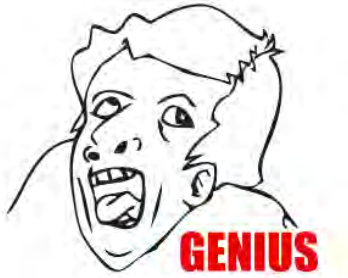
DEF CON 23 LAS VEGAS

This talk is not about LTE vulnerabilities

No cables





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Scared Poopless – LTE and *your* laptop

Disclaimer:
During the slides you will be exposed to hacker stock photos from the internet.

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Thank you!

Goldy
aSmig
@octosavvi



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Intel Security would like to acknowledge and thank the Huawei PSIRT team for their responsiveness and cooperation on this issue.

- CVE-2015-5367: Insecure Linux Image in Firmware
- CVE-2015-5368: Insecure Firmware Update Authentication

http://huawei.com/en/security/psirt/security-bulletins/security-advisories/hw-446601.htm



DEMO

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What did I just see?



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This is not a DELL problem

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Remember kids!
This is why you should do
secure firmware updates

NEVER FORGET

Adam Caudill
Brandon Wilson



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Who are we?

@jessemichael
@laplinker



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Background

- Internal LTE/3G modems and who uses them?





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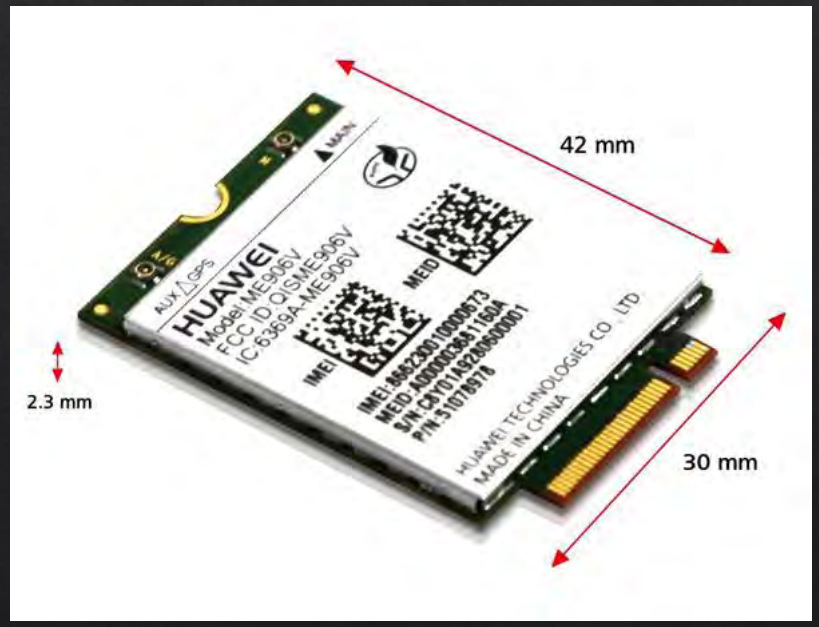
- Internal LTE/3G modems and who uses them?
  - Business class devices





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- Internal LTE/3G modems and who uses them?
  - Business class devices
- How is it plugged in anyway?



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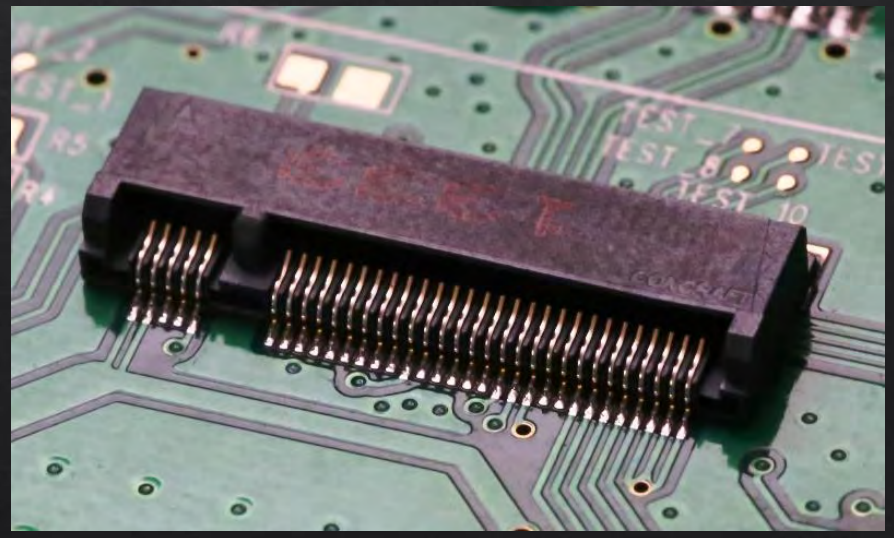

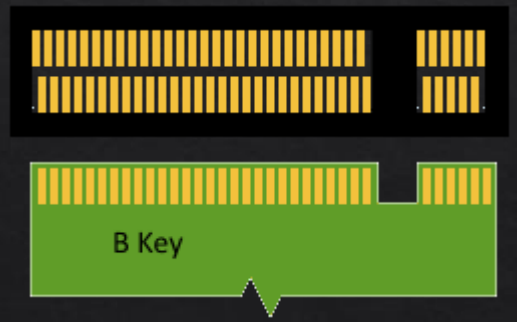

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- Internal LTE/3G modems and who uses them?
  - Business class devices
- How is it plugged in anyway?

PCIe ×2, SATA, USB 2.0 and 3.0,
Audio, PCM, IUM, SSIC and I2C





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- Internal LTE/3G modems and who uses them?
  - Business class devices
- How is it plugged in anyway?
  - USB?!



DEF CON 23 LAS VEGAS

- Internal LTE/3G modems and who uses them?
  - Business class devices
- How is it plugged in?
  - USB?!
- Why hack this device anyway?



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Background

- Internal LTE/3G modems and who uses them?
  - Business class devices
- How is it plugged in?
  - USB?!
- Why hack this device anyway?
  - Module available worldwide
  - It’s plugged in [INSIDE] your laptop/tablet



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- Software
- Firmware
- Hardware



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- Software
  - Windows utility for firmware updates
- Firmware
- Hardware



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- Software
  - Windows utility for firmware updates
- Firmware
  - Packed in software utility
- Hardware



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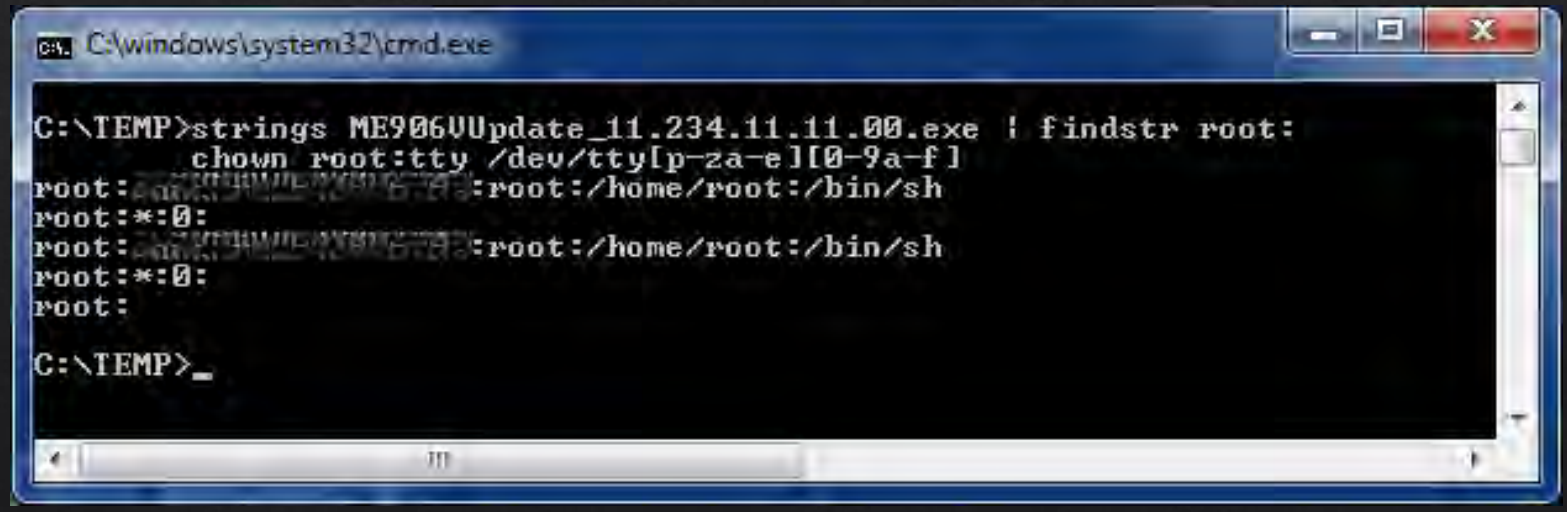
- Software
  - Windows utility for fi
- Firmware
  - Strings is useful
- Hardware





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- Software
  - Windows utility for firmware updates
- Firmware
  - Strings is useful
- Hardware
  - Test pads?





DEF CON 23 LAS VEGAS

- Software
  - Windows utility for firmware updates
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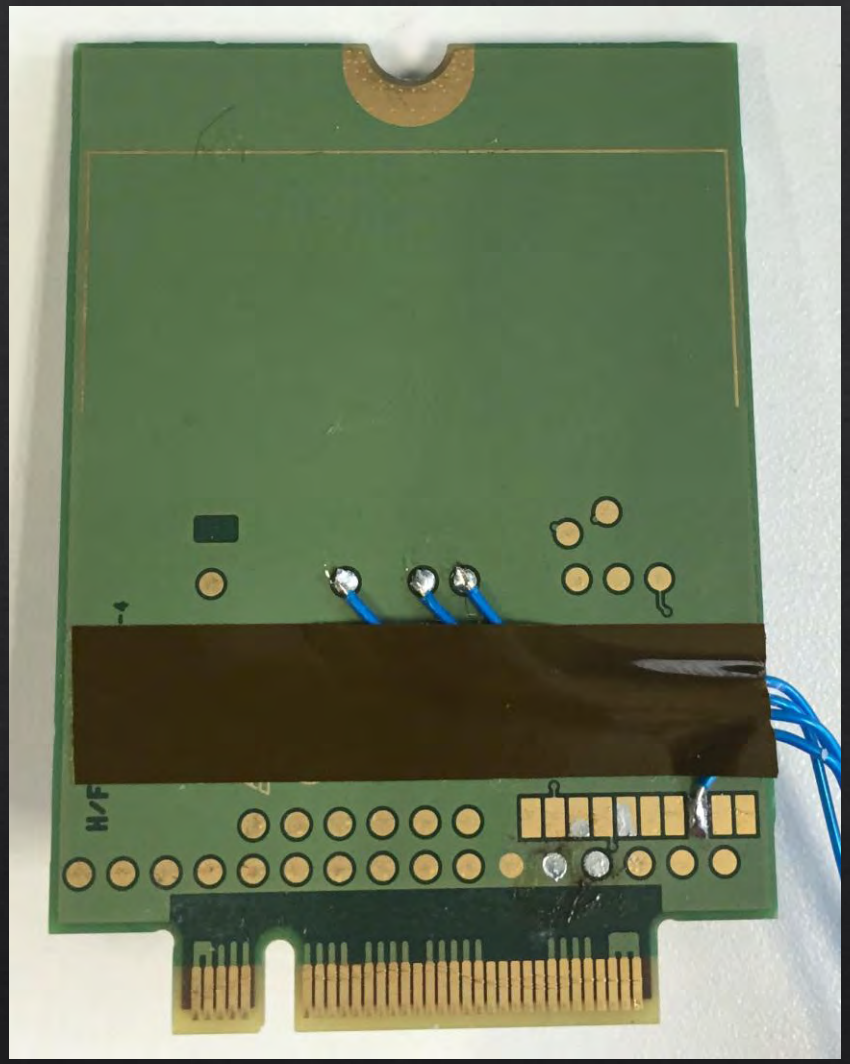

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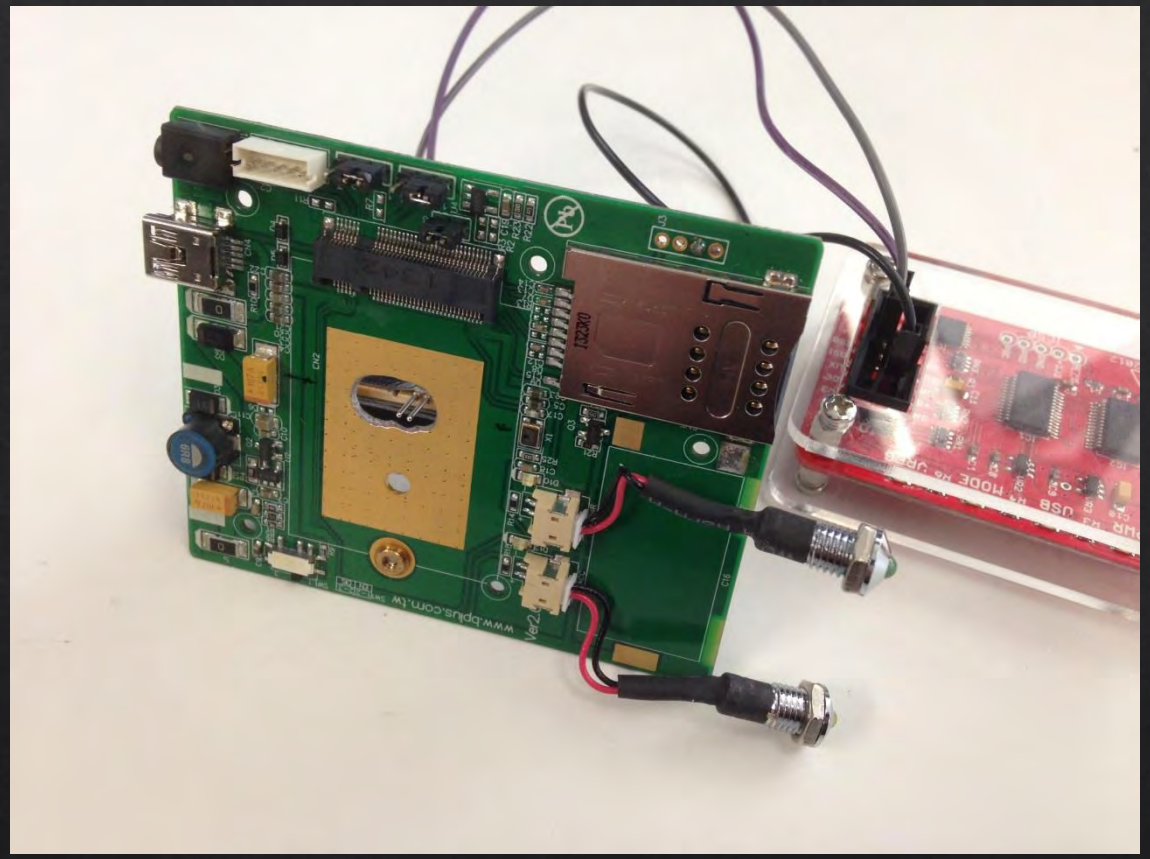

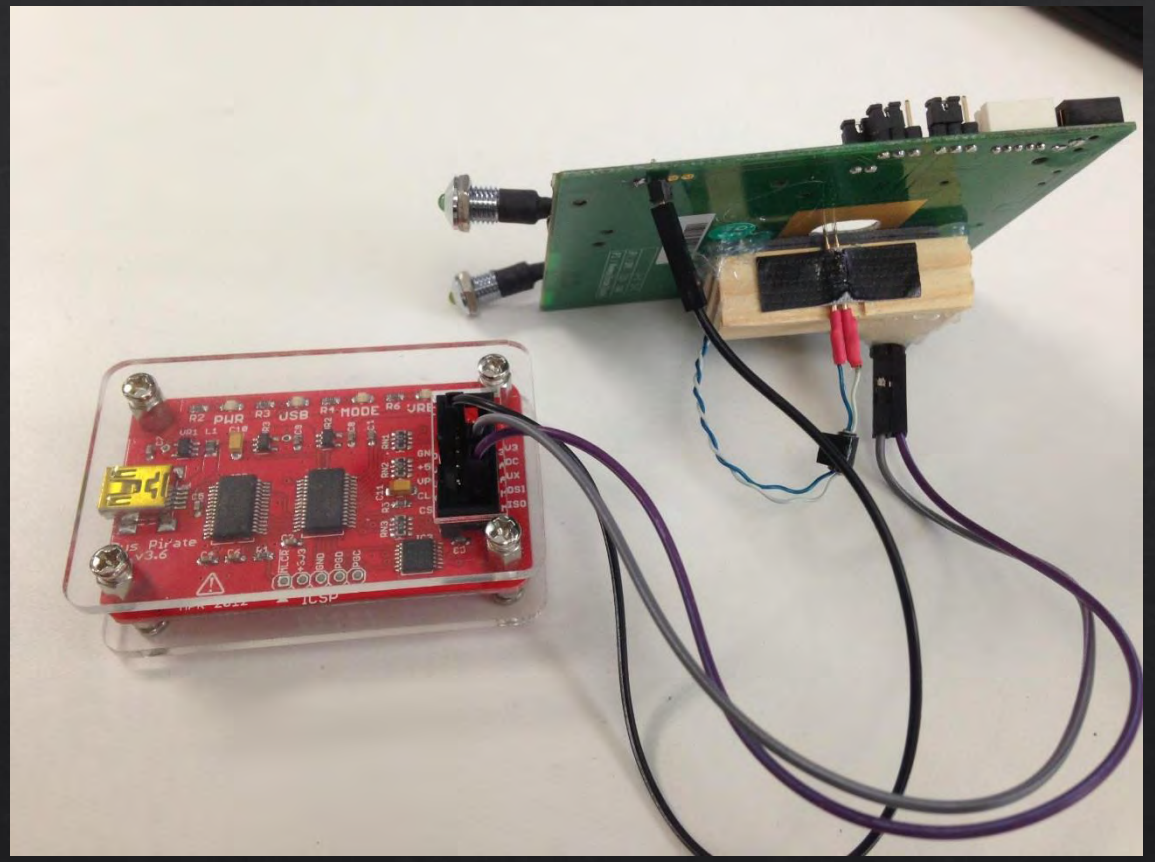

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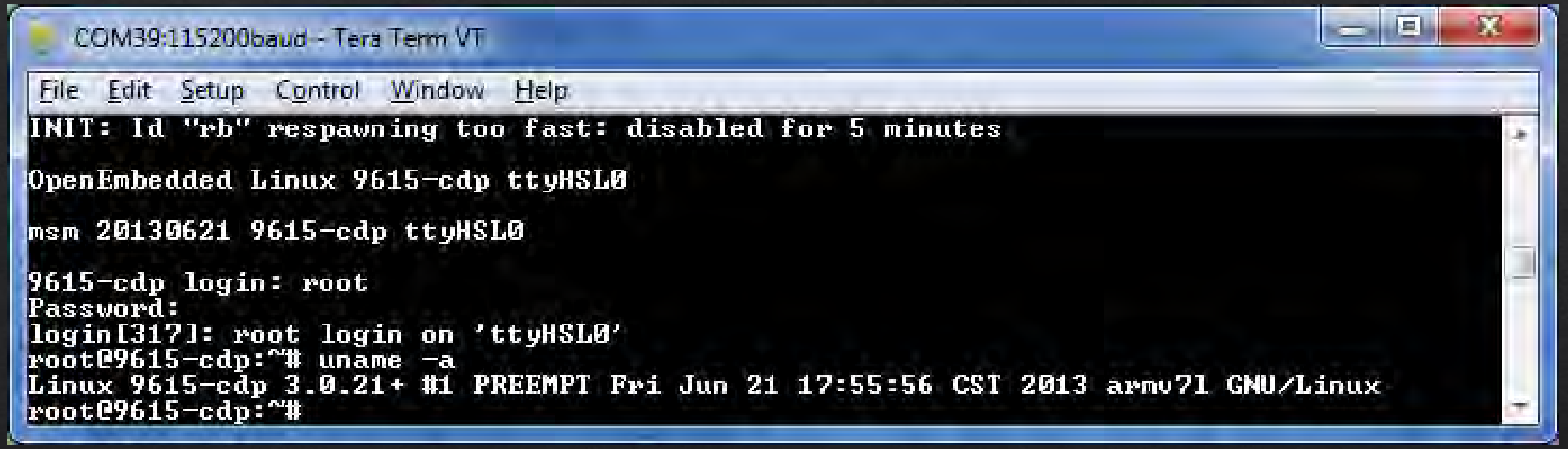
Got root shell!



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Happy shell dance



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Obligatory success meme



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- We have root shell on a linux run, independent device <u>inside</u> the physical platform.



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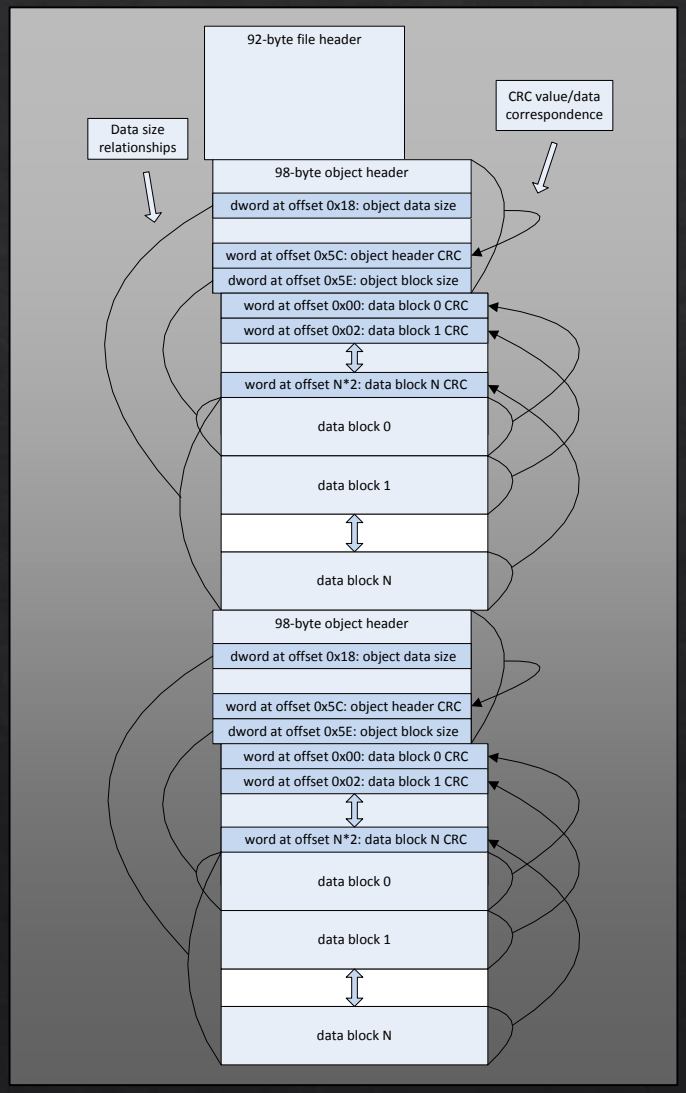
Firmware structure





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Updater patch

- Updater checks CRC
- Updater calculates the correct CRC and compares to the one in the firmware image
- Modify updater code to save correct CRC in image instead of comparing it
- Total op code change = 6 (not including NOP padding)



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Summary

- We had a cool demo!
- There is such a thing as an insider threat, literally.
- Secure your firmware updates.

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Questions?

