



Walkie Talkies and Effective Range

We are often asked about the radios that we sell and hire: What Is The Range? The answer to this question is a little more involved than simply quoting a single number.

All of our hire walkie-talkies have the standard 4 watts power output, which is as high as you will find on any brand of UHF professional walkie-talkie in the UK, or in fact, anywhere else.

RANGE VS. TERRAIN	
HILL TO VALLEY	MAX RANGE
OPEN FIELD	BETTER
COMMUNITY SETTING	MORE
WOODED AREA	AVERAGE
URBAN SETTING	

The "range" depends massively on where the radio is used.

Radio signals travel from the transmitting radio in straight lines.

Every solid object that the radio signal passes through absorbs some of the radio signal.

So, radio signals might get 2 miles in open, flattish countryside.

Perhaps even further in "ideal" applications - such as hilltop-to-valley communications where there is perfect "Line Of Sight" with no hills, trees or buildings to get in the way.

But only maybe half a mile, perhaps even less, in a city with lots of big buildings, or within a large building.

Within buildings the "range" or signal penetration depends a lot on what the structure is made of: metal walls, or very thick stone or brick walls, can totally block radio signals.

Use of a repeater with a set of walkie-talkies can increase the area of radio communication coverage.

"But I've Seen Walkie Talkie Radios With Advertised Ranges of 10 or even 20 Miles or more?"

	They presumably get these figures by testing in very "ideal" but unrealistic conditions, for example as in the diagram, by communicating from two hill-tops several miles apart - so that there is perfect "Line Of Sight" between the two radios.
	Of course this gives an "artificially" high range which bears little resemblance to what you might expect in more normal usage.

One limiting factor that affects walkie-talkie range is the curvature of the earth.

	The world (as most people know!) is round, and this means that beyond around six miles maximum, radio signals from radios at near ground level are blocked by the curvature of the earth, and that's if they weren't blocked much sooner by hilly terrain, buildings, etc.
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Sadly, some radio manufacturers have got into a ridiculous rivalry, whereby they claim bigger and bigger "maximum range" figures for their products, with the distances claimed bearing less and less relationship to what customers will usually achieve in normal conditions of use.

They know that the typical uninformed customer, looking at several models of radio on the shelves in a shop, will see that one box claims a range of "up to 3 miles" and another says "up to 8 miles" and choose the one with the biggest number of miles. When in fact, the radios usually have the same power output and the same size of aerial, and so their real "ranges" will be similar - they are subject to the same laws of physics.

We prefer to be honest about what is likely or realistic in terms of radio range.