



Federal Communications Commission  
Washington, D.C. 20554

November 9, 2011

DA 11-1870

Mitchell Lazarus  
Fletcher, Heald & Hildreth, PLC  
1300 North 17th Street, 11th floor  
Arlington, VA 22209

Dear Mr. Lazarus:

This letter responds to the request you submitted on August 3, 2011 on behalf of AKELA, Inc. (AKELA) for waiver of Part 90 of the Commission's Rules to permit certification and use of the AKELA Standoff Through-the-Wall Imaging Radar (ASTIR) system.<sup>1</sup> For the reasons set forth below, we grant the waiver request.

In 2009, the Wireless Telecommunications Bureau and Public Safety and Homeland Security Bureau (the Bureaus) granted a waiver to L-3 CyTerra (CyTerra) to permit certification and use of CyTerra's Electromagnetic Motion Detection and Ranging (EMMDAR) sensor, a handheld radar device operating in the 3100-3500 MHz band that is capable of sensing motion through walls.<sup>2</sup> A waiver was required because the EMMDAR's frequency usage was inconsistent with the Commission's technical rules. Specifically, rather than operating on a single frequency like most radars, the EMMDAR steps through two hundred frequencies, spaced two megahertz apart between 3101 MHz to 3499 MHz, one at a time. The Bureaus concluded that grant of the waiver request was warranted in light of the device's benefits to the public safety community, and because the EMMDAR's operational characteristics considerably reduce the potential for interference to other users. The CyTerra waiver grant subsequently was modified with respect to the emission mask.<sup>3</sup>

On August 3, 2011, AKELA requested a waiver of Part 90 to permit certification and use of its ASTIR system, a portable device that can be set up outside a building (up to thirty meters away), typically on a tripod or a vehicle, and displays interior features of the building together with the locations of individuals inside. On September 22, 2011, at the request of Wireless Telecommunications Bureau staff, AKELA provided additional technical information regarding the ASTIR. AKELA asserts that the technical properties of the ASTIR system are similar to those of the EMMDAR, and are no more interfering, so the ASTIR should also qualify for a waiver.

We agree, and grant the AKELA waiver request for the same reasons that the Bureaus granted the CyTerra waiver request. Grant of the waiver request is subject to the following conditions:

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<sup>1</sup> AKELA, Inc., Request for Waiver (filed Aug. 3, 2011).

<sup>2</sup> See L-3 CyTerra, *Order*, WP Docket No. 09-2, 24 FCC Rcd 14147 (WTB/PSHSB 2009).

<sup>3</sup> See Letter dated February 17, 2010 from Scot Stone, Deputy Chief, Mobility Division, Wireless Telecommunication Bureau to Mitchell Lazarus; Letter dated August 6, 2010 from Scot Stone, Deputy Chief, Mobility Division, Wireless Telecommunication Bureau to Mitchell Lazarus. The final version, under which CyTerra obtained its certification, requires that the emissions be attenuated 50 dB below the peak and average power on any frequency removed from the operating frequency from 100 Hz to 10 kHz, and comply with Section 90.210(c) of the Commission's Rules, 47 C.F.R. § 90.210(c), on any frequency removed from the operating frequency by more than 10 kHz. The device must also meet the limits of Section 90.210(c) using peak and average limits.

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- Eligibility is limited to state and local police and firefighters, and use is limited to actual emergencies involving threats to safety of life, and necessary training.
- The number of units to be sold is limited to 5,000 during the first year following equipment approval, and 10,000 during the second year (with no limit in subsequent years).
- The device may not be mounted on a fixed outdoor structure.
- The device must have the technical parameters described by AKELA in its waiver request (*i.e.*, the ASTIR transmits with a peak instantaneous power of 31.6 milliwatts<sup>4</sup> on one frequency at a time for 65 microseconds and steps through two hundred frequencies spaced two megahertz apart between 3101 MHz to 3499 MHz, followed by a 260-microsecond “off time;” the device cannot be locked on, and automatically shuts off after one minute<sup>5</sup>).

AKELA must obtain equipment authorization for the ASTIR. A copy of this letter shall be submitted with the equipment authorization application.

Operation of the ASTIR system by eligible entities will require separate Commission authorization from the Wireless Telecommunications Bureau, using radio service code RS (radiolocation service).<sup>6</sup> Applicants may apply for authorization on the 3100-3500 MHz band, rather than listing each of the frequencies on which the ASTIR operates. While Part 90 frequency coordination<sup>7</sup> is not required, we will coordinate the applications with the National Telecommunications and Information Administration.<sup>8</sup> Applicants must specify the number of units and the proposed area of operation. Applications must reference this action by the DA number on the first page. No operation is permitted prior to license grant, and no applications will be granted until AKELA obtains equipment authorization.

Accordingly, IT IS ORDERED that the Request for Waiver filed by AKELA, Inc., on August 3, 2011, IS GRANTED SUBJECT TO THE CONDITIONS SET FORTH HEREIN.

This action is taken under delegated authority pursuant to Sections 0.131 and 0.331 of the Commission’s Rules, 47 C.F.R. §§ 0.131, 0.331.

FEDERAL COMMUNICATIONS COMMISSION

Scot Stone  
Deputy Chief, Mobility Division  
Wireless Telecommunications Bureau

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<sup>4</sup> The device transmits an unmodulated (CW) carrier (emission designator N0N). The emission must be attenuated 50 dB below the peak and average power on any frequency removed from the operating frequency from 100 Hz to 10 kHz, and comply with Section 90.210(c) on any frequency removed from the operating frequency by more than 10 kHz. The device must also meet the limits of Section 90.210(c) using peak and average limits.

<sup>5</sup> For extended surveillance operations, the system can be set to cycle for 15 seconds, followed by 300 seconds of off-time, and repeat for a duration specified by the user.

<sup>6</sup> Ordinarily, licensees in the Public Safety Radio Services (such as state or local government entities) that already have a Commission license for a radio communications system may operate radar units without obtaining a separate license. *See* 47 C.F.R. § 90.20(f)(4).

<sup>7</sup> *See* 47 C.F.R. § 90.175.

<sup>8</sup> License applications in particular areas may be denied in order to protect Federal Government radiolocation facilities.