

## RADIO COMMUNICATIONS TECHNICIAN

### DEFINITION

Assembles, diagnoses malfunctions, repairs, modifies, and maintains elements of the District's radio communications system, and inspects the work of radio maintenance contractors.

### TYPICAL DUTIES

Assembles, installs, repairs, and maintains all the elements of the radio communications system, such as transmitters, receivers, receiver voting systems, repeaters, radio control consoles, microwave, multiplex, telemetering, and antenna systems.

Diagnoses equipment malfunctions, repairs or replaces defective parts, and services radio receivers and transmitters in stations and mobile units in the field.

Modifies systems to suit special applications or standardize equipment and improve efficiency.

Integrates new systems with existing systems and converts obsolete equipment to designs submitted by communication engineers.

Uses testing equipment for troubleshooting radio and microwave systems.

Inspects radio installation and maintenance performed by contractors.

Participates in training equipment operators and responds to technical operational problems.

Assists in making detailed inspections of radio and microwave transmitters.

Makes recommendations to the supervisor regarding operating procedures and purchases or modifications of equipment and related matters.

Assists in the evaluation of the District's emergency communications tree.

Assists in training programs related to radio use and procedures.

Observes and monitors the use of communications equipment to insure that Federal Communications Commission regulations are observed.

Recommends procedures for and participates in inventory control and record keeping.

Performs emergency repairs.

Performs related duties as assigned.

### DISTINGUISHING CHARACTERISTICS AMONG RELATED CLASSES

A Radio Communications Technician diagnoses malfunctions of the radio communications system, repairs and maintains elements of the system, modifies existing systems and equipment, integrates existing systems to new systems, and inspects the work of radio-maintenance contractors.

The Radio Communications Supervisor evaluates the District's radio and microwave communications systems and coordinates the installation of new systems and modification of existing systems and is also responsible for the compliance with related FCC regulations.

### SUPERVISION

General supervision is received from the Radio Communications Supervisor or an IT Electronics Communications Supervisor. No supervision is exercised.

## CLASS QUALIFICATIONS

### Knowledge of:

- Electronics theory as related to two-way radio communications equipment
- Digital technologies such as P25 and various modulation schemes such as LSM (Linear Simulcast Modulation), CQPSK, and C4FM
- Principles related to encrypted and secure communications such as AES and DES
- Basic mathematics necessary to solve functional electronic equations
- Principles, practices, methods, terminology, and trends in microwave and radio used to support two-way radio systems
- Electronic testing equipment used in the service and maintenance of radio and microwave systems
- Federal Communications Commission regulations regarding radio systems and operations
- Networking principles, protocols, and infrastructure related to radio communications and systems
- Safety practices related to the operation and maintenance of RF related equipment
- Various types of radio systems such as conventional and trunking radio systems
- CAD systems as they relate to dispatching
- Logging recorders as it relates to radio dispatching
- Microsoft Windows Operating Systems and Office Suite programs

### Ability to:

- Read and use a variety of schematics, plans, and specifications
- Use test equipment related to the maintenance of microwave and radio communications
- Work effectively with District personnel and representatives from public agencies and private firms
- Inspect and evaluate maintenance work completed by others
- Train District personnel in the use of equipment
- Work effectively without supervision
- Communicate effectively orally and in writing
- Maintain accurate logs and records
- Maintain various databases
- Diagnose and repair malfunctions in microwave and radio systems
- Operate a computer and associated peripheral equipment

### Special Physical Requirements:

- Climb and work from ladders
- Visual acuity to read schematics, detailed plans, and gauges on test instruments
- Lift components and test instruments weighing up to 60 pounds
- Sufficient color perception for color key and color-coded wire discrimination

## ENTRANCE QUALIFICATIONS

### Education:

Graduation from high school or evidence of equivalent educational proficiency, preferably supplemented by training in the repair of two-way radio and microwave communications systems.

Experience:

Two years of experience within the past five years in service and maintenance of two-way radio communications systems operating in the Private Land Mobile Service under FCC Rules, Part 90.

Special:

A valid Federal Communications Commission General Radiotelephone Operator License.  
A valid California Driver License.  
Use of an automobile.

This class description is not a complete statement of essential functions, responsibilities, or requirements. Entrance requirements are representative of the minimum level of knowledge, skill, and/or abilities. To the extent permitted by law, management retains the discretion to add or change typical duties of a position at any time, as long as such addition or change is reasonably related to existing duties.

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JPK