

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

In the Matter of	)	
	)	
OP LLC (Crown Castle International Corp.),	)	File No. 0002271317
Licensee of WPYQ831, Petition for Waiver of	)	
Section 27.50(f)(1) of the Commission's Rules	)	

**MEMORANDUM OPINION AND ORDER**

**Adopted: February 23, 2007**

**Released: February 26, 2007**

By the Commission: Commissioners Adelstein and McDowell issuing separate statements.

**I. INTRODUCTION**

1. This order addresses a request filed by OP LLC, and its parent company, Crown Castle International Corp. (collectively, Crown Castle), on August 9, 2005, seeking waiver of Section 27.50(f)(1) of the Commission's rules,<sup>1</sup> which specifies a peak 2 kW Equivalent Isotropically Radiated Power (EIRP) limit for fixed and base station operations in the 1670-1675 MHz band.<sup>2</sup> For the reasons stated below, we hereby authorize OP LLC, licensee of call sign WPYQ831, to transmit with a power limit of 4 kW/MHz and 8 kW/MHz peak EIRP, for fixed and base station operations in non-rural and rural areas, respectively.

2. This authority is limited to the 30 Cellular Market Areas (CMAs) specified in Crown Castle's Initial Market Deployment Plan,<sup>3</sup> and to the portions of the two CMAs that encompass the White Mountain Apache Reservation, 75% of the population of which OP LLC must serve by August 31, 2007.<sup>4</sup> Further,

<sup>1</sup> 47 C.F.R. § 27.50(f)(1).

<sup>2</sup> See "OP LLC, Licensee of WPYQ831, Request for Waiver, Statement in Support of Request of OP LLC and Crown Castle International Corp. for Waiver of Section 27.50 (f)(1) of the Commission's Rules" (Petition), ULS File No. 0002271317. We note that in WT Docket No. 03-264, the Commission sought comment on a similar request filed by Crown Castle. See Biennial Regulatory Review—Amendment of Parts 1, 22, 24, 27 and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services, WT Docket No. 03-264, *Report and Order and Further Notice of Proposed Rulemaking*, 20 FCC Rcd 13900, 13925 ¶54 (2005) (*Streamlining FNPRM*). Although no party objected to the issues specific to Crown Castle's proposed operations in the 1670-1675 MHz band in that proceeding, Aloha Partners, L.P. (Aloha) contends that it would be "unfair" to grant Crown Castle's request, unless the Commission also grants Aloha's request to operate at 250kW effective radiated power in the Lower 700 MHz Band. We address Aloha's assertions below. See *infra* para. 13. We also note that Intel, Microsoft, Nokia, Inc., Sony Ericsson, and Texas Instruments support grant of Crown Castle's waiver request. See, e.g., Letter dated October 11, 2006, from Robert S. Koppel, Director, Government Relations, Texas Instruments, to Marlene H. Dortch, Secretary, FCC.

<sup>3</sup> Crown Castle has identified 30 markets—corresponding to CMAs 1-20, 22, 24, 26, 27, 30, 33, 35, 72, 75, and 93—where it seeks initial relief. See Letter dated October 4, 2006, from Ari Q. Fitzgerald, counsel to Crown Castle, to Fred Campbell, Legal Advisor to FCC Chairman Kevin Martin, Attachment A (Initial Market Deployment Plan).

<sup>4</sup> The reservation originally was established as the Fort Apache Indian Reservation on November 9, 1871, by Executive Order of President Ulysses S. Grant. According to the White Mountain Apache Tribe, the area "consists of 1.67 million acres (over 2,600 square miles) in east-central Arizona. It ranges in elevation from 2,600 feet in the (continued...)"

we will require OP LLC to coordinate the proposed operation or modification of any high-power (*i.e.*, above 2 kW EIRP) base station within 1.3 kilometers of any National Weather Service (NWS) radiosonde<sup>5</sup> receive sites, which are located in the adjacent 1675-1683 MHz band.<sup>6</sup> We also we will require OP LLC to consult with the National Science Foundation (NSF)<sup>7</sup> before operating or modifying any high-power base station within 185 kilometers of key radio astronomy facilities that perform observations in the adjacent 1660.5-1670 MHz band.<sup>8</sup>

## II. BACKGROUND

3. In 2003, OP Corporation won an exclusive 5-MHz nationwide license in the 1670-1675 MHz band in FCC Auction No. 46,<sup>9</sup> which it assigned (pro forma) in 2004 to OP LLC.<sup>10</sup> The license has a ten-year term, expiring on October 1, 2013 and, under Section 27.14(a), a showing of substantial service in the licensed area is required by the end of the ten-year term.<sup>11</sup> Section 27.902 authorizes licensees in this band “to provide fixed or mobile service, except aeronautical mobile service,” pursuant to technical requirements specified in Subpart J, Part 27 of the Commission’s rules.<sup>12</sup>

4. Crown Castle states that it intends to use the 1670-1675 MHz band license to provide a one-way (base-to-mobile) nationwide service, called Modeo,<sup>13</sup> to wireless handsets with at least 10 video channels and 24 audio channels.<sup>14</sup> Crown Castle states that its network will be based on the new Digital

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Salt River Canyon on the southwest corner of the reservation to over 11,400 feet at the top of Mount Baldy.” See <http://www.wmat.nsn.us/wmahistory.shtml>.

<sup>5</sup> A radiosonde is “[a]n instrument that is carried aloft by a balloon to send back information on atmospheric temperature, pressure and humidity by means of a small, expendable radio transmitter. Radiosondes can be tracked by radar, radio direction finding, or navigation systems (such as the satellite Global Positioning System) to obtain wind data.” <http://www.weather.gov/glossary/index.php?letter=r>.

<sup>6</sup> See *infra* para.10.

<sup>7</sup> Congress established the NSF, an independent federal agency, in 1950 “to promote the progress of science; to advance the national health, prosperity and welfare; to secure the national defense; and for other purposes.” NSF funds discovery, learning, research infrastructure and stewardship to boost U.S. leadership in all aspects of science, mathematics and engineering research and education. NSF’s activities are guided by the 24-member National Science Board, which also serves as a policy advisory body to the President and Congress. See [http://www.nsf.gov/news/news\\_summ.jsp?cntn\\_id=100595](http://www.nsf.gov/news/news_summ.jsp?cntn_id=100595) (NSF Fact Sheet).

<sup>8</sup> See *infra* para.11.

<sup>9</sup> See “1670-1675 MHz Band Auction Closes,” *Public Notice*, DA 03-1472, 18 FCC Rcd 9089 (WTB, rel. May 2, 2003).

<sup>10</sup> See ULS File No. 0001988324 (filed Dec. 29, 2004).

<sup>11</sup> 47 C.F.R. § 27.14(a). Section 27.14(a) defines substantial service “as service which is sound, favorable, and substantially above a level of mediocre service which just might minimally warrant renewal.” *Id.* It also provides that “[f]ailure by any licensee to meet this requirement will result in forfeiture of the license and the licensee will be ineligible to regain it.” *Id.*

<sup>12</sup> 47 C.F.R. § 27.902.

<sup>13</sup> Modeo was formerly known as Crown Castle Mobile Media and is a subsidiary of Crown Castle International Corp. Additional information regarding Modeo is available at <http://www.modeo.com/>.

<sup>14</sup> See Presentation to the FCC on the use of the 1670-1675 MHz Band at 3 (September 28, 2006), filed with Letter dated September 29, 2006, from Ari Q. Fitzgerald, counsel to Crown Castle, to Marlene H. Dortch, Secretary, FCC, WT Docket No. 03-264 (Crown Castle September 28, 2006 Presentation).

Video Broadcasting–Transmission System for Handheld Terminals (DVB-H) standard,<sup>15</sup> which will use a 5-MHz carrier bandwidth at each base station.<sup>16</sup> Crown Castle requests that rather than complying with the current 2 kW EIRP limit for fixed and base station operations in the band on a “per carrier” basis, it be permitted to operate on a “power spectral density” (PSD) basis of 4 kW/MHz in non-rural areas, and 8 kW/MHz for rural areas (defined as counties with a population density of 100 persons or less per square mile).<sup>17</sup> This approach would enable the company to operate its proposed 5-MHz bandwidth DVB-H technology at up to 20 kW and 40 kW peak EIRP in non-rural and rural areas, respectively. Crown Castle claims that such higher power limits would enable it to more efficiently and effectively serve the public.<sup>18</sup>

5. Although the 1670-1675 MHz band is generally unencumbered, there are three vital federal Geostationary Operational Environmental Satellite System (GOES) earth stations in the band.<sup>19</sup> Section 1.924(g)(1) establishes coordination zones around downlinks for these earth stations,<sup>20</sup> which are located at Wallops Island, Virginia; Fairbanks, Alaska; and Greenbelt, Maryland. The Wallops Island and Fairbanks zones are each bounded by a circle with a radius of 100 kilometers (62.1 miles), while the Greenbelt zone is bounded by a circle with a radius of 65 kilometers (40.4 miles). Section 1.924(g)(2) requires licensees to protect Wallops Island and Fairbanks at all times, and to protect Greenbelt, which is a back-up for Wallops Island, when it is active.<sup>21</sup> Section 27.903(b)(3) requires licensees to “file a separate station application with the Commission and obtain an individual station license, prior to construction or operation of any station” subject to Section 1.924.<sup>22</sup> Licensees are required to notify the National Oceanic and Atmospheric Administration (NOAA) either before or simultaneously with the filing of such an application.<sup>23</sup>

6. Crown Castle notes that in December 2005, the Department of Defense Joint Spectrum Center (JSC) concluded a study for NOAA of the potential impact of the proposed increased power levels requested by Crown Castle on the three GOES earth station sites.<sup>24</sup> The JSC found that, with expanded coordination zones for Greenbelt and Fairbanks, and with proper prior coordination of facilities to be located within such expanded zones, Crown Castle could locate transmitters and provide service at higher power levels.<sup>25</sup> Crown Castle has indicated that it would comply with the expanded coordination zones

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<sup>15</sup> Additional information regarding DVB-H technology is available at <http://www.dvb-h.org/technology.htm>.

<sup>16</sup> Petition at 2.

<sup>17</sup> See Petition at 1-5; Comments of Crown Castle International Corp. at 3-5, 7-86, WT Docket No. 03-264 (filed Dec. 19, 2005) (Crown Castle Comments). In the *Rural Report and Order*, the Commission established a “baseline definition of ‘rural area’ as those counties (or equivalent) with a population density of 100 persons per square mile or less.” See *id.* n.2, citing Facilitating the Provision of Spectrum-Based Services to Rural Areas, *Report and Order*, 19 FCC Rcd 19078, 19087 ¶11 (2004) (*Rural Report and Order*).

<sup>18</sup> See, e.g., Crown Castle September 28, 2006 Presentation at 8.

<sup>19</sup> See <http://www.oso.noaa.gov/goes/>.

<sup>20</sup> 47 C.F.R. § 1.924(g)(1).

<sup>21</sup> 47 C.F.R. § 1.924(g)(2)(i), (ii). The Greenbelt facility also conducts monthly tests.

<sup>22</sup> 47 C.F.R. § 27.903(b)(3).

<sup>23</sup> 47 C.F.R. § 1.924(g)(1).

<sup>24</sup> See Department of Defense Joint Spectrum Center, *NOAA GOES Sensor Data Downlink Coordination Zones for Proposed Transmitters in the 1670 to 1675 MHz Frequency Band* (JSC Report), attachment to ULS File No. 0002271317.

<sup>25</sup> See *id.*

specified in the JSC Report, as a condition of the requested waiver, and thereby ensure that it would not cause harmful interference to the GOES facilities.<sup>26</sup>

### III. DISCUSSION

7. For the reasons stated below, we hereby authorize OP LLC to transmit at a power level of up to 4 kW (non-rural) and 8 kW (rural) peak EIRP in any one megahertz band segment, for fixed and base station operations in the 1670-1675 MHz band for the 30 markets specified in Crown's Initial Market Deployment Plan.<sup>27</sup> Crown Castle argues that an increase from the current 2 kW peak EIRP limit for its proposed 5-MHz bandwidth DVB-H technology to 20 kW EIRP for non-rural areas (based on a PSD of 4 kW/MHz), would enable it to construct fewer base stations, resulting in a more efficient and rapid deployment of service to the public.<sup>28</sup> It also argues that such a power increase would reduce "dead-spots" and enhance in-building coverage, resulting in improved service to the public.<sup>29</sup> Crown Castle claims that a power limit increase from 2 kW peak EIRP to 40 kW peak EIRP for rural areas (based on a PSD of 8 kW/MHz), would promote deployment of service to rural and underserved areas, where it would be difficult to justify the number of base stations required to serve vast, sparsely populated areas with a 2 kW peak EIRP limit.<sup>30</sup>

8. We find that grant of the requested relief is appropriate under Section 1.925(b)(3)(i), which provides that a waiver may be granted if it is shown that: "(i) The underlying purpose of the rule(s) would not be served or would be frustrated by application to the instant case, and that a grant of the requested waiver would be in the public interest."<sup>31</sup> The Commission adopted the 2 kW peak EIRP limit in Section 27.50(f)(1) for the 1670-1675 MHz band, and the related coordination procedures of Section 1.924(g), primarily to protect GOES co-primary operations in the band.<sup>32</sup> Crown Castle has agreed to operate subject to the expanded coordination zones pursuant to the JSC Report to protect GOES operations from harmful interference. Specifically, Crown Castle has agreed to an extension of the Greenbelt, Maryland coordination zone radius from 65 to 100 kilometers, and the Fairbanks, Alaska coordination zone radius from 100 to 180 kilometers.<sup>33</sup> Crown Castle also has committed to working closely with NOAA to ensure that the GOES facilities are fully protected from its operations.<sup>34</sup>

9. PSD limits of 4 kW/MHz (non-rural) and 8 kW/MHz (rural) peak EIRP will not disadvantage

<sup>26</sup> See, e.g., Crown Castle September 28, 2006 Presentation at 12.

<sup>27</sup> See *supra* note 3.

<sup>28</sup> Petition at 7.

<sup>29</sup> Crown Castle Comments at 6.

<sup>30</sup> *Id.* at 7. Crown Castle also notes that its proposed one-way, broadcast-type network does "not require reverse path links, so there is no concern about system 'imbalance', where a base station transmits to points so far out that a mobile unit located at these points would not have adequate power to respond to the base station. *Id.* at 6.

<sup>31</sup> 47 C.F.R. § 1.925(b)(3)(i).

<sup>32</sup> See Amendments to Parts 1, 2, 27 and 90 of the Commission's Rules To License Services in the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands, WT Docket No. 02-8, *Report and Order*, 17 FCC Rcd 9980, 10033 ¶135, and 10041-10044 ¶¶164-171 (2002). See also Reallocation of the 216-220 MHz, 1390-1395 MHz, 1427-1429 MHz, 1429-1432 MHz, 1432-1435 MHz, 1670-1675 MHz, and 2385-2390 MHz Government Transfer Bands, ET Docket No. 00-221, *Report and Order and Memorandum Opinion and Order*, 17 FCC Rcd 368, 394-397 ¶¶61-66 (2002).

<sup>33</sup> See Crown Castle Comments at 11. We note that the JSC Report does not find that there is a need at this time to extend the established 100 kilometer radius of the Wallops Island, Virginia coordination zone.

<sup>34</sup> See *id.*

any other party in the band because Crown Castle is the only Commission licensee in the band. Such PSD limits, moreover, provide a measured approach for limiting potential interference to the co-channel GOES stations by controlling the total amount of energy in any one megahertz portion of the 1670-1675 MHz band, including the band edges. This, along with the out-of-band emission (OOBE) limits, and certain coordination and consultation conditions that we adopt below, will ensure protection of adjacent band operations.<sup>35</sup> We therefore conclude that the underlying purpose of the Section 27.50(f)(1) 2 kW peak EIRP limit would not be served by strict application of the rule to Crown Castle's proposed operations because Crown has agreed to expanded coordination zones to protect the GOES facilities from harmful interference.

10. *National Weather Service Radiosondes.* The NWS has used radiosondes<sup>36</sup> to obtain upper-air data that are essential for weather forecasts and research since the 1930s, and currently operates radiosondes in the 1675-1683 MHz band. Radiosondes have an approximate 250 milliwatt transmitter power and operate out to a range of 250 kilometers from NWS Upper Air Sites.<sup>37</sup> Radiosonde transmitters have limited transmit power, which cannot be increased to overcome interference that could be caused by high-power (*i.e.*, above 2 kW EIRP) Crown Castle base stations deployed in the 1670-1675 MHz band. Accordingly, in order to address the potential for interference, we will require Crown Castle to coordinate with NWS, the operation or modification of any base station using more than 2 kW EIRP within 1.3 kilometers of any NWS Upper Air Site. Crown Castle has agreed to comply voluntarily with such a coordination requirement "to ensure the protection of radiosonde receive sites operating in spectrum bands adjacent to the 1670-1675 MHz band."<sup>38</sup>

11. *Radio Astronomy Service.* Crown Castle has not requested, nor do we grant, a waiver of the current Section 27.53(j) OOBE limits,<sup>39</sup> which are intended to protect licensees in adjacent spectrum.<sup>40</sup> In this regard, we note that the 1670-1675 MHz band is adjacent to and just above a Radio Astronomy Service (RAS) band that contains two of the four hydroxyl<sup>41</sup> line frequencies, namely 1665 and 1667 MHz. Passive observation of these lines by RAS observatories provides scientific information that allows a greater understanding of how objects in our galaxy were formed.<sup>42</sup> It is possible that, depending on the

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<sup>35</sup> See *infra* paras. 10 & 11.

<sup>36</sup> A radiosonde is a small instrument package that is suspended below a 2 meter (6 feet) wide balloon. As the radiosonde rises at about 300 meters/minute (about 1,000 feet/minute), sensors measure, *inter alia*, air pressure, temperature, and relative humidity. These measurements are then sent by a battery-powered transmitter to ground receivers. By tracking the position of the radiosonde in flight, information on wind speed and direction aloft is also obtained. See <http://www.ua.nws.noaa.gov/factsheet.htm> (NWS Radiosonde Observations – Fact Sheet). See also *infra* note 5.

<sup>37</sup> Worldwide, there are over 800 upper-air observation stations and through international agreements data are exchanged between countries. Most Upper Air Sites are located in the Northern Hemisphere and observations are usually taken at the same time each day (00:00 and/or 12:00 UTC), 365 days a year. Observations are made by the NWS at 92 stations - 69 in the conterminous United States, 13 in Alaska, 9 in the Pacific, and 1 in Puerto Rico. See *infra* Appendix. Maps of the station sites may be viewed at [http://www.ua.nws.noaa.gov/nws\\_upper.htm](http://www.ua.nws.noaa.gov/nws_upper.htm).

<sup>38</sup> See Letter dated February 5, 2007, from Ari Q. Fitzgerald, counsel to Crown Castle, to Richard Arsenault, Chief Counsel, Mobility Division, Wireless Telecommunications Bureau, FCC, attachment to ULS File No. 0002271317.

<sup>39</sup> See 47 C.F.R. § 27.53(j).

<sup>40</sup> Federal systems in the adjacent spectrum bands include radio astronomy, space research (passive), and radiosondes operations.

<sup>41</sup> Hydroxyl is a molecule consisting of a single oxygen atom and a single hydrogen atom (OH).

<sup>42</sup> Signals from sources in outer space are generally very weak; consequently, RAS facilities utilize extremely sensitive receivers that can easily be disturbed by nearby radio transmissions on the same or adjacent frequency

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location, a high-power (*i.e.*, above 2 kW EIRP) Crown Castle base station could adversely impact radio astronomy facilities observing in the 1660.5-1670 MHz band. To protect these radio astronomy observations, we will require Crown Castle to consult in advance with the RAS facilities listed in Section 2.106, footnote US311, before establishing any high-power base station within a 185 kilometer radius of such facilities.<sup>43</sup>

12. *White Mountain Apache Reservation.* In 2000, the Commission adopted rules and policies to encourage wireless telecommunications carriers to serve individuals living on tribal lands.<sup>44</sup> The Commission noted that, “[b]y virtually any measure, communities on tribal lands have historically had less access to telecommunications services than any other segment of the population.”<sup>45</sup> The Commission specifically concluded that bidding credits would “encourage participation in auctions by carriers who are in a position to provide service to tribal lands, and [would] help mitigate the economic risk associated with this type of service.”<sup>46</sup> We note that OP LLC received a bidding credit in Auction 46 whereby it agreed to serve at least 75% of the population of the White Mountain Apache Reservation by August 31, 2007, or repay the credit, plus interest.

13. We seek to further the Commission’s goal of providing increased access to telecommunications services on tribal lands, and conclude that the public interest will be served by requiring OP LLC, as a condition of this waiver relief, to fulfill its agreement to serve this tribal area. To facilitate the provision of service to the tribal area, we hereby authorize OP LLC, on our own motion, to transmit with a power limit of 4 kW/MHz (non-rural) and 8 kW/MHz (rural) EIRP, for fixed and base station operations located within those portions of CMA 320 and CMA 322 that encompass the tribal area. We note that, depending on the location, a high-power (*i.e.*, above 2 kW EIRP) Crown Castle base station could adversely impact radio astronomy facilities located at the Mount Graham International Observatory (MGIO), where sky conditions are among the best in the Continental United States and which is approximately 90 kilometers south of the tribal area.<sup>47</sup> Accordingly, OP LLC must provide written notice to MGIO at least 30 days prior to operating or modifying any high-power (*i.e.*, above 2 kW EIRP) base station on the tribal land. If OP LLC fails to serve at least 75% of the population of the White Mountain Apache Reservation by August 31, 2007, the authority to operate at higher power limits granted herein for the 30 markets identified in Crown Castle’s Initial Market Deployment Plan and for the specified portions

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bands. A list of RAS facilities that observe the band below 1670-1675 MHz is set forth in Section 2.106 footnote US311.

<sup>43</sup> See 47 C.F.R. § 2.106 footnote US74 (“[R]adio astronomy service [in the 1660.5-1670.0 band] shall be protected from unwanted emissions only to the extent that such radiation exceeds the level which would be present if the offending station were operating in compliance with the technical standards or criteria applicable to the service in which it operates. Radio astronomy observations in these bands are performed at the locations listed in US311.”).

<sup>44</sup> See *Extending Wireless Telecommunications Services to Tribal Lands, Report and Order and Further Notice of Proposed Rulemaking*, 15 FCC Rcd 11794 (2000) (subsequent history omitted).

<sup>45</sup> *Id.* at 11798 ¶8.

<sup>46</sup> *Id.* at 11800 ¶16.

<sup>47</sup> MGIO is a division of the Steward Observatory, University of Arizona. Its facilities include the 600-ton, 16-story, Large Binocular Telescope (LBT), currently the world’s most powerful optical telescope. <http://medusa.as.arizona.edu/lbto/>. The Vatican Observatory, one of the oldest astronomical research institutions in the world, operates an optical-infrared telescope facility known as the Vatican Advanced Technology Telescope at MGIO. <http://clavius.as.arizona.edu/vo/R1024/VO.html>. In addition, the Arizona Radio Observatory owns and operates the Heinrich Hertz Submillimeter Telescope on Mount Graham. [http://aro.as.arizona.edu/smt\\_docs/smt\\_telescope\\_specs.htm](http://aro.as.arizona.edu/smt_docs/smt_telescope_specs.htm).

of CMA 320 and CMA 322 shall be void and the 2 kW peak power limit for fixed and base station operations in the band would apply to all of OP LLC's fixed and base station operations.

14. We also find that grant of the requested relief will serve the public interest. As noted above, the increased power limits should result in a reduction in the number of base stations required to serve a market, potentially resulting in more rapid deployment of service to the American public.<sup>48</sup> The use of higher power limits should also enable Crown Castle to improve service quality to the public by reducing dead-spots and by increasing in-building coverage. We limit relief, however, to the 30 markets identified in Crown Castle's Initial Market Deployment Plan<sup>49</sup> and the White Mountain Apache Reservation, rather than nationwide. This approach will enable the Commission to assess whether there are any unanticipated issues associated with Crown Castle's proposed use of higher power limits in the 1670-1675 MHz band.<sup>50</sup>

15. We reject Aloha Partners, L.P.'s (Aloha) assertion that it would be unfair to grant Crown's waiver request unless Aloha also is afforded the ability to operate at higher power levels. It is well settled that the Commission evaluates waiver requests on a case-by-case basis to determine whether an applicant's showing satisfies the waiver standard.<sup>51</sup> As noted above, we find that Crown's showing, which includes GOES coordination, satisfies the applicable waiver standard.

16. In any event, we disagree with Aloha that it would be competitively disadvantaged by grant of Crown's request to operate its 5-MHz bandwidth DVB-H system at up to 20kW (non-rural) and 40kW (rural) EIRP (based on PSDs of 4 kW/MHz and 8 kW/MHz, respectively) unless the Commission concurrently grants Aloha's request to operate with an effective radiated power (ERP) in the Lower 700 MHz Band of 50 kW ERP/MHz in urban and rural areas.<sup>52</sup> We also reject Aloha's alternative argument that relief to Crown should not be granted unless the Commission provides increased power to all Lower 700 MHz Band licensees in WT Docket 03-264.<sup>53</sup> Although Aloha and Crown each intend to offer mobile

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<sup>48</sup> According to Crown Castle, the requested relief could result in up to an 80 percent reduction in the number of base stations required to serve a market. See Crown Castle Comments at 7.

<sup>49</sup> See *supra* note 3.

<sup>50</sup> Crown Castle does not seek a waiver of Section 1.924(a), which requires coordination within a specified area "to minimize possible interference at the National Radio Astronomy Observatory site located at Green Bank, Pocahontas County, West Virginia, and at the Naval Radio Research Observatory site at Sugar Grove, Pendleton County, West Virginia." See 47 C.F.R. § 1.924(a). We also note that Section 1.924(d) requires licensees "to make reasonable efforts to protect the Arecibo Observatory in Puerto Rico from interference. See 47 C.F.R. § 1.924(d). Although Puerto Rico is not one of the 30 markets identified in Crown Castle's Initial Market Deployment Plan, we note that it is possible that the power increases sought by Crown Castle could cause harmful interference to the Arecibo Observatory. In the event that Crown Castle desires authority to operate using more than 2 kW EIRP in Puerto Rico, it should first consult with the National Science Foundation and Interference Office of the Arecibo Observatory before seeking such authority from the Commission.

<sup>51</sup> See, e.g., In the matter of Intelsat LLC, *Order on Reconsideration*, 15 FCC Rcd. 25234 (2000) ("waiver request must be considered on its own merits").

<sup>52</sup> See Letter dated December 13, 2006, from Thomas Gutierrez, counsel for Aloha, to Marlene H. Dortch, Secretary, FCC (Aloha December 13, 2006 *Ex Parte*); Letter dated November 8, 2006, from Thomas Gutierrez, counsel for Aloha, to Marlene H. Dortch, Secretary, FCC. See also Letter dated November 15, 2006, from Ari Q. Fitzgerald, counsel to Crown Castle, to Marlene H. Dortch, Secretary, FCC (Crown November 15, 2006 *Ex Parte*). On November 28, 2006, Aloha filed four applications for waiver of Section 27.50(c)(1) to permit it to operate at an ERP limited to the higher of the current rule (50kW ERP) or 50 kW/MHz, which equals 250kW for a technology employing a 5-MHz wide bandwidth. See ULS File Nos. 0002830922 (Little Rock-North Little Rock, AR), and 0002830928 (Las Vegas, NV), 0002830929 (Tucson, AZ), and 0002830931 (Phoenix, AZ).

<sup>53</sup> See Aloha December 13, 2006 *Ex Parte*. We note that on February 16, 2007, Mobile Satellite Ventures Subsidiary LLC (MSV), which holds an authorization to provide mobile satellite service in the L Band, withdrew its request that the Commission defer action on OP LLC's request while MSV exchanged information with OP LLC.

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video services using DVB-H technology, Lower 700 MHz licensees are authorized to operate at 50 kW ERP (82 kW EIRP) under Section 27.50(c)(1),<sup>54</sup> a level over four times higher than the maximum 20 kW EIRP we grant Crown for non-rural areas, and over twice the 40 kW EIRP we afford Crown for service to rural areas. Thus, even assuming its arguments are relevant, we do not believe our actions here will competitively disadvantage Aloha.

17. This waiver grant is also subject to the following conditions:

- 1) OP LLC must fully protect the Geostationary Operational Environmental Satellite System (GOES) earth stations located at Wallops Island, Virginia and Fairbanks, Alaska at all times, and the GOES earth station located at Greenbelt, Maryland, when it is active (to protect test, maintenance and repair activities, and any operational deployments).
- 2) OP LLC must coordinate with the National Oceanic and Atmospheric Administration (NOAA), the proposed operation or modification of any facility within the expanded Greenbelt, Maryland GOES coordination zone (radius increased from 65 to 100 kilometers), and any facility within the expanded Fairbanks, Alaska GOES coordination zone (radius increased from 100 to 180 kilometers). OP LLC shall initiate coordination by providing written notice concurrently with, or before, filing an application with the Federal Communications Commission regarding any such proposed operation or modification, to: NOAA/NESDIS, Office Frequency Management, 1335 East-West Highway, SSMC1, STE 5132, Silver Spring, MD 20910 (attention Dr. David McGinnis, NESDIS Frequency Manager).
- 3) OP LLC must coordinate with, and obtain the consent of, the National Weather Service for the proposed operation or modification of any high-power (*i.e.*, above 2 kW EIRP) base station within 1.3 kilometers of any Upper Air Site location specified in the Appendix. OP LLC shall initiate coordination by providing written notice, at least 30 days before undertaking any such proposed operation or modification, to: National Weather Service, Engineering and Acquisitions Branch, 1325 East West Hwy, Room 3406, Silver Spring, MD 20910 (attention Franz Zichy).
- 4) OP LLC must comply with the out-of-band emission limits specified in Section 27.53(j).<sup>55</sup>
- 5) OP LLC must consult with the Radio Astronomy Service facilities listed in Section 2.106, footnote US311, prior to operating or modifying any high-power (*i.e.*, above 2 kW EIRP) base station within a 185 kilometer radius of any such facility.<sup>56</sup> OP LLC

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See Letters dated February 16 and January 30, 2007 from Jennifer A. Manner, Vice President, Regulatory Affairs, MSV, to Marlene H. Dortch, Secretary, FCC.

<sup>54</sup> 47 C.F.R. § 27.50(c)(1). The power limit for base stations operating in the Lower and Upper 700 MHz Bands is 1 kW ERP. However, Lower 700 MHz Band base stations, like Aloha's, are permitted to operate at power levels up to 50 kW ERP if they do not produce signals exceeding a Power Flux Density of 3 mW/m<sup>2</sup> on the ground within 1 kilometer of the station. See 47 C.F.R. § 27.55(b)

<sup>55</sup> 47 C.F.R. § 27.53(j).

<sup>56</sup> See 47 C.F.R. § 2.106 footnote US311. The facilities include: (1) Allen Telescope Array, Hat Creek, California; (2) NASA Goldstone Deep Space Communications Complex, Goldstone, California; (3) National Astronomy and Ionosphere Center, Arecibo, Puerto Rico; (4) National Radio Astronomy Observatory, Socorro, New Mexico; (5)

(continued...)

shall initiate consultation by providing written notice, at least 30 days before undertaking any such operation or modification, to: National Science Foundation, Division of Astronomical Sciences, Electromagnetic Spectrum Management, 4201 Wilson Blvd, Suite 1045, Arlington VA 22230 (attention Drs. Tomas Gergely and Andrew Clegg).

- 6) OP LLC must comply with all other quiet zone and coordination requirements specified in Section 1.924 and Section 27.903.<sup>57</sup>
- 7) This waiver is limited to OP LLC's proposed 5-MHz bandwidth operations in the 1670-1675 MHz band.
- 8) This waiver is subject to any future U.S. treaty or other arrangement either with Canada or with Mexico regarding use of the 1670-1675 MHz band.<sup>58</sup>
- 9) This waiver is subject to any future Commission action in WT Docket 03-264.

#### IV. ORDERING CLAUSES

18. Accordingly, IT IS ORDERED that, pursuant to the authority in Sections 1, 2, 4(i), 4(j) and 309 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 152, 154(i), 154(j) and 309, and Sections 1.3 and 1.925(b)(3)(i) of the Commission's rules, 47 C.F.R. §§ 1.3, 1.925(b)(3)(i), the application of OP LLC, ULS File No. 0002271317, seeking waiver of Section 27.50(f)(1), 47 C.F.R. § 27.50(f)(1), IS GRANTED, subject to the conditions enumerated above.

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National Radio Astronomy Observatory, Green Bank, West Virginia; (6) National Radio Astronomy Observatory, Very Long Baseline Array Stations; and (7) Owens Valley Radio Observatory, Big Pine, California.

<sup>57</sup> 47 C.F.R. §§ 1.924, 27.903.

<sup>58</sup> We also note that, in order to protect geostationary satellites, the International Telecommunications Union (ITU) has established a power limit of 35 dBW (3162 Watts) EIRP for terrestrial operations in the 1-10 GHz bands. See ITU Radio Regulations, Article 21-2, § 2. However, for operations that exceed this power level, the maximum radiation point of the transmitting antenna must be separated by two degrees or more from the orbit of geostationary satellites, which are positioned over 22,000 miles above the equator. *Id.*; see also *id.*, Table 21-1. In order to provide coverage to customers on the ground, Crown Castle does not propose to operate transmitting antennas that are tilted up above the horizon and will therefore always be separated by more than two degrees from the orbit of geostationary satellites.

19. IT IS FURTHER ORDERED that this Order SHALL BE EFFECTIVE upon release. Petitions for reconsideration under Section 1.106 of the Commission's rules, 47 C.F.R. § 1.106, may be filed within thirty days of the date of public notice of this Order.

FEDERAL COMMUNICATIONS COMMISSION

Marlene H. Dortch  
Secretary

## APPENDIX

## National Weather Service, Upper Air Site Locations

REGION/STATION	LAT/LONG DEGS/MINS/SEC	ELEVATION METERS
<b>EASTERN REGION</b>		
ALBANY, NY	42/41/33N 73/49/56W	93
BLACKSBURG, VA	37/12/21N 80/24/52W	639.5
BUFFALO, NY	42/56/22N 78/43/28W	218.2
CARIBOU, ME	46/52/06N 68/00/45W	191
CHARLESTON, SC	32/53/44N 80/01/43W	14.2
CHATHAM, MA	41/40/00N 69/58/00W	16
GRAY, ME	43/53/34N 70/15/24W	123.4
GREENSBORO, NC	36/ 05/51N 79/56/35W	277
MOREHEAD CITY, NC	34/46/34N 76/52/40W	11.3
PITTSBURGH, PA	40/31/52N 80/12/59W	360.5
STERLING, VA	38/58/36N 77/28/38W	85.9
UPTON, NY	40/51/56N 72/51/49W	21.3
WALLOPS IS.,VA	37/55/42N 75/28/34W	12.2
WILMINGTON, OH	39/25/14N 83/49/17W	322.8
<b>CENTRAL REGION</b>		
ABERDEEN, SD	45/27/16N 98/25/51W	398.4
BISMARCK, ND	46/46/20N 100/45/42W	505.4
CHANHASSEN, MN	44/50/56N 93/33/51W	289.9
DENVER, CO	39/45/48N 104/52/10W	1612.4
DODGE CITY, KS	37/45/42N 99/58/08W	786.4
GAYLORD, MI	44/54/30N 84/43/09W	447.8
GRND JUNCTION, CO	39/07/12N 108/31/25W	1474
GREEN BAY, WI	44/29/20N 88/06/39W	209.4
INT'L FALLS, MN	48/33/53N 93/23/52W	361.8
LINCOLN, IL	40/09/06N 89/20/16W	179.2
NORTH PLATTE, NE	41/08/02N 100/42/00W	848.6
QUAD CITIES, IA	41/36/45N 90/34/56W	230.7
RAPID CITY, SD	44/04/23N 103/12/37W	1029
RIVERTON, WY	43/04/00N 108/28/32W	1698.1
SPRINGFIELD, MO	37/14/08N 93/24/06W	390.7
TOPEKA, KS	39/04/25N 95/37/50W	270.1
VALLEY, NE	41/19/10N 96/22/00W	351.1
WHITE LAKE, MI	42/41/58N 83/28/17W	330.4
<b>SOUTHERN REGION</b>		
ALBUQUERQUE, NM	35/02/06N 106/37/24W	1618.5
AMARILLO, TX	35/13/09N 101/42/51W	1094.8
BROWNSVILLE, TX	25/55/00N 97/25/13W	7

<b>REGION/STATION</b>	<b>LAT/LONG DEGS/MINS/SEC</b>	<b>ELEVATION METERS</b>
BIRMINGHAM, AL	33/10/48N 86/46/58W	174
CORPUS CHRISTI, TX	27/46/45N 97/30/22W	13.9
DEL RIO, TX	29/22/37N 100/56/37W	314
FORT WORTH, TX	32/50/02N 97/18/04W	195.2
JACKSON, MS	32/19/12N 90/04/40W	90.8
JACKSONVILLE, FL	30/29/01N 81/42/04W	10.7
KEY WEST, FL	24/33/00N 81/46/00W	2.2
LAKE CHARLES, LA	30/07/32N 93/13/01W	2.7
LITTLE ROCK, AR	34/50/16N 92/15/58W	172.8
MIAMI, FL	25/45/21N 80/23/00W	3.5
MIDLAND, TX	31/56/35N 102/11/23W	874.8
NASHVILLE, TN	36/14/49N 86/33/43W	180
NORMAN, OK	35/14/10N 97/27/40W	358.8
PEACHTREE, GA	33/21/29N 84/34/07W	244.7
SAN JUAN, PR	18/25/52N 65/59/30W	4
SANTA TERESA, NM	31/52/23N 106/41/50W	1252.4
SHREVEPORT, LA	32/27/08N 93/50/33W	85
SLIDELL, LA	30/20/16N 89/49/29W	10.1
TALLAHASSEE, FL	30/26/47N 84/17/59W	52.8
TAMPA BAY, FL	27/42/19N 82/24/04W	13.1
<b>WESTERN REGION</b>		
BOISE, ID	43/19/11N 116/13/35W	871.1
DESERT ROCK, NV	36/37/00N 116/01/00W	1006.2
ELKO, NV	40/51/38N 115/44/28W	1591.7
FLAGSTAFF, AZ	35/13/48N 111/49/17W	2179
GLASGOW, MT	48/12/21N 106/37/30W	692.1
GREAT FALLS, MT	47/27/38N 111/23/04W	1131.7
MEDFORD, OR	42/22/37N 122/52/50W	398.4
OAKLAND, CA	37/43/17N 122/13/11W	4.3
QUILLAYUTE, WA	47/56/03N 124/33/39W	55.8
RENO, NV	39/34/11N 119/47/40W	1516.4
SALEM, OR	44/55/35N 123/00/05W	60.7
SALT LAKE CTY, UT	40/47/13N 111/58/05W	1288.1
SAN DIEGO, CA	32/49/00N 117/08/00W	133.5
SPOKANE, WA	47/40/54N 117/37/38W	727.9
TUCSON, AZ	32/07/26N 110/56/27W	787.6
<b>ALASKA REGION</b>		
ANCHORAGE	61/09/25N 149/59/11W	50.1
ANNETTE	55/02/20N 131/34/37W	34.7
BARROW	71/17/21N 156/47/06W	11.9
BETHEL	60/47/11N 161/50/19W	33.5
COLD BAY	55/12/11N 162/43/05W	25.3
FAIRBANKS	64/48/58N 147/52/37W	135
KING SALMON	58/40/46N 156/40/07W	8.3

<b>REGION/STATION</b>	<b>LAT/LONG DEGS/MINS/SEC</b>	<b>ELEVATION METERS</b>
KODIAK	57/44/38N 152/29/39W	5.5
KOTZEBUE	66/53/13N 162/36/45W	5
MCGRATH	62/57/22N 155/36/03W	103
NOME	64/30/26N 165/26/07W	6.4
ST. PAUL ISLAND	57/09/48N 170/13/12W	10
YAKUTAT	59/30/56N 139/40/20W	10.7
<b>PACIFIC REGION</b>		
GUAM	13/28/39N 144/47/40E	75.4
HILO, HI	19/43/06N 155/03/30W	11
KOROR, PALAU		
WCI	07/20/23N 134/29/19E	30.2
LIHUE, HI	21/59/36N 159/20/48W	29.7
MAJURO, MARSHALL ISLANDS	07/05/11N 171/23/27E	3.4
PAGO PAGO, AMERICAN SAMOA	14/20/18S 170/43/09W	5.5
PONAPE, ECI	06/58/31N 158/13/23E	38.4
CHUUK, ECI	07/27/14N 151/50/33E	3.9
YAP, WCI	09/29/37N 138/05/29E	15.5

**STATEMENT OF  
COMMISSIONER JONATHAN S. ADELSTEIN**

RE: OP LLC (Crown Castle International Corp.), Licensee of WPYQ831, Petition for Waiver of Section 27.50(f)(1) of the Commission's Rules, File No. 0002271317, *Memorandum Opinion and Order*, FCC 07-16

I am glad that we finally are ruling on the August 2005 request of Crown Castle to operate a higher peak Equivalent Isotropically Radiated Power (EIRP) limit pursuant to its nationwide license in the 1670-1675 MHz band. This relief should allow Crown Castle greater flexibility in deploying its network while still ensuring that a number of important Government-operated facilities are sufficiently protected.

It is important that we provide Crown Castle with this flexibility as the developing mobile video marketplace becomes more and more competitive. Crown Castle also has committed to provide service to the White Mountain Apache Reservation by August 31, 2007, and I am glad that my colleagues were supportive of my effort to extend the waiver relief to deployment in the tribal area, which well serves the public interest.

Finally, while we rightly do not further delay grant of the Crown Castle waiver request pending our review of other proceedings or waivers, I do think it is important that we quickly resolve the biennial review proceeding looking at adopting a power spectral density-based emission limit to supplement the current broadband PCS and Advanced Wireless Service base station EIRP.<sup>1</sup> This proposal appears to have wide-spread industry support, and we should resolve the issue without further delay if we truly want to provide the regulatory flexibility that is so important to promoting the deployment of wireless broadband services.

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<sup>1</sup> Biennial Regulatory Review—Amendment of Parts 1, 22, 24, 27 and 90 to Streamline and Harmonize Various Rules Affecting Wireless Radio Services, WT Docket No. 03-264, *Report and Order and Further Notice of Proposed Rulemaking*, 20 FCC Rcd 13900 (2005).

**STATEMENT OF  
COMMISSIONER ROBERT M. McDOWELL**

RE: OP LLC (Crown Castle International Corp.), Licensee of WPYQ831, Petition for Waiver of Section 27.50(f)(1) of the Commission's Rules, File No. 0002271317, *Memorandum Opinion and Order*, FCC 07-16

I am pleased that the Commission has ruled on the request for waiver submitted by 1670-1675 MHz licensee Crown Castle. Today's action exemplifies the strong public interest benefits associated with a flexible spectrum policy that allows entrepreneurs, rather than regulators, to determine how best to maximize our limited spectrum resources. Indeed, in permitting Crown Castle to design, build and operate its network at higher powers, we pave the way for this entrant to ultimately roll-out an innovative and exciting mobile broadband video service -- known as Modeo -- to American consumers living in urban, rural, insular and tribal areas. At the same time, we are continuing to protect government users in this spectrum band, as well as other users in adjacent bands. This is precisely the type of action the Commission must continuously and expeditiously take to provide the certainty necessary for our country's entrepreneurs to forge ahead with advanced broadband offerings. As such, I wholeheartedly support it.