

Changes from SMART Card CPLD Core V3 to V3.1

- Timing of ROM_CS bus switching improved (some Z80s were not compatible with v3.0)
- Writes to \$1FFD are captured and readable in \$FAFF if Spectrum is a 128+2A/B or +3
- Allows paging of multiple ROMs based on Spectrum ports \$7FFD and \$1FFD
- Reset switch now sends a long pulse to the Spectrum for better operation on 128 +2A/B, +3
- NMI debounced, flag no longer needs to be cleared. NMI trigger flashes the green LED.
- Core version ID can be read from Port \$FAFF

Note: A V3 SMART Card can be updated to V3.1 core but it has to be returned for reconfiguration. I'm happy to do this at just the cost of return postage, just drop me a line: smart@retroleum.co.uk

Main changes from V2 to V3 SMART Card.

ROMs:

- The V3's BootROM is the equivalent to the Firmware ROM of the V1/V2 SMART Card
- The V3's Launcher is the equivalent to the SnapLoad ROM of the V1/V2 SMART Card
- The V3 does not require the Toolkit ROM as the SD Card FAT16 formatter is now part of the BootROM
- The V3's Debug ROM contains support code for the Launcher's hacking features.
- (DiagROM and other ROMs not tailored to the SMART Card still work as normal.)
- The V3 does not generate a patched version of the Sinclair ROM, instead it intercepts calls to LD_BYTES on the fly to facilitate SD Card loading for .taps

PCB:

- The CPLD is now a larger capacity (ie: more expensive) chip.
- The Z80 M1 signal from the edge connector now goes to the CPLD logic.
- A few analog components have been removed (equivalent operations performed digitally)

Logic:

- Bit 4 of the address bus is now ignored when decoding port addresses (to help with Timex compatibility – though this is still to be implemented on the software side)
- The "switch to back to Spectrum ROM" feature is now triggered by the JP instruction when primed.
- The reset line from the edge connector is sampled for reset operations instead of just the SMART Card button (making the reset buttons on the Spectrum+ and 128 series almost the same as the SMART Card's own)
- A bit of logic added for M1 signal testing.
- Quite a few port bit assignments have changed (see full manual).
- NMIs now require a manual acknowledgement strobe to allow further NMIs (and are now maskable).
- LD_BYTES calls are intercepted on the fly instead of requiring a patched ROM.

Software:

- 128 game support (tap and sna).
- Hacking tools in the NMI freezer options.
- The Spectrum+ and 128 special keys also control the menus.
- Lots of minor improvements for ease-of-use.