Introduction
Welcome to the K5QHD repeaters. The Garland Amateur Radio Club (GARC) maintains five repeaters:

1. An active two meter repeater on 146.660 MHz with a negative offset of 600 KHz. A CTCSS tone of 110.9 Hz is required to key the repeater. The repeater will identify with the words “K5QHD VHF repeater.” The courtesy tone will be a high-low sequence.

2. A hot standby 146.660 MHz repeater will have the same characteristics. The repeater will identify with the words “K5QHD backup VHF repeater.” The courtesy tone will be a low-high-low sequence.

3. An auxiliary 146.660 MHz repeater will have the same characteristics. The repeater will identify with the words “K5QHD auxiliary repeater.” This portable repeater is generally used for special events.

4. An active 70 cm repeater on 442.700 MHz with a positive offset of 5 MHz. A CTCSS tone of 110.9 Hz is required to key the repeater. The repeater also transmits a CTCSS tone of 110.9 Hz for opening the user's receiver squelch, if so configured. The repeater will identify with the words “K5QHD UHF repeater.” The courtesy tone will be a low-high sequence.

5. A hot standby 442.700 repeater will have the same characteristics as the active 70 cm repeater. The repeater will identify with the words “K5QHD backup UHF repeater.” The courtesy tone will be a high-low-high sequence.

Note: a single courtesy tone denotes a net condition.

These repeaters are located in the city of Garland at different locations. They are open repeaters, available 24 hours per day. During emergency conditions and emergency training nets, the repeaters are used only through a net control station. Occasionally, the repeaters are used for other nets or special service events.

Of course, all use of the repeaters will fall within the guidelines of the FCC rules and regulations, but some of the following guidelines are for common courtesy and common procedures. Following these guidelines will help make the repeaters enjoyable for everyone. Remember that we all want to have fun and enjoy the repeaters, so please be courteous and respectful to others.

Note: All FCC rules must be followed on the repeaters at all times!!!

Failure to follow FCC rules will result in a repeater being turned off or in some way disabled with or without warning.

Entering an Existing QSO
The GARC repeaters use a courtesy tone to indicate the end of a transmission. The normal courtesy tone sequence is 1-second delay after the receiver activity ends, then the courtesy tone, and then a brief hang time. During the QSO you should wait for the
courtesy tone before transmitting, as the courtesy tone resets the timeout timer. When there is a QSO in progress and you wish to enter that QSO, please follow the procedure below. If you have an emergency, please use the emergency procedure for breaking in. Please note that it is common courtesy to give your call sign when entering a QSO already in progress.

1. Wait for a break.
2. Key up and either give your call sign or your call sign and a short comment or give a quick comment and then your call sign.
3. Un-key and wait to be recognized. Please keep in mind this may take a minute if the previous parties want to finish their train of thought.

**Initiating a Call**
Before initiating a call on the repeater, listen for a short time to the frequency to insure it is not in use. Frequently there are pauses in QSOs which may last from seconds to minutes depending on the nature of the pause. If after listening for a few minutes you hear no traffic, key up and ask if the frequency is in use. Only after you have insured the repeater is idle, should you make your call to another station or just transmit your call sign if you wish to engage someone in a conversation.

**Answering a Call**
To respond to a station it is common courtesy to answer with your call sign. If the person who called knows you, you may begin your conversation. Otherwise, also give your name before continuing.

**Net Conditions**
The GARC repeaters are designated repeaters for net operation in an emergency by Garland Radio Amateur Civil Emergency Service (RACES) and the Garland Amateur Radio Emergency Services (ARES). RACES nets are open only to RACES appointees. ARES nets are open to all licensed radio amateurs. The courtesy tone of the repeater will be a single beep during RACES and ARES nets.

The GARC has various nets that occur both on a regular basis and intermittently. If you hear a net in progress, please stand by and let the net business be handled. If this is an open net, please feel free to join in, but listen first. If you have an emergency and need to use the repeater during any of these nets, please use the emergency procedure for breaking in described below.

**Entering a QSO with an Emergency Situation**
Use this procedure during any emergency situation that threatens life or property. This procedure can be used to break into any QSO, net, or activity on the repeater.

1. Wait for a pause in the repeater activity.
2. Key up and say "BREAK, BREAK" or “Priority” or “Emergency” (and your call sign). Please note that if someone says this, all other talking stops!
3. Unkey and then either allow a net control or someone on frequency to recognize you.

4. Give net control or the person who is helping you all necessary information.

**Accessing the Repeater for Testing**

This procedure should be used anytime that you wish to access the repeater for testing.

1. Make sure the frequency is not in use.

2. Use some type of identifying statement; for example “(your call sign) to the K5QHD repeater TESTING,” or “(your call sign) testing with the K5QHD repeater.”

3. Key up and proceed with your test.

4. When complete please clear with your call sign.

**Repeater Maintenance**

Please be aware that if someone is working on the repeater, it may go down at any time. Following the points listed below would be greatly appreciated.

1. Please listen to the person doing maintenance for any special instructions.

2. Please leave longer than normal pauses between transmissions to allow for further information to be passed at any time.

3. Please keep in mind that it may be very warm or cold in the repeater room and the personnel working on the repeater would like to complete the work as quickly as possible.

It is always our intention to keep maintenance to a minimum, but as everyone knows this equipment requires some upkeep. We want the repeater to be there when we really need it. Thank you for your patience in this area.

GARC hopes you enjoy using our repeaters as much as we like hearing you on the air. Please send any concerns, questions, or suggestions to the GARC Board at board@k5qhd.org.