



Technical Bulletin

## **Fighting Back Against BCB Interference**

Broadcast band interference is a common nuisance to radio reception efforts and is caused by powerful nearby AM broadcasting station transmitting in the 550kc to 1700kc frequency band. A station in this area may be very close to where you live and employ a receiving station. If you're receiving interference of this kind you will probably know it right away, especially if you can hear music or commercial announcements on dozens of frequencies well separated from the AM broadcast band. Sometimes the station can be heard every few kilohertz across a broad spectrum of the HF frequency range.

Can you fight back against this legal onslaught? You bet, but there are a few important steps to take first. To start, try to identify what type of interference exists. If the offending station can be heard all over the place in the HF frequency range or commonly mixes with other station's signals you likely have a case of fundamental RF voltage overload caused by the offending station's primary transmission. Identify which station is the offender by flipping back and forth between the interference and the AM broadcast band, trying to match the voice or music with the various loud stations heard. If the problem appears to be of the overload type a BCB filter is the best answer. Choose one that puts the offending station the furthest possible into the filter's stopband, or frequency reject area. BCB filters can often insert 70db or more of attenuation, making the offending station manageable.

The other type of BCB interference is caused by harmonic generation from the AM broadcast station's transmitter site. Harmonics are the tendency of a radio transmitter to exhibit a small amount of its content output on multiples of the original transmission frequency. These spurious radiations are filtered by the transmitter's final circuitry, but not fully. The result is a 5KW station with several measurable watts output on frequency multiples. Example: a station on 1,200kc will have outputs on 2,400kc, 3,600kc, 4,800kc, etc.

Problems of this kind can only be dealt with by the transmitter's owners. Best bet - if you're suffering from this kind of interference try to identify the offending station and tell them about it. Call or write the station and address your correspondence to the chief engineer, requesting that he take a look at the station's content output and see if some additional filtration is warranted or possible. Sometimes the station may claim to meet FCC harmonic specifications

and they are required to do nothing else. They are right, so be diplomatic and polite. Ordinarily the FCC will not intervene if the station meets the Commission's purity standards. Unfortunately, that still does not solve your problem. Co-op diplomatic work and possibly a visit to the station personally may be helpful.

Another type of interference is caused by re-radiation of AM broadcast signals and effects from the powerful local signal mixing with electrical power distribution systems or overhead telephone lines. These cases are pretty rare and somewhat difficult to find. Special equipment and technical expertise available from a local radio club may be helpful in these instances.

In your efforts to live with AM broadcasters keep in mind that some local efforts at your own station can also help, such as good short distance equipment grounding, shielding and operating with horizontally polarized antennas, and sometimes even the use of bandpass filters for HF application or attenuators.

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