

Supported Flash Devices

The flash memories listed in this document have been qualified for use with the Rabbit 2000 and/or 3000 microprocessors. Only some of these devices have been fully tested with Dynamic C, but specifications for the others indicate full compatibility.

Starting with Dynamic C version 7.20 large sector flash devices (sectors greater than 4096 bytes) are supported. To incorporate a large-sector flash into an end product, the best strategy is have a small-sector development board. If using large-sector flash, a type with a “top boot block” is required to support run-time User block updates.

The terms “small sector” and “large sector” as used in industry are somewhat arbitrary. This document uses the following definitions:

A small sector flash must contain equally-sized sectors of 128, 256, 512, 1024, or 4096 bytes.

A large sector flash is either a byte-writable device with at least two sectors of different sizes, or a device with sectors of uniform size larger than 4K. Typical large sector flash devices have a variety of sector sizes from 4K bytes up to 128K bytes on a single device, while some others contain equally sized sectors of 16K bytes up to 64K bytes.

IMPORTANT: The rapidly changing market for flash devices may affect availability. The inclusion of a flash device in the following tables does not speak to its availability.

Small Sector Flash Memories

| Vendor | Device Name | Device Size (bytes) | Write Mode | Operating Voltage (V) | Dynamic C Support as of Version ^b | Rabbit 2000 | Rabbit 3000 ^c |
|----------------|--------------|---------------------|------------|-----------------------|--|-------------|--------------------------|
| Atmel | AT29C010A | 128K | sector | 4.5–5.5 | All | x | |
| Atmel | AT29LV010A | 128K | sector | 3.0–3.6 | All | x | x |
| Atmel | AT29BV010A | 128K | sector | 2.7–3.6 | All ^a | x | x |
| Atmel | AT29C020 | 256K | sector | 4.5–5.5 | 6.50 ^d | x | |
| Atmel | AT29LV020 | 256K | sector | 3.0–3.6 | 6.50 | x | x |
| Atmel | AT29BV020 | 256K | sector | 2.7–3.6 | 6.50 ^a | x | x |
| Atmel | AT29C040A | 512K | sector | 4.5–5.5 | 6.50 ^{a, d} | x | |
| Atmel | AT29LV040A | 512K | sector | 3.0–3.6 | 6.50 ^a | x | x |
| Atmel | AT29BV040A | 512K | sector | 2.7–3.6 | 6.50 ^a | x | x |
| Mosel/Vitellic | V29C51001T/B | 128K | byte | 4.5–5.5 | 6.50 | x | |
| Mosel/Vitellic | V29LC51001 | 128K | byte | 4.5–5.5 | 7.02 ^a | x | |
| Mosel/Vitellic | V29C51002T/B | 256K | byte | 4.5–5.5 | 6.50 ^d | x | |
| Mosel/Vitellic | V29LC51002 | 256K | byte | 4.5–5.5 | 7.02 ^a | x | |
| Mosel/Vitellic | V29C51004T/B | 512K | byte | 4.5–5.5 | 6.50 ^a | x | |
| Mosel/Vitellic | V29C31004T/B | 512K | byte | 3.0–3.6 | 7.02 ^a | x | x |
| SST | SST29EE512 | 64K | sector | 4.5–5.5 | 6.50 | x | |
| SST | SST29LE512 | 64K | sector | 3.0–3.6 | 6.50 | x | x |
| SST | SST29VE512 | 64K | sector | 2.7–3.6 | 6.50 ^a | x | x |
| SST | SST29EE010 | 128K | sector | 4.5–5.5 | All ^d | x | |
| SST | SST29LE010 | 128K | sector | 3.0–3.6 | All | x | x |
| SST | SST29VE010 | 128K | sector | 2.7–3.6 | All ^a | x | x |

Small Sector Flash Memories

| Vendor | Device Name | Device Size (bytes) | Write Mode | Operating Voltage (V) | Dynamic C Support as of Version ^b | Rabbit 2000 | Rabbit 3000 ^c |
|--------|-------------|---------------------|------------|-----------------------|--|-------------|--------------------------|
| SST | SST29EE020 | 256K | sector | 4.5–5.5 | 7.02 ^a | x | |
| SST | SST29LE020 | 256K | sector | 3.0–3.6 | 7.02 ^a | x | x |
| SST | SST29VE020 | 256K | sector | 2.7–3.6 | 7.02 ^a | x | x |
| SST | SST29SF512 | 64K | byte | 4.5–5.5 | 7.20 ^a | x | |
| SST | SST29VF512 | 64K | byte | 2.7–3.6 | 7.20 ^a | x | x |
| SST | SST29SF010 | 128K | byte | 4.5–5.5 | 7.20 ^a | x | |
| SST | SST29VF010 | 128K | byte | 2.7–3.6 | 7.20 ^a | x | x |
| SST | SST29SF020 | 256K | byte | 4.5–5.5 | 7.20 ^a | x | |
| SST | SST29VF020 | 256K | byte | 2.7–3.6 | 7.20 ^a | x | x |
| SST | SST29SF040 | 512K | byte | 4.5–5.5 | 7.20 ^{a,d} | x | |
| SST | SST29VF040 | 512K | byte | 2.7–3.6 | 7.20 ^a | x | x |
| SST | SST39SF512 | 64K | byte | 4.5–5.5 | 7.20 ^a | x | |
| SST | SST39LF512 | 64K | byte | 3.0–3.6 | 7.20 ^a | x | x |
| SST | SST39VF512 | 64K | byte | 2.7–3.6 | 7.20 ^a | x | x |
| SST | SST39SF010 | 128K | byte | 4.5–5.5 | 7.02 ^a | x | |
| SST | SST39LF010 | 128K | byte | 3.0–3.6 | 7.21 ^a | x | x |
| SST | SST39VF010 | 128K | byte | 2.7–3.6 | 7.21 ^a | x | x |
| SST | SST39SF020A | 256K | byte | 4.5–5.5 | 6.50 ^d | x | |
| SST | SST39LF020 | 256K | byte | 3.0–3.6 | 7.21 ^{a, d} | x | x |
| SST | SST39VF020 | 256K | byte | 2.7–3.6 | 7.21 ^a | x | x |
| SST | SST39SF040 | 512K | byte | 4.5–5.5 | 7.02 ^{a, d} | x | |

Small Sector Flash Memories

| Vendor | Device Name | Device Size (bytes) | Write Mode | Operating Voltage (V) | Dynamic C Support as of Version ^b | Rabbit 2000 | Rabbit 3000 ^c |
|---------|-------------|---------------------|------------|-----------------------|--|-------------|--------------------------|
| SST | SST39LF040 | 512K | byte | 3.0–3.6 | 7.21 ^{a, d} | x | x |
| SST | SST39VF040 | 512K | byte | 2.7–3.6 | 7.21 ^a | x | x |
| Winbond | W29EE011 | 128K | sector | 4.5–5.5 | 7.02 ^a | x | |
| Winbond | W29C020C | 256K | sector | 4.5–5.5 | All ^d | x | |
| Winbond | W29C040 | 512K | sector | 4.5–5.5 | 7.02 ^{a, d} | x | |

Large Sector Flash Memories

| Vendor | Device Name | Device Size (bytes) | Write Mode | Operating Voltage (V) | Dynamic C Support as of Version ^{b, e} | Rabbit 2000 | Rabbit 3000 ^c |
|-----------------|---------------|---------------------|------------|-----------------------|---|-------------|--------------------------|
| AMD | AM29F002BB/T | 256K | byte | 4.5–5.5 | 7.25 ^a | x | |
| AMD | AM29F004BB/T | 512K | byte | 4.5–5.5 | 7.25 ^a | x | |
| AMD | AM29LV001BB/T | 128K | byte | 2.7–3.6 | 7.20 ^a | x | x |
| AMD | AM29LV002BB/T | 256K | byte | 2.7–3.6 | 7.25 ^a | x | x |
| AMD | AM29LV004BB/T | 512K | byte | 2.7–3.6 | 7.25 ^a | x | x |
| Hynix / Hyundai | HY29F002T | 256K | byte | 4.5–5.5 | 7.20 ^a | x | |
| Hyundai | HY29F002B | 256K | byte | 4.5–5.5 | 7.20 ^a | x | |
| Macronix | MX29F002B/T | 256K | byte | 4.5–5.5 | 7.30 ^a | x | |
| ST | M29F040B | 512K | byte | 4.5–5.5 | 7.30 ^a | x | |
| Windbond | W39L020 | 256K | byte | 3.0–3.6 | 8.00 ^a | x | x |

- a. These flash devices are recognized as of the Dynamic C version listed, but have not all been tested with those versions. 512KB flash in particular may not work with versions prior to 7.04, but a software patch is available from Z-World tech support for 512KB flash support under versions 6.57 and 7.03.
- b. **Dynamic C Versions 6.04-6.1x:**
The `FLASH_SIZE` parameter in the `JRABBIOS.C` file needs to be changed to reflect the correct number of 4K pages for the selected device. By default, the `FLASH_SIZE` parameter contains a 0x20 that corresponds to a 128K x 8 device with thirty-two 4K pages of flash. Dynamic C versions 6.5x and greater determine the flash size automatically and no code change is required.
- c. Please note that the Rabbit 3000 requires Dynamic C version 7.25 or later.
- d. Tested with Dynamic C version 7.32P to verify basic program load functionality.
- e. Dynamic C versions 7.3x and 8.00 require `TN226.zip` for reliable program loading, and run-time flash writes where practical. Earlier Dynamic C versions do not support run-time flash writes. The files in `TN226.zip` will replace some of your Dynamic C files. Extract these replacement files into the root directory where you installed Dynamic C, so that they will be placed in the correct subdirectories.

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