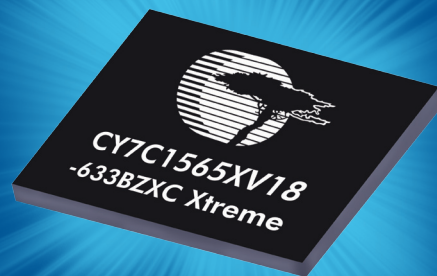


CYPRESS QDR™ II+ SRAMs: XTREME NETWORKING



PRODUCT OVERVIEW

CYPRESS ENABLES HIGH-PERFORMANCE NETWORKING APPLICATIONS

The worldwide leader in SRAMs now brings the fastest and most efficient QDR™ SRAM ever. Cypress's QDR II+ Xtreme SRAMs operate up to 633 MHz and enable the next generation of high-speed networking and telecommunication applications.

Cypress's Xtreme line of QDR II+ and DDR II+ devices are fit-, form-, and function-compatible with existing QDR II+ family devices, allowing manufacturers of network switches, routers, and aggregation platforms to boost performance by simply increasing clock speeds within the system without any board design changes.

QDR II+ XTREME FEATURES

- 633 MHz clock for Burst of 4 operation (633 million transactions per second)
- 450 MHz clock for Burst of 2 operation (900 million transactions per second)
- 11.4 GB/s maximum bandwidth
- Bus widths of x18 and x36
- 2.5 clock cycle latency
- On-Die Termination (ODT) available
- Core $V_{DD} = 1.8 \text{ V} \pm 0.1 \text{ V}$; $V_{DDQ} = 1.4 \text{ V to } 1.6 \text{ V}$
- Supports 1.5 V I/O supply
- HSTL inputs and variable drive HSTL output buffers
- Pb-free package options
- JTAG 1149.1 compatible test access port

Part Number	Density (Mbit)	Interface	Bus Width	Burst	Package	Speed (MHz)
CY7C1562XV18	72	QDR II+	x18	2	165 BGA	366, 450
CY7C1563XV18	72	QDR II+	x18	4	165 BGA	600, 633
CY7C1564XV18	72	QDR II+	x36	2	165 BGA	366, 450
CY7C1565XV18	72	QDR II+	x36	4	165 BGA	600, 633
CY7C1568XV18	72	DDR II+	x18	2	165 BGA	600, 633
CY7C1570XV18	72	DDR II+	x36	2	165 BGA	600, 633
CY7C1262XV18	36	QDR II+	x18	2	165 BGA	366, 450
CY7C1263XV18	36	QDR II+	x18	4	165 BGA	600, 633
CY7C1264XV18	36	QDR II+	x36	2	165 BGA	366, 450
CY7C1265XV18	36	QDR II+	x36	4	165 BGA	600, 633
CY7C1268XV18	36	DDR II+	x18	2	165 BGA	600, 633
CY7C1270XV18	36	DDR II+	x36	2	165 BGA	600, 633

Xtreme ODT parts are available as: CY7C2***XV18

For the full Xtreme product offering, please visit www.cypress.com/go/xtreme.

ADVANTAGES

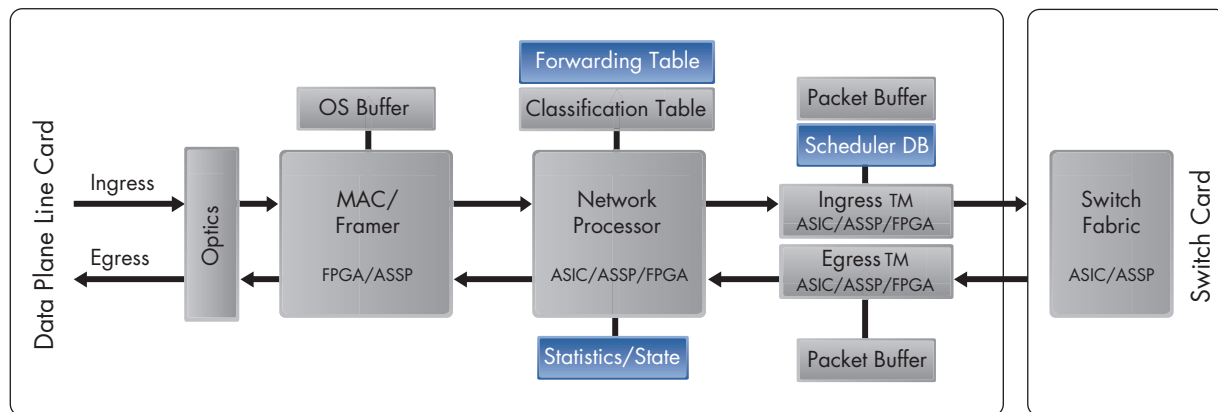
- Fastest QDR SRAM at 633 MHz
- Highest random transaction rate at 900 MT/s
- Low 2.5 clock cycle read latency
- 40% less power consumption than 90 nm
- On-Die Termination available to reduce noise and board components

APPLICATIONS

- Enterprise switches and routers
- Wired and wireless infrastructure
- Data centers
- Video processing
- Test equipment
- Medical devices
- Military and aerospace

ACCELERATING NETWORKS

A key segment for Cypress's QDR II+ Xtreme SRAM is packet-based networking applications. Specifically, data plane line cards found in routers and switches utilize QDR II+ SRAM for a variety of high transaction rate functions. Coupled with network processing chips, QDR II+ SRAMs assist in forwarding table lookups, updating statistics, and monitoring packet states. QDR II+ SRAMs also support traffic managers (TMs) with packet scheduling. All the aforementioned functions demand a high random transaction rate memory to satisfy the ever increasing line rates of modern networking systems.



QDR SRAM functions in a data plane line card

WHAT IS RANDOM TRANSACTION RATE (RTR)?

Random Transaction Rate (RTR) is the rate of truly random memory accesses for a given memory device. It provides an accurate metric for measuring memory performance in networking applications.

For SRAM, a user may perform a transaction (a read or write) to any random location in the memory array. Therefore, the RTR of an SRAM device with double data rate addressing would be twice the operating frequency. Cypress's QDR II+ Xtreme Burst of 2 devices have double data rate addressing and a maximum RTR of 900 million transactions per second (450 MHz x 2). Cypress's QDR II+ Xtreme Burst of 4 devices have single data rate addressing, and have a maximum RTR of 633 million transactions per second (633 MHz x 1).

The required RTR for networking applications is defined by the packet rate multiplied by the number of memory accesses per packet. For instance, the 100 Gbps line speed has a packet rate of 150 million packets per second. A typical forwarding table lookup may require four memory accesses per packet. Therefore, the RTR required for this common lookup operation is 600 million transactions per second, which can be satisfied with QDR II+ Xtreme. Amid ever increasing network traffic, Random Transaction Rate provides a necessary metric for measuring memory performance.

FOR FURTHER DETAILS

Go to www.cypress.com for more information on QDR II+ Xtreme and all Synchronous SRAM products. To purchase QDR II+ Xtreme parts, visit us at www.cypress.com/buyonline.

Cypress Semiconductor Corporation

198 Champion Court, San Jose CA 95134
phone +1 408.943.2600
toll free +1 800.858.1810 (U.S. only)

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