

Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of)
MUNICIPALITY OF ANCHORAGE, ALASKA) ULS File Nos. 0006112495 and 0006112498
CALAMP WIRELESS NETWORKS, INC.)
Request For Waiver of Section 90.531(d)(1) of the)
Commission's Rules)

ORDER

Adopted: August 26, 2014

Released: August 26, 2014

By the Chief, Public Safety and Homeland Security Bureau:

I. INTRODUCTION

1. On January 22, 2014, the Municipality of Anchorage, Alaska (Anchorage or Municipality) filed two applications seeking authority to operate a new wideband IP-based private land mobile data system on General Use channels in the portion of the 700 MHz band designated for public safety narrowband use. In connection with these applications, Anchorage seeks waiver of Section 90.531(d)(1) of the Commission's rules so that it may operate its mobile data system on a wideband basis using 50 kHz bandwidth channels. It also seeks waiver of Section 90.531(d)(1) on behalf of its equipment vendor, CalAmp Wireless Networks, Inc. (CalAmp), so that it may obtain equipment from CalAmp capable of operating with a channel bandwidth greater than 25 kHz.

2. For the reasons detailed below, we grant Anchorage's waiver request. We also grant a waiver to CalAmp so that it may add a wideband emission designator to the equipment certification for one model of its 700 MHz base stations for operation in Anchorage's IP-based mobile data system.

II. BACKGROUND

3. Anchorage currently operates a 14-year old mobile data system, serving over 350 of police patrol units using 25 kHz bandwidth channels in the 800 MHz band. Anchorage contends this mobile data system is "outdated" and "difficult to maintain and repair." Due to increased demands, it claims

1 See ULS application numbers 0006112495 and 0006112498, filed Jan. 22, 2014.

2 47 C.F.R. § 90.531(d)(1)(licensees can only combine 6.25 kHz channels to a maximum bandwidth of 25kHz) .

3 See Description of Filings and Request for Waiver attached to ULS application numbers 0006112495 and 0006112498 (Wideband Waiver Request).

4 Id. at 7, 12.

5 This waiver permits CalAmp to only market its base station with the wideband mode activated to Anchorage for use in Anchorage's IP-based mobile data system.

6 Anchorage's mobile data system is licensed under call signs WPBB244 and WPRI529.

7 Wideband Waiver Request at 2.

congestion on its mobile data system “adversely affects the Municipality’s ability to transmit critical public safety information.”⁸ It also argues that it is difficult to implement enhancements to its current system to accommodate its expanding need for mobile data because the system’s underlying technology is “relatively obsolete.”⁹

4. Accordingly, Anchorage seeks to build and implement a new 700 MHz wideband IP-based private land mobile data system that it can integrate into the existing Anchorage Wide Area Radio Network (AWARN).¹⁰ AWARN is an existing 700 MHz narrowband digital IP-based public safety voice radio system that almost all public safety agencies and emergency responders in the Municipality use.¹¹ While AWARN is currently a voice-only system, Anchorage, through its pending applications, seeks to add a mobile data component to the network.¹²

5. Anchorage states that its new IP-based mobile data system will initially serve 400 or more of its police department’s “crime scene investigators, traffic enforcement personnel, and major incident managers” but will eventually expand to include other users of the AWARN system, possibly including users from the Kenai Peninsula and the Matanuska-Susitna Boroughs.¹³ Anchorage claims its proposed mobile data system will also be “technologically compatible” with the Wasilla Police Department’s existing wideband mobile data system, encouraging roaming and regional interoperability between the Anchorage Police Department and the Wasilla Police Department.¹⁴

6. Anchorage explains that its proposed IP-based mobile data system will combine eight 700 MHz 6.25 kHz channel pairs to form 50 kHz bandwidth channel blocks in order to offer end users a data throughput rate of 128 kbps.¹⁵ It indicates that it intends to operate two distinct 50 kHz bandwidth channel blocks at each of eight existing transmitter locations within the AWARN system.¹⁶

7. Anchorage therefore seeks waiver of Section 90.531(d)(1) of the Commission’s rules,¹⁷ which limits the maximum combined channel bandwidth on 700 MHz narrowband spectrum to 25 kHz so that it may obtain a license to operate its proposed IP-based mobile data system using 50 kHz bandwidth channels.¹⁸

⁸ *Id.*

⁹ *Id.*

¹⁰ *Id.* at 3-4.

¹¹ *Id.* at 3.

¹² *Id.* at 4.

¹³ *Id.*

¹⁴ *Id.* The City of Wasilla Police Department operates a mobile data system on 700 MHz narrowband spectrum using 50 kHz bandwidth channels under STA call sign WQIW915. The STA is authorized until September 10, 2014. Wasilla is 44 road miles from Anchorage.

¹⁵ Anchorage seeks to form 50 kHz bandwidth channel pairs (50 kHz base transmit, 50 kHz mobile transmit) by aggregating eight contiguous 6.25 kHz bandwidth channels for base transmit paired with eight contiguous 6.25 kHz bandwidth channels for mobile transmit. Wideband Waiver Request at 4, 12.

¹⁶ *Id.* at 5.

¹⁷ 47 C.F.R. § 90.531(d)(1).

¹⁸ Wideband Waiver Request at 7.

8. Anchorage also seeks waiver of Section 90.531(d)(1) on behalf of its equipment vendor, CalAmp, so that it may obtain equipment from CalAmp capable of operating with a channel bandwidth greater than 25 kHz.¹⁹ By separate letter, CalAmp has notified the Commission's Office of Engineering and Technology (OET) of its intention to modify the equipment certification for one of its base stations in order to add a wideband emission designator authorizing operation at a bandwidth greater than 25 kHz for use in Anchorage's IP-based mobile data system.²⁰

9. In support of its waiver request, Anchorage argues that the public interest is served by allowing it to implement "much needed improvements to an aging public safety radio system that no longer meets communications needs."²¹ It claims that its proposed wideband operations will cause no harmful interference to other users in the band because "there currently are no licensees on the co-channels or adjacent channels it has proposed in its applications."²²

10. It also claims its proposed mobile data system will meet the Commission's spectrum efficiency requirements, and that once implemented the IP-based mobile data system will occupy "only about 13 percent" of the 700 MHz narrowband channels available in Alaska.²³ Anchorage includes with its applications a concurrence letter from the Regional Planning Committee (RPC) for Region 2 – Alaska.²⁴

11. On April 15, 2014, the Public Safety and Homeland Security Bureau (Bureau) released a Public Notice seeking comment on Anchorage's waiver request.²⁵ In particular, the Bureau sought comment from any party who would be impacted by Anchorage's proposed wideband operations.²⁶ It also sought comment on whether or not grant of the requested waiver would have any effect on the eventual implementation in Alaska of the nationwide broadband public safety communications network by the First Responder Network Authority (FirstNet).²⁷ No party commented in response to the Public Notice.

¹⁹ *Id.*

²⁰ CalAmp Wireless Networks, Inc. indicates it intends to seek a Class II permissive change to add emission designator 28K0F1D to the equipment authorization for its base station certified under FCC ID No. EOTBDP4-EXCT769. CalAmp indicates that the mobile units it intends to supply Anchorage are already properly certified for 50 kHz operation. *See* Letter from Mitchell Lazarus, Counsel for CalAmp, Inc. to Dr. Rashmi Doshi, Chief, Laboratory Division, Office of Engineering and Technology, Federal Communications Commission (Mar. 25, 2014)(CalAmp Letter). *See also* 47 C.F.R. § 2.1043.

²¹ Wideband Waiver Request at 11.

²² *Id.* at 12.

²³ *Id.*

²⁴ *See* letter from Dean Strid, Chairman, Region 2, 700 MHz Planning Committee to Municipality of Anchorage (Nov 22, 2013)(attached to Wideband Waiver Request)(Region 2 Letter).

²⁵ *See* Public Safety and Homeland Security Bureau Seeks Comment on Applications and Waiver Request Filed by the Municipality of Anchorage, Alaska for 50 kHz Wideband Operation on 700 MHz Narrowband General Use Channels, *Public Notice*, 29 FCC Rcd 3818 (PSHSB 2014).

²⁶ *Id.* at 3820.

²⁷ *Id.*

III. DISCUSSION

12. Section 1.925 states that to obtain a waiver of the Commission's rules, a petitioner must demonstrate either that: (i) the underlying purpose of the rule(s) would not be served or would be frustrated by application to the present case, and that a grant of the waiver would be in the public interest;²⁸ or (ii) in view of unique or unusual factual circumstances of the instant case, application of the rule(s) would be inequitable, unduly burdensome, or contrary to the public interest, or the applicant has no reasonable alternative.²⁹

13. We find that Anchorage satisfies the second prong of the waiver standard as detailed below. Because we are granting Anchorage's waiver request, we also grant CalAmp a waiver to allow it to add a wideband emission designator to the equipment certification of its base station for use in Anchorage's IP-based mobile data system.

14. *Section 90.531(d)(1) Waiver.* As an initial matter, we find the current spectral environment in the State of Alaska is an unusual circumstance. There appears to be little demand for 700 MHz General Use channels in Alaska outside of the AWARD system. A search of our database reveals no other licensee operating on General Use channels in the State of Alaska except for the City of Wasilla which, as noted in paragraph four, *supra*, employs a wideband mobile data system pursuant to Special Temporary Authority that Anchorage claims is compatible with the system it intends to deploy.

15. Furthermore, we agree with Anchorage that in order to achieve its desired data throughput rate of 128 kbps it must operate its proposed IP-based mobile data system using channel bandwidths greater than 25 kHz. This is because data throughput rates higher than 64 kbps are difficult to achieve on 25 kHz bandwidth channels.³⁰ In fact, Anchorage claims its existing mobile data system provides data throughput rates of only 19.6 kbps operating on 25 kHz bandwidth channels in the 800 MHz band.³¹ Its proposed 700 MHz system will have a throughput of 128 kbps, an over 500% increase in spectrum efficiency achieved through only a doubling of required bandwidth. Thus, we conclude that Anchorage has no reasonable alternative to seeking a waiver of Section 90.531(d)(1) if it is to achieve its desired data throughput rate on 700 MHz narrowband channels.

16. Moreover, we find Anchorage's proposal to aggregate narrowband 6.25 kHz bandwidth channels into 50 kHz blocks will create minimal impact on the availability of 700 MHz narrowband channels throughout the state,³² and that an adequate number of General Use channels will remain available in the band for future use by other licensees even after Anchorage deploys this mobile data system.³³ In analyzing the impact of Anchorage's proposal on channel availability in the State of Alaska,

²⁸ 47 C.F.R. § 1.925(b)(3)(i).

²⁹ 47 C.F.R. § 1.925(b)(3)(ii).

³⁰ A specification sheet for CalAmp's Gemini G3-ADB receiver indicates that data rates vary with the strength of the desired signal but that 64 kbps is the maximum attainable data rate for a 25 kHz bandwidth channel in the 700 MHz band while a data rate of 128 kbps can be achieved for a 50 kHz bandwidth channel in the 700 MHz band. See <http://www.calamp.com/products/private-radios-narrow-band-equipment/private-mobile-networks/gemini-g3-adb>.

³¹ Wideband Waiver Request at 2.

³² *Id.* at 12 (noting that, once constructed, its IP-based mobile data network will occupy "only about 13 percent" of the 700 MHz narrowband channels available in the state).

³³ *Id.* at 1-2.

we find probative the fact that it obtained consent from the Regional Planning Committee and that no entity objected to Anchorage's applications or waiver request.³⁴

17. Finally, given that a large portion of the state's population resides in the Municipality, we find it in the public interest for Anchorage to replace its existing outdated mobile data system. We recognize that Congress has charted a path for a nationwide interoperable public safety network with its creation of FirstNet in 2012.³⁵ We are also aware that FirstNet is currently engaging in a number of activities to implement its statutory mandates, and to develop its nationwide system architecture, including undertaking state consultations.³⁶ We also note that the Commission has sought comment on the future of the 700 MHz narrowband spectrum, including whether to eliminate the 6.25 kHz narrowbanding requirement in light of possible long-term demand to migrate the narrowband spectrum to broadband use.³⁷ Nonetheless, we find it in the public interest to grant the present waiver because in the interim we believe Anchorage's proposed IP-based mobile data system on 700 MHz narrowband spectrum may serve its police department's current data needs. However, we also note that our consideration of the factual circumstances that support a waiver request today may not be present in the future when FirstNet's efforts are more mature or if the Commission's policies on the use of the band shift. Finally, in light of the other circumstances described herein, we find it unduly burdensome to require Anchorage to operate its new IP-based mobile data system at less than desired data rates solely to comply with the bandwidth requirements of Section 90.531(d)(1).

18. *CalAmp's Class II permissive change.* Having determined that Anchorage has satisfied the waiver standard, we now turn to its request to obtain equipment for its IP-based mobile data system capable of operating on 700 MHz narrowband spectrum with a bandwidth greater than 25 kHz.³⁸ Anchorage's equipment vendor, CalAmp, states in a letter to staff at OET that it "no longer manufactures equipment compatible with a 50 kHz base station" and therefore intends to seek a Class II permissive change to "simply add a 50 kHz emission designator" to a "later and more advanced unit now certified for a 25 kHz bandwidth."³⁹

19. CalAmp includes several reports with its letter detailing the performance of its base station under various tests while operating with a wideband emission using a channel bandwidth of 50 kHz.⁴⁰ Included with these tests are results of measurements on Adjacent Channel Power (ACP).⁴¹

20. All transmitters operating on narrowband spectrum in the 700 MHz band must comply with ACP emission limits which are designed to minimize interference to adjacent channels.⁴² ACP limits are

³⁴ See Region 2 Letter.

³⁵ Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. 112-96, 126 Stat. 156, Section 6202 (2012)..

³⁶ See http://www.ntia.doc.gov/files/ntia/publications/fact_sheet_process-9-19-13.pdf.

³⁷ See Development of Operational, Technical and Spectrum Requirements for Meeting Federal State and Local Public Safety Communication Requirements Through the Year 2010, WT Docket No. 96-86, *Seventh Report and Order and Notice of Proposed Rulemaking*, 28 FCC Rcd 4783, ¶¶ 88-91 (2013); See also, Middle Class Tax Relief and Job Creation Act of 2012, Pub. L. No. 112-96, 126 Stat. 156, § 6102 (2012).

³⁸ Wideband Waiver Request at 7.

³⁹ CalAmp Letter at 2.

⁴⁰ See Nemko Canada, Inc. Test Reports (attached to CalAmp Letter).

⁴¹ See Nemko Canada, Inc. Test Report Reference No: 155790-2TRFWL at 33-41 (attached to CalAmp Letter).

⁴² See 47 C.F.R. § 90.543(a). An ACP emission limit is based upon the absolute and relative levels of coupled power as a function of frequency to ensure that the adjacent channel interference potential of a transmitter at various (continued....)

important for determining the interference potential of a transmitter to users operating on other in-band channels or in other bands.⁴³ Although the Commission specifies no ACP limits for transmitters operating with a channel bandwidth greater than 25 kHz, it did seek comment in January 2005 on an industry adopted standard for ACP emission limits when a transmitter operates with a channel bandwidth of 50 kHz.⁴⁴

21. CalAmp's test report demonstrates that its base station complies with the industry adopted ACP emission limits when transmitting using a wideband emission on a 50 kHz bandwidth channel. Consequently, we conclude that the CalAmp base station is unlikely to cause interference to licensees on other 700 MHz narrowband channels when operating in a wideband mode. Furthermore, we find the results of all other measurements in the test reports appropriate.

22. Consequently, we find it in the public interest to grant Anchorage's equipment vendor, CalAmp, a waiver of Section 90.531(d)(1) so it may add a new wideband emission designator to its base station certified under FCC ID No. EOTBDP4-EXCT769 for use in Anchorage's IP-based mobile data system. We condition the instant waiver to Anchorage on CalAmp first obtaining a permissive change to add a wideband (50 kHz) emission designator to its current certification. CalAmp should include a copy of this order with its application for permissive change. Once the new emission designator is added to its equipment certification, CalAmp may only market its base station with the wideband mode activated to Anchorage for use in Anchorage's IP-based mobile data system.

IV. ORDERING CLAUSES

23. Accordingly, IT IS ORDERED that the waiver request associated with ULS File Nos. 0006112495 and 0006112498 filed by the Municipality of Anchorage, Alaska pursuant to Section 1.925 of the Commission's rules, 47 C.F.R. § 1.925, IS GRANTED and the associated application SHALL BE PROCESSED accordingly.

24. IT IS FURTHER ORDERED that CalAmp Wireless Networks, Inc. IS GRANTED a waiver to add a wideband emission designator to its base station certified under FCC ID No. EOTBDP4-EXCT769.

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bandwidths is consistent and predictable. See Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010, WT Docket No. 96-86, *Sixth Notice of Proposed Rulemaking*, 17 FCC Rcd 19303, 19304 ¶ 3 (2002) (*Sixth Notice*).

⁴³ ACP emission limits are designed to minimize interference to communications systems operating on other in-band channels or in other bands by restricting the level of emissions that are transmitted into adjacent channels and other parts of the spectrum. See Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements Through the Year 2010, WT Docket No. 96-86, *First Report and Order and Third Notice of Proposed Rulemaking*, 14 FCC Rcd 152, 213 ¶ 136 (1998).

⁴⁴ See Development of Operational, Technical and Spectrum Requirements for Meeting Federal State and Local Public Safety Communication Requirements Through the Year 2010, WT Docket No. 96-86, *Fifth Memorandum Opinion and Order, Sixth Report and Order, and Seventh NPRM of Proposed Rulemaking*, 20 FCC Rcd 831, 845-48 ¶ 36 (2005). The ACP limits were proposed by the Private Radio Section of the Wireless Communications Division of the Telecommunications Industry Association (TIA-PRS) which claimed the limits represented a consensus opinion of manufacturers. *Id.* at 854 ¶ 35.

25. This action is taken under delegated authority pursuant to Sections 0.131, 0.191, 0.331 and 0.392 of the Commission's rules, 47 C.F.R. §§ 0.131, 0.191, 0.331, 0.392.

FEDERAL COMMUNICATIONS COMMISSION

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