Bone Conductive
Audio Accessories

- **Designed for extreme environments**
- **Dependable & Robust**
- **Crystal Clear Audio**
- **ATEX/IECEx Intrinsically Safe versions**

Entel's comprehensive understanding of the demands of front line Fire Fighting has enabled us to develop a range of market leading radios & accessories. Specifically designed with professional Fire & Rescue applications in mind and with a global customer base, Entel's Fireground radio equipment is already used by many of the world's leading Fire & Rescue organisations.

Our Bone Conductive accessories have been designed to withstand the everyday rigours of the Fireground environment and can easily be worn in conjunction with your existing breathing apparatus (BA) & helmet.

Entel offer two accessories with advanced bone conduction technology:

- Throat mic
- Skull mic
- Both models interface to Entel's quick release submersible PTT

IMO INTERNATIONAL MARITIME ORGANIZATION

These bone conductive accessories are approved to work with HT500 IECEx and HT800/900 ATEX series portable radios. Entel's Intrinsically Safe radios and accessories are compliant with IMO regulation for firefighters: SOLAS 2012 MSC.338(91) Regulation II-2/10.10.4.

For more information about our products please contact us:

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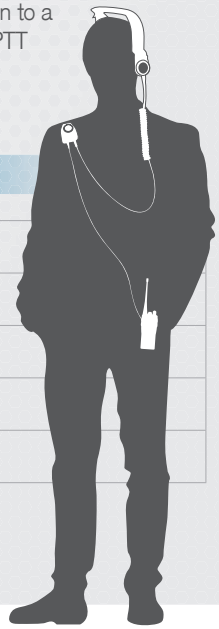
Skull mic
CXR5/950

The CXR5 incorporates a high performance, low profile, bone conductive skull microphone that provides clear audio transmission even in the noisiest of environments. Unlike conventional headsets, the bone conductive skull mic is not adversely affected by external sounds. The incorporated high quality earpiece ensures loud and clear reception.

The fully adjustable Skull Mic mounts into most helmet types and attaches to a Submersible PTT via a quick release Nexus connector. The PTT has been designed to clip on to a belt or any other suitable position using its rugged revolving clip. The large size PTT switch is easy to use even with a gloved hand or under clothing.



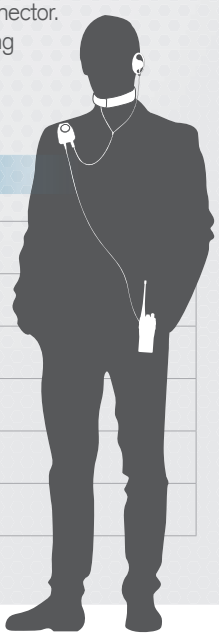
Features:

- High performance bone conductive skull mic
- Unique fastening-strap system fits all BA & helmet designs
- IP54 robust durable design
- Supplied with Submersible quick release PTT unit
- ATEX & IECEx Approved

Throat mic
CXR16/950

The CXR16 incorporates a high performance bone conductive throat vibration microphone that provides clear audio transmission even in the noisiest of environments. Unlike conventional headsets, the bone conductive throat mic is not adversely affected by external sounds.

The bone conductive microphone is placed on the neck close to the throat and fastened with a soft Velcro band, the audio is routed to a soft 'D' shape earpiece. The CXR16 connects to a large rugged Submersible PTT via a robust cable and quick release Nexus connector. The PTT has been designed to clip on to a belt or any other suitable position using it's rugged revolving clip. The large sized PTT Switch is easy to use, even with a gloved hand or under clothing.



Features:

- High performance bone conductive throat mic
- Can be used under protective suits
- Soft-feel washable neck band
- IP54 robust durable design
- Supplied with Submersible quick release PTT unit
- ATEX & IECEx Approved

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Submersible PTT95x Series

IP67

- Submersible IP67
- High quality nexus connector
- Ex Intrinsically safe versions available
- Rotating clip provides flexible mounting options
- Rugged construction, designed to withstand the harshest environments
- Large PTT button, ideal for gloved hand use

TESTED

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Frequently Asked Questions

SOLAS Regulation 11-2/10 – Firefighters' communication

V1.0

Flyer

What is the IMO regulation for firefighters?

Who is affected by this regulation?

Regulation II-2/10.10.4 is applicable to all new SOLAS ships constructed on or after July 1 2014. Existing ships should comply with this requirement no later than the first survey after July 1 2018.

Why was this regulation adopted?

This regulation was proposed in the aftermath of an incident caused by fire in the engine room on board the Swedish tanker 'Ek-River' while in dry-dock. Based on this, upgrades of radio-communication equipment for fire fighters including additional equipment such as smoke diver emergency alarm, PASS alarm and location lights were proposed.

What does the regulation say?

MSC 91 adopted amendments to SOLAS Regulation II-2/10 to add a new paragraph 10.4 to clarify that a minimum of two two-way portable radiotelephone apparatus for each fire party for fire-fighters' communication shall be carried on board. These radio devices shall be of an explosion proof type or Intrinsically Safe (IS).

What type of ships does this regulation apply to?

The regulation does not specify type of the vessel. All ships with firefighting teams on board need to comply.

What does IS mean?

IS is a term used to describe products designed for use in hazardous (explosive) locations. These are areas where flammable liquids, vapours, gases or combustible dusts are likely to occur in quantities sufficient to cause a fire or explosion.

How are IS radios different from normal radios?

In normal use, electrical equipment can create tiny internal sparks and heat. Both of these can become a source of ignition in a flammable atmosphere.
IS radios will not create the sparks and/or heat sufficient to ignite an explosive atmosphere

How do we know that a radio is IS?

IS products are tested by independent accredited labs under specific standards to qualify as an IS product. For example, the standard applicable in Europe is called ATEX. Your supplier should be able to provide you an approval certificate showing the brand and model number of the radio.

How do I know which standard of IS to use for my vessels?

The specifications depend on individual Flag of the vessel. For example, it is mandatory for European companies and European-flag vessels to use ATEX certified equipment.

What is ATEX?

ATEX is an EU directive dealing with electrical equipment for use in explosive atmospheres. It categorizes the hazardous environment into three Gas Groups: IIA, IIB, and IIC (II is a Roman numeral). Group IIC is the most severe group, i.e. gases/vapours in this group can be ignited very easily.

Flammable materials are also categorized according to their ignition temperatures which are called temperature classes. Entel radios have a temperature class of T4 or 135^{o}C, i.e. the temperature of an Entel radio will not rise beyond 135^{o}C in case of an electronic failure.

What IS standard do Entel radios conform to?
Entel's IS radios conform to three standards:

- **ATEX Approved IIC**
- **ATEX Approval IIA**
- **IECEx Approval**

What information do I need to provide at the time of ordering?
There are two key points you need to check:

- IS standard required (ATEX or IECEx)
- Frequency band (VHF or UHF)

How do I decide which frequency band to order for the radios?
This would depend on the frequency band currently being used by your vessel's crew for on-board communication. Both VHF and UHF bands are widely used and Entel has models to satisfy these frequencies.

Is there anything else I need?
Firefighters use face masks and breathing apparatus which makes it difficult for them to use radios in a conventional manner. We therefore suggest they use specialized bone conductive audio accessories. Entel is a major supplier to fire brigades globally. We can offer the following options:

- Skull microphone and earpiece
- Throat microphone and earpiece

For further details, please see our brochure: Bone Conductive Audio Accessories

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What are the benefits of Entel products?

How are Entel radios different from other manufacturers' products?

Entel is the only manufacturer to supply IP68 rated fully waterproof radios, withstanding total immersion in water to a depth of 2 meters for 4 hours. This protects against the likely hazards encountered in any field of operation.

Exceeding MILSTD 810C/D/E/F rating for tough enduring performance, HT Series 2.0 is designed to withstand shock, vibration, dust and moisture, ensuring many years of trouble free use in the most hostile environments.

In addition, Entel offers a broad range of professional audio accessories to suit the fire and rescue applications.

How long have Entel been manufacturing radios?

Entel was established in 1995 and has offices in the UK, South Korea, and Philippines. It also has a trade network in over 100 countries worldwide. Entel's products are highly successful and used extensively across numerous industry sectors including fire and rescue, petrochemical and shipping, supplying major blue chip organizations worldwide. We have a growing list of customers who have placed their trust in our brand and are fully satisfied with the product.

Entel understands the needs of these customers for a radio that is robust and reliable. With its wide range of marine VHF and UHF intrinsically safe portables, Entel can help you in selecting the most competitive and suitable solution for compliance with the new SOLAS regulations for firefighters.

Are there any special offers?

If you decide to equip your firefighting crew across the fleet with Entel products, we can freeze the prices for you up to the deadline of this regulation. This means you can spread the cost of purchase over a longer period while benefiting from a fixed price.

Entel is not located in the same country as my company. Is it expensive to get the products delivered?

Entel has three distribution hubs worldwide (UK, Philippines, South Korea) from which we can deliver directly to your vessel. We can ship to the majority of destinations in the world within a transit time of 48 hours.

Due to our global distribution operation, we have very competitive rates from DHL and FedEx and we pass on these savings to our customers.

Can I use Entel radios with other suppliers' headsets?

These products are used in hazardous and explosive environments therefore the whole solution, i.e. radio and accessory, has to be IS. Entel's ATEX/IECEx approval certificate lists both the radios and accessories. This will give you peace of mind that the whole communication solution is IS and certified by a leading independent accredited lab.

How does your bone-conductive headset work?

The headset is a high performance bone vibration microphone that provides clear audio reception in a noisy environment.
For transmitting your message, a low profile, bone conductive microphone is placed on top of the head or around the throat, and the earpiece is over one of the ears.

A robust cable exits the microphone and attaches via a quality in-line connector to a large rugged waterproof press to talk switch that can clip on to a belt or other suitable position using the rugged revolving clip. The press to talk switch is easy to use, and can be used by a gloved hand or under clothing.

My firefighting crew already has a breathing apparatus. Does your bone conductive solution need to integrate with it?

No, our bone-conductive solution can work independently of the face mask and breathing apparatus. Your crew must decide if the skull microphone (which fits inside the helmet) or a throat microphone is best suited for their needs.

Should the application require an integrated communication system with the breathing apparatus, Entel has approved two of the leading breathing apparatus brands on its ATEX certificate.

What standard accessories are supplied with the radios?

Radio is supplied with the following:

- Battery
- Antenna
- Charger
- Belt clip

Your radios have display and non-display variants. Which one should I use?

Both radios will meet the SOLAS requirement. Choice between display and non-display variant will depend on your crew's preference. Display variants provide on-screen information about battery life, signal strength, enabled options etc. It is also easy to use in dark environments as the channel number is displayed in a bright back-lit screen.

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