

Interfacing FlashRunner 2.0 with ATECC devices

Algorithm Notes

Below the protocol supported:

- I2C

Most of the Data zone cannot be read: commands VERIFY, READ and DUMP are not available for that memory type.

Commands List

Memory types:

C → Config

O → OTP

D → Data

WRITE_CONFIG

Read FRB and write data into the Config zone.

Warning: This operation must be executed before locking the Config zone.

UPDATE_EXTRA

Read FRB and write data into the 2 extra bytes of Config zone.

Warning: This operation must be executed before locking the Config zone.

LOCK_CONFIG

Lock Config zone.

WRITE_OTP

Read FRB and write data into the OTP zone.

Warning: This operation must be executed after locking the Config zone and before locking Data and OTP zone.

WRITE_DATA

Read FRB and write data into the Data zone.

Warning: This operation must be executed before locking Data and OTP zone.

LOCK_DATA_OTP

Lock both Data and OTP zone.

LOCK_SLOTS

Read FRB and lock every slot that should be locked.

Warning: This operation must be executed after writing on the Data zone because it prevents operations on individual slots.

IS_LOCKED

IS_LOCKED <C|O|D>

Check if a memory zone is locked and print the result in the log.

VERIFY

VERIFY <C|O> <R>

Verify command: only for Config or OTP.

R – Normal verify with Readout method

Warning: For Config zone, this operation verifies also the regions that cannot be written, except the first region where reserved data are stored. FRB must contain the final values for all bytes.

Warning: For the OTP zone, this operation must be executed after locking Data and OTP zone.

READ

READ <C|O> <start_addr> <size>

Read function: only for Config or OTP (page size 32 bytes).

Warning: For the OTP zone, this operation must be executed after locking Data and OTP zone.

DUMP

DUMP <C|O>

Dump function: only for Config or OTP.

Warning: For the OTP zone, this operation must be executed after locking Data and OTP zone.

CONNECT

Connect function: Power on and entry

DISCONNECT

Disconnect function: Power off and exit

FAQ

• HOW MEMORY ADDRESSES ARE MAPPED IN FRB?

Memory addresses do not correspond to the ones reported in the datasheet, for example for ATECC608A:

- Config zone: 128 bytes, from 0x000000 to 0x00007F.
- OTP zone: 64 bytes, from 0x010000 to 0x01003F.
- Data zone (simplified): 1120 bytes from 0x020000 to 0x02045F.
- Slot 0: 32 bytes, from 0x020000 to 0x02001F;
- Slot 1: 32 bytes, from 0x020020 to 0x02003F;
- Slot 2: 32 bytes, from 0x020040 to 0x02005F;
- Slot 3: 32 bytes, from 0x020060 to 0x02007F;
- Slot 4: 32 bytes, from 0x020080 to 0x02009F;
- Slot 5: 32 bytes, from 0x0200A0 to 0x0200BF;
- Slot 6: 32 bytes, from 0x0200C0 to 0x0200DF;
- Slot 7: 32 bytes, from 0x0200E0 to 0x0200FF;
- Slot 8: 416 bytes, from 0x020100 to 0x02029F;
- Slot 9: 64 bytes, from 0x0202A0 to 0x0202DF;
- Slot 10: 64 bytes, from 0x0202E0 to 0x02031F;
- Slot 11: 64 bytes, from 0x020320 to 0x02035F;

- Slot 12: 64 bytes, from 0x020360 to 0x02039F;
- Slot 13: 64 bytes, from 0x0203A0 to 0x0203DF;
- Slot 14: 64 bytes, from 0x0203E0 to 0x02041F;
- Slot 15: 64 bytes, from 0x020420 to 0x02045F.