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hacktek - Tektronix Application Module Hack
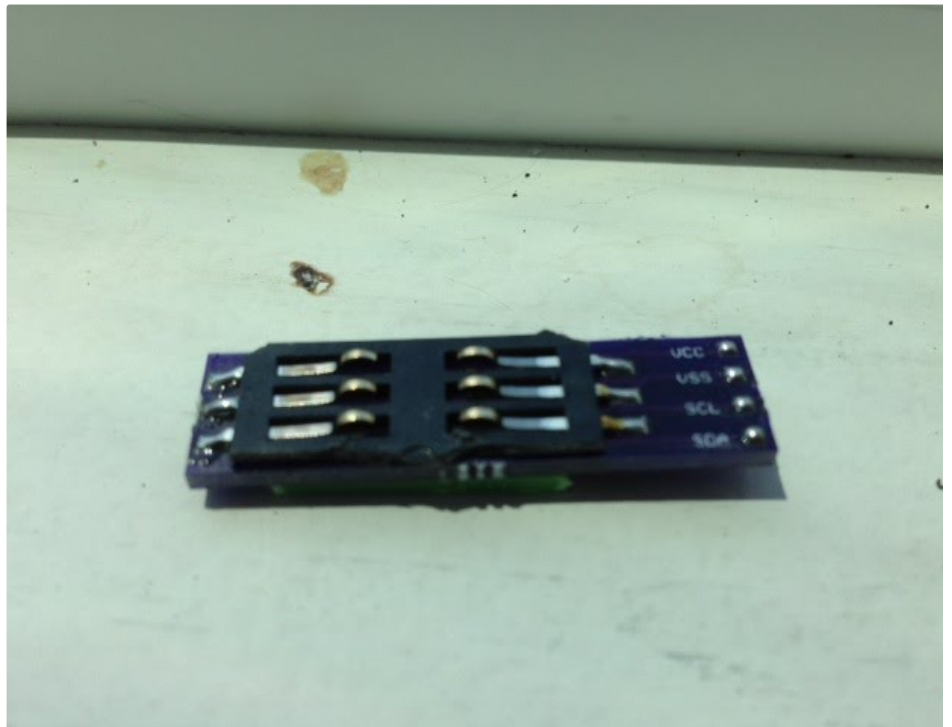
I purchased a new Tektronix MSO2012B Oscilloscope and quickly found utility in the demo I2C decoder for when I need to diagnose the failed controller in my hot tub. Before the demo period expired, I decided that the capability was rather compelling but didn't have money to purchase the actual application modules. This scope is used purely for hobbies and will never make a buck. After scraping the internet (and Google Translate) for information about this scope, I was able to produce my own Application Modules. It was a whole lot easier than I expected it to be.

After some investigation and trial/error I found that each application module can be enabled with up to two applications by writing the SKU of the application module (SKU can be found on the Tektronix website) onto a 24c08 eeprom.

Once this was proven, boards were created at OSHPark, a few parts purchased from Digikey and I now have a rather capable device.

1x Haktek Module ($3.00) - https://oshpark.com/profiles/mchamster
1x 24c08 ($0.25) - Digikey - 24LC08BT-I/OTCT-ND
1x Sim holder ($1.50) Digikey - 609-1401-1-ND
1x Spacer - Free

The 24c08 goes on the back of the board while the SIM holder will need to be trimmed to fit onto the board. Program the 24c08 by any means you have. I used a spare RaspberryPi. The I2C header to write to the module is labeled on the PCB.

To make it fit in the Tektronix, use a spacer to fill the gap between the PCB and the module bay. I initially used a piece of paper folded up but eventually found a scrap piece of plastic and glued it on.

What amazed me about this was Tektronix used no encryption, hashing or any other forms of authentication. It's just an EEPROM and for under $5 I was able to enable functionality that was not initially exposed. This shouldn't even be considered hacking. It's synonymous to flipping a bit in a configuration file.

Please comment below if this same methodology works with other Tektronix scopes.

Thanks!

- Jm

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📄 24C08_DPO2COMP_D...	JM VALERA, JUL 22, 20...	V.1		⬇
📄 24C08_DPO2COMP_D...	JM VALERA, JUL 22, 20...	V.1		⬇
📄 24C08_DPO2EMBD_D...	JM VALERA, JUL 22, 20...	V.1		⬇
🖼 PHOTO 1.JPG (69K)	JM VALERA, JUL 22, 20...	V.1		⬇
🖼 PHOTO 2.JPG (68K)	JM VALERA, JUL 22, 20...	V.1		⬇

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