

PRODUCT OVERVIEW

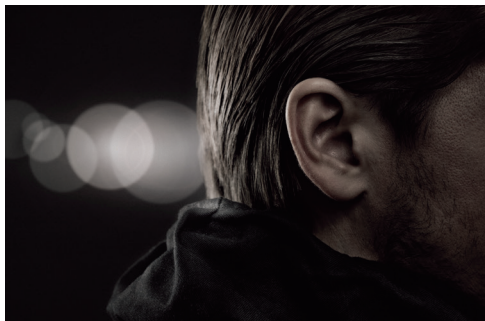
**INTERSPIRO**



**SPIROCOM**

**SIMPLER COMMUNICATION – SAFER WORK**

# THE CHALLENGE AND DEVELOPMENT OF SPIROCOM



Everything began when the rescue services in Los Angeles wanted a radio system that made it possible for firemen to speak directly with each other in “full duplex”.

The desire was also to be able to keep the existing long-distance radio system for communication out to the firefighter commander.

In order to also be able to clearly speak to people in possible danger, an external loudspeaker was also on the requirement list.

Interspiro assumed the challenge and developed the SpiroCom concept.

Today, the SpiroCom family has grown and to satisfy various customers' needs, Interspiro has developed several different models of SpiroCom over the years.

In addition, today there are multiple radio adapters as well as various accessories, such as an external PTT monophone and headset.

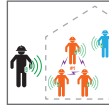
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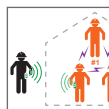
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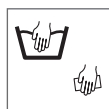
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# SIMPLER COMMUNICATION – SAFER WORK

**SpiroCom is an entirely new compact voice communication system built to handle the tough conditions that can characterize the site of a fire. It withstands the intense heat, has the simplifying functions that facilitate in critical phases and has the operating reliability that saves lives - both the firefighter's own life and those he has come to assist.**

## FULL DUPLEX

The firemen in the group can communicate without problem and maintain vital contact. It means that collaboration becomes more effective, risks are minimized and the chances for a fast, successful mission increase. The Team Talk function is a voice-activated, full duplex, short-range radio for two firefighters. Without having to push any buttons, the voice communication is sent between the two.

## INTERACTION OVER LONG-RANGE RADIO

An individual fireman can contact the firefighting commander at any time over long-range radio. It provides perfect interaction and a clear overview of the situation for everyone involved in the mission. A large, easy-to-use PTT button on the mask unit activates the long-range radio. The button is placed to be easy to find and has a "Lift and release" function that provides the best possible ergonomics for the user.

## BUILT-IN VOICE AMPLIFIER

Thanks to SpiroCom and its voice amplifier, the fireman can also communicate with those in danger in critical situations when the environment and the noise level demand extra volume to be heard. Vital instructions and calming words can be conveyed and an orderly evacuation can be made.

On the following pages, these icons are used to show the designs of the various models:



Wireless transmission from the mask unit to the long-range radio



External loudspeaker (VPU, "Voice Projection Unit")



Transmission from the mask unit to the long-range radio takes place over a cable



Compatible with digital radio devices



Team Talk, group radio between firemen ("Full Duplex")



Ex-classed for use in potentially explosive environments



Communication over long-range radio (PTT, "Push-To-Talk")

# HARD FACTS FOR HARD CHALLENGES

## MASK UNIT

- High sound quality
- Wireless technology (certain models)
- Adjustable loudspeaker
- Volume control
- Automatic shut-off

## TEAM TALK

- Short-range radio
- Voice activated
- Full duplex
- Handsfree

## COMMUNICATION OVER LONG-RANGE RADIO (PTT, "PUSH-TO-TALK")

- Mask-mounted
- LED indication
- "Lift and release" function

## BATTERY

- 3 x AAA alkaline batteries
- Up to 25 hours (depending on talking time)
- Up to one year "stand by"
- Indication of low battery voltage

## FREQUENCY

- Europe 868 MHz
- USA 915 MHz

## STANDARDS/APPROVALS

- Ex ia IIC T4
- UL 913 Class 1, Division 1, Group A, B, C & D
- FCC
- IC
- EMC
- NIOSH
- NFPA 1981
- EN 137



# HOW SPIROCOM WORKS

Every fireman has a SpiroCom mask unit mounted on his mask. When the units are started, they connect up to each other and the firemen can speak directly with each other in full duplex. Full duplex means that the firemen can talk with each other in the same way as they talk with each other without radio. We call this function Team Talk.

Team Talk is intended for short-range communication and cannot replace the communication between fireman and firefighting commander. If a fireman wants to connect to the commander, this is done with a connection to the fireman's long-range radio, wireless or by cable depending on which SpiroCom model has been chosen. A button on the mask unit (the PTT button) opens up the long-range radio and the fireman can send out speech to the commander. Conversely, the commander can send speech to the fireman by activating the PTT button on his radio.

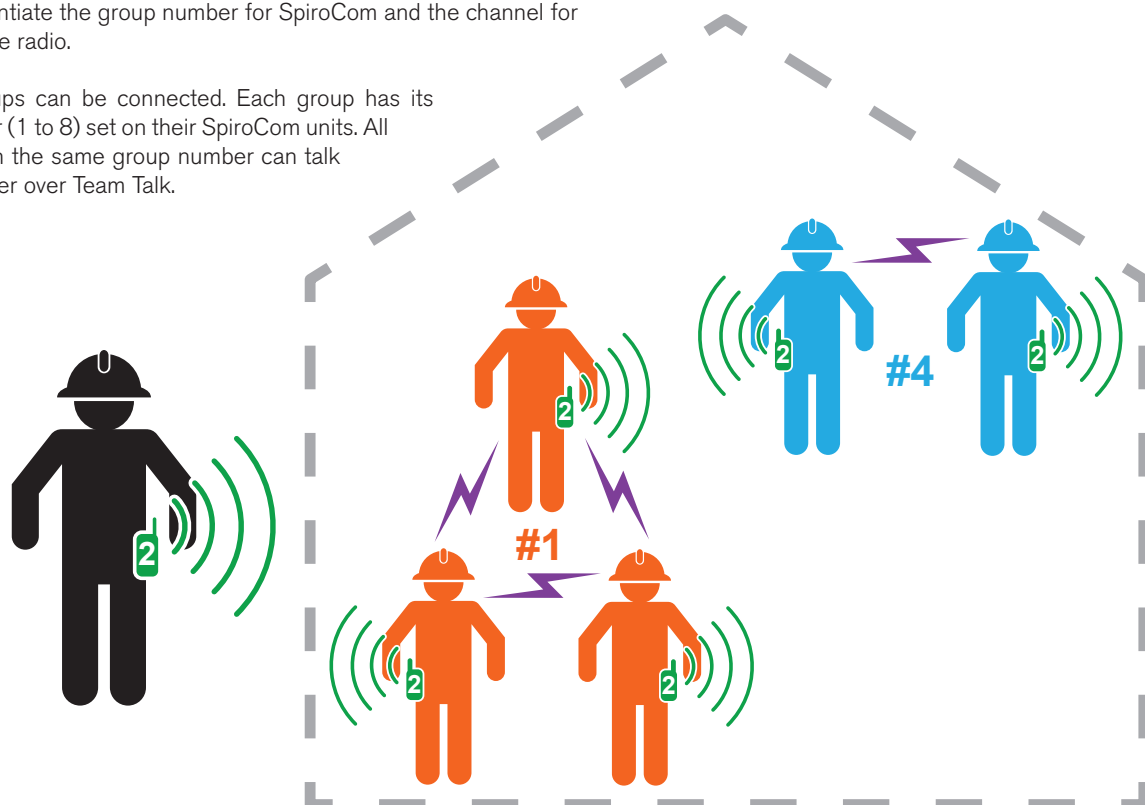
For units with an activate external loudspeaker (VPU), the fireman can speak to those in need with good audibility.

As in the example below, three people in Group 1 (#1) and two in Group 4 (#4). The people in the two groups each have their own long-range radio for contact with the firefighting commander. The long-range radio is set on the desired channel ("2" in the example below), which does not need to be the same as the group number on the SpiroCom units. The channel set for the group's long-range radio should be the same as the one the firefighting commander has on his radio. The groups can now reach the commander with their PTT button on the mask unit and the commander can reach the groups with his PTT button on the radio.

A "PTT call" from a fireman is heard by everyone that has the same channel set on the radio and a "PTT call" from the commander is heard by all with the same channel set on the radio.

So we differentiate the group number for SpiroCom and the channel for the long-range radio.

Up to 8 groups can be connected. Each group has its group number (1 to 8) set on their SpiroCom units. All members with the same group number can talk with each other over Team Talk.



# SYSTEM COMPONENTS

The various components of the SpiroCom system can be divided into two main groups: Mask units and Radio adapters. A brief description of the various components is provided below.

## SPIROCOM XXL MASK UNIT








The transmission of the sound over the PTT function takes place wirelessly from the mask unit to the long-range radio. All XXL variants have Team Talk and PTT functionality. XXL is available with the external loudspeaker (VPU) activated or inactivated.

## SPIROCOM XL MASK UNIT

The transmission of the sound over the PTT function takes place over cable from the mask unit to the long-range radio. All XL variants have Team Talk and PTT functionality.

## SPIROCOM L MASK UNIT

Only has PTT functionality. Transmission of the sound from the mask unit to the long-range radio takes place over a cable.

	 Wireless	 TeamTalk	 "Push-To-Talk"	 Cable	 External loudspeaker	 Digital radio	 Ex-classed
SPIROCOM XXL	■	■	■		□ <sup>1</sup>	■	■
SPIROCOM XL		■	■	■		■	■
SPIROCOM L			■	■		■	■

<sup>1</sup> Is available with or without activated external loudspeaker

## RAI ADAPTER

Radio adapter for wireless transmission of the sound between the mask unit and the long-range radio. The adapter fits several well-known radios on the market and attaches directly to the radio. An external PTT button or a monophone can be connected to the adapter.

## GRA ADAPTER

Radio adapter for wireless transmission of the sound between the mask unit and the long-range radio. The adapter is connected to the long-range radio with a short cable adapted to various kinds of radios - contact Interspiro for questions of availability. An external PTT button or a headset can be connected to the adapter.

## TWR ADAPTER

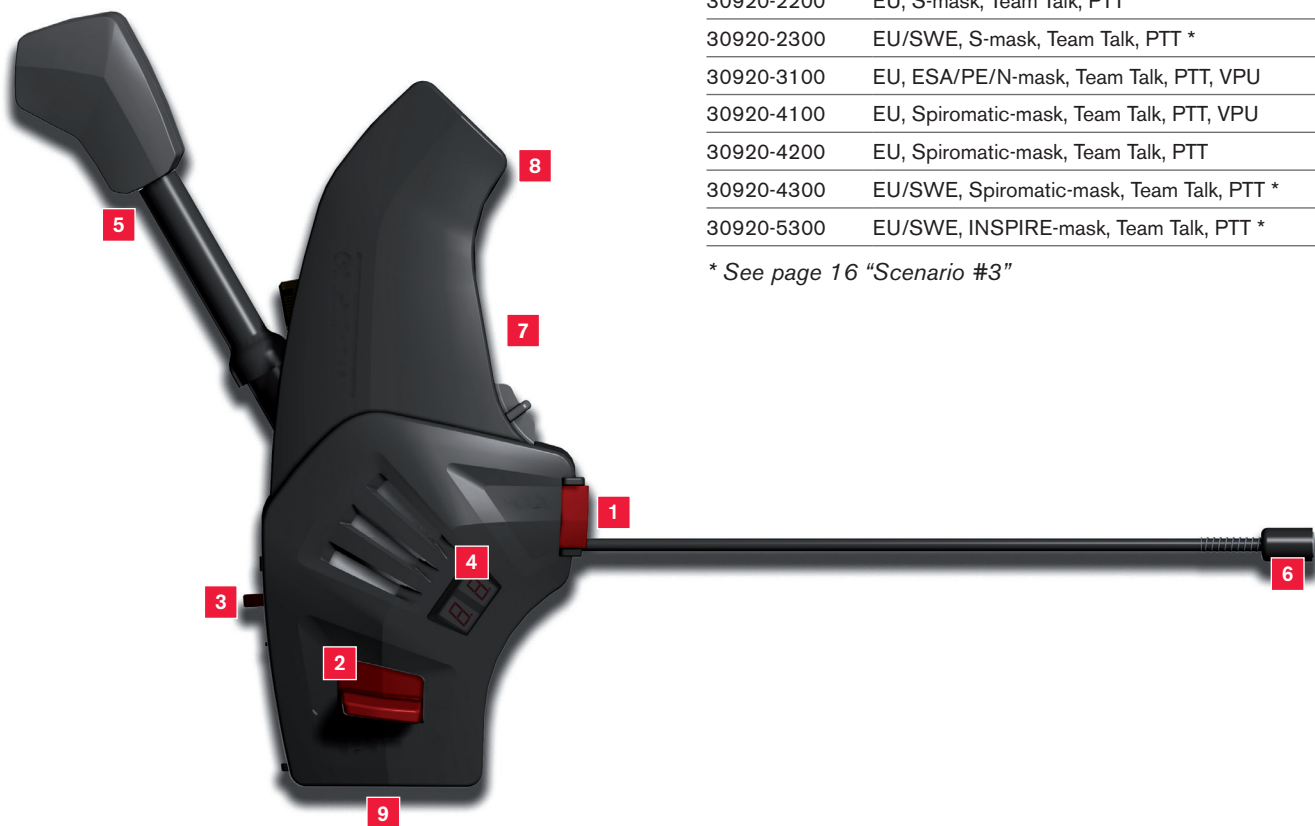
Radio adapter for wireless transmission of the sound between the mask unit and the long-range radio. The adapter fits Motorola GP340 and Motorola HT1250 and is attached directly to the radio.

# SPIROCOM XXL



XXL is made for wireless transmission of the sound to the long-range radio and has Team Talk, PTT and if desired – an external loudspeaker (VPU).

- Ex-classed for use in zone zero
- Available in a USA and an EU model (different frequencies)
- Fits the following masks: ESA, PE, N, S, INSPIRE, Spiromatic



Article no.	Description
30920-1100	USA, S-mask, Team Talk, PTT
30920-2100	EU, S-mask, Team Talk, PTT, VPU
30920-2200	EU, S-mask, Team Talk, PTT
30920-2300	EU/SWE, S-mask, Team Talk, PTT *
30920-3100	EU, ESA/PE/N-mask, Team Talk, PTT, VPU
30920-4100	EU, Spiromatic-mask, Team Talk, PTT, VPU
30920-4200	EU, Spiromatic-mask, Team Talk, PTT
30920-4300	EU/SWE, Spiromatic-mask, Team Talk, PTT *
30920-5300	EU/SWE, INSPIRE-mask, Team Talk, PTT *

\* See page 16 "Scenario #3"

**1** Mode button, which is also the on and off button.

**2** PTT button, of a slide type for significantly easier activation.

**3** Volume button/group selection

**4** The unit has a display that shows what group is set. There is also a voice that states which group is chosen ("Group one") and when the unit is connected ("Connected").

**5** The desired position against the ear is easily set with the flexible speaker frame.

**6** The microphone is installed in the speaker cone. The microphone can be muted if in an extremely noisy environment.

**7** Installation on the mask is very easy with a fast connector.

**8** A low battery is indicated with a blinking red LED on the mask unit and a voice that says "Low bat".

**9** Powered by three AAA batteries that can easily be replaced with the unit installed on the mask.



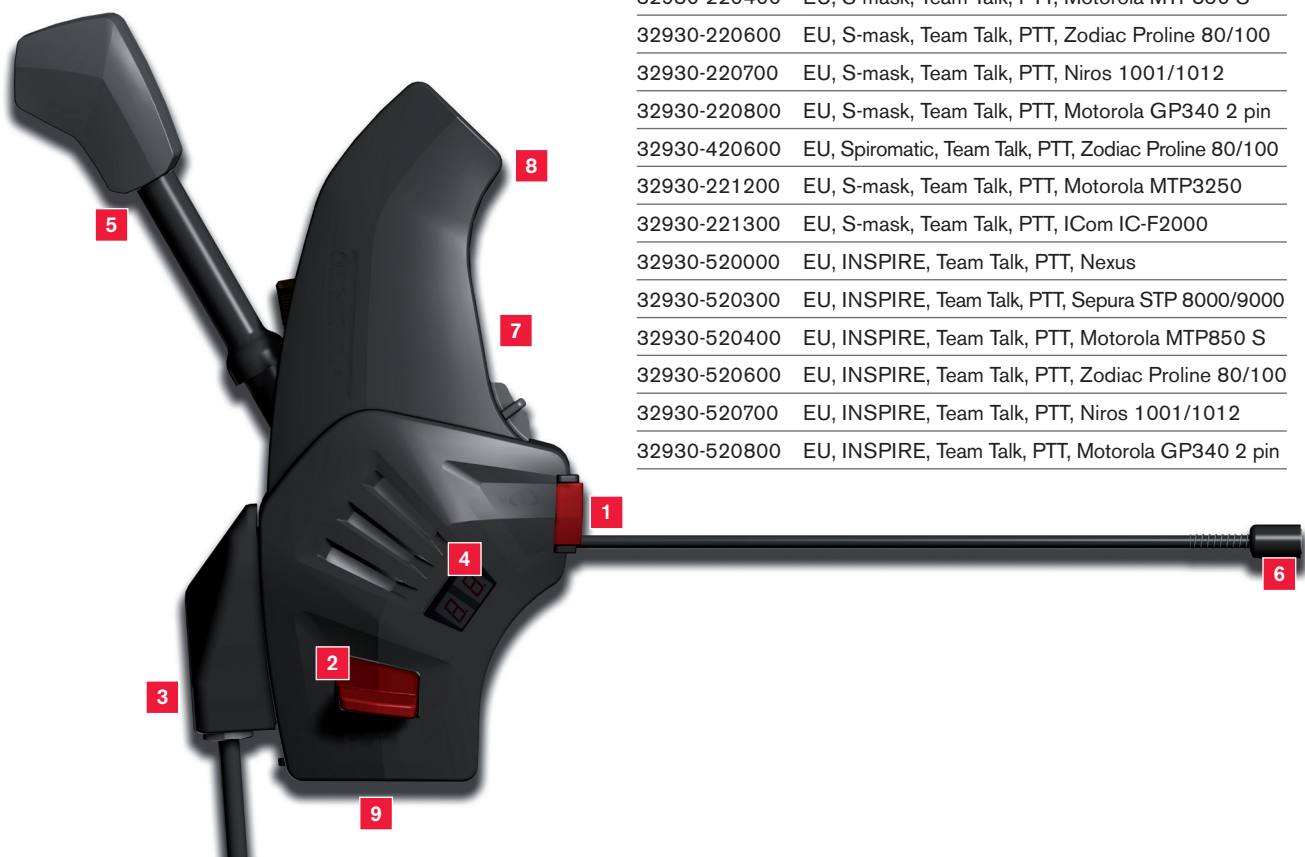
# SPIROCOM XL



XL is made for wired transmission of the sound to the long-range radio and has Team Talk and PTT.

- Ex-classed for use in zone zero
- Available in a USA and an EU model (different frequencies)
- Fits the following masks: ESA, PE, N, S, INSPIRE, Spiromatic

Article no.	Description
32930-120000	USA, S-mask, Team Talk, PTT, Nexus
32930-220000	EU, S-mask, Team Talk, PTT, Nexus
32930-220300	EU, S-mask, Team Talk, PTT, Sepura STP 8000/9000
32930-220400	EU, S-mask, Team Talk, PTT, Motorola MTP850 S
32930-220600	EU, S-mask, Team Talk, PTT, Zodiac Proline 80/100
32930-220700	EU, S-mask, Team Talk, PTT, Niros 1001/1012
32930-220800	EU, S-mask, Team Talk, PTT, Motorola GP340 2 pin
32930-420600	EU, Spiromatic, Team Talk, PTT, Zodiac Proline 80/100
32930-221200	EU, S-mask, Team Talk, PTT, Motorola MTP3250
32930-221300	EU, S-mask, Team Talk, PTT, ICom IC-F2000
32930-520000	EU, INSPIRE, Team Talk, PTT, Nexus
32930-520300	EU, INSPIRE, Team Talk, PTT, Sepura STP 8000/9000
32930-520400	EU, INSPIRE, Team Talk, PTT, Motorola MTP850 S
32930-520600	EU, INSPIRE, Team Talk, PTT, Zodiac Proline 80/100
32930-520700	EU, INSPIRE, Team Talk, PTT, Niros 1001/1012
32930-520800	EU, INSPIRE, Team Talk, PTT, Motorola GP340 2 pin



**1** Mode button, which is also the on and off button.

**2** PTT button, of a slide type for significantly easier activation.

**3** Cable that is easily connected to the long-range radio.

**4** The unit has a display that shows what group is set. There is also a voice that states which group is chosen ("Group one") and when the unit is connected ("Connected").

**5** The desired position against the ear is easily set with the flexible speaker frame.

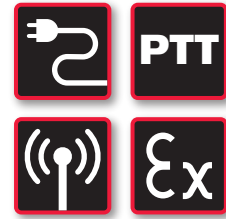
**6** The microphone is installed in the speaker cone. The microphone can be muted if in an extremely noisy environment.

**7** Installation on the mask is very easy with a fast connector.

**8** A low battery is indicated with a blinking red LED on the mask unit and a voice that says "Low bat".

**9** Powered by three AAA batteries that can easily be replaced with the unit installed on the mask.

# SPIROCOM L



XL is made for wired transmission of the sound to the long-range radio and has PTT functionality.

- Ex-classed for use in zone zero
- Fits the following masks: ESA, PE, N, S, INSPIRE, Spiromatic

Article no.	Description
33648-200000	S-mask, PTT, Nexus
33648-500000	INSPIRE-mask, PTT, Nexus
33648-300000	ESA/PE/N-mask, PTT, Nexus
33648-200400	S-mask, PTT, Motorola MTP850 S
33648-500400	INSPIRE-mask, PTT, Motorola MTP850 S
33648-300400	ESA/PE/N-mask, PTT, Motorola MTP850 S
33648-200300	S-mask, PTT, Sepura STP 8000/9000
33648-500300	INSPIRE-mask, PTT, Sepura STP 8000/9000
33648-300300	ESA/PE/N-mask, PTT, Sepura STP 8000/9000



**1** Mode button, which is also the on and off button.

**2** PTT button, of a slide type for significantly easier activation.

**3** Cable that is easily connected to the long-range radio.

**4** The desired position against the ear is easily set with the flexible speaker frame.

**5** The microphone is installed in the speaker cone.

**6** Installation on the mask is very easy with a fast connector.

**7** A low battery is indicated with a blinking red LED on the mask unit and a voice that says "Low bat".

**8** Powered with three AAA batteries, or for some models via the battery in the long-range radio.

**9** The sound volume is adjusted using the long-range radio.

# RAI ADAPTER



RAI (Radio Adapter Interface) is a radio adapter that is easily attached directly to the long-range radio.

- Available in a USA and an EU model (different frequencies)
- One variant is Ex-classed for use in zone zero

Article no.	Description
33514-1000	USA, Motorola APX 6000
33514-2001	EU, Motorola MTP850 S
33514-2002	EU, Motorola DP4400/DP4601
33514-2100	EU, SWE, Motorola MTP850 S *

Article no.	Description
33647-01	External PTT with Binder-contact
33515-01	Monophone CT-MultiCom with Binder-contact

\* See page 16 "Scenario #3"



**1** Display that shows the group set

**2** Button to switch between groups.

**3** Robust watertight contact for connection of accessories, such as an external PTT or monophone

**4** Powered from the long-range radio.

# GRA ADAPTER



GRA (Generic Radio Adapter) is a radio adapter that can be connected to most well-known long-range radios on the market.

- Available in a USA and an EU model (different frequencies)
- One variant is Ex-classed for use in zone zero

Article no.	Description
32450-1000	USA, Motorola HT1250
32450-1001	USA, Motorola XTS2500
32450-2003	EU, Sepura STP 8000/9000
32450-2004	EU, Motorola MTP850 S & MTP850 FUG
32540-2005	EU, Entel HT 783
32450-2008	EU, Entel HT 981
32450-2009	EU, ICom F-61
32450-2010	EU, Motorola MTP3250
32450-2011	EU, Motorola CP040

Article no.	Description
32450-2103	EU, SWE, Sepura STP 8000/9000 *
32450-2104	EU, SWE, Motorola MTP850 S & MTP850 FUG *
32450-2106	EU, SWE, Niros 1001/1012 *
32450-20xx	EU, Ex-classed. For radio upon request.

\* See page 16 "Scenario #3"

Article no.	Description
32752-51	Attachment clip
33647-02	External PTT with Binder-contact



**1** Short cable for connection to the long-range radio.

**2** Extra contact - possible to connect accessories.

**3** Display that shows the group set.

**4** Button to turn the unit on or off.

**5** Buttons to switch between groups and adjust volume levels.

**6** Powered with three AAA batteries.  
Low battery is shown with blinking LEDs.

**7** Robust fastening clip available as an accessory.

# TWR ADAPTER



TWR (Two Way Radio Adapter) is a radio adapter that is easily attached directly to the long-range radio.

- Available in a USA and an EU model (different frequencies)

Article no.	Description
30921-1000	USA, Motorola HT1250/Motorola GP340
30921-2000	EU, Motorola GP340
30921-2100	EU, SWE, Motorola GP340 *

\* See page 16 "Scenario #3"



**1** Display that shows the group set.

**3** Fast connection to radio. Easy to attach and remove.

**2** Button to switch between groups.

**4** Powered from the long-range radio.

# APPLICATIONS

Firefighting takes place in different ways and with different routines in most countries, which is why the descriptions below should be seen as examples.

## FIREFIGHTING - SCENARIO #1

Firefighting with a commander who has a long-range radio for communication and does not enter the fire zone.

The commander has a long-range radio set on one channel. The firefighters have a SpiroCom and a long-range radio with a radio adapter (RAI, TWR or GRA).

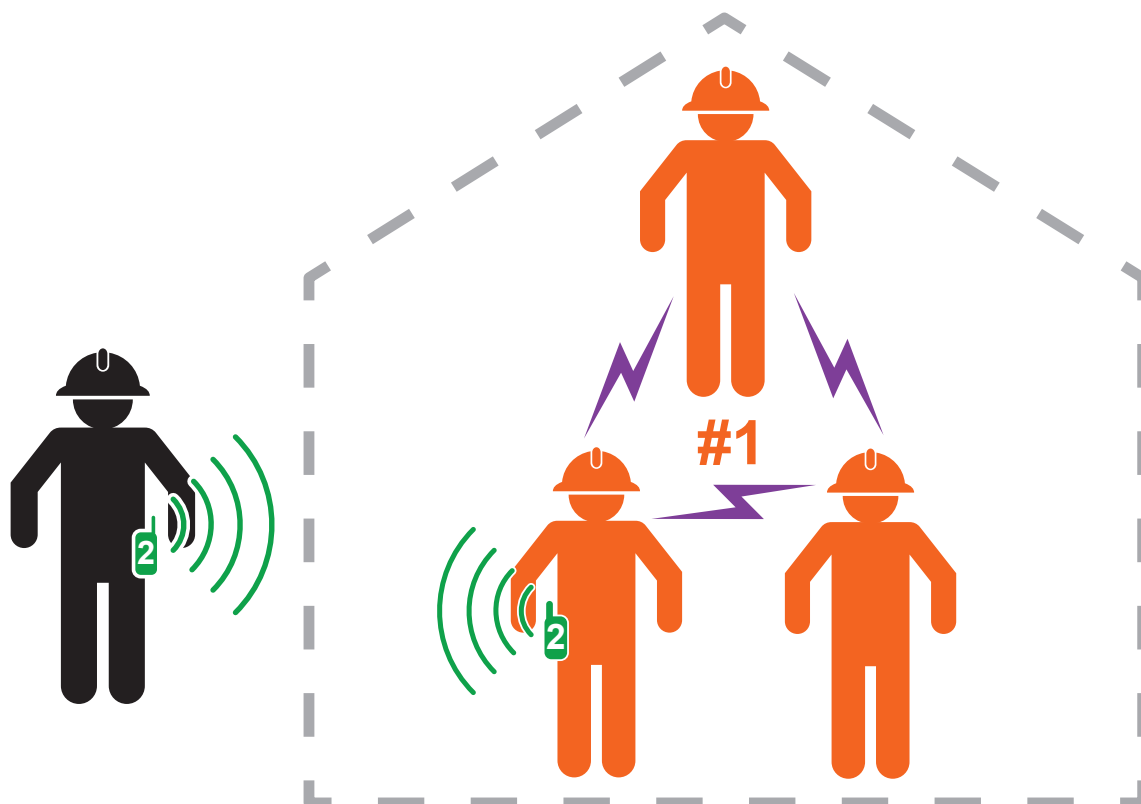
The firefighters have their SpiroCom and radio adapter set on the same group number.

The firefighters can now communicate with each other (Team Talk) by just speaking. No button-pushes are necessary. The commander does not hear the speech between the firefighters.

If a firefighter wants to reach the commander, he activates his PTT button and talks to the commander. All firefighters hear the speech.

The commander answers by activating his PTT button on the long-range radio and all firefighters hear the speech.

A firefighter who is separated from the firefighter with the radio adapter loses contact with both the group and the commander. If the firefighter then rejoins the group, the Team Talk contact resumes.



## FIREFIGHTING - SCENARIO #2

Firefighting with a commander who has a long-range radio for communication and does not enter the fire zone.

The commander has a long-range radio set on one channel. The firefighters have a SpiroCom and a long-range radio each with a radio adapter (RAI, TWR or GRA).

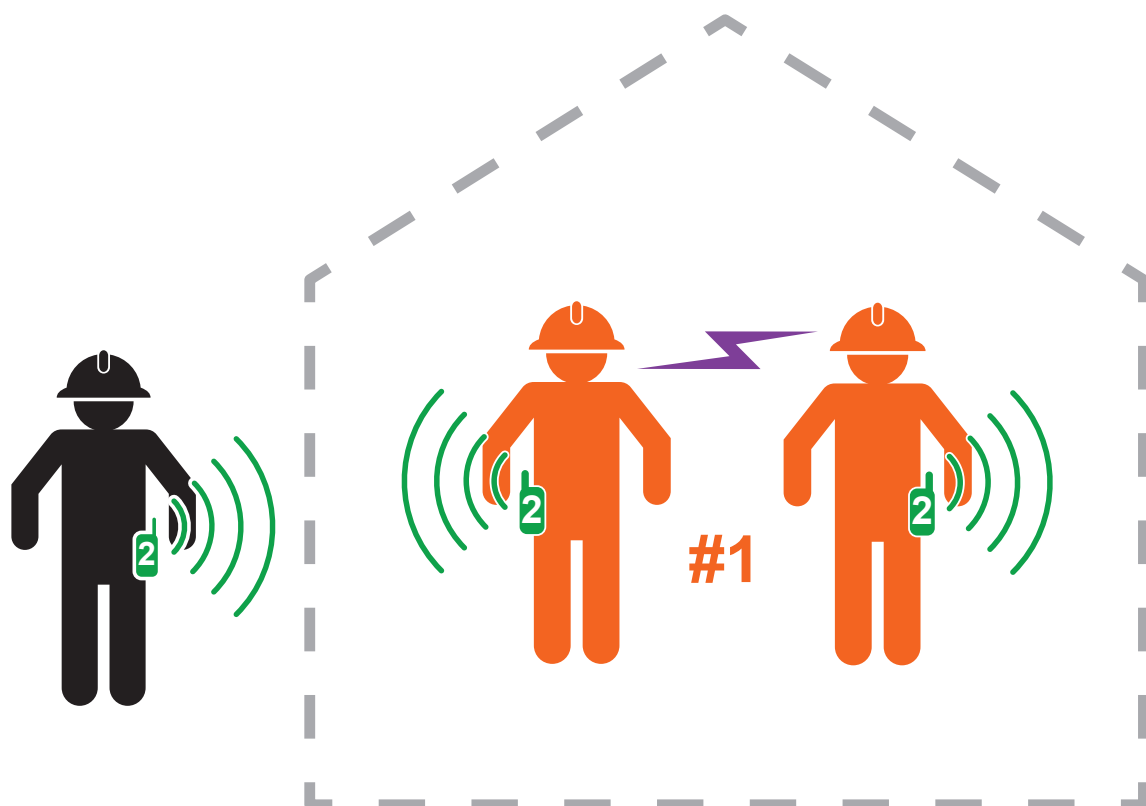
The firefighters have their SpiroCom and radio adapter set on the same group number.

The firefighters can now communicate with each other (Team Talk) by just speaking. No button-pushes are necessary. The commander does not hear the speech between the firefighters.

If a firefighter wants to reach the commander, he activates his PTT button and talks to the commander. All firefighters hear the speech.

The commander answers by activating his PTT button on the long-range radio and all firefighters hear the speech.

A firefighter that is separated from the group loses contact with his group, but over his radio adapter and long-range radio has contact with the commander. If the firefighter then rejoins the group, the Team Talk contact resumes.



## FIREFIGHTING - SCENARIO #3

Firefighting with a commander who has a mask with SpiroCom, a radio adapter and a long-range radio for communication and is mission-ready to enter the fire zone. (This scenario is sometimes called the "Swedish model for firefighting")

The commander has a SpiroCom set to a group that differs from the group the firefighters have set on their SpiroCom. The radio adapter for the commander has the same group setting that he has on his SpiroCom. Long-range radio set on the same channel as the firefighters.

The firefighters have a SpiroCom and a long-range radio each with a radio adapter (RAI, TWR or GRA).

The firefighters have their SpiroCom and radio adapter set on the same group number.

The firefighters can now communicate with each other (Team Talk) by just speaking. No button-pushes are necessary. The commander does not hear the speech between the firefighters.

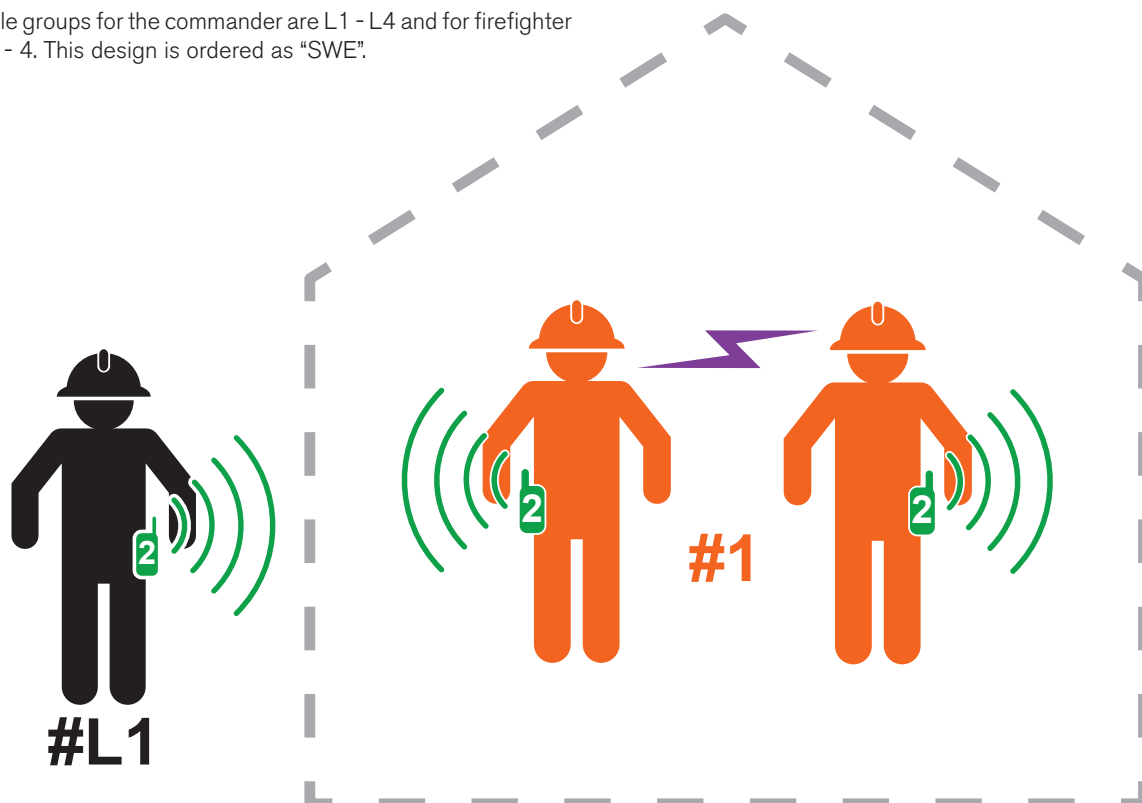
If a firefighter wants to reach the commander, he activates his PTT button and talks to the commander. All firefighters hear the speech.

The commander answers by activating his PTT button on the long-range radio and all firefighters hear the speech.

A firefighter that is separated from the group loses contact with his group, but over his radio adapter and long-range radio has contact with the commander. If the firefighter then rejoins the group, the Team Talk contact resumes.

If the commander enters the fire zone, he can communicate with the firefighters over his PTT button. The firefighters always communicate with the commander over PTT.

Available groups for the commander are L1 - L4 and for firefighter pairs 1 - 4. This design is ordered as "SWE".





## CHEMICAL FIREFIGHTING - SCENARIO #4

Upon chemical firefighting, the firefighter cannot reach the PTT button on the SpiroCom unit, which is why an external PTT is connected to a selected radio adapter. Both RAI and GRA can be connected to an external PTT.

Chemical firefighting with a commander who has a long-range radio for communication and does not enter the chemical zone. The commander has a long-range radio set on one channel.

The chemical firefighters have a SpiroCom and a long-range radio each with a radio adapter (RAI or GRA).

The chemical firefighters have their SpiroCom and radio adapter set on the same group number.

The chemical firefighters can now communicate with each other (Team Talk) by just speaking. No button-pushes are necessary. The commander does not hear the speech between the chemical firefighters.

If a chemical firefighter wants to reach the commander, he activates his external PTT button, which is placed in the safety suit at an appropriate place for external access and speaks to the commander. All chemical firefighters hear the speech.

The commander answers by activating his PTT button on the long-range radio and all chemical firefighters hear the speech.

A chemical firefighter that is separated from the group loses contact with his group, but over his radio adapter and long-range radio has contact with the commander. If the chemical firefighter then rejoins the group, the Team Talk contact resumes.



# CLEANING



The SpiroCom unit can remain on the mask when it is washed manually (according to the instructions in the mask's user manual).

However, before washing, it is important that the unit's microphone is protected with a washing plug.

After washing, let the unit dry in an upright position so that water can be drained from the loudspeaker.

Article no.	Description
33429-01	Washing plug for microphone, INSPIRE-mask
33360-01	Washing plug for microphone, S-mask
33361-01	Washing plug for microphone, ESA-mask





Interspiro has over 90 years of experience as a groundbreaking innovator of respiratory protection for non-breathable environments. Interspiro is a supplier of respiratory protection to defense military organizations, fire and rescue services, industries, utilities, shipping and diving companies around the world. Interspiro is an Ocenco Group company. Ocenco ranks among the world's largest respiratory protection companies.

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