

# Glossary of FM and Repeater Terminology

**Access code** — One or more numbers and/or symbols that are keyed into the repeater with a DTMF tone pad to activate a repeater function, such as an autopatch.

**Autopatch** — A device that interfaces a repeater to the telephone system to permit repeater users to make telephone calls. Often just called a “patch.”

**Carrier-operated relay (COR)** — A device that causes the repeater to transmit in response to a received signal. Solid state versions may be called COS (carrier-operated switch).

**Channel** — The pair of frequencies (input and output) used by a repeater, or a single frequency used for simplex.

**Channel step** — The difference (in kHz) between FM channels. The common steps are 15 and 20 kHz for 2 meter repeaters, 20 kHz for 222 MHz repeaters, and 25 kHz for 440 MHz repeaters. Closer spacing is beginning to be used in some congested areas.

**Closed repeater** — A repeater whose access is limited to a select group (see *open repeater*).

**Control operator** — The Amateur Radio operator who is designated to “control” the operation of the repeater, as required by FCC regulations.

**Courtesy tone** — An audible indication that a repeater user may go ahead and transmit.

**Coverage** — The geographic area within which the repeater provides communications.

**Crossband** — A repeater with its input on one band and output on another.

**CTCSS** — Abbreviation for continuous tone-controlled squelch system, a subaudible tone sent with an FM voice transmission to access a repeater.

**DCS** — Digital Coded Squelch. A newer version of CTCSS that uses a subaudible digital code instead of an analog tone to selectively open a receiver’s squelch.

**Digipeater** — A packet radio (digital) repeater, usually using store-and-forward on a single frequency.

**DTMF** — Abbreviation for *dual-tone multifrequency*, commonly called Touch Tone, the series of tones generated from a keypad on a ham radio transceiver (or a regular telephone).

**Duplex or full duplex** — A mode of communication in which a user transmits on one frequency and receives on another frequency simultaneously (see *half duplex*).

**Duplexer** — A device that allows the repeater transmitter and receiver to use the same antenna simultaneously.

**Frequency coordinator** — An individual or group responsible for assigning frequencies to new repeaters without causing interference to existing repeaters.

**Full quieting** — A received signal that contains no noise.

**Half duplex** — A mode of communication in which a user transmits at one time and receives at another time.

**Handheld** — A small, lightweight portable transceiver small enough to be carried easily.

**Hang time** — A few seconds of repeater carrier following a user transmission that allows others who want to access the repeater a chance to do so; the *courtesy beep* sounds during the hang time.

**Input frequency** — The frequency of the repeater’s receiver (and your transceiver’s transmitter).

**Intermod — Intermodulation distortion (IMD)**, the unwanted mixing of two strong RF signals that causes a signal to be received on an unintended frequency.

**Key up** — To turn on a repeater by transmitting on its input frequency.

**Li-ion** — Lithium-ion battery. Longer life, smaller and lighter than NiCd, Li-ion batteries are becoming more popular for use with handheld radios.

**Machine** — A repeater system.

**Mag mount** — Magnetic mount, an antenna with a magnetic base that permits quick installation and removal from a motor vehicle or other metal surface.

**NiCd** — A nickel-cadmium battery that may be recharged many times; often used to power portable transceivers. Pronounced *NYE-cad*.

**NiMH** — Nickel-metal-hydride battery; rechargeable, offers more capacity and lighter weight than an NiCd battery. Often used to power portable transceivers.

**Offset** — the spacing between a repeater’s input and output frequencies.

**Open repeater** — a repeater whose access is not limited.

**Output frequency** — the frequency of the repeater’s transmitter (and your transceiver’s receiver).

**Over** — A word used to indicate the end of a voice transmission.

**Repeater Directory** — An annual ARRL publication that lists repeaters in the US, Canada and other areas.

**Separation** — The difference (in kHz) between a repeater’s transmitter and receiver frequencies, also called the *offset*, or *split*. Repeaters that use unusual separations, such as 1 MHz on 2 meters, are sometimes said to have “oddball splits.”

**Simplex** — A mode of communication in which users transmit and receive directly on the same frequency.

**Squelch tail** — The noise burst heard in a receiver that follows the end of an FM transmission, before the squelch circuit turns off the speaker.

**Time-out** — To cause the repeater or a repeater function to turn off because you have transmitted for too long.

**Timer** — A device that measures the length of each transmission and causes the repeater or a repeater function to turn off after a transmission has exceeded a certain length.

**Tone pad** — An array of 12 or 16 numbered keys that generate the standard telephone dual-tone multifrequency (**DTMF**) dialing signals. Resembles a standard telephone keypad. (see *autopatch*).