

### Robot WIFIBOT Lab V4

Wifibot Lab is suited for those who want an affordable mobile platform for developing and learning robotics. The base system is composed by a four-wheel drive chassis controllable using RS232/USB, 4 infrared sensors, a Web Camera (or CSI), a WIFI adapter, an Intel Celeron quad core SBC, running Linux Ubuntu 18,04LTS, or a NVIDIA Jetson module or a Raspberry PI, and a free WIFI access point. **2D Lidar, Depth camera, GPS or IMU can be an option.** 

You can develop your application on the robot or remotely using the HDMI port or remote SSH over EthernetRJ45/WIFI.

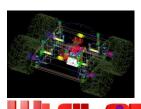
For controlling this robot, several GUI and API are available. The motor board can be programmed using MPLAD/ICD3/4/Pickit3/4 debugger or using our internal bootloader.

The RS232 or Ethernet protocol is open and simple, and it can be used with any kind of framework on any king of computer board (**ROS**, **RTMAPS**, **Matlab**, **etc...**)





www.wifibot.com







### FISCT Lab V4 **Default Specifications**

4 hall effect coders 336 tics / Motor sensor:

wheel turn

Speed control: 4 x PID DSPIC Microchip

33E coded in C RS232 Boot loader ICD2/3 (option)

4x 12v Brushless motors Motors:

26:1 planetary gear

156 rpm

L:32 cm **Dimensions:** 

W: 37 cm H: 15 cm W: 3.8Kg

12.8V LIFEPO4 Power

10AH **Batteries:** 

Power supply 18V / 220V Path Power Management Charger inside the robot You can use the robot during

charging

RS232/USB Control bus:

Simple protocol C/C++ API,

(ROS, MatLab, RTMAPS,

possible)

Sockets TCP/UDP via WIFI or Distant Protocol:

RJ45

Intel Celeron J1900 quad core SBC CPU:

1.8Ghz 4G Ram / 60G SSD HD Nvidia Jetson Nano or Xavier NX

Raspberry 3 or 4

4 Infrared Sensors:

> 1 web cam wide angle CSI Camera for Nvidia

C++ control API Software:

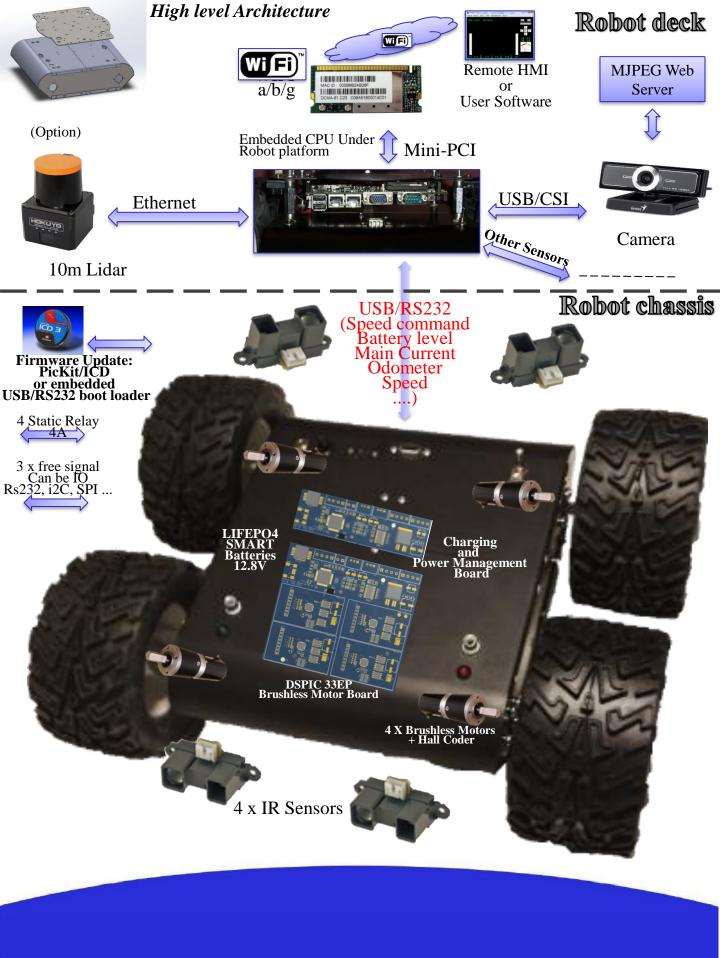
1 HMI

Embedded Camera Web Server

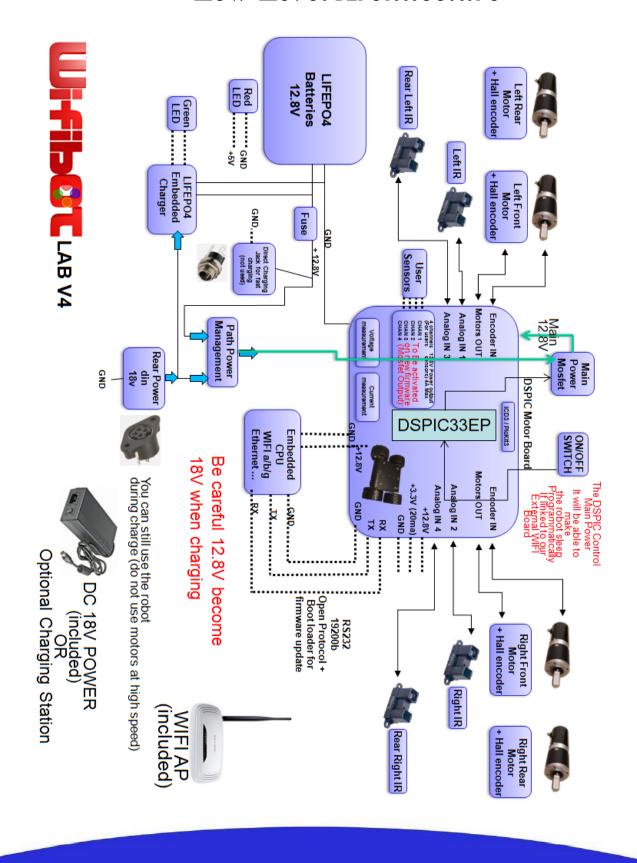


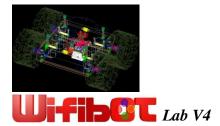


DC 18V POWER (included)



# Low Level Architecture





# Low Level Architecture (DSUB15 on the robot)

DSUBF



HD-D-sub-15 Female

Be careful 12.8V become 18V when charging so check that your device is 18V tolerant or use a DC/DC

DsubF-1 et 2 -> +12.8V (8A Max, embedded PC, other device)

DsubF-6 à 10 -> GND

DsubF-15 -> 12.8V (Linked to the Main Switch, 300mA)

### Power Mosfet Output:

DsubF-3 -> Channel 1: +12.8V (4A)

DsubF-4 et 5 -> Channel 2: +12.8V (4A)

DsubF-11-12 -> Channel 3: +12.8V (4A)

DsubF-13-14 -> Channel 4: +12.8V (4A)

### Serial port for Embedded PC:

# We provide USB to RS232 adapter

DSNBW

DSUB15M-6 -> DSUB9F-3 TX
DSUB15M-7 -> DSUB9F-2 RX
DSUB15M-9 -> DSUB9F-5 GND

Infrared Sensors:

DSUB15M-3 -> Infra1-data DSUB15M-8 -> Infra1-gnd DSUB15M-1 -> Infra1-+5V DSUB15M-4 -> Infra2-data DSUB15M-8 -> Infra2-gnd DSUB15M-1 -> Infra2-+5V DSUB15M-5 -> Infra3-data DSUB15M-14 -> Infra3-gnd DSUB15M-2 -> Infra3-+5V DSUB15M-10 -> Infra4-data

DSUB15M-14 -> Infra4-gnd

DSUB15M-2 -> Infra4-+5V

FUTURE USE:

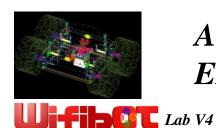
DsubM-11 -> free dspic IO (future use)

DsubM-12 -> free dspic IO (future use)

DsubM-13 -> free dspic IO (future use)

DsubM-14 -> GND

DsubM-15 -> 3.3V (20mA)



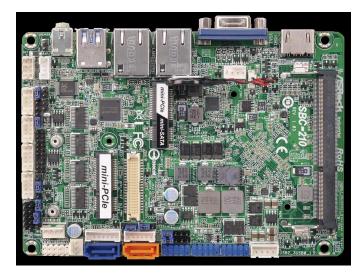
# Annex 1 EMBEDDED Default CPU

Intel® Celeron J1900

SBC-210

3.5" SBC Motherboard





- Intel® AtomTM Baytrail-M/D Processor J1900
- ·Integrated Intel® Gen7 Intel Graphics DX 11, OGL3.2
- Supports Single Channel DDR3L 1333MHz, 1 x SO-DIMM, up to 8GB system memory
- -1 x COM (RS-232/422/485), 3 x COM (RS-232)
- -1 x HDMI, 1 x D-Sub, 1 x Dual Channel 24-bit LVDS
- •2 x USB 3.0, 6 x USB 2.0, 2 x SATA2
- 1 x mini-PCle, 1x mSATA (shared)
- · Gigabit LAN: 2 x Realtek Lan
- ·1 x TPM Header
- •9~36 V DC-in

# Annex 2



# Wireless-N Dual-Band Half Mini Card

Highest Performance with Atheros AR9280 Solution, 2T2R

## **Specifications**

#### Standard

802.11a/b/g/n

### Chipset

Mac/BB /RF Atheros AR9280

### Host Interface

Half Mini PCI Express

#### Radio

Kaalo			
Antenna	2 x U.FL connectors, 2T2R		
Operating Frequency	802.11b/g/n ISM Band: 2.412 ~ 2.4835 GHz		
	802.11a ISM Band: 5.15 ~ 5.85 GHz		
	802.11a: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)		
M. L.E.	802.11b: DSSS (DBPSK, DQPSK, CCK)		
Modulation	802.11g: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)		
	802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM)		
	802.11a: 12dBm ± 1.5dBm		
	802.11b: 18dBm ± 1.5dBm		
Output Power	802.11g: 15dBm ± 1.5dBm		
•	802.11gn HT20: 13dBm ± 1.5dBm@MCS7		
(2T)	802.11gn HT40: 12dBm ± 1.5dBm@MCS7		
	802.11an HT20: 12dBm ± 1.5dBm@MCS7		
	802.11an HT40: 12dBm ± 1.5dBm@MCS7		
	802.11a:-68dBm ±2dBm@54Mbps		
Receive Sensitivity (2R)	802.11b:-85dBm ±2dBm@11Mbps		
	802.11g: -68dBm ±2dBm@54Mbps		
	802.11gn HT20: -68dBm ±2dBm@MCS7		
	802.11gn HT40: -68dBm ±2dBm@MCS7		
	802.11an HT20: -68dBm ±2dBm@MCS7		
	802.11an HT40: -68dBm ±2dBm@MCS7		

# Annex 3

# 150Mbps Wireless N Router TL-WR740N



Standards	IEEE 802.11n, IEEE 802.11g, IEEE 802.11b
Interface	4 10/100M Auto-Sensing RJ45 LAN Port(Auto MDI/MDIX)
inchace	1 10/100M Auto-Sensing RJ45 WAN Port(Auto MDI/MDIX)
Wireless Signal Rates	Up to 150Mbps
Frequency Range	2.4-2.4835GHz
EIRP	<20dBm(EIRP)
Wireless Functions	Enable/Disable Wireless Radio, WDS Bridge, WMM, Wireless Statistics
	130M: -68dBm@10% PER
	54M: -68dBm@10% PER
Receiver Sensitivity	11M: -85dBm@8% PER
	6M: -88dBm@10% PER 1M: -90dBm@8% PER
Andrews Torre	-
Antenna Type	5dBi Fixed Omni Directional Antenna
Software Functions	NAT, DoS Firewall, DHCP
Access Control	Parental Control, Local Management Control, Host
	List, Access Schedule, Rule Management
Guest Network	2.4GHz guest network × 1
Protocols	Supports IPv4 and IPv6
Operating temperature	0°C~40°C (32°F~104°F)
Storage temperature	-40°C~70°C (-40°F~158°F)
Operating humidity	10% ~ 90%, Non-Condensing
Storage humidity	5%~90%, Non-Condensing
Dimensions	6.9 x 4.6 x 1.3 in. (174 x 118 x 33 mm)

# Annex 4



# Ultra wide angle Full HD webcam

Part NO.	32200312100
Video resolution	CIF/VGA: Up to 30fps 720P HD: Up to 30fps 1080p FHD: Up to 30fps
Image Sensor	1080p Full HD pixel CMOS
Interface	USB 2.0
Lens Type	Manual focus lens
Max. Still Image Resolution	12MP (Interpolation),1920 x 1080, 1280 x 720, 640 x 480 pixels
File format	MJPEG/WMV
UVC (Plug & Play)	YES
IPM(Image Protection Mechanism)	YES
Microphone	YES

# GP2Y0A02YK

# Long Distance Measuring Sensor

### ■ Features

- Less influence on the colors of reflected objects and their reflectivity, due to optical triangle measuring method
- Distance output type (Detection range:20 to 150cm)
- An external control circuit is not necessary Output can be connected directly to a microcomputer

### Applications

 For detection of human body and various types of objects in home appliances, OA equipment, etc

### ■ Absolute Maximum Ratings

 $(T_a=25^{\circ}C)$ 

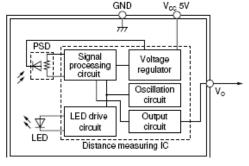
Parameter	Symbol	Rating	Unit
Supply voltage	$V_{cc}$	-0.3 to +7	V
*1 Output terminal voltage	Vo	-0.3 to V <sub>CC</sub> +0.3	V
Operating temperature	Topr	-10 to +60	°C
Storage temperature	$T_{stg}$	-40 to +70	°C

<sup>\*1</sup> Open collector output

### ■ Recommended Operating Conditions

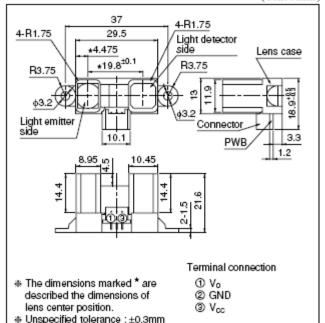
Parameter	Symbol	Rating	Unit
Operating Supply voltage	$v_{\infty}$	4.5 to 5.5	V

### Internal Block Diagram

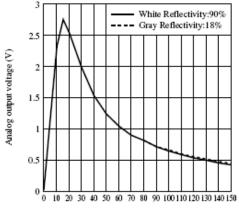


### ■ Outline Dimensions

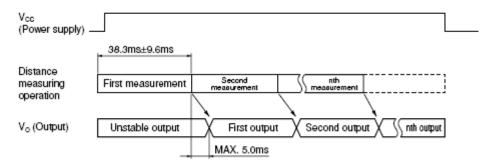
(Unit:mm)



### Analog Output Voltage vs. Distance to Reflective Object



# Timing Chart Distance to reflective object L (cm)

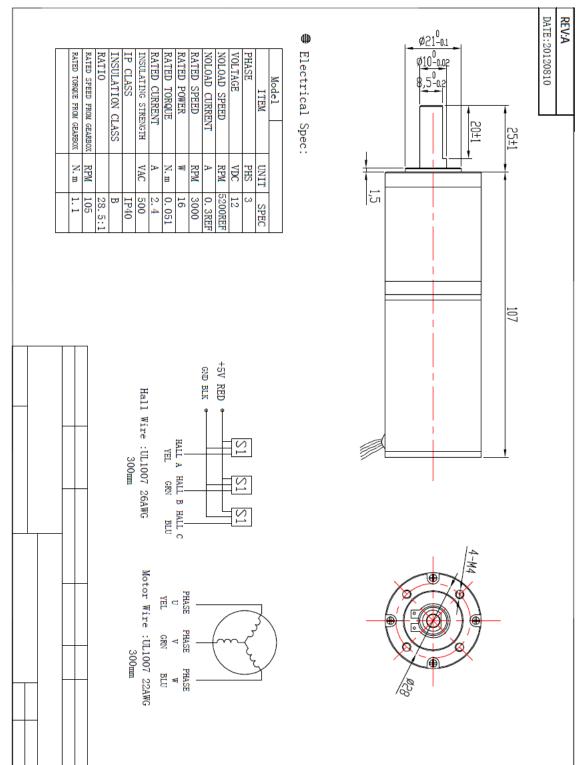


# Annex 6 (Brushless Motor 12V 1/28)





# Wifibet



# Annex 7 (OPTION)

# Hokuyo UST-10LX Scanning Laser Rangefinder

### **Specifications**



Supply voltage: 12VDC/24VDC (Operation range 10 to 30V ripple within 10%)

Supply current: 150mA or less (during start up 450mA is necessary.)

Light source: Laser semiconductor (905nm) Laser class 1 (IEC60825-1:2007)

Accuracy: ±40mm

Repeated accuracy: σ< 30mm

Scan angle: 270°

Angular resolution: 0.25°

Start up time: Within 10 sec (start up time differs if malfunction is detected during start up)

Input: IP reset input, photo-coupler input (current 4mA at ON)

Output: Synchronous Output, photo coupler open collector output 30VDC 50mA MAX.

Interface: Ethernet 100BASE-TX

LED display: Power supply LED display (Blue): Blinks during start up and

malfunction state.

Ambient temperature: -10°C to +50°C

Ambient Humidity: Below 85% RH (without dew, frost)

Storage temperature:  $-30^{\circ}$ C to  $+70^{\circ}$ C

Storage Humidity: Below 85% RH (without dew, frost)

Shock resistance: 196m/s2 (20G) X,Y and Z direction 10 times.

Protective Structure: IP65

Material Front case: Polycarbonate, Rear case: Aluminum

Surrounding intensity: Less than 15,000lx

## Detection range

0.06m to 10m (white Kent sheet)

0.06m to 4m (diffuse reflectance 10%)

Max. detection distance: 30m

# Annex 8 (OPTION)

# Slamtec Mapper M2M1 Pro -LiDAR Mapping Sensor(Industrial Grade)





### **Key Features**

Large Scenarios and High-quality Mapping
Industry grade LiDAR, 2 times detecting range further than M1M1, and higher sample rate.
Plug and play, without any external dependence
Can be used as a mapper as well as a laser range scanner
Connected with WiFi or Ethernet, easy communication
Fully Compatible with ROS, Easy Data Analysis
Strong stability: work well in fast speed and in the tilting scenarios

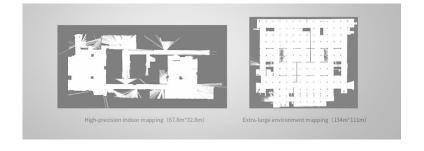
### **Description**

Slamtec Mapper M2M1 is an industrial-grade LiDAR. Different from the normal LiDAR, M2M1 has the ability to work in some severe surroundings. SLAMTEC Mapper uses high-performance SLAM map optimization engine and SharpEdge<sup>TM</sup> fine-mapping technology, which can actively detect and correct closed-loop, and achieve 100,000 square meters high-precision map and pose. SLAMTEC Mapper can work without additional sensors or data input. Because of the built-in 9-DOF inertial navigation system, SLAMTEC Mapper in the hand-held mapping mode can work normally in a fluctuating environment with inclination, to ensure the best map data quality.

SLAMTEC Mapper provides a complete SDK development kit, mobile phone, and PC-side evaluation tools to facilitate users to expand development and data acquisition. At the same time, combined with the supporting ROS driver, the generated map and pose data can be directly used in the ROS environment, which is fully compatible.

### **Large Scenarios and High-quality Mapping**

Slamtec Mapper adopts SLAMTEC third-generation high-performance SLAM graph optimization engine and SharpEdge<sup>TM</sup> mapping technology to realize a high accurate thousand-square-meter map building and real-time localization, and it can actively detect the closed-loop and correct map. The mapper is an ideal choice for users to realize mapping and re-localization in various complicated scenarios and output map and localization data that meets users' expectations.



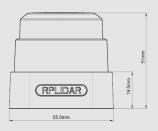
# Annex 9 (OPTION)

# RPLiDAR S1 Portable ToF Laser Scanner Kit - 40M Range



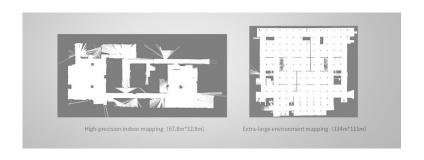
### Dimension and Weight

Height: 51mm Weight: 105g Mechanical Dimensions: 55.5mmX55.5mmX51mm



### Measurement Performance

Application Scenarios	Works well both in indoor and outdoor environment, reliable resistance to daylight
Distance Range	On White Objects: 40m (White light-diffused surface)
Distance Range	On Black Object: 10m
Sample Rate	9200 times per second
Sample Frequency	Typical value: 10Hz (the frequency is adjustable within the 5-15Hz range.
Angular Resolution	Typical value: 0.391°(the resolution is adjustable within the 0.313°-0.587° range according to the sample frequency.)
Communication Interface	TTL UART (3.3V)
Band Rate	256000bps
Distance Resolution	1cm



# Annex 10 (OPTION)

# UTM-30LX-EW



# Long Range HOKUYO LRF

Model	UTM-30LX-EW
Power Source	12V DC +/- 10%, Current usage Max 1A at start-up, Normal use 0.7A
Light Source	Pulsed laser diode (λ=905nm), Laser safety class 1
Principle	Direct Time of Flight
Detection Range	0.1m to 30m (500mm x 500mm or more, White Kent Sheet)
Multi-Echo function	Max 3 output of distance per step
Accuracy	0.1m to 10m +/- 30mm, 10m to 30m +/- 50mm
Scan Window & Resolution	270° Resolution 0.25°
Scan speed	25ms/scan
Communication protocol	SCIP2.2 (Exclusive command)
Interface	Ethernet 100 Base-TX (Auto-negotiation) TCP/IP Synchronous output: NPN open collector
Connection	Power / synchronous output cable 2m Ethernet RJ-45 with male connector 30cm (female connector included)
Physical dimensions	62 x 62 x 87mm Weight 370g
Operating temperature / humidity	-10 to +50°C @ 85% humidity (no condensing or icing) (Storage -25 to +75°C)
Vibration resistance	Double amplitude 1.5mm, 10 to 55Hz each for 2 hours in X,Y,Z Directions
Impact Resistance	196m/s² each 10 times in in X,Y,Z Directions



- 30 metres range
- Designed for outdoor use
- 270° scan 0.25° resolution
- 40 scans per second
- Compact: 62 x 62 x 87mm
- Lightweight: 400g
- Power frugal: 12VDC, 8.4W
- Ethernet connectivity
- Multi-Echo functionality
- Effective in adverse weather



# Annex 11 (CPU OPTION : replace SBC210)

## Raspberry PI



# **Specifications**

- Broadcom BCM2711, Quad core Cortex-A72 (ARM v8) 64-bit SoC @ 1.5GHz
- 1GB, 2GB or 4GB LPDDR4-3200 SDRAM (depending on model)
- 2.4 GHz and 5.0 GHz IEEE 802.11ac wireless, Bluetooth 5.0, BLE
- Gigabit Ethernet
- 2 USB 3.0 ports; 2 USB 2.0 ports.
- Raspberry Pi standard 40 pin GPIO header (fully backwards compatible with previous boards)
- 2 × micro-HDMI ports (up to 4kp60 supported)
- 2-lane MIPI DSI display port
- 2-lane MIPI CSI camera port
- 4-pole stereo audio and composite video port
- H.265 (4kp60 decode), H264 (1080p60 decode, 1080p30 encode)
- OpenGL ES 3.0 graphics
- Micro-SD card slot for loading operating system and data storage
- 5V DC via USB-C connector (minimum 3A\*)
- 5V DC via GPIO header (minimum 3A\*)
- Power over Ethernet (PoE) enabled (requires separate PoE HAT)
- Operating temperature: 0 50 degrees C ambient
- \* A good quality 2.5A power supply can be used if downstream USB peripherals consume less than 500mA in total.

# Annex 12 NVIDIA AI (CPU OPTION: replace SBC210 SBC)



# SCALABLE, FLEXIBLE HARDWARE SOLUTIONS

Whether for enterprise, small to medium business, or research, the Jetson family of modules has a solution to meet specific performance and budget needs. They all share the same architecture and SDKs, allowing for one code base and seamless deployment across the entire product portfolio.

#### Jetson Nano

WIFIBOT Integration (power + mounting)
Auvidia or Connecttech Carrier Board + SSD 250G
NVIDIA Maxwell\* architecture with 128
NVIDIA CUDA\* cores

#### Jetson TX2 Series

WIFIBOT Integration (power + mounting)
Auvidia or Connecttech Carrier Board + SSD 250G
NVIDIA Pascal architecture with 256
NVIDIA CUDA cores

#### Jetson Xavier NX

WIFIBOT Integration (power + mounting)
Auvidia or Connecttech Carrier Board + SSD 250G
NVIDIA Volta\* architecture with 384
NVIDIA CUDA cores and 48 Tensor
cores

#### Jetson AGX Xavier

WIFIBOT Integration (power + mounting)
Auvidia Carrier Board + SSD 250G

NVIDIA Volta<sup>-</sup> architecture with 512

NVIDIA CUDA cores and 64 Tensor

NVIDIA JetPack SDK - Unified software release across all Jetson products

















Jetson modules power a range of applications that require various performance levels and prices—from AI-powered Network Video Recorders (NVRs) to automated optical inspection (AOI) in high-precision manufacturing to autonomous mobile robots (AMRs). Jetson modules pack unbeatable performance and energy efficiency in a tiny form factor, effectively bringing the power of modern AI, deep learning, and inference to embedded systems at the edge.

# Annex 13 GPS (Option)



- SiRF star iv chipset
- 48 channels all-in-view tracking
- WAAS/EGNOS support
- RoHS compliant

The 20 Channel BU-353 Waterproof SiRFIII USB GPS Receiver is a USB GPS receiver

that features a highly sensitive, low power consumption chipset in a ultra compact form factor compatible with Microsoft Windows 8. The BU-353-S4 is powered by a SiRF Star IV GPS chipset, and will provide you with superior performance in urban canyons, and in dense foliage. With the SiRF CGEE (Client Generated Extended Ephemeris) technology, has the capability of predicting satellite positions for up to 3 days in advance, and will deliver a CGEE-start time of less than 15 seconds under most conditions without any network assistance. The BU-353-S4's MicroPower mode allows the receiver to stay in a hot start-like condition almost continuously while consuming very little power.

# Annex 13 IMU (Option)

#### **Technical Brief**



Miniature High-Performance Attitude & Heading Reference Systems / Inertial Measurement Units

#### Overview

The YEI 3-Space Sensor™ product line is a family of miniature, high-precision, high-reliability, Attitude and Heading Reference Systems (AHRS) / Inertial Measurement Units (IMU). Each YEI 3-Space Sensor uses triaxial gyroscope, accelerometer, and compass sensors in conjunction with advanced processing and on-board quaternion-based Kalman filtering algorithms to determine orientation relative to an absolute reference in real-time. The product family offers a breadth of communication, performance, and packaging options ranging from the ultra-miniature TSS embedded to fully integrated battery-powered wireless and data-logging versions.

Orientation can be returned in absolute terms or relative to a designated reference orientation. The proprietary multireference vector mode and 24-point ortho-calibration process increase accuracy and greatly reduce and compensate for sensor error. The YEI 3-Space Sensor system also utilizes a dynamic sensor confidence algorithm that ensures optimal accuracy and precision across a wide range of operating conditions.

The YEI 3-Space Sensor system features are accessible via a well-documented open communication protocol that allows access to all available sensor data and configuration parameters using a variety of communication interfaces. Versatile commands allow access to raw sensor data, normalized sensor data, and filtered absolute and relative orientation outputs in multiple formats including: quaternion, Euler angles (pitch/roll/yaw), rotation matrix, axis angle, two vector (forward/up).

### **Applications**

- Robotics
- · Motion capture
- · Positioning and stabilization
- · Personnel / pedestrian navigation and tracking
- · Unmanned air/land/water vehicle navigation
- · Education and performing arts
- · Healthcare monitoring
- · Gaming and motion control
- · Accessibility interfaces
- · Virtual reality and immersive simulation

### **Product Family**



- 50x35x15 mm, 17 grams
- USB communications via virtual COM port
- · RGB status LED, two buttons
- · Hand-held or strap-down case style



# Annex 14 Camera 3D ZED2 + mounting



\ /i.a	 $\bigcirc$	itpi	141

Video Mode	Frames per second	Output Resolution (side
2.2K	15	4416x1242
1080p	30 / 15	3840x1080
720p	60 / 30 / 15	2560x720
WVGA	100 / 60 / 30 / 15	1344x376

Video Streaming

using ZED SDK

Stream anywhere over IP

#### Video Recording

Native resolution video encoding in H.264, H.265 or lossless format (on host)

New ISP tuned with machine learning for Al and vision tasks

#### Motion

**Motion Sensors** Accelerometer Gyroscope Data Rate: 400Hz

#### **Position Sensors**

Barometer Magnetometer Data Rate: 25Hz / 50Hz

6-DoF visual-inertial stereo SLAM with advanced sensor compensation

#### Pose Update Rate

Up to 100Hz

Translation: 0.35% Rotation: 0.005°/m (without loop correction)

#### Technology

#### Depth

#### Depth Resolution

Native video resolution (in Ultra mode)

#### Depth Range

0.2 - 20 m (0.65 to 65 ft)

#### Depth FOV

Depth FPS

Up to 100Hz

110° (H) x 70° (V) x 120° (D)

### Technology

Neural Stereo Depth Sensing

#### Object Detection

#### **Object Types**

Persons, Vehicles

#### **Detection Outputs**

Bounding Boxes 2D/3D Location Speed Unique ID Segmentation Masks

# **Object Tracking**

Yes

**Detection Range** 

Up to 20m (3D) Up to 40m (2D)

### Image Sensors

#### Sensor Resolution

Dual 4M pixels sensors with 2-micron pixels

#### Sensor Size

1/3" backside illumination sensors with high low-light sensitivity

#### Camera Controls

Adjust Resolution, Frame rate, Brightness, Contrast, Saturation Gamma Sharpness, Exposure and White Balance

#### Sensor Format

Native 16:9 format for a greater horizontal field of view

#### Shutter Sync

Electronic Synchronized Rolling Shutter

Sensors

Accelerometer

Gyroscope

Barometer

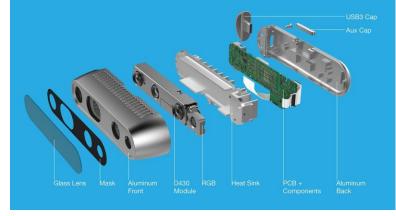
Magnetometer

Temperature sensor

# Annex 15 (Option) 3d camera from Intel + robot mounting

Intel D435i





# **TECH SPECS**

**Features** 

Use Environment: Indoor/Outdoor

Image Sensor Technology: Global Shutter, 3μm x 3μm pixel size Maximum Range:

Approx. 10 meters. Accuracy varies depending on calibration, scene, and lighting condition.

Depth

**Depth Technology:** Active IR Stereo

Depth Field of View (FOV): 87°±3° x 58°±1° x 95°±3°

Minimum Depth Distance (Min-Z):

Depth Output Resolution & Frame Rate: Up to  $1280 \times 720$  active stereo depth resolution. Up to 90 fps.

RGB

RGB Sensor Resolution & Frame Rate):  $1920 \times 1080$ 

RGB Frame Rate: 30 fps

RGB Sensor FOV (H x V x D): 69.4° x 42.5° x 77° (+/- 3°)

**Major Components** 

Camera Module:

Intel RealSense Module D430 + RGB Camera

Vision Processor Board: Intel RealSense Vision Processor D4

**Physical** 

Form Factor: Camera Peripheral

Length x Depth x Height: 90 mm x 25 mm x 25 mm

Connectors: USB-C\* 3.1 Gen 1\*

Mounting Mechanism:

One 1/4-20 UNC thread mounting point. Two M3 thread mounting points.