Technician License Course

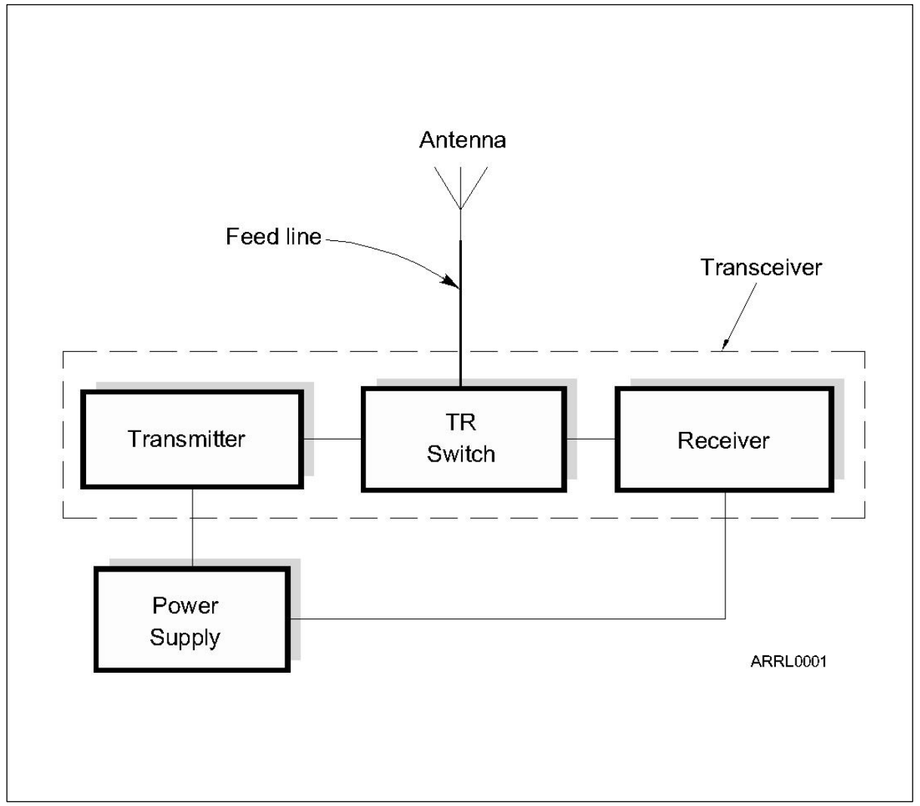
Chapter 3

Section 3.3 Radio Circuits

The Basic Transceiver

The Basic Transceiver

- Combination of "transmitter" and "receiver"



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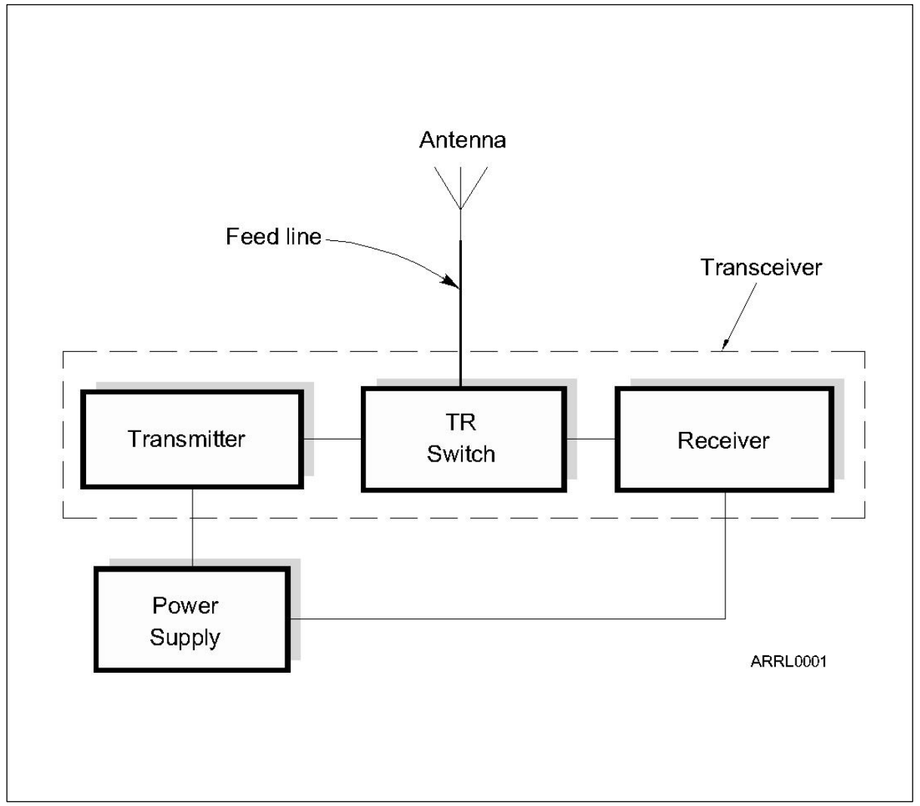

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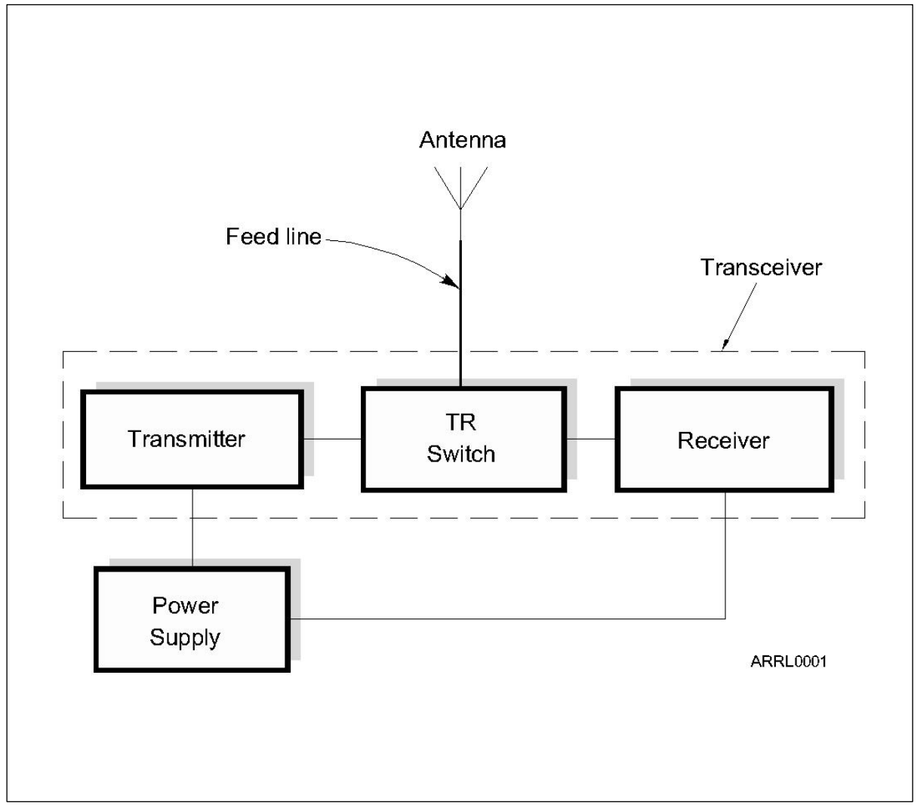
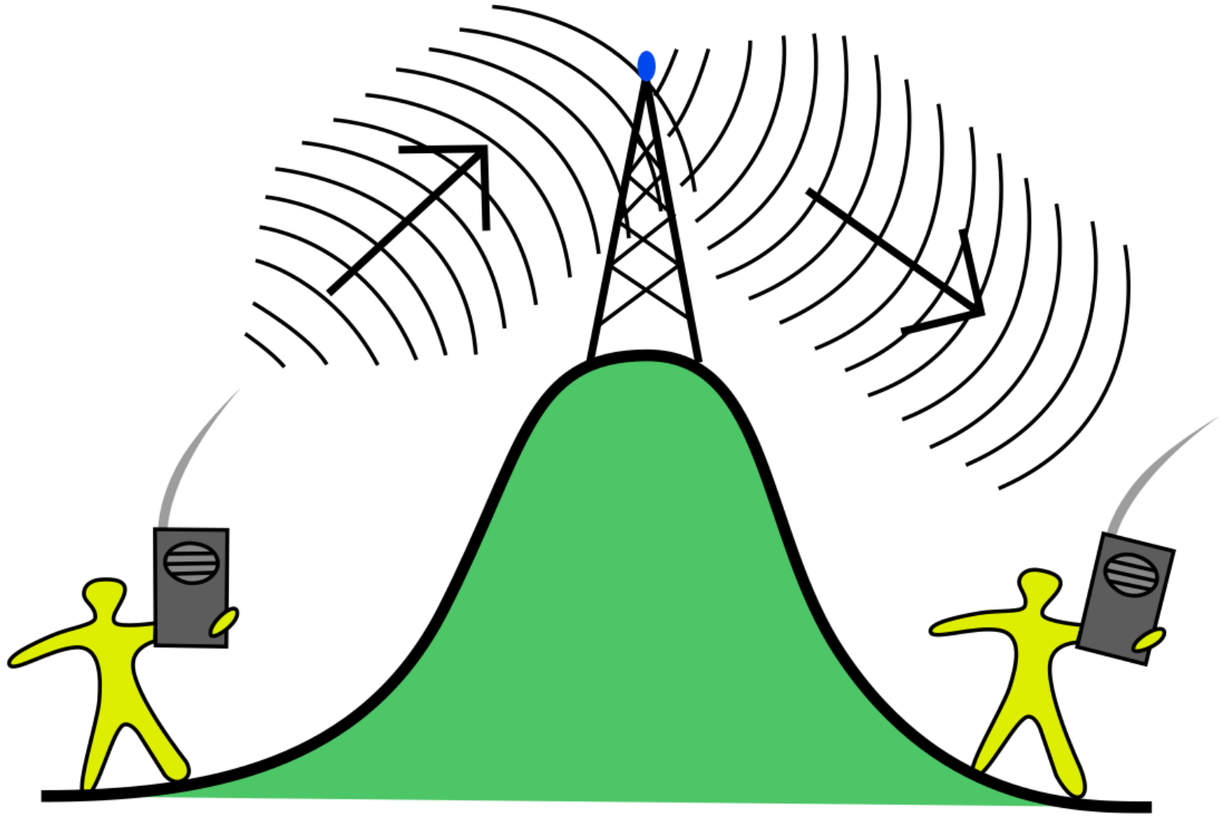
- Combination of “transmitter” and “receiver”
- Abbreviated “XCVR” (X = trans)
- Antenna switched between transmitter and receiver by the TR switch



Transmit/Receive (TR) Switch

- TR switch allows a single antenna to be switched to the transmitter when sending and to the receiver when receiving.
- In a transceiver, the TR switch is inside the unit and operates automatically.
- Transceivers cannot transmit and receive at the same time like a repeater.

The Basic Repeater



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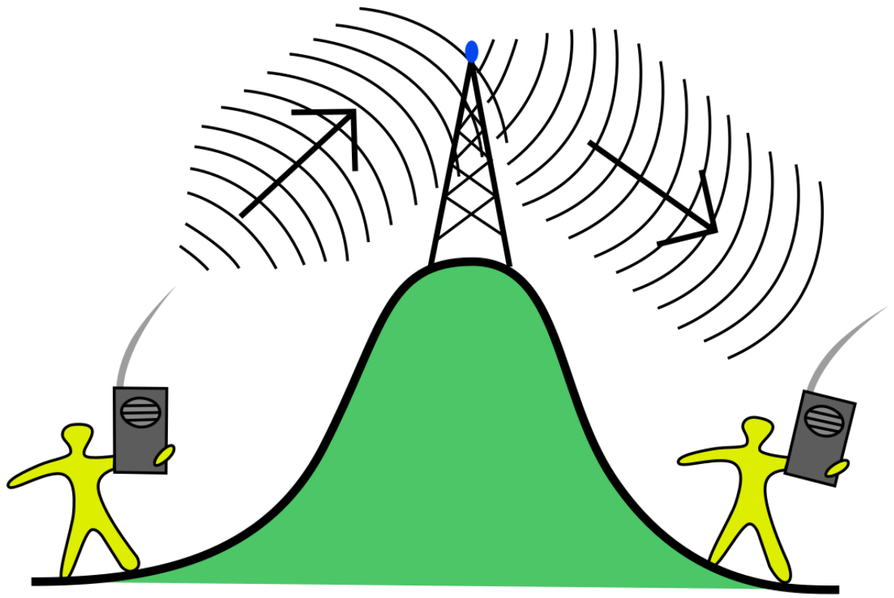

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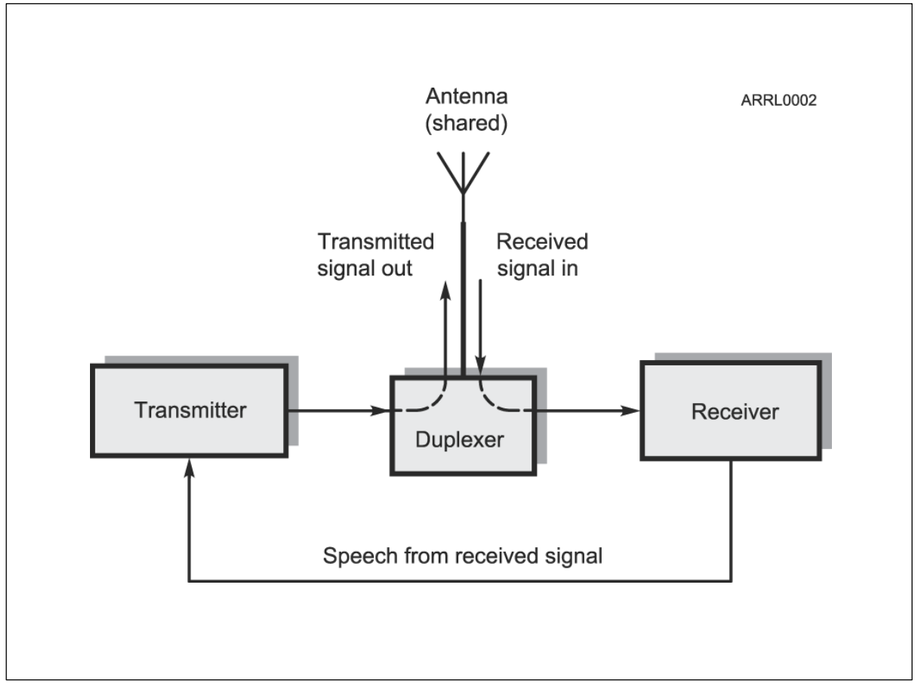
- Simultaneously re-transmits received signal on the same band, not the same frequency



The Basic Repeater

- Relays signals from low-power stations over a wide area
- Simultaneously re-transmits received signal on the same band, not the same frequency
- TR switch replaced with duplexer which allows antenna to be shared without switching

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- The radio wave carrying the information is sent from the station antenna into space.

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- The radio wave carrying the information is intercepted by the receiving station's antenna.
- The receiver extracts the information from the received wave.
- The information is then presented to the user in a format that can be understood (sound, picture, words on a computer screen, response to a command, etc.).

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- This makes ham radio fun…learning all about how radios work.
- Don’t be intimidated. You will be required to only know the basics, but you can learn as much about the “art and science” of radio as you want.

Filters

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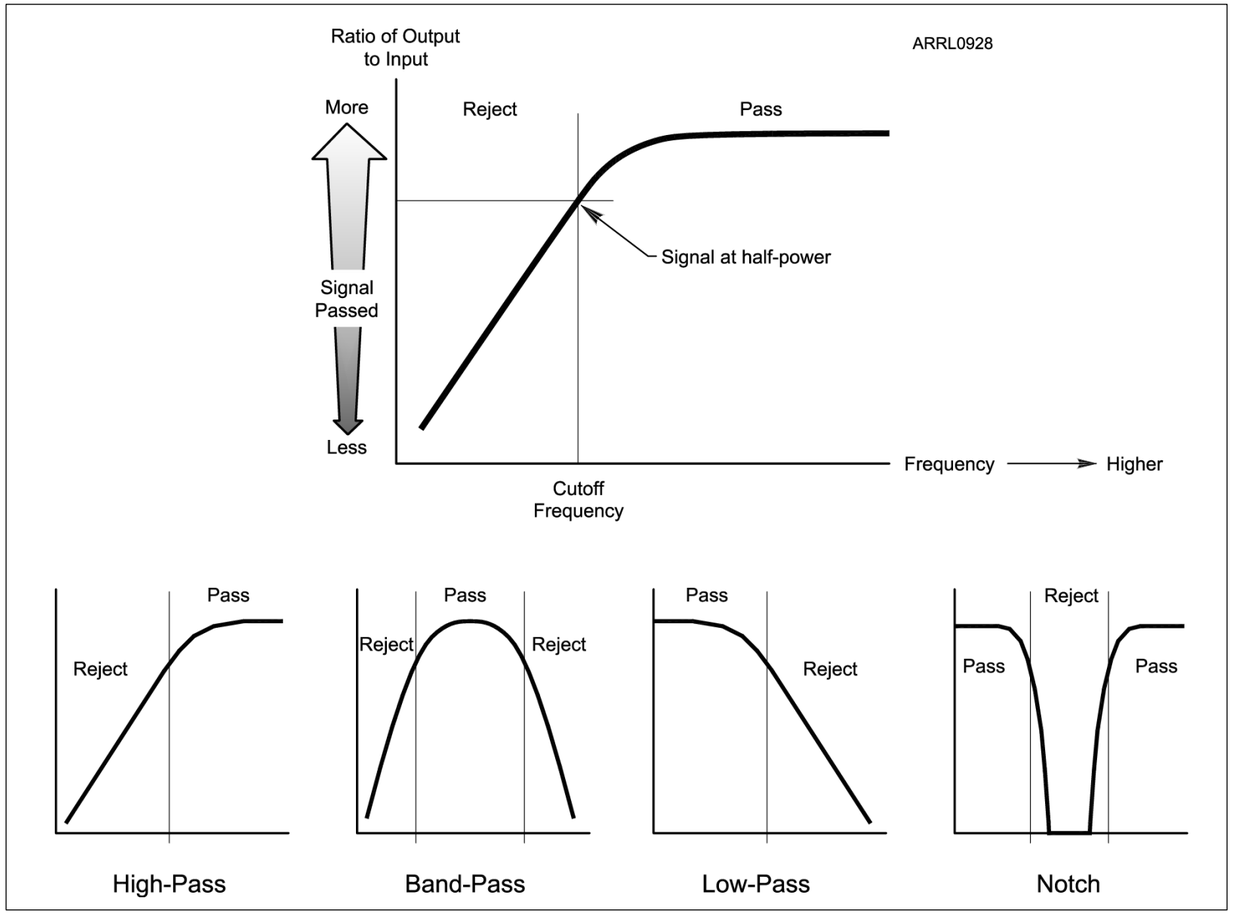
- Filters can reject, enhance, or modify signals.

Types of Filters



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  - Amplitude, frequency, or phase

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  - Modulators add information to an RF signal, demodulators recover the information

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- Different than a *multiplier* which multiplies a signal's frequency by some integer, usually 2 or 3

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- *Preamplifiers* make a receiver more sensitive
  - Preamplifiers added between antenna and receiver

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Are there any questions?