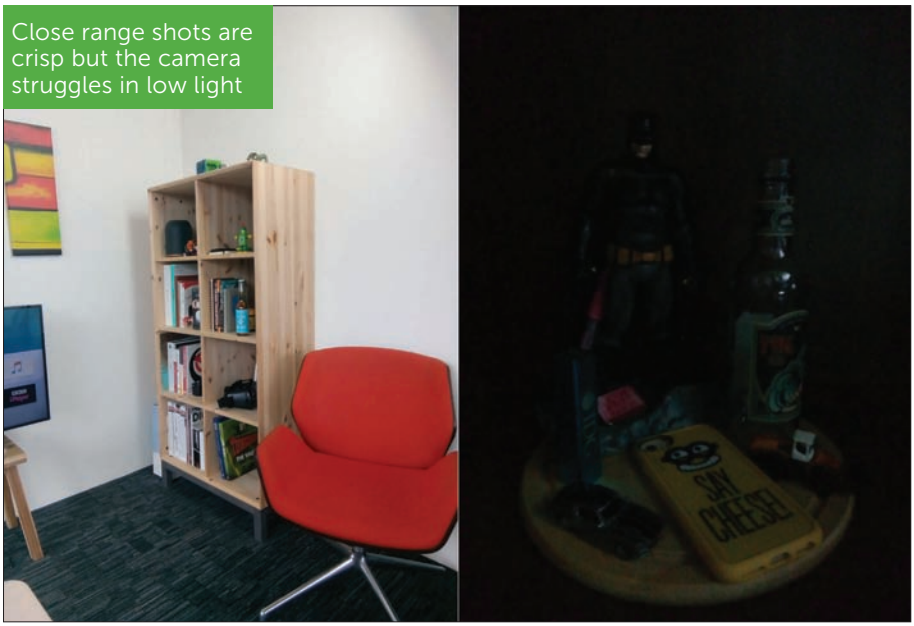
REVIEW

Auto settings

makes it tricky to capture fast-moving targets, and photos tend to come out lacking detail. That's even apparent in more close-range shots, which never quite seem crisp, and the camera struggles even more when dealing with low light conditions.

The included camera app is also a no-nonsense affair, with a few simple options like HDR, but much in the way of effects or filters.

The video set-up is similarly basic – the quality is fine for a quick Snapchat or a video call, but there's no image stabilisation, and the quality drops noticeably with any sudden movements. If you just want a phone camera for Skype calls and taking

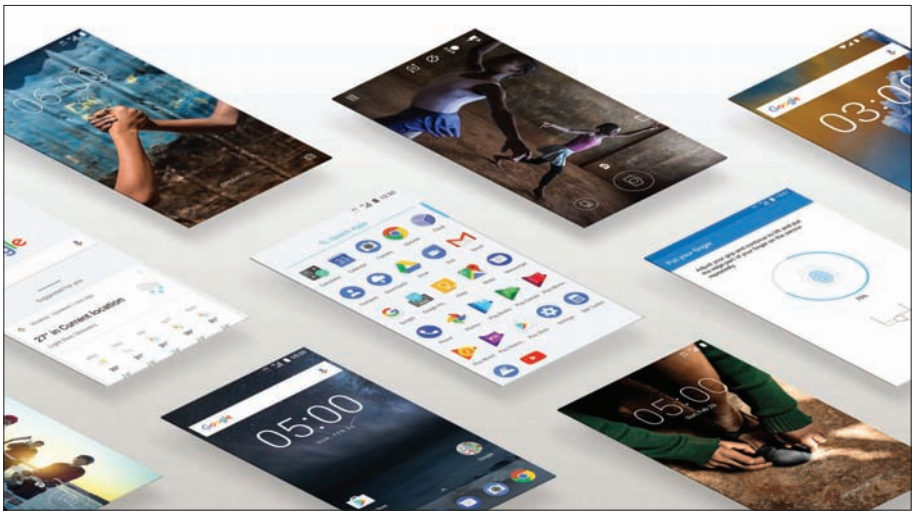


the occasional photo of your dogs, the Nokia 3 will probably do you fine. But Instagrammers or anyone relying on their smartphone for holiday pictures is likely to be disappointed.

Software

There's not all that much to say about the Nokia 3's software, but we think that's for good reason: it comes with an almost-stock version of Android 7.0 out-of-the-box. The downside of that is a lack of exciting, novel features; the upside is that you get Google's smooth, consistent user interface with none of the clutter that other manufacturers often throw into their Android devices.

REVIEW



Credit: Nokia

That's a relief, because given how sluggish the Nokia 3 often feels as is, it would be a nightmare to have it slowed down even more by bloated software.

One big perk is the inclusion of Google Assistant, the smart Siri rival that's missing on plenty of more expensive Android devices. You may find that you don't put it to much use, but it's likely to be a welcome benefit for some.

Verdict

We had high hopes for the Nokia 3, but the final phone is a bit of a disappointment. We can't deny that it looks absolutely fantastic for the price, and we're fans of Nokia's decision to stick to stock Android, but it's just cut too many corners on the internal specs to make the 3 stand out amid a fiercely competitive budget smartphone market. **Dominic Preston**

Specifications

- 5in (1280x720, 294ppi) IPS touchscreen
- Android 7.0 (Nougat)
- MediaTek MT6737 processor
- Quad-core 1.4GHz Cortex-A53 CPU
- Mali-T720MP1 GPU
- 2GB RAM
- 16GB storage, microSD support up to 256GB
- Dual-band 802.11a/b/g/n Wi-Fi
- Bluetooth 4.0
- GPS
- NFC
- Micro-USB 2.0
- 8Mp f/2.0 autofocus, LED flash
- 8Mp f/2.0 autofocus
- 3.5mm headphone jack
- 2,630mAh non-removable lithium-ion battery
- 143.4x71.4x8.5mm
- 143g

Credit: Nokia

COMPARISON

Moto G5s

Moto G5s Plus

Credit: Motorola

Moto G5s vs G5s Plus

Motorola has revealed updated versions of its Moto G5 family, the G5s and G5s Plus. But what's the difference? MARIE BLACK reports

We explain the key differences between the two new budget phones from Motorola to help you choose which is best for you.

What's different?

For a start, the price. The Moto G5s is £40 cheaper than the G5s Plus at £219, and if you're on a tight

budget that could make all the difference. Neither phone is on sale just yet (they should be on sale imminently), but Amazon is already listing product pages for the Moto G5s and Moto G5s Plus.

Out of the box the first thing you'll notice is the difference in size. The Plus model is roughly 3mm taller and wider than the G5s, but they are of a similar thickness. Correspondingly, the Plus weighs in a bit heavier at 168g versus 157g.

This is because the G5s Plus has a larger screen – 5.5in against 5.2in. If you want to watch films and play games this could be useful, but other than sheer size the screen is actually not any better than that on the G5s. They each have the same number of pixels – a full-HD resolution of 1920x1080 – but because they are more tightly packed on the G5s the screen should be sharper (424ppi vs 401ppi). This is such a tiny difference, though, we'd be amazed if anyone could tell the difference.

The Moto G5s Plus has a bit of extra grunt, too, though neither of these budget phones are going to offer flagship performance. In place of the G5s' Snapdragon 430 and integrated Adreno 505 GPU it has the Snapdragon 625 and Adreno 506. Both are octa-core chips.

The most important difference between the two is in the camera department. Both will suit selfie fans thanks to a dedicated LED flash at the front, though the Plus will turn out sharper images thanks to its 8Mp lens (over 5Mp in the G5s).

For more serious photography the G5s has a 16Mp, f/2.0 camera with single-LED flash at the rear, which is

capable of shooting full-HD (1080p) video. The Moto G5s Plus trumps it with a 13Mp, f/2.0 dual-camera, dual-LED flash and support for 4K video.

If you want a dual-SIM phone you should opt for the Moto G5s, but note that in some territories (likely including the UK) it will be sold as a single-SIM phone. Connectivity is otherwise largely the same between the two handsets, save for the fact the Plus model lists Wi-Fi support of the dual-band variety.

One final minor difference might be found in the colouring of each model. While both the G5s and G5s Plus list grey and gold versions, the Moto G5s is referred to as 'fine gold' and the Moto G5s Plus 'blush gold'. Without seeing the two side by side we're not entirely sure what is the difference between the two.

What's the same?

Pretty much everything else, including the memory (3GB) and storage (32GB with support for microSD up to 128GB) allocations.

Both phones charge over Micro-USB with support for Turbo Charge and have 3,000mAh batteries. But because the Moto G5s Plus is more powerful and has a larger screen, we would expect its battery life to be slightly shorter than that of the standard Moto G5s.

Each also supports NFC, Bluetooth 4.2, GPS, A-GPS and GLONASS, and features a 3.5mm headphone jack, bottom-facing mono speaker, two mics and a fingerprint scanner.

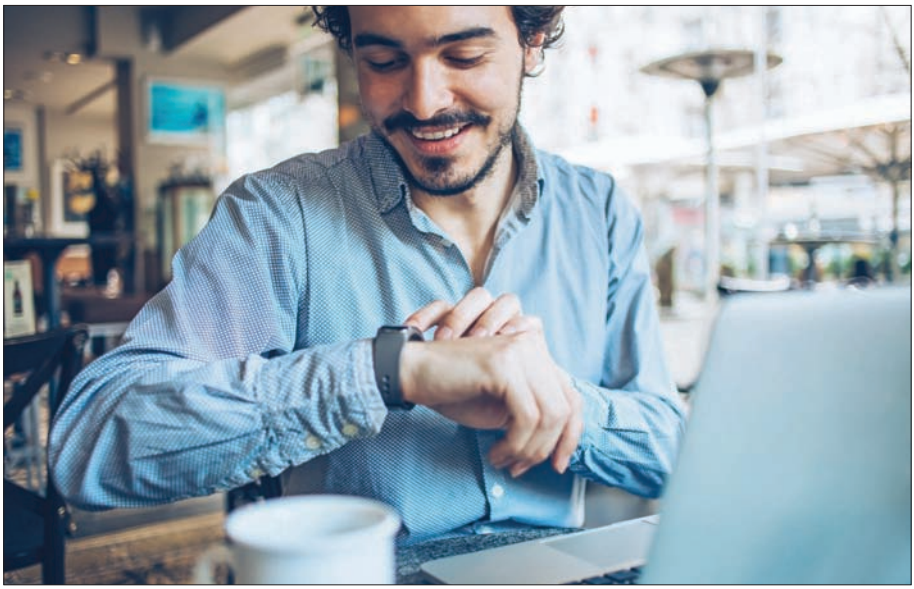
Neither Moto G5s model is fully waterproof, though they feature a 'water-repellent nano coating', which means they are in essence splashproof.

Verdict

With only a small difference in its overall size the more powerful G5s Plus with dual-cameras is likely to be the better buy here. However, when you're buying in the budget market price is everything, and the £40 difference could be enough to tip the balance in the favour of the G5s. The smaller model also has the potential to offer longer battery life, but we'll see when we get them into our Test Centre. **Marie Black**

	Moto G5s	Moto G5s Plus
Operating system	Android 7.1 Nougat	Android 7.1 Nougat
Processor	1.4GHz Snapdragon 430 octa-core	2GHz Snapdragon 625 octa-core
GPU	450MHz Adreno 505	650MHz Adreno 506
Memory	3GB	3GB
Storage	2GB (microSD up to 128GB)	2GB (microSD up to 128GB)
Display	5.2in full-HD (1920x1080, 424ppi)	5.5in full-HD (1920x1080, 401ppi)
Connectivity	4G LTE (dual-SIM in selected markets, 802.11a/b/g/n Wi-Fi, Bluetooth 4.2, NFC, GPS, A-GPS, GLONASS	4G LTE, dual-band 802.11a/b/g/n Wi-Fi, Bluetooth 4.2, NFC, GPS, A-GPS, GLONASS
Ports	Micro-USB, 3.5mm headphone jack	Micro-USB, 3.5mm headphone jack
Fingerprint scanner	Yes	Yes
Primary camera	16Mp, f/2.0, LED flash, PDAF, 1080p video	13Mp dual-camera, f/2.0, dual-LED flash, 4K video
Front camera	5Mp, f/2.0, LED flash	5Mp, f/2.0, LED flash
Audio	Mono speaker, 2 mics	Mono speaker, 2 mics
Waterproof	Water-repellent nano-coating	Water-repellent nano-coating
Battery	3,000mAh with Turbo Charge	3,000mAh with Turbo Charge
Dimensions	73.5x150x8.2-9.5mm	76.2x153.5x8.0-9.5mm
Weight	157g	168g
Colours	Lunar Grey, Fine Gold	Lunar Grey, Blush Gold

ROUND-UP



Credit: iStock

Top Android Wear watches of the year

Choosing an Android Wear watch can be as difficult as picking out a phone. *Android Advisor* is here to sort it all out

There's an interesting theory that smartwatches are to the smartphone what wristwatches were to the pocket watch. Picture the way the average gentlemen used to have to rummage through his pocket for his watch prior to the 20th century. Now skip forward 100 years and the average smartphone user still has to dive into his/her pocket to

check their phone. The kicker now is that your phone holds far more information than a pocket watch ever did, yet all of which is still locked into your pocket.

Smartwatches aren't for making phone calls, although some can do this, but instead they provide a quick and easy way to check what notifications are on your smartphone, so you can decide whether it's worth delving into your pocket or searching around your bag to fetch your smartphone or not.

There are two type of smartwatch: those with a colourful touchscreen like would find on your phone, and those which combine a regular analogue watch with smart features.

We call them 'semi-smartwatches' but they're also known as hybrids. It hasn't quite made the chart here but the Fossil Q Grant is a great example.

The latter we class as a semi-smart device and normally gives you information via a small LCD screen, LEDs or even smaller hands on the watch face.

While a fully-fledged smartwatch can do a lot more, the juice guzzling screen results in a short battery life. Semi-smart watches benefit from longer battery life with some even having separate cells for the watch and smart features.

If you're an Android user, then an Android Wear smartwatch is the obvious choice but it's not necessarily the best for everyone. Google's OS tweaked for wearables also plays nicely with iOS but with cut down functionality, so iPhone owners will get more from the Apple Watch.

When testing for what is the best smartwatch, the important factors to consider are how much of your

smartphone's functions can it perform, and how well does it handle each task, the final attribute is obviously style – it's still bling after all.

As it stands, you'll need to pick a watch with more limited functionality if you want long battery life while ones which can do all sorts will typically last a couple of days. Fitness fans will want to look for a device with a heart-rate monitor and built-in GPS, although these are often poor.

We consider the important factors of a smartwatch to be level of notification detail, battery life, style, water resistance, compatibility with a range of devices/smartphones, plus additional features such as microphones and Wi-Fi support so you don't have to connect to a phone for full functionality.

With very similar, if not identical, hardware on offer with many of the Android Wear watches, a large part of the decision will come down to design and price.

1. Huawei Watch 2

£329 from tinyurl.com/ybxvnxak

In terms of design, the Sport variant of the Huawei Watch 2 is quite a step away from the fashion focused first-generation Huawei Watch – although that's not to say it's not an attractive wearable. Gone is the silver stainless steel body of a traditional watch, as the Huawei Watch 2 boasts a rather generic sporty smartwatch design, complete with a plastic body and a double chrome design.

In terms of dimensions, the circular display of the Watch 2 is fairly large at 1.2in with only one case size

available (45mm), meaning it may look a little bulky and awkward on smaller wrists – especially with a height of 12.6mm. It's also fairly heavy at 57g – for comparison, the second-generation Apple Watch measures in at 45g.

Credit: Huawei

Huawei claims that the ceramic bezel used on the Watch 2 is six times harder than stainless steel, making it resistant to abrasion whilst still being relatively lightweight. While we were initially concerned that the mirror-finish bezels would be prone to light scratches, we can confirm that after five weeks of wear, it's still scratch-free.

The lugs are also lower than other smartwatches available on the market, and this provides a more comfortable fit around the wrist. It's not the only benefit either, as it also provides better stability to the watch during heart-rate monitoring (especially when moving quickly during exercise).

In terms of colour options, Huawei offers the Watch 2 in three colours: Dynamic Orange, Carbon Black and Concrete Grey. The latter two are fairly similar in look, although with a key difference: the Concrete Grey Huawei Watch 2 has silver buttons, while the Carbon Black variant has black buttons. The Dynamic Orange colour option is also exclusive to the 4G variant of the Huawei Watch 2.

While admittedly the colour options aren't as 'out there' as what is offered with the Huawei P10, the Watch 2 straps can be swapped out for any standard 20mm watch strap, allowing for limited customization.

Overall, the build quality of the Huawei Watch 2 is around what is expected of a £330 smartwatch. Despite featuring a plastic body compared to the stainless steel first-generation Watch, the mirror-like double-chrome design provides a more premium look than other fitness-focused smartwatches. The lowered lugs also make a huge difference in comfort, especially when worn over long periods.

Hardware

Inside the second-generation Huawei Watch is a quad-core Snapdragon Wear 2100 processor with 768MB of RAM. The Wear 2100 brings various improvements over the Snapdragon 400 used in older smartwatches beyond a speed bump, including improved battery life and a smaller design.

Credit: Huawei

In use, the Watch is responsive to the touch with no signs of lag when navigating between menus, swiping between notifications or running third-party apps. As part of the standalone nature, the Watch 2 features 4GB of storage that can be used to store music. Alternatively, the Watch 2 comes

with Google Play Music support, and even offers users a two-month free trial to the service when they buy the Watch, allowing users to browse and download music to the Watch on the go.

Display

In terms of the screen, the Huawei Watch 2 features a 1.2in circular AMOLED display with a 390x390 resolution, equating to around 326ppi. While the resolution is nothing to be sniffed at, it can't quite compete with the 480 x 480 resolution of the LG Watch Sport – and it shows. Not all watch faces are as well defined as we'd like, although it's a small issue that only the more eagle-eyed amongst you will notice in day-to-day use.

Aside from the issues with resolution, we thought the Huawei Watch 2's AMOLED display was bright and vibrant, with no complaints with use even in direct sunlight.

Fitness

So, what can the Huawei Watch 2 offer that the original didn't? Like many other smartwatches, the Watch 2 has a heavy focus on fitness, and aims to be your fitness companion, offering helpful stats and professional fitness advice.

While the Watch 2 features preset exercises (cardio, fat burn, bike ride, and so on) that you can select on-the-fly, you can also use the Huawei Health app on your smartphone to create your own custom workout plans based on your goals. It'll coach you during your exercise, giving you stage guidance

ROUND-UP

(warm up, high intensity, low intensity, and so on), speed guidance, lap reminders and of course, goal process reminders and more.

The Watch 2 has a heart-rate monitor that provides a real-time heart-rate zone to keep your heart rate in check while exercising, as, contrary to popular belief, having a high heart rate can have a negative effect on your workout. If it is too high during your workout, the Watch 2 will let you know.

It doesn't stop there though, as it also offers in-depth stats following your workout, available on your smartphone. It'll break your workout into different areas, offer post-workout reports for VO2Max, training effect evaluations (for long-term comparison) and recovery time advice depending on how hard you've pushed yourself. Don't worry about sweat damaging the smartwatch either: the Watch 2 offers IP68 dust and water resistance, meaning it should survive for up to 1m of water for 30 minutes.

Our only annoyance? It doesn't make any attempt to automatically detect fitness activities. While this may not affect those that plan on going for a run or a

Credit: Huawei

bike ride, it means that those who take walks that turn into brisk exercise and forget to turn on the walking activity on the Watch miss out on all that data.

Equally, we found that on occasion we'd forget to end the tracking on the Watch and that it'd still be tracking us hours later – not good for our battery life or our health data.

Connectivity

The Huawei Watch 2 features not only a built-in heart-rate monitor, but also GPS, Wi-Fi (802.11 b/g/n), Bluetooth 4.1 and optional 4G connectivity, allowing for standalone use.

This means that you can use the Watch for exercise and even to make and receive calls without your smartphone being in range. It's worth mentioning that the 4G connectivity is exclusive to the Sport variant, and isn't available as part of the Classic range.

In terms of sensors, the Huawei Watch 2 boasts an accelerometer, three-axis gyroscope, barometer, compass and a capacitive sensor in addition to the heart-rate monitor mentioned above.

Battery life

In terms of battery life, Huawei claims that the 4G-connected Watch 2 will last for two days on a single charge, while the non-4G variant will last an extra day with a three-day battery life with average use (both feature the same 420mAh battery).

While we can't confirm the battery life of the 4G-connected Watch, we can say that the standard Huawei Watch 2 lasts around two days on a single

charge – it's only when we toggle on the smart power saving mode that we see three-day battery life.

There's also a Watch Mode for those that only want to use the smartwatch to tell the time. While it disables most of the functionality of the Watch, it also allows it to be powered on for a whopping 30 days on a single charge.

Huawei claims that if everything is in use constantly (GPS, Wi-Fi, Bluetooth, 4G connectivity) like when using it to track workouts, the Watch 2 will reportedly last 11 hours before needing some juice.

The good news is that when the time does come to charge the Huawei Watch 2, it's pretty fast: we found that it would charge from empty to full in little over an hour.

Software

In terms of software, the Huawei Watch 2 boasts the latest version of Android Wear, aka Android Wear 2.0. It's a huge improvement over the original Android Wear, providing a more intuitive and easy-to-use user interface. Due to the standalone capabilities offered by the new version of Android Wear, the Huawei Watch 2 features its own built-in Play Store for users to browse and download apps directly to the Watch without the need for a paired smartphone.

While there are a handful of apps for Android Wear that allow for standalone use, many (at the time of writing) still require a connected smartphone to work. While Google Play Music can stream music to the smartwatch via Wi-Fi only, Spotify requires a smartphone to be connected for playback.

Of course, the Huawei Watch 2 also includes Google Assistant support, with users able to long-press one of the two buttons on the Watch 2 to activate it. It's quicker and more responsive than on older smartwatches we've used, making it a decent option for text input when replying to texts and emails. For those that don't enjoy dictation, you can swipe on-screen using the new keyboard.

Verdict

The Huawei Watch 2 is no-doubt a huge improvement over the first-generation Huawei Watch despite trading in the classic look for something a little sportier. The double-chrome design gives it a premium look, although it's let down a little bit by cheap-looking removable plastic straps.

It's the hardware that really sets the Watch 2 apart: it boasts optional 4G connectivity, GPS, Wi-Fi and

Credit: Huawei

Bluetooth, allowing for use without a connected smartphone. The array of built-in sensors provides in-depth fitness tracking, allowing for a more holistic view of your exercise regime, although there are small issues that need ironing out. **Lewis Painter**

2. Fossil Q Founder

Price: £181 from fave.co/2vcwy0y

Smartwatches have been around for a while now but it's taken some time for existing watch makers to get in on the game. Well known fashion brand, Fossil, has a range of Q smart watches and the Q Founder runs on Android Wear rivalling the like of the Moto 360.

Design

Why buy a smartwatch from a watch maker rather than a tech brand? Well design and build quality is part of the deal. You're also buying the brand much like you would with a fashionable clothing brand. The Fossil logo appears on the buckle of the metal strap rather than on the front, though.

Not that we've had any problems with the build of other Android Wear smartwatches, but the Fossil Q Founder is a gorgeous lump of metal which has turned a lot of heads while we've been testing it. It's got the look of a proper watch, yet the features of a smart device.

It's worth noting that the model we looked it with the metal strap is very chunky and quite heavy – which you may or may not be looking for. A lot of this is down to the strap itself which is 100g even with three

Credit: Fossil

links taken out. The body on its own is just 56g so wearing it with a silicone or leather strap will be more comfortable for some.

Fossil uses a 22mm quick release mechanism so you can even swap easily for different occasions. The firm's own straps start at £15 for a nylon option and range up to £39 if you want a leather and steel strap.

Although the Q Founder looks much like the Moto 360, the button sits at three o'clock which is more awkward to use then two o'clock. It's not a big deal and we like that it genuinely looks like a traditional watch crown with its etched finish.

Like other Android Wear devices, the Fossil Q Founder is IP67 rated so it's dust tight and water resistant enough for things like taking a shower. It can be dunked into water up to 1m for up to 30

minutes but be careful if you're planning on going for a swim with it.

Hardware

Fossil does make chronograph smartwatches with smart features but the Q Founder is the top-range model with a touchscreen and Android Wear. Square screens seem to be mostly a thing of the past and although display is good there's a problem.

It almost matches the Moto 360 with a 1.5in LCD display and a 360x326 resolution resulting in a 240ppi pixel density. It's both crisp and bright.

While most Android Wear smartwatches are powered by a Qualcomm Snapdragon 400, Fossil has gone with an Intel Atom Z34XX – as found in the Tag Heuer Connected Watch. There's 1GB of RAM which is double some rivals, but we've not noticed any difference compared to Qualcomm powered watches and the Q Founder feels nippy in general use.

Inside is 4GB of storage and sensors such as a 3-axis accelerometer and 3-axis gyroscope for activity tracking. The Q Founder will track your steps but there's no heart-rate monitor on the back – we've not found them hugely accurate elsewhere but it's worth noting that the Q Founder doesn't have this feature. There's also no built-in GPS. You'll need to connect the watch over

Credit: Fossil

Bluetooth 4.1 to your Android (4.4+) or iPhone (iOS 8.2+) to get the full experience of notifications but the Q Founder also has built-in Wi-Fi so it doesn't become dumb without a companion device. A small hole on the left side is where a microphone lives so you can use voice commands and do dictation.

The Q Founder runs Android Wear 1.4, which brings features like additional gestures, app permissions and better battery life with Doze. Fossil also comes with a range of watch faces, though to add some value and we like them a lot. They are customizable too giving you the ability to change colours and what information is displayed such as battery percentage, step progress, weather, date and time zone. As mentioned earlier, it's just a big shame that they get cut off at the bottom by the flat tyre.

As usual you'll need the Android Wear app on your phone to get going but Fossil has also made a companion app where you can track your daily activity, manage notifications and customize your watch faces.

Battery life

It's clever that what appears to be part of the boxing is actually the charger for the Q Founder which includes an LED notification light. It charges wirelessly, but it's pretty chunky and with the metal strap you have to pick it up to fit the watch over it.

No Android Wear smartwatch offers great battery life, so don't expect anything more than a day with the Fossil Q Founder unless you set the screen brightness to low and barely use the thing. With light usage

we still had 25 percent battery after 24 hours but realistically it will need charging every night. We found that the 400mAh battery charged to nearly 50 percent in around 30 minutes which isn't too bad. The charger being bulky just makes it awkward to carry with you.

Verdict

There's no doubt that the Fossil Q Founder is a well-made and good looking Android Wear smartwatch which is also a competitive price. The hardware on offer is good, although some may miss the heart-rate monitor and GPS. As much as we love it, the flat tyre effect of the screen is a big drawback stopping it being really great. **Chris Martin**

3. Moto 360 Sport

Price: £219 from tinyurl.com/yarws77g

Looking for the best smartwatch for fitness? Well the Moto 360 Sport is a contender with Android Wear, GPS and a heart-rate monitor.

Design

As you can learn from the name, the Moto 360 Sport is a smartwatch for fitness so it has a different design and build compared to the regular model. It still has the Moto 360 style so is easily recognisable as a Motorola smartwatch with the traits of the second-generation watch including the power button at 2 o'clock and the micro-etching on the bezel. The case size is 45mm which is a tiny bit smaller than the larger Moto 360 but the watch is slightly thicker at 11.5mm.

Credit: Motorola

It's not heavy at 54g. The main difference is that the watch is enclosed in an all-in-one silicone strap. Build quality is just as good but clearly the emphasis is on the practicality rather than the style. You can't personalize it with the Moto Maker but the fitness smartwatch is available in white or 'Orange Flame' but you'll only find black at most retailers.

Opting for a silicone strap might not look as good but it works much better for activities like running. The stretchy rubber means it stays put while you're moving your arms around and can easily be cleaned – handy since dust and dirt tent to stick to it. The Moto 360 Sport band can't be removed though which is a little strange but perhaps means things are held together better.

Like other Android Wear smartwatches, the Moto 360 Sport is IP767 rated, which means it's both dust- and water resistant. Running in the rain and

slashing it to clean it is fine but you shouldn't be fully submerging it. The stealthy black look of our sample is almost uninterrupted apart from a small section on the left side of the body. Here a hole in the silicone exposes the metal body of the watch where the microphone lives.

Hardware

The core Moto 360 Sport specs match up to the non-fitness model (and other Android Wear devices). The combination of a Qualcomm Snapdragon 400 processor, 4GB of storage and 512MB of RAM is very familiar. It's no surprise that the watch runs smoothly in operation.

The Moto 360 2 is available in either 35- or 40mm options for the screen, but the Moto 360 Sport comes in just 35mm. The resolution matches the smaller model at 360x325. Sadly the 'flat tyre' – the black section at the bottom of the display – remains. This houses the ambient light sensor which the hybrid screen makes use of. As you can see below, the shape of the glass around the edge makes the screen look a bit odd, distorting the pixels but it's not a huge issue.

Motorola claims the 'AnyLight' display is the "world's first hybrid screen". It means that indoors you'll get the normal LCD experience but get outside for a run and the display automatically switches to a black and white mode which reflects natural light. We found it worked pretty well.

The battery is the same size as the smaller Moto 360 at 300mAh and you'll probably need to charge it every night, especially when you go out for a run

during the daytime. It's easy to charge the Moto 360 Sport though with the docking station which sits nicely on a bedside table and provides wireless charging.

To be the best smartwatch for fitness GPS is essential and is the main spec missing from the regular Moto 360. When you're out for a run, it's easy to start tracking via the custom watch face using the preinstalled Moto Body. You can also use other running and fitness platforms if you like though including Google Fit, RunKeep, Strava, Under Armour Record and even Fitbit.

You get all the details you'd expect such as pace, lap time, distance and more – plus you don't need

Credit: Motorola

ROUND-UP

Credit: Motorola

to go running with your phone which is a bonus. You can even listen to music if you store music on the Moto 360 Sport and use Bluetooth headphones. Just remember to sync the data for your runs with the paired smartphone because it won't stay there forever – this caught us out and we lost the info for a number of long walks we did on the Acer Scilly Media Challenge. To accompany the GPS is an optical heart-rate monitor on the back of the watch, just like the normal 360. This can measure your heart rate continuously but while it's pretty accurate for resting heart rate, it can be very erratic when you're running. Like other Android Wear smartwatches with heart-rate monitors, you can't fully rely on it for accurate data; therefore real enthusiasts will want to look elsewhere if this is important.

That's pretty much everything covered aside from the fact that the Moto 360 Sport has Wi-Fi (in case you're not connected to a phone over Bluetooth) and runs on Android Wear – compatible with Android and iPhone – so you can use it like any other smartwatch on Google's platform. You'll get notifications to your wrist and you can do all sort of stuff like voice commands and even get directions on Google Maps.

Verdict

Available for under £200, the Motorola Moto 360 Sport is one of the best smartwatches for fitness. You get the some of the regular 360 style in a design which is practical for activities like running. The GPS tracking is accurate but it's shame the same can't be said of the heart-rate monitor and we still find the 'flat tyre' on the screen an eyesore. A solid effort but hard-core fitness fans might need something which is more in-depth. **Chris Martin**

4. Huawei Watch

Price: £199 from tinyurl.com/yd96cvox

Our review unit was the silver model but the Huawei Watch will also be available in a nice looking black model and a shiny gold one for those after a more bling finish. There are also two straps to choose from, either leather or stainless steel. Interestingly, Huawei has places the physical button at 2 o'clock rather than 3 and this seems to make sense meaning you don't need to twist your wrist as much to push it (the wrist not wearing the device).

Like many smartwatches, the Huawei is big so you've got to be prepared for this. It seems only some vendors are following Apple's lead of producing two sizes for those with smaller wrist which is a shame.

The stainless steel case and sapphire crystal front look great, even if the device is a bit chunky at 11.3mm. We're used to some Huawei devices being cheap and made from plastic but this couldn't be further the other way.

Design

It's easily one of the most premium and desirable Android Wear wearables around, in fact smartwatches in general – it can pass a stylish regular wrist watch. Those tiny bezels play a big part in the wow factor and the Huawei Watch is definitely a head-turner.

As well as looking great, it has an IP67 rating so is dust-proof and will survive being dunked in up to 1m of water for a maximum of 30 minutes.

Hardware

The Huawei Watch fits in with the standard set of hardware for Android Wear devices. This means it has a Qualcomm Snapdragon 400 processor, 4 GB of internal storage, 512 MB of RAM and Bluetooth 4.1. It also has various sensors like an accelerometer, barometer and heart-rate monitor.

The screen, however, is a little larger than rivals such as the LG G Watch R at 1.4in but this is smaller than the Motorola Moto 360 so it's not the biggest around. What's notable is the resolution of 400x400 means it's has the highest pixel density of any Android Wear device at 286ppi.

Round screens are quickly becoming the norm for smartwatches with a few exceptions like the Sony SmartWatch 3. Huawei's is fully round so doesn't have the 'flat tire' effect found on Motorola's which is still a sticking point even with the new 2015 version.

It looks great with plenty of brightness on offer should you need it and it's also nice and responsive. The issue is that how you choose to use the screen has a big impact on battery life.

By default, the screen is set to always on – although it will dim and change the watch face to a stripped back version – and like this it will last you roughly one and half to two days which is what Huawei claims. However, switch the screen to switch off and you'll get double or more the battery life.

Leaving it set to always on wouldn't be so bad if the charger was easy to use, but it's not. It's not a stand and although it attaches magnetically, the metal contacts don't always sit properly so occasionally we though the watch was charging when it wasn't.

Moving onto fitness tracking and the Huawei Watch comes preloaded with Google Fit as you'd expect but also the firm's own offering, Daily Tracking. This does the same job but with a nicer interface.

As mentioned there is a heart-rate monitor and like pretty much every watch with one of these, it's hit and

Credit: Huawei

miss as to whether it can take a reading successfully. We often found we had to push the watch into our wrist to achieve success. You'll want a dedicated fitness watch if this is important.

That's a shame but perhaps not as much as the fact it doesn't have GPS so those wanting proper tracking for running will need to look elsewhere. However, the Huawei Watch is compatible with Jawbone Up bands if you don't mind wearing a second device.

Software

As we mention in all Android Wear watch reviews, the experience is essentially the same across them all. It's not like skins which get added to Android phones so you get pure Android Wear no matter which one you pick. Price, hardware and design are all important when it comes to choosing then but it's worth pointing out that the Huawei Watch comes with

Credit: Huawei

the latest version of the software. This means you get Wi-Fi support to use the device without a companion phone and the new layout which provides a proper app launcher and contacts list.

You can also do things like draw emojis if that's your kind of thing (it actually works really well if you can think of what to draw) but more important is support for iOS compatibility. That's right, you can use the Huawei Watch with your iPhone – just bear in mind that it's by no means the same experience compared with using it with an Android phone.

Other than the usual Google Now card style system of notifications, the Huawei Watch comes with a huge range of watch faces built-in and of course you can download more as well as the apps you want to use.

Verdict

Although it's pricy, the Huawei Watch is best Android Wear smartwatch on the market with its absolutely stunning design and exquisite build quality. There's still work to be done though as the watch lacks GPS, the heart-rate monitor doesn't work very well and the charger is bit fiddly. **Chris Martin**

5. Asus ZenWatch 3

Price: £249 from tinyurl.com/ybuvjqaw

The Asus ZenWatch 3 is hands-down the best looking ZenWatch so far. The company has come a long way from the days of the bulky rectangular first-generation ZenWatch, and now offers a high-end circular

smartwatch that wouldn't look out of place next to traditional luxury wristwatches. In fact, we'd go as far as to say that the Asus ZenWatch 3 is one of the best-looking smartwatches ever.

The third-generation ZenWatch employs an 'annular solar eclipse design' with a diamond-cut bezel surrounding the gorgeous 1.39in display. What does that mean? The design mirrors the look during an eclipse when the moon covers the centre of the sun, leaving its outer edges visible.

It's a unique look for a smartwatch and it adds to the overall luxurious look, especially when the colour of the bezel matches small details on the watch face (text colour, widgets, and so on). It's the little things that count, right?

The body is made from 316L stainless steel that was cold forged to make it 82 percent tougher, and is complimented by traditional Italian stitched leather straps. While the straps were initially quite stiff, the leather softened over time and became extremely comfortable to wear. There are three body colours available – Gunmetal, Silver and Rose Gold – each with different straps, although these can be switched out for any 18mm strap for an extra level of customization.

It's not only the general design of the Asus ZenWatch 3 that makes it so attractive, though. It's impressively thin at 9.95mm and weighs only 48g, making it comfortable to wear and not too heavy or bulky for those of us with thin wrists. It also features IP67 water resistance, meaning it can survive for up to half an hour at a depth of 1m.

The ZenWatch 3 also sports three buttons modelled after the crown found on mechanical wristwatches. They aren't purely for aesthetics either, as they offer shortcuts to various features of the smartwatch: the top button is customizable and can launch an app or function, the middle button provides a range of functions, including access to apps and settings, while the bottom button switches on Eco Mode, a mode that extends the battery life of the smartwatch.

Credit: Asus

Features

The ZenWatch 3 has a 1.39in AMOLED display which equates to around 287ppi and is one of the brightest, most vivid displays we've seen on a smartwatch despite offering the same 400x400 resolution as the likes of the Huawei Watch 2. It's also protected by Corning's curved Gorilla Glass 3 2.5D, giving the display a scratch-resistant cover.

Of course, being a smartwatch, there are many watch faces available for ZenWatch 3 owners. In fact, Asus offers six themes (Luxury, Digital, Simplicity, Sport, Urban and Youth) and a range of 50 watch faces within that are exclusive to ZenWatch owners.

Beyond that, you have an entire library of generic watch faces available for smartwatches running

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Android Wear, and if that's not enough, Asus provides a FaceDesigner app for Android users that allows users to design a new watch face with widgets, from scratch.

In terms of processing power, the Asus has Qualcomm's latest Snapdragon Wear 2100 processor which is optimized for use in smartwatches, offering improved performance and battery life when compared to the older Snapdragon 400 processor. It also has 512MB of RAM, and 4GB of storage for music.

While there are no benchmarks we can run to quantify its performance, it's not the snappiest smartwatch we've used – even with the Wear 2100 processor. It's often quite laggy and you'll find yourself accidentally tapping on the wrong function due to the lag too, although we're convinced this is due to the aging software (which we come to below) instead of the processor. Either way, it damages the

Credit: Asus

premium look Asus has worked so hard to achieve with the ZenWatch 3.

In terms of battery life, the Asus ZenWatch 3 features a standard 340mAh battery that we found would last around 36 hours maximum before requiring a charge, meaning it's best if it's topped up every day.

The good news is that the magnetic charger features Asus' own HyperCharge technology that provides 60 percent of charge in only 15 minutes, much faster than many rivals. There's also a battery pack available that will extend battery life by 40 percent, according to Asus, although we haven't been able to test it.

The smartwatch also features both Bluetooth 4.1 and Wi-Fi for standalone connectivity when out of range of the smartphone, although you'll have to connect to the Wi-Fi network using your connected smartphone before it'll connect itself.

There's not much else that the Asus ZenWatch 3 can do. Like the ZenWatch 2, Asus decided against including a heart-rate monitor after hit-and-miss results with the first-generation watch, and nor does it feature GPS for accurate fitness tracking. It's clear from these omissions that the ZenWatch 3 is directed more at the fashion-conscious than the fitness-focused.

In terms of fitness tracking, Asus' own ZenFit will automatically counts steps and encourages you to stand regularly, but with no HR monitor or GPS it can't offer much else. In terms of exercise tracking, it's fairly limited, offering only walking, running, push-ups and sit-ups.

Software

As mentioned above, it's the software that lets the Asus ZenWatch 3 down. Unlike many other smartwatches available in 2017, the Asus ZenWatch 3 still features the original Android Wear instead of the recently released Android Wear 2, available on the likes of the Huawei Watch 2 and is, in our opinion, a huge improvement to Android's watch OS.

That said, the software is underwhelming – it's long in the tooth and counter-intuitive compared to Android Wear 2. It's a little disappointing as the hardware is impressive, but the dated software lets it down and ruins the premium look that the company has worked hard to craft.

Asus has said that Android Wear 2 will be available for the third-generation ZenWatch in the future, but has given no indication as to when it may be.

Verdict

The Asus ZenWatch 3 is a gorgeous smartwatch – possibly one of the best-looking to date – but there are shortcomings to the circular smartwatch. It's limited in terms of fitness tracking, measuring only steps and standing hours and offering tracking for only basic exercises due to the omission of GPS and a heart-rate tracker. It's also sluggish in performance and runs the outdated Android Wear 1.5, although Asus promises an update to Android Wear 2.0 in the future. If you're more fashion-conscious than fitness-focused, this is the watch for you, but if you're looking for something a little more high-tech, the likes of the Huawei Watch 2 may be a better option. **Lewis Painter**

Credit: iStock

Best VPN services

Surf the web anonymously and get access to US Netflix in the UK on your Android phone or tablet. ASHLEIGH MACRO reports

If you want to surf the web privately and securely, even when you're out and about connecting to public Wi-Fi, a VPN (virtual private network) is what you're looking for. You can also use it to access blocked content such as the American version of Netflix. If you're looking to do so on your Android phone or tablet, you'll be pleased to hear that there are plenty of great VPN apps for Android.

Please note that it is against Netflix and other blocked content's terms and conditions to access them using a VPN, so you do so at your own risk.

1. PureVPN

Price: From $2.95 (£2.30) per month from fave.co/2pYjebX

PureVPN is our favourite VPN right now, and we're pleased to report that it's great on Android too. It has a huge number of servers available across 141 countries, and logging is restricted to just the time at which connections are made to keep privacy at the forefront of its service.

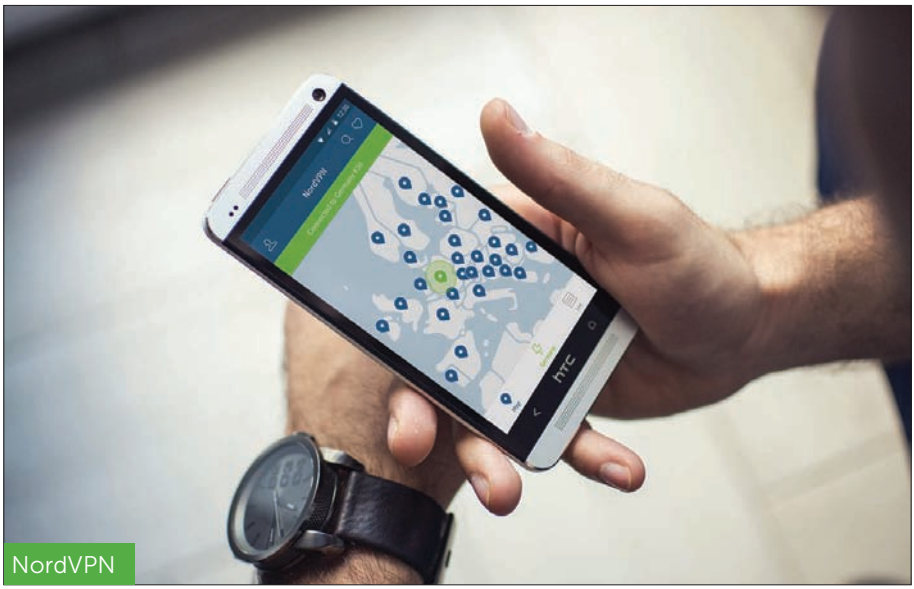
There are lots of features and modes to suit whatever priorities you may have, and it works well with Netflix, too. PureVPN's Android app is also smart, letting you choose the purpose of your VPN usage and tailoring the connection to match.

You'll need to sign up to one of PureVPN's subscription packages in order to use the Android app. You can pay as little as $2.95 if you choose the 24-month package at time of writing, or $11 (£8.50) if you choose the monthly package. There's also a seven-day money-back guarantee.

2. NordVPN

Price: $3.29 (£2.50) per month from fave.co/2vfaqTt

NordVPN offers an application for Android , in addition to those for Mac, PC and iOS, and like the



NordVPN

Credit: NordVPN

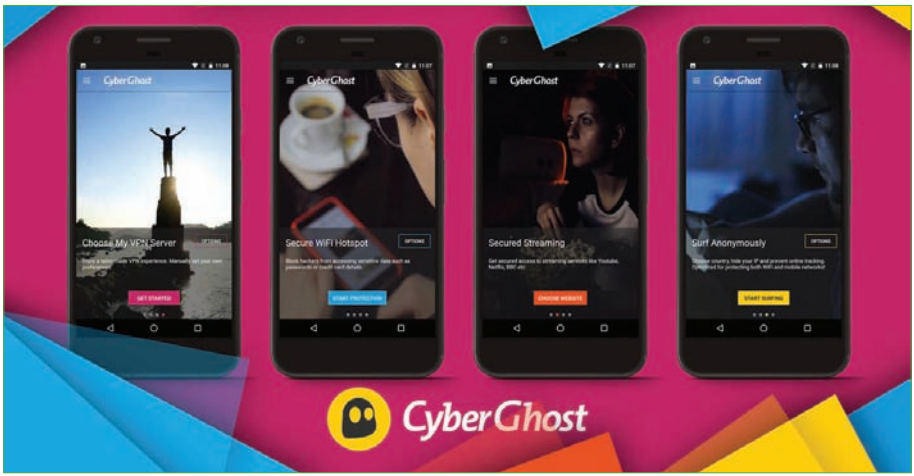
other services here, one subscription will let you use the application on all of those devices rather than limiting you to one.

The provider tells us that it keeps no logs at all on its customers, so that combined with its competitive pricing and top security options makes this one of the most attractive offerings for Internet users. It's easy to set up and suitably speedy too.

3. CyberGhost

Price: From £3.74 per month
from tinyurl.com/ycj3z4sb

Also one of our favourite VPNs, CyberGhost is a breeze to install on Android. You'll get seven days



Credit: CyberGhost

of the Premium service for free, too. There are some things missing from the Android version though, including the activities covering anonymous torrenting and basic website unblocking that you'll find on the desktop version.

The downside is that CyberGhost had some issues accessing Netflix during our testing. It is continuously working to add new servers as its current ones become blocked though, and the same can be said for all other VPN providers, too.

4. IPVanish

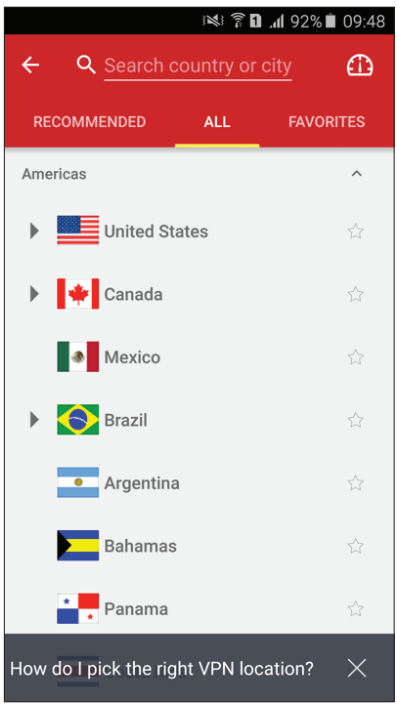
Price: $6.49 (£5) per month from fave.co/2vfaVwG

IPVanish comes with a seven-day guarantee you can try it out and see how much you like it. Prices start at $6.49 per month, but you'll only get access

to servers in just over 60 countries. That said, you are very unlikely to need more than that, and this package is know to be speedy and very secure. Plus, you can have five simultaneous connections on multiple devices.

5. ExpressVPN

Price: $8.32 (£6.40) per month from fave.co/2wpcxm3



Credit: ExpressVPN

Popular VPN option ExpressVPN offers apps for all operating systems, including Android. The app opens up the web to get around firewalls and censorship, and also provides protection from hackers and snoops who could be spying on you whilst you're connected to a public network.

You'll need to sign up for an ExpressVPN subscription of your choice, then download and install the Android app to your phone or tablet to begin browsing the web safely. Choose between a monthly subscription that will cost you $12.95 (£9.90) per month, a 12-month subscription that will cost you $8.32 per month or a six-month subscription at $9.99 (£7.65) per month. Each option has a 30-day money back guarantee.

ROUND-UP

Credit: TunnelBear

TunnelBear VPN

6. TunnelBear VPN

Price: Free option available, $4.99 (£3.82) per month from fave.co/2vf81It

Our last option is TunnelBear, which has a very limited free option in addition to a monthly option or a well priced yearly option that will cost you $59.88 (£45.95) for 12 months. You can connect with five devices at once, and that includes your Android phone or tablet.

HOW TO Download YouTube video to a phone

Want to watch YouTube videos without an Internet connection on your Android phone or tablet? MARIE BLACK shows how

Credit: iStock

Watching YouTube video is one of our favourite pastimes on an Android phone or tablet, but doing so out of range of a Wi-Fi hotspot can place a heavy burden on a mobile data connection. Thankfully, you can use an app such as Tubemate to download YouTube videos for offline watching.

HOW TO

Because Google doesn't approve of you bypassing its platform for watching video (also see is it legal to download YouTube video?), you won't find Tubemate in Google Play. Nevertheless, it's a free app that we will show you how to sideload on your phone or tablet.

In publishing this tutorial we do not advocate the downloading of copyrighted videos from YouTube, and in our examples (see tinyurl.com/y8o5braa) we are using only video from our own YouTube channel.

Tubemate app

First, open the Settings menu on your Android phone or tablet and go to Security, then enable Unknown sources. This will allow you to install apps from outside Google Play; that it is disabled by default is to protect you, so we recommend disabling that toggle once you have installed Tubemate

Now open your web browser and head to tubemate.net. You want to install the latest version of the app (currently 2.4) from one of the verified sites listed here. This is because in downloading apps from outside Google Play you risk potentially downloading something malicious that is masquerading as a genuine app

Also note that because you are sideloading the app it won't be automatically updated along with the other apps on your phone when a new version is released. So if Tubemate ever stops working for you, return here and install the update if one is available.

We've chosen Android Freeware. Click on the link, then press the blue Install app button. You'll be warned that this type of file can harm your device,

but go ahead and press OK anyway. Once the file has downloaded you'll see a notification in the drop-down bar at the top of the screen. Tap on this notification and your device should open the Downloads folder on your device

Tap on the download listed youtube-tubemate.7.07.apk and choose Install when prompted. Click Open when the download completes and agree to the T&Cs

You can either use Tubemate to download YouTube videos from directly within the app, or you can do so within the YouTube app itself. To download a video from the YouTube app, launch the video, then tap Share and choose Tubemate. You'll be prompted to choose a resolution, then tap the green download button

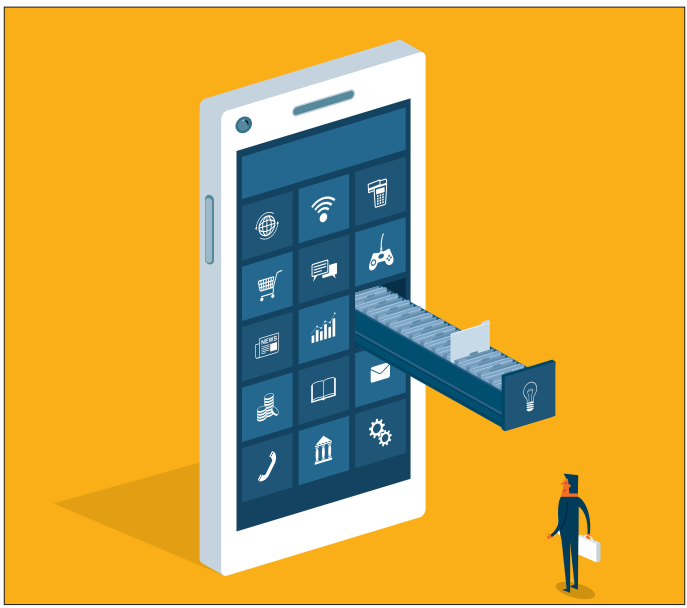
Alternatively, open the Tubemate app and use the search function to find a video. To download the video just press the green arrow at the top of the screen, choose a resolution and again tap the green download icon

Credit: iStock

HOW TO

HOW TO Clear space on an Android device

Zap cached app files, clear the Downloads folder, take charge of music downloads, and more. BEN PATTERSON reports



Credit: iStock

Few things in life are as annoying as finding that your Android handset refuses to install any more app updates because it's run out of storage. Unlike many of life's little annoyances, though, this one's easy to fix.

You can quickly clear out hundreds of megabytes or even a gig or two by sweeping up stale downloads,

rooting out offline maps and documents, clearing caches, and wiping unneeded music and video files. There's even an easy way to find and nix space-hogging apps that you no longer use.

1. Clear out all cached app data

If you dig into the Apps storage setting screen and tap on an individual app, you'll notice that each app has its own stash of 'cached' data – anywhere from a few kilobytes to hundreds of megabytes, or even more. These caches of data are essentially just junk files, and they can be safely deleted to free up storage space. Tap the Clear Cache button to take out the trash.

If poking through each and every app looking for cached data to clear sounds like a chore, there's an easy way to clear all cached app data in one fell swoop. Tap Settings > Storage > Cached data, then tap OK in the confirmation window.

2. Clean up the Downloads folder

Just like on a PC or a Mac, your Android device has a Downloads folder, and it's a favourite hideout for miscellaneous junk files downloaded from the web or by your various Android apps.

Open the app drawer and tap Downloads to see what's lurking in the Downloads folder. Tap the three-line menu in the top corner of the screen and sort the list of downloads by size, then take a look at what's hogging the most storage space. If you see anything you don't need, tap and hold the file to select it, then tap the Trash button.

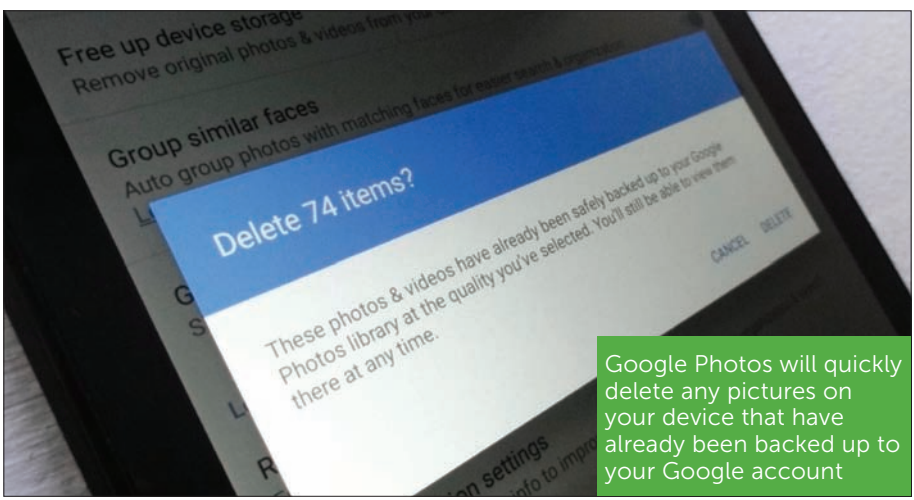
HOW TO

3. Dump photos that are already backed up

One of the best features of Google's new Photos app is its ability to back up your entire photo library to your online Google account. Once your snapshots are safely backed up, Photos can zap any locally stored images to free up more storage space.

Open the Photos app, tap the three-line menu button in the top left corner of the screen, then tap Free up device storage. The Photos app will let you know how many pictures it can delete from local storage; tap OK to pull the trigger.

Note: If you're using the 'High quality' setting for unlimited but lower-resolution cloud storage of your backed up photos, keep in mind that the 'Free up device storage' feature will delete your full-resolution originals. Make sure you've stored them elsewhere before you tap the OK button.



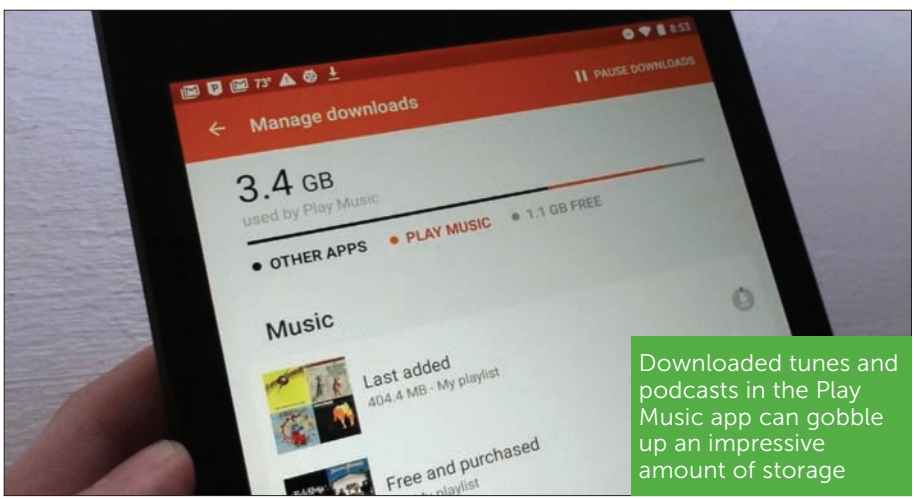
Google Photos will quickly delete any pictures on your device that have already been backed up to your Google account

4. Manage downloaded music and podcasts

Google's Play Music app gives you two options when it comes to storing tunes on your device: You can manually pick which purchased or uploaded Google Play songs and albums get downloaded, or you can let the app make those decisions for you. Either way, music lovers may end up with a significant amount of their device storage gobbled up by their favourite artists.

Same goes with podcasts, with Play Music's default setting geared to auto-download the three most recent episodes of each subscriptions. If you subscribe to more than a few podcasts, those episodes – and the space required to store them on your handset – can add up quickly.

To check exactly how many megabytes or even gigabytes of storage Play Music has reserved for



Downloaded tunes and podcasts in the Play Music app can gobble up an impressive amount of storage

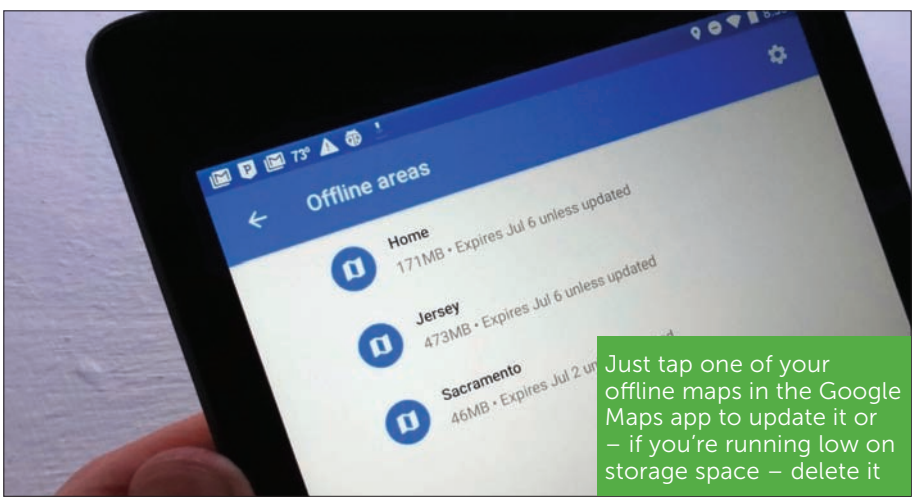
tunes and podcasts, tap the three-line menu button in the top left corner of the screen, then tap Settings > Manage downloads. To wipe a song download or a podcast from local storage, tap the orange downloaded button to the right of its name.

Bonus tip: You can use the same method to manage your downloads in the Play Movies & TV app.

5. Erase offline areas in Google Maps

Downloading a map in the latest version of the Google Maps app is a great way to navigate when your device is offline, especially now that both searching and driving directions are supported.

But those searchable offline 'areas' come at a cost: storage space, and potentially lots of it. Indeed, a single offline map can consume more than a gigabyte of storage depending on the size of the area.



Just tap one of your offline maps in the Google Maps app to update it or – if you're running low on storage space – delete it

You can check how much space your offline maps have staked out by tapping the three-line menu button in the top left corner of the main Google Maps interface, then tap Offline. The storage used by each offline map is displayed below its name. Tap the map and tap Delete to reclaim its storage space.

6. Unload your least-used apps

I love the fact that I can download and install Android apps to my devices remotely from a desktop Web browser. The downside? My Android handsets tend to be overstuffed with too many apps, many of them used only once (or even never).

The solution, of course, is to delete some of those apps – ideally, the ones you use the least.

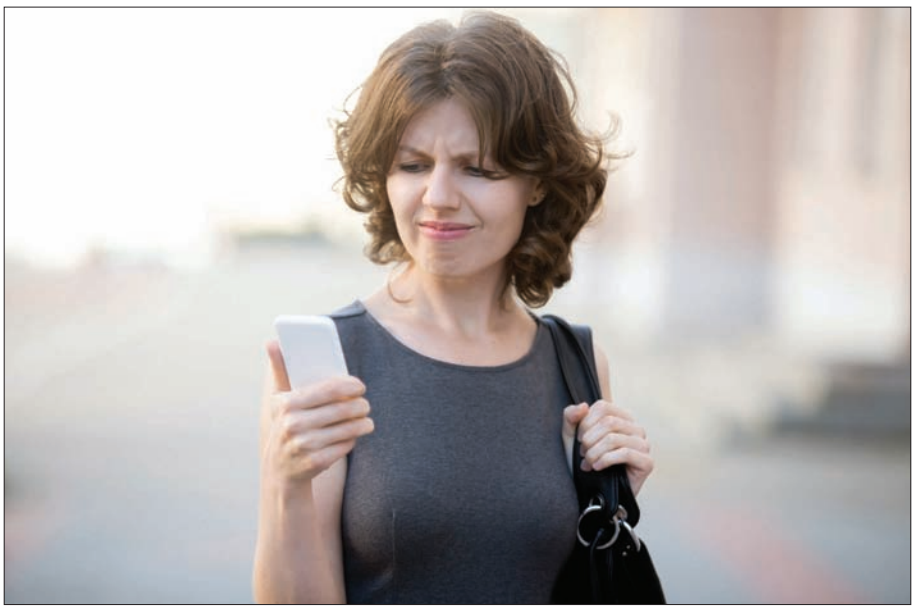
To do so, open the Play Store app, tap the three-line menu button in the top right corner of the screen, tap My apps & games, then tap the Installed tab. Next, tap the Sort button near the top-right corner of the screen, then pick an option, such as Size or – better yet – Last Used. If you sort your apps according to Last Used, scroll to the very bottom of the list to see which apps you use the least. See a seldom-used app you could do without? Tap it, then tap Uninstall.

There are also several apps that can track your app usage and tell you which apps you're using the least. Among them: App Usage, App Tracker, and QualityTime.

HOW TO

HOW TO Turn off phone notifications in Android

BEN PATTERSON explains how to weed out the random calls and alerts, and focus only on the ones that really matter to you



Credit: iStock

So there you are, doing your best to connect with a friend over a cup of coffee, but you can't help but notice the pulsing alert on your phone's touchscreen. What if it's your babysitter trying to reach you, or a nasty email from your boss?

You surreptitiously unlock your phone to see what the fuss is about—and just like that, you become one

of those people who can't keep their hands off their handsets, even when there's a flesh-and-blood person in front of them. (Oh, and that message on the screen? It was a promo for a half-off sale. Great.)

The good news is that your Android phone boasts a series of tools that can help you concentrate on the people who matter, rather than being distracted by random calls, messages, and alerts.

1. Let Do Not Disturb mode screen your calls

Yes, activating Do Not Disturb mode for Android (flick down with two fingertips to reveal Quick Settings, then tap the Do Not Disturb button) is a great way to keep your phone from buzzing during lunch, but you may still find yourself tempted to check your messages.

Here's a handy trick: just set Do Not Disturb to screen your calls and text messages, allowing only the most important ones through. That way, you'll be confident that your silent phone isn't actually ringing off the hook with mission-critical calls, and more likely to pay attention during your lunchtime chat.

Tap Settings > Sound > Do not disturb > Priority only allows, then pick some options. For example, you can set 'priority only' to include incoming calls and texts from contacts, reminders, event alerts, and repeat callers. To restrict call and text alerts to your innermost circle, make sure Calls and Messages is set to Starred contacts only, then go through the Contacts app and star only those contacts who really, truly matter to you. Finally, a Repeat callers setting will allow a caller to get through if they've called twice

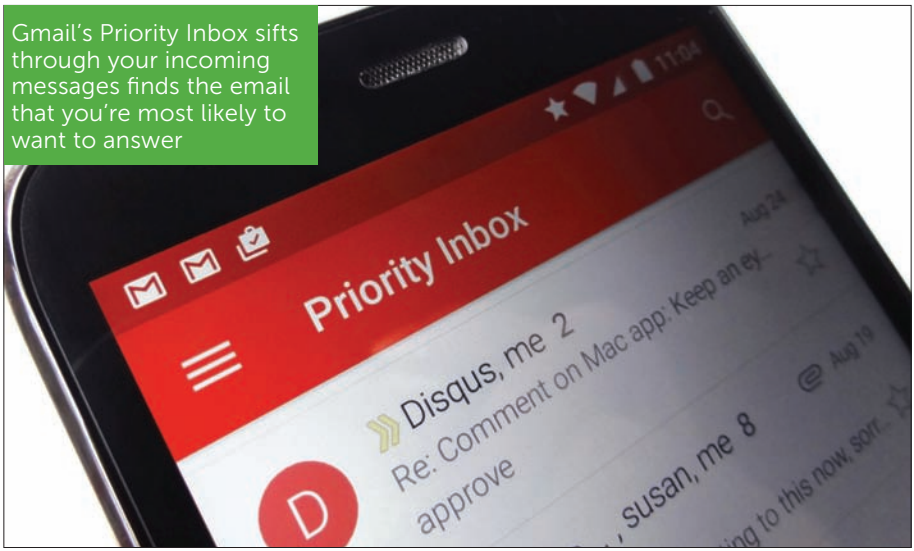
within 15 minutes. To enable Priority mode, flick down from the top of the screen to reveal Quick Settings, tap Do Not Disturb, then make sure the Priority only tab is enabled. Finally, sit back and give your full, undivided attention to a (grateful) friend.

Note: Android's version of Do Not Disturb boasts three different modes: Priority Only, which blocks specific alerts for apps, calls and texts; Alarms Only, which blocks all alerts except for the Android alarm clock; and Total Silence, which blocks all alerts, no matter what. While the Alarms Only and Total Silence modes will guarantee you a peaceful lunch hour, they may also block critical alerts, calls or alarms. In general, you should stick with Priority Only mode unless you're certain you don't want any interruptions, period.

2. Turn on alerts for Gmail's Priority Inbox – and off for all your other inboxes

If you're not interested in hacking iOS's VIP alerts into your Android phone, you can take advantage of Gmail's secret formula for determining which messages are most important to you.

Using your prior emailing habits as a guide, Gmail's Priority Inbox sifts through your incoming messages, finds the email that you're most likely to answer, and puts them into an 'Important and unread' folder. Everything else (such as random email promotions, newsletters, and other lower-priority messages) goes into the aptly-named 'everything else' section of your inbox. Once that's done, you can set the Android version of Gmail to alert you only when new messages



Gmail's Priority Inbox sifts through your incoming messages finds the email that you're most likely to want to answer

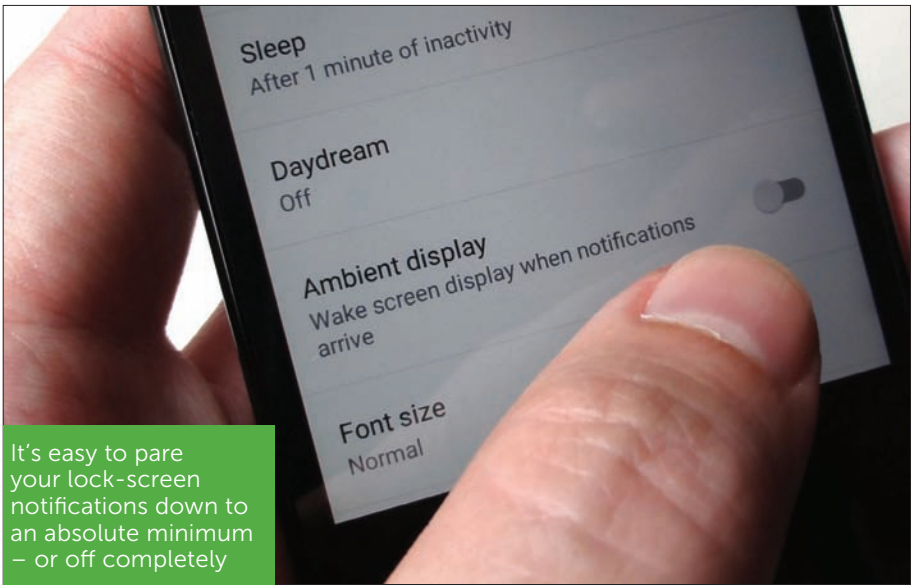
land in your Priority Inbox – and hopefully, you'll feel better about leaving your silenced phone alone.

First, you'll need to enable Gmail's Priority Inbox feature. Open Gmail, tap the menu button in the top-left corner of the screen, tap Settings, pick a Gmail account, then tap Inbox type > Priority Inbox. Tap Manage labels, then make sure that Priority Inbox is the only Gmail label with notifications turned on. (If you don't see a Sound on, Notify once or similar tag next to a label, then notifications are off for that label.)

3. Turn off unneeded lock-screen notifications

So, you're in a meeting, your phone is sitting dutifully – and silently – on the table in front of you, and you're giving your colleagues your full attention. But then it

HOW TO



It's easy to pare your lock-screen notifications down to an absolute minimum – or off completely

happens: Your phone's lock screen lights up, and your eyes can't help but flick down to the display ... which is nothing more than a random Facebook update.

Luckily, it's easy to pare down your lock-screen notifications to an absolute minimum – or turn them off completely, even when you don't have Do Not Disturb or Priority mode switched on.

To keep your phone's lock screen from lighting up when notifications come in, tap Settings > Display, then toggle off the Ambient Display setting. Or, here's another option: Tap Settings > Sound > Do not disturb > Block visual disturbances, then enable the Block when screen is off setting. Doing so will keep alerts blocked by Do Not Disturb from lighting up your phone's lock screen.

You can completely turn off notifications for a specific app by tapping Settings > Notifications. Tap an app, then enable the Block all setting. You can also choose to show an app's alerts silently, but remember, even silent notifications can be tempting.

Another way to disable an app's alerts is by long-pressing its notification when it appears. When you do, you'll get the chance to block its alerts or show them silently.

While you're at it, you might also want to turn off your handset's pulsing notification light—you know, the one that's saying 'Look at me, look at me' all the time. Go back to Settings > Notifications, tap the Settings button (the one shaped like a gear) in the top right corner of the screen, then toggle off the Pulse notification light setting.

Just below the Pulse light notification toggle is a setting that can disable all lock-screen notifications, regardless of whether Do Not Disturb is switched on. If you're willing to forgo any and all lock-screen alerts, tap On the lock screen, then choose the Don't show notifications at all setting.


IDG