

SPARROW BILL OF MATERIALS (BOM)

System	Item	Description	Qty	Tested/Recommended
Brain	NVIDIA Jetson Orin Nano Super Developer Kit	AI Edge Compute Device	1	NVIDIA Jetson Orin Nano Super Developer Kit
	2TB PCIe Gen 4 NVMe M.2 Internal Solid State Hard Drive	2TB SSD Drive	1	Samsung 980 PRO SSD MZ-V8P2T0CW
	Pi 3 Click Shield	Pi 3 Click Shield converts the GPIO pins on the NVIDIA Jetson Orin Nano into two mikroBUS™ sockets	1	MIKROE-2756
	mikroBUS Shuttle	Mikro Shuttle is a small add-on board, which is intended to be used with Shuttle click, in order to expand the mikroBUS™ with additional stacking options.	4	MIKROE-2882
	mikroBUS Shuttle Click	Shuttle click is a mikroBUS socket expansion board, which provides an easy and elegant solution for stacking up to four click boards on a single mikroBUS	2	MIKROE-2880
	DS3231M I2C Board	Real-time clock module which has an extremely low power consumption, allowing it to be used with a single button cell battery, for an extended period of time	1	MIKROE-3770
	BME688 I2C Board	Compact add-on board that contains a four-in-one environmental measurement solution	1	MIKROE-4893
	SHTC3 I2C Board	The SHTC3 sensors offers the complete measurement system: capacitive RH sensor, bandgap thermal sensor, analog and digital data processing, and the I2C communication interface	1	MIKROE-3331
	I2C Relay Board	Relay board featuring at least one SRD-5VDC-SL-C relays	1	MIKROE-3357
Power	24V 15A MPPT Solar Charge Controller	24V 15A (at least) MPPT solar charge controller with load output control and usb interface	1	Victron Smart Solar MPPT 100V/20A SCC110020160R
	USB Solar Charge Controller Interface	Direct to USB interface connection to devices with a USB port	1	Victron Energy VE.Direct to USB interface ASS030530010
	100 Watt Solar Panels Monocrystalline Solar Panel	100 Watt Monocrystalline Solar Panel (at least 2 required working in a 24V matrix)	2	ECO-WORTHY 100 Watt Solar Panel US-L02M100-B-1
	10AWG PV004 Solar Extension Cable 30A/1000V DC, IP67	Cables that go from the Solar Panels (PV004 connector) to the Solar Charge Controller (overall length subject to installation)	1	ECO-WORTHY 10FT 10AWG Solar Extension Cable 30A/1000V DC, IP67 Waterproof with Compatible Quick Connectors
	45in Solar Panel Mount Brackets	45in Solar Panel Mount Brackets, with Foldable Tilt Legs Suitable for 2pcs 100W	1	ECO-WORTHY 45in Solar Panel Mount Brackets US-L03TYNS1Z4-1
	24V 50Ah or 100Ah LifePo4 Battery	24V 50Ah 100Ah LifePo4 Battery (capacity depending on deployment conditions/location)	1	ECO-WORTHY 24V 100Ah LifePo4 Lithium Battery US-L13070402010-1
	SAE to O Ring 10AWG Battery Connector Terminal	Fused Battery Cable that goes from the Battery (O-Ring) to the Solar Controller Battery Cable (SAE)	1	iGreely 10 Gauge Wire SAE to O Ring Terminal
	10AWG Solar Panel Connector Cable	Solar Controller Battery Cable (SAE), 10AWG SAE to PV Male & Female Adapter (overall length subject to installation, see assembly instructions on how to modify for this use case)	1	iGreely Solar Panel Connector Cable, 10AWG SAE to Male & Female Adapter
	Outdoor Weatherproof IP65 Electrical Junction Box	Outdoor Weatherproof IP65 Electrical Junction Box, Ventilated Design, Use with Mounting Panel & Hinged Cover. Size: 17"x13"x7"	1	ANIMACYN Electrical Junction Box, Ventilated Design, Cable Grommets, Indoor/Outdoor Use with Mounting Panel & Hinged Cover. Waterproof IP 65. (Grey Cover, 17.7"x13.7"x7.9")
Build	18AWG Speaker Wire (Black+Red)	18AWG Copper Clad Aluminum Speaker Wire (Black + Red)	1	GEARIT GEARIT Speaker Wire 18 Gauge, Speaker Cable 18AWG
	Displayport Headless EDID Dongle	Displayport monitor emulator required to guarantee image output during remote control of Jetson unit	1	BKFK dp Dummy Plug - Display to hdmi Adapter, Luna Display Virtual Window for Home-edid Emulator-Dummy, displayport Headless dummie dongle(DP-1P)
	5.5mm x 2.5mm 90 Degree Right Angle DC Barrel Male Plug Jack	5.5mm x 2.5mm 90 Degree Right Angle DC Barrel Plug to Power the Jetson Unit	1	Fancasee DC Power Pigtail Cable, 10-Pack 5.5mm x 2.5mm 90 US-CAB-65
	5.5mm x 2.1mm DC Female Plug to Bare Wire Pig tail	Starlink Mini Power DC Female Plug (You can use either a DC female plug to bare wire plug or a fully assembled DC female plug pigtail)	1	Tonton 16AWG DC Power Pigtails Cable - 3.3FT, Pure Copper, Orange - 5.5mm x 2.1mm DC Female Plug to Bare Wire Open End
	Zip Ties Assorted Size	Zip Ties Assorted Size, Double Sided Toothed,Heavy Duty Cable Wire Ties	1	JIANYANG Zip Ties Assorted Size, 8+12+14+18 Inch
	Connection Terminal for 3 Wires. Lever action.	We need 2 for each build, they come in boxes with larger quantities, any brand of lever action solderless wire connectors will work.	1	Wago 221-413 Connection terminal 3 wires 0.2 to 4 mm² with control lever, transparent compact model, Box of 50
	10FT USB A to Micro USB Cable	Long Micro USB cable for the Audiomoth	1	MOVOYEE Long 10FT USB to Micro USB Cable
	PG7 PG9 PG11 PG13.5 PG16 PG19 Weatherproof Cable Gland Connectors	Weatherproof Cable Gland Connectors to route the cables going in and out of the electrical Junction Box	1	LISTENJIALE Cable Gland Waterproof 50 pcs
	STARLINK Mini Kit	STARLINK Mini Kit - High-Speed Portable Internet for Remote and Mobile Use	1	Starlink Mini Antenna Kit
Network	Starlink Ethernet Adapter RJ45 Coupler Waterproof Compatible	Weatherproof Starlink Compatible RJ45 Coupler	1	EAZUSE RJ45 Starlink Ethernet Adapter Gen 3/Mini
	Cat 6 Outdoor Ethernet Cable from Jetson to Starlink	Cat 6 Outdoor Ethernet Cable, 24AWG 10Gbps Waterproof Direct Burial LLDPE UV Jacket (overall length subject to installation)	1	VOIETOLT Cat 6 Outdoor Ethernet Cable 30 ft, 24AWG 10Gbps Cat6 Cable Cord Waterproof Direct Burial LLDPE UV Jacket
	2X WiFi Antenna with MHF4/PEX to RP-SMA Pigtail Antenna WiFi Cable	Pair of 6dBi 2.4GHz 5GHz Dual Band WiFi RP-SMA Male Antenna+2x 35CM RP-SMA IPEX MHF4 Pigtail Cable for M.2 NGFF WiFi WLAN Card	1	HIGHFINE 2 x 6dBi 2.4GHz 5GHz Dual Band WiFi RP-SMA Male Antenna+2x 35CM RP-SMA IPEX MHF4 Pigtail Cable for M.2 NGFF WiFi WLAN Card
Optional	10dBi Long Range Outdoor WiFi Fiberglass Antenna	Optional upgrade to improve overall WiFi Range. **IMPORTANT NOTE: MHF4/PEX to RP-SMA Pigtail Antenna WiFi Cable is REQUIRED and must be purchased separately**	2	eifagur 10dBi Long Range Dual Band WiFi 2.4GHz 5GHz Fiberglass Antenna
Audio	AudioMoth Dev Case	Weatherproof AudioMoth Case	1	AudioMoth Dev Case
	AudioMoth Dev Board	AudioMoth Dev board	1	AudioMoth Dev Board
Camera	2.4Ghz Solar WiFi Security Camera	Solar Weatherproof WiFi Cameras to be used as the SPARROW Camera Traps (you can use up to 150 cams per SPARROW main unit)	1	Reolink Argus Eco+

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