



# E-Band Link Registration: A Lightweight Approach to Spectrum Licensing

White Paper



## INTRODUCTION

The “E-Band” refers to 10 GHz of licensed-band spectrum allocated by the US FCC, split between 71-76GHz and 81-86GHz. This spectrum allocation provides a unique set of benefits for users including:

- No channelization rules, making high data rates much easier to achieve than at lower frequencies
- Very narrow antenna beamwidths (less than 1.2 degrees), creating “spatial pipes” between the radios that protect links from interference and enable large-scale frequency re-use
- A lightweight licensing process that can typically be completed within minutes of knowing where the radios are to be located

## TYPICAL E-BAND LINK REGISTRATION PROCESS

E-Band link registration is normally completed using an automated on-line registration database system. The system checks for possible interference between a proposed E-Band installation and all existing registered E-Band links based on the GPS coordinates of each radio location and the operating parameters of the particular radios being used. This system provides a real-time response that in the vast majority of cases is positive. The following factors may prevent receiving an immediate positive result from the automated system and may require a more extensive, manually-handled process:

- The automated process determines that the link (based on GPS coordinates) may cause harmful interference to an already-registered link, or may be subject to harmful interference from an already-registered link.
- The link is located near one of the radio astronomy sites shown on the attached map



- The link is within 35 miles of the US/Canada or US/Mexico border
- The link is near a Federal Government facility that is using E-Band frequencies on a confidential basis
- The link is in an environmentally sensitive area or at a historic building site
- The link is located next to an airport runway

Most link registrations that cannot be registered through the automated system, can still be registered through a manual process using FCC Form 601, however this will require additional time and costs. Links located near radio astronomy sites typically require 4-6 weeks to coordinate with the site, and links near the borders typically require 9-12 weeks for international coordination.

## BRIDGEWAVE REGISTRATION OPTIONS

There are two processes that can be used to register BridgeWave E-Band links. If you expect to register several E-Band links, you may consider obtaining an E-Band nationwide FCC license. The license can be obtained by filing FCC Form 601 (currently requires a \$830 FCC fee) and takes about one week for approval. You can file the form yourself or contract with Comsearch (or other radio frequency service company) to file it on your behalf. Once you have a nationwide license, you can directly register links through the on-line database working through one of the designated database managers (such as Comsearch). The charges for using the self-service automated system vary, but are currently no more than of a few hundred dollars per link. If the automated system is unable to complete registration of the link, then these firms can also assist you in pursuing the link registration manually using FCC Form 601. Upon receiving approval for the link, you have 12 months to complete construction of the link, and your license is good for 10 years, at which time you can apply to renew it.



The alternative process is to use BridgeWave's link registration service. This option is the simplest and most economical for users who do not anticipate coordinating a large number of links. BridgeWave will register the link in BridgeWave's name for your use, for a fee comparable to the full service rates charged by the database managers. In this case, it is not necessary for you to obtain your own nationwide license. In the exceptional cases when BridgeWave is not able to register the link through the automated system, BridgeWave will assist you in taking the additional required steps, working together with Comsearch, to complete the registration through the manual process.

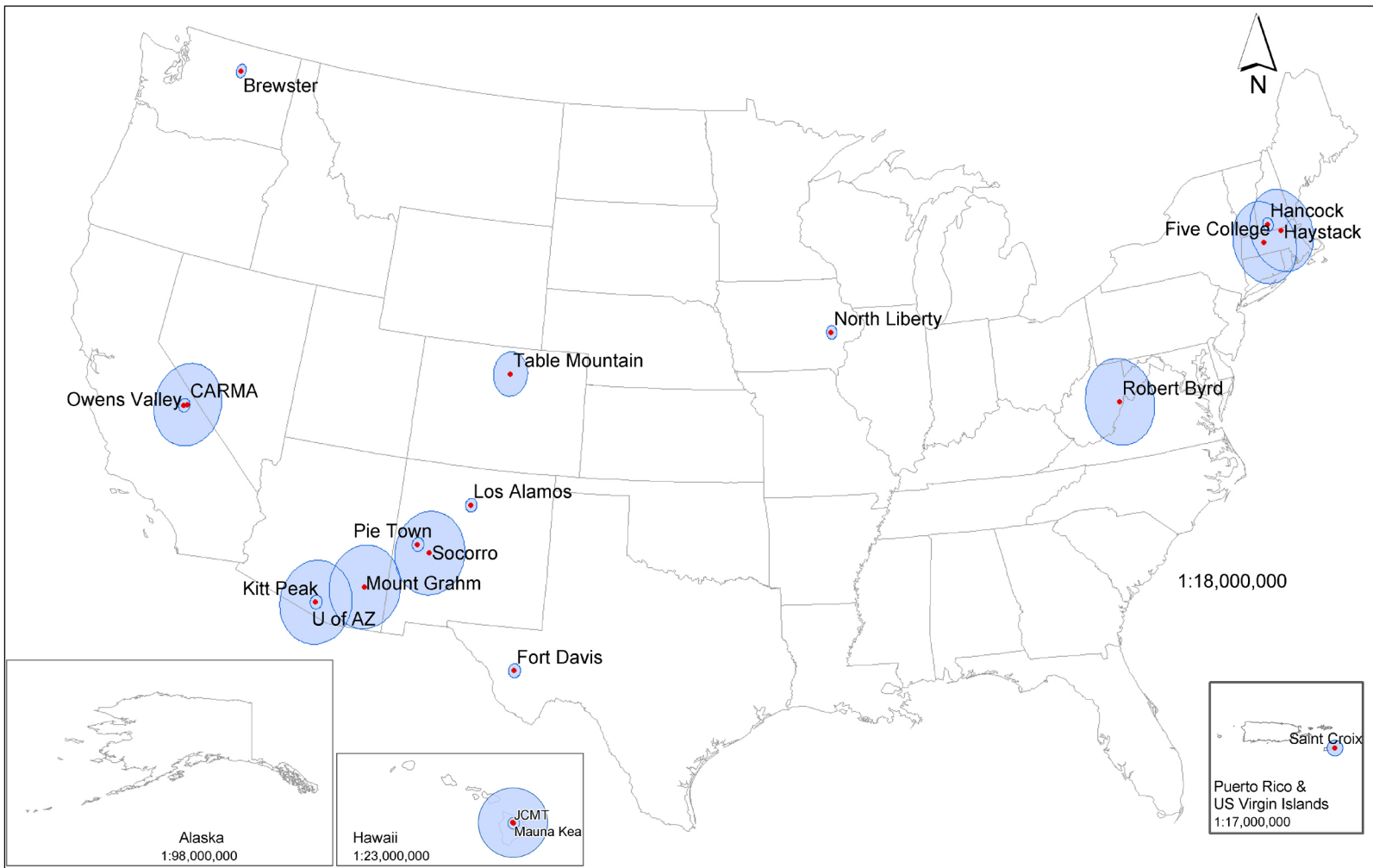
For more details on the registration process, see the included Registration Guide from Comsearch.



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## RADIO ASTRONOMY

### Legend

- Sites
- Site Radius



g l o b a l  
S P E C T R U M M A N A G E M E N T

Comsearch's new 70-90 GHz Link Registration system makes registering a link quick and easy. Our online registration system offers an intuitive interface for licensees to quickly and efficiently register and maintain their links.

## 70-90 GHz Registration Database Gigabit Data Access and License Registration is Here

The Federal Communications Commission (FCC) has allocated 12.9 GHz of spectrum in the 71-76, 81-86, and 92-95 GHz bands for high quality multi-gigabit point-to-point communications. Based on more than 28 years of experience in spectrum management, frequency coordination and database management and development, the FCC has designated Comsearch as a database manager for these bands.

Comsearch has developed a link registration system and database for FCC licensees operating in the 71-76, 81-86, and 92-95 GHz bands. Comsearch's registration system is designed for licensees to register their links with due consideration of existing users, ensuring interference-free operation. Our web-based system stream-

lines the registration process, providing rapid registration results, typically in seconds rather than days.

Exceptional technical support is the hallmark of Comsearch. Our support team members include software and fixed wireless engineers with many years of experience in the design and licensing of point-to-point links. Our skilled engineers offer personalized technical support for each customer.

### The Database and The Process

Comsearch's online link registration system can be easily accessed through [www.gigabitlink.com](http://www.gigabitlink.com) or through Comsearch's Interactive Solutions site at [www.comsearch.com](http://www.comsearch.com). This user-friendly registration system offers upfront interference analysis with commercial systems as well as automatic coordination with federal users through electronic data transfers with the NTIA.

## 70-90 GHz Registration Database

Registering a link is quick and easy. Our online registration system offers an intuitive interface for licensees to quickly and efficiently register and maintain their links.

### The Process:

1. Licensees enter the technical parameters of their link in user-friendly data fields complete with look up tables and pull-down menus.
2. The registration system conducts a quick interference analysis and identifies any potential interference conflicts. Licensees can make unlimited changes to their link as necessary to resolve interference.
3. Once the link is submitted for registration, the system performs all FCC checks (environmental assessment, international coordination, and quiet zone) to determine if FCC Form 601 is required to complete the registration. The registration system will also determine if an FAA Antenna Structure Registration (ASR) is required for any site.
4. Finally, the system submits the link parameters to the NTIA to analyze against existing Federal Government facilities in the area.

Comsearch, a pioneer of web-based interactive engineering and licensing tools for microwave systems, has a proven reputation in developing and managing online spectrum management applications. Our customers not only rely on the functionality and efficiency of our systems, they rely on the accuracy of our engineering analyses and data, and the accessibility of our experts.

Our 70-90 GHz registration system compliments our portfolio of interactive spectrum management tools by providing the same high level of expertise and support that our customers have come to expect.

Experience the power and real-time results of our 70-90 GHz registration system to help you keep pace with network capacity and efficient spectrum use demands.



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### GLOBAL SPECTRUM MANAGEMENT

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