



THE SAVOX RADIO ACCESSORIES BUYING GUIDE

3 STEPS
For Choosing the Right Radio Accessories

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THIS BUYING GUIDE HAS BEEN DEVELOPED TO HELP YOU EVALUATE, COMPARE AND SELECT THE APPROPRIATE RADIO ACCESSORIES FOR YOUR WORKING ENVIRONMENT.

Choosing radio accessories can be a complicated task. You'll want to give consideration to new technologies, device compatibility and reliability, as well as the operational requirements for your radio communications system.

Here's What You Need to Consider:

- 1 Know what accessories are available and which would be best suited for your operational needs
- 2 Make sure the gear can survive your work environment
- 3 Specify the technical features

STEP 1. Overview of radio accessories

Your choice of radio accessories is always dictated by the needs of your working environment. For instance:

- Do you need to clip the radio on your back and control it remotely?
- Are you working in a protective suit that poses physical restrictions for the communications gear?
- Or do you require a headset you can wear with a helmet or gas mask?

LIGHTWEIGHT HEADSETS DIRECTLY CONNECTED TO RADIO

The most simple radio accessory is a headset or earpiece, directly wired to your radio, with an in-line PTT button usually located on the cord.

This direct wire setup is not only lightweight, but also one of the most cost-effective options. In high noise environments, you can wear the headset under hearing protection or use a dedicated noise-cancelling headset.

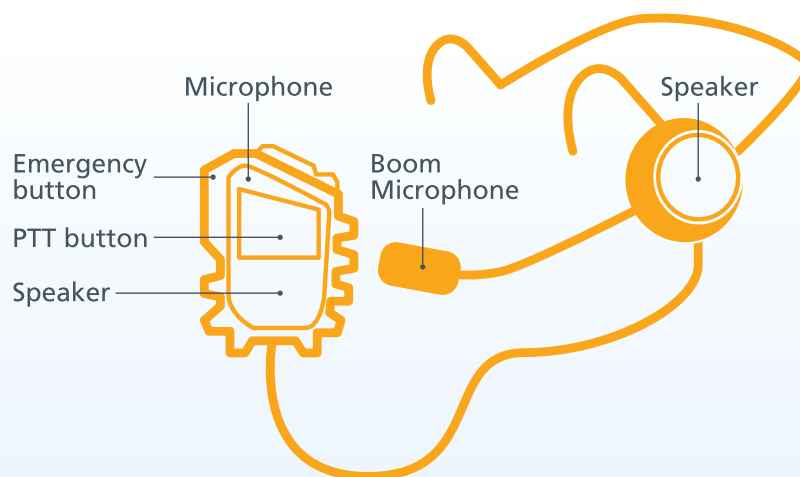
PTT/RSM AND A HEADSET

A more sophisticated product is a separate and large PTT button/RSM that is compatible with a large variety of different headsets.

The PTT button/RSM and headset are connected via a rugged connector. This setup allows greater flexibility for various work environments – especially if large gloves are required.

Radio accessories can be generally divided into the following categories:

- Push-to-Talk (PTT) and headset combinations
- Lightweight earpieces and headsets connected directly to a radio
- Remote speaker microphones
- Special headsets
- Voice amplifiers



REMOTE SPEAKER MICROPHONES

Considered the workhorse of radio accessories, a remote speaker microphone (RSM) is comprised of a microphone, speaker and a PTT button.

A headset of your choice is connected to the RSM when using a mask or helmet. When the helmet is removed (along with the headset connected to your radio), you still have communications through the RSM.

A RSM also lets you to place the radio itself wherever it's most convenient while allowing you to keep all the essential radio functions close at hand.

SPECIAL HEADSETS

In demanding conditions such as using a self-contained breathing apparatus (SCBA), it's vital to ensure communications by choosing a more sophisticated headset that connects either to your PTT or RSM unit, or directly to the radio.

The headset's microphone is a vital part of its functionality. Choose a headset to meet your specific operational needs.



Wearing Protective Gear

When you must use protective gear and need to maintain excellent audio, a bone-conducting microphone can be conveniently mounted inside your helmet where it presses against the skull. Another option is to place the microphone in a throat band.

Voice amplifiers combined with a throat or bone-conducting microphone ensure that your communication is heard when using a protective suit, gas mask or SCBA.

Working with Background Noise

If your work is affected by traffic, factory or fire noises, consider a noise-cancelling microphone that picks up your speech but cancels out the background noise. While noise-cancelling microphones utilize very reliable technology, they must be used close to the mouth.

Working with No Background Noise and No Protective Gear

If cost is a consideration and you work without interfering background noises wearing no protective gear, then electric microphones in radios and remote speaker microphones (RSM) are an option giving you excellent sound quality (effective only when used very close to the mouth).

Other Factors

Other deciding factors when choosing a headset may be weight, ease of use, audio quality, helmet integration or hearing protection.

VOICE AMPLIFIERS

Voice amplifiers used with a throat or a bone-conducting microphone ensures that you are heard when using a protective suit, gas mask or an SCBA.

STEP 2. Ensure operational capability in hostile environments

HOT, COLD, WET, DRY, ELECTROMAGNETIC OR CONTAMINATED

— you need reliable communications equipment to withstand a variety of environments.



HEAT AND COLD

HEAT AND COLD BOTH POSE THEIR OWN REQUIREMENTS FOR COMMUNICATIONS GEAR.

In high temperature environments, the cable is the most vulnerable part of the system. On the other hand, extreme cold can make the controls stiff and render them unusable, while the batteries go flat very quickly. Speakers may also suffer from both high and low temperatures.

Make sure that you choose the accessories that comply with the standards relevant to your industry.

IP RATING - SOLID PARTICLE PROTECTION

Level	Object size protected against
0	—
1	> 50 mm
2	> 12.5 mm
3	> 2.5 mm
4	> 1 mm
5	Dust protected
6	Dust tight

EN standards / IEC standards / MIL standards

Industry standards specify different environmental tests such as temperature, humidity, shocks and bumps, drops, ingress protection, fluid contamination, freezing rain, blowing sand and electromagnetic compatibility.

IP RATING - LIQUID INGRESS PROTECTION

Level	Protected against
0	Not protected
1	Dripping water
2	Dripping water when tilted up to 15°
3	Spraying water
4	Splashing of water
5	Water jets
6	Powerful water jets
6K	Powerful water jets with increased pressure
7	Immersion up to 1m
8	Immersion beyond 1m
9K	Powerful high temperature water jets



HUMIDITY

Humidity is one of the worst enemies of electronic equipment. Ensure your radio accessories comply to a sufficient ingress protection (IP) level.

When looking at the IP code, the first digit is the protection level against solid particles, while the second digit is the protection level for liquids.

For example, an IP67 rated product is completely protected against dust (Level 6) and can be immersed. up to one meter (Level 7).

CONTAMINATION

In contaminated environments the radio and its accessories are usually worn inside protective suits. This poses additional challenges to radio accessories as you should be able to use it with heavily protected hands.

Gear that has been designed for use in CBRNe environments (chemical, biological, radiological, nuclear defense, and improvised explosives) are most likely to have large PTT buttons that can be activated through protective layers.



STEP 3. Essential technical requirements

ENSURE COMPATIBILITY, QUALITY, RELIABILITY, SERVICE AND SUPPORT.



COMPATIBILITY

Radio manufacturers typically have various analog, digital, TETRA or P 25 standard radios - each one sporting a different plug.

Make sure that your radio accessory supplier is up-to-date with the latest radios and their requirements in terms of compatibility.



AUDIO QUALITY

The quality of audio is dependent on three factors.

1. The radio itself – the accessories reproduce the audio transmitted to it
2. The accessories plugged in the radio
3. Correct mounting and usage of accessories

Take a look at the technical spec sheets and compare the figures that will read like this:

SPEAKER: 8 Ohm Max 2W, SPL v90dB/0.5W/0.2m

MICROPHONE: Omnidirectional, sensitivity -39dB +/-2dB

If you are accustomed to reading tech specs, you may have a good idea of the quality. But the best practice would be to test the units in real working environments.

What matters the most is the perceived quality – is it sufficient to get your message across?

Also keep in mind that digital and TETRA radios require better sound quality from accessories than earlier analog equipment.

IN-SERVICE LIFE

To reach a predictable in-service life of 5 to 10 years, ensure your radio accessory supplier provides comprehensive maintenance and spare parts supply services.

In particular, radio cable damage causes up to 95% of all radio accessory failures. Can your radio accessory cable be easily and economically replaced?

Also take into consideration the service network and warranty of your radio accessory supplier.

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