SE-1

Space Edge One

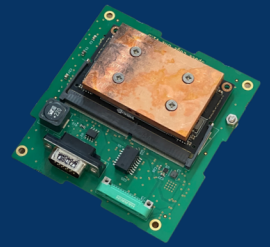**SPIRAL BLUE**

Based on the NVIDIA Jetson series, SE-1 is the onboard computing system developed and space proven by Spiral Blue that enables on board edge processing capabilities for satellites.

The SE-1 utilises NVIDIA modules to maximise processing power, whilst maintaining manageable power draw. It is the most powerful computer in space outside of a space station. Customisations and add-ons are available.

Specifications

PROCESSING

Chip Architecture	NVIDIA Jetson Xavier NX *Compatible with Orin NX.*
Processing Power	6 TFLOPS
GPU	384-core Volta
CPU	6-core Carmel
RAM	Compatible with 8GB and 16GB Jetson Xavier NX modules

DESIGN PARAMETERS

Size	0.25U (25x96x90mm) *Fits cubesats and smallsats.*
Weight	~250g*
Power Usage	3W idles, 20W peak, 6 W avg
Radiation	Research avail.

CONNECTIONS

Ethernet	1x Gigabit ethernet
UART	3x UART, including one for debug.
CAN	1x 2 Megabit CAN
USB	2x USB 3.1 1x USB2.0 1x USB 2.0 device mode
Serial	RS485 transceivers can be installed on UART lines as required. One installed by default.
GPIO	Direct access to X GPIOs from Jetson module.
Debug	Provided on one of the UART lines

STORAGE

Storage Options	Standard PCIe SSDs supported. 1TB included.

AVAILABILITY, COST & EXTRAS

Availability	In stock *Large orders - 8 weeks lead time*
Flight Model Cost	$50 000 USD
Engineering Model Cost	$5000 USD w. Flight model *$25 000 standalone*
Included Extras	40 hrs engineering support *w. Flight Model*

SOFTWARE

Operating System	Nvidia JetPack versions 4 and 5 *Ubuntu Linux based*
Utilities	Spiral Blue utilities for control and monitoring of carrier board features.

weight dependant on heatsink preferences.

What's included?

- **40 hours** — Engineering support
- **Jetson Module**
- **Carrier Board**
- **SSD**
- **Heat Sink**
- **Power Cabling**

Add Ons

- **Enclosure**
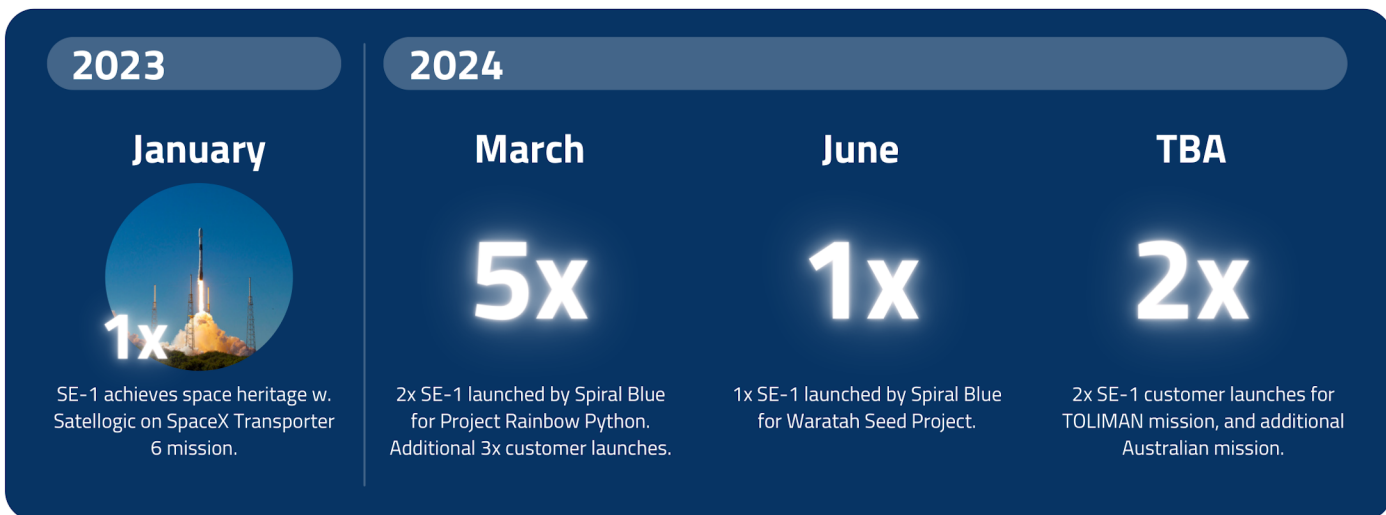- **Thermal Control**
- **On Board Software**
- **Cabling**
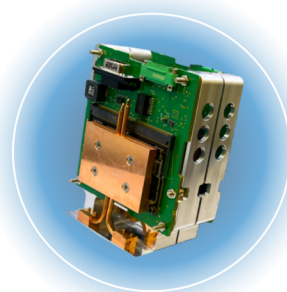- **AI / ML**
- **Custom Solutions**

Space Heritage

Following the 2023 launch, 8x SE-1 computers are scheduled to launch in 2024. This, in addition to the three SE-Z predecessors in orbit, will bring the total number of Spiral Blue computers in orbit to 12.

2023

January

1x

SE-1 achieves space heritage w. Satellogic on SpaceX Transporter 6 mission.

2024

March

5x

2x SE-1 launched by Spiral Blue for Project Rainbow Python. Additional 3x customer launches.

June

1x

1x SE-1 launched by Spiral Blue for Waratah Seed Project.

TBA

2x

2x SE-1 customer launches for TOLIMAN mission, and additional Australian mission.

Past and scheduled launches as of January 2024.

Enquiries

Lets chat about how SE-1 can support your next space mission!
Get in touch at info@spiralblue.space

3x SE-1 computers w. mounting brackets.