

SOLUTION BRIEF

ACHIEVE SUPPLY RESILIENCE WITH AMD PROGRAMMABLE DEVICES AND ISSI MEMORY

AMD × ISSI × AVNET

together we advance_

OVERVIEW

Transformative change in the semiconductor industry demands that customers consider not just recent trends, but also the long-term trajectory of the supply chain. The market for DRAM is particularly volatile and cyclical. Embedded designs typically have a long lifecycle, and OEMs benefit by leveraging components from suppliers who are committed to long-term support and broad markets.

In addition, OEMs need timely and transformative solutions to manage their supply chain and avoid production downtime. Leveraging a distributor who can offer unprecedented visibility and solutions across the entire product lifecycle is essential.

Together, AMD, ISSI, and Avnet can help you keep the production lines running when supply and demand shift.

DESIGN ONCE FOR LONG-TERM AVAILABILITY

ISSI is a technology leader that develops high-performance integrated circuits for automotive, industrial, medical, communications, enterprise, and digital consumer applications. ISSI's primary products are SRAM, DRAM, and flash.



ISSI has committed to long-term support of memory products for over 35 years, even during periods of tight manufacturing capacity. Leveraging a fabless sourcing model allows ISSI to accommodate production volumes of any size and helps ensure a source of long-term supply.

REDUCE PRODUCTION DOWNTIME WITH A SUPPLY-CHAIN LEADER

Avnet and subsidiary Avnet Silica are globally authorized distributors of both AMD and ISSI products, supporting customers from concept to production.

Avnet supply-chain services, such as strategic safety stock and consigned inventory, help customers respond quickly when the unexpected hits. Avnet can provide real-time tracking and continuous monitoring of inventory levels, orders, and other relevant supply chain data, enabling enhanced forecasting, which considers not just demand forecasts, but also consumption patterns and market data. Avnet supply chain services can also reduce cash tied up in inventory and avoid production downtime.

1. A list of ISSI devices validated on AMD and third-party platforms is available through your local AMD sales contact.

KEY BENEFITS

LONG LIFECYCLE

Enjoy support for DDR4 and LPDDR4/4X product technologies through at least 2038. Avoid costly redesigns or component requalification.

AVOID SUPPLY CHAIN DISRUPTION

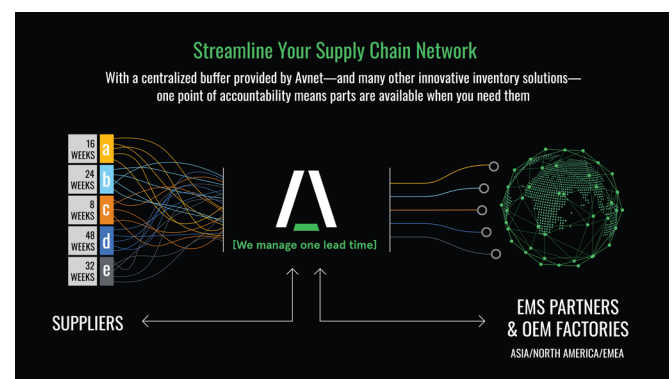
Leverage expert supply-chain analytics to help ensure parts are available when you need them.

ACHIEVE PERFORMANCE, WITH ECONOMY

Select the right DRAM technology to optimize design economy while achieving the required performance.


LEVERAGE PRE-VALIDATED SOLUTIONS

Choose memory devices that have been hardware validated with AMD FPGAs and adaptive SoCs.¹



ISSI DRAM/SRAM PRODUCT PORTFOLIO FOR AMD FPGAs AND ADAPTIVE SoCs

PROCESSING SYSTEM AND PROGRAMMABLE LOGIC INTERFACES

	MEMORY TYPE	DDR4	DDR3/3L	DDR2	LPDDR4/4X	LPDDR2	HyperRAM	RLDRAM3	QDR II+
ISSI MEMORY	ISSI FAMILY	IS43QR, IS46QR ¹	IS43TR, IS46TR ¹	IS43DR, IS46DR ¹	IS43LQ, IS46LQ ¹	IS43LD, IS46LD ¹	IS66, IS67 ¹	IS49RL	IS61QDP
	PRODUCT LONGEVITY	2038	2038	2031	2038	2031	2038	2031	2030
	MAX SPEED ²	3200 MT/s	2133 MT/s	900 MT/s	4266 MT/s	1066 MT/s	500 MT/s	2400 MT/s	567 MHz
	WIDTH ²	x8, x16	x8, x16	x8, x16	1x16, 2x16	x16, x32	x8, x16	x18, x36	x18, x36
	DENSITY ²	4, 8, 16 Gb	1, 2, 4, 8, 16 Gb	512M-2 Gb	2, 4, 8, 16, 32 Gb	256M-8 Gb	32M-1 Gb	576 Mb, 1.15 Gb, 2.30 Gb	18, 36, 72 Mb
	MODULES	SMART Modular Technologies, a Penguin Solutions brand distributed by Avnet, offers a portfolio of modules built on ISSI long-life DDR4 DRAM, delivering consistent quality, extended lifecycle support, and BOM stability.							
AMD DEVICES	VERSAL™ ³	✓	-	-	✓	-	✓	✓	-
	ZYNQ™ ULTRASCALE+™	✓	✓	-	✓	-	✓	✓	✓
	KINTEX™ ULTRASCALE+	✓	✓	-	-	-	✓	✓	✓
	VIRTEX™ ULTRASCALE+	✓	✓	-	-	-	✓	✓	✓
	KINTEX ULTRASCALE+ GEN 2	-	-	-	✓	-	✓	-	-
	SPARTAN™ ULTRASCALE+	✓	-	-	✓	-	✓	-	-
	7 SERIES	-	✓	✓	-	✓	-	✓	✓

¹ IS46 DRAM and IS67 HyperRAM components are Automotive Grade.

² Consult the AMD device data sheet and IP product guide for the maximum supported interface rate, width, and density supported by specific AMD devices.

³ DDR4, LPDDR4/4X, and RLDRAM3 require selection of a Versal device that supports XPIO.

ISSI FLASH MEMORY PRODUCT PORTFOLIO FOR AMD FPGAs AND ADAPTIVE SoCs

PRIMARY BOOT MODES¹

	MEMORY TYPE	SPI, QUAD SPI	OCTAL SPI	BYTE PARALLEL	NAND	eMMC	UFS 3.1
ISSI MEMORY	ISSI FAMILY	IS25LP, IS25WP	IS25LX, ISWX	IS29GL	IS34M, IS35M	IS21, IS22	IS27TH
	PRODUCT LONGEVITY	2038	2038	2038	2038	2033	2033
	MAX SPEED ²	Up to 166 MHz	Up to 200 MHz	70 ns	25 ns	400 MB/s	1.6 GB/s
	WIDTH ²	x1, x2, x4	x8	x8, x16	x8, x16	x8	x8
	I/O VOLTAGE ²	1.7-1.95V 2.3-3.6V	1.7-2.0V 2.7-3.6V	2.7-3.6V	1.8V/3.3V	1.8V/3.3V	1.2V
	DENSITY ²	512k-2 Gb	32M-2 Gb	32 Mb-2 Gb	1, 2, 4, 8 Gb	4 Gb to 128 Gb	64, 128, 256 Gb
AMD DEVICES	VERSAL	✓	✓	-	-	✓	✓ ³
	ZYNQ ULTRASCALE+	✓	-	-	✓	✓	-
	KINTEX ULTRASCALE+	✓	-	✓	-	-	-
	VIRTEX ULTRASCALE+	✓	-	✓	-	-	-
	KINTEX ULTRASCALE+ GEN 2	✓	✓	-	-	-	-
	SPARTAN ULTRASCALE+	✓	✓	-	-	-	-
	7 SERIES	-	-	✓ ⁴	✓ ⁵	-	-

¹ ISSI memory devices for primary boot have been pre-qualified, and programming is supported in the AMD Vivado™ Design Suite. Refer to [UC908](#) for details.

² Consult the AMD device data sheet and IP product guide for the maximum supported interface rate, width, and density supported by specific AMD devices.

³ UFS 3.1 only supported on Versal Prime Series Gen 2 and AI Edge Series Gen 2 devices.

⁴ Byte-wide Peripheral Interface is not supported on Spartan 7 devices.

⁵ Zynq 7000 devices provide support for unmanaged NAND for primary boot. 7 Series FPGAs do not support NAND boot.

TAKE THE NEXT STEP

- Visit the [AMD Adaptive SoC and FPGA External Memory Interface resource page](#)
- Leverage the [ISSI parametric and cross-reference search tools](#) and SMART Modular Technologies [DIMM Selector](#) to select devices for your design
- Request samples or a supply-chain services overview presentation from your local [Avnet Americas](#), [Avnet APAC](#), or [Silica](#) sales representative
- Reach out to your AMD, ISSI, or Avnet FAE for general support, signal integrity questions, or turnkey re-qualification of ISSI memory in existing designs

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