

Getting Started on 2m SSB

Try the “Other Mode” on 2 Meters

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10 Dec 2016

In the past decade, a new breed of amateur radio transceiver has hit the marketplace — radios that cover from HF through VHF/UHF frequencies. These radios include the ICOM IC-706, the ICOM IC-9100, the Yaesu FT-100 and the Yaesu FT-991. This is not an exhaustive list since there are new radios being introduced every year with additional capability.

These radios include “all-mode capability” which means that they can operate FM, CW and SSB on the VHF bands. Clearly, FM is the most commonly used mode on VHF and UHF but having SSB opens up a whole new range of operating fun.

Why SSB?

FM is the most popular mode primarily due to the wide availability of FM repeaters. These repeaters extend the operating range on VHF and enable low power handheld transceivers to communicate over 100 miles. FM is also used on simplex to make contacts directly without repeaters. The main disadvantage of FM is relatively poor performance when signals are weak, which is where SSB really shines. A weak FM signal can disappear completely into the noise while a comparable SSB signal is still quite readable. How big of a difference does this really make? Perhaps 10 dB or more, which corresponds to one or two S-units. Put a different way, using SSB instead of FM can be equivalent to having a beam antenna with 10 dB of gain, just by changing modulation types. So this is a big deal and radio amateurs interested in serious VHF work have naturally chosen SSB as the preferred voice mode. (You will also hear them using Morse code or CW transmissions, which is even more efficient than SSB.)

Just as an example of what is possible on SSB, during one VHF contest I was operating portable on Garden of the Gods Road in Colorado Springs. I had just dismantled my 2m yagi antenna and was listening to 2m SSB on a short mobile whip antenna. Suddenly, I heard WA7KYM in Cheyenne, Wyoming calling CQ from about 160 miles away. I figured that with my puny little antenna and only 10 watts of power, there was no way he was going to hear me. But, what the heck, it was a contest and it would be more points so I gave him a call. To my surprise, WA7KYM heard me and we made the contact without much signal strength to spare. Now, to be accurate, this contact has more to do with WA7KYM’s “big gun” station (linear amplifier, low noise preamp and large antenna array) than it had to do with my 10 watts and a small whip. The key point here is that this contact would not have happened using FM and was only possible because of SSB.

When and Where to Operate

The SSB portion of the band runs from 144.100 MHz to 144.275 MHz and Upper Sideband (USB) is used. The 2M SSB calling frequency is 144.200 MHz, so that is the first place to look for activity or to call CQ. One of the realities of 2m SSB operation is that many times, no one is on the air. There is just not that much activity out there, compared to 2m FM. Some amateurs get discouraged, turn off the radio and miss the thrill of working distant stations during a band opening. To get started on 2m SSB, the trick is to get on the air at times when you know there will be activity— during VHF nets and VHF contests.

Here in Colorado, the local [Rocky Mountain VHF Plus net](#) is on Monday night at 8:00 PM local time on 144.220 MHz (USB). This net is centered in the Denver area but VHF enthusiasts check in from all around Colorado. It is very common to have stations check in from the bordering states of Wyoming, Nebraska, Kansas, New Mexico or even Oklahoma. More information on the net and other VHF activities can be found at <http://www.rmvhf.org>

VHF Contests

Think of VHF contests as “VHF activity weekend” since they are a great opportunity to just get on the air and work most of the local 2m SSB enthusiasts. The main contests are the [ARRL June VHF Contest](#), the [ARRL January VHF Contest](#), the [ARRL September VHF Contest](#) and the [CQ Worldwide VHF Contest](#) in July. For more information, take a look at the article [How to Work a VHF Contest](#).

Equipment

The required equipment for getting started on 2m SSB is pretty basic – a transceiver capable of 2m SSB and a 2m antenna. If you own one of the rigs mentioned above then you are probably ready to go. The 2m antenna you already have is probably vertically polarized since that is what we use for 2m FM, both mobile and base stations. All of the 1/4-wave and 5/8-wave antennas that are commonly used for 2m mobile work are vertically polarized. Most omni-directional base station antennas such as those made by Cushcraft, Diamond, Comet, etc. are vertical, too. These antennas will work for SSB but most of the really active 2m SSB stations use horizontally-polarized antennas. Vertically-polarized stations can work horizontally-polarized stations but there will be a substantial signal loss (about 20dB?). If vertical is all you have, then give it a try. If you can get a horizontal antenna, then your results will be much better.

The most common horizontally-polarized antenna on 2m is a Yagi mounted so that its elements are parallel to the ground. There are a variety of horizontally-polarized, omni-directional mobile antennas, such as the HO antenna made by M2 (see <http://www.m2inc.com>).

Get on the Air

This information is intended to get your started on your way to operating 2m on the SSB portion of the band. You will learn more as you get into it and you will find that most of the people hanging out down on sideband are friendly, knowledgeable and helpful. They are always happy to see new call signs on the band.

Some resources available on the web are:

Rocky Mountain VHF Plus web page: <http://www.rmvhf.org>

VHF Operating articles by KØNR (similar to this one) at: <http://www.k0nr.com/>

North East Weak Signal Group web site at: <http://www.newsvhf.com/>