

COVE Repeater Association

Serving Copperas Cove

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Operators throughout Coryell, Bell, Burnet and Lampasas Counties

Activities and Membership Open to All Hams

(and families too...)

- VHF and UHF Contacts on Club Repeaters
- Monthly Meetings
- Social Events
- National Field Day Events in Summer and Winter
- Repeater maintenance and other technical stuff
- Impromptu field set-ups and operations

K5CRA Club Repeaters

- Copperas Cove location with high elevation for widest coverage
 - **2 meters VHF**
 - **147.26 with a positive offset (+) and a tone of 88.5**
 - FM Analog and Yaesu System Fusion C4FM Digital
 - **70 centimeter UHF (*Also referred to as the 440 machine*)**
 - **443.325 with a positive offset (+) and a tone of 88.5**
 - FM Analog and Yaesu System Fusion C4FM Digital
 - Yaesu System Fusion Digital capable with DR-1X Repeaters for each band
 - Set on Automatic Mode Select for FM or Digital
 - **Transmit in traditional FM and you will hear FM out**
 - **Transmit in new C4FM Digital and you will hear Digital out**
- Solar Powered battery back-up
- Open to all amateur operators

Helpful Hints on Repeater Operations

- What you will hear
 - Traditional every day FM vhf contacts between stations
 - Contacts using Yaesu digital transmissions
 - On a digital radio that is set to digital you will hear a digital voice
 - On an FM vhf radio, old school scanner, or digital radio set to FM, you will hear static noise
 - On a digital radio set to *Auto Mode*, the radio will switch to digital and you will hear voice. *Auto Mode is the recommended setting for those with digital capable radios.*
- Breaking in to a Digital communication between stations
 - Go to FM, listen for a break and transmit “Break” and the repeater will switch to digital and transmit your “Break.”
 - Operators with radios in the preferred Auto Mode will experience the shift back to FM and hear your break in transmission and be able to talk with you.
- Turning off the noise from digital operations on an FM VHF radio
 - Set your receive mode to tone squelch mode (TSQ on some radios, CT on others) so your receiver will listen for a tone of 88.5 before sound comes out of the speaker. Since digital mode does not send a tone, you will not hear any noise.

Why System Fusion?

- Learning new technology is one of the pleasures of amateur radio.
- Can communicate using AM, SSB, PSK, RTTY FM and *several digital modes*. Yaesu C4FM is one of those digital modes.
- One of the benefits of digital communication is the ability to send large amounts of data. So, besides somewhat improved voice communication, other data can be sent along with the voice data:
 - Call sign
 - Locations and distance between locations
 - Speed and tracking
 - Those stations on frequency and within range (group monitoring function)
 - Weather information
 - Images
 - Text messages
 - Beacon messages

A Few Quick Questions About Digital

- I have no plans to buy a digital radio, so where does that leave me?
 - The repeaters operate on traditional FM VHF and UHF and are set in the Auto Mode to switch between FM and Digital as needed. Just transmit on your current into the repeater and it will switch and everyone will hear your transmission as always.
- How do I get rid of the noise when someone is operating digital?
 - Set your receiver squelch to listen for a tone (88.5) before sending sound to the speaker. The Digital mode does not send a tone when transmitting voice you otherwise hear as noise so your radio won't play the noise without a tone. Clear as mud? Feel free to ask one of the repeater trustees or other club members for assistance.
- Does the digital system get better distance coverage?
 - Generally no, it doesn't. The digital operation requires a fairly strong signal to meet requirements. If the signal drops below a certain point the signal drops. It's all or nothing. An FM signal may drop below the same cut off point but can continue to be heard in a weak or faint condition. Digital operators who are told their signal cut off may need to increase power, or if mobile, wait for a better or closer location.

Sources

- Cove Repeater Association website:
 - <https://coverpeaterassociation.shutterfly.com>
 - Cove Repeater Association on Facebook
- A Digital Communications Guide for Amateur Radio Operators, Yaesu Vertex Standard, 2011.

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Notes:

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