

B. The Super-Heterodyne Receiver

The "super-het" is by far the most popular receiver architecture in use today.

HO: The Super-Heterodyne Receiver

Q: So how do we tune a super-het? To what frequency should we set the local oscillator?

A: HO: Super-Heterodyne Tuning

Another vital element of a super-het receiver is the preselector filter.

HO: The Preselector Filter

Q: So what should this preselector filter be? How should we determine the required order of this filter?

A: HO: The Image and Third-Order Signal Rejection

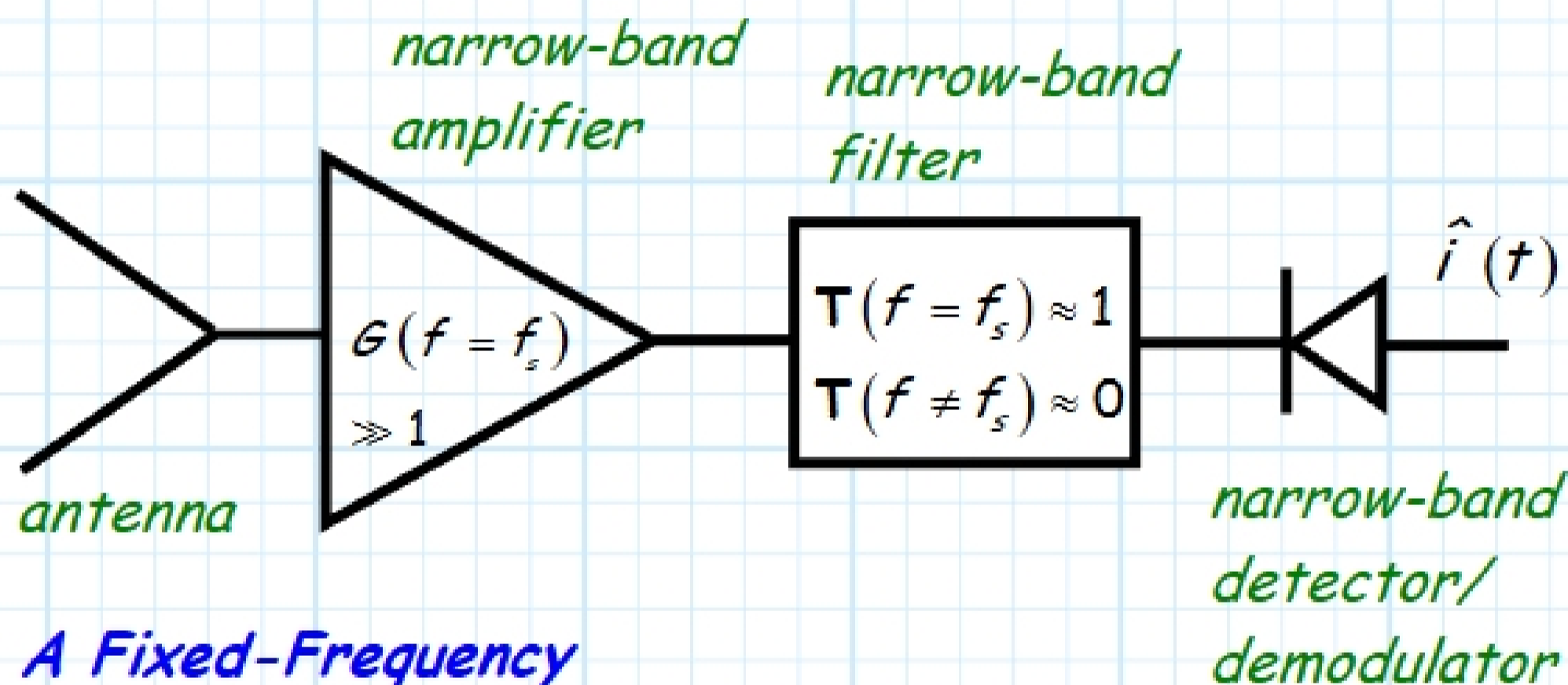
Q: I have heard of some receivers being described as up-conversion receivers, what exactly are they?

A: HO: Up-Conversion

There are many variants of the basic super-het receiver that can improve receiver performance. HO: Advanced Receiver Designs

The Super-Heterodyne Receiver

Note that the homodyne receiver would be an excellent design if we **always** wanted to receive a signal at **one** particular signal frequency (f_s , say):



A Fixed-Frequency Homodyne Receiver

No tuning is required!

Moreover, we can **optimize** the amplifier, filter, and detector performance for **one—and only one—**signal frequency (i.e., f_s).

Q: *Couldn't we just build one of these fixed-frequency homodyne receivers for **each** and every signal frequency of interest?*

A: Absolutely! And we sometimes (but not often) do. We call these receivers **channelized receivers**.

