EepromWords

Words for accessing serial EEPROMs.

Updated Jan 27, 2008 by cbiffle

EEPROM quick facts:

- Like the Propeller's internal RAM, multibyte values in EEPROM are stored little-endian.
- Unaligned accesses are supported -- that is, unlike in the Propeller's internal RAM, reading a four-byte value at address 1 reads addresses 1 through 4, inclusive.
- These words support a 256KiB EEPROM address space, as used by Atmel's 24Cxxx-series chips.
- Depending on board configuration, multiple EEPROM chips may appear in this address space. There may be holes of inaccessible memory between the chips.
- Attempting to read or write into one of these memory holes will throw a File I/O Exception (code -37 decimal).

The documentation below introduces a new address type in stack comments, `e-addr`, or EEPROM address.

High-Level Interface

ee!

(x e-addr --)

Stores the 32-bit value `x` in EEPROM at `e-addr` in little-endian byte order.

Waits for the write to complete before returning.

Wordlist: `eeaccess`

Since: 8.01-alpha

Defined by: PropellerForth

ee@

(e-addr -- x)

Reads a 32-bit value from EEPROM at `e-addr` in little-endian byte order.

Wordlist: `eeaccess`

Since: 8.01-alpha

Defined by: PropellerForth

eec!

(c e-addr --)

Writes the byte `c` into EEPROM at address `e-addr`.

Does not wait for the write to complete before returning. If another EEPROM command is likely to be issued soon to the same chip, call `eewait` after `eewrite`.

Wordlist: `eeaccess`

Since: 8.01-alpha

Defined by: PropellerForth

eec@

(e-addr -- c)

Reads a single byte from EEPROM at `e-addr`.

Since: 8.01-alpha

Defined by: PropellerForth

eeinit

(--)

Initializes the I2C bus for the current Cog, configuring the I/O pins and attempting to reset any chips on the bus.

While it's not strictly necessary to `eeinit` before calling other EEPROM words, it's a good idea.

Wordlist: `eeaccess`

Since: 8.01-alpha

Defined by: PropellerForth

eewait

(e-addr --)

Waits for the chip that includes `e-addr` to become available after a write operation.

In the high-level interface, this is only needed after `eewrite`.

Wordlist: `eeaccess`

Since: 8.01-alpha

Defined by: PropellerForth

eewrite64

(a-addr e-addr --)

Transfers 64 bytes from main memory (starting at `a-addr`) into EEPROM (starting at `e-addr`). The EEPROM address **must** be aligned to a 64-byte boundary.

This word uses the EEPROM's internal page write capability and is currently the fastest way to write the EEPROM.

Wordlist: `eeaccess`

Since: 8.01-alpha

Defined by: PropellerForth

savemem

(--)

Copies all of RAM into EEPROM (starting at EEPROM address 0) as a bootable image. This backs up the system's dictionary, but does not save runtime state (stacks, which Cogs are doing what, etc.).

Wordlist: `bootable`

Since: 8.01-alpha

Defined by: PropellerForth