

Guardian
Safety Systems

Innovative Communications

First Responder Communication Solutions



by
INNOTECH
Innovative technology.

First Responder Driven Products

Effective communications provides first responders and specialist teams with an increased level of confidence especially when undertaking the most demanding tasks.

Two career fire fighters, frustrated by the lack of suitable communications, approached Innotech (Guardian Safety Systems parent company) with a proposal to design and develop a communication system to improve the safety for themselves and their colleagues.

The result is the breakthrough Guardian BA and Helmet Accessories which connect to a portable two way radio via the Guardian Speaker Microphone, providing clear and reliable communications in high noise, dangerous environments.

The Guardian Comms System utilises Innotech's patented bone conduction technology (harnessing voice vibrations through the skull) to send and receive communications. This effectively isolates ambient noise, reducing missed messages and improving transmissions resulting in increased safety and operational efficiency whilst attending an incident.

Guardian Communications Systems was designed and built initially to meet the harsh realities of Fire Fighting. However, it is finding an increasing acceptance in other First Responder and Emergency Applications.



Guardian Speaker Microphone

The Guardian Speaker Microphone is the core component of the Guardian Communications System and interfaces with many different brands and models of two way portable radios. The robust Speaker Microphone has been designed understanding the difficulties of communicating in high noise, dangerous environments. It is also suitable for every day tasks.

A very large Press to Talk (PTT) button is mounted on the front of the Guardian Speaker Microphone and can be pressed whilst wearing gloves or through the thick membrane of a HAZMAT suit. The large, easy to find PTT button can also be actuated by the users forearm or wrist while still holding tools or equipment, giving the user hands free communications.

The Guardian Speaker Microphone has a strong and versatile pocket clip, which can be rotated 360° enabling attachment to all forms of clothing and equipment straps unlike other speaker microphones that are easily dislodged due to ineffective pocket clips.

The Guardian Speaker Microphone is powered from the host portable radio and requires NO BATTERIES which increases reliability in the field. Internal circuitry combined with a noise cancelling microphone greatly reduces ambient noise during transmission.

A male accessory connector that provides the interface to the Guardian BA and Helmet comms accessories is recessed into the Guardian Speaker Microphone which significantly improves the system's reliability by avoiding mechanical damage to the connector.

A Guardian Accessory can be easily connected to the Guardian Speaker Microphone even with gloved hands or in poor visibility. Connecting the accessory automatically directs receive and transmit audio from the Speaker Microphone to the Accessory. The Speaker Microphone then acts as the PTT control. Unplugging the accessory automatically restores the Speaker Microphone to normal operation, meaning the user is never without reliable communications.



Ordering Information and Model Numbers on the Back Page

Speaker Microphone Key Advantages

- > Dual purpose: Normal Speaker Microphone or PTT with Accessories
- > Large easy to find PTT button which can be actuated with gloves or through HAZMAT suit.
- > Heavy duty pocket clip for secure deployment
- > Automatic Level Control for optimised audio
- > Quick release, protected accessory connector for reliability
- > No batteries: For greater reliability when attending an incident



BA Accessory

The Guardian BA accessory is a dedicated Breathing Apparatus communications device that can be easily fitted to the rubber straps of a Breathing Apparatus mask in seconds, without affecting the integrity of the mask. Its seamless design means there is no delay donning or doffing the mask and remains comfortable after long periods of use.

The BA Accessory connects to the portable two way radio via the Guardian Speaker Microphone providing clear and reliable communications in high noise, dangerous environments.

The BA Accessory has an advanced speech transducer that converts voice vibrations from the wearer's skull into electrical energy which is then amplified and passed to the Guardian Speaker Microphone for transmission when the Speaker Microphone's PTT button is pressed.

This technology means the user doesn't have to shout through the BA mask into a regular speaker microphone which results in poor quality transmissions.

The BA Accessory also converts received audio signals from the Speaker Microphone to mechanical vibrations which are then passed to the wearer's skull through the vibration transducer. As a result of this, received messages may still be heard even if hearing protection is worn, making it ideal for noisy environments. In addition to the vibration transducer, the BA Accessory incorporates an external speaker which is always active. This enables others, close to the wearer, to hear received radio messages.

There are no batteries in the BA Accessory which minimises maintenance costs and improves reliability whilst attending an incident.

The strong, lightweight cable that interconnects to the Speaker Microphone is terminated in a female connector which provides protection from physical damage enhancing overall reliability. The BA Accessory is rated to IP 66 meaning it can be left on the mask during cleaning or decontamination.



BA Accessory Key Advantages

- > Easily attached and removed from a wide range of Mask straps
- > Maintains mask integrity
- > Does not delay donning of Breathing Apparatus
- > Excellent performance in noisy environments
- > Includes external speaker so others can hear received messages
- > Can stay attached during cleaning or decontamination
- > No batteries: For greater reliability when attending an incident
- > Suited to:
 - Structural, ship and aircraft fire fighting
 - HAZMAT/ CBR
 - Confined space rescue

Winner of an Australian International Design Award 2008



Ordering Information and Model Number on the Back Page



Helmet Accessory

The Guardian Helmet Accessory is a dedicated communications solution for Structural Fire Helmets. The Helmet accessory easily attaches in seconds to the helmet ratchet housing. It does not delay the donning or doffing of the Helmet and can be worn for long periods of time due to its superior comfort. It can also be worn over a Breathing Apparatus mask and flash hood.

The Helmet Accessory connects to the portable two way radio via the Guardian Speaker Microphone providing clear and reliable communications in high noise, dangerous environments.

The Helmet Accessory has an advanced speech transducer that converts voice vibrations from the wearer's skull into electrical energy which is then amplified and passed to the Guardian Speaker Microphone for transmission when the Speaker Microphone PTT button is pressed.

This means ambient noise is reduced significantly, improving transmissions and minimising repeated messages when compared to a conventional speaker microphone.

The Helmet Accessory also converts received audio signals from the Speaker Microphone to mechanical vibrations which are then passed to the wearer's skull through the vibration transducer. As a result of this, received messages may still be heard even if hearing protection is worn, making it ideal for noisy environments. In addition to the vibration transducer, the Helmet Accessory incorporates an external speaker which is always active. This enables others, close to the wearer, to hear received radio messages.

There are no batteries in the Helmet Accessory which minimises maintenance costs and improves reliability whilst attending an incident.

The strong, lightweight cable that interconnects to the Speaker Microphone is terminated in a female connector which provides protection from physical damage, enhancing overall reliability.

The Helmet accessory is rated to IP65, which allows it to be cleaned with other PPE equipment. A system is also provided for cable stowage when the cable is not in use.



Helmet Accessory Key Advantages

- > Quick and easy to install and remove
- > Does not delay donning of Helmet
- > Seamless design for greater comfort, doesn't compromise helmet functionality
- > Excellent performance in noisy environments
- > Can be used with hearing protection
- > No batteries: For greater reliability when attending an incident
- > Ideal for Incident Controllers and pump operators

Ordering Information and Model Numbers on the Back Page



Rescue Helmet Accessory

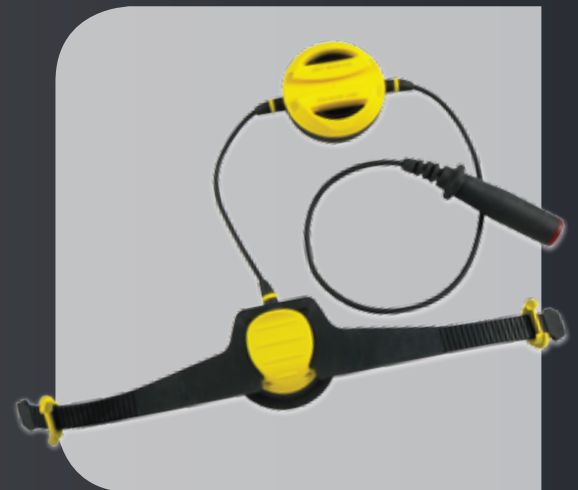
The Rescue Helmet Accessory can be fitted to numerous light-weight rescue style helmets, providing improved and reliable communications through direct contact with the wearer's head in hazardous environments.

The Rescue Helmet Accessory includes two easily fitted clips, attached either side of the helmet, and a rubberized strap which supports the transmit transducer inside the helmet. The receiving transducer unit mounts to the helmet strap. Donning or doffing of the helmet is not affected, whilst the superior levels of comfort experienced when wearing a helmet with Guardian Comms fitted, allows use for extended periods of time.

The Rescue Helmet Accessory, when connected to the portable radio via the Guardian Speaker Microphone provides clear, reliable communications in a wide range of high noise and hazardous situations.

The Guardian Speaker Microphone's easy to use PTT button effectively provides a hands free system, as it can be activated by a variety of means.

The Rescue Helmet Accessory allows the use of Guardian Communications in applications previously ignored by competitors' devices. These include Vertical Rescue, Urban Search & Rescue (USAR), Rural Fire Fighting, HAZMAT, Swift Water rescue, or any other situation where non-structural helmets are worn.



Rescue Helmet Kit Advantages

- > Specially designed clips allow for easy installation
- > Allows Guardian Comms to be implemented into many other applications
- > Suits a wide range of Rescue Helmet types
- > Ideally suited for Vertical Rescue & USAR

**Ordering Information
and Model Numbers on
the Back Page**

Speaker Microphone Ordering Details



FC001
Speaker Microphone with Jedi Connector to suit Motorola Radios



FC003
Speaker Microphone with Warris Connector to suit Motorola Radios



FC005
Speaker Microphone with Connector to suit Tait Orca Radio



FC007
Speaker Microphone with Mini Warris Connector to suit Motorola, Simoco and other Radios



FC009
Speaker Microphone with Connector to suit Simoco SRP9100 Radio



FC011
Speaker Microphone with Connector to suit Tait TP9100 Series Radios



FC013
Speaker Microphone with connector to suit Tait TP8100 Series Radios

Patent Information:
Internationally Registered Designs and Design Patents Awarded and Pending

Accessory Ordering Details



FC101
Helmet Accessory for use with Guardian Speaker Microphone. Attaches to the ratchet housing of a helmet.

FC102
Variant for Jet Style Helmets



Additional Specifications

FM Class	3610 & 3611 when used with speaker microphone
Ingress Protection	IP 65
EMC	CTick, CISPR 13

International Patents Awarded and Pending. International Registered Designs and Design Patents Awarded and Pending



FC202
BA Accessory for use with Guardian Speaker Microphone. Attaches directly to Breathing Apparatus Mask straps.

Additional Specifications

FM Class	3610 & 3611 when used with speaker microphone
Ingress Protection	IP 66
EMC	CTick, CISPR 13

International Patents Awarded and Pending. International Registered Designs and Design Patents Awarded and Pending



FC300 Series
Rescue Helmet Accessory for use with Guardian Speaker Microphone. Models available to attach to a wide range of Rescue and Light Weight Helmets.

Additional Specifications

FM Class	3610 & 3611 when used with speaker microphone
Ingress Protection	IP 66
EMC	CTick, CISPR 13

Contact Information

PO Box 292, Sunnybank, QLD, 4109, Australia
Brisbane Technology Park, 6 McKechnie Dr,
Eight Mile Plains, QLD, 4113, Australia
Phone: +61 7 3841 1388
email: sales@guardian.com.au
website: www.guardian.com.au