

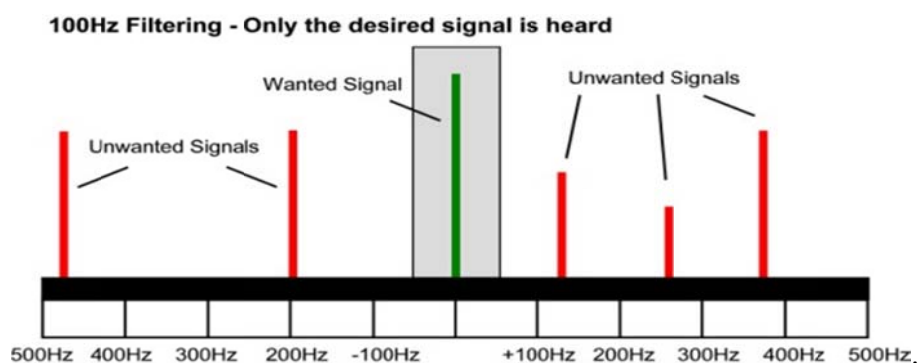
Your first HF rig is likely to be an expensive purchase, so it's important to take time to consider exactly what you need. Talk to one or two existing amateurs, perhaps from your local club, to make sure you buy something that will do what you need. Consider what bands you want to use, whether you plan to work portable, if you'll want to use data modes, and what power you'll need (especially if you move from 10 watts to 50+ watts). It's also worth considering the second-hand market for a bargain, but check it first.

DSP and Filtering

As part of the **Introduction to HF** article, written for Charlie Davy MOPZT for Essex Ham, Charlie explains about Digital Signal Processing and filtering – worth a read before making a purchase.

All transceivers have a volume control, most have a squelch knob (useful on FM), and some have an RF Gain option which lets you reduce the sensitivity of the receiver when faced with a very strong/local signal. Modern transceivers usually offer some form of Digital Signal Processing (DSP) which can tailor the sound of the signal either on an IF (Intermediate Frequency) or AF (Audio Frequency) basis.

AF, the most common - the width of the signal can be adjusted so that unwanted "side-splatter" can be attenuated. The receiver can still be overloaded by strong adjacent signals. IF-based filtering, either built-in to more advanced radios, or via an optional plug-in filter, can dramatically improve the radio's tolerance to strong adjacent signals. The following diagram shows several signals spread across 1kHz – Let's assume that these are all CW signals and we are only interested in the centre signal. With the radio's pass-band set to around 1000Hz, a total of 6 signals would be heard, and it would be very hard to pick-out what's being sent by the green (wanted) signal. So, by using a filter we can reduce the width of the receiver's pass-band to a very small amount, in this case: 100Hz. The radio is now concentrating solely on the signal we are interested in – The others are now inaudible (or significantly attenuated). With a narrow filter like this, it's possible to listen to a very weak signal despite the presence of strong signals nearby.



Worth a look – Great for getting started with HF

- **Yaesu FT-450D** (HF and 50MHz): Compact with a range of IF-based DSP. 100-watt RF output and an easy-to-use front-panel. A very good HF radio that works great on CW, SSB or digimodes.
- **Yaesu FT-857D** (HF, 50MHz, 144MHz, 432MHz): A "Shack-in-a-Box" as it covers most of the Ham bands. A mobile-sized radio with a removable front-panel so works great in a vehicle but can also be used portable or in your shack. It offers 100w on HF+6m with 50w on 2m and 20w on 70cm.

For the full article, and more Getting Started Guides, go to essexham.co.uk/getstarted