PRODUCT BRIEF

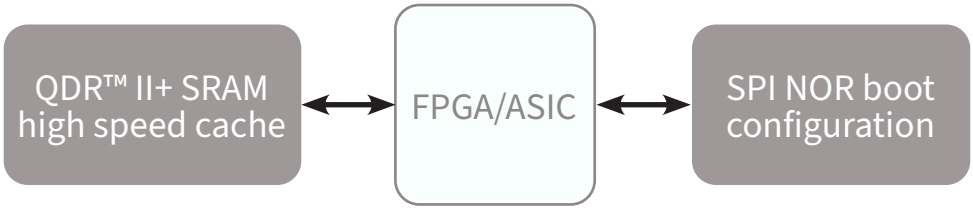
144-Mbit QDR®-II+ Synchronous SRAM

Infineon's HiRel memories perform in the most extreme environments

Infineon's 144-Mbit Quad Data Rate (QDR™)-II+ Synchronous (Sync) SRAMs designed with Infineon's patented RadStop™ Technology are optimized for space as well as other harsh environment applications. The 144-Mbit QDR-II+ SRAMs are the next generation QDR-II+ SRAM devices continuing the space grade legacy featuring lower power and higher performance than the previous generation. The QDR-II+ SRAMs are available in x18/x36, two-word/four-word data bus configurations, and with and without on-die-termination to optimize the power consumption. The QDR-II+ SRAM architecture provides a low latency and random memory access capability needed for high performance applications such as external cache memories. Infineon's QDR™ II+ Sync SRAM family provides the Random Transaction Rate (RTR) necessary to break system bottlenecks.

Infineon's state-of-the art RadStop™ Technology is radiation hardened through propriety design and process hardening techniques. Our synchronous SRAM devices are of the highest reliability and performance and well suited for applications for radar implementations and on-board image processing applications due to the low latency and random memory access capability.





Key features

Certified reliability
- DLAM QML-V
- QCI, datapacks
- RHA, WLAT

Ultimate radiation performance
- >200 Krad TID
- >120 LET SEL iimmunity
- <3.34e-7 Err/bit.day

Product features
- 250 MHz max frequency
- Concurrent R/W
- On-die-termination
- Throughput up to 36 Gbps
- Low latency (2 cycles)
- HSTL I/O
- SWaP optimized CCGA package with Six Sigma columns

Key applications
- Radar (SAR, LiDAR, SWOT)
- Satellite based networking
- Satellite imaging
- Command and data handling
- Telemetry and tracking
- Attitude and orbit control(AOC)

Differentiated memory portfolio
- Performance
- Density
- Reliability
- Longevity

Space

www.infineon.com/hirelmemory

Key Features

- 250 MHz/36 Gbps maximum frequency of operation/throughput
- 4-Mbit x18, 2-Mbit x36 bus-width configurations in two-word or four-word burst mode
- -55 to +125°C military temperature grade
- Two independent unidirectional data ports for concurrent read/write transactions
- Double Data Rate (DDR) address port
- Output impedance matching input (ZQ) matches the device outputs to system data bus impedance
- On-die-termination
- 1.5–1.8 V (HSTL) I/O signaling standards
- Controller available for Xilinx and Microsemi FPGAs
- QML-V qualified

Product Table

Density	Part Number	Description	Operating Temp.	Qual Level	TID[1]	SEL[2]	SEU[3]	SEF[4]
144 Mbit	CYPT2642KV18-250GCMB	144M QDR II+ x18 BURST of 2 Prototype	-55°C to 125°C	Prototype	—	—	—	—
	5962R1821401VXF	144M QDR II+ x18 BURST of 2 DLAM QML V	-55°C to 125°C	QML-V	200	> 120 (125°C)	<3.34e-7	Immune 120
	CYPT2643KV18-250GCMB	144M QDR II+ x18 BURST of 4 Prototype	-55°C to 125°C	Prototype	—	—	—	—
	5962R1821402VXF	144M QDR II+ x18 BURST of 4 DLAM QML V	-55°C to 125°C	QML-V	200	> 120 (125°C)	<3.34e-7	Immune 120
	CYPT2643KV18-1X24M	144M QDR II+ Prototype DIE	-55°C to 125°C	Prototype	—	—	—	—
	CYPT2644KV18-250GCMB	144M QDR II+ x36 BURST of 2 Prototype	-55°C to 125°C	Prototype	—	—	—	—
	5962R1821501VXF	144M QDR II+ x36 BURST of 2 DLAM QML V	-55°C to 125°C	QML-V	200	> 120 (125°C)	<3.34e-7	Immune 120
	CYPT2645KV18-250GCMB	144M QDR II+ x36 BURST of 4 Prototype	-55°C to 125°C	Prototype	—	—	—	—
	5962R1821502VXF	144M QDR II+ x36 BURST of 4 DLAM QML V	-55°C to 125°C	QML-V	200	> 120 (125°C)	<3.34e-7	Immune 120
	CYPT1642KV18-250GCMB	144M QDR II+ x18 BURST of 2 Prototype w/o ODT	-55°C to 125°C	Prototype	—	—	—	—
	5962R1821403VXF	144M QDR II+ x18 BURST of 2 DLAM QML V w/o ODT	-55°C to 125°C	QML-V	200	> 120 (125°C)	<3.34e-7	Immune 120
	CYPT1643KV18-250GCMB	144M QDR II+ x18 BURST of 4 Prototype w/o ODT	-55°C to 125°C	Prototype	—	—	—	—
	5962R1821404VXF	144M QDR II+ x18 BURST of 4 DLAM QML V w/o ODT	-55°C to 125°C	QML-V	200	> 120 (125°C)	<3.34e-7	Immune 120
	CYPT1644KV18-250GCMB	144M QDR II+ x36 BURST of 2 Prototype w/o ODT	-55°C to 125°C	Prototype	—	—	—	—
	5962R1821503VXF	144M QDR II+ x36 BURST of 2 DLAM QML V w/o ODT	-55°C to 125°C	QML-V	200	> 120 (125°C)	<3.34e-7	Immune 120
	CYPT1645KV18-250GCMB	144M QDR II+ x36 BURST of 4 Prototype w/o ODT	-55°C to 125°C	Prototype	—	—	—	—
	5962R1821504VXF	144M QDR II+ x36 BURST of 4 DLAM QML V w/o ODT	-55°C to 125°C	QML-V	200	> 120 (125°C)	<3.34e-7	Immune 120

1) Total Ionizing Dose [Krad (Si)] 2) Single Event Latchup [LET] @ 125°C 3) Single Event Upset [err/bit.dy] Geo sync-solar min; Note: SEU is <1e-12 with Controller EDAC

4) Single Event Functional Interrupt [LET] 5) Prompt dose information available on request

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