

# Intel ME Cleaner

## Using [me\\_cleaner](#)

Needless to say, there is a certain amount of risk of bricking your system when it comes to this procedure. Proceed with caution!

Make sure that any kind of battery is unplugged from the computer

- This includes your laptop battery as well as your RTC (coin cell) battery!

Clip an SPI reader that is compatible with flashrom onto your motherboard's bios chip

- [Supported programmers](#)
- Make sure to consult the datasheet for the specific EEPROM that your motherboard uses when wiring the pins to the programmer. For example, on a

### 3. PIN CONFIGURATION SOIC 150 / 208-MIL

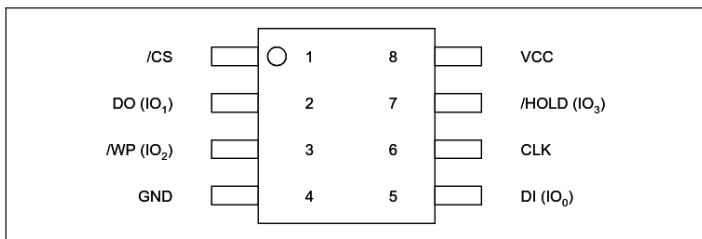


Figure 1a. W25Q16BV Pin Assignments, 8-pin SOIC 150 / 208-mil (Package Code SN & SS)

On a separate computer, interface with the SPI programmer and try reading off of the EEPROM

```
flashrom -p linux_spi:dev=/dev/spidev0.0,spispeed=1000 -r original_dump.bin
```

- May need to mess around with SPI speed
  - If you are using a Raspberry Pi, make sure to enable SPI using `raspi-config`!
- Dump the firmware multiple times and store them safely.

Use `me_cleaner` to modify the original firmware dump

Consult the project's wiki. Essentially, you can do one of two things:

```
# Set HAP bit as well as attempt to remove portions of the ME firmware
python me_cleaner.py -S -O modified_image.bin original_dump.bin

# Only sets HAP bit. Used if the above command fails
python me_cleaner.py -s -O modified_image.bin original_dump.bin
```

## Write to the EEPROM

```
flashrom -p linux_spi:dev=/dev/spidev0.0,spispeed=1000 -w modified_image.bin
```

You may also want to, after writing to the EEPROM, *read the firmware again* and use me\_cleaner to [verify that the firmware has been cleaned properly](#).

```
python me_cleaner.py -c firmware_to_check.bin

# You can also use intelmetool
sudo intelmetool -m

# Output:
# Can't find ME PCI device
```

You can also check in your bios. On my T480 and L390, the ME Firmware Version is blanked out.

Cheers!

## Other Notes

### Updating the BIOS

For whatever reason, my T480 *really* does not want to update its own bios after using me\_cleaner. In contrast, my L390 does not have this issue. Anyways, if you choose to update the bios, make sure that me\_cleaner is still active afterwards [using the aforementioned methods](#). My L390 for example keeps its HAP bit set even after a bios upgrade.

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