

# *PWRspkr 15W*



[www.westmountainradio.com](http://www.westmountainradio.com)

1020 Spring City Drive

Waukesha, WI 53186

262-522-6503

[sales@westmountainradio.com](mailto:sales@westmountainradio.com)

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Thank you for choosing the PWRspkr 15W. You will find that this LOUD loudspeaker improves your communications especially in noisy environments.

The PWRspkr 15W is a loudspeaker containing a 15-watt RMS linear power amplifier. The amplifier uses an active bandpass filter that limits the audio to a 300Hz to 3.2kHz bandwidth. This makes it ideal for voice communications.

The PWRspkr 15W comes with two six foot cables. The audio cable plugs into the 3.5 mm speaker or headphone output of a radio. The Powerpole® connector plugs into any 12 volt power source.

The volume control allows for setting the audio level for comfortable listening. The PWRspkr 15W has plenty of gain. It can get very loud and this is useful in a noisy vehicle.

The PWRspkr 15W is ideal for mobile radio stations for hams, CB radio, commercial radio, emergency radio, ambulances, police vehicles, and small public address systems.

## **Installation**

The PWRspkr 15W should be installed in a weather-protected area. If it is for communication purposes place it near the operator. The cables are six feet long.

Remove the bracket from the speaker housing. Then secure the bracket to any flat surface using the supplied screws or other hardware. Re-mount the loudspeaker, aim it, and securely tighten the knurled nuts.

The audio cable has a stereo 3.5 mm plug. The tip is for the audio, the ring is not connected, and the sleeve is common. This connector is for mono audio. When plugged into a stereo source the PWRspkr 15W will play the left channel audio only; it will not short out the right channel. A stereo extension cable may be added if needed.

The power cable is fitted with red and black Powerpole® connectors. It should be plugged into a fused source, such as a RIGrunner power strip connected to 12 volts. Use a 5 Amp fuse. The Red is plus 12 volts, and Black is common. An extension cable may be used if needed.

(Powerpole® is a registered trademark of [Anderson Power Products](#))

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## Operation

Turn on the PWRspkr 15W using the Power/Volume knob . The green LED will light. Adjust the volume control for the intended listening level.

**Note:** The radio also has a volume control and it must be turned up for the PWRspkr 15W to work.

It is possible to use either the radio or PWRspkr 15 W volume as the master. It is recommended to set one volume control half way up. Then the adjustable volume control can go both above and below the nominal listening level.

## Circuit Description

The PWRspkr uses a 4-inch loudspeaker driven with a 15-watt RMS power amplifier.

The power amplifier is a class-AB linear amplifier connected as a bridged-load (BTL). This allows the amplifier to produce 15 watts RMS into 4 ohms audio when powered by 13.8 volts without using an output transformer. Note that both leads of the loudspeaker driver are “hot” and neither can be grounded.

The power amplifier integrated circuit has internal protection for overheating and a short-circuited loudspeaker.

Input audio is applied through a resistive dividing network and coupled to the pre-amplifier via an isolating transformer. The input resistance is 100 ohms. There are filter capacitors to remove any rf pickup from the audio line.

The internal pre-amplifier contains an active 300 Hz to 3.2kHz band-pass filter. Note that the filter permits only “intelligence-energy” to reach the loudspeaker driver. The “lows” and the “highs” are attenuated and not applied to the loudspeaker. This is why the sound level can be very high without damaging the loudspeaker from over excursion or excessive heat.

The loudspeaker sound pressure level (SPL) is 102.5 dB typical at 1 meter before electronic clipping.

DC power is applied through a ferrite inductor and shunt capacitor to remove any RF on the power leads. Large electrolytic capacitors further filter the internal DC for any noise or ripple appearing on the DC power line.

## Specifications

<b>Dimensions</b>	5.5 x 4.3 x 2.5 in. 6.5 x 4.7 x 2.7 in. when mounted
<b>Power Requirements</b>	9 to 16 VDC Current: 2A max w/ 13.8V supply Quiescent current 90mA typical
<b>Sensitivity</b>	0.83 VRMS produces full output into 4 ohms (1kHz signal, 13.8V supply)
<b>Loudspeaker Driver</b>	4 in. treated paper cone 4 ohm impedance Rated Power: 20 watts
<b>Power Amplifier - Integrated Circuit</b>	Class AB Linear BTL (bridged-tied-load) circuit 15 watts RMS audio output into 4 ohms when powered by 13.8V supply Short circuit protected by shut down Over-heat protected by shut down Heat sink is the two PCB ground planes
<b>Pre-Amplifier</b>	Active four stage filter with gain Frequency response is flat 300 to 3.2kHz 18 dB/octave high-pass at 300Hz (-3 dB) 18 dB/octave low-pass at 3.2kHz (-3 dB)

### PWRspkr 15W Warranty

*PWRspkr 15W* is warranted against failure due to defects in workmanship or materials for one year after the date of purchase from West Mountain Radio. Warranty does not cover damage caused by abuse, accident, misuse, improper or abnormal usage, failure to follow instructions, improper installation, alteration, lightning, or other incidence of excessive voltage or current. If failure occurs within this period, return the *PWRspkr 15W* or accessory to West Mountain Radio at your shipping expense. The device or accessory will be repaired or replaced, at our option, without charge, and returned to you at our shipping expense. Repaired or replaced items are warranted for the remainder of the original warranty period. You will be charged for repair or replacement of the *PWRspkr 15W* or accessory made after the expiration of the warranty period.

West Mountain Radio shall have no liability or responsibility to customer or any other person or entity with respect to any liability, loss, or damage caused directly or indirectly by use or performance of the products or arising out of any breach of this warranty, including, but not limited to, any damages resulting from inconvenience, loss of time, data, property, revenue, or profit, or any indirect, special incidental, or consequential damages, even if West Mountain Radio has been advised of such damages.

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