



Meizu MX6 Teardown

Teardown of the Meizu MX6 on Monday July 25th 2016.

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INTRODUCTION

Hot on the heels of the [Huawei P9](#), the Meizu MX6 is the next Chinese-designed smartphone to land on our teardown table. At first glance, this iPhone look-alike is making us see double! The MX6 couldn't be the long lost twin to the iPhone, could it? Let's get this teardown started and find out.

Stay up to date on the latest repair news, and get a behind-the-scenes look at where the teardown magic happens by following us on [Facebook](#), [Instagram](#), or [Twitter](#).

[video: <https://www.youtube.com/watch?v=u6TsjbeiGAc>]



TOOLS:

- [P2 Pentalobe Screwdriver iPhone](#) (1)
- [iSlack](#) (1)
- [Spudger](#) (1)
- [Phillips #00 Screwdriver](#) (1)
- [Tweezers](#) (1)
- [SIM Card Eject Tool](#) (1)
- [iFixit Opening Tool](#) (1)

Step 1 — Meizu MX6 Teardown



- On the outside, the MX6 walks the iPhone walk, but does it talk the talk? Here's what we know so far:
 - MediaTek Helio X20 deca-core (a.k.a. *10 cores!*) CPU w/ ARM Mali-T880 GPU
 - 4 GB LPDDR3 RAM and 32 GB of storage
 - 5.5-inch, 1080p high-precision display (~401 ppi)
 - 12 MP *f*/2.0 main camera w/ 1.25 μ m pixels and 5 MP front-facing camera
 - Flyme OS 5.2 over Android 6.0 Marshmallow
 - 3,060 mAh battery with 24 W fast charging
 - USB-C port, Dual SIM support, and Meizu mTouch fingerprint sensor

Step 2



- It's a three-phone pile-up as we pull over to take a cursory look at how the MX6 compares to its iPhone idols.
- A quick comparison reveals...not a whole lot. Apart from the USB-C connector and a slightly shifted microphone port, we're hard pressed to distinguish the MX6 from its Cupertino-based counterparts.
- It's a similar story topside. Aside from the oval home button and different side button configuration, the MX6 fits right into the iPhone lineup—what with its metal unibody design and [2.5D glass panel](#).
- The MX6 differentiates itself with a centered rear camera and dual flash assembly, but those subtle antenna bands are reminiscent of [certain iPhone 7 rumors](#).

Step 3



- Like the [Huawei P9](#), the MX6 seems inspired by the iPhone in more than just looks: two Pentalobe screws secure the MX6's display assembly to the chassis.
- We're still baffled as to why manufacturers would copy Apple's screw design, when a regular ol' Phillips or Torx screw does the same job better with less hassle.

 *Ruh Roh, Raggy!* We also find a [fingerprint reader cable booby trap](#) like in the iPhone 5s/SE!

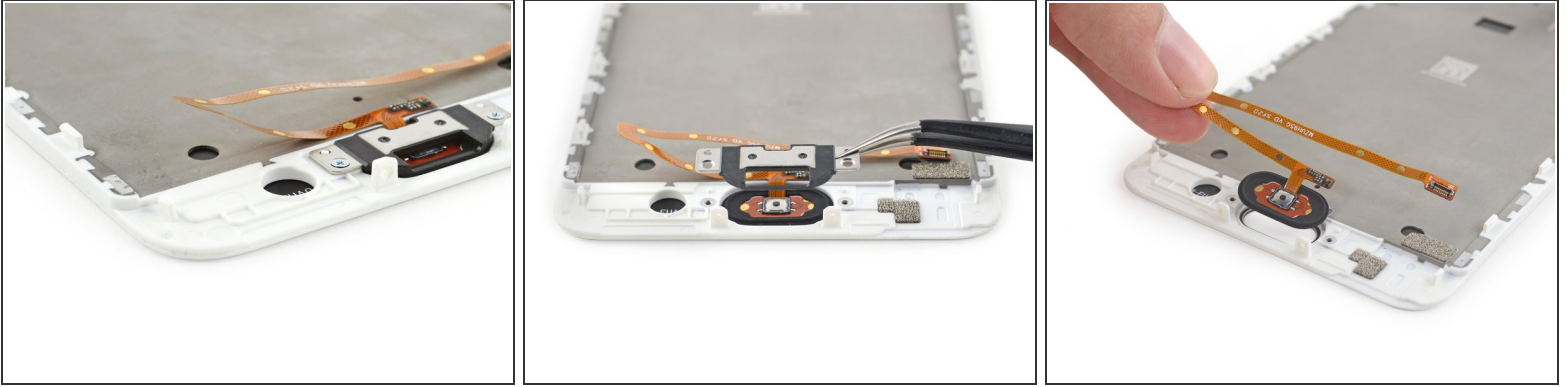
- Not to worry, Scooby Doo— Meizu cut us some slack (literally), so the cable is unlikely to rip when opening the phone.
- ① The cable's connector lies under a screwed-down, tamper-evident bracket that's arguably simpler than Apple's [awful spring clip](#).

Step 4



- Before diving in, we pause to disconnect the battery; its small connector releases with a flip of the spudger. [Safety first.](#)
- With the MX6 safely de-electrified, we pop the display cable free and peer inside.
 - First observation: *Phillips screws— everywhere!* A small celebration breaks out around the teardown table.
 - Second observation: Looks like the iPhone mold is mostly skin-deep, look at that big ol' battery. We just can't wait to dig in.

Step 5



- Interestingly, the display's perimeter is all plastic, including its clips and edges. This may be a durability concern, but there's no risk of [display bracket separation](#).
 - Out comes the bracket securing the fingerprint sensor—followed by the sensor itself, with its long [switchback](#) cable in tow.
- i** This display assembly is a much simpler affair than you'll find in a comparable iPhone (or Android phone!), thanks to some handy spring contacts and a motherboard-mounted front-facing camera.
- ★** That means a cheaper, simpler repair!

Step 6



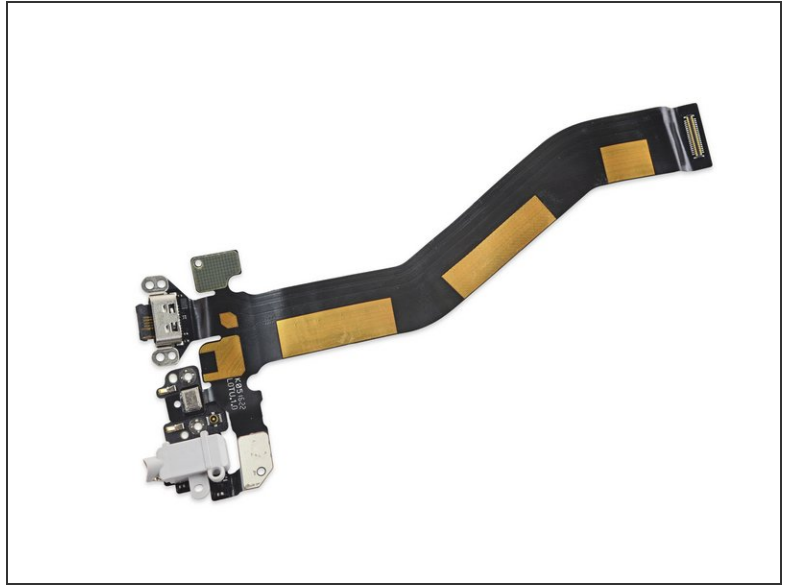
- With the display assembly out of the way, we carefully excavate the MX6's stubbornly-adhered battery. Luckily, the battery features an [iPhone 4-esque battery pull tab](#) that makes the job a bit easier.
- The MX6 packs a non-user-removable, 3.8 V, 11.63 Wh Li-poly battery.
 - ⓘ This puts the MX6's battery ahead in the power struggle, topping the [iPhone 6s Plus](#)'s 10.45 Wh battery, and just barely surpassing the [Samsung Galaxy S7](#)'s 11.55 Wh battery.
 - ⓘ Meizu claims that their mCharge 24 W (12 V at 2 A) fast charging technology will fully charge the MX6's battery in only 75 minutes, compared to [90 minutes](#) for the Galaxy S7.

Step 7



- Next to come out? The speaker assembly, complete with spring contacts and what appears to be an antenna sticker of some kind.
- Part of the assembly lines up with the lower microphone hole—but if you go looking for a mic here, you'll be disappointed!
- This assembly has a tiny acoustic tube channel with a 90-degree bend, passing sound from the outside world to a mic located elsewhere...

Step 8



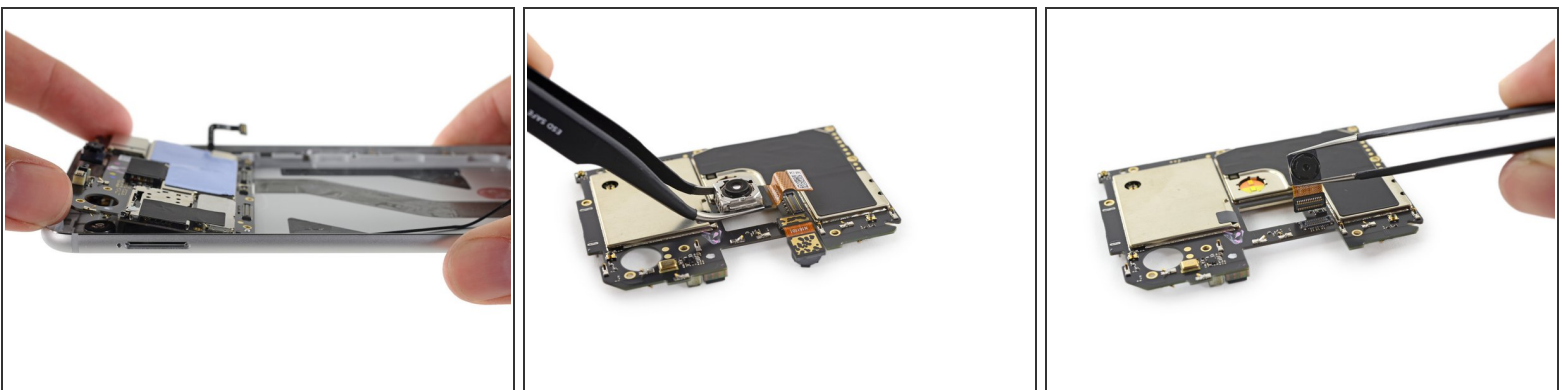
- "Elsewhere" turns out to be a combined USB-C, headphone jack, and microphone assembly—which we dutifully peel out of the chassis of the MX6.
- ⓘ A small amount of adhesive secures the cable to the chassis, but it presents no problem for our teardown engineer.
- Upon inspection, we find antenna connections on the bottom of the cable, as well as on the bottom of the motherboard.
- ✦ Manufacturers seem to be in competition to cram [as much](#) as they [possibly can](#) onto the charging port cable. (Which means a pricier repair when your port eventually gets loose.)

Step 9



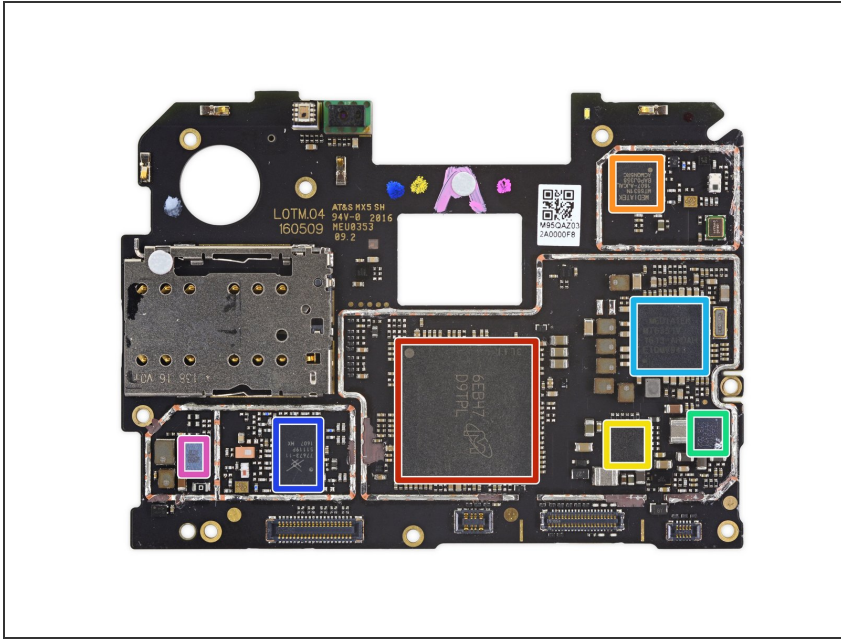
- With tweezers in hand, we deftly pluck out several bits 'n pieces:
 - Antenna/vibrator bracket
 - Antenna/front-facing camera bracket
 - Dual SIM card tray
 - [Turbo-encabulator](#)
 - ⓘ Just kidding ;)

Step 10



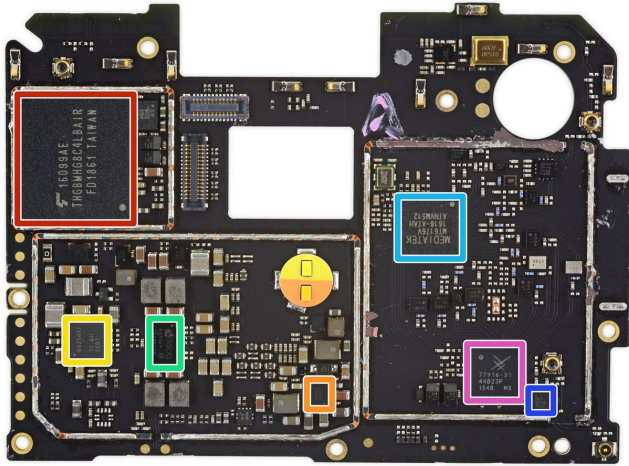
- With those bits out of the way, we lift the motherboard out and get a closer look at the cameras.
 - ⓘ The rear-facing camera features Sony's 12 MP [Exmor RS IMX386](#) CMOS image sensor along with a 6-element $f/2.0$ lens, while the front-facing camera features a 5 MP sensor with a 4-element $f/2.0$ lens.

Step 11



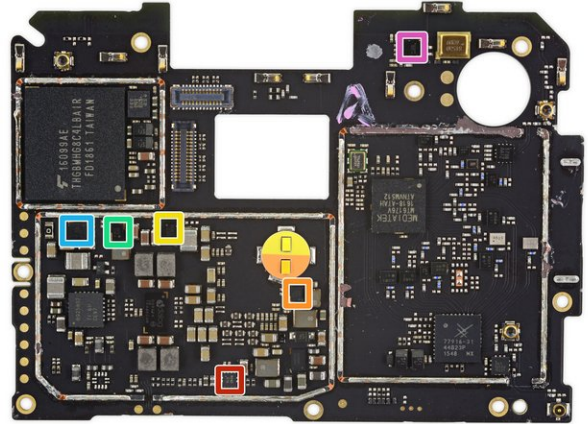
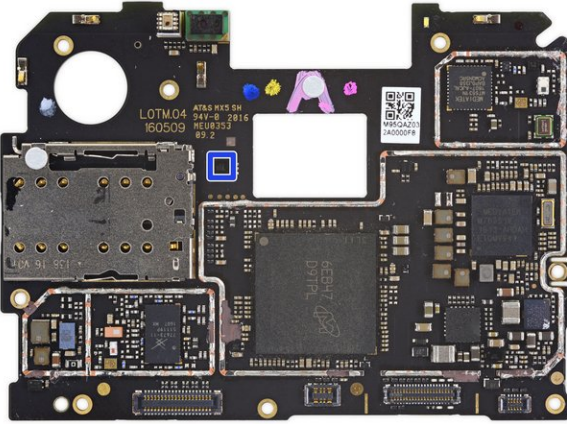
- With the motherboard plucked from the the rear case, we take a second to explore the MX6's silicon situation. Highlights include:
 - Micron [MT52L512M64D4GN-107 WT:B](#) 32 Gb (4 GB) Mobile LPDDR3 SDRAM with MediaTek [Helio X20](#) SoC layered underneath
 - MediaTek [MT6631N](#) Wi-Fi module
 - Texas Instruments [BQ25892](#) fast charging IC
 - NXP [TFA9911](#) audio amplifier
 - MediaTek MT6351V PMIC
 - Skyworks SKY77673-11 power amplifier module (likely)
 - MediaTek MT6300P (possibly an iteration of the [MT6302](#) dual SIM card controller)

Step 12



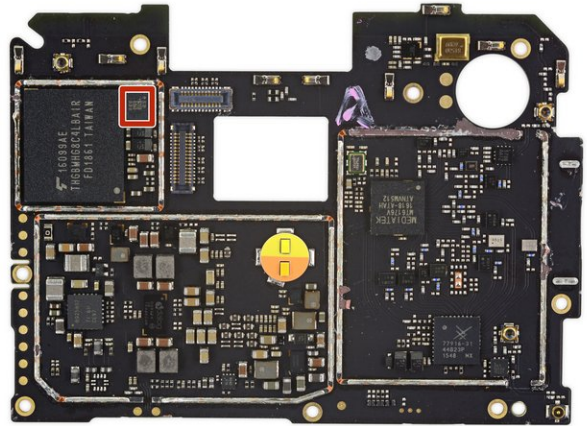
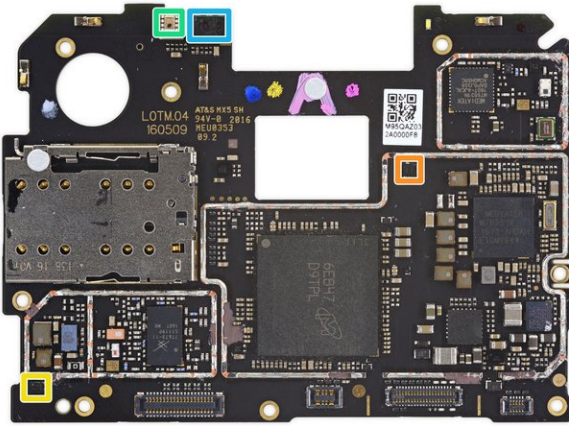
- On the flip side:
 - Toshiba [THGBMHG8C4LBAIR](#) 32 GB eMMC 5.1 NAND flash
 - Texas Instruments [LM36272](#) LCD backlight driver
 - Texas Instruments [BQ25892](#) fast charging IC
 - Dialog Semiconductor [DA9214](#) PMIC
 - MediaTek [MT6176V](#) RF transceiver
 - Skyworks [SKY13596-397LF](#) RF switch
 - Skyworks [SKY77916-31](#) RF PAM

Step 13



- IC Identification, pt. 2:
 - ON Semiconductor [FUSB301A](#) USB type-C controller
 - Texas Instruments [LM3644](#) camera flash LED driver
 - ON Semiconductor [FAN53200UC35X](#) 5 A regulator
 - ON Semiconductor [FAN53526UC128X](#) 3.0 A DC-DC converter
 - ON Semiconductor [FAN49101](#) 2 A buck-boost regulator (likely)
 - Texas Instruments [DRV2604](#) haptic driver
 - Skyworks SKY9225 antenna tuner (likely)

Step 14



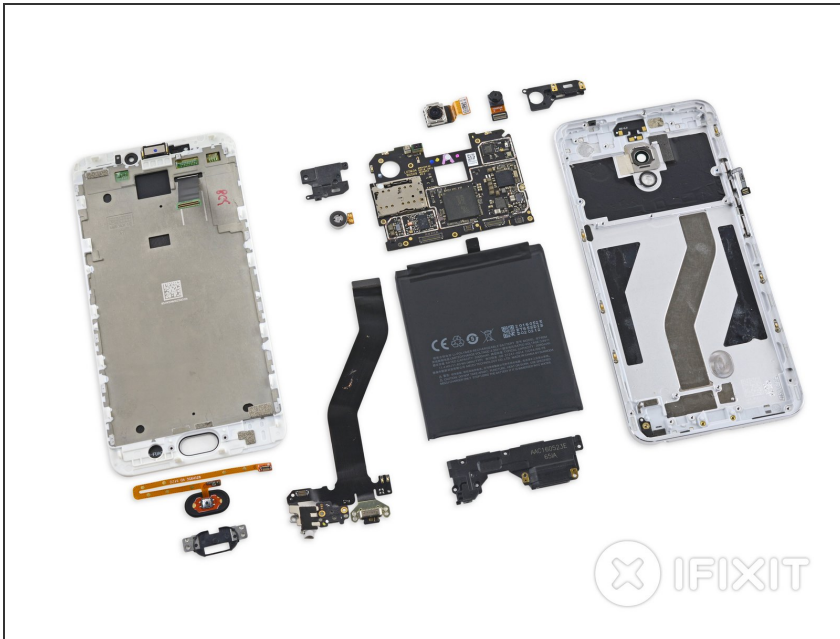
- IC Identification, Pt. 3 (sensors):
 - STMicroelectronics [LSM6DS3](#) 3-axis accelerometer/gyroscope
 - AKM Semiconductor AK09911 3-axis electronic compass
 - Rohm BU52031NVX Hall Effect sensor
 - Rohm BH1745 color sensor
 - Broadcom [APDS-9922-001](#) ambient light/proximity sensor

Step 15



- The final few pickings come from the MX6's chassis.
- We pry out the (tiny!) rotational vibrator motor. It's different from the linear oscillating motors and "Taptic Engines" used in many ([not all](#)) iPhone models, but also takes less space.
- The chassis itself is peppered with spring contacts, which no doubt made our teardown journey that much easier.

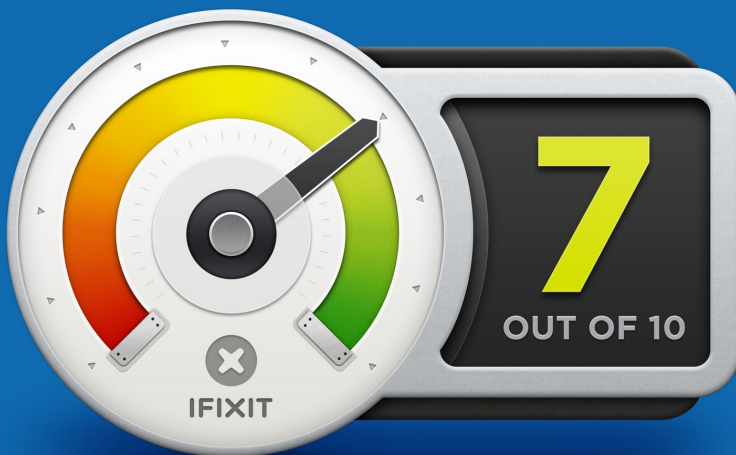
Step 16



- Though the exterior design looks undeniably iPhone-esque, the hardware layout calls to mind [another recent Android hit from China](#).
- And that's a wrap! Time to give this phone a score.

Step 17 — Final Thoughts

REPAIRABILITY SCORE:



- The display assembly is the first component out, simplifying screen repairs.
- Modular components with spring contacts, large screws, and thoughtful cabling all make repair cheaper and easier.
- The battery is equipped with a pull-tab for removal, but tough adhesive means lots of force is needed to remove it.
- The MX6 uses Pentalobe security screws on the exterior, requiring a specialty screwdriver to open the phone before any repair.

