Science

SciFi 1 Datasheet

High bandwidth neural recording headstage with display

Table of Contents

Overview

SciFi 1 is a high bandwidth neural recording headstage. It features WiFi 6 (2x2 MIMO) wireless connectivity for ultra-low latency, with flexible antenna configurations (both internal and external). It is ruggedized to meet harsh operating conditions and it is plug and play compatible with Science Axon Probes and the Synapse API.

Key Features

- WiFi 6 connectivity for minimal latency and connection speed of up to 2.4 Gbps.
- High contrast OLED display for detailed status and experiment information.
- High visibility RGB light ring for status indication provides information about the device to users who may be some distance away. The light is also customizable by the user for their experiment goals.
- Automatic switching between internal and external WiFi antennas.
- 1400 mAh battery (2–4 hour battery life in active use).
- 128 GB of internal high speed storage available for saving recordings on-device.
- Octa-core processor with integrated GPU: up to 15 TOPS.
- Status indication through LED ring and AMOLED display panel.
- USB Type-C® port for connectivity.

Physical Dimensions

The SciFi 1 headstage measures 66.00 mm top to bottom, 17.50 mm front to back, and 56 mm side to side.
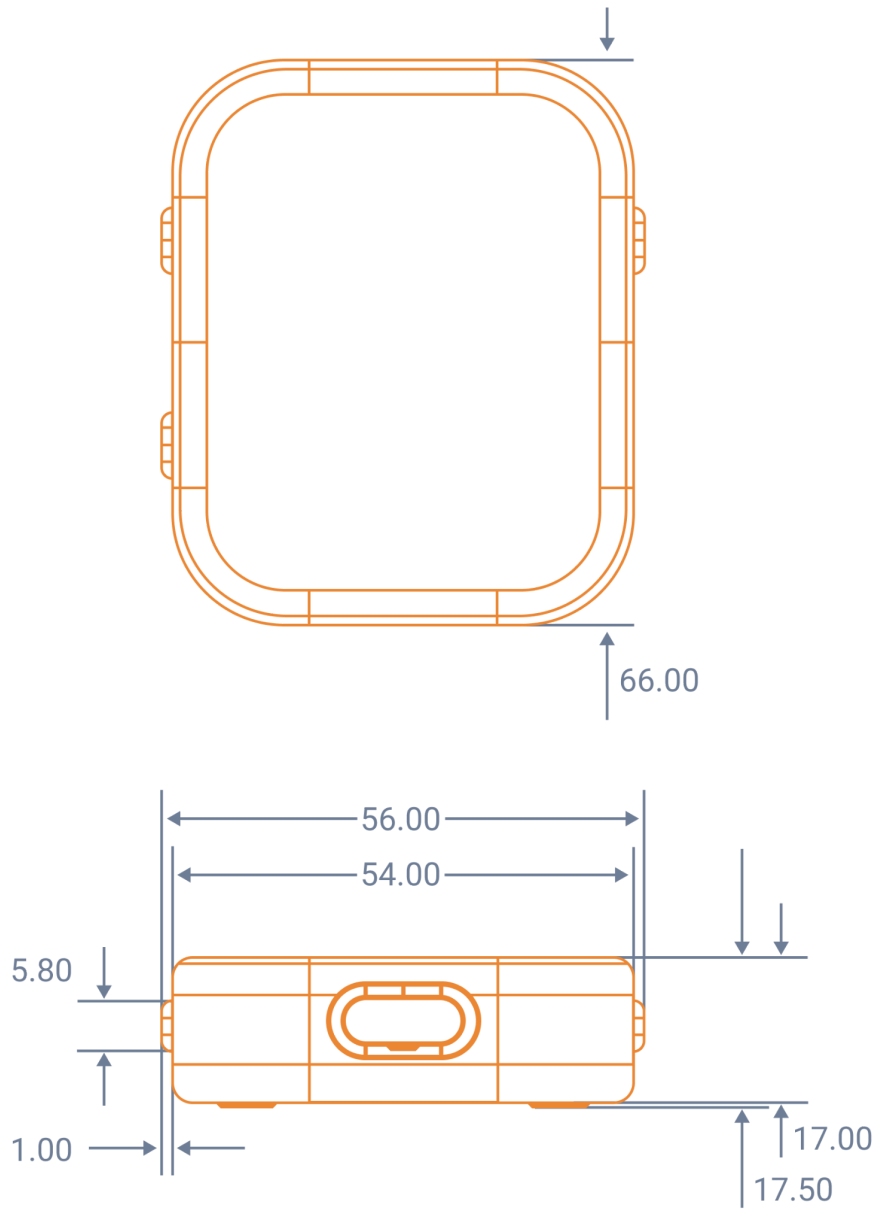
All dimensions shown in mm

Summary Table

Body	Dimensions	56 x 66 x 17.5 mm
		2.20 x 2.60 x 0.69 in
Display	Display technology	AMOLED, 60 Hz
	Viewing angle	160 degrees
	Resolution	368 x 448
	Brightness	350 nits
	Contrast	100000:1
	Diagonal	45.21 mm
Wireless Connectivity	WLAN	802.11 ax 160 MHz (5 GHz only)
	Max link speed	2400 Mbps *
	Iperf: Max up-link TCP	850 Mbps *
	Iperf: Max down-link TCP	850 Mbps *
Probe Connectivity	Physical interface	USB-C
	USB Spec	USB 3.1 5Gbps
	Compatible probes	Science [Axon Probes](#)
Battery	Battery capacity	5.6 Wh
	Safety features	Undervoltage, overcurrent, JEITA battery charging
	Battery life	2–4 hours in active use or 9 hours idle
Storage	Storage capacity	128 GB
	Approx. storage capacity (full bandwidth Axon record)	120 minutes **
Platform	OS	Linux Ubuntu

* Ideal conditions: minimal RF noise and interference and local WiFi router with minimal traffic.

** Based on 512 channel, 16 kHz, 12-bit, 100 GB free storage

Interfaces

Up/Down	Navigate between options on the AMOLED screen.
Power/Select	Holding the power button serves to turn on and off the device, with short presses serving as a select key.
LED Status Ring	The LED status ring can express a wide range of intuitive status information and can be customized to fit your own experiment goals like: ● Timer when cell media needs to be swapped ● Spikes being detected

LED Status Ring
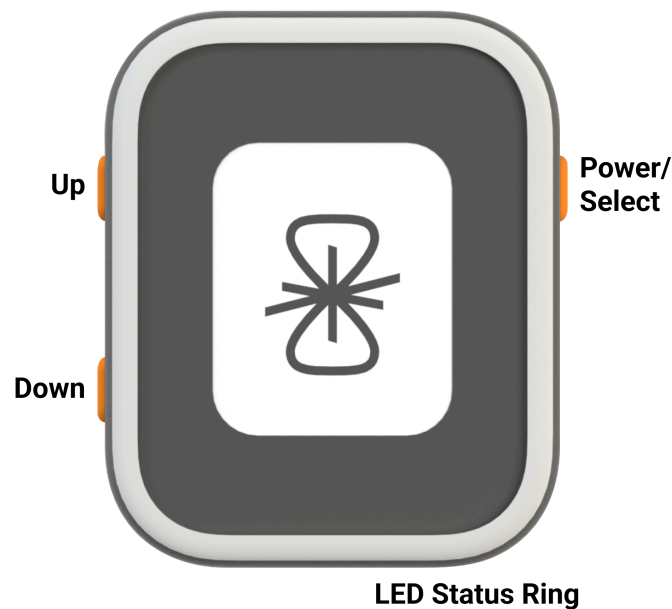
Hardware Requirements

In order to make use of SciFi 1, you will require the following:
- USB-C data cable (USB 3.1 required - 10 Gbps, USB 3.1, 2x2 on the packaging are good indicators).
- A WiFi network
    - The network must be capable of WiFi 5 (802.11ac) or later versions. To get best performance, we recommend using WiFi 6 (802.11ax 160MHz).
- A PC with synapsectl software installed.
- A Science Axon Probe.

Contact Information

Science Corporation
300 Wind River Way
Alameda, CA 94501
www.science.xyz

This preliminary product datasheet may change without notice.