

4.9 GHz Band Licensing and Rules Overview



Introduction

In 2003 the FCC assigned the 4940-4990 MHz frequency band for Public Safety use. Any qualified agency may now obtain a license and use the band. This document provides a brief summary of FCC rules covering the 4.9 GHz band. Specific FCC rules are covered in Subpart Y in 47CFR part 90.

Qualified Licensees

The 4.9 GHz band is a licensed band available for use by public safety agencies. Any agency qualified for a 700 MHz license qualifies for a 4.9 GHz license. Generally this covers all government entities, private companies sponsored by a government entity (such as private ambulance services) and any organization with critical infrastructure (power companies, pipelines, etc.).

Approved Uses of the Band

The band may be used for any terrestrial based radio transmission including data, voice, and video. Point-to-point and multipoint operations are permitted. All multipoint and temporary (less than 1 year) point-to-point links are primary uses of the band. Permanent point-to-point links are secondary uses and require separate site licenses. Where interference cannot be eliminated by technical or operational modifications, primary users take precedence over secondary users. BreezeACCESS 4900 can be configured as point-to-point or multipoint system

Prohibited Uses

Aeronautical use and commercial use of the band is prohibited.

Special Considerations

After filing of a license application, the FCC will handle any required coordination for band use near the Canadian border. Also, use of the 4.9 GHz band must not interfere with radio astronomy observatories (radio quiet zones).

Obtaining Licenses

Both general and site-specific licenses may be obtained at any time through the Universal Licensing System (ULS) available at www.fcc.gov. There is no charge and applications are processed within hours. Site-specific licenses must have endpoint coordinates submitted with the application.

Time Limits

There is no time limit for construction and operation under a general license. A site-specific license must be operational within 18 months of the grant.

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Channel Plan

The FCC has divided the band into 18 channels in the table below. Channels may be aggregated, and operated in channels of up to 20 MHz. BreezeACCESS 4900 can be configured to any 5 or 10 MHz block of spectrum within the band.

Channel Number	Center Frequency (MHz)	Channel Bandwidth (MHz)
1	4940.5	1
2	4941.5	1
3	4942.5	1
4	4943.5	1
5	4944.5	1
6	4947.5	5
7	4952.5	5
8	4957.5	5
9	4962.5	5
10	4967.5	5
11	4972.5	5
12	4977.5	5
13	4982.5	5
14	4985.5	1
15	4986.5	1
16	4987.5	1
17	4988.5	1
18	4989.5	1

Frequency Coordination

A general 4.9 GHz license gives an agency the right to use the entire 4940-4990 MHz frequency band. Multiple agencies may receive licenses within the same geographic area, so interference is possible. Usually interference can be prevented or eliminated by affected licensees working together on a technical solution, and possibly sharing the same infrastructure. Many 700 MHz Regional Planning Committees are handling local frequency planning in 4.9 GHz. A frequency plan does not have to be in place prior to use of the band. Any agency may use the band upon obtaining a license.

Emission Mask

In November 2004, the FCC defined two masks for use in the 4.9 GHz band: the DSRC-A mask (identical to the mask defined in the 802.11 standards) for a low power devices, and the DSRC-C mask, with better adjacent channel protection, for higher power devices. BreezeACCESS 4900 meets the DSRC-C mask, allowing the system to transmit at higher power levels, providing for superior range, throughput and non-line-of-sight performance.

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ANNEX - How to File for a 4.9 GHz License

Eligibility for a 4.9 GHz license is limited to public safety entities and communications on the band must be limited to the protection of life, health or property. Cities, towns, counties, states, municipal utilities are all eligible to hold 4.9 GHz licenses. Each 4.9 GHz license is granted for the entire 50 MHz available in the band and all primary licensees share the band equally – there are no exclusive assignments. Licenses in the 4.9 GHz band are granted to cover the licensee’s legal jurisdiction – e.g. citywide, countywide, and statewide.

License applications for operations at 4.9 GHz are filed using the FCC’s Universal Licensing System (ULS). At any time during the electronic filing process, if you do something wrong, or fail to complete a required field, an error message will appear explaining what was completed incorrectly or what information is missing. The system will not let you advance to a new screen until the current screen is completed successfully.

Log onto the FCC’s Universal Licensing System at <http://wireless.fcc.gov/uls/>.

- Click on “On-Line Filing.”
- Enter your FCC Registration Number (FRN) and your password ¹
- Click “Submit”
- A screen will appear that says “My Applications” – Application at a Glance
- Click on the “Apply for New License” link on the left hand side of this page
- A screen will appear that says “License Manager”
- Use the drop-down box to select the radio service code “PA”
- Click “Continue”
- The Form 601 will appear
- When filling out a Form 601 on-line, certain fields will not require completion – these fields appear faint or faded on the screen.
- First item you will need to respond to is “Will this application require a waiver of the Commissions rules?”
- Select “No” ²
- Click “No” ³ to the question “Are attachments filed with this application?”
- Next question is: “Interconnected Service?”
- Answer yes or no
- Next field is “Fee Status”
- Governmental entities are exempt from fees
- Click “Next page.”

¹ If you do not have an FCC Registration Number (FRN) you will have to register your Taxpayer Identification Number (TIN) with the FCC following the on-screen prompts using “CORES”. CORES is available on-line on the ULS homepage.

² Operation on-board aircraft requires a waiver. See text of 4.9 GHz Overview for details.

³ If you have requested a waiver, you will need to answer ‘yes’ to this question because the waiver will be attached to the application.

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- On the drop down screen in the field “The licensee is” select ‘Governmental Entity’
- Complete all the blank fields (name, address, etc.)
- Click “Next Page.”
- Ownership Questions/Qualifications
- Answer each of the questions using the drop-down boxes
- Click “Next Page.”
- Type the name of the party authorized to sign the application in the box
- Click “Next Page”
- The control point section comes up
- Click on ‘add a control point.’ And fill in the control point information, address, and telephone number.
- Click on “Save”
- Click on “Next Page.”
- The Eligibility screen will appear. Enter rule section 90.1203. Describe your activity just as always – e.g. applicant is a governmental entity, etc.
- Click on “Next Page.”
- The Location Page comes up
- Click on “Add”
- Using the drop down box on Location Description Click on “T – Temporary Fixed.”⁴
- Using the drop down box on Area of operation code, choose the area of operation that corresponds with your legal jurisdiction – Countywide, Statewide, or “Other” (for Citywide operations), or kmra around a center point, or box rectangular
 - A dialogue box will open up after you select the Area of Operation. If you choose:
 - “Other” indicate “within the legal jurisdiction of _(city)___, “kmra around a set of coordinates,” enter the coordinates, city and state.
 - “County”, enter the county
 - “State”, enter the state
- The last two questions on the page are whether or not the sites would result in an Environmental Effect or are located within a Quiet Zone. Answer these questions using the drop down boxes.
- Click on “Next Page.”
- This is the antenna page; no information is needed, unless you are filing for permanent fixed point-to-point operations. Click on “Next Page.”
- This is the frequency page. You do not need to enter anything in this section because the Universal Licensing System automatically fills in the frequency range for 4.9 GHz.
- At the bottom of the page, select ‘submit’ to file the application with the FCC.

⁴ Temporary Fixed operations are primary. If you propose to operate permanent fixed point-to-point stations, you must select that option from the drop down menu and each permanent fixed site must be listed separately on the application. You must provide coordinates, ground elevation, antenna height, HAAT, etc. for each site.

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- The FCC assigns your application a file number so that you can track it if necessary. You should receive a granted license within a short period of time. Some grant literally overnight.