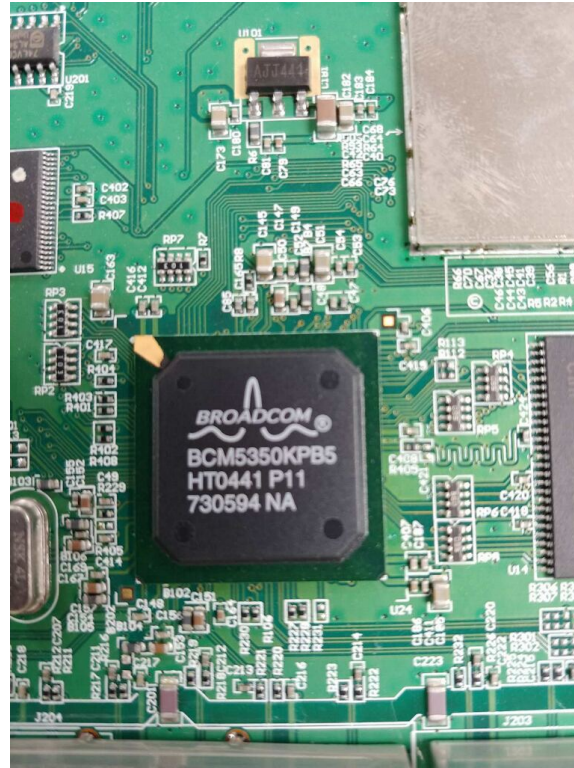


## 2018 TI Challenge - 9364A

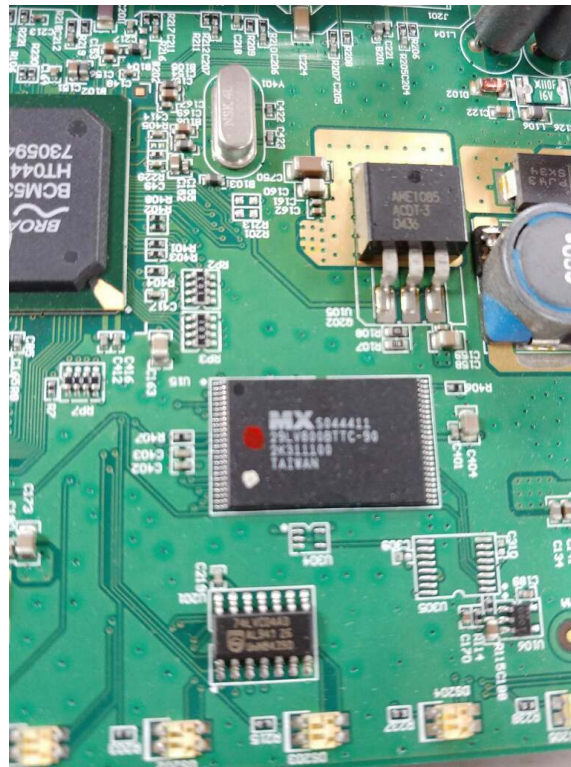
For our TI Challenge this year, we chose to take apart an old Netgear router. We chose this because an internet connection is something so ubiquitous in our everyday life, yet we didn't know what was inside the device that makes it possible.



The first chip we researched was the large Broadcom chip in the middle of the board (above). This chip is an integrated transceiver device for 2.4 ghz network. This means the chip controls the transmission and reception of the WiFi network.



One of the components we found was a Samsung Random Access Memory (RAM) chip (above right). This chip is used to compute the router's processes. Since it is a RAM chip, when the power is disconnected, the memory will not be stored.



The MX chip is also a memory chip, but flash memory. This means that when the power is disconnected, the information is still stored, unlike the Samsung chip. In the case of our router, this would include things like the network name and other configurations.

This was an eye-opening project. We were amazed with how compact and how intricate the router was, and this experience has furthered our interest in modern technologies.



Full disassembly of router

## Works Cited

Samsung K4S640832H-TC75

[http://www.datasheetcatalog.com/datasheets\\_pdf/K/4/S/6/K4S640832H-TC75.shtml](http://www.datasheetcatalog.com/datasheets_pdf/K/4/S/6/K4S640832H-TC75.shtml)

MX 29LV800BTTC-90

<http://www.datasheet.hk/search.php?part=29lv800bttc-90&stype=part>

Broadcom BCM2050

<http://www.techinsights.com/reports-and-subscriptions/open-market-reports/Report-Profile/?ReportKey=SOC-0304-001>