

## **Industrial / Business Licensing**

Individuals or entities desiring to operate on frequencies listed in the Industrial/Business Pool are required to obtain a radio station license for these frequencies.

The Commission has accepted a list of channels in the 450-470 MHz band designated for low power use. The list was submitted by the Land Mobile Communications Council. It is expected that low power licensees will migrate to channels in the 450-470 MHz band designated for low power use. For more information, see Public Notice DA 00-1359 ([pdf](#)).

Below is some helpful information to aid you with the licensing process.

### **Licensing Process**

#### **1. Gathering Information**

Preparing to License outlines the important information about your radio system that you gather before you contact a frequency coordinator.

#### **2. Frequency Coordination**

Frequency coordinators are FCC certified to recommend the most appropriate frequencies for applicants in the designated Part 90 radio services. Applications for new frequency assignments, changes to existing facilities or operation at temporary locations must include a showing of frequency coordination.

#### **3. Filing Your Application**

New applications and other actions which require frequency coordination are normally filed with the FCC through the recognized frequency coordinator. Other actions such as minor modifications or administrative updates may be filed with the FCC through the [Universal Licensing System](#) (ULS). For new users, you can learn more about ULS online systems through its [getting started tutorials](#)

#### 4. **Immediate Operation**

There are two ways to begin immediate operation of your system. The FCC implemented a licensing procedure for Conditional Authority in 1995. You may begin operating your system 10 days after your application is filed with the FCC. In addition, you may apply for a [Special Temporary Authority](#) to operate during emergency or other urgent conditions without filing a license application.

#### 5. **Notification of Construction**

A licensee must notify the Commission that its system is constructed and placed into operation within 12 months of the date of grant or their license will automatically cancel. (See [47 CFR 90.155\(a\)](#)). Notification is made by filing FCC Form 601 through ULS (Purpose Code: NT). You may also request an extension of the construction period through Form 601 before the expiration of the construction period. This filing must be made within 15 days of the expiration of the applicable construction period. (See [47 CFR 1.946 \(d\)](#)). You may also request an extension of the construction period through Form 601 (Purpose Code: EX) before the expiration of the construction period. (See [47 CFR 1.946\(e\)](#)).

#### 6. **Renewal of License**

You must file for renewal of your license no later than the expiration date of your license period, and no sooner than 90 days prior to expiration by filing FCC Form 601 (Purpose Code: RO) through [ULS](#). (See [47 CFR 1.949](#)).

## Eligibility

Any applicant may apply for any frequency in the pool in which he/she establishes eligibility. Briefly, eligibility is open to persons primarily engaged in any of the following activities:

- The operation of a commercial activity;
- The operation of educational, philanthropic, or ecclesiastical institutions;
- Clergy activities; or
- The operation of hospitals, clinics, or medical associations.

There are specific frequency coordinator requirements for particular frequencies.

[47 CFR 90.35\(b\)](#) lists each frequency in the Industrial/Business Pool and any required frequency coordinator(s) using the following letter codes:

<b>Code</b>	<b>Frequencies</b>
IP	Petroleum Coordinator
IW	Power Coordinator
LA	Automobile Emergency Coordinator
LR	Railroad Coordinator

An applicant may use the services of any frequency coordinator certified in the pool in which he/she establishes eligibility. If the applied-for frequencies can only be recommended by another coordinator, the coordinator that you selected will seek the concurrence of the required coordinator. An example:

An eligible applicant may use the services of any coordinator certified for the Industrial/Business Pool. If the applied-for frequencies were allocated solely to the former Power Radio Service (IW), the application must receive concurrence from UTC,

The Telecommunications Association, the coordinator of the former Power Radio Service (IW).

Eligibility is also provided for any corporation proposing to furnish nonprofit radiocommunication service to its parent corporation, to another subsidiary of the same parent, or to its own subsidiary. This corporate eligibility is not subject to the cooperative use provision of [47 CFR 90.179](#).

Eligibility is also provided for a nonprofit corporation or association that is organized for the purpose of furnishing a radiocommunications service to persons who meet the eligibility requirements of the Industrial/Business Pool. Such use is subject to the cooperative use provisions of [47 CFR 90.179](#).

## Emission Designators

FCC Form 601 requests the emissions of the transmitter. Emissions are designated according to their classification and the necessary bandwidth. Three symbols are used to describe the basic characteristics of radio waves. Emissions are classified and symbolized according to the following characteristics:

- First Symbol - type of modulation of the main carrier.
- Second Symbol - nature of signal(s) modulating the main carrier.
- Third Symbol - type of information to be transmitted.

Whenever the full designation of an emission is necessary, the symbol for that emission shall be preceded by the necessary bandwidth of the emission.

### Designator Examples

The new International Telecommunication Union (ITU) emission designators must be used in place of the old designators. The following provides samples of the corresponding new ITU designators for the most commonly used emission designators:

<b>Description</b>	<b>Old</b>	<b>New</b>
Frequency modulated (FM) voice	20F3	20K0F3E
Frequency modulated (FM) voice	13.6F3	13K6F3E
Frequency modulated digitized voice	20F3Y	20K0F1E
Frequency modulated digitized non-voice	20F9Y	20K0F1D
Amplitude modulated single sideband voice	3A3J	3K00J3E
Amplitude modulated (AM) voice	8A3	8K00A3E

If you have questions about your emission designator, you may want to contact your radio vendor or manufacturer. Also, emission designators should be included in the type acceptance paper work from the Commission. Emissions are discussed in the CFR 47, 2.201 and 90.207.

## Frequency Coordinators

In 1982, Congress provided the Commission with the statutory authority to use frequency coordinators to assist in developing and managing the Private Land Mobile Radio (PLMR) spectrum. Frequency coordinators, in this case, are private organizations that have been certified by the Commission to recommend the most appropriate frequencies for applicants in the designated Part 90 radio services. This frequency coordination process is intended to make more efficient use of the PLMR spectrum for the benefit of all members of the public. In general, applications for new frequency assignments, changes to existing facilities or operation at temporary locations must include a showing of frequency coordination (See [CFR 47, Section 90.175](#)).

Anything that requires Frequency Coordination must be electronically submitted by the Coordinator. Frequency Coordination is required for a new filing. Major Modifications and Amendments that change or add frequencies, emissions, ERP, Output Power, Antenna Height, Ground Elevation, change location of Base, Fixed, Mobile or Control stations or number of Mobile units and any change to station class. (Hydro frequencies listed in [CFR 47 Section 90.265\(a\)](#)). Go through the National Oceanic and Atmospheric Administration (NOAA) for coordination.

Frequency Coordination is not required for STAs unless they are filing a waiver of the 180 day limit of STA. Developmental and Demonstration applications, Radiolocation (RS) applications, Itinerant operations and station classes ending in the letter "I" or "L" and applications for 6.1 Meter Control Stations.

There are different frequency coordinators authorized for the different categories of PLMR spectrum.

- For frequencies in the 470-512 MHz band, applicants may use any frequency coordinator.
- For frequencies below 470 MHz and above 512 MHz, applicants must choose a frequency coordinator as specified below.
- Contact information for each of the certified coordinators is below.

## Below 800 MHz Coordinators

Frequency coordinators in this range are based on designations clarified in Section 90.35 of the Commission's Rules.

### Coordinator

### Frequency Designation

#### [AAA Frequency Coordination](#)

c/o RadioSoft, Inc.

194 Professional Park Dr

Clarksville, GA 30523

P: 888-601-FORM

P: 706-754-1AAA

F: 706-754-2745

E: [AAA@RadioSoft.com](mailto:AAA@RadioSoft.com)

**LA:**

**Automobile**

#### [Enterprise Wireless Alliance \(EWA\)\\*](#)

Attn: Frequency Coordination Department

2121 Cooperative Way Ste 225

Herndon, VA 20171

P: 703-528-5115

P: 800-482-8282

F: 703-524-1074

E: [customerservice@enterprisewireless.org](mailto:customerservice@enterprisewireless.org)

**IP:**

**Petroleum**

\*Also coordinates on behalf of the Petroleum Frequency Coordinating Committee (PFCC), International Taxicab and Livery Association (ITLA), Telephone Maintenance Frequency Advisory Committee (TELFAC), Newspaper Association of America (NAA), and Alliance of Motion Picture and Television Producers.

Utilities Telecom Council Spectrum Services (UTC)

1129 20th Street NW, Suite 350

Washington, DC 20036

P: 202-872-0030

F: 202-872-1331

E: [spectrumservices@utc.org](mailto:spectrumservices@utc.org)

**IW: Power**

AAR Frequency Coordination

Transportation Technology Center, Inc.

Attn: James Reimer, Frequency Coordination

55500 DOT Road

Pueblo, CO 81001

P: 719-584-0578

F: 719-584-7145

E: [coordination@aar.com](mailto:coordination@aar.com)

**LR:  
Railroad**

Central Station Alarm Association (CSAA)

Attn: Robert Bitton, President

1565 Union Avenue, P.O. Box 775

Union, New Jersey 07083-0775

P: 908-810-8822

F: 908-810-8844

E: [bittonr@supreme-inc.com](mailto:bittonr@supreme-inc.com)

**Other**



[Forest Industries Telecommunications \(FIT\)](#)

1565 Oak Street

Eugene, Oregon 97401

P: Main Office: 541-485-8441

P: Chicago: 888-583-2-WAY

P: Dallas: 888-342-2-WAY

P: Los Angeles 888-355-2-WAY

P: WASH. D.C. 888-395-2-WAY

F: 541-485-7556

E: [license@landmobile.com](mailto:license@landmobile.com)

Hydrological Federal Frequency\*

NOAA National Weather Service

Attn: John Bradley

Office of Climate, Water, and Weather Services, W/OS31

1325 East-West Highway, Room 13466

Silver Spring, Maryland 20910

P: 301-713-0624 x154

E: [Hydro.Radio.Freq@noaa.gov](mailto:Hydro.Radio.Freq@noaa.gov)

\* Note that frequencies in the 169-172 MHz and 406-413 MHz bands available under Section 90.265(a) of the Commission's rules must be coordinated through the National Oceanic and Atmospheric Administration (NOAA).

[Manufacturers Radio Frequency Advisory Committee, Inc.\(MRFAC\)](#)

c/o Radiosoft, Inc.

194 Professional Park Dr.

Clarkesville, GA 30523

P: 800-262-9206

E: [coord@mrfac.com](mailto:coord@mrfac.com)

[The Wireless Infrastructure Association \(WIA\)](#)

The Wireless Infrastructure Association

500 Montgomery St., Suite 500

Alexandria, VA 22314

P: 703-535-7502

F: 703-836-1608

E: [don.andrew@wia.org](mailto:don.andrew@wia.org)

**800/900 MHz Coordinators**

**Coordinator**

[Enterprise Wireless Alliance \(EWA\)](#)

Attn: Frequency Coordination Department

2121 Cooperative Way Ste 225

Herndon, VA 20171

P: 703-528-5115

P: 800-482-8282

F: 703-524-1074

E: [customerservice@enterprisewireless.org](mailto:customerservice@enterprisewireless.org)

[Forest Industries Telecommunications \(FIT\)](#)

1565 Oak Street

Eugene, Oregon 97401

P: Main Office: 541-485-8441

P: Chicago: 888-583-2-WAY

P: Dallas: 888-342-2-WAY

P: Los Angeles 888-355-2-WAY

P: WASH. D.C. 888-395-2-WAY

F: 541-485-7556

E: [license@landmobile.com](mailto:license@landmobile.com)

[Manufacturers Radio Frequency Advisory Committee, Inc. \(MRFAC\)](#)

c/o Radiosoft, Inc.

194 Professional Park Dr

Clarkesville, GA 30523

P: 800-262-9206

E: [coord@mrfac.com](mailto:coord@mrfac.com)

[The Wireless Infrastructure Association \(WIA\)](#)

The Wireless Infrastructure Association

500 Montgomery St., Suite 500

Alexandria, VA 22314

P: 703-535-7502

F: 703-836-1608

E: [don.andrew@wia.org](mailto:don.andrew@wia.org)

[Utilities Telecom Council Spectrum Services \(UTC\)](#)

Attn: Frequency Coordination Department

1129 20th Street NW, Suite 350

Washington, DC 20036

P: 202-872-0030

F: 202-872-1331

E: [spectrumservices@utc.org](mailto:spectrumservices@utc.org)

The following coordinators are certified for the 800 MHz General Category and SMR Pools, but not the 800 MHz B/ILT Pool or the 900 MHz band:

[American Association of State Highway and Transportation Officials \(AASHTO\)](#)

c/o RadioSoft, Inc.

194 Professional Park Dr

Clarkesville, GA 30523

P: 888-601-3676

F: 706-754-2745

E: [angela@radiosoft.com](mailto:angela@radiosoft.com)

E: [eileenf@radiosoft.com](mailto:eileenf@radiosoft.com)

[Association of Public-Safety Communications Officials, Inc. \(APCO\)](#)

Automated Frequency Coordination Department

351 N. Williamson Blvd

Daytona Beach, FL 32114-1112

P: 888-272-6911

F: 386-322-2502

E: [afc@apcointl.org](mailto:afc@apcointl.org)

[Forestry Conservation Communications Association \(FCCA\)](#)

122 Baltimore Street

Gettysburg, PA 17325

P: 717-398-0815

P: 855-803-1465

F: 717-778-4237

E: [michelle.fink@frequencycoordination.org](mailto:michelle.fink@frequencycoordination.org)

[International Municipal Signal Association \(IMSA\)](#)

122 Baltimore Street

Gettysburg, PA 17325

P: 717-398-0823

P: 855-803-1465

F: 717-778-4237

E: [michelle.fink@frequencycoordination.org](mailto:michelle.fink@frequencycoordination.org)

The following coordinators are certified for the 800 MHz and 900 MHz B/ILT Pool, but not the 800 MHz General Category and SMR Pools:

[AAA Frequency Coordination](#)

c/o RadioSoft, Inc.

194 Professional Park Dr

Clarkesville, GA 30523

P: 888-601-FORM

P: 706-754-1AAA

F: 706-754-2745

E: [AAA@RadioSoft.com](mailto:AAA@RadioSoft.com)

[AAR Frequency Coordination](#)

Transportation Technology Center, Inc.

Attn: James Reimer, Frequency Coordination

55500 DOT Road

Pueblo, CO 81001

P: 719-584-0578

F: 719-584-7145

E: [coordination@aar.com](mailto:coordination@aar.com)

## **Radio Service Code**

The following radio services apply to the Industrial/Business pool. A complete list of ULS radio service codes is also available on the [Universal Licensing System](#) site.

### **Below 800 MHz**

IG - Industrial/Business Pool - Private, Conventional

YG - Industrial/Business Pool - Private, Trunked

### **Above 800 MHz Business**

GB - 806-821/851-866 MHz, Conventional

GU - 896-901/935-940 MHz, Conventional

YB - 806-821/851-866 MHz, Trunked

YU - 896-901/935-940 MHz, Trunked

### **Above 800 MHz Industrial/Land Transportation**

GO - 806-821/851-866 MHz, Conventional

GI - 896-901/935-940 MHz, Conventional

YO - 806-821/851-866 MHz, Trunked

YI - 896-901/935-940 MHz, Trunked

## Preparing to License

Before you begin the license process, you must have detailed information about your radio system to provide to the frequency coordinator, such as:

- Frequency/ Frequency Band

What frequency band or specific frequency you want to operate on. Note: Frequencies in the 470-512 MHz band are shared with UHF-TV channels 14-20 and are only available in 11 cities. The Commission's rules require licensees to show that any assigned channels in this band in a particular urbanized area are at full capacity before they will be assigned additional 470-512 MHz channels in that area. See Shared Frequencies for more information.

- Mobile Radio Count

The number of mobile radios that will operate on the system.

- Output Power/ERP

The output power of the system amplifier, as well as the effective radiated power (ERP), which is the system's power at the antenna.

- Emission Designators

Includes several pieces of vital information: modulation, signal, type of information and size of the channel. This determines the channel width your system will occupy.

- International Coordination

For stations near the Canadian border, refer to the [Industry Canada](#) site to access Canadian licensing information. Note that the Canadian database does not show all valid stations.

## Antenna Information

You must also provide the following information about your antenna:

- Structure

The most common codes are:

- B - Building with side mounted antenna
- BANT - Building with antenna on top
- MAST - Self-supported structure
- PIPE - Pipe antenna
- POLE - Any type of pole antenna
- TOWER - Free standing guyed structure used for communications purposes
- Height

Antenna height from ground to tip, in meters.

- Support Structure Height

If antenna is mounted on top of a building, it is the distance from ground to the top of the building. Check with your building management company for this information.

- Coordinates

All coordinates (latitude/longitude) must be referenced to the North American Datum of 1983 (NAD83). Latitude and longitude must be listed in degrees, minutes and seconds.

- Site Elevation

The antenna site ground elevation above sea level. This information should always be in meters.

- FAA Antenna Structure Registration

Refer to ASR [TOWAIR Determination](#) to determine if your antenna needs to be registered with the FCC.



## Shared Frequencies

Frequencies in the 470-512 MHz band are shared with UHF-TV channels 14-20 and are only available in 11 cities.

[47 CFR 90.313](#) requires licensees to show that any assigned channels in this band in a particular urbanized area are at full capacity before they will be assigned additional 470-512 MHz channels in that area. For stations that are operating at full capacity, the rules specify the minimum allowable distance between co-channel stations.

32 kilometers (20 miles) for:

- Channel 15 in Chicago
- Channel 20 in Philadelphia
- Channel 17 in Washington

64 kilometers (40 miles) for all other channels and areas.

In accordance with these rules, new applicants may apply for only one channel at a time. After loading that channel to full capacity, a licensee may apply for another channel. Current licensees may use existing loading to satisfy this requirement and apply for more than one channel at one time.

Licensees in the 470-512 MHz band that are operating above full capacity may use those units to qualify for additional channels. Licensees operating in other frequency bands may also use existing licensed units to qualify for more than one channel at one time. In each of these instances, the licensee must concurrently modify his/her existing license(s) to remove units from these licenses so that they may be applied towards the loading of a 470-512 MHz band license.

## Available Cities

The 470-512 MHz band is available for licensing within 50 miles of the geographic center of 11 cities:

Urbanized Area	Geographic Center*		Channel Frequencies (MHz)	
	N. Lat.	W. Long.		
Boston, MA	41° 21' 24"	71° 03' 75"	14	470-476
			16	482-488
Chicago, IL	41° 52' 28.1"	87° 38' 22.2"	14	470-476
			15	476-482
Dallas/Fort Worth, TX	32° 47' 09.5"	96° 47' 38"	16	482-488
Houston, TX	29° 45' 26.8"	95° 21' 37.8"	17	488-494
Los Angeles, CA**	34° 03' 15"	118° 14' 31.3"	14	470-476
			20	506-512
Miami, FL	25° 46' 38.4"	80° 11' 31.2"	14	470-476

New York/N.E. NJ	40° 45' 06.4"	73° 59' 37.5"	14	470-476
			15	476-482
Philadelphia, PA	39° 56' 58.4"	75° 09' 19.6"	19	500-506
			20	506-512
Pittsburgh, PA	40° 26' 19.2"	79° 59' 59.2"	14	470-476
			18	494-500
San Francisco/Oakland, CA	37° 46' 38.7"	122° 24' 43.9"	16	482-488
			17	488-494
Washington, DC/MD/VA	38° 53' 51.4"	77° 00' 31.9"	17	488-494
			18	494-500

\* Coordinates are referenced to North America Datum 1983 (NAD83).

\* \* Channel 16 (482-488 MHz) is available in Los Angeles for use by public safety users.

In addition, channels 14 (470-476 MHz) and 15 (476-482 MHz) are allocated in Cleveland, OH and channels 15 (476-482 MHz) and 16 (482-488 MHz) are allocated in Detroit, MI.

Assignments on these channels, however, are not available until further order from the Commission. Applicants in these cities may apply for channels in the 421-430 MHz band.