MULTISENSE® KS21i

PRODUCT SUMMARY

RUGGEDIZED STEREO VISION

The MultiSense® KS21i is a rugged stereo computer sensor with on-board processing, intelligently designed to facilitate complete and standalone sensor solutions in challenging indoor environments.

RUGGED The MultiSense® KS21i features an extruded aluminum housing that is suited for challenging indoor environments. Each unit is rigorously tested and held to the highest quality and design standards to ensure consistent and dependable operation.

APPLICATIONS The durable construction of the MultiSense® KS21i allows it to be utilized in a number of indoor applications, such as logistics, manufacturing, and industrial cleaning.

ON-BOARD PROCESSING All MultiSense® stereo sensors feature powerful on-board processing, eliminating the need for costly peripherals. Combined with the MultiSense® Viewer software, the KS21i allows you to view your data in real-time so you don't miss a thing.

PERCEPTION With two built-in infrared pattern projectors, the KS21i is capable of dependably seeing even in the most dynamic lighting conditions.

GROUND PLANE MODELING The on-board IMU in conjunction with the stereo imaging and on-board processing allow for accurate point cloud generation and ground plane modeling of the surrounding area, which is critical for autonomous applications within dynamic environments.

BENEFITS

- RUGGEDIZED SENSOR FOR INDOOR OPERATION
- POWERFUL ON-BOARD PROCESSING
- FLEXIBLE MOUNTING OPTIONS
- ELECTRICAL PROTECTION ON ALL I/O
- PERFORMS IN LOW-LIGHT CONDITIONS

FEATURES

- IP54 RATED
- -22° - 149°F OPERATING TEMPERATURE
- 1.2Ghz QUAD-CORE ARM® PROCESSOR
- 500Mhz 28nm DUAL-CORE VIDEO PROCESSOR
- 4 GB DDR4 RAM
- BMI160 IMU

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CARNEGIE ROBOTICS

MULTISENSE® KS21i

CARNEGIE ROBOTICS

RUGGEDIZATION

OPERATING TEMPERATURE	-22° - 149°F (-30° - 65°C)
IP RATING (CABLES ATTACHED)	IP54
OPERATING RELATIVE HUMIDITY	93%
REGULATORY	RoHS
SHOCK	100G, 2ms
VIBRATION	10 GRMS
GRAVEL BOMBARDMENT	ROCK CHIP RESISTANT

COMPUTE

PROCESSOR	1.2Ghz QUAD CORE ARM® A53
REAL-TIME PROCESSING	ARM® CORTEX R5
GPU	500Mhz ARM® MALI-400 MP2
RAM	4GB DDR4 W/ ECC
MAPPING COMPONENTS	IMU (BMI160)
OPERATING SYSTEM	PETALINUX

ELECTRICAL

VOLTAGE RANGE	9 - 36VDC
OVERVOLTAGE	48VDC
COLD CRANKING	6V
POWER (NOMINAL)	12W (ALGORITHM-DEPEDENT)
COMMUNICATIONS PROTOCOL	1000BASE-T
DATA CONNECTION	RJ45
POWER CONNECTION	A-CODED M12

PHYSICAL

HEIGHT	2.2in (5.5cm)
WIDTH	11.2in (28.5cm)
DEPTH	5.4in (13.7cm)
CONSTRUCTION	EXTRUDED ALUMINUM

IMAGE SENSOR PAYLOAD

	MONOCHROME	RGB
RESOLUTION	1920 x 1200	1920 x 1188
SHUTTER TYPE	GLOBAL SHUTTER	ROLLING SHUTTER
FRAME RATE	30 FPS MAX	30 FPS MAX
BIT DEPTH	8	8
APERTURE	F/2.6	F/2.8
FILTER	IR PASS	IR CUT

OPTICS

ALGORITHM	SGM (SEMI-GLOBAL STEREO MATCHING)
STEREO BASELINE	8.3in (21.0cm)
STEREO ALGORITHM SPEED	30 FPS @ 0.5MP, 256 DISP
RANGE	1.6 - 66ft (0.5 - 20.0m)
VIEW ANGLE	PARALLEL TO MOUNTING PLANE
COLOR FOV (RAW)	135° H x 84° V
STEREO FOV (RAW)	135° H x 84° V
FOCAL LENGTH	3.9mm (STEREO) / 2.5mm (COLOR)

MOST RECENT FIRMWARE VERSION AVAILABLE HERE: https://docs.carnegierobotics.com/docs/firmware/update.html

IR LASER EMITTER

NUMBER OF DOTS	11,400
WAVELENGTH	850 nm
FIELD OF ILLUMINATION	130° x 51°

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