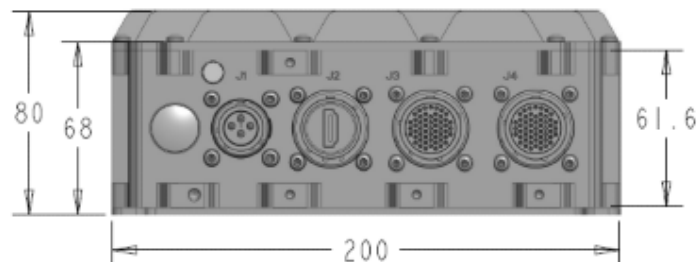
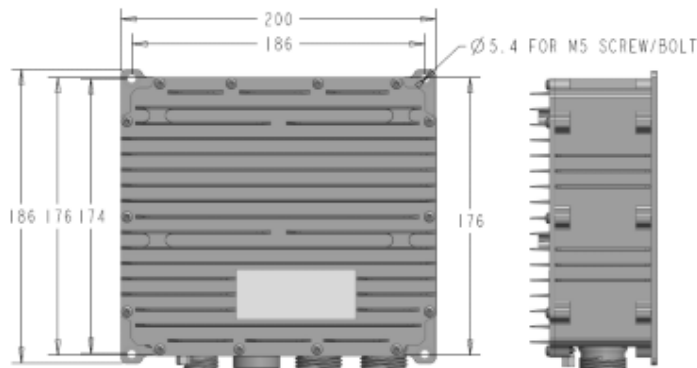


SABRECOM-JRS Compact Rugged x86 Mission Computer with I/O Expansion



FEATURES

Rugged x86 computer ideal for harsh environment and mobile applications 29% smaller than original SabreCom-JSP system

Intel 11th / 13th gen Core i7 and Xeon processors

32-64GB RAM with ECC option

128GB-2TB integrated solid state flashdisk

Choice of Linux or Windows 64-bit OS

Standard I/O includes:

- 2 1Gbps Ethernet, 1-3 USB 3.0, 2 USB 2.0
- 4 RS-232/422/485, audio I/O
- 1 HDMI on dedicated connector

Optional 16-channel 16-bit A/D with autocalibration

Optional 4-channel 16-bit D/A with autocalibration

Optional 22 GPIO

Easy I/O expansion with up to 2 PCIe minicards

Choice of MIL-STD-461 filter or isolated power supply with MIL-STD-461/704/1275 filtering

Rugged enclosure with IP67 rating

MIL-DTL-38999 style I/O connectors for extreme ruggedness

Designed to meet MIL-STD-810H shock and vibration requirements

Internal electronics qualified to MIL-STD-202H shock and vibration requirements

10-60VDC input range

-40 to +80C operating temperature

Dimensions: 7.9 x 7.3 x 3.1 in. / 200 x 186 x 80 mm W x D x H

SabreCom-JSP2 offers rugged high-performance computing in a compact package with easy I/O expansion. The enclosure is 29% smaller and 20% lighter than our SabreCom-JSP system yet features the same computing and MIL standards compliance. Processor options include Intel Core i7 and Xeon 11th and 13th generation families, and mass storage capacity is up to 2TB. Choose from Windows 10, Windows 11, and Linux OS.

A distinguishing feature of SabreCom-JRS is its use of predefined I/O expansion configurations. Selecting from a menu of preconfigured I/O options reduces system cost, leadtime, and risk through the use of proven solutions and existing inventory of cables and components. Specialized I/O requirements can still be supported with built-in expansion sockets and the expansion I/O connector.

SabreCom-JSP2 is designed to meet stringent requirements of MIL-STD-810H and IP67. See a test report of similar products [here](#).

◆ COM Express Provides Compelling Benefits

The compute power in SabreCom-JSP2 is provided via a COM Express module installed on Diamond's [Jasper](#) carrier board. The use of COM Express modules enables performance scalability, earlier access to the latest processors, well as lifecycle extension and protection from obsolescence. If the selected processor reaches end of life, a new COM with a different processor can be easily substituted with no mechanical change and usually very minimal reconfiguration of the OS drivers. A range of COMs and processors are already validated and available as ordering options. Customer requests for specific processors or COM vendors can also be accommodated with a nominal NRE charge for validation testing and OS support.

Generation	Type	Processor	PassMark* (approx.)	Max RAM
11 - Tiger Lake	Core i7	1185GRE	7,800	32GB
13 - Raptor Lake	Core i7	1365URE	10,900	64GB
13 - Raptor Lake	Core i7	1370PRE	20,300	64GB
13 – Raptor Lake	Core i5	120U	14,900	64GB
11 - Tiger Lake	Xeon	11865MRE	19,600	64GB / ECC 32GB

Two input power options are available for SabreCom systems:

- MIL-STD-461 compliant filter module - this option offers a lower system price for applications that have less stringent power requirements. It can support both a fixed 12VDC and a variable 18-24VDC input range.
- Rugged MIL isolated power supply - this option features MIL-STD-461, -704, -1275, and DO160 compliance. This option supports a 10-60VDC input range. Maximum total system power dissipation is 80W, which is sufficient for any combination of processor and I/O included in the system. More information on this power supply is available [here](#).

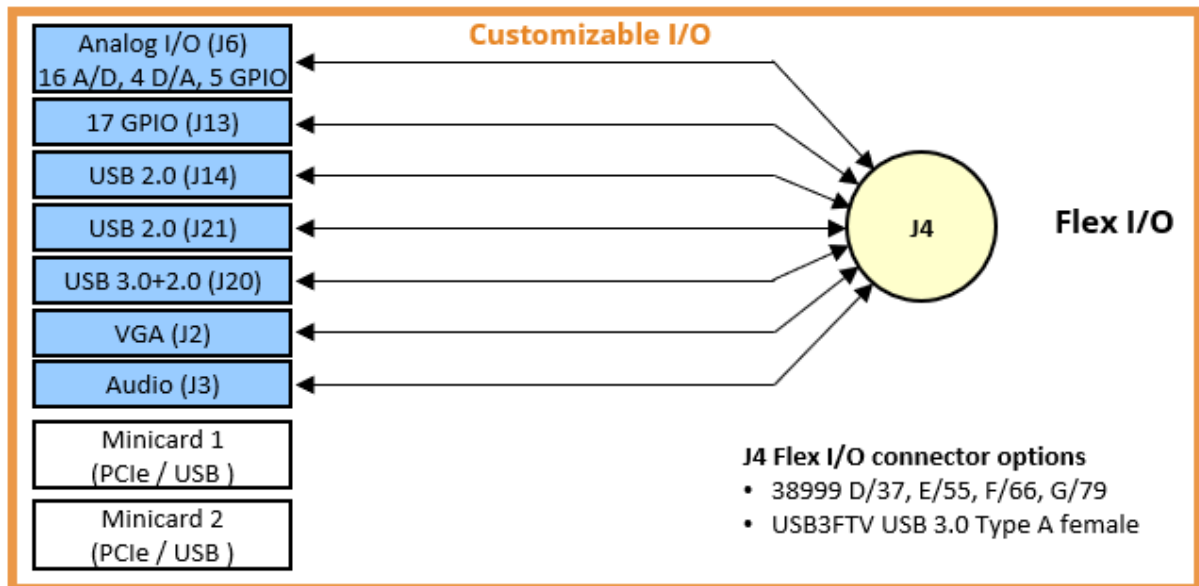
◆ I/O Expansion

Standard I/O on SabreCom-JRS is provided on a single D38999 F size (66 contacts) connector labeled J3. This connector provides the following I/O features:

- 2x 1Gb Ethernet
- 2x USB 2.0

- 4x RS-232/422/485 (configurable in pairs)
- 28x GPIO 3.3V
- I2C, SPI, Reset, Power button

I/O expansion is achieved via a second D38999 connector labeled J4. I/O is provided via 2 PCIe / USB minicard sockets on the internal SBC, along with additional auxiliary I/O on the SBC not included on J3.



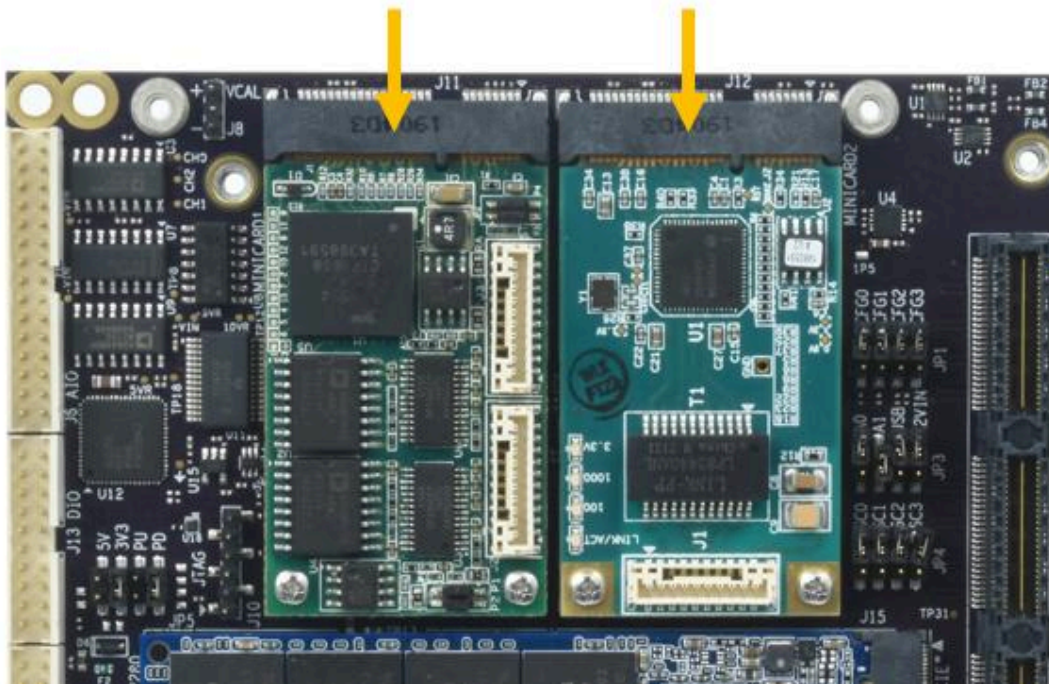
Choose from a range of I/O options from Diamond Systems as well as 3rd parties, including:

- Analog I/O with 16-bit A/D & D/A resolution and autocalibration
- Digital I/O with 3.3V / 5V logic levels, including counter/timers and PWMs
- Serial ports with RS-232/422/485 capability including optional opto-isolation
- 1GbE / 2.5GbE Ethernet
- CAN
- USB 2.0 / 3.0
- MIL-STD-1553
- ARINC-429
- and others

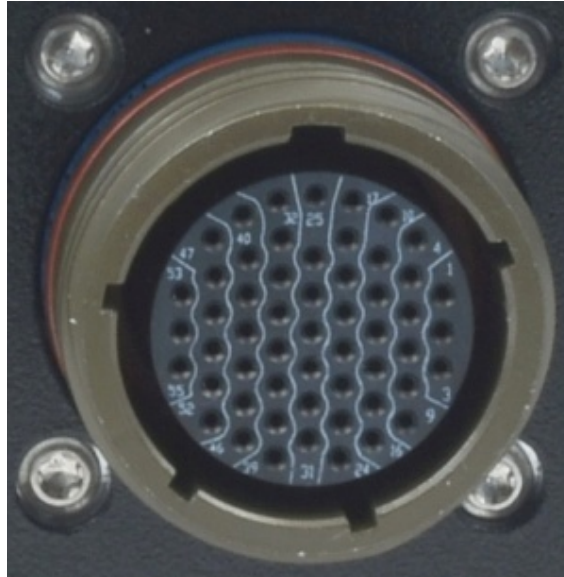
Several predefined I/O expansion configurations are available with no NRE charge and reduced leadtime. The table below lists the available options. All features listed are **in addition to** the standard options already included and described above. All serial ports are RS-232/422/485 capable and are preconfigured in pairs during system assembly time.

Order Code	A/D 16-bit	D/A 16-bit	GPIO 3.3V	Serial	CAN	2.5Gb Eth	USB 3.0	USB 2.0	VGA	Audio
00								2	1	1
01	16	4	22					1		
02			32	4						
03			32		4					
04				4	4			2		1
05							1			
06				4		1		2	1	1
07					4	1		2	1	1
08			28			1		1		1
09				8				1		1

Dual PCIe/USB minicard sockets

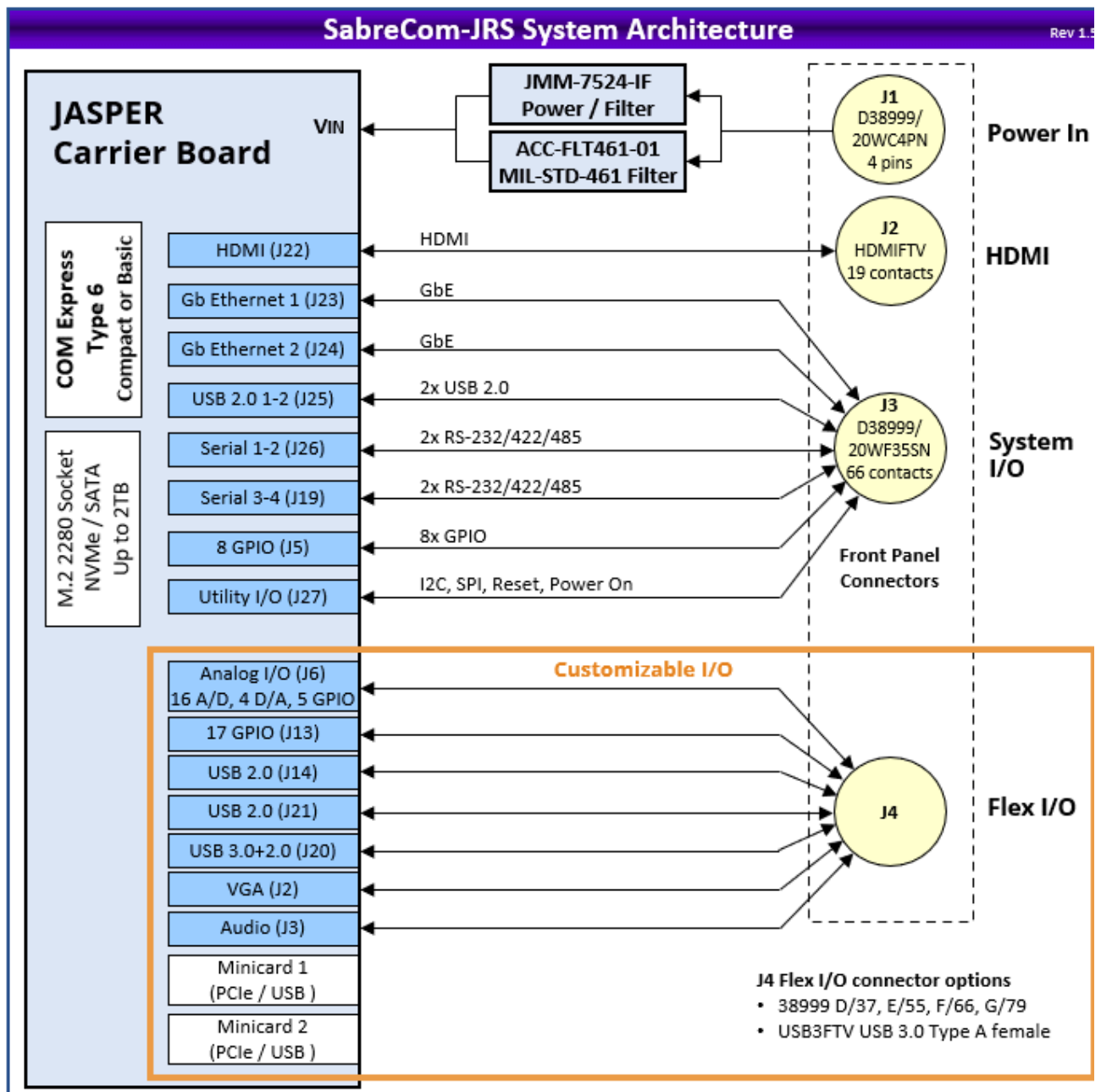


Standard D38999 E size I/O
connector
supporting up to 55 I/O contacts



Available expansion connectors are D/37 contacts, E/55, F/66, or G/79. The standard expansion I/O connector size is E/55. On request this connector can be changed to one of the other sizes, depending on the number of I/O signals needed by the application. Systems with a G size expansion connector are slightly taller to accommodate the larger connector size. Other sizes and styles of connectors are also available with a nominal NRE charge for case and cable design activity.

Systems requiring I/O expansion beyond what SabreCom-JSP2 can accommodate may consider Diamond's larger **SabreCom-JSP** system. This larger system supports up to 3 expansion I/O connectors and can simultaneously accommodate the MIL power supply and up to 6 minicards, or 2 minicards + 1 PCIe/104 module.



Ordering Information

System Configuration and Ordering

The ordering guide below lists all the standard configuration options for SabreCom-JSP2. For custom I/O expansion, please contact our Sales team and we will work with you to define the expansion boards and internal / external cabling and provide a custom part number.

Ordering No.: **SCM-JRS-A-BCD-E-FG**

Select one option each from A-G below.
* denotes the most common option.

A Processor and RAM

* i7-1185GRE 32G	1185-32
i7-1365URE 32G	1365-32
i7-1365URE 64G	1365-64
i7-1370PRE 32G	1370-32
i7-1370PRE 64G	1370-64
i5-120U 32G	120U-32
i5-120U 64G	120U-64
i7-11865MRE 32G ECC	11865-32E
i7-11865MRE 64G	11865-64

B Jasper Baseboard

* JSP-BB02D without DAQ	D
JSP-BB03A with DAQ (F must be 01)	A

C Power Supply

* MIL isolated power, 10-60VDC	J
MIL-STD-461 filter, 12V or 18-34VDC	F
Direct input, 12V or 18-34VDC	X

Example: **SCM-JRS-1185-32-AJ1-LNX-01C**

SabreCom-JRS Rugged System, 1185GRE CPU,
32GB RAM, MIL isolated power, 1TB SSD, Linux,
with data acquisition, sealing caps

G Connector Caps

* Plastic protective caps	(Blank)
Metal sealing caps	C

F I/O Expansion (Features are in addition to standard I/O)

* 2 USB 2.0, Audio, VGA (1)	00
Data Acquisition (16 A/D, 4 D/A, 22GPIO), 1 USB 2.0	01
4 Serial, 32 GPIO, 1 USB 2.0	02
4 CAN, 32 GPIO, 1 USB 2.0	03
4 CAN, 4 Serial, 2 USB 2.0, Audio	04
1 USB 3.0 Type A	05
4 Serial, 1 2.5GbE, 2 USB 2.0, Audio, VGA	06
4 CAN, 1 2.5GbE, 2 USB 2.0, Audio, VGA	07
28 GPIO, 1 2.5GbE, 1 USB 2.0, Audio	08
8 Serial, 1 USB 2.0, Audio	09
Custom I/O (XX determined by Diamond Systems)	XX

E Operating System (Options may depend on processor)

* Linux 64-bit	LNX
Windows 11 64-bit	W11

D Flashdisk (Contains selected operating system files)

* 1TB	1
2TB	2
512GB	5
128GB	8

Cable Kits

Diamond can provide lab-grade cable kits for system evaluation and testing. These cables generally consist of consumer-grade cables (HDMI, RJ-45, DB9, etc.) attached to the appropriate MIL-DTL-38999 mating connector to plug into the system front panel connectors. These are not ruggedized and not intended for use in the actual application environment. Predefined cables are available for the standard I/O connectors J1, J2, and J3. For custom I/O on J4, Diamond can design and quote a matching external cable of the same general style.



www.diamondsystems.com | [Sunnyvale, California USA](#) | [+1-650-810-2500](tel:+16508102500) | sales@diamondsystems.com