



Long-term Support
World Class Quality

IND & MED
Industrial & Medical
Market



ISSI Reduces Total Cost of Ownership for Industrial and Medical Customers Who Require Long Product Lifecycles and High Quality

Customers making Industrial and Medical products expect long term support and high quality. To fulfill this, ISSI has developed a wide range of DRAM, SRAM, Flash and PSRAMs with the utmost quality and reliability, together with several extended temperature ranges. Also, unlike many other memory suppliers whose primary interest is the consumer, mobile phone, or PC markets with ever-shortening life cycles, ISSI's company strategy continues to be to maintain focus on the needs of customers in the industrial and medical segments.

Long-Term Product Support

Industrial, medical, and hi-rel market segments have a lengthy timeframe for planning, design, manufacturing and support. They require suppliers who can provide products with lifecycles for the entire term. At ISSI, long-term product support is a key principle. Therefore, while there is no product longevity program, product longevity is what we do. You can be confident that ISSI will provide and support memory needs throughout the lifecycle of the customers' end products.

Quality and Reliability

ISSI is a fabless semiconductor company that designs and markets specialty memory products for high reliability, extended temperature applications for industrial and medical applications. Quality and reliability are considered vital for the equipment manufactured in the industrial/medical/hi-rel market segments. At ISSI, excellent quality and reliability are designed in, not just tested-in. The emphasis on quality and reliability starts at the earliest point of product design and continues at every step, right through to customer shipment. ISSI is ISO9001:2000 certified, all foundry partners are ISO/TS16949 certified, and our subcons are ISO/QS9000 compliant.

Extended Temperature

The equipment in the industrial/medical/hi-rel market segment is often exposed to extended temperatures. At ISSI, our memory products are designed and 100% tested to meet these industrial and automotive temperatures. ISSI supports test flows targeted to meet the stringent application demands. In addition we provide product in die [or wafer] form and have value added die distributor partners who can support even more extreme operating conditions. Almost every memory product is offered with multiple temperature grade options, including -40C to 95C, -40C to 105C, and -40C to 125C.

Medical

ISSI provides a wide range of memory products for use in medical devices. Sophisticated diagnostic and patient care equipment quite often require high-speed Flash, SRAM, or DRAM. On the other hand, power-critical, portable medical applications might benefit more with serial Flash, Ultra Low Power [ULP] SRAMs, PSRAMs or Mobile DRAMs.

Conclusion

ISSI can help customers avoid the challenges that they may face as they source memory for their applications in the Industrial and Medical markets. ISSI's business is based on supporting customers in market segments which demand long term support and high quality. This allows customers to drastically reduce the number of PCN and EOL notices that they deal with. By partnering with ISSI, our customers can avoid costly re-designs and frequent component re-qualifications.

In the sections that follow, please refer to the DRAM, SRAM, Flash, and MCP product offering matrices for great solutions for industrial and medical applications. If you have any question or need more information, please contact us today.



ISSI's corporate core strategies are based on providing a broad portfolio of innovative products, with world class quality and long-term support that is required by the Automotive, Industrial and Medical markets.



ISSI Offers
125°C DRAM

Broad portfolio of DRAM Solutions for Industrial & Medical Market

DRAM	16Mb	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb	2Gb	4Gb	8Gb	16Gb
EDO/FP (3.3V)	✓										
SDRAM (3.3V)	✓		✓	✓	✓	✓					
DDR				✓	✓	✓					
DDR2					✓	✓	✓	✓			
DDR3/DDR3L							✓ ECC	✓	✓ ECC	✓ ECC	✓
DDR4									✓	✓	✓
Mobile DRAM	16Mb	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb	2Gb	4Gb	8Gb	16Gb
Mobile SDRAM (1.8V/2.5V/3.3V)		✓	✓	✓	✓	✓					
LPDDR		✓	✓	✓	✓	✓	✓	✓			
LPDDR2					✓	✓	✓ ^M	✓ ^M	✓ ^M	✓	
LPDDR4 (1.1V), LPDDR4X (0.6V)								✓ ^M ECC	✓ ^M ECC	✓ ^M ECC	✓

Broad portfolio of SRAM Solutions for the Industrial & Medical Market



Asynchronous SRAM/Pseudo SRAM	64Kb	256Kb	512Kb	1Mb	2Mb	3Mb	4Mb	8Mb	16Mb	32Mb	64Mb
5V	✓	✓	✓	✓			✓	✓			
High Speed Asynchronous		✓	✓	✓ ECC	✓ ECC	✓	✓ ECC	✓ ECC	✓ ECC	✓	
Ultra Low Power		✓		✓	✓		✓ ECC	✓ ECC	✓		
Pseudo SRAM								✓	✓	✓	✓
Low Pin Count	512Kb	1Mb	2Mb	4Mb	8Mb	16Mb	32Mb	64Mb	128Mb	256Mb	512Mb
Serial SRAM	✓	✓	✓	✓							
Serial/QUAD RAM(SPI/QPI)					✓ ECC	✓ ECC	✓	✓	✓		
HyperRAM							✓ ECC	✓ ECC	✓ ECC	✓	✓
OctalRAM							✓ ECC	✓ ECC	✓ ECC	✓	✓
Muxed/Latch Async				✓	✓	✓					
Synchronous SRAM	2Mb	4Mb	8Mb	16Mb	36Mb	72Mb	144Mb				
Standard/No-Wait(ZBT) Synchronous	✓	✓ ECC	✓ ECC	✓	✓	✓					
QUAD/DDRII/QUADP/DDRIP [Compatible to QDR-II™/QDR-II+™]				✓	✓	✓	✓				

Industrial & Automotive Temperature Grade, Long Term Support, Leaded or RoHS [Lead Free]

STATUS ✓ Production ✓ Sampling ✓ Roadmap ✓ Under Consideration
ECC : On-chip Error Correcting Code is an available option **M** : MCP may be an option [DRAM + Flash]



Broad portfolio of **Flash** Solutions for Industrial & Medical Market

SPI/QSPI [Serial NOR]	512Kb	1Mb	2Mb	4Mb	8Mb	16Mb	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb	2Gb
2.5/3V	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓ ECC	✓ ECC	✓ ECC	✓ ECC
1.8V	✗	✗	✓	✓	✓	✓	✓	✓	✓	✓ ECC	✓ ECC	✓ ECC	✓ ECC

1.2V and Wide I/O 1.5V - 3.6V Serial Flash products under development

Twin Quad SPI [2 CE]	256Mb	512Mb
3V	✓	✓
1.8V	✗	✗

Parallel Flash [NOR]	32Mb	64Mb	128Mb	256Mb	512Mb	1Gb
3V w/ VIO = 1.65-3.6V	✓	✓	✓	✓	✗	✗

xSPI [Octal Flash]	32Mb 64Mb	128Mb	256Mb	512Mb	1Gb	2Gb
3V	✓	✓	✓	✓	✗	✗
1.8V	✓	✓	✓	✓	✗	✗

HyperFlash™	128Mb	256Mb
3V	✓	✓
1.8V	✓	✓

Broad portfolio of **MCP** Solutions for Industrial & Medical Market

SPI NAND	1Gb	2Gb	4Gb	8Gb
3V/1.8V	✓ 1bit ECC	✗ 1bit ECC	✗ 8bit ECC	✗ 8bit ECC

SLC NAND	1Gb	2Gb	4Gb	8Gb	16Gb
3V/1.8V; [x8 & x16]	✓ 1 or 4bit ECC	✓ 1 or 4bit ECC	✓ 1 or 4 or 8bit ECC	✓ 8bit ECC	✗ 8bit ECC

MCP	QSPI NOR	xSPI* [Octal] - 256/512 Mb [24-ball TFBGA]	SLC NAND - 1/2/4/8 Gb [162-ball /149-ball BGA]	eMMC - 4/8/16 GB [162-ball/254-ball BGA]
LPDDR2* 256Mb/ 512Mb/ 1Gb/ 2Gb/ 4Gb	✓		✓	✗
LPDDR4/4X 2Gbit/4Gb/8Gb	✗		✗	✗
Octal RAM* 128Mb/256Mb		✓		

*2Gb LPDDR2 + 4Gb SLC NAND in production

**Contact Factory for Octal RAM 128Mb + xSPI 512Mb MCP

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STATUS ✓ Production ✗ Sampling ✗ Roadmap ✗ Under Consideration
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Disclaimer

Integrated Silicon Solution, Inc. does not recommend the use of any of its products in life support applications where the failure or malfunction of the product can reasonably be expected to cause failure of the life support system or to significantly affect its safety or effectiveness. Products are not authorized for use in such applications unless Integrated Silicon Solution, Inc. receives written assurance to its satisfaction, that:

- the risk of injury or damage has been minimized;
- the user assume all such risks; and
- potential liability of Integrated Silicon Solution, Inc is adequately protected under the circumstances