

# WaveNet-Ex

## WiFi MIMO access point & Mesh router for hazardous areas



- WiFi AP, client, repeater, router & Mesh point\* (\*depends on the model)
- ATEX / IECEX certification :  
II 2G Ex db IIC T5-T4 Gb  
II 2D Ex tb IIIC T110°C/T140°C Db  
I M2 Ex db I Mb (SWS only)  
Zone 1, 2, 21 & 22
- Heavy duty aluminum or stainless steel IP68 enclosure
- 2 or 3 intrinsically safe RF outputs (support any type of antenna)
- Gigabit Ethernet network interface
- DC power supply input (+18VDC to +60VDC) or PoE or Ppoe (Passive Power over Ethernet)



## Introduction

WaveNet-Ex is an all-in-one WiFi device (access point, client, repeater, router & Mesh point) **designed for industrial applications in zone 1 rated explosive areas**. Its aluminium enclosure is perfectly suited for chemical industries, refineries, electric stations, very dusty locations as well as those where sparks and electric arcs occur. It can also be used in the sea in its stainless steel version and thus defy the rusting effects of salt water.

WaveNet-Ex is ideal for tele-operation of heavy machinery from a remote control station, collision avoidance, localization of people and goods and other services as evacuation signaling systems, VoIP wireless phones, mobile data download (smartphones, tablets...), mobile & fixed IP video...

WaveNet-Ex relies on the multi-streams MIMO technology that contributes to an expanded coverage, higher data throughput and increased radio link reliability to ensure seamless communication. The three antenna connectors protected by an intrinsic barrier allow the use of non-ATEX antennas for a reduced installation cost and an increased flexibility.

It can be administered from ACKSYS WaveManager & WaveViewer applications or via SNMP or a web browser and works with any kind of industrial Ethernet protocol. It also offers routing, filtering and advanced security features (WPA2-Enterprise (Radius), DoS, Firewall...).

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## Technical characteristics overview

<b>Ethernet interface</b>	1-port Gigabit Ethernet 10/100/1000 Base TX auto-sensing, auto MDI/MDIX cross-over, RJ45
<b>WiFi interfaces</b>	Models 1033 : 802.11n, MIMO 2T2R, 2.4/5GHz, ANI (Adaptive Noise Immunity) Models 1133 : 802.11ac, MIMO 2T2R, 2.4/5GHz, ANI (Adaptive Noise Immunity) Models 1230 : 802.11n, MIMO 2T2R, 2.4/5GHz + 802.11ac, 2.4/5GHz, ANI (Adaptive Noise Immunity)
<b>WiFi radio data rate</b>	Models 1033 : up to 300 Mbps Models 1133 : up to 867 Mbps Models 1230 : up to 300 Mbps (802.11n) + up to 433 Mbps (802.11ac)
<b>Operating frequencies</b>	From 2.4 GHz to 5.825 GHz
<b>Output power</b>	Models 1033 -> 2.4 GHz : up to 23.5 dBm (aggregate) / 5 GHz : up to 21 dBm (aggregate) $\pm$ 2 dB Models 1133 -> 2.4 GHz : up to 20.8 dBm (aggregate) / 5 GHz : up to 19.8 dBm (aggregate) $\pm$ 2 dB Models 1230 -> 2.4 GHz : up to 23.5 dBm (aggregate) / 5 GHz : up to 21 dBm (aggregate) $\pm$ 2 dB (802.11n) 2.4 GHz : up to 19 dBm / 5 GHz : up to 18 dBm $\pm$ 2 dB (802.11ac)
<b>Sensitivity</b>	From -92 dBm to -96 dBm
<b>Antennas</b>	Up to 3 intrinsically safe RF outputs: supports any type of antennas NB : Antenna gain is limited in accordance with regulation domain as well as group of operations (see operation manual)
<b>Security</b>	Firewall, DoS, https, MAC filtering, WPA/WPA2-Personal & Enterprise (IEEE 802.1X/RADIUS), WEP, tunnels L2 (GRE), VPN (OpenVPN), SNMP V3, isolated clients (in AP mode)
<b>WiFi modes</b>	Access point, client, MESH (IEEE 802.11s), infrastructure, AD-HOC, fast roaming (less than 30 ms), WMM QoS
<b>Ethernet networking</b>	Frames filtering, bridging, repeater, STP/RSTP, VLAN, DHCP (server & client), DNS relay
<b>Ethernet routing</b>	Multicast (PIM), IP redundancy (VRRP), static routes, NAT router, router
<b>Administration</b>	http, https, SNMP agent (V1, V2C, V3), WaveManager administration software
<b>Power supply</b>	+18VDC to +60VDC or PoE or PPoE (Passive Power over Ethernet), M25 x 1.5 or 3/4" npt-f cable gland
<b>Consumption</b>	8 Watts for A10 models / 14 Watts for A11 et A12 models
<b>Enclosure</b>	Aluminum polyester powder coated or stainless steel AISI 316 (CF8M) electropolish
<b>Dimensions &amp; weight</b>	Enclosure weight (aluminum models) : 2.6 Kg Aluminum enclosure : 179.8mm (+ 2 couplers) x 180mm (+1 coupler) x 89.5mm Stainless steel enclosure : 180.5mm (+ 2 couplers) x 196mm (+1 coupler) x 90mm One metric coupler : 58.5mm / One npt coupler : 70mm
<b>Standards and certifications</b>	II 2G Ex db IIC T5-T4 Gb II 2D Ex tb IIIC T110°C/T140°C Db I M2 Ex db I Mb (SWS only) Zone 1, 2, 21 & 22 IECEX and ATEX Gas and Dust (SWA only) IECEX and ATEX Gas, Dust and Mining (SWS only)
<b>Environment</b>	IP68 • Operating temperature : -40°C to +60°C • Storage : -40°C to +80°C, Humidity: 5% to 95% (non-condensing)

## Ordering references

WaveNet-Ex...			
<i>WiFi interface</i> \ <i>Enclosure</i>	Aluminum / 3/4" npt	Aluminum / M25 x 1.5	Stainless Steel / 3/4" npt
11n 2T2R 2 couplers N type	SWAA1033-420X0	SWAA1033-440X0	SWSA1033-42EM0
11ac 2T2R 2 couplers N type	SWAA1133-420X0	SWAA1133-440X0	SWSA1133-42EM0
11n 2T2R + 11ac 1T1R 3 couplers N type	SWAA1230-420X0	SWAA1230-440X0	SWSA1230-42EM0
<b>Additional accessories</b> ANH92-CNRU      Omni antenna, angled, N-type, 2.4 / 5 GHz, 3 dBi ANH92-CNSU      Omni antenna, straight, N-type, 2.4 / 5 GHz, 3 dBi KM-01              Mounting kit for 2" pipe (Stainless steel pole mounting kit, max diameter 2", 50 mm) KM-02              Universal mounting kit			

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