

The IC-7800 has highly-advanced DSP units. To bring out the maximum DSP potential, Icom's engineering team has selected only the best parts to be used in the receiver stages, and have simplified the receiver circuit using the latest technology. As a result, the combination of digital and analog technology has achieved a level never seen before.

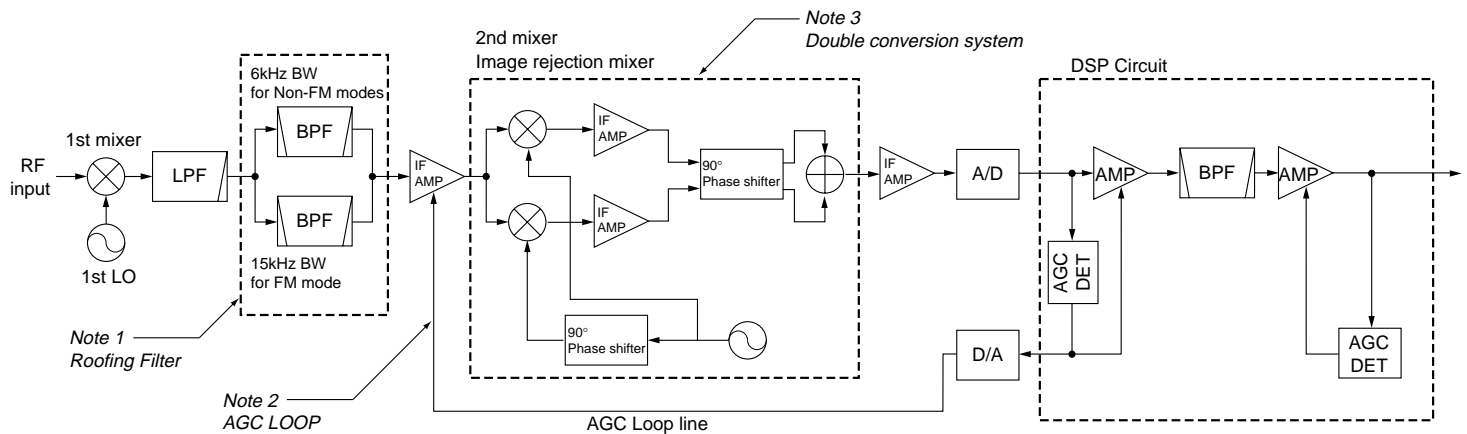


Fig.1 Receiver block diagram

Two roofing filters (See Note 1 in the diagram)

In most transceivers, the 1st IF filter or so called 'roofing filter', covers the maximum bandwidth in the receiving modes. Therefore most 'all mode' transceivers have a 15kHz (or more) 1st IF filter which also covers FM mode. The IC-7800 has two 1st IF filters, one for FM mode and the other for non-FM (SSB, CW, AM and RTTY) modes. The 1st IF filter for the non FM modes has just a 6kHz bandwidth, providing excellent blocking characteristics against nearby strong signals. In addition, the wide dynamic range IF amplifier after the filter improves the inband IMD characteristics in the roofing filter.

AGC loop management (See Note 2 in the diagram)

Icom has redesigned the AGC loop management, so that not only the digital IF filter and manual notch but also the 1st IF stage is adopted in the AGC loop controlled by the DSP unit. That means the IF amplifier is never distorted by the strong signals, providing 110dB of ultra wide dynamic range in the receiver.

Double conversion system (See Note 3 in the diagram)

Most transceivers have triple (or more) conversion systems. But the mixers used in each stage often become a cause of signal distortion and spurious emissions. The IC-7800 makes it possible to construct a double conversion super-heterodyne system by adopting an image rejection mixer. This system reduces signal distortion through IF processing and provides a high-fidelity signal to the DSP unit.

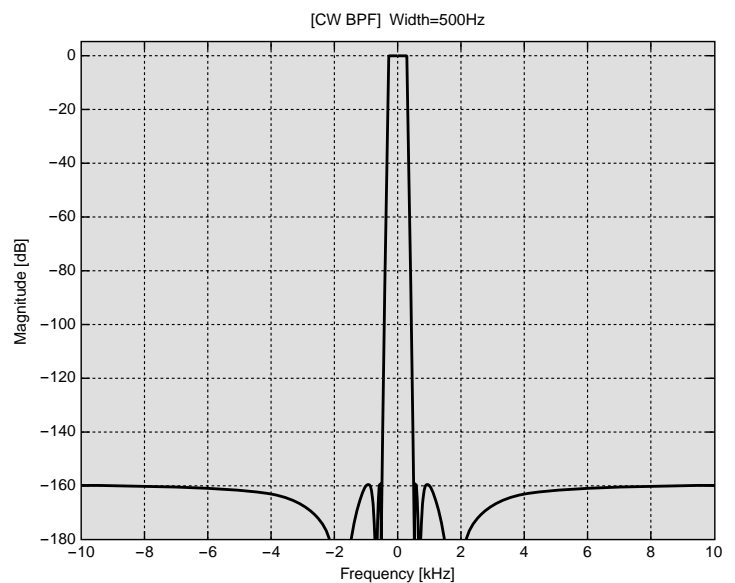


Fig.2 IF Filter Characteristic created by the DSP unit