

HYPERSPEC AI  
SENSE AND REASON

# PRODUCT CATALOGUE

## HYPERLITE MAPPING KIT V2



The Hyperspec Mapping Kit is a comprehensive solution designed for mapping and perception tasks. With its powerful hardware components, including the MID-360 Livox Lidar, uBlox Zed F9P GNSS, WITMOTION HWT905-TTL IMU, and InstaPro X3 Camera, it offers high-performance data capture capabilities. Combined with ROS integration, the kit provides flexibility and extensibility, empowering users to achieve accurate and precise mapping results in various applications.

**Accuracy  $\pm 3$  cm**

**Data Rate  
200,000 pps**

**Camera FoV 360**



## CAMERA

Sensor	1/2.8" IMX298
Resolution	16MP 4656H x 3496V
Data Format	MJPEG/YUY2
Frame Rate	MJPEG 10fps@4656x3496/3264x2448/2592x1944/ 30fps@1080P/720P/1024x768; YUY2 8fps@1024x768, 10fps@640x768
Lens	
Field of View(FoV)	360 Panoramic
Lens Mount	M12
Focusing Range	3.3ft (1M) to infinity
IR sensitivity	Integral IR filter, visible light

## SCANNER - LIVOX MID-360 LIDAR

Field of View	Horizontal:360°, Vertical: -7°~52°
Range Precision	≤ 2 cm <sup>4</sup> (@ 10m) ≤ 3 cm <sup>5</sup> (@ 0.2m) Angular Precision (1σ) < 0.15°
Frame Rate	10 Hz (typical)
Data	IEEE 1588-2008 (PTPv2),
Synchronization	GPS
Detection Range	0.1m to 40m @ 10% Reflectivity, 70m @ 80% reflectivity
Vertical Resolution	40-line. Point Cloud Density
Point Accumulation	200,000 pts / sec
Speed	
Laser Wavelength	905nm
Laser Safety	Class 1 (IEC60825-1:2014) (Eye Safety)

## FEATURES

Active antenna / LNA control, Active antenna / LNA supply, Additional SAW, Antenna open circuit detection pin, Antenna short circuit detect / protect pin, Base station with survey-in , Carrier phase output, Data logging, Jamming detection, Programmable flash memory, RTC crystal, RTK rover, Secure boot, Time pulse output.

## GNSS

GNSS	BeiDou, Galileo, GLONASS, GPS / QZSS
Number of GNSS	4
GNSS platform	Concurrent GNSS
GNSS bands	B1I, B2I, E1B/C, E5b, L1C/A, L1OF, L2C, L2OF
Oscillators	TCXO
<b>Interfaces</b>	
UART	2
USB	1
12C	1
SPI	1
<b>Electrical data</b>	
Max supply [V]	3.6
Min supply [V]	2.7
<b>Environmental</b>	
Max temp [°C]	85
Min temp [°C]	-40
Antennas	Pin for external antenna

## WIT MOTION MILITARY GRADE INCLINOMETER

Range	Acceleration (±6g), Gyroscope (±2000°/s), Magnet Field (±4900μT), Angle (X, Z-axis: ±180°, Y ±90°)
Resolution	Acceleration (0.005g), Gyroscope (0.61°/s), Magnet Field (16 bits)
Angle Accuracy (after calibrated)	X, Y-axis: 0.05° (Static) , X, Y-axis: 0.1° (Dynamic)
Output Content	3-axis Acceleration+Angle+Angular Velocity+Magnetic
Band Rate	Field+Quaternion
Output Frequency	4800-961200 (adjustable) 0.2-200Hz

## ONBOARD COMPUTER WITH 2TB STORAGE

SoC	Rockchip RK3588S (8nm LP process) • 8-core 64-bit processor
CPU	• Big.Little Architecture: 4xCortex-A76 and 4xCortex-A55, Big core cluster is 2.4GHz, and Little core cluster is 1.8GHz frequency.
Storage	• 2 Terabyte NVMe Storage
GPU	• Arm Mali-G610 MP4 “Odin” GPU • Compatible with OpenGL ES1.1/2.0/3.2, OpenCL 2.2 and Vulkan 1.2 • 3D graphics engine and 2D graphics engine
NPU	Built-in AI accelerator NPU with up to 6 TOPS, supports INT4/INT8/INT16 mixed operation
PMU	RK806-1
RAM	4GB/8GB/16GB /32GB (LPDDR4/4x
Memory	• QSPI Nor FLASH 16MB • MicroSD (TF) Card Slot • M.2 M-KEY Socket
USB	USB3.0 × 1 USB2.0 × 2 Type-C (USB3.1) ×1
Video Output	HDMI2.1, up to 8K @60Hz • DP1.4 (DisplayPort), DP1.4 and USB3.1 ports are multiplexed, and the port is shared with Type-C
Camera	• 2 * MIPI D-PHY TX 4Lane, configurable up to 4K @60Hz MIPI CSI 4Lane • 2 * MIPI D-PHY RX 4Lane CODEC: ES8388
Audio	• 3.5mm headphone jack audio input/output • Input: Onboard MIC • HDMI 2.1 eARC
Ethernet	10/100/1000Mbps Ethernet
Expantion Port	For extending UART, PWM, I2C, SPI, CAN and GPIO interfaces.
M2M-KEY Socket	Support PCIe NVMe SSD
Expansion Slot	Support custom PCIe Wi-Fi6+BT5.0 module
Button	1×MaskROM key 1×Recovery key 1×On/Off key
Power Source	Support Type-C power, 5V @ 4A
LED	Power indicator: red Status indicator: green
Debugging	3 Pin debug serial port (UART)

## SENSOR PLATFORM

Weight	3 lbs
Size	12 x 7 x 9

## EXPORT OPTIONS

Image  
Point Cloud

## PHYSICAL

Operating Temp	-4°F~167°F (-20°C~+75°C)
Cable Length	3.3ft (1M) (edited)
Weight	3 lbs

## POWER

Power Supply	DC 5V
Working Current	MAX 200mA

\* If not specified, data refers to a Hyperpsec Mapping kit V2: reachout to us.  
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