

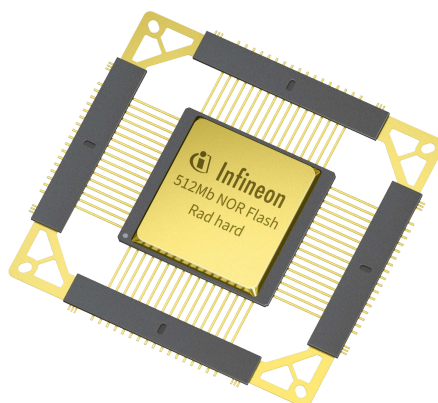
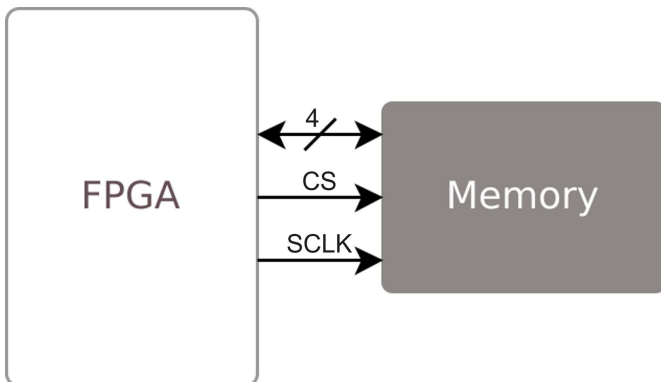
HiRel rad hard non-volatile NOR Flash

Infineon Technologies' HiRel memories perform in the most extreme environments

Infineon Technologies offers the industry's highest performance, low pin-count, radiation hardened by design 512 Mbit rad hard Serial NOR flash. The industry standard Quad Serial Peripheral Interface (QSPI) is simple to use with broad ecosystem support. The rad hard NOR Flash family offers 512 Mbit densities in a ceramic or plastic package coupled with the flexibility and fast performance required by high reliability applications. Our radiation hardened NOR Flash memories provide an ideal FPGA boot/configuration solution for systems with limited space, low signal pin count requirements, low power and offer flexibility, reliability, and performance well beyond ordinary serial flash devices.

Our HiRel rad hard NOR Flash memories are ideal for platforms requiring fast boot solutions and offer the highest radiation performance for space-grade FPGAs. Depending on image size, the 512 Mbit rad hard NOR Flash can typically store 2 boot code images and can load a 200 Mbit bitstream in 0.42 seconds. The 512 Mbit rad hard NOR Flash supports a single QSPI interface in a x4 mode and a single channel SPI mode for legacy support. Both interfaces are supported by modern FPGA devices and utilize standard instruction sets.

FPGA data storage



Key features

Ultimate reliability

- DLAM QML-V/P
- QCI, datapacks
- RHA, WLAT

Product features

- 512 Mbit densities
- 133 MHz QSPI data interface
- Single channel SPI mode for legacy support
- TID 300 krad[Si]
- SEL: >80 MeV·cm²/mg [LET] @ 125°C
- SEFI: <2.77e⁻⁵ err/dev·day
- SEU: IMMUNE
- Mil temperature grade
- 68-lead ceramic flat pack
- 100-pin plastic TQFP
- DLAM QML-V/P certified

Key applications

- Space grade FPGA configuration image storage
- Standalone boot code storage for space processors

Differentiated memory portfolio

- Performance
- Density
- Reliability
- Longevity



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Radiation hardened memories

Infineon's HiRel rad hard memory products portfolio consists of the world's most-reliable nonvolatile memory and offers a wide selection of NOR Flash, F-RAM, and SRAM solutions that enhance overall system computing limits, while providing Size, Weight and Power (SWaP) benefits with greater design flexibility to satisfy the needs of today's advanced space systems and beyond.

Key features

- 512 Mbit density
- QSPI interface operating up to 133 MHz
- 10k program/erase cycles @ 85°C
- 10 years data retention at 125°C
- 3.3 V supply voltage
- 1.8/3.3 V I/O support
- -55 to +125°C military temperature grade
- 68-pin ceramic quad flat pack or 100-pin plastic TQFP
- DLAM QML-V or QML-P qualified

Radiation performance

- TID: 300 Krad(Si)
- SEL: > 80 MeV.cm²/mg [LET] @ 125°C
- SEU: Immune
- SEFI: < 2.77e⁻⁵ err/dev-day

Support: www.infineon.com/hirelmemory

Parts list

Density	Infineon P/N	Description	Operating temp	Qual. level	Package	TID ¹⁾	SEL ²⁾	SEU ³⁾	SEFI ⁴⁾
512 Mbit	CYRS17B512-133AZMB	Quad SPI rad hard NOR Flash, plastic package	-55°C to 125°C	Infineon qual	100-pin TQFP	300	> 80	Immune	< 2.77e ⁻⁵
	CYPT17B512-133AZMB	Quad SPI rad hard NOR Flash, plastic package - PROTO	-55°C to 125°C	PROTOTYPE	100-pin TQFP	-	-	-	-
	*5962F2122201PXE	Quad SPI rad hard NOR Flash, plastic package - DLAM	-55°C to 125°C	QML-P	100-pin TQFP	300	> 80	Immune	< 2.77e ⁻⁵
	CYRS17B512-133UZMB	Quad SPI rad hard NOR Flash, plastic package	-55°C to 125°C	Infineon qual	68-pin CQFP	300	> 80	Immune	< 2.77e ⁻⁵
	CYPT17B512-133UZMB	Quad SPI rad hard NOR Flash, plastic package - PROTO	-55°C to 125°C	PROTOTYPE	68-pin CQFP	-	-	-	-
	*5962F2122202VYC	Quad SPI rad hard NOR Flash, plastic package - DLAM	-55°C to 125°C	QML-V	68-pin CQFP	300	> 80	Immune	< 2.77e ⁻⁵

- 1) Total Ionizing Dose [Krad (Si)]
- 2) Single Event Latchup MeV.cm²/mg [LET] @ 125°C
- 3) Single Event Upset [err/bit.day]
- 4) Single Event Functional Interrupt err/dev-day

Note:
* Coming soon - contact factory for details



www.infineon.com/hirel

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