

Radio Use and Communications Practices

Mancahca Fire/Rescue
Travis County Emergency Services District #5



Receiving Calls

Every fire department must have a way to receive calls from the public and alerting the responders to the call. MFR receives over 99% of our calls from the 911 system. 911 calls are processed at CTECC (Combined Transportation, Emergency & Communications Center). CTECC (pronounced C-tek) processes 911 calls for Austin and Travis County and houses the dispatching resources for Austin Fire and Police Department, as well as Austin/Travis County EMS and Travis County Sheriff's Office.

The Austin Fire Department provides dispatch service for MFR as well all of the other Travis County fire departments.



Receiving Calls

Occasionally we will receive reports directly from the public either by telephone at the fire station or by civilians coming to the station or approaching firefighters in public. The firefighter receiving the information should get the following information:

- Address of the emergency?
- What is the problem?
- A callback number (for phone calls)
- This information is then relayed to dispatch via radio as the response is made.

Firefighters also field a variety of non-emergency calls from the public via the non-emergency phones at the fire station or by civilians approaching firefighters in public with questions or requests. Basic courtesy and professionalism should be exercised. If you do not have an answer to a question, get the person's contact information and inform them that someone will get back to them with an answer. Then pass the information up the chain of command.

Alerting

There are several methods to alert MFR of requests for service by our dispatch center.

- Station Alerting: A radio signal sent to a receiver at the station that opens the speakers and announces the call
- Active 911: Intended as a redundancy to station alerting, text information is sent from the dispatch center to the Active 911 service and then out to individual subscriber devices that have the Active 911 phone app. Although typically a timely notification process, it is subject to delays and missed messages similar to texting services on a phone

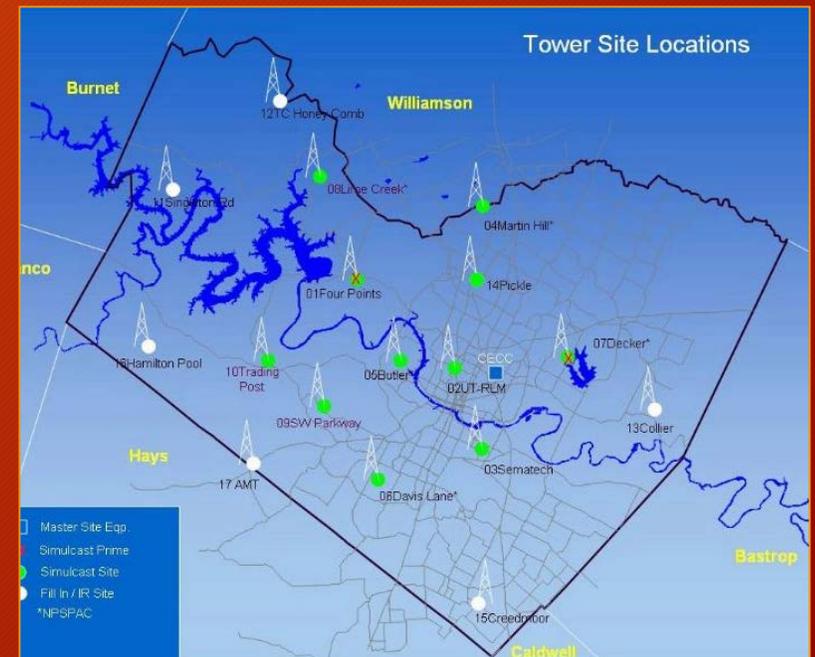
Alerting

There are several methods to alert MFR of requests for service by our dispatch center.

- TC Locution Radio Channel: A radio channel that rebroadcasts the station alerting information over the 800 Mhz radio system
- Mobile Data Computers (MDC): The computers mounted in the apparatus that convey incident information from the dispatch system and allow units to communicate their status with Dispatch without using the radio
- Direct hail: When a unit is statused as "Available Local Area", it is an indication that the crew is not in the station but is monitoring their home channel. Dispatch will directly hail the crew on the home channel to advise them that they have a call.

Radio Communication

MFR utilizes an 800Mhz radio system for radio communication. This is a shared system in the Austin/Travis County emergency service community. The primary advantage is having a system that allows other agencies to communicate with each other. In addition, departments that are not on the 800Mhz system can be “patched” to an 800 channel by dispatch on an as-needed basis.



Radio Communication

Although there are about 300 channels available on an 800Mhz radio, MVFD only utilizes a handful of these channels on a regular basis. These channels are:

- Medcom South: The medical channel for most medical calls in ESD5 and surrounding auto aid partner response areas
- FIRECOM East: Our "home channel" for communicating with fire dispatch for most non-medical incidents and collision calls
- FIRECOM South: The home channel for AFD units south of the river. We use FIRECOM South when running auto aid calls in the City
- ESD5A: MFR-only channel for routine/administrative communication
- ESD5B: MFR-only channel for routine/administrative communication
- FTAC*: Tactical channel for larger incidents [structure fires, rescue calls, etc

Radio Communication: FTAC Channels

Tactical channels are found in Zone 2 and 3 of our radios. The tactical talkgroups are grouped by 3's. This gives an incident 2 tactical comm channels and 1 emergency comm channel. Zone 4 is a series of training talkgroups, but they are configured the same as the tactical groups (they can be used as tactical groups if needed)

When a radio is dialed in to one of the tactical talkgroups, the radio will only scan the 3 talkgroups in that set.

| Zone 2 | Zone 3 | Zone 4 |
|---------|---------|---------|
| FTAC201 | ARFF301 | TRN401 |
| FTAC202 | ARFF302 | TRN402 |
| EMER203 | EMER303 | EMER403 |
| FTAC204 | FTAC304 | TRN404 |
| FTAC205 | FTAC305 | TRN405 |
| EMER206 | EMER306 | EMER406 |
| FTAC207 | FTAC307 | TRN407 |
| FTAC208 | FTAC308 | TRN408 |
| EMER209 | EMER309 | EMER409 |
| FTAC210 | FTAC310 | TRN410 |
| FTAC211 | FTAC311 | TRN411 |
| EMER212 | EMER312 | EMER412 |
| FTAC213 | FTAC313 | TRN413 |
| FTAC214 | FTAC314 | TRN414 |
| EMER215 | EMER315 | EMER415 |

Radio Communication

The language we use to communicate in the fire service must use standardized terms and phrases so the message is understood with as short a message as possible. Standard language also makes the message understood from one agency to another

Some common language practices used by MFR include:

- ◆ Plain Language: No use of "10 codes"
- ◆ Call out the ID of the unit you are talking to before you identify yourself on the radio ("Hey you , this is me" "Dispatch, this is Engine 501")
- ◆ Refer to units by their ICS role, when assigned ("Command, this is Engine 501" not "Battalion 501, this is Engine 501")

Radio Communicaiton

There are 2 radio “codes” that are used in MFR and across Austin/Travis County.

Signal 4: Dispatch will use the phrase “Engine 501, signal 4” to indicate that the emergency identifier (the orange button) has been activated on that users radio. If the activation was accidental, the user should respond with “Negative Signal 4”. The radio will then need to be reset by holding down the orange button for 3 seconds or turning the radio off and back on. The user will also need to confirm they are back on the correct channel as the emergency ID feature will place the radio on an emergency channel automatically.

Radio Communicaiton

There are 2 radio "codes" that are used in MFR and across Austin/Travis County.

Code 4: Code 4 is a term used by law enforcement to indicate that everything is OK at their location.

Radio Communication

Some other standard terms:

| | |
|------------------------|--|
| "Responding" | En Route to an incident |
| "On Scene" or "Out" | Arrived at the scene of an incident |
| "Clear" | Unit is leaving an incident and available for calls |
| "Available Local Area" | Unit is not in the station, but in territory and listening to the radio for calls |
| "Available Station" | Unit has returned to its assigned station |
| "Out Of Service" | Unit is not available for calls (mechanical / training / out of territory – unavailable) |
| "Reserve Status" | This is a status used for unstaffed apparatus, this status places a 24 hour delay on the vehicle |

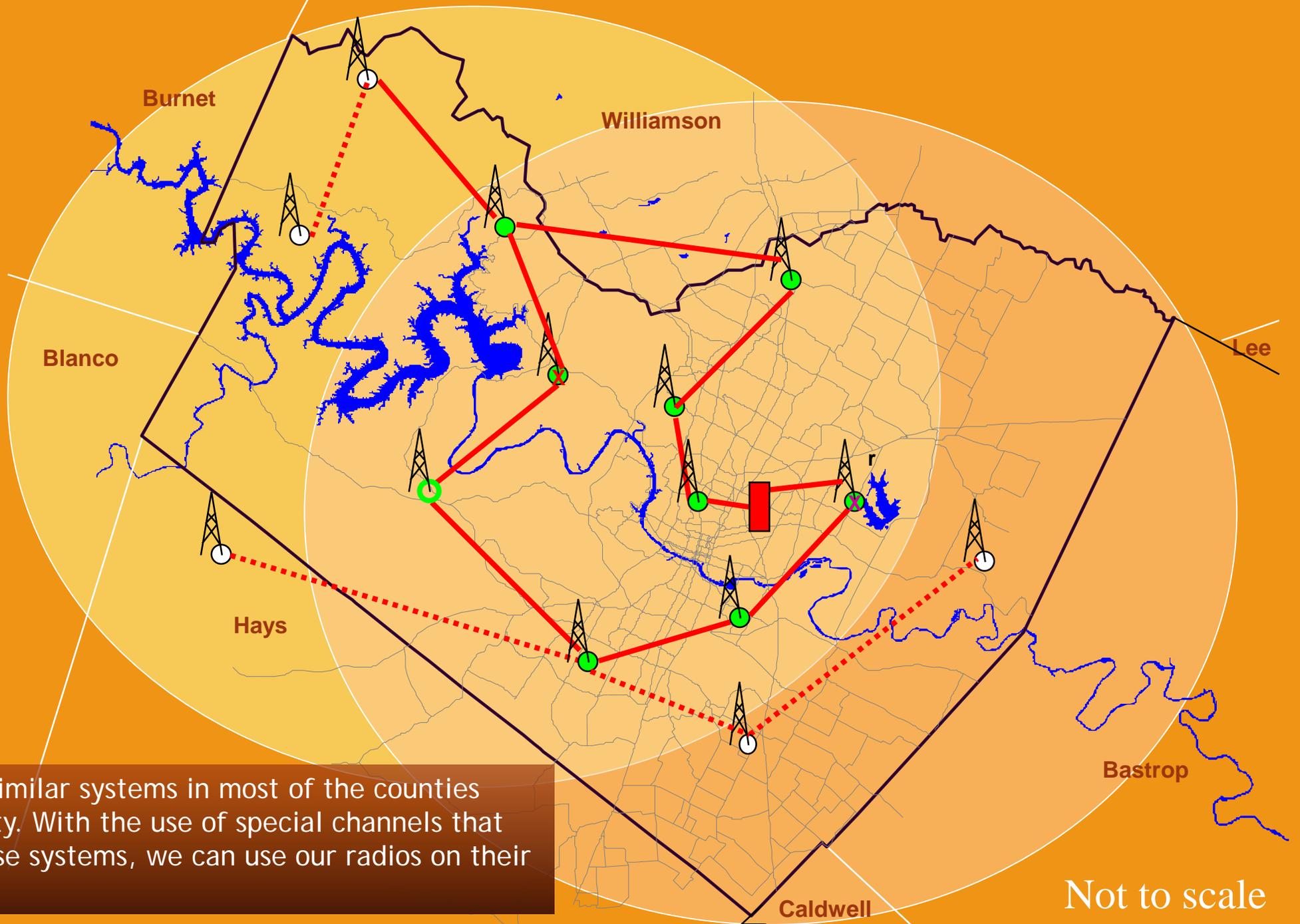
Law enforcement also uses the term "clear" but it has a different meaning. LE will often ask to "Clear EMS" or "Clear Fire" on the radio or on the MDC. In their world, this means that the scene is secure and EMS or Fire is clear to enter the scene safely and assist at the scene.

Radio Communication

When I speak on the radio, where does the transmission go?

The 800 Mhz system is a network of radio towers that pickup field radio signals - relays them to dispatch and then rebroadcasts the signal over the entire system. A handheld radio in Manchaca can be heard in Williamson County and vice-versa. Also keep in mind that the network is shared by all of the emergency services in Travis County and they are able to listen in on most transmissions. Additionally, the media monitors the radio system.

Regional Radio System



Additionally, there are similar systems in most of the counties surrounding Travis County. With the use of special channels that are shared between these systems, we can use our radios on their systems.

Not to scale

Radio Communications

The Radios:

800mhz

- All Digital System / Regional Coverage
- Provides “Interoperable” communications amongst agencies on the system
 - AFD
 - Other County Fire Departments
 - ATCEMS
 - TCSO, APD, Capital Metro, Parks, etc.
- Radios are ruggedized, water resistant, and intrinsically safe



Radio Communications

The Radios:

The handheld radios and some of the mobile radios also have VHF capability. This allows us greater interoperability when working outside of our area on mutual aid or statewide TIFMAS deployments.



Radio Communications

The Radios:

- Radio ID: Each radio has a unique number that identifies the radio to the radio system
- Emergency ID: The orange button on the radio. When held down for 1+ seconds it sends an emergency signal to dispatch. Dispatch will send Law Enforcement to the last known location of the user if they cannot be reached on the radio.
- Talkgroup: A communication channel on the 800 Mhz system. The selector knob has 16 talkgroup positions (16 "channels") to chose from in each Zone on the radio.
- Zone: A bank of Talkgroups; A radio may have multiple zones, each with 16 Talkgroups.



Radio Communications

The Radios:

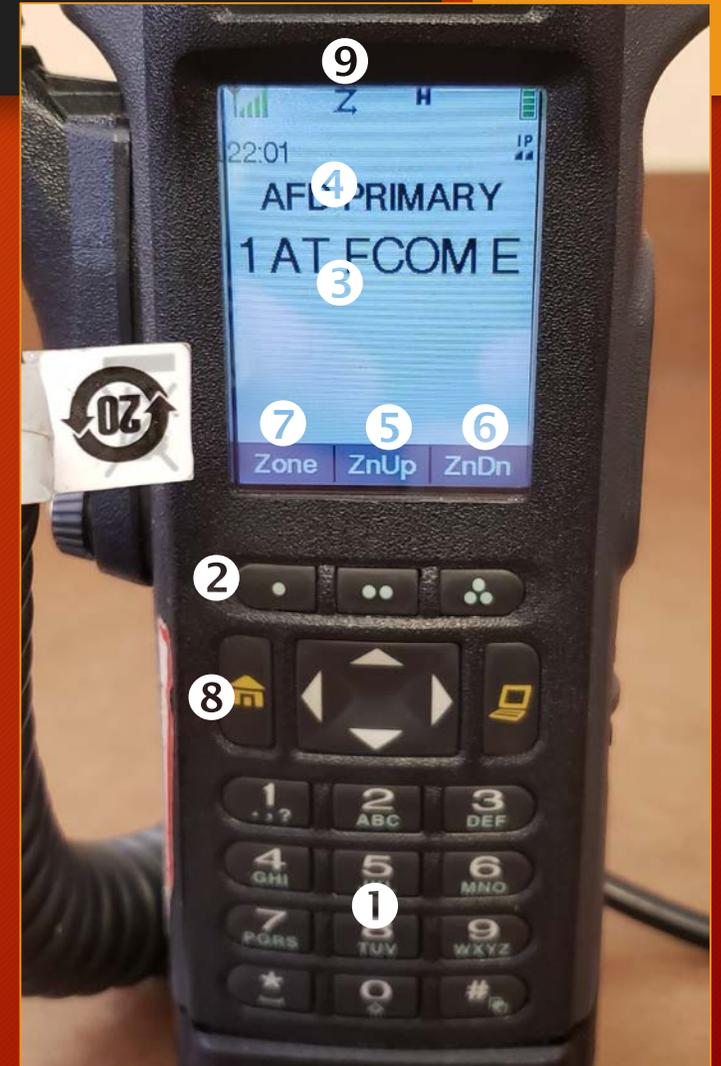
1. Keypad Lock (prevents accident changes from bumping buttons)
2. Channel Selector Knob
3. On/Off / Volume
4. A = Scan B or C = No Scan
5. Emergency ID Button
6. Collar Mic Transmit button
7. Collar Mic volume control



Radio Communications

The Radios:

1. Keypad
2. Soft Keys (perform function as labeled directly above on the screen)
3. Current Channel
4. Current Zone
5. Change to next higher zone
6. Change to next lower zone
7. Zone: Press Zone and then use up or down arrows to scroll through zones. Press Sel soft key to select a particular zone
8. Home button (press and hold to return to home channel)
9. Scan Status: the "Z" = scan on



Radio Communications

The mobile radio has a different layout, but operates in a similar fashion:

1. Soft Keys (perform function as labeled directly above on the screen)
2. Current Channel
3. Current Zone
4. Change to next higher zone
5. Change to next lower zone
6. Zone: Press Zone and then use up or down arrows to scroll through zones. Press Sel soft key to select a particular zone
7. Home button (press and hold to return to home channel)
8. Scan Status: the "Z" = scan on



Radio Communications: Zones

Zones are either lettered or numbered. Numbered zones are zones unique to the local system (FTACs are zones 2 and 3 - they are typically only available to Travis County first responders and some neighboring agencies). The Public Safety channels are in Zone E since all public safety responders in all counties that use the network have access to these channels.

| | | | | |
|-------------|----------|---|----|--------------------------------|
| | G2 | Regional Interop Channels | 3 | FTAC 300s |
| Zone Down → | G1 | Regional Interop Channels | 4 | Training FTACs |
| | E9 | Regional Public Safety Interop Channels | 5 | ESD5-Specific Zone |
| | E1 | Regional Public Safety Interop Channels | 6 | All ESDs "A" channels |
| | D2 | Austin/Travis County Interop Channels | 7 | Williamson County Cedar Park |
| | D1 | Austin/Travis County Interop Channels | 8 | Williamson County West Fire |
| ← Zone Up | 1 | Primary w/all fire and med home channels | 9 | Williamson County Central Fire |
| | 2 | FTAC 200s | 10 | Williamson County East Fire |

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| | | | |
|----|------------------------------|----|-------------------------------------|
| 11 | Williamson County Georgetown | 19 | ABIA ARFF Bank |
| 12 | Williamson County Round Rock | 20 | Blank |
| 13 | Blank | 21 | Blank |
| 14 | Williamson County Fire | 22 | Blank |
| 15 | Hospitals | 23 | Blank |
| 16 | ATCEMS Medcom Tac Channels | 24 | LCRA Radio Network Interop Channels |
| 17 | APD Channels | 25 | Hays County |
| 18 | TCSO Channels | 26 | Dynamic Zone |

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| | | | |
|------|---|--------|----------------------------------|
| 27 | Blank | TX77 | TXWARN Network |
| 28 | AFD VHF Alert Channels | TX78 | TXWARN Network |
| W | NOAA Weather Radio Channels | TX STX | South Texas Ops Channels |
| V3 | State VHF Law Interop | TX GCI | GCI Interop Channels |
| V2 | State VHF Channels 10-29 | TX AUS | State Interop Channels |
| V1 | State VHF Tac, Fire, Law and Med Channels | M4 MRG | Middle Rio Grande Valley Interop |
| TX75 | TXWARN Network | M3 MRG | MRG Valley Public Safety Interop |
| TX76 | TXWARN Network | M2 MRG | MRG Valley Fire and Med Interop |

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| | | | |
|----|-----------------------------------|----|--|
| L4 | 700 MHz Interoperability Channels | E9 | Regional Public Safety Interop Channels |
| L3 | 700 MHz Interoperability Channels | E1 | Regional Public Safety Interop Channels |
| L2 | 700 MHz Interoperability Channels | D2 | Austin/Travis County Interop Channels |
| L1 | 700 MHz Interoperability Channels | D1 | Austin/Travis County Interop Channels |
| H | 800 MHz Interoperability Channels | 1 | Primary w/all fire and med home channels |
| G9 | Regional Interop Channels | 2 | FTAC 200s |
| G2 | Regional Interop Channels | 3 | FTAC 300s |
| G1 | Regional Interop Channels | 4 | Training FTACs |