Wifibot M

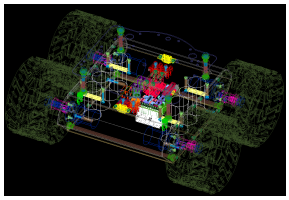
- *High mobility 6x6 platform*
- *Modular and open architecture*
- *Fully controllable using Wifi 2.4Ghz or 5Ghz*
- *Embedded Linux WIFI CPU*

WIFIBOT M

Wifibot M is suited for those who want an affordable but robust mobile platform for local surveillance. The base system is composed by a six wheel drive waterproof (IP64) polycarbonate chassis controllable using WIFI.
The chassis is composed by 3 parts linked with a 2 dimensional link.
You can also connect as option, devices such as IP camera (MJPEG or MPEG) or any Ethernet sensors etc...
A liteStation2 from UBNT router is the main CPU that allows data transfer, and a 5Ghz router can be added.

For controlling this robot, several GUI and API are available for PDA and PC. The motor board can be programmed using MPLAB and a ICD2/3 debugger. The embedded Ethernet protocol is simple and it can be used on any kind of framework (**JAUS, RTMAPS, URBI, Matlab, etc…**), you need only to add an external CPU for that.

www.wifibot.com

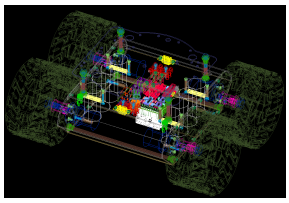


Windows Embedded

Wi-fibot M

Default Specifications

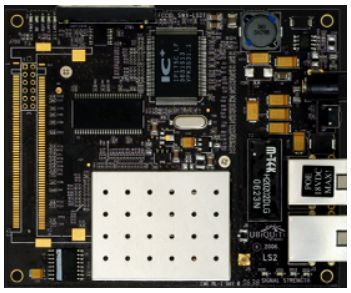
Motor sensor :	2 hall effect coders 2048 tics / wheel turn
Speed control :	2 x PID DSPIC Microchip 33f coded in C ICD2/3 (option)
Motors :	6x 12v motors 52:1 planetary gear 156 rpm / 6W
Dimensions (+ wheels):	L : 63 cm W : 39 cm H : 15 cm W : 5 Kg
Batteries:	12.8V LIFE 12000 mAH 3A Charger
Control bus :	(Ethernet) Simple protocol C/C++ API,
Distant Protocol :	Sockets TCP/UDP via WIFI or RJ45
CPU :	Atheros Linux MIPS
Sensors :	1 Analog camera AXIS H264 / MJPEG Video Server
DC/DC :	Traco Power (On demand)



High level Architecture

Wifibot M

WIFI CPU



Ethernet

Remote HMI

External Ethernet

Any user device

Remote PC

Ethernet

RS232

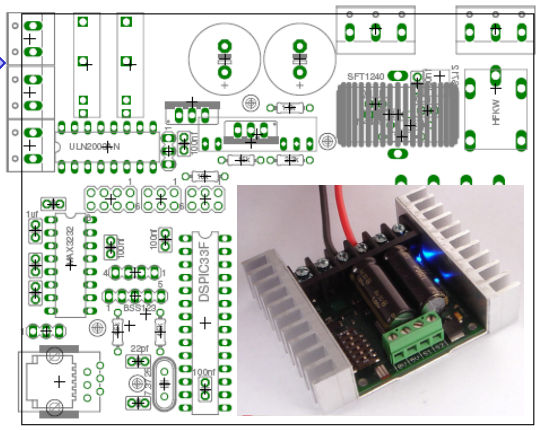
AXIS COMMUNICATIONS

LIFE Bat

Analog

Video Switch

IO Relay



RS485

Analog

Analog

Camera

(Option)

2 x 25 A DSPIC 33F Motor Board

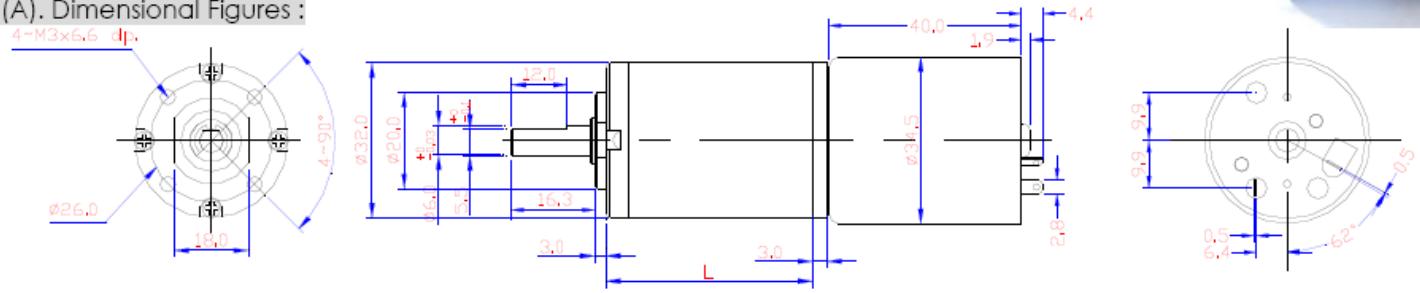
Robot

Motor + Hall Coder

Annexe

Model : PK32F Series of DC Planetary Gear Motor

(A). Dimensional Figures :



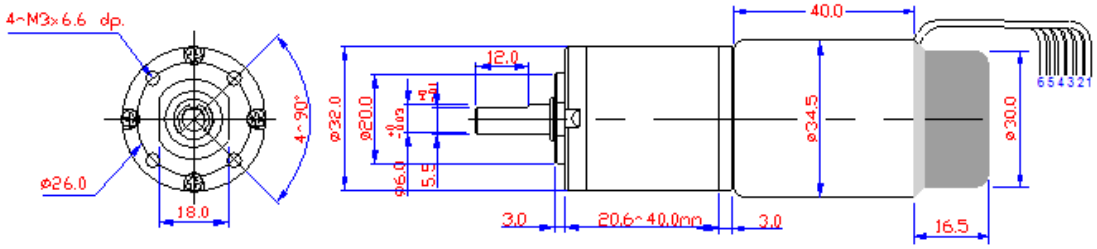
(B). Standard DC Motor Specifications :

DESCRIPTION	Rated Voltage	Speed	Current	Torque	Output	Eff
	VDC	RPM	mA	g-cm	W	%
NO LOAD	12V	6000 ± 600	approx. 136			
	24V	6000 ± 600	approx. 50			
AT MAX. EFF	12V	5000	approx. 710	approx. 105	approx. 5.4	63
	24V	5100	approx. 320	approx. 105	approx. 5.4	71
AT STALL	12V		approx. 3755	approx. 656		
	24V		approx. 2122	approx. 780		

(C). Gearbox Specifications :

Reduction Ratio	Rated Tolerance Torque	Max. Momentary Tolerance Torque	Efficiency	Radial Play of Shaft	Thrust Play of Shaft	L
1/5	2kgf-cm Max	6 kgf-cm	80%	≦ 0.05 mm	≦ 0.03 mm	17.6
1/27	6kgf-cm Max	18 kgf-cm	70%	↑	↑	24.0
1/51,1/71	12kgf-cm Max	36 kgf-cm	60%	↑	↑	30.4
1/100	12kgf-cm Max	36 kgf-cm	60%	↑	↑	30.4
1/264	12kgf-cm Max	36 kgf-cm	50%	↑	↑	36.8
1/516	12kgf-cm Max	36 kgf-cm	50%	↑	↑	36.8
1/721	12kgf-cm Max	36 kgf-cm	50%	↑	↑	36.8

Model: EM3516 One / Two Channel Hall Effect Encoder



■ **Resolution :** **12 Resolution P/R**

■ **Electrical Specifications**

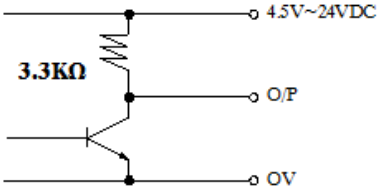
Power Source	4.5 ~ 24VDC
Current Consumption	30mA or below
Response Frequency	20KHz
Output Mode	With pull up resistor
Output Signal	A, A&B

※ Please indicate which is the resolution P/R and rotational direction when placing an order.

■ **Feature**

- Hall Effect Sensor
- Speed Position Detection
- Low cost

■ **Output Circuit :**



■ **One Channel Encoder Connections :**

1. Black : HALL SENSOR GND
2. Red : HALL SENSOR Vcc
3. White : HALL SENSOR Aout
4. Green : EMPTY
5. Brown : +MOTOR
6. Blue : -MOTOR

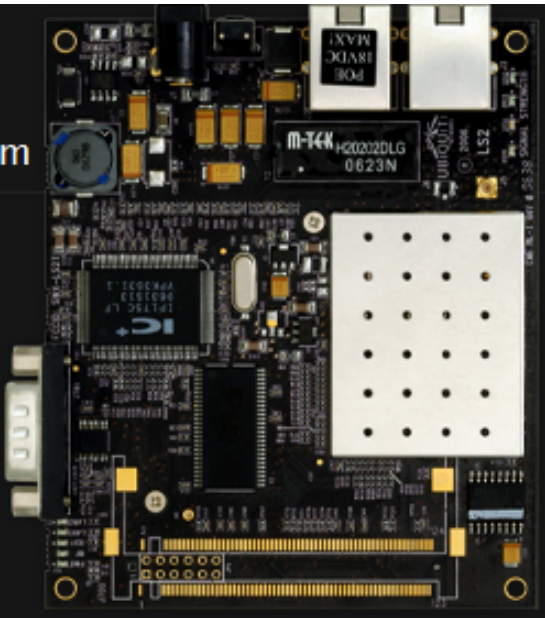
■ **Two Channel Encoder Connections :**

1. Black : HALL SENSOR GND
2. Red : HALL SENSOR Vcc
3. White : HALL SENSOR A Vout
4. Green : HALL SENSOR B Vout
5. Brown : +MOTOR
6. Blue : -MOTOR

Annexe

LS2

2.4GHz 802.11b/g Long-Range Embedded System



Full Linux SDK support

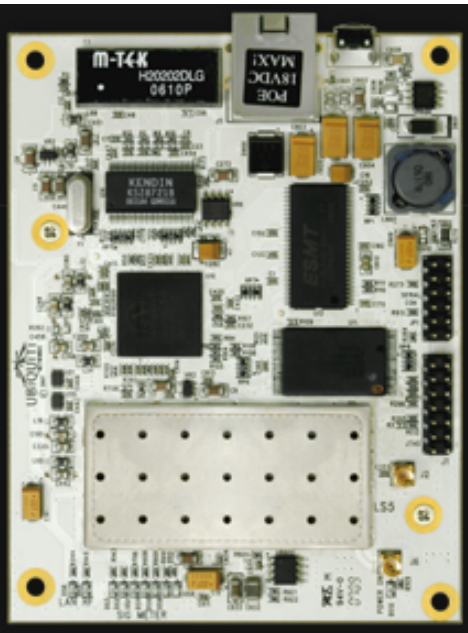
The world's first true industrial, hi-power Wi-Fi development platform. Featuring superior RF performance, reliability, and full Linux SDK support.

Processor Specs	Atheros AR2315 SOC, MIPS 4KC, 180MHz
Memory Information	16MB SDRAM, 4MB Flash
Serial Interface	On board RS232 with DB9 connector
Networking Interface	2 X 10/100 BASE-TX (Cat. 5, RJ-45) Ethernet Interface
Approvals	FCC Part 15.247, IC RS210, CE
RoHS Compliance	YES
TX Channel Width Support	5MHz / 10MHz / 20MHz / 40MHz
Max Power Consumption	6.5 Watts
Power Method	Passive Power over Ethernet (pairs 4,5+; 7,8 return)
DC Voltage Rating	5-24V (18V max recommended)
ESD/EMP Protection	Transient Voltage Suppression at POE port
Operating Temperature	-40C to 85C (System PCB optimized for hi-temp)
Modes	Station, StationWDS, AP Bridge
Services	SNMP,DHCP,NAT
Utilities	Antenna Alignment tool, Discovery Utility
Security	WEP/WPA
Outdoor Range (Antenna Dependent)	Over 50km

Annexe (Option)

LS5

5GHz 802.11a Long-Range Embedded System



Full Linux SDK support

The LS5 is an industrial rated, hi-performance 5GHz wireless platform featuring superior RF performance, compact design, and full Linux SDK support.

Processor Specs	Atheros AR2315 SOC, MIPS 4KC, 180MHz
Memory Information	16MB SDRAM, 4MB Parallel Flash
Serial Interface	10Pin (5x2) Header available for RS232/DB9
Networking Interface	2 X 10/100 BASE-TX (Cat. 5, RJ-45) Ethernet Interface
Wireless Approvals	FCC Part 15.247, IC RS210, CE ETSI EN301 489-17 / 893
RoHS Compliance	YES
TX Channel Width Support	5MHz / 10MHz / 20MHz / 40MHz
Max Power Consumption	7.0 Watts
Power Method	Passive Power over Ethernet (pairs 4,5+; 7,8 return)
DC Voltage Rating	5-24V (18V max recommended)
ESD/EMP Protection	Transient Voltage Suppression at POE port
Operating Temperature	-40C to 85C (System PCB optimized for low/hi-temp)
Modes	Station, StationWDS, AP Bridge
Services	SNMP,DHCP,NAT
Utilities	Antenna Alignment tool, Discovery Utility
Security	WEP/WPA
Outdoor Range (Antenna Dependent)	Over 50km

Annexe

FICHE TECHNIQUE

Technical specifications – AXIS M7001 Video Encoder

Video	
Video compression	H.264 (MPEG-4 Part 10/AVC) Motion JPEG
Resolutions	NTSC: 720x480 to 176x120 PAL: 720x576 to 176x144
Frame rate H.264	30/25 (NTSC/PAL) fps in all resolutions
Frame rate Motion JPEG	30/25 (NTSC/PAL) fps in all resolutions
Video streaming	Two simultaneous streams, one in H.264 and one in Motion JPEG, in all resolutions Controllable frame rate and bandwidth VBR/CBR H.264
Image settings	Compression, color, brightness, contrast, saturation, rotation Aspect ratio correction, mirroring of images Text overlay Privacy mask Deinterlace filter
Pan/Tilt/Zoom	Wide range of analog PTZ cameras supported (drivers available for download at www.axis.com) 20 presets, guard tour, PTZ control queue Supports Windows compatible joysticks
Network	
Security	Password protection, IP address filtering, HTTPS encryption, digest authentication, user access log
Supported protocols	IPv4/v6, HTTP, HTTPS, QoS layer 3 DiffServ, FTP, SMTP, Bonjour, UPnP, SNMPv1/v2c/v3(MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS

System integration	
Application Programming Interface	Open API for software integration, including VAPIX® from Axis Communications available at www.axis.com
Intelligent video	Video motion detection
Alarm triggers	Intelligent video
Alarm events	File upload via FTP, HTTP and email Notification via email, HTTP and TCP PTZ presets
Video buffer	20 MB pre- and post-alarm
General	
Casing	Standalone or wall mount
Processors and memory	ARTPEC-3, 64 MB RAM, 128 MB Flash
Power	Power over Ethernet IEEE 802.3af Class 2
Connectors	Analog composite video BNC input, NTSC/PAL auto-sensing RJ-45 10BaseT/100BaseTX PoE 2.5 mm (0.1") analog composite video tele plug input RS-422/RS-485
Operating conditions	0 – 50 °C (32 – 122 °F) Humidity 20 – 80% RH (non-condensing)
Approvals	EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61000-6-1, EN 61000-6-2, FCC Part 15 Subpart B Class B, ICES-003 Class B, VCCI Class B, C-tick AS/NZS CISPR 22, EN 60950-1
Weight	82 g (0.18 lb.)
Included accessories	Mounting kit, Installation Guide, CD with installation and management tools, software and User's Manual, 1 Windows decoder user license

Annexe

Front mini driving camera

CCIQ II-Wide-angle mini Bullet camera

CCIQ

- **MO-R3511G**
- 1/4" Color CCIQ II Camera
- Pixel :648x488(NTSC / PAL)
- 400 TV Lines
- 2.1mm/ F2.5 mini board lens
- View Angle D: 158.5, H:109, V:77.6
- 0.1Lux / F1.2
- DC 5-12 V
- Dimension : 11.5(D) x 24 mm

Rugged PTZ camera (Option)

WCM-101R

- 1/4" Super HAD CCD, Samsung optical 10x zoom
- Built-in IR LED 14ea
- Endless Pan rotation (-45 ° to 90 ° Tilt angle)
- Up to 63 programmable preset
- less than ±0.1° Preset Accuracy
- 8 programmable Tour, 4 Pattern
- Alarm - Move the camera to programmed Preset position with Alarm trigger.(Max. 2)
- 4 Scan(Programmable speed and diagonal scan)
- Programmable Privacy Masking(2 Zones)
- RS-422, RS-485 communication
- Multiple protocol (Pelco-D, Pelco-P, Wonwoo)
- Built-in Menu System for Setup of Programmable Functions
- Mechanical Auto Flip
- Programmable Zoom Speed(Optional Update tool)
- DC 12V, 900mA