FIRESCOPE Radio Communications Guidelines

MACS 441-1

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This document contains information relative to the Incident Command System (ICS) component of the National Interagency Incident Management System (NIIMS). This is the same Incident Command System developed by FIRESCOPE.

Additional information and documentation can be obtained from the following resources:

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FIRESCOPE RADIO COMMUNICATIONS GUIDELINES

FIRESCOPE Radio Communications Guidelines are derived from the Cooperative Agreements for Use of Radio Frequencies between fire service agencies of California allowing for mutual use of radio channels during mutual aid efforts.

<u>VHF high band is the default radio frequency band utilized by the California fire service.</u> There are eighty-six (86) VHF channels that should be pre-programmed into all VHF radios utilized by fire service agencies providing mutual aid in California (see the FIRESCOPE STATEWIDE CHANNEL PLAN).

Fire service agencies whose normal dispatch system is on a band other than VHF high band should ensure that their mobile and portable radios and dispatch centers are properly licensed and programmed to operate on the UHF, 700 and 800 MHz interoperability channels contained within the FIRESCOPE STATEWIDE CHANNEL PLAN.

IMPORTANT COMMUNICATIONS ISSUES

Travel Channel

The **C**alifornia **E**mergency **S**ervices **R**adio **S**ystem (CESRS) may be utilized as a travel channel by Strike Teams or other resources in travel status. It is preferable to utilize CESRS in Simplex/Direct mode for line-of-sight communications however Repeat mode is authorized when line-of-sight communications is ineffective.

Narrowbanding

ALL VHF and UHF radios **MUST** be narrowband compliant as of January 1, 2013. Any non-compliant radio equipment used on narrowband channels may present a *life-safety hazard*. All radios that are <u>not</u> capable of narrowband technology **shall be** taken out-of-service and not placed into service by another fire service agency (e.g. donations, personal or volunteer use, etc.) Any radios returned to the vendor or disposed of as surplus should have all programming deleted or crystals removed.

GUIDELINES

1. While numerous radio channels/talkgroups can be pre-programmed into radios, it is important to note that in order to transmit on those channels/talkgroups (including channels listed in the FIRESCOPE STATEWIDE CHANNEL PLAN) the user: 1) must be authorized by the FCC or NTIA to transmit on those frequencies, 2) must have a radio use agreement or Memorandum of Understanding with the agency which is licensed for the channels, or 3) must be assigned to an incident with that channel/talkgroup listed on the Incident Radio Communications Plan (ICS Form 205).

2.   Any agency requesting mutual aid will advise responding agencies of an initial contact channel for the incident. Generally, the initial contact channel will be VFIRE22. Incident Communications Centers (ICC's) and Staging Area Managers should monitor VFIRE21 or another specified initial contact channel to assist resources arriving at the incident.

3.   Local policy will dictate radio channel/talkgroup assignments for an incident until a Communications Unit Leader (COML) establishes the Incident Radio Communications Plan (ICS Form 205).

4.   The Incident Commander or, if assigned, the Communications Unit Leader is responsible for managing assigned radio channels/talkgroups and must clear the use of local, state and federal frequencies with the controlling agencies prior to inclusion in an Incident Radio Communications Plan (ICS Form 205).

5.   Clear text (plain English) should be used for all communications. CODES SHALL NOT BE USED! Standardized channel/talkgroup names should be stated, e.g. "VFIRE22", or "NIFC Tac 2". Channel/talkgroup numbers corresponding to how a specific radio is programmed should not be used except if published in an IAP (e.g. "Channel 1", or "Channel A14".)

6.   When calling another unit/ICS position, the standard is to identify who you are calling first, followed by your call sign (e.g. "Engine 2111, Battalion 2104" or "Division B, Strike Team 6412C"). Recognize that on large mutual aid incidents, there may be several units with the same radio ID. In those cases, the agency name should also be used (e.g. Oceanside Engine 2111, Oceanside Battalion 2104").

7.   Data communications [i.e. automated or push button status keeping for "computer aided dispatch" (CAD) systems] **SHALL NOT** be used outside the local agency's normal area of operation.

8.   Radio programming that enables data signaling (e.g. MDC1200 push-to-talk identification) is prohibited on interoperability channels (e.g. VFIRE22, VFIRE23, etc.)

9.   Vehicular repeater systems (mobile extenders) **SHALL NOT** be used outside the local agency's normal area of operation.

10. The use of gateways (including portable, mobile or fixed) shall be limited to the smallest geographical area of coverage to meet the temporary needs of the incident. Gateways shall only be used on channels/talkgroups that are specifically licensed for that type of operation (e.g. temporary mobile relay) and must be specifically authorized based upon an approved Incident Radio Communications Plan (ICS Form 205) or be recognized as a fixed gateway, included in the California Statewide Communications Interoperability Plan (Cal-SCIP).

11. Family Radio Service (FRS) radios are **_prohibited_** from use on Federal and State of California incidents. Use of any non-public safety radio (e.g. FRS, etc.) or use of a frequency/talkgroup not identified on the Incident Radio Communications Plan (ICS Form 205) is prohibited on any incident.

12. The use of any frequency outside the agency's normal, licensed area of operation is prohibited by FCC rules and will likely cause harmful interference to other users (e.g. Strike Teams using a local channel in a distant part of the state).

FIRESCOPE STATEWIDE CHANNEL PLAN

The FIRESCOPE Statewide Channel Plan was developed to assist California Fire Service agencies in buying and programming synthesized radios so as to maximize their effectiveness for mutual aid responses.

Regardless of the radio system used on a daily basis, all California Fire Service agencies should maintain an adequate number of VHF mobile and portable radios to support mutual aid operations. In addition to the VHF interoperability channels, UHF, 700 and 800 MHz interoperability channels are also available to support mutual aid and all-risk incidents.

USAGE NOTES for ICS 217A COMMUNICATIONS RESOURCE WORKSHEETS:

1. The VFIRE channels require individual agency licensing from the FCC. VFIRE channel operational policies are outlined in California's Office of Emergency Services (OES) Fire Operations Bulletin #28 and/or the California Statewide Communications Interoperability Plan (Cal-SCIP). Contact OES Fire & Rescue Branch for information.

2. Use of CALCORD is subject to the CALCORD Plan, under an executed CALCORD agreement with OES and/or in accordance with the California Statewide Communications Interoperability Plan (Cal-SCIP). Contact OES Telecommunications for information.

3. The following **thirty-two** standard tones are used by the Fire Service in California for repeater access and/or tone protection in radios. However, if radios can only be programmed with 16 tones, then program tones 1 through 16.

1. **110.9**	*2.* **123.0**	*3.* **131.8**	*4.* **136.5**	*5.* **146.2**	*6.* **156.7**	*7.* **167.9**	*8.* **103.5**
9. **100.0**	*10.* **107.2**	*11.* **114.8**	*12.* **127.3**	*13.* **141.3**	*14.* **151.4**	*15.* **162.2**	*16.* **192.8**
17. **67.0**	*18.* **71.9**	*19.* **74.4**	*20.* **77.0**	*21.* **79.7**	*22.* **82.5**	*23.* **85.4**	*24.* **88.5**
25. **91.5**	*26.* **94.8**	*27.* **97.4**	*28.* **118.8**	*29.* **173.8**	*30.* **179.9**	*31.* **186.2**	*32.* **203.5**

4. **Important** – Bendix-King EPH radios are **prohibited** for use on any State or Federal Incidents!

5. Mobile transmitters are to be set to lowest available power setting* on; VFIRE's, VTAC's, UTAC's, Cal-Fire Tac's, NIFC Command and Tac's and Air-to-Ground channels, etc. *Lowest available power setting means operations shall be at 10 watts or the lowest power setting above 10 watts available in the radio.

6. Use of the NIFC Command, Tactical and Logistics channels is based upon an approved Incident Radio Communications Plan (ICS Form 205). Communications Unit Leaders **must** obtain authorization for the use of these channels through the NIFC Communications Duty Officer.

7. For use based upon an approved Incident Radio Communications Plan (ICS Form 205). Communications Unit Leaders must obtain authorization for the use of these channels through the Cal-Fire Southern Region/South Operations GACC or Northern Region Command Center/North Operations GACC.

8. Specific channel usage guidelines are still being determined, and will be published in the California Statewide Communications Interoperability Plan (Cal-SCIP). Until the Cal-SCIP is finalized, these channels are for inter-agency / inter-discipline use. No single-agency, routine communications permitted. Tone 6 (156.7 Hz.) is used as the common tone (transmit side only at this time).

9. These channels are for inter-agency/inter-discipline use. No single-agency, routine communications permitted. Tone 6 (156.7 Hz.) is used as the common tone (transmit and receive).

10. These channels are for fire/fire-based EMS intra/inter-agency and strike team use. Tone 6 (156.7 Hz.) is used as the common tone (transmit and receive). Use is subject to an executed use agreement with OES until such time as the California Statewide Communications Interoperability Plan (Cal-SCIP) is finalized. Contact OES Telecommunications for information.

11. **Not available for use** in Imperial, Kern, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura counties.

12. AIR GUARD – 168.625 MHz – A National Interagency Air Guard frequency for government aircraft assigned to incidents. It is used for emergency communications by aviation. A separate receiver is required to permit continuous monitoring in aircraft. Transmitters on this channel should encode a CTCSS of 110.9 Hz. All Incident Radio Communications Plans (ICS Form 205) on incidents that use federal or Cal-Fire aircraft **SHALL** have AIR GUARD programmed in the last available channel slot of all portable radios. Communications Unit Leaders shall place AIR GUARD in channel slot 16 (Bendix-King GPH & DPH and other manufacturers who use 16 channels in a zone/group) and channel slot 20 (Bendix-King GPH-CMD and DPH-CMD).

    AIR GUARD is restricted to the following use:
    a. Air-to-Air emergency contact and coordination.
    b. Ground-to-Air emergency contact.
    c. Initial call, recall, and re-direction of aircraft when no other contact frequency is available.

13. The **C**alifornia **E**mergency **S**ervices **R**adio **S**ystem (CESRS) may be utilized as a travel channel by Strike Teams or other resources in travel status. It is preferable to utilize

CESRS in Simplex/Direct mode for line-of-sight communications however Repeat mode is authorized when line-of-sight communications is ineffective. Communication Centers do **not** monitor this channel.

14. Users with radios that are capable of switching between direct and repeat should program the repeat channel (and not two separate channels, a direct channel and a repeat channel).

15. Users with radios that are NOT capable of switching between direct and repeat should program both the repeater and direct version of each repeated channel and place a "D" in the display to identify the direct version.

16. Users **SHALL** enable/program their radios with; Channel Guard (**CG**), Operator Selectable Tone (**OST**), Multiple Private Line (**MPL**) capability.

NOTE: For additional information concerning the appropriate usage of channels identified in the FIRESCOPE STATEWIDE CHANNEL PLAN, contact OES Telecommunications or your respective Communications Unit Leader (COML).

COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET - ICS 217A

	Frequency Band	Description
	VHF HIGH BAND	**FIRESCOPE STATEWIDE CHANNEL PLAN 2014**

Ch	Channel Configuration	Channel Name/Trunked Radio System Talkgroup	Eligible Users	RX Freq	RX Tone or CSQ	TX Freq	Tx Tone or NAC	N or W	Pwr	Mode A, D or M	Remarks
1	Simplex – Air/Mo	**AIRGUARD**	**EMERGENCY ONLY**	168.6250	CSQ	168.6250	Tone 1 110.9	N	H	A	Usage Note 12
2	Simplex – Mo only	**CALCORD**	CA Public Safety Interop	156.0750	Tone 6 156.7	156.0750	Tone 6 156.7	N	H	A	Usage Note 2
3	Simplex – Air/Mo	**CDF A/G**	Cal-Fire	151.2200	CSQ	151.2200	NONE	N	L	A	Usage Note 3, 5, 16
4	Repeater Pair	**CDF C-1**	Cal-Fire	151.3550	Tone 8 103.5	159.3000	**OST**	N	H	A	Usage Note 3, 7, 14, 16
5	Repeater Pair	**CDF C-2**	Cal-Fire	151.2650	Tone 8 103.5	159.3300	**OST**	N	H	A	Usage Note 3, 7, 14, 16
6	Repeater Pair	**CDF C-3**	Cal-Fire	151.3400	Tone 8 103.5	159.3450	**OST**	N	H	A	Usage Note 3, 7, 14, 16
7	Repeater Pair	**CDF C-4**	Cal-Fire	151.4000	Tone 8 103.5	159.3750	**OST**	N	H	A	Usage Note 3, 7, 14, 16
8	Repeater Pair	**CDF C-5**	Cal-Fire	151.3175	Tone 8 103.5	159.3525	**OST**	N	H	A	Usage Note 3, 7, 14, 16
9	Repeater Pair	**CDF C-6**	Cal-Fire	151.2500	Tone 8 103.5	159.3600	**OST**	N	H	A	Usage Note 3, 7, 14, 16
10	Repeater Pair	**CDF C-7**	Cal-Fire	151.4600	Tone 8 103.5	159.3900	**OST**	N	H	A	Usage Note 3, 7, 14, 16
11	Repeater Pair	**CDF C-8**	Cal-Fire	151.4450	Tone 8 103.5	159.3450	**OST**	N	H	A	Usage Note 3, 7, 14, 16
12	Repeater Pair	**CDF C-9**	Cal-Fire	151.1750	Tone 8 103.5	159.4500	**OST**	N	H	A	Usage Note 3, 7, 14, 16
13	Repeater Pair	**CDF C-10**	Cal-Fire	151.1900	Tone 8 103.5	159.2250	**OST**	N	H	A	Usage Note 3, 7, 14, 16
14	Simplex – Mo only	**CDF T-1**	Cal-Fire	151.1450	Tone 16 192.8	151.1450	Tone 16 192.8	N	L	A	Usage Note 5, 7
15	Simplex – Mo only	**CDF T-2**	Cal-Fire	151.1600	Tone 16 192.8	151.1600	Tone 16 192.8	N	L	A	Usage Note 5, 7
16	Simplex – Mo only	**CDF T-3**	Cal-Fire	151.1750	Tone 16 192.8	151.1750	Tone 16 192.8	N	L	A	Usage Note 5, 7
17	Simplex – Mo only	**CDF T-4**	Cal-Fire	151.1900	Tone 16 192.8	151.1900	Tone 16 192.8	N	L	A	Usage Note 5, 7
18	Simplex – Mo only	**CDF T-5**	Cal-Fire	151.2500	Tone 16 192.8	151.2500	Tone 16 192.8	N	L	A	Usage Note 5, 7
19	Simplex – Mo only	**CDF T-6**	Cal-Fire	151.3250	Tone 16 192.8	151.3250	Tone 16 192.8	N	L	A	Usage Note 5, 7
20	Simplex – Mo only	**CDF T-7**	Cal-Fire	151.3400	Tone 16 192.8	151.3400	Tone 16 192.8	N	L	A	Usage Note 5, 7

The convention calls for frequency lists to show four digits after the decimal place. The letter "U", "N", or "W" in the deviation (Dev) column reflects whether the frequency is ultranarrow, narrow, or wide band. Mode refers to either "A" indicating Analog, "D" indicating Digital (e.g. Project 25) or "M" indicating Mixed Mode. All channels are shown as if programmed in a control station, mobile or portable radio. Repeaters (and depending on use, base stations) must be programmed with the Rx and Tx reversed.

COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET - ICS 217A

	Frequency Band	Description
	VHF HIGH BAND	**FIRESCOPE STATEWIDE CHANNEL PLAN 2014**

Ch	Channel Configuration	Channel Name/Trunked Radio System Talkgroup	Eligible Users	RX Freq	RX Tone or CSQ	TX Freq	Tx Tone or NAC	N or W	Pwr	Mode A, D or M	Remarks
21	Simplex – Mo only	**CDF T-8**	Cal-Fire	151.3700	Tone 16 192.8	151.3700	Tone 16 192.8	N	L	A	Usage Note 5, 7
22	Simplex – Mo only	**CDF T-9**	Cal-Fire	151.3850	Tone 16 192.8	151.3850	Tone 16 192.8	N	L	A	Usage Note 5, 7
23	Simplex – Mo only	**CDF T-10**	Cal-Fire	151.4000	Tone 16 192.8	151.4000	Tone 16 192.8	N	L	A	Usage Note 5, 7
24	Simplex – Mo only	**CDF T-11**	Cal-Fire	151.4450	Tone 16 192.8	151.4450	Tone 16 192.8	N	L	A	Usage Note 5, 7
25	Simplex – Mo only	**CDF T-12**	Cal-Fire	151.4600	Tone 16 192.8	151.4600	Tone 16 192.8	N	L	A	Usage Note 5, 7
26	Simplex – Mo only	**CDF T-13**	Cal-Fire	151.4750	Tone 16 192.8	151.4750	Tone 16 192.8	N	L	A	Usage Note 5, 7
27	Simplex – Mo only	**CDF T-14**	Cal-Fire	159.2250	Tone 16 192.8	159.2250	Tone 16 192.8	N	L	A	Usage Note 5, 7
28	Simplex – Mo only	**CDF T-15**	Cal-Fire	159.2700	Tone 16 192.8	159.2700	Tone 16 192.8	N	L	A	Usage Note 5, 7
29	Simplex – Mo only	**CDF T-16**	Cal-Fire	159.2850	Tone 16 192.8	159.2850	Tone 16 192.8	N	L	A	Usage Note 5, 7
30	Simplex – Mo only	**CDF T-17**	Cal-Fire	159.3150	Tone 16 192.8	159.3150	Tone 16 192.8	N	L	A	Usage Note 5, 7
31	Simplex – Mo only	**CDF T-18**	Cal-Fire	159.3450	Tone 16 192.8	159.3450	Tone 16 192.8	N	L	A	Usage Note 5, 7
32	Simplex – Mo only	**CDF T-19**	Cal-Fire	159.3600	Tone 16 192.8	159.3600	Tone 16 192.8	N	L	A	Usage Note 5, 7
33	Simplex – Mo only	**CDF T-20**	Cal-Fire	159.3750	Tone 16 192.8	159.3750	Tone 16 192.8	N	L	A	Usage Note 5, 7
34	Simplex – Mo only	**CDF T-21**	Cal-Fire	159.3900	Tone 16 192.8	159.3900	Tone 16 192.8	N	L	A	Usage Note 5, 7
35	Simplex – Mo only	**CDF T-22**	Cal-Fire	159.4050	Tone 16 192.8	159.4050	Tone 16 192.8	N	L	A	Usage Note 5, 7
36	Simplex – Mo only	**CDF T-23**	Cal-Fire	159.4500	Tone 16 192.8	159.4500	Tone 16 192.8	N	L	A	Usage Note 5, 7
37	Simplex – Mo only	**CDF T-24**	Cal-Fire	151.3175	Tone 16 192.8	151.3175	Tone 16 192.8	N	L	A	Usage Note 5, 7 **NEW FOR 2014**
38	Simplex – Mo only	**CDF T-25**	Cal-Fire	159.3525	Tone 16 192.8	159.3525	Tone 16 192.8	N	L	A	Usage Note 5, 7 **NEW FOR 2014**
39	Simplex – Mo only	**CESRS**	Travel	153.7550	Tone 16 192.8	154.9800	**OST**	N	H	A	Usage Note 3, 13, 14, 15, 16
40	Repeater Pair	**NIFC C-1**	NIRSC	168.7000	CSQ	170.9750	**OST**	N	L	A	Usage Note 3, 5, 6, 14, 16

The convention calls for frequency lists to show four digits after the decimal place. The letter "U", "N", or "W" in the deviation (Dev) column reflects whether the frequency is ultranarrow, narrow, or wide band. Mode refers to either "A" indicating Analog, "D" indicating Digital (e.g. Project 25) or "M" indicating Mixed Mode. All channels are shown as if programmed in a control station, mobile or portable radio. Repeaters (and depending on use, base stations) must be programmed with the Rx and Tx reversed.

COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET - ICS 217A

Frequency Band: VHF HIGH BAND

Description: FIRESCOPE STATEWIDE CHANNEL PLAN 2014

Ch	Channel Configuration	Channel Name/Trunked Radio System Talkgroup	Eligible Users	RX Freq	RX Tone or CSQ	TX Freq	Tx Tone or NAC	N or W	Pwr	Mode A, D or M	Remarks
41	Repeater Pair	**NIFC C-4**	NIRSC	166.6125	CSQ	168.4000	**OST**	N	L	A	Usage Note 3, 5, 6, 14, 16
42	Repeater Pair	**NIFC C-5**	NIRSC	167.1000	CSQ	169.7500	**OST**	N	L	A	Usage Note 3, 5, 6, 14, 16
43	Repeater Pair	**NIFC C-6**	NIRSC	168.4750	CSQ	173.8125	**OST**	N	L	A	Usage Note 3, 5, 6, 14, 16
44	Repeater Pair	**NIFC C-8**	NIRSC	169.5375	CSQ	164.7125	**OST**	N	L	A	Usage Note 3, 5, 6, 14, 16
45	Repeater Pair	**NIFC C-9**	NIRSC	170.0125	CSQ	165.2500	**OST**	N	L	A	Usage Note 3, 5, 6, 14, 16
46	Repeater Pair	**NIFC C-10**	NIRSC	170.4125	CSQ	165.9625	**OST**	N	L	A	Usage Note 3, 5, 6, 14, 16
47	Repeater Pair	**NIFC C-11**	NIRSC	170.6875	CSQ	166.5750	**OST**	N	L	A	Usage Note 3, 5, 6, 14, 16
48	Repeater Pair	**NIFC C-12**	NIRSC	173.0375	CSQ	167.3250	**OST**	N	L	A	Usage Note 3, 5, 6, 14, 16
49	Simplex – Mo only	**NIFC T-1**	NIRSC	168.0500	CSQ	168.0500	**OST**	N	L	A	Usage Note 3, 5, 6, 16
50	Simplex – Mo only	**NIFC T-2**	NIRSC	168.2000	CSQ	168.2000	**OST**	N	L	A	Usage Note 3, 5, 6, 16
51	Simplex – Mo only	**NIFC T-3**	NIRSC	168.6000	CSQ	168.6000	**OST**	N	L	A	Usage Note 3, 5, 6, 16
52	Simplex – Mo only	**NIFC T-5**	NIRSC	166.7250	CSQ	166.7250	**OST**	N	L	A	Usage Note 3, 5, 6, 16
53	Simplex – Mo only	**NIFC T-6**	NIRSC	166.7750	CSQ	166.7750	**OST**	N	L	A	Usage Note 3, 5, 6, 16
54	Simplex – Mo only	**NIFC T-7**	NIRSC	168.2500	CSQ	168.2500	**OST**	N	L	A	Usage Note 3, 5, 6, 16
55	Repeater Pair	**OES 1A**	Cal-EMA "Fire Net"	154.1600	CSQ	159.1350	**OST**	N	H	A	Usage Note 3, 14, 16
56	Repeater Pair	**OES 1B**	Cal-EMA "Fire Net"	154.1600	CSQ	159.1950	**OST**	N	H	A	Usage Note 3, 14, 16
57	Repeater Pair	**OES 2A**	Cal-EMA "Fire Net"	154.2200	CSQ	159.1350	**OST**	N	H	A	Usage Note 3, 14, 16
58	Repeater Pair	**OES 2B**	Cal-EMA "Fire Net"	154.2200	CSQ	159.1950	**OST**	N	H	A	Usage Note 3, 14, 16
59	Simplex – Air/Mo	**R5 AG-08**	USFS R5 Fire	166.8750	CSQ	166.8750	None	N	L	A	Usage Note 5, 6, 7
60	Simplex – Air/Mo	**R5 AG-14**	USFS R5 Fire	167.5000	CSQ	167.5000	None	N	L	A	Usage Note 5, 6, 7

The convention calls for frequency lists to show four digits after the decimal place. The letter "U", "N", or "W" in the deviation (Dev) column reflects whether the frequency is ultranarrow, narrow, or wide band. Mode refers to either "A" indicating Analog, "D" indicating Digital (e.g. Project 25) or "M" indicating Mixed Mode. All channels are shown as if programmed in a control station, mobile or portable radio. Repeaters (and depending on use, base stations) must be programmed with the Rx and Tx reversed.

COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET - ICS 217A

Frequency Band	Description
VHF HIGH BAND	**FIRESCOPE STATEWIDE CHANNEL PLAN 2014**

Ch	Channel Configuration	Channel Name/Trunked Radio System Talkgroup	Eligible Users	RX Freq	RX Tone or CSQ	TX Freq	Tx Tone or NAC	N or W	Pwr	Mode A, D or M	Remarks
61	Simplex – Air/Mo	**R5 AG-24**	USFS R5 Fire	168.6375	CSQ	168.6375	None	N	L	A	Usage Note 5, 6, 7
62	Simplex – Air/Mo	**R5 AG-41**	USFS R5 Fire	167.4750	CSQ	167.4750	None	N	L	A	Usage Note 5, 6, 7
63	Simplex – Air/Mo	**R5 AG-43**	USFS R5 Fire	167.6000	CSQ	167.6000	None	N	L	A	Usage Note 5, 6, 7
64	Simplex – Air/Mo	**R5 AG-53**	USFS R5 Fire	168.4875	CSQ	168.4875	None	N	L	A	Usage Note 5, 6, 7
65	Simplex – Air/Mo	**R5 AG-59**	USFS R5 Fire	169.1125	CSQ	169.1125	None	N	L	A	Usage Note 5, 6, 7
66	Simplex – Mo only	**R5 T-4**	USFS R5 Fire	166.5500	CSQ	166.5500	**OST**	N	L	A	Usage Note 3, 5, 7, 16
67	Simplex – Mo only	**R5 T-5**	USFS R5 Fire	167.1125	CSQ	167.1125	**OST**	N	L	A	Usage Note 3, 5, 7, 16
68	Simplex – Mo only	**R5 T-6**	USFS R5 Fire	168.2375	CSQ	168.2375	**OST**	N	L	A	Usage Note 3, 5, 7, 16
69	Simplex – Base/Mo	**VFIRE21**	Fire Interop	154.2800	Tone 6 156.7	154.2800	Tone 6 156.7	N	H	A	Usage Note 1
70	Simplex – Mo only	**VFIRE22**	Fire Interop	154.2650	Tone 6 156.7	154.2650	Tone 6 156.7	N	L	A	Usage Note 1, 5, 9
71	Simplex – Mo only	**VFIRE23**	Fire Interop	154.2950	Tone 6 156.7	154.2950	Tone 6 156.7	N	L	A	Usage Note 1, 5, 9
72	Simplex – Mo only	**VFIRE24**	Fire Interop	154.2725	Tone 6 156.7	154.2725	Tone 6 156.7	N	L	A	Usage Note 1, 5, 9
73	Simplex – Mo only	**VFIRE25**	Fire Interop	154.2875	Tone 6 156.7	154.2875	Tone 6 156.7	N	L	A	Usage Note 1, 5, 9
74	Simplex – Mo only	**VFIRE26**	Fire Interop	154.3025	Tone 6 156.7	154.3025	Tone 6 156.7	N	L	A	Usage Note 1, 5, 9
75	Simplex – Base/Mo	**VCALL10**	Public Safety Interop	155.7525	CSQ	155.7525	Tone 6 156.7	N	H	A	Usage Note 4, 8
76	Simplex – Base/Mo	**VTAC11**	Public Safety Interop	151.1375	Tone 6 156.7	151.1375	Tone 6 156.7	N	L	A	Usage Note 5, 8
77	Simplex – Base/Mo	**VTAC12**	Public Safety Interop	154.4525	Tone 6 156.7	154.4525	Tone 6 156.7	N	L	A	Usage Note 4, 5, 8
78	Simplex – Base/Mo	**VTAC13**	Public Safety Interop	158.7375	Tone 6 156.7	158.7375	Tone 6 156.7	N	L	A	Usage Note 5, 8
79	Simplex – Base/Mo	**VTAC14**	Public Safety Interop	159.4725	Tone 6 156.7	159.4725	Tone 6 156.7	N	L	A	Usage Note 4, 5, 8
80	Simplex – Air/Mo	**170.00000**	USFS R5 Project	170.0000	CSQ	170.0000	None	N	L	A	Usage Note 5, 6, 7

The convention calls for frequency lists to show four digits after the decimal place. The letter "U", "N", or "W" in the deviation (Dev) column reflects whether the frequency is ultranarrow, narrow, or wide band. Mode refers to either "A" indicating Analog, "D" indicating Digital (e.g. Project 25) or "M" indicating Mixed Mode. All channels are shown as if programmed in a control station, mobile or portable radio. Repeaters (and depending on use, base stations) must be programmed with the Rx and Tx reversed.

	COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET - ICS 217A		Frequency Band		Description	
			VHF HIGH BAND		FIRESCOPE STATEWIDE CHANNEL PLAN 2014	

Ch	Channel Configuration	Channel Name/Trunked Radio System Talkgroup	Eligible Users	RX Freq	RX Tone or CSQ	TX Freq	Tx Tone or NAC	N or W	Pwr	Mode A, D or M	Remarks
81	Portable Repeater	**VTAC33**	All Public Safety	159.4725	Tone 4 136.5	151.1375	Tone 4 136.5	N	L	A	Portable Tactical Repeater
82	Portable Repeater	**VTAC34**	All Public Safety	158.7375	Tone 4 136.5	154.4525	Tone 4 136.5	N	L	A	Portable Tactical Repeater
83	Portable Repeater	**VTAC35**	All Public Safety	159.4725	Tone 4 136.5	158.7375	Tone 4 136.5	N	L	A	Portable Tactical Repeater
84	Portable Repeater	**VTAC36**	All Public Safety	151.1375	Tone 4 136.5	159.4725	Tone 4 136.5	N	L	A	Portable Tactical Repeater
85	Portable Repeater	**VTAC37**	All Public Safety	154.4525	Tone 4 136.5	158.7375	Tone 4 136.5	N	L	A	Portable Tactical Repeater
86	Portable Repeater	**VTAC38**	All Public Safety	158.7375	Tone 4 136.5	159.4725	Tone 4 136.5	N	L	A	Portable Tactical Repeater

The convention calls for frequency lists to show four digits after the decimal place. The letter "U", "N", or "W" in the deviation (Dev) column reflects whether the frequency is ultranarrow, narrow, or wide band. Mode refers to either "A" indicating Analog, "D" indicating Digital (e.g. Project 25) or "M" indicating Mixed Mode. All channels are shown as if programmed in a control station, mobile or portable radio. Repeaters (and depending on use, base stations) must be programmed with the Rx and Tx reversed.

COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET - ICS 217A

	Frequency Band	Description
	UHF & UHF-T	**FIRESCOPE STATEWIDE CHANNEL PLAN 2014**

Ch	Channel Configuration	Channel Name/Trunked Radio System Talkgroup	Eligible Users	RX Freq	RX Tone or CSQ	TX Freq	Tx Tone or NAC	N or W	Pwr	Mode A, D or M	Remarks
1	Simplex – Mo only	**FDUMA**	FD Interop ONLY	487.2375	Tone 6 156.7	487.2375	Tone 6 156.7	N	H	A	Cal-EMA Interop (**in LAC ONLY**)
2	Repeater	**UCALL40**	All Public Safety	453.2125	CSQ	458.2125	Tone 6 156.7	N	H	A	Usage Note 3, 9, 14, 16
3	Repeater	**UTAC41**	All Public Safety	453.4625	CSQ	458.4625	**MPL**	N	H	A	Usage Note 3, 9, 14, 16
4	Repeater	**UTAC42**	All Public Safety	453.7125	CSQ	458.7125	**MPL**	N	H	A	Usage Note 3, 9, 14, 16
5	Repeater	**UTAC43**	All Public Safety	453.8625	CSQ	458.8625	**MPL**	N	H	A	Usage Note 3, 9, 14, 16
6	Repeater	**NC 2 CALL**	LE Calling	410.2375	Tone 7 167.9	419.2375	Tone 7 167.9	N	H	A	CALLING
7	Repeater	**IR 10**	LE Tactical	410.4375	Tone 7 167.9	419.4375	Tone 7 167.9	N	H	A	
8	Repeater	**IR 11**	LE Tactical	410.6375	Tone 7 167.9	419.6375	Tone 7 167.9	N	H	A	
9	Repeater	**IR 12**	LE Tactical	410.8375	Tone 7 167.9	419.8375	Tone 7 167.9	N	H	A	SAR Incident Command
10	Simplex	**IR 13**	LE Tactical	413.1875	Tone 7 167.9	413.1875	Tone 7 167.9	N	H	A	
11	Simplex	**IR 14**	LE Tactical	413.2125	Tone 7 167.9	413.2125	Tone 7 167.9	N	H	A	Interagency Convoy
12	Simplex	**IR 15**	LE Tactical	410.2375	Tone 7 167.9	410.2375	Tone 7 167.9	N	H	A	CALLING (Direct)
13	Simplex	**IR 16**	LE Tactical	410.4375	Tone 7 167.9	410.4375	Tone 7 167.9	N	H	A	Direct for IR 10
14	Simplex	**IR 17**	LE Tactical	410.6375	Tone 7 167.9	410.6375	Tone 7 167.9	N	H	A	Direct for IR 11
15	Simplex	**IR 18**	LE Tactical	410.8375	Tone 7 167.9	410.8375	Tone 7 167.9	N	H	A	Direct for IR 12 - SAR Incident Cmd

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| | | COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET - ICS 217A | Frequency Band | UHF & UHF-T | Description | FIRESCOPE STATEWIDE CHANNEL PLAN 2014 |

Ch	Channel Configuration	Channel Name/Trunked Radio System Talkgroup	Eligible Users	RX Freq	RX Tone or CSQ	TX Freq	Tx Tone or NAC	N or W	Pwr	Mode A, D or M	Remarks
16	Repeater	**MED 1**	Fire/EMS	463.0000	CSQ	468.0000	**MPL**	N	H	A	Usage Note 3, 16
17	Repeater	**MED 2**	Fire/EMS	463.0250	CSQ	468.0250	**MPL**	N	H	A	Usage Note 3, 16
18	Repeater	**MED 3**	Fire/EMS	463.0500	CSQ	468.0500	**MPL**	N	H	A	Usage Note 3, 16
19	Repeater	**MED 4**	Fire/EMS	463.0750	CSQ	468.0750	**MPL**	N	H	A	Usage Note 3, 16
20	Repeater	**MED 5**	Fire/EMS	463.1000	CSQ	468.1000	**MPL**	N	H	A	Usage Note 3, 16
21	Repeater	**MED 6**	Fire/EMS	463.1250	CSQ	468.1250	**MPL**	N	H	A	Usage Note 3, 16
22	Repeater	**MED 7**	Fire/EMS	463.1500	CSQ	468.1500	**MPL**	N	H	A	Usage Note 3, 16
23	Repeater	**MED 8**	Fire/EMS	463.1750	CSQ	468.1750	**MPL**	N	H	A	Usage Note 3, 16
24	Repeater	**MED 9A**	Fire/EMS	462.9500	CSQ	467.9500	**MPL**	N	H	A	Usage Note 3, 16
25	Repeater	**MED 10A**	Fire/EMS	462.9750	CSQ	467.9750	**MPL**	N	H	A	Usage Note 3, 16
26	Repeater	**MED 12**	Fire/EMS	463.0125	CSQ	468.0125	**MPL**	N	H	A	Usage Note 3, 16
27	Repeater	**MED 22**	Fire/EMS	463.0375	CSQ	468.0375	**MPL**	N	H	A	Usage Note 3, 16
28	Repeater	**MED 32**	Fire/EMS	463.0625	CSQ	468.0625	**MPL**	N	H	A	Usage Note 3, 16
29	Repeater	**MED 42**	Fire/EMS	463.0875	CSQ	468.0875	**MPL**	N	H	A	Usage Note 3, 16
30	Repeater	**MED 52**	Fire/EMS	463.1125	CSQ	468.1125	**MPL**	N	H	A	Usage Note 3, 16
31	Repeater	**MED 62**	Fire/EMS	463.1375	CSQ	468.1375	**MPL**	N	H	A	Usage Note 3, 16
32	Repeater	**MED 72**	Fire/EMS	463.1625	CSQ	468.1625	**MPL**	N	H	A	Usage Note 3, 16
33	Repeater	**MED 82**	Fire/EMS	463.1875	CSQ	468.1875	**MPL**	N	H	A	Usage Note 3, 16
34	Repeater	**MED 92A**	Fire/EMS	462.9625	CSQ	467.9625	**MPL**	N	H	A	Usage Note 3, 16
35	Repeater	**MED 102A**	Fire/EMS	462.9875	CSQ	467.9875	**MPL**	N	H	A	Usage Note 3, 16

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	COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET - ICS 217A		Frequency Band **700 & 800 MHz**		Description **FIRESCOPE STATEWIDE CHANNEL PLAN 2014**

Ch	Channel Configuration	Channel Name/Trunked Radio System Talkgroup	Eligible Users	RX Freq	RX Tone or CSQ	TX Freq	Tx Tone or NAC	N or W	Pwr	Mode A, D or M	Remarks
1	Base-Fixed-Mobile	**7CALL50**	ALL Public Safety	769.24375	$F7E	799.24375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
2	Base-Fixed-Mobile	**7TAC51**	ALL Public Safety	769.14375	$F7E	799.14375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
3	Base-Fixed-Mobile	**7TAC52**	ALL Public Safety	769.64375	$F7E	799.64375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
4	Base-Fixed-Mobile	**7TAC53**	ALL Public Safety	770.14375	$F7E	800.14375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
5	Base-Fixed-Mobile	**7TAC54**	ALL Public Safety	770.64375	$F7E	800.64375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
6	Base-Fixed-Mobile	**7TAC55**	ALL Public Safety	769.74375	$F7E	799.74375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
7	Base-Fixed-Mobile	**7TAC56**	ALL Public Safety	770.24375	$F7E	800.24375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
8	Base-Fixed-Mobile	**7GTAC57**	Other Public Service	770.99375	$F7E	800.99375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
9	Base-Fixed-Mobile	**7MOB79**	Mobile Repeater	774.50625	$F7E	804.50625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
10	Base-Fixed-Mobile	**7LAW61**	LAW Interop ONLY	770.39375	$F7E	800.39375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
11	Base-Fixed-Mobile	**7LAW62**	LAW Interop ONLY	770.49375	$F7E	800.49375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
12	Base-Fixed-Mobile	**7FIRE63**	Fire Interop ONLY	769.89375	$F7E	799.89375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
13	Base-Fixed-Mobile	**7FIRE64**	Fire Interop ONLY	769.99375	$F7E	799.99375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
14	Base-Fixed-Mobile	**7MED65**	EMS Interop ONLY	769.39375	$F7E	799.39375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
15	Base-Fixed-Mobile	**7MED66**	EMS Interop ONLY	769.49375	$F7E	799.49375	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
16	Base-Fixed-Mobile	**7DATA69**	Mobile Data	770.74375	$F7E	800.74375	**MPL**	N	H	D	NO Voice Tx Permitted
17	Base-Fixed-Mobile	**7CALL70**	ALL Public Safety	773.25625	$F7E	803.25625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
18	Base-Fixed-Mobile	**7TAC71**	ALL Public Safety	773.10625	$F7E	803.10625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
19	Base-Fixed-Mobile	**7TAC72**	ALL Public Safety	773.60625	$F7E	803.60625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
20	Base-Fixed-Mobile	**7TAC73**	ALL Public Safety	774.10625	$F7E	804.10625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16

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COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET - ICS 217A

	Frequency Band	Description
	700 & 800 MHz	**FIRESCOPE STATEWIDE CHANNEL PLAN 2014**

Ch	Channel Configuration	Channel Name/Trunked Radio System Talkgroup	Eligible Users	RX Freq	RX Tone or CSQ	TX Freq	Tx Tone or NAC	N or W	Pwr	Mode A, D or M	Remarks
21	Base-Fixed-Mobile	**7TAC74**	ALL Public Safety	774.60625	$F7E	804.60625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
22	Base-Fixed-Mobile	**7TAC75**	ALL Public Safety	773.75625	$F7E	803.75625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
23	Base-Fixed-Mobile	**7TAC76**	ALL Public Safety	774.25625	$F7E	804.25625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
24	Base-Fixed-Mobile	**7GTAC77**	Other Public Service	774.85625	$F7E	804.85625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
25	Base-Fixed-Mobile	**7MOB79**	Mobile Repeater	774.50625	$F7E	804.50625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
26	Base-Fixed-Mobile	**7LAW81**	LAW Interop ONLY	774.00625	$F7E	804.00625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
27	Base-Fixed-Mobile	**7LAW82**	LAW Interop ONLY	774.35625	$F7E	804.35625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
28	Base-Fixed-Mobile	**7FIRE83**	Fire Interop ONLY	773.50625	$F7E	803.50625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
29	Base-Fixed-Mobile	**7FIRE84**	Fire Interop ONLY	773.85625	$F7E	803.85625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
30	Base-Fixed-Mobile	**7MED86**	EMS Interop ONLY	773.00625	$F7E	803.00625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
31	Base-Fixed-Mobile	**7MED87**	EMS Interop ONLY	773.35625	$F7E	803.35625	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
32	Base-Fixed-Mobile	**7DATA89**	Mobile Data	774.75625	$F7E	804.75625	**MPL**	N	H	D	NO Voice Tx Permitted
33	Base-Fixed-Mobile	**8CAFIRE1**	FIRE Interop ONLY	853.98750	Tone 6 156.7	808.98750	**MPL**	W	H	A	Usage Note 3, 10, 14, 16
34	Base-Fixed-Mobile	**8CAFIRE2**	FIRE Interop ONLY	851.91250	Tone 6 156.7	806.91250	**MPL**	W	H	A	Usage Note 3, 10, 11, 14, 16
35	Base-Fixed-Mobile	**FIREMARS**	FIRE Interop ONLY	868.98750	Tone 6 156.7	821.91250	**MPL**	W	H	A	Usage Note 3, 10, 14, 16
36	Base-Fixed-Mobile	**FIREMARS2**	FIRE Interop ONLY	866.91250	Tone 6 156.7	823.98750	**MPL**	W	H	A	Usage Note 3, 10, 11, 14, 16
37	Base-Fixed-Mobile	**8CALL90**	ALL Public Safety	851.01250	CSQ	806.01250	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
38	Base-Fixed-Mobile	**8TAC91**	ALL Public Safety	851.51250	CSQ	806.51250	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
39	Base-Fixed-Mobile	**8TAC92**	ALL Public Safety	852.01250	CSQ	807.01250	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
40	Base-Fixed-Mobile	**8TAC93**	ALL Public Safety	852.51250	CSQ	807.51250	**MPL**	N	H	D	Usage Note 3, 9, 14, 16
41	Base-Fixed-Mobile	**8TAC94**	ALL Public Safety	853.01250	CSQ	808.01250	**MPL**	N	H	D	Usage Note 3, 9, 14, 16

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	COMMUNICATIONS RESOURCE AVAILABILITY WORKSHEET - ICS 217A			Frequency Band **700 & 800 MHz**						Description **FIRESCOPE STATEWIDE CHANNEL PLAN 2014**

Ch	Channel Configuration	Channel Name/Trunked Radio System Talkgroup	Eligible Users	RX Freq	RX Tone or CSQ	TX Freq	Tx Tone or NAC	N or W	Pwr	Mode A, D or M	Remarks
42	Base-Fixed-Mobile	**ICALL**	ALL Public Safety	866.01250	Tone 6 156.7	821.01250	**MPL**	W	H	A	Usage Note 3, 9, 14, 16
43	Base-Fixed-Mobile	**ITAC1**	ALL Public Safety	866.51250	Tone 6 156.7	821.51250	**MPL**	W	H	A	Usage Note 3, 9, 14, 16
44	Base-Fixed-Mobile	**ITAC2**	ALL Public Safety	867.01250	Tone 6 156.7	822.01250	**MPL**	W	H	A	Usage Note 3, 9, 14, 16
45	Base-Fixed-Mobile	**ITAC3**	ALL Public Safety	867.51250	Tone 6 156.7	822.51250	**MPL**	W	H	A	Usage Note 3, 9, 14, 16
46	Base-Fixed-Mobile	**ITAC4**	ALL Public Safety	868.01250	Tone 6 156.7	823.01250	**MPL**	W	H	A	Usage Note 3, 9, 14, 16

The convention calls for frequency lists to show four digits after the decimal place. The letter "U", "N", or "W" in the deviation (Dev) column reflects whether the frequency is ultranarrow, narrow, or wide band. Mode refers to either "A" indicating Analog, "D" indicating Digital (e.g. Project 25) or "M" indicating Mixed Mode. All channels are shown as if programmed in a control station, mobile or portable radio. Repeaters (and depending on use, base stations) must be programmed with the Rx and Tx reversed.

CALIFORNIA STANDARD 32 CTCSS TONES

Continuous Tone Coded Carrier Squelch (CTCSS), Digital PL (DPL) and Network Access Codes (NAC)

TONE #	TONE Hz	DPL	NAC	TONE # = CTCSS
1	110.9	Dxxx	$455	
2	123.0	Dxxx	$4CE	
3	131.8	Dxxx	$526	
4	136.5	Dxxx	$555	
5	146.2	Dxxx	$5B6	
6	156.7	Dxxx	$61F	
7	167.9	Dxxx	$68F	
8	103.5	Dxxx	$40B	
9	100.0	Dxxx	$3E8	
10	107.2	Dxxx	$430	
11	114.8	Dxxx	$47C	
12	127.3	Dxxx	$4F9	
13	141.3	Dxxx	$585	
14	151.4	Dxxx	$5EA	
15	162.2	Dxxx	$656	
16	192.8	Dxxx	$788	
17	67.0	Dxxx		
18	71.9	Dxxx		
19	74.4	Dxxx		
20	77.0	Dxxx		
21	79.7	Dxxx		
22	82.5	Dxxx		
23	85.4	Dxxx		
24	88.5	Dxxx		
25	91.5	Dxxx		
26	94.8	Dxxx		
27	97.4	Dxxx		
28	118.8	Dxxx		
29	173.8	Dxxx		
30	179.9	Dxxx		
31	186.2	Dxxx		
32	203.5	Dxxx		
NONE	CSQ	NONE	$293	"Default" NAC Code
NONE	CSQ	NONE	$F7E	Rx EVERYTHING regardless of NAC