

Global Tokenizer V2 – Mechanical Connections

Source	Target	Joint	Delta	Description
handheld_enclosure_front	brass_threaded_inserts	heat-set press fit	(0, 0, 0)	Handheld Enclosure Front Cover -> M3 Threaded Heat-Set Inserts - heat-set press fit; M3 Threaded Heat-Set Inserts centered on Handheld Enclosure Front Cover
handheld_enclosure_back	handheld_enclosure_front	enclosure_m3_screws into brass_threaded_inserts	(0, 0, -55)	Handheld Enclosure Back Cover -> Handheld Enclosure Front Cover - enclosure_m3_screws into brass_threaded_inserts; Handheld Enclosure Front Cover sits 55mm back from Handheld Enclosure Back Cover
carrier_board_mount	handheld_enclosure_front	pcb_m3_screws	(0, 0, 0)	Carrier Board Mounting Frame -> Handheld Enclosure Front Cover - pcb_m3_screws; Handheld Enclosure Front Cover centered on Carrier Board Mounting Frame
depth_camera_mount	handheld_enclosure_front	pcb_m3_screws	(0, -35, 0)	Depth Camera Secure Bracket -> Handheld Enclosure Front Cover - pcb_m3_screws; Handheld Enclosure Front Cover sits 35mm down from Depth Camera Secure Bracket
battery_holder_bracket	handheld_enclosure_back	pcb_m3_screws	(0, 0, 0)	18650 Battery Pack Clip -> Handheld Enclosure Back Cover - pcb_m3_screws; Handheld Enclosure Back Cover centered on 18650 Battery Pack Clip
oled_display_bezel	handheld_enclosure_front	snap-fit and glue	(0, -25.5, 25.5)	OLED Display Mount Bezel -> Handheld Enclosure Front Cover - snap-fit and glue; Handheld Enclosure Front Cover sits 25.5mm down, 25.5mm forward from OLED Display Mount Bezel
main_mcu_mount	carrier_board_mount	pcb_m3_screws	(0, -10, 0)	Main System Controller Mount -> Carrier Board Mounting Frame - pcb_m3_screws; Carrier Board Mounting Frame sits 10mm down from Main System Controller Mount
spectral_sensor_triad_mount	handheld_enclosure_front	pcb_m3_screws	(0, 15, -30)	18-Channel Spectral Triad Mount -> Handheld Enclosure Front Cover - pcb_m3_screws; Handheld Enclosure

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				Front Cover sits 15mm up, 30mm back from 18-Channel Spectral Triad Mount
dac_led_driver_mount	carrier_board_mount	pcb_m3_screws	(0, 14, 0)	I2C LED Driver DAC Mount -> Carrier Board Mounting Frame - pcb_m3_screws; Carrier Board Mounting Frame sits 14mm up from I2C LED Driver DAC Mount
vnir_led_array_mount	spectral_sensor_triad_mount	integrated snap-lock	(0, 17.5, 0)	VNIR Multi-Wavelength LED Array Mount -> 18-Channel Spectral Triad Mount - integrated snap-lock; 18-Channel Spectral Triad Mount sits 17.5mm up from VNIR Multi-Wavelength LED Array Mount
environmental_sensor_mount	handheld_enclosure_back	pcb_m3_screws	(0, 25, 0)	Ambient Air & VOC Sensor Mount -> Handheld Enclosure Back Cover - pcb_m3_screws; Handheld Enclosure Back Cover sits 25mm up from Ambient Air & VOC Sensor Mount
carrier_board_mount	baseboard_hub	mount	(0, 2, 0)	Carrier Board Mounting Frame -> Custom Handheld Carrier Board - mount; Custom Handheld Carrier Board sits 2mm up from Carrier Board Mounting Frame
depth_camera_mount	depth_sensor_cam	mount	(0, 0, 0)	Depth Camera Secure Bracket -> RGB-D ToF Camera Module - mount; RGB-D ToF Camera Module centered on Depth Camera Secure Bracket
battery_holder_bracket	li_ion_cell	mount	(0, 26.5, 0)	18650 Battery Pack Clip -> Internal Li-Ion Battery Pack - mount; Internal Li-Ion Battery Pack sits 26.5mm up from 18650 Battery Pack Clip
oled_display_bezel	status_display	mount	(0, 0.5, 0)	OLED Display Mount Bezel -> User Interface OLED - mount; User Interface OLED sits 0.5mm up from OLED Display Mount Bezel
main_mcu_mount	main_mcu	mount	(0, 3.7, 0)	Main System Controller Mount -> Main System Controller - mount; Main System Controller sits 3.7mm up from Main System Controller Mount
spectral_sensor_triad_mount	spectral_sensor_triad	mount	(0, 5.5, 0)	18-Channel Spectral Triad Mount -> 18-Channel Spectral Triad - mount;

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			0)	18-Channel Spectral Triad sits 5.5mm up from 18-Channel Spectral Triad Mount
dac_led_driver_mount	dac_led_driver	mount	(0, 9.5, 0)	I2C LED Driver DAC Mount -> I2C LED Driver DAC - mount; I2C LED Driver DAC sits 9.5mm up from I2C LED Driver DAC Mount
vnir_led_array_mount	vnir_led_array	mount	(0, 8.8, 0)	VNIR Multi-Wavelength LED Array Mount -> VNIR Multi-Wavelength LED Array - mount; VNIR Multi-Wavelength LED Array sits 8.8mm up from VNIR Multi-Wavelength LED Array Mount
environmental_sensor_mount	environmental_sensor	mount	(0, 0, 0)	Ambient Air & VOC Sensor Mount -> Ambient Air & VOC Sensor - mount; Ambient Air & VOC Sensor centered on Ambient Air & VOC Sensor Mount
rugged_usbc_mount	handheld_enclosure_front	M3 bolt and hex nut	(0, 0, -22.5)	Rugged USB-C Connector Mount -> Handheld Enclosure Front Cover - M3 bolt and hex nut; Handheld Enclosure Front Cover sits 22.5mm back from Rugged USB-C Connector Mount
rugged_usbc_mount	rugged_usbc_panel	threaded collar lock	(0, 0, 5)	Rugged USB-C Connector Mount -> Rugged IP67 USB-C Panel Mount Connector - threaded collar lock; Rugged IP67 USB-C Panel Mount Connector sits 5mm forward from Rugged USB-C Connector Mount
rugged_usbc_mount	handheld_enclosure_front	M3 bolt and hex nut	(0, 0, -22.5)	Rugged USB-C Connector Mount -> Handheld Enclosure Front Cover - M3 bolt and hex nut; Handheld Enclosure Front Cover sits 22.5mm back from Rugged USB-C Connector Mount
rugged_usbc_mount	rugged_usbc_panel	threaded collar lock	(0, 0, 5)	Rugged USB-C Connector Mount -> Rugged IP67 USB-C Panel Mount Connector - threaded collar lock; Rugged IP67 USB-C Panel Mount Connector sits 5mm forward from Rugged USB-C Connector Mount
lens_protective_cap	handheld_enclosure_front	hinge pin and M3 bolt	(0, 0, -55)	Protective Flip Cover -> Handheld Enclosure Front Cover - hinge pin and M3 bolt; Handheld Enclosure

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				Front Cover sits 55mm back from Protective Flip Cover
teflon_diffuse_target	lens_protective_cap	press fit into inner recess	(0, 0, 0)	Spectral Calibration Reference Target -> Protective Flip Cover - press fit into inner recess; Protective Flip Cover centered on Spectral Calibration Reference Target
hand_strap	handheld_enclosure_back	M3 mounting screws	(0, 0, 35)	Ergonomic Rugged Hand Strap -> Handheld Enclosure Back Cover - M3 mounting screws; Handheld Enclosure Back Cover sits 35mm forward from Ergonomic Rugged Hand Strap
trigger_button_mount	handheld_enclosure_back	thread lock nut	(0, 0, -32.5)	Trigger Button Bezel -> Handheld Enclosure Back Cover - thread lock nut; Handheld Enclosure Back Cover sits 32.5mm back from Trigger Button Bezel
trigger_button_mount	trigger_button	panel mount thread	(0, 0, 0)	Trigger Button Bezel -> Trigger Scan Button - panel mount thread; Trigger Scan Button centered on Trigger Button Bezel
teflon_diffuse_target	battery_charger_bms	attached	(0, 3.4, 0)	Spectral Calibration Reference Target -> 1S Li-Ion Charger & Powerpath - attached; 1S Li-Ion Charger & Powerpath sits 3.4mm up from Spectral Calibration Reference Target
teflon_diffuse_target	power_delivery_sink	attached	(0, 3.5, 0)	Spectral Calibration Reference Target -> USB-PD Sink Controller - attached; USB-PD Sink Controller sits 3.5mm up from Spectral Calibration Reference Target