

Reverse Engineering Challenge (VRC High School) - The Components of a Mobile Phone

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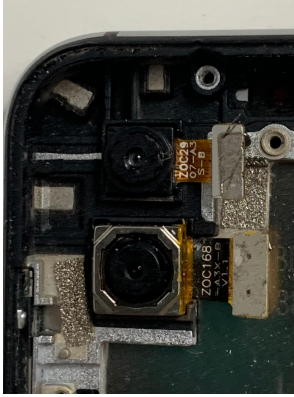

Start


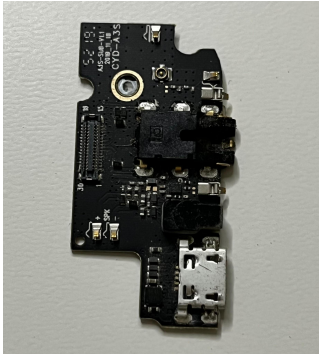
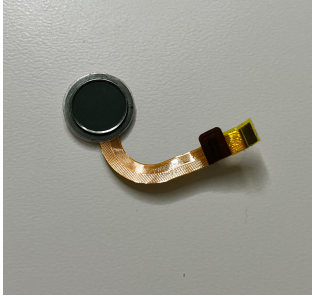






End




The Hardware Components Inside My Device:

Component Name	Image	Description
SIM Slot		<p>SIM cards allow a mobile user to use this data and the features that come with them. Without a SIM card, some phones would not be able to make calls, or connect to internet services such as 4G LTE and 5G or send SMS messages. SIM cards are removable and have anywhere from 32 KB to 128 KB.</p>
16MP + 5MP Dual Camera		<p>This device contains a 16MP sensor tagged alongside a 5MP secondary sensor. The use of the secondary camera is to measure the depth of field and help blur the background in the image, while providing complete focus on the subject at the front.</p>
Back Cover		<p>Smartphone covers provide adequate protection to phones. They protect the corners, back, and edges of the phone. A good phone case cover will mitigate the impact of shock and vibration when the smartphone is dropped.</p>

<p>Display</p>		<p>The Glass Panel or display (Top Layer) is the top glass layer in the front, which you can touch and feel. Typically less than one millimeter thick, the glass panel mostly serves as a layer of protective scratch-resistant glass to resist shattering and damaging surfaces</p>
<p>Charging Board Port</p>		<p>A charging port connects a phone to a power source to recharge the battery. A data port allows a phone to connect to a PC or other device for various types of data transfer. It also contains a headphone jack.</p>
<p>Fingerprint Sensor</p>		<p>Fingerprint sensors allow users to unlock the phone, open an app, or authenticate a mobile payment just by placing their finger directly on the display. Fingerprint recognition systems work by examining a finger pressed against a smooth surface. The finger's ridges and valleys are scanned, and a series of distinct points, where ridges and valleys end or meet, are called minutiae. These minutiae are the points the fingerprint recognition system uses for comparison.</p>

<p>Flex Cable</p>		<p>A flex cable is an extremely important and inseparable part of every smartphone. In mobiles the flex cable is used primarily to connect the motherboard to the LCD display.</p>
<p>Front Camera</p>		<p>The front camera of a phone is facing the user, or on the same surface as the main display. This enables two-way video calls and video conferencing. It is also useful for capturing self-portraits.</p>
<p>Li-polymer Battery</p>		<p>Lithium-polymer batteries are commonly used to charge smartphones and other portable electronic devices. Li-poly batteries have several advantages over other types of batteries, due to high energy density, a long cycle life, and a wide operational temperature range.</p>
<p>2G RAM+16G ROM Motherboard</p>		<p>The motherboard is a central component necessary to the functioning of the phone that allows the CPU, RAM, and other hardware elements to communicate with each other. The mainboard is a printed circuit board that comprises several components like the storage/memory, camera, wireless networks, and other major parts essential for the adequate functioning of your smartphone.</p>

<p>Antenna Signal Wire</p>		<p>The function of the antenna is to receive and transmit radio signals. When you make a call, the phone transmits the radio signals to all the nearest towers which then relays the signal to the person whom you were contacting, their phone converts the signals into electrical signals, which is then converted to sound and vice versa happens when they speak. Without an antenna your phone would not be able to make or receive calls and messages.</p>
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Final Conclusion:

Phones have become an essential part of modern life and are important for a variety of reasons, such as communication, information, and productivity. Throughout this process I have learned about all the several elements that make a mobile phone so effective and convenient. While there are many components to this phone the major ones include the camera, front/back cover, SIM card, charging port board, fingerprint sensor, flex cable, battery, antenna signal wire, and the motherboard. The SIM card and the antenna signal wire aid in communication by allowing the device to receive and send messages and calls by transmitting radio signals to radio towers. The motherboard is a circuit that contains all the information on your phone, and the flex cable allows it to connect to the display so you are able to see it. Your phone's battery provides power , allowing other components to function, and the charging port is used to charge your battery when it runs out of power. A fingerprint sensor is not crucial for a phone to function but they serve as a more useful and easier way to unlock your phone. Finally, the front and back glass serve in protecting the hardware in your phone and making sure it does not get damaged.