



PNG

The mission wireless intercom

About Axnes

Axnes was founded in 1995 and is a privately owned company headquartered in Norway with offices in the United Kingdom, Austria and the United States of America, and worldwide distribution through its partner network. Axnes is widely recognized as the industry leader within its field.

Axnes is an approved supplier to OEM's - Airbus, Leonardo, Sikorsky, and Bell, and has a worldwide customer base. The company has been supplying its wireless intercom systems for two decades and is an EASA Part 21 and Part 145 approved quality organization. Axnes' products are developed and produced in Norway.

Our mission statement:

To develop, manufacture and support professional wireless intercoms, providing our customers with increased mission capabilities, enhanced situational awareness and safety



PNG Systems' Core Products



Flexibility

- ▶ Enables pre-defined **mission configurations** for multirole platforms
- ▶ Suitable for applications such as:
 - ▶ **Utility operations**
 - ▶ **Search and Rescue**
 - ▶ **Maritime Rescue**
 - ▶ **Mountain rescue**
 - ▶ **CSAR/Medevac**
 - ▶ **Law enforcement**
 - ▶ **Load handling/load masters**

Envision Axnes PNG

- ▶ **Envision** the enhanced situational awareness of talking with your hoist crewman, without having to rely on hand and arm signals, as they deploy from any type of platform, being ships, patrol boats, helicopters or inside aircraft or when working in the close range of mission vehicles.
- ▶ **Envision** a system working effectively in a substantial noise environment with aircraft/ship engines, rotor downwash and weather or darkness factors, but you're able to talk reliably and clearly with your team in close vicinity or kilometers away, like they are still seated in the boat with you and connected to the boats' intercom system.
- ▶ **Envision** the capability in the event of an emergency or for situational awareness, crew's ability to view your positional data on a mission map system, displaying your location as a dynamic target with the ability to be followed by a search light to your reported position.
- ▶ **Envision** the ability to select Push to Talk on your wireless handset and use the boats' radio selected to a desired channel to talk directly to other mission frequencies or sources.
- ▶ **Envision the benefits...** these are just a few of the many features that "PNG WICS" by Axnes achieves every day for our customers.

Benefits of a Wireless ICS

- ▶ The PNG System frees crew members from the encumbrance of wired connections to the ICS while minimizing the potential for snag hazards. Additionally, the solution provides for the ability to move freely within as well as outside the platform while maintaining real-time communications with occupants.
- ▶ In an exceptionally compact package with drop-in capability, the PNG system easily integrates with any brand or existing intercommunications system and is based on Axnes software defined digital radio technology. It provides both full-duplex and secure communications. The system also has effective noise reduction and echo cancelling capabilities that facilitate reliable communication in harsh environments and under any noisy conditions, such as in or around aircraft engines and marine vessels.
- ▶ PNG supports intercom group configurations, mixing both wireless and wired crew. The PNG handheld MP30 and MP50 transceivers can incorporate GPS and outside crew position data, which is transferred to the operational platform and made available to display on the PNG CP50 control panel or on the platforms command and control system.
- ▶ Waterproof and mobile solutions available, making it possible to use the system anywhere and at any time.

Wireless Intercom extension Features



Clear Communications



- ▶ Full duplex, adaptive noise cancelling, echo cancelling, and non-interrupted VOX allows for crystal clear communications in the noisiest environments.

Robust Range



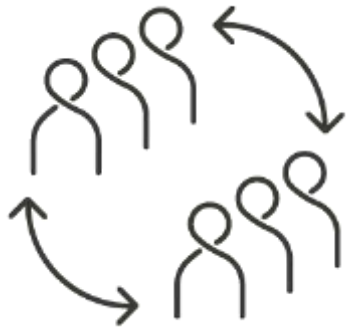
- ▶ Robust range capabilities in- and outside the boat/aircraft, for all operational requirements. Typically, several kilometers can be expected

Secure Communication



- ▶ Inherent secure com based on AES 256 , FIPS 140-2 or embedded hardware encryption allowing privacy and confidentiality. (both military and commercial)

Group Support



- ▶ Groups and intercom loops with simultaneous multiple group attendance on a single frequency. Especially useful if crews need to work separately in the same boat, aircraft or vehicle, like a medical team.

Remote Radio Keying



- ▶ Allows access to other platform installed radios for outside crew. Allows the crew to use the ships' Radio/ICS selection to transmit from a remote location using the MP50/30 to the platform/ship, that in turn acts much like a repeater and transmits directly on the selected radio channel.

Especially helpful when your location is remote and your unable to communicate with your agencies handheld radio.

Rugged and New Design



- ▶ Intuitive and easy to operate, rugged all aluminum housing. Amphibious variants available.

Versatility



- ▶ Connects to all major ICS brands and all standard headsets and helmets. It works as an extension of the existing wired ICS, meaning crew members can stay in comms without having to plug in anymore and thereby mitigating cable hazards.

GPS positioning



- ▶ Secure GPS position reporting of remote crew and optional AIS SART distress feature

Additional Information GPS

- ▶ Both the MP50/MP30 Transceivers send GPS positional data accessible from the CP50 control panel and can be optionally integrated with mission map systems such as Churchill, AeroComputers, Euronav and others where you can create a dynamic target from the crewmember on the ground. This allows for targeting of a FLIR camera or the search light onto that position).

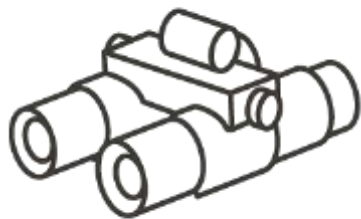


Operational Mode



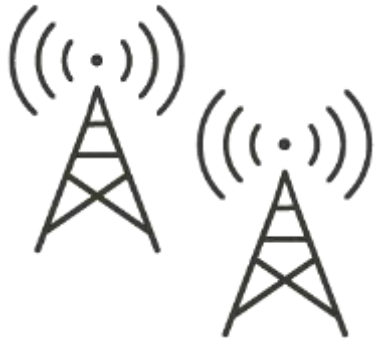
- ▶ Intercom, Direct Mode and Local Mode. For example to make communication with a patient on the ground easier.

NVG Friendly



- ▶ NVG Friendly Control Panel and Handset displays that are dimmable, making night operations possible.

Dual Band



- ▶ Dual Band operation for Simplex Operations (Radio to Radio) The DUAL Band feature also allows for transmission on the Maritime VHF channel

Qualification



- ▶ Certified airworthy to aviation authority requirement. Axnes has fully implemented a Quality Management System that meets the requirements of the current AS9100, ISO9001, EASA Part 21 G and Part 145. In addition, offers Axnes engineering support during integration along with a team of field solutions managers for customer training and support after deployment.

System components: MP50 PNG Transceiver

- ▶ Rugged metal housing, IP 68, to 10 feet of water (3m)
- ▶ Small and efficient size 125x68x31mm
- ▶ GPS positioning back to aircraft
- ▶ AIS Identification
- ▶ Dual-band (dual radio transmitters UHF and VHF)
- ▶ Connects to all common headsets/mics through waterproof Fischer plug. Adaptors available
- ▶ Inherent secure com
- ▶ AES 256 standard
- ▶ Capability to host government specified HW encryption
- ▶ NVG friendly
- ▶ Battery time 12 to 15 hours operation, 35 hours standby
- ▶ Charges in aircraft in 20G cradle



System components: MP30 PNG Transceiver

- ▶ Rugged metal housing, IP55 (IP57 on some connector types)
- ▶ Small and efficient size, 110x68x38mm
- ▶ GPS positioning option
- ▶ Bluetooth interface option
- ▶ Connects to all common headsets. Different connectors available (e.g.: NEXUS U-92, M9177/3-1, different LEMO)
- ▶ Inherent secure com
- ▶ AES 256 standard
- ▶ Capability to host government specified HW encryption
- ▶ NVG friendly
- ▶ Battery time 12 to 15 hours operation, 35 hours standby
- ▶ Charges in aircraft in 20G cradle



System Components: MP50 vs. MP30

- ▶ The MP30 is a non submersible handset where the MP50 is designed for over water operations. However, both units are providing many of the same advantages over other wireless intercom systems.
- ▶ MP30 and MP50 transceivers can be combined in the same system when some but not all crew/team members require the MP50's additional features

	MP30	MP50
Rugged aluminum body	*	*
Rechargeable, long lasting lithium battery	*	*
Hands free VOX mode operation	*	*
Advanced Noise cancelling technology	*	*
Innovative Echo cancellation	*	*
Compatible with all common headsets	*	*
Inherent secure comm with optional AES 256 or embedded encryption	*	*
PTT mode: push button activated when desired	*	*
PTT2: enabled relay through platform radios to other remote stations	*	*
GPS position reporting	*	*
NVG compatible LED screen	*	*
Submersible to 10 feet / 3 meters		*
Dual band with marine VHF		*
Walkie talkie function		*
Optional AIS-SART distress beacon		*
Local mode: external microphone allows communication between rescuer and victim with helmet/headset on		*
Bluetooth connection to mobile devices including cell phones	*	

System components: CP50 PNG Control Panel

- ▶ Multirole configuration switching
- ▶ Identification of active transceivers
- ▶ Control TX mute and Group broadcast
- ▶ GPS position reporting of remote crew
- ▶ Remote crew positioning and remote crew SART beacon activation (optional)
- ▶ USB test, diagnostics and configuration port
- ▶ DZUS panel mount format, other formats on request
- ▶ CAN-bus interface and power supply from base station provides easy installation
- ▶ NVG friendly



System components: BST50 PNG Base Station

- ▶ Connects to any vendors ICS system
- ▶ Capable of delivering PTT signal to radios installed in the aircraft
- ▶ Digital connections through RS232/422
- ▶ Supports multiple connection points for audio through analog and digital interfaces
- ▶ Output for remote crew position data to tactical systems
- ▶ External configuration memory dongle for hot swapping
- ▶ Dual antenna support
- ▶ internal and external antenna in large airframes, gives full internal coverage while retaining 4-8km outside range, range can also be limited to reduce RF signature
- ▶ Control panel interface



System components: BST30/35 PNG Mobile Base Station

- ▶ Connects to any vendors ICS system
- ▶ Capable of delivering PTT signal to radios installed in the platform
- ▶ Supports multiple connection points for audio through analog and digital interfaces
- ▶ Output for remote crew position data to tactical systems
- ▶ Single antenna support
- ▶ The system provides support for a wired microphone headset connected directly to the base providing the operator with wired access to the intercom loop.
- ▶ Control panel interface
- ▶ Comes with -and without internal battery
- ▶ Manpack pouch and mounting bracket available for transport



System components: CHG50/55 PNG Charger

Aircraft Charger

- ▶ Crash tolerant > 20G
- ▶ In-flight securing clamp
- ▶ Water draining cradle
- ▶ Power through aircraft DC system, 10-30 Volts
- ▶ Supports full operation of transceiver while charging

Table Charger

- ▶ One to four simultaneous charging positions
- ▶ Individual charging management
- ▶ 100-240 V Power Supply



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Main System Specifications

- ▶ Full duplex capability
- ▶ UHF 397-470MHz and Maritime FM VHF 156-162 MHz
- ▶ Channel separation 25 Khz
- ▶ Supports multiple wireless users and grouping of users
- ▶ Operational temperature -20° to +55°C
- ▶ AES 256 standard
- ▶ FIPS140-2 option
- ▶ Capability to host government specified Hardware encryption
- ▶ Qualified according DO-160G
- ▶ Qualified according to DO-178C
- ▶ BST50 & CP50 Delivered with EASA Form 1

European Customers

- ▶ OEMS: Airbus, Leonardo, Sikorsky and Bell
- ▶ MROs: Heli-One, SAAB AB, Ukrainian Helicopters, Marshall UK, Hangar1, Scandinavian Avionics, United Rotorcraft
- ▶ End Users: Turkish Airforce, Danish 722 squadron, UK RAF, Swedish maritime administration, Babcock UK, Babcock Mission critical services in Spain, Italy and Australia, CHC UK and Norway, Bristow UK and Norway, Airlift, Norwegian Air Ambulance, LT Tech, Italian Airforce, Italian Coastguard, Norwegian Airforce, Norwegian Police, Swedish Air Ambulance, Deutsche Bundes Polizei, Icelandic Coastguard, Atlantic Airways, California Highway Patrol, LA City Fire, IOMAX, Estonia Border Patrol and Police, Polish Medical Rescue, Air Greenland, Dutch Airforce, all hoist equipped AW139 operators(Axnes product are standard and on aircraft's Type Certificate)



North American Customers PNG

- ▶ California Highway Patrol
- ▶ LA City Fire
- ▶ Travis County Star Flight, Austin, TX
- ▶ Two Bear Air Rescue, MT
- ▶ Cal Fire, CA
- ▶ Ventura County Sheriff's CA
- ▶ Miami Dade Fire Rescue
- ▶ US Military Programs
- ▶ Sikorsky
- ▶ Airbus
- ▶ Bell
- ▶ Leonardo



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