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WHITE PAPER

The U.S. WiMAX 3.65 GHz Opportunity

The History of the Band and How WISPs Can Register for FCC Approval

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The 3.65 GHz Opportunity for U.S. WISPs

The 3.65 GHz frequency band presents an unparalleled opportunity for rural and suburban service providers — what has been referred to as a "land grab" opportunity to capture market territory and broadband customers. The availability of the band, combined with WiMAX™ wireless technology and the ease of registering to use 3.65 GHz, has created all the necessary ingredients for Wireless Internet Service Providers (WISPs) to cost effectively replace first generation legacy equipment or deploy new networks.

> "We wanted to take advantage of the success of the WiFi movement and take it to another level. Our licensing regime for the 3650 MHz band will serve as a wireless highway between small towns and the big city – it will facilitate the delivery of broadband to all corners of the country by serving a different user group, one that often is driven by more localized, community based needs."
>
> FCC Commissioner
> Jonathan S. Adelstein

U.S. WISPs considering the use of WiMAX for 3.65 GHz service benefit from the fact that WiMAX has already been successfully deployed around the world. The "early adopter" phase is over and the technology is proven from a performance and reliability standpoint. In addition, a huge ecosystem has developed that has reduced the cost of WiMAX technology. Beyond this, operators that move quickly also have the benefit of timing, and being first to market. After all, what is more important than staking claim to frequency rights and securing customers before the competition does? This presents a chance for WISPs to utilize the benefits of today's state of the art wireless technology, and all the advantages WiMAX offers such as superior quality of service (QoS), enhanced Service Flow management, Adaptive Modulation and network scalability. For existing and new WISPs, the combination of the 3.65 GHz band and WiMAX represents a rare opportunity to serve more customers efficiently and cost effectively.

Although larger cities across the U.S. have broadband service available in the form of cable modems or DSL, vast sections of the U.S. are not served by adequate and affordable broadband service. Furthermore, many consumers and businesses that do have broadband access receive less than ideal speed and reliability due to inherent limitations of broadband cable and DSL, such as distance from the central office or primary infrastructure distribution points, and over-subscription of the network at peak times. On the other end of the spectrum of broadband users in the U.S., there are small businesses and government entities paying too much for broadband service delivered via T1 lines and fiber. These customers are also excellent prospects for WISPs to target.

The good news, for small and mid-size WISPs wanting to serve such customers, is that large carriers aren't paying attention to this huge market; most are focused on urban areas where they can capture higher population densities, and possibly compete with mobile voice/broadband. This leaves a significant portion of the country under-served and available for WISPs interested in serving customers with the 3.65 GHz band.

History of the 3.65 GHz band

Historically, the 3.65 GHz band was exclusive Federal Government spectrum allocated on a primary basis for radiolocation services and, later, was also allocated to the non-government radiolocation services on a secondary basis. In 1984 the FCC added a primary allocation in the 3.65 band for non-government fixed satellite services (FSS) space-to-earth operations. In 1998 the FCC issued a Notice of Proposed Rulemaking and Order whereby the Commission proposed to allocate 3.65 GHz to the non-government fixed service on a primary basis and tentatively concluded not to allocate the band to land mobile service.

In 2004 the Commission released the Notice of Proposed Rulemaking, proposing the operation of unlicensed devices in the band. In the Notice, the FCC stated that the band would foster the introduction of new and advanced services to the American public, especially in rural areas, and would result in more efficient use of spectrum. The Commission proposed to allow unlicensed devices to operate in this band with higher power limits than typically allowed for Part 15 devices.

In 2005 the FCC adopted a Report and Order for the 3650-3700 MHz band, deciding to provide for structured entry into the band by adopting a non-exclusive licensing scheme, in lieu of an unlicensed scheme that had originally been proposed. In reaching this decision, the FCC considered many factors, including the band's encumbrance with grandfathered satellite and radiolocation operations, which prevented terrestrial use in many centers along the east and west coasts, and the lack of pairing opportunities with other spectrum for duplex operations. This, as well as evidence that the band was well suited to high-power broadband operations, persuaded the Commission that much of the interest in developing the band was focused on smaller markets and less densely populated areas. For these reasons, the Commission structured the band's rules to provide WISPs and other providers an economical means of quickly initiating broadband services, particularly in under-served and rural areas. This emphasis on rural and under-served U.S. populations may be partially attributed to the "net neutrality" movement, which is fundamentally about providing equal access to the Internet.

Solectek WiMAX base station installation in Indiana.

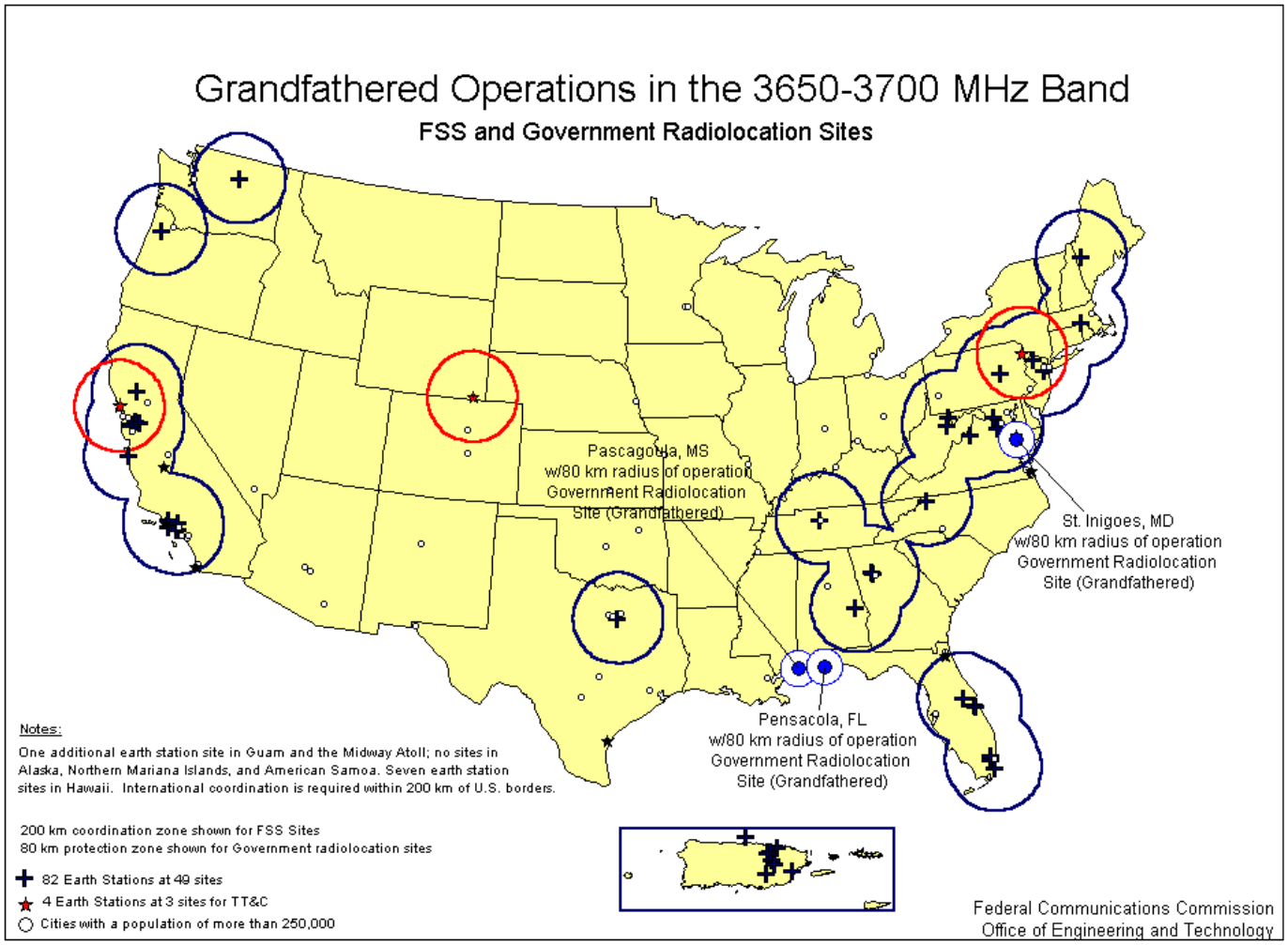
The Commission concluded that the 3.65 GHz band would be best put to use on a non-exclusive shared use basis. The Commission adopted a nationwide, non-exclusive licensing scheme for terrestrial operations in the band and adopted provisions to enable cooperative, shared use of the band, including a streamlined licensing mechanism and a requirement that equipment operating in the band incorporate a contention-based protocol to minimize interference. The Commission concluded that this licensing approach reached an appropriate balance, providing a framework with low entry costs and minimal regulatory delay, while still ensuring more orderly operation than would exist under a traditional unlicensed approach in which users must accept interference from others in the band and users' locations may be unknown.

The Commission required that all 3.65 GHz licenses cooperate and "make every effort" to avoid harmful interference and specifically declined to give interference priority to licensees who were the first to deploy in an area. The Commission required that all 3.65 GHz band licensees register their fixed and base stations in a common database. The Commission concluded that the non-exclusive licensing model, in conjunction with operational and technical safeguards (such as contention-based protocol and registration requirements), obligated licensees to cooperate to avoid harmful interference. The Commission concluded that the licensing rules it adopted would "ensure open access to this spectrum for nominal application fees and allow effective and efficient use of this spectrum in response to market forces." This, the Commission reasoned, would encourage "rapid deployment of broadband technologies" and advance the "goal of bringing broadband services to all Americans, including consumers living in less densely populated rural and suburban areas.

Contention-Based Protocol Requirement

There are two technical thresholds for system-based cooperation, as defined by the FCC. The first is Restricted Contention, which is a system that is aware of the presence of other similar systems and can adjust their operation in the presence of such similar systems. Equipment authorized under this rule is limited to deployment in the lower 25 MHz portion of the 3650-3700 MHz allocation (3650-3675 MHz) and may not be used in the upper 25 MHz allocation (3675-3700 MHz). The second technical requirement, for Unrestricted Contention, requires devices to sense and react not only to similar systems, but also different systems. Such devices can use the entire 50 MHz of allocation.

What is Contention-based Protocol?
A protocol that allows multiple users to share the same spectrum by defining the events that must occur when two or more transmitters attempt to simultaneously access the same channel and establishing rules by which a transmitter provides reasonable opportunities for other transmitters to operate.



Emission Limits

In setting the power limits for transmissions in the 3.65 GHz band, the Commission balanced numerous competing factors to "serve the public interest and foster the expeditious introduction of new terrestrial services in the 3.65 GHz band. These factors include (1) the importance of interference protection for grandfathered FSS earth stations and federal government radiolocation stations, a list of which is presented at the end of this White Paper under "Appendix," and (2) the need to ensure efficient use of the band by avoiding mutual interference among licensed operators. The Commission adopted a peak power density of 25 Watts per 25 MHz of bandwidth and no greater than 1 Watt per 1 MHz of bandwidth for fixed applications and imposed a limit of 1 Watt per 25 MHz of bandwidth for mobile operations. The Commission concluded that it set the 3.65 GHz power limits at an appropriate level to support commercially viable services which will allow licensees to operate effectively in the band without unacceptably interfering with each other's operations. In addition, the power limits, combined with protection zones for grandfathered FSS earth stations, prevent interference with in-band satellite operations. The Commission established 80 mile protection zones for such FSS sites operating in the 3.65 GHz band, however, the Commission ruled that licensees in the band could establish fixed terrestrial services within protection zones if the affected FSS operator provides approval.

Licensing Process

The Commission will issue an unlimited number of non-exclusive nationwide licenses to non-Federal entities for the 50 megahertz of spectrum allocated for commercial use. These licenses serve as a prerequisite for registering individual fixed and base stations. Mobile and portable stations, which are typically used by end-users and consumers, do not require a separate license and do not have to be registered. According to the FCC, there are four key steps involved in obtaining authority to operate a base or fixed station:

- Obtain a nationwide, non-exclusive license using ULS (Universal Licensing System) http://wireless.fcc.gov/uls/
- Before registering a station, examine the ULS for nearby stations
- Obtain FCC-certified equipment with contention-based protocol
- Register each fixed and base station using ULS and pay a $210 fee. You will need to input the FCC's equipment authorization numbers of the product to be used.

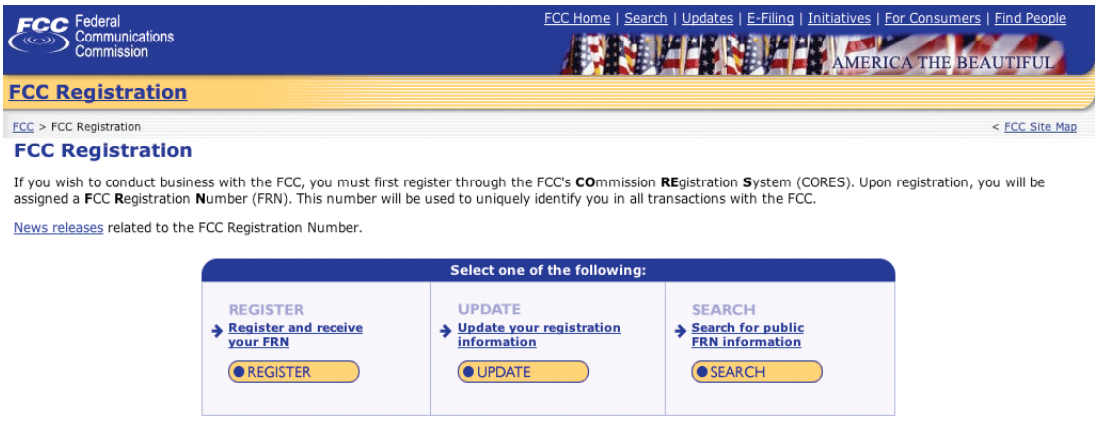
Once an operators holds a license, it is considered National and they can deploy 3.5 GHz equipment anywhere in the U.S., except in the exclusion zones (unless permission is received by the grandfathered operator). These licenses are non-exclusive and anyone may apply for and obtain a license with no priority given to those entities holding licenses registered earlier.

FCC Registration

Entities must obtain an FCC Registration Number (FRN) prior to applying for a license. This can be done online, and is free of charge via the FCC's Commission Registration System (CORES). https://fjallfoss.fcc.gov/coresWeb/publicHome.do

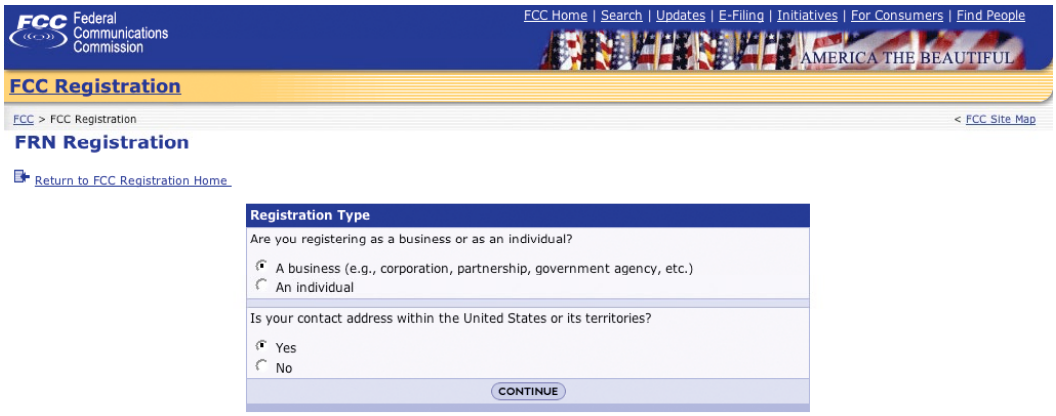
Step 1

Go to the FCC Registration website and click on register.



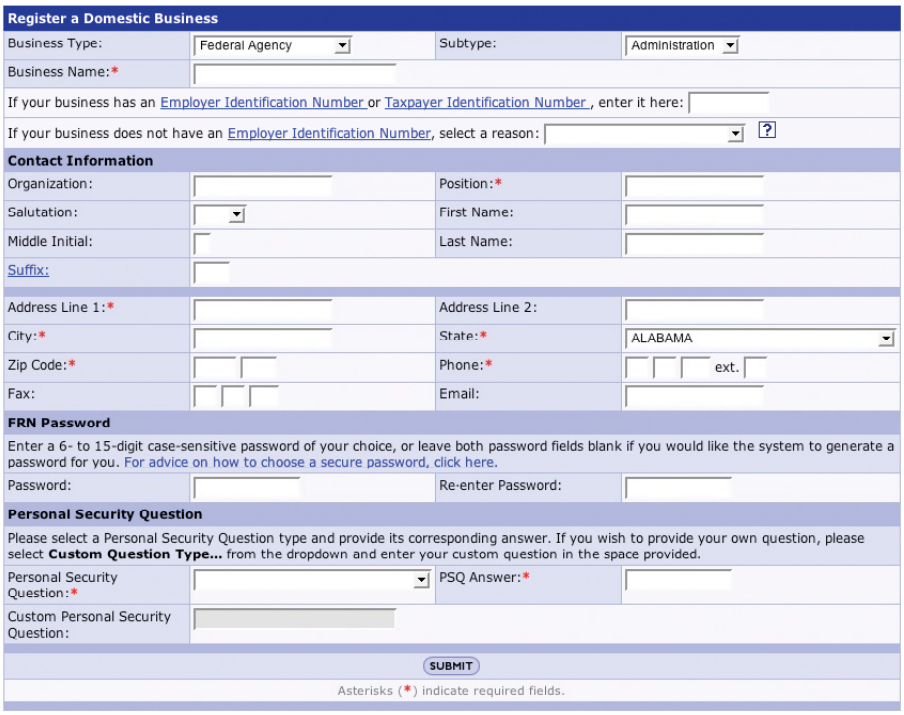
Step 2

The following screen will appear, asking whether you are a business or individual. If you file as a business, you will need to submit your business's federal tax number. If you file as an individual, enter your social security number or taxpayer ID.



Step 3

Fill out the online form. The FRN number will be presented and you should write down the password, for safe keeping.

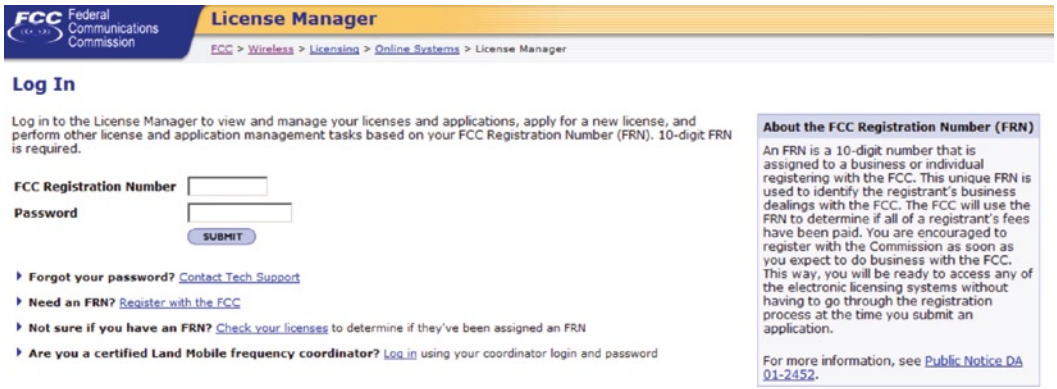


Step 4

Click on the link to "FCC Universal Licensing System" (ULS). Click on ULS License Manager. The other link, ASR Online Filing, is to register base station sites.

Step 5

Enter the FRN number previously provided to you and your password. You will then see a list of your licenses under "My Licenses," if you have previously registered.



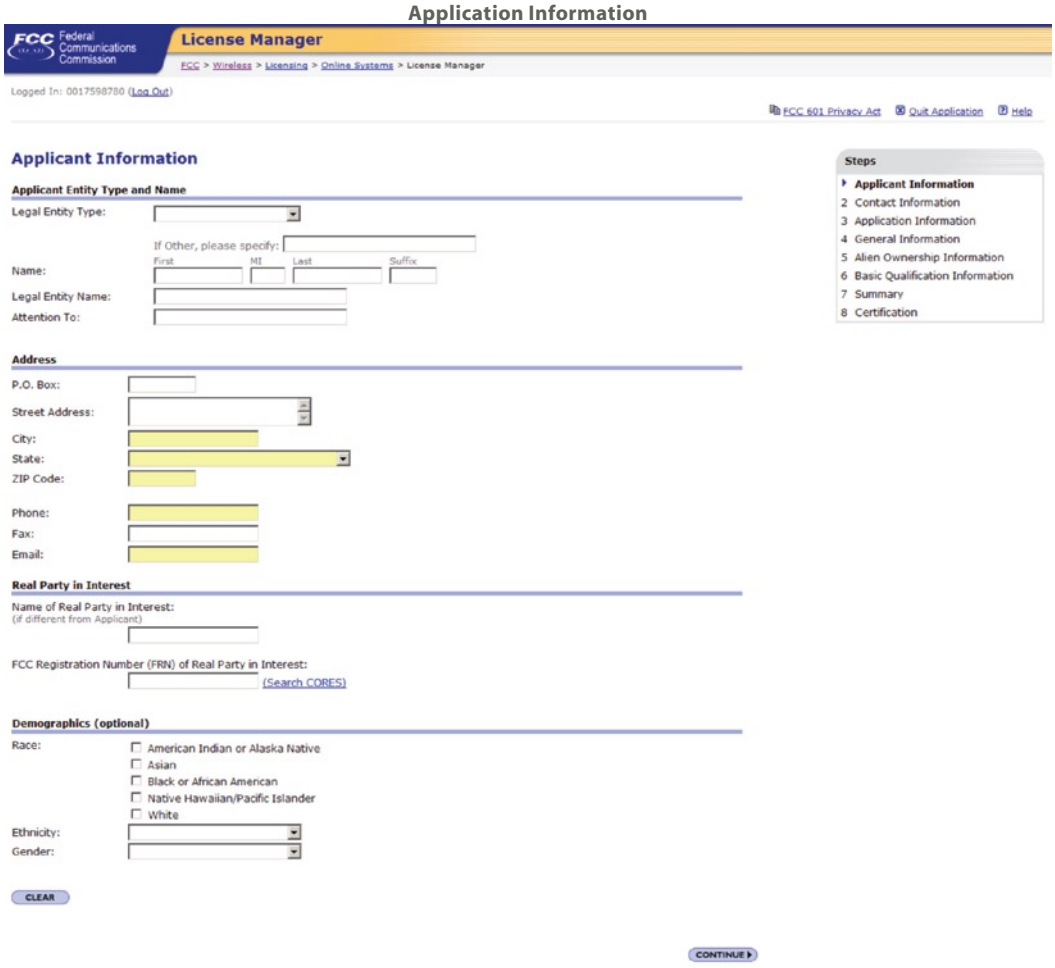
Step 6

In the drop down box, select "NN – 3650 – 3700 MHz."

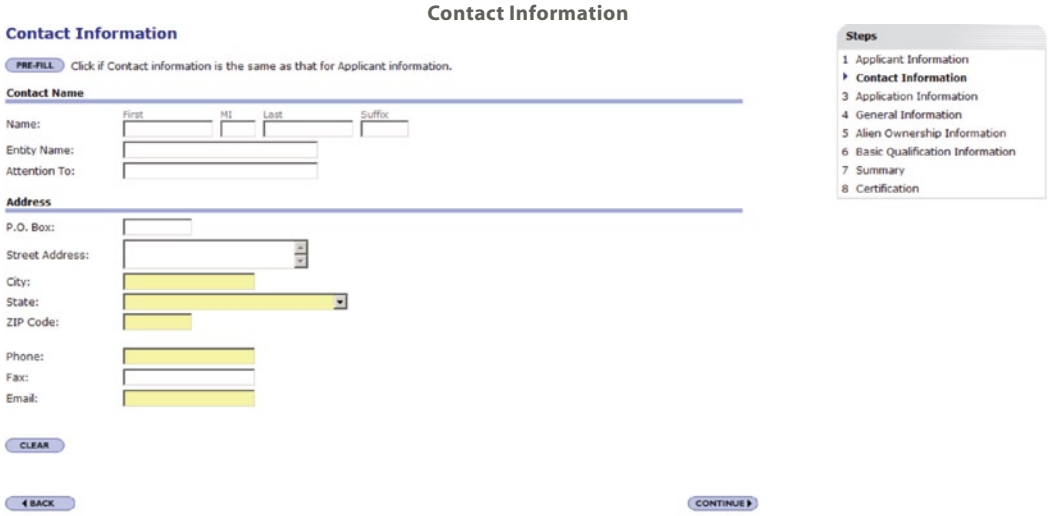
Step 7

Fill out the application and contact information.

Application Information



Contact Information

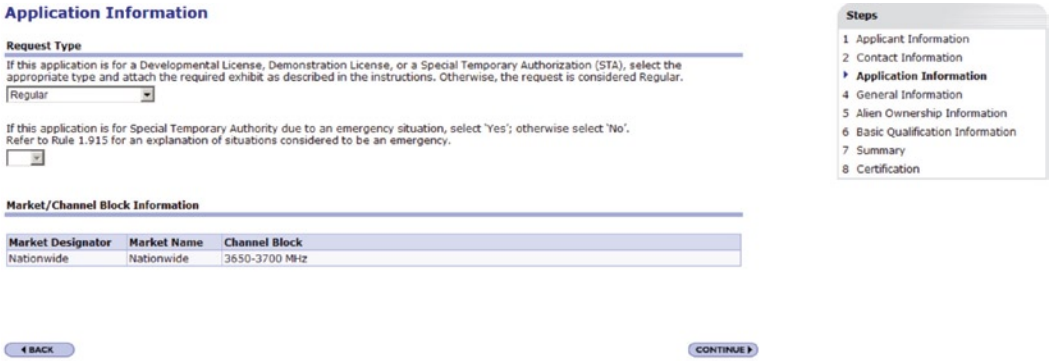


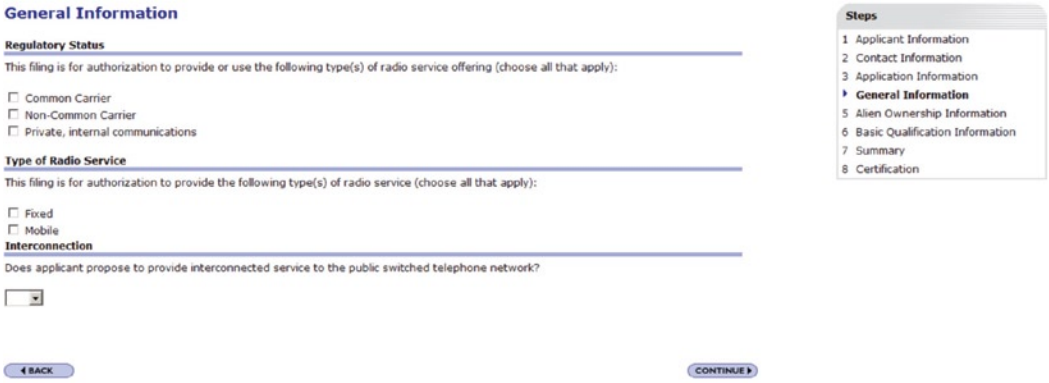
Step 8

The following screen will be presented, after entering your contact information. Most applicants will answer "No" to the question regarding the exemption and waiver. You can ignore the "Renewal Date," as all 3.65 GHz licenses are for ten year terms.

Step 9

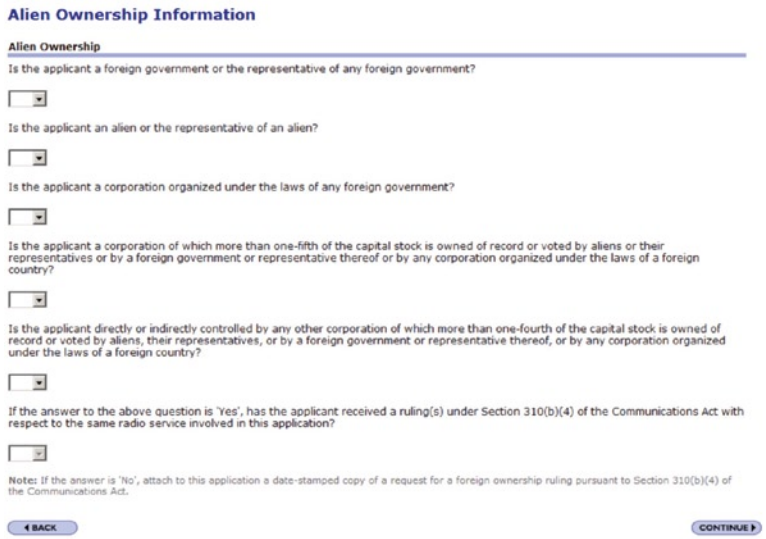
Continue filling out the forms. The following screens will be presented.





Step 10

Answer questions about foreign entity status.



Alien Ownership Information

Alien Ownership

Is the applicant a foreign government or the representative of any foreign government?

Is the applicant an alien or the representative of an alien?

Is the applicant a corporation organized under the laws of any foreign government?

Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?

Is the applicant directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof, or by any corporation organized under the laws of a foreign country?

If the answer to the above question is 'Yes', has the applicant received a ruling(s) under Section 310(b)(4) of the Communications Act with respect to the same radio service involved in this application?

Note: If the answer is 'No', attach to this application a date-stamped copy of a request for a foreign ownership ruling pursuant to Section 310(b)(4) of the Communications Act.

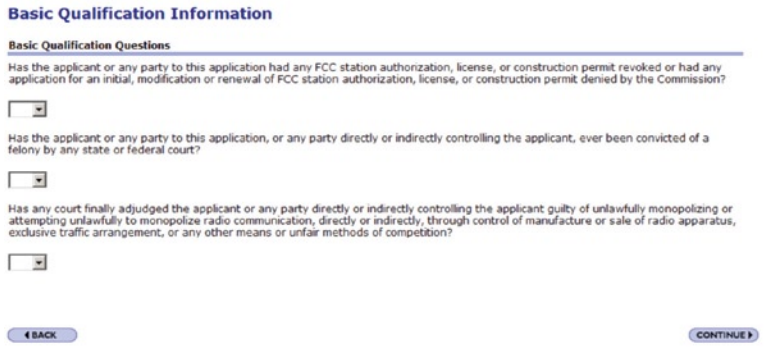
BACK CONTINUE

Steps

1 Applicant Information
2 Contact Information
3 Application Information
4 General Information
Alien Ownership Information
6 Basic Qualification Information
7 Summary
8 Certification

Step 11

Answer questions regarding legal or negative regulatory history.



Basic Qualification Information

Basic Qualification Questions

Has the applicant or any party to this application had any FCC station authorization, license, or construction permit revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission?

Has the applicant or any party to this application, or any party directly or indirectly controlling the applicant, ever been convicted of a felony by any state or federal court?

Has any court finally adjudged the applicant or any party directly or indirectly controlling the applicant guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement, or any other means or unfair methods of competition?

BACK CONTINUE

Steps

1 Applicant Information
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5 Alien Ownership Information
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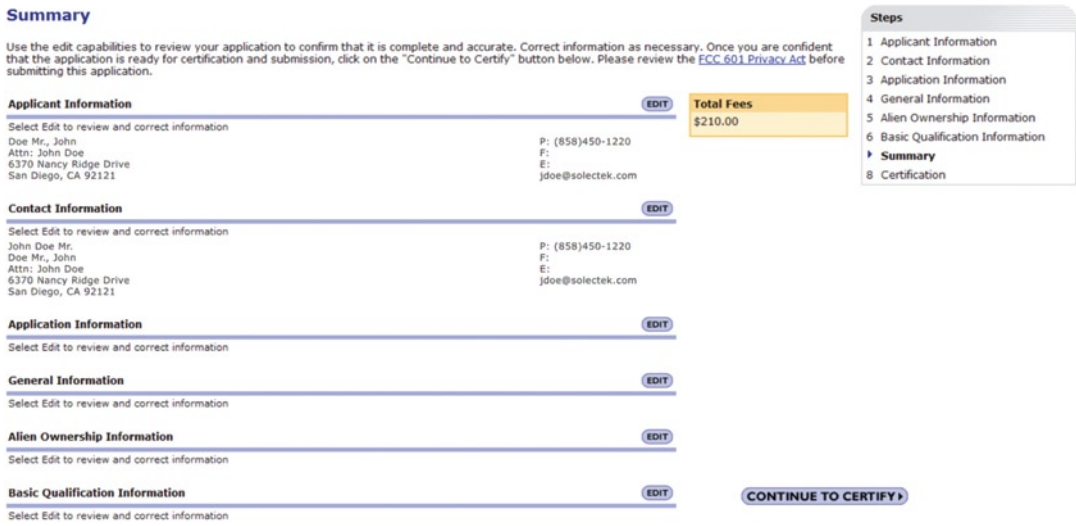
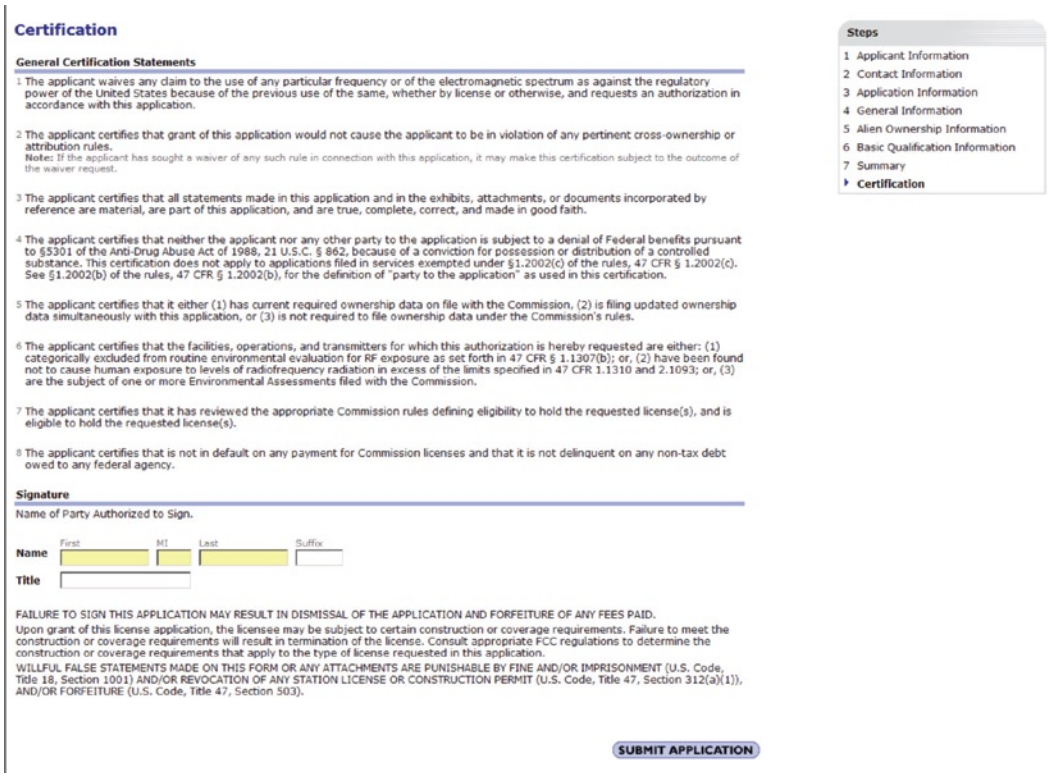
Step 12

You are almost there! The summary page enables you to double check your information and make changes if needed.



Step 13

Complete the "Certification" page. Since you are entering a binding agreement, definitely read the fine print on this page and consult legal counsel if necessary. After submitting this information, the payment page appears and you will have the ability to print the application.



APPENDIX: Grandfathered Exclusion Zones

State	City	Latitude	Longitude	NAD*	Call Sign	Filenumber	Licensee
CA	Chatsworth	34°14'20.70"N	118°34'11.50"W	83	E000326	SESMOD2000112902256	McKibben Communications
CA	Livermore	37°45'40.00"N	121°47'53.00"W	n/s	KA232	SESLIC1997103001576	Sprint Communications Company, L.P.
CA	Malibu	34°4'52.60"N	118°53'52.90"W	83	E980066	SESMOD2000112902218	AT&T Corp.
CA	Malibu	34°4'50.30"N	118°53'46.40"W	n/s	KA273	SESRWL2000072401194	AT&T Corp.
CA	Malibu	34°4'49.70"N	118°53'43.90"W	27	KA91	SESMOD1998081701067	AT&T Corp.
CA	Malibu	34°4'51.00"N	118°53'44.00"W	27	KB32	SESMOD1998081701066	AT&T Corp.
CA	Mountain House	37°45'0.70"N	121°35'37.80"W	83	KA206	SESMOD2000022200272	Pacific Satellite Connection, Inc.
CA	Mountain House	37°45'1.70"N	121°35'38.80"W	83	KA86	SESMOD2000022200265	Pacific Satellite Connection, Inc.
CA	Salt Creek	38°56'20.20"N	122°8'48.00"W	n/s	KA371	SESRWL1999101201864	AT&T Corp.
CA	Salt Creek	38°56'21.00"N	122°8'49.20"W	27	KA372	SESRWL2003103101527	AT&T Corp.
CA	Salt Creek	38°56'22.30"N	122°8'49.60"W	n/s	KA373	SESRWL2000121502350	AT&T Corp.
CA	San Ramon	37°45'39.70"N	121°47'56.80"W	83	E6241	SESMOD2000112902270	Sprint Communications Company L.P.
CA	Somis	34°19'31.00"N	118°59'41.00"W	27	KA318	SESRWL2002030500275	SES Americom, Inc.
CA	Sylmar	34°18'55.00"N	118°29'12.00"W	83	E6148	SESRWL2004102901607	FiberSat Global Services, LLC
CA	Sylmar	34°19'4.00"N	118°29'0.00"W	27	KA274	SESRWL1999022500279	Globecast North America Incorporated
CA	Three Peaks	38°8'51.90"N	122°47'38.00"W	83	E950208	SESMOD2001032600656	Loral Spacecom Corporation
FL	Medley	25°51'19.00"N	80°19'52.00"W	n/s	E960068	SESLIC1995120700087	Teleport Of The Americas, Inc.
FL	Medley	25°50'26.00"N	80°19'3.00"W	27	E960406	SESMOD1999042201041	Globecast North America Incorporated
FL	Melbourne	28°5'10.00"N	80°38'10.00"W	n/s	E950276	SESMOD2003051500668	Harris Corporation
FL	Melbourne	28°2'25.00"N	80°35'48.00"W	27	KA354	SESLIC1995032300008	Melbourne International Communications Limited
FL	Miami	25°55'33.30"N	80°13'16.20"W	83	E980299	SESMOD2000072101188	USA Teleport, Inc.
FL	Miami	25°48'35.00"N	80°21'10.00"W	83	KA407	SESRWL2004030500317	Americasky Corporation
FL	Miami	25°48'35.00"N	80°21'11.00"W	n/s	KA412	SESRWL2004042200574	Americasky Corporation
FL	Miramar	25°58'32.00"N	80°17'0.00"W	n/s	E960105	SESLIC1995122600010	GEMS International Television
FL	Orlando	28°25'29.00"N	81°7'21.00"W	27	KA280	SESRWL2000101902129	Sprint Communications Company L.P.
GU	Pulantat	13°25'0.00"N	144°44'57.00"E	n/s	KA28	SESLIC1997081401122	MCI WORLDCOM Network Services, Inc.
GU	Pulantat	13°25'5.20"N	144°45'5.70"E	83	KA326	SESMOD2000120102250	MCI WORLDCOM Network Services, Inc.
HI	Haleiwa	21°40'14.60"N	158°2'3.10"W	83	KA25	SESMOD2003051300642	Intelsat LLC
HI	Paumalu	21°40'27.00"N	158°2'16.00"W	27	KA265	SESMOD2002040500579	Intelsat LLC
HI	Paumalu	21°40'15.50"N	158°2'6.10"W	83	KA266	SESMOD2004081801190	Intelsat LLC
HI	Paumalu	21°40'14.10"N	158°2'6.10"W	83	KA267	SESMOD2004081801191	Intelsat LLC
HI	Paumalu	21°40'25.00"N	158°2'16.00"W	27	KA268	SESMOD2002040500583	Intelsat LLC
HI	Paumalu	21°40'24.00"N	158°2'16.00"W	27	KA269	SESMOD2004042900611	Intelsat LLC
HI	Paumalu	21°40'24.00"N	158°2'16.00"W	27	KA270	SESMOD2004011300031	Intelsat LLC
MD	Clarksburg	39°13'5.60"N	77°16'12.40"W	27	KA259	SESMOD2002040500569	Intelsat LLC
MD	Clarksburg	39°13'5.00"N	77°16'12.00"W	27	KA260	SESMOD2002040500571	Intelsat LLC
MD	Clarksburg	39°13'2.60"N	77°16'10.90"W	83	KA261	SESMOD2003040200453	Intelsat LLC
MD	Clarksburg	39°13'1.80"N	77°16'11.40"W	83	KA262	SESMOD2003040200454	Intelsat LLC
MD	Clarksburg	39°13'4.40"N	77°16'13.90"W	83	KA263	SESMOD2004040800539	Intelsat LLC
MD	Clarksburg	39°13'5.20"N	77°16'13.90"W	83	KA264	SESMOD2004040800538	Intelsat LLC
MD	Clarksburg	39°13'7.00"N	77°16'12.00"W	83	KA275	SESMOD2003051300641	Intelsat LLC
ME	Andover	44°38'1.20"N	70°41'51.30"W	83	E000306	SESLIC2000062201004	MCI WORLDCOM Network Services, Inc.
ME	Andover	44°38'1.20"N	70°41'51.30"W	83	E000700	SESLIC2000113002229	MCI WORLDCOM Network Services, Inc.
ME	Andover	44°37'58.00"N	70°41'54.00"W	n/s	KA349	SESMOD1997060300716	MCI WORLDCOM Network Services, Inc.
ME	Andover	44°37'58.20"N	70°41'55.30"W	83	KA386	SESRWL2003102101443	MCI WORLDCOM Network Services, Inc.
ME	Andover	44°38'0.00"N	70°41'55.00"W	27	WA20	SESRWL2003091701297	MCI WORLDCOM Network Services, Inc.
ME	Andover #6	44°37'58.20"N	70°41'55.30"W	83	E930190	SESRWL2003062400894	MCI WORLDCOM Network Services, Inc.
NC	West Jefferson	36°25'50.00"N	81°23'45.00"W	n/s	E970334	SESLIC1997052700684	Infotel International Services, Inc.
NJ	Carpentersville	40°38'39.00"N	75°11'29.00"W	27	E7541	SESMOD2000113002268	Lockheed Martin Corporation
NJ	Carteret	40°34'44.70"N	74°13'0.50"W	83	E950361	SESMOD2000080801394	All Mobile Video, Inc.
NJ	Carteret	40°34'45.40"N	74°12'59.50"W	83	E950372	SESMOD2000080801390	All Mobile Video, Inc.

APPENDIX: Grandfathered Exclusion Zones (cont'd)

State	City	Latitude	Longitude	NAD*	Call Sign	Filenumber	Licensee
NJ	Franklin	41°7'4.00"N	74°34'33.00"W	n/s	E6777	SESLIC1999031200365	Sprint Communications Company, L.P.
NJ	Franklin	41°7'4.00"N	74°34'33.00"W	n/s	KA231	SESRWL1997062300835	US Sprint Communications Company L.P.
NY	Hauppauge	40°49'15.40"N	73°15'48.40"W	83	E950436	SESMOD2002030700321	Reuters America, Inc.
NY	Hauppauge	40°48'53.60"N	73°14'18.40"W	83	E970361	SESMOD2000112202201	Globecomm Systems, Inc.
OR	Moores Valley	45°20'32.40"N	123°17'19.40"W	83	KA365	SESLIC2003100201362	Neptune Pacific License Corporation
PA	Catawissa	40°53'39.00"N	76°26'21.00"W	27	E980493	SESMOD2000112902217	AT&T Corp
PA	Hawley	41°27'51.00"N	75°7'47.90"W	27	E950209	SESMOD1996073100731	Loral Spacecom Corporation
PA	Roaring Creek	40°53'35.90"N	76°26'22.60"W	n/s	KA444	SESRWL2002041800608	AT&T Corp.
PA	Roaring Creek	40°53'37.50"N	76°26'21.80"W	27	WA33	SESRWL2004032300452	AT&T Corp.
PR	Carolina	18°26'0.00"N	65°59'35.00"W	27	KA377	SESRWL2003071000942	Americom Government Services, Inc.
PR	Humacao	18°9'5.00"N	65°47'20.00"W	n/s	E872647	SESRWL2000091201765	Telecommunicaciones Ultramarinas de Puerto Rico
PR	San Juan	18°26'47.00"N	66°3'58.00"W	27	KA466	SESLIC1995030600004	Telecommunicaciones Ultramarinas de Puerto Rico
TN	Nashville	36°14'5.70"N	86°45'21.40"W	n/s	E960050	SESLIC1995101100315	Northstar Studios, Inc.
TN	Nashville	36°14'5.70"N	86°45'19.40"W	n/s	E960073	SESLIC1995101700295	Northstar Studios, Inc.
TN	Nashville	36°14'6.20"N	86°45'20.40"W	n/s	E970010	SESLIC1996100800361	Northstar Studios, Inc.
TX	Desoto	32°37'48.00"N	96°50'32.00"W	n/s	KA306	SESRWL2002030300266	Megastar Inc
VA	Alexandria	38°47'38.00"N	77°9'46.00"W	27	E970267	SESMOD2004070200978	SES Americom, Inc.
VA	Alexandria	38°47'36.00"N	77°9'59.00"W	27	KA81	SESMOD1998071701970	SES Americom, Inc.
VA	Bristow	38°47'1.60"N	77°34'24.30"W	83	E000152	SESMOD2004020900202	New Skies Networks, Inc.
VA	Bristow	38°47'2.40"N	77°34'21.90"W	83	E000696	SESMOD2003102801506	New Skies Networks, Inc.
VA	Quicksburg	38°43'45.40"N	78°39'25.10"W	83	E000589	SESLIC2000082401509	MCI WORLDCOM Network Services, Inc.
VA	Quicksburg	38°43'45.40"N	78°39'25.10"W	83	E010140	SESLIC2000113002478	MCI WORLDCOM Network Services, Inc.
VA	Quicksburg	38°43'45.40"N	78°39'24.20"W	83	E990175	SESMOD2000113002226	MCI WORLDCOM Network Services, Inc.
VA	Reston	38°57'0.00"N	77°22'40.00"W	n/s	E950406	SESLIC1995062900762	Sprint Communications Company, L.P.
WA	Brewster	48°8'51.00"N	119°41'29.00"W	n/s	E960222	SESLIC1996022101766	SES Americom, Inc.
WA	Brewster	48°8'49.00"N	119°41'28.00"W	27	KA20	SESRWL2002110601960	SES Americom, Inc.
WA	Brewster	48°8'51.00"N	119°41'29.00"W	n/s	KA294	SESRWL2003072201015	SES Americom, Inc.
WA	Yacolt	45°51'46.40"N	122°23'44.30"W	83	KA221	SESMOD1999082001537	MCI WORLDCOM Network Services, Inc.
WA	Yacolt	45°51'45.50"N	122°23'43.80"W	83	KA323	SESMOD1999082001536	MCI WORLDCOM Network Services, Inc.
WV	Albright	39°34'7.00"N	79°34'45.00"W	27	KA413	SESRWL2004060800805	AT&T Corp.
WV	Etam	39°16'50.00"N	79°44'13.00"W	n/s	KA378	SESRWL2001060801039	AT&T Corp.
WV	Etam	39°16'48.00"N	79°44'14.00"W	27	WA21	SESRWL2001060801038	AT&T Corp.
WV	Rowlesburg	39°16'52.10"N	79°44'10.70"W	n/s	KA351	SESRWL2002092301654	AT&T Corp
WY	Cheyenne	41°7'56.00"N	104°44'10.50"W	27	E950253	SESMOD2000050500706	Echostar North America Corporation
WY	Cheyenne	41°7'55.70"N	104°44'11.50"W	27	E980118	SESMOD2001111402151	Echostar North America Corporation

About Solectek

Solectek Corporation manufactures long-range broadband wireless products used to transmit voice, data and video. Founded in 1989 in San Diego, CA, the company is a pioneer in point-to-point and point-to-multipoint systems in the unlicensed and licensed frequency bands. Products are engineered and manufactured by Solectek at the company's U.S. factory and abroad. Since 1998, Solectek has been owned by an international conglomerate with holdings in electronics, real estate, construction and other diversified industries. Solectek has installations in more than 90 countries and is a Principal Member of the WiMAX Forum.

For information on Solectek end-to-end 3.65 GHz system, please email **sales@solectek.com**

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