

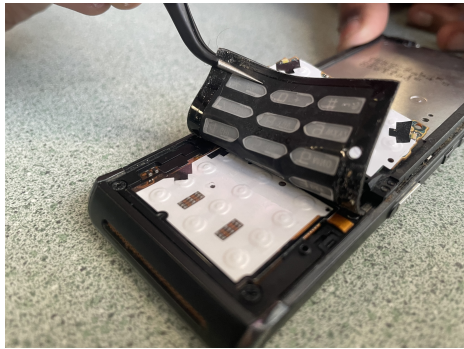
Location: Hopkinton, MA

Walkman Phone Disassembly Documentation by 1715M
(VEXIQ Reverse Engineering Challenge)

Participants: Aashrithasai, Evelyn, Malak, Alekhya, Sravani, and Vanshika.

Team: 1715M, Mechanical Carrots

The Sony Ericsson W595 is a walkman or slide phone from 2008. It weighs about 3.67 ounces and is compatible with Java. The walkman phone isn't a common item in today's society, and we usually take it for granted or just completely ignore it because it isn't as "complex" as today's phones. We wanted to take it apart so we could find out how the components worked and behaved in relation to each other and how technology has changed in such a short amount of time to the technology that we use now. By studying this technology, it is like we are almost experiencing the world a decade ago. In addition, the parts and their roles are easy to translate to the building knowledge we possess by taking part in the Vex IQ program.



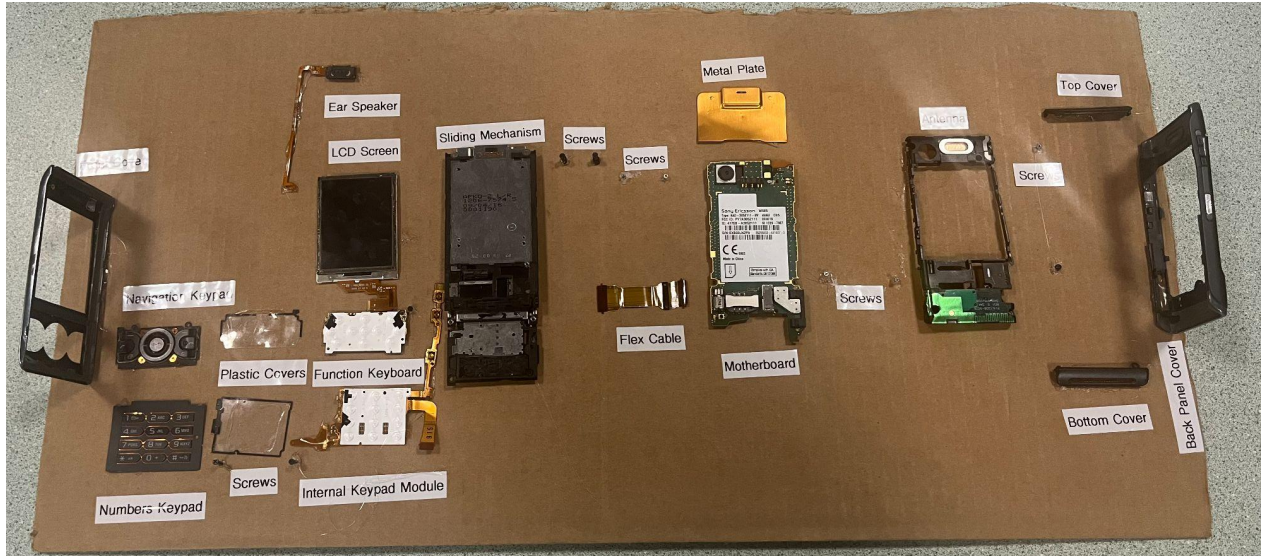
Our team members removing the keypad from the Internal keypad Module using our tools and safety goggles.



An image of our tools.

Full components list:

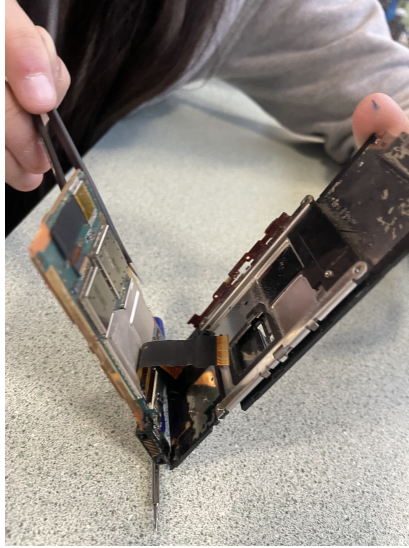
- Flex Cable
- LCD Screen
- Ear Speaker/Speaker Buzzer
- Numbers Keypad
- Navigation Keypad
- Back Panel Cover
- Function Keyboard
- Top Cover & Bottom Cover
- Front Cover
- Internal Keypad Module (UI Board Numeric incl.)/UI Board Function
- Double Sided Tape
- Sliding Mechanism
- Antenna
- Motherboard
- Plastic covers



A diagram demonstrating the way we would reassemble the phone if we were to.

The Flex Cable is a part of many devices today, and is used to connect the motherboard to the LCD screen, which is something we compared to a motor cable— although they don't have the same roles. The LCD stands for Liquid Crystal Displays. It is used in many phones because of the low need for high amounts of power and its high legibility under many conditions. The Ear Speaker is used to receive calls. The function keyboard is used to control the features of the phone, and the keypads are used as a protection for the keyboard and Internal Keypad Module that is easy for the user to access. The Internal Keypad module is what is clicked to input digits. The panel covers are the pieces of the phone's protective shell that reduce damage to the internal components. Double sided tape is used as an adhesive in some parts of the Sony Ericsson W595. The sliding feature allows the front case to slide to reveal where the user can interact with the device. Plastic coverings are used as protection for some parts of the slide phone. The Antenna is used as a convertor for radio wave energy, and is a part of the wireless system of this phone. The Motherboard is one of the main elements of the phone, and functions to make the elements of the phone that were previously mentioned all cooperate.

We learned a lot of lessons from this challenge, like how the slide phone was much more interesting and its designs and components were more intricate than expected. Even though the past phones look simple and seem primitive compared to the smartphones that we use today, they actually are really complex items that can show us engineering in a special way that you can't find within modern phones. The components can be translated into what we do in robotics today. For example the way we can relate the motherboard to the VEX IQ brain, and how the diagram we created helps us with our notebooking skills. All of which we were able to learn from the Sony Ericsson W595 walkman phone, a name we would have never recognized before.



Our team members separating the motherboard from the other internal hardware

*Our sources were: FixShop.eu, <https://www.formymobile.co.uk/w595disassembly.php>, and **Sony Ericsson W595 Spare Parts & Accessories** <https://www.maxbhi.com/sony-ericsson-w595-spar...> <https://youtu.be/wbZ1594pmKs>*