

The Tiger Innovations Solar Array Simulator provides up to 24 individual solar array simulators housed in a single 4U or 6U, 19 inch rack-mount chassis. All SAS channels have an individually controllable IV curve, adjustable for max-power current/voltage, short circuit current, and open circuit voltage. Each individual output open circuit voltage is adjustable from 0V - 55V, while the short-circuit current range goes from 0 - 8 A. The SAS requires one or more external power supplies for operation. The size and number of supplies can be adjusted to meet aggregate power requirements. Additional supplies can be integrated in parallel with all channels, or wired directly to individual channels. The SAS provides telemetry and control for each channel, including separate output enable switches. Software control is typically implemented using our StreamLINK package or through a defined Ethernet interface.

Tiger Innovations Solar Array Simulator			
Base 4U Configuration		Base 6U Configuration	
Number of Channels	8 - 16	Number of Channels	8 - 24
DC Input Power	0 – 20A @ 5 – 60V	DC Input Power	0-60A @ 5 – 60V
	From External Supply		From External Supply
Current Range	0 – 3 A per channel	Current Range	0 – 8 A per channel
Per Channel Control		Per Channel Control	
	- Max Power Voltage		- Max Power Voltage
	- Max Power Current		- Max Power Current
	- Open Circuit Voltage		- Open Circuit Voltage
	- Short Circuit Current		- Short Circuit Current
Mechanical		Mechanical	
Format	4U, 19" rack mounted	Format	6U, 19" rack mounted
	20" deep		20" deep
Mass	Approx. 43 lbs	Mass	Approx. 53 lbs
Data Interface		Configurable Features	
I/O Format	Ethernet	Max Current	3, 6 or 8 A per channel
I/O Protocols	UDP/IP	Channels	8 – 24 per SAS
Data Formats	Continuous stream		
		PRTD simulator	-120 C to +120 C
			per channel
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•TIGER INNOVATIONS• contact us for a quote or additional customization options			

## CONFIGURABLE SAS CHANNELS

Each SAS channel can be individually configured with a parameterized IV curve. The IV curve can be adjusted by varying the Max Power Voltage, Max Power Current, Open Circuit Voltage slope, and Short Circuit Current slope. Orbit simulations are easily generated using a scripting language to periodically update these values via software command. Typically Tiger Innovations has implemented this simulation architecture using our StreamLINK ground control software; however the SAS can easily be integrated with any Ethernet based software controller or setup manually using the front panel LCD controls.



**Configurable I-V Curve** 

The base model SAS is a 4U rack mounted chassis that houses 16 individual channels, each capable of 0-3A. The SAS can be expanded as required for missions with larger channel requirements. For example, a 24 channel 0-4A SAS is available in a 6U chassis. A typical system consists of a 4U/6U SAS unit, an Ethernet switch, a 1U Computer, and a 1U Keyboard/Monitor. A set of 1U COTS 20 Amp rack mount backing supplies are typically utilized and can be delivered by Tiger Innovations or supplied by the customer. The StreamLINK Control software resides on the computer and provides the command, telemetry, and scripting interface for the system. A user defined software package can be substituted for the StreamLINK tools.





**Turnkey SAS Block Diagram** 

The Tiger Innovations SAS provides a highly capable spacecraft simulation tool, in a compact package, while keeping costs low to provide our customers with quality product at the best value.

Tiger Innovations, L.L.C. is a well-qualified, high-technology small business founded in 1997, with a broad range of experience in specialty software / computer architecture design and implementation. Although, our experience ranges from hardware and software design and implementation for real-time embedded systems (spacecraft and long-range airborne communication and control processors) to custom software / COTS product integration for multiple workstations, our primary focus is satellite systems, avionics, and related support equipment. We have extensive experience with custom hardware, software, and communication protocol design and implementation. Our company philosophy is such that we view the entire project (design, development, documentation, and training) as equally important pieces, and strive to provide the best possible product in all areas. Tiger Innovations is a domestic company with its headquarters located in Arlington, Virginia. All of our employees are United States citizens, and have the ability to work on government programs of varying levels of classification.

