



# Career Service Authority

## Electronic Systems Technician

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### **GENERAL STATEMENT OF CLASS DUTIES**

Installs, modifies, fabricates, troubleshoots, repairs and maintains a wide variety of specialized technical electronic equipment and electrical systems.

### **DISTINGUISHING CHARACTERISTICS**

This class is distinguished from Electronic Equipment Installer, which installs electronic equipment including two-way radio, cellular phone, mobile computer terminals and ancillary electronic equipment in a variety of City vehicles. This class is distinguished from Communications Electronic Technician, which performs bench and field maintenance and repair work on electronic and electrical systems in radio transmitters and receivers. This class is also distinguished from Maintenance Technician, which performs standard performance, semi-skilled, trades work in a variety of trade areas for the purpose of construction, maintenance, repair and/or installation of equipment and/or facilities (mechanical work).

#### ***Guidelines, Difficulty and Decision Making Level:***

Guidelines are generally but not always clearly applicable, requiring the employee to exercise judgment in selecting the most pertinent guideline, interpret precedents, adapt standard practices to differing situations and recommend alternative actions in situations without precedent.

Duties assigned are generally complex and may be of substantial intricacy. Work assignment is performed within an established framework under general instructions but requires simultaneous coordination of assigned functions or projects in various stages of completion.

Employee is responsible for determining time, place and sequence of actions to be taken. Unusual problems or proposed deviations from guidelines, practices or precedents may be discussed with the supervisor before being initiated.

#### ***Level of Supervision Received and Quality Review:***

Under general supervision, the employee receives assignments and is expected to carry them through to completion with substantial independence. Work is reviewed for adherence to instructions, accuracy, completeness and conformance to standard practice or precedent. Recurring work clearly covered by guidelines may or may not be reviewed.

#### ***Interpersonal Communications and Purpose:***

Contacts with the public or employees where explanatory or interpretive information is exchanged, gathered or presented and some degree of discretion and judgment are required within the parameters of the job function.

***Level of Supervision Exercised:***

By position, performs lead work.

**ESSENTIAL DUTIES**

Repairs and maintains electronic systems and equipment such as microwave, radar, radio, computers, cellular phones, closed circuit TV, cable TV, security, runway lighting, paging, fire alarm and other related electronic, control and signaling systems.

Troubleshoots, tests, diagnoses, calibrates, and performs bench and field repairs to the component level.

Designs and fabricates circuits and related equipment as needed to utilize existing equipment, modify applications, or resolve unusual problems.

Installs and maintains radio systems, antennas, transmission lines, power supplies, videos, microwave transmitters and receivers, alarm and signaling equipment, encoders and decoders, computer data systems, and other related communication systems.

Performs preventative maintenance for electronic control and signaling equipment to minimize repair problems and to meet manufacturers' specifications.

Reviews service contracts, evaluates and recommends equipment purchasing as assigned.

Provides training and maintenance instructions to operators or installers of specialized systems and equipment.

Operates a variety of computer systems designed to monitor and/or operate specific electronic and electrical systems.

Researches and prepares technical reports.

Maintains records on required and completed repair work.

By position, writes computer programs compatible with operating systems to expand functions.

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Any one position may not include all of the duties listed.  
However, the allocation of positions will be determined by  
the amount of time spent in performing the essential duties  
listed above.  
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**MINIMUM QUALIFICATIONS**

***Competencies, Knowledges & Skills:***

**Electronics** - Knowledge of electronic theory, circuits, components, and material properties (excluding computers).

**Readings** - Understands and interprets written material, including technical materials, rules, regulations, instructions, reports, charts, graphs, or tables; applies what is learned from written material to specific situations.

**Technical Problem Solving** - Troubleshoots, diagnoses, analyzes, and identifies system malfunctions to determine the source and cause of the problem.

**Technical Competence** - Uses knowledge that is acquired through formal training or extensive on-the-job experience to perform one's job; works with, understands, and evaluates technical information related to the job; advises others on technical issues.

**Integrity/Honesty** - Contributes to maintaining the integrity of the organization; displays high standards of ethical conduct and understands the impact of violating these standards on an organization, self, and others; is trustworthy.

**Attention to Detail** - Is thorough when performing work and conscientious about attending to detail.

**Problem Solving** - Identifies problems; determines accuracy and relevance of information; uses sound judgment to generate and evaluate alternatives, and to make recommendations.

**Self-Management** - Sets well-defined and realistic personal goals; displays a high level of initiative, effort, and commitment towards completing assignments in a timely manner; works with minimal supervision; is motivated to achieve; demonstrates responsible behavior.

**Learning** - Uses efficient learning techniques to acquire and apply new knowledge and skills; uses training, feedback, or other opportunities for self-learning and development.

**Interpersonal Skills** - Shows understanding, friendliness, courtesy, tact, empathy, concern, and politeness to others; develops and maintains effective relationships with others; may include effectively dealing with individuals who are difficult, hostile, or distressed; relates well to people from varied backgrounds and different situations; is sensitive to cultural diversity, race, gender, disabilities, and other individual differences.

**Planning and Evaluating** - Organizes work, sets priorities, and determines resource requirements; determines short- or long-term goals and strategies to achieve them; coordinates with other organizations or parts of the organization to accomplish goals; monitors progress and evaluates outcomes.

**Oral Communications** - Expresses information (for example, ideas or facts) to individuals or groups effectively, taking into account the audience and nature of the information (for example, technical, sensitive, controversial); makes clear and convincing oral presentations; listens to others, attends to nonverbal cues, and responds appropriately.

**Teamwork** - Encourages and facilitates cooperation, pride, trust, and group identity; fosters commitment and team spirit; works with others to achieve goals.

**Technology Application** - Uses machines, tools, or equipment effectively; uses computers and computer applications to analyze and communicate information in the appropriate format.

**Decision Making** - Makes sound, well-informed, and objective decisions; perceives the impact and implications of decisions; commits to action, even in uncertain situations, to accomplish organizational goals; causes change.

**Reasoning** - Identifies rules, principles, or relationships that explain facts, data, or other information; analyzes information and makes correct inferences or draws accurate conclusions.

**Arithmetic** - Performs computations such as addition, subtraction, multiplication, and division correctly using whole numbers, fractions, decimals, and percentages.

**Visual Color Discrimination** - Accurately matches or detects differences among colors, including shades of color and brightness.

**Electrical** - Knowledge of electrical equipment, components, instruments, and systems, including their design, installation, testing, uses, repair, or maintenance.

**Writing** - Recognizes or uses correct English grammar, punctuation, and spelling; communicates information (for example, facts, ideas, or messages) in a brief, clear, and organized manner; produces written information, which may include technical material, that is appropriate for the intended audience.

**Memory** - Recalls information that has been presented previously.

**Mental Visualization** - Sees things in the mind by mentally organizing and processing symbols, pictures, graphs, objects, or other information (for example, sees a building from a blueprint, or sees the flow of work activities from reading a work plan).

**Self-Esteem** - Believes in own self worth; maintains a positive view of self and displays a confident, capable image.

**Flexibility** - Is open to change and new information; adapts behavior or work methods in response to new information, changing conditions, or unexpected obstacles; effectively deals with uncertainty.

**Creative Thinking** - Uses imagination to develop new insights into situations and applies new solutions to problems; designs new methods where established methods and procedures are not suitable or are unavailable.

**Computers** - Knowledge of circuit boards, processors, chips, and computer hardware and software, including applications and programming.

**Customer Service** - Works with clients and customers (that is, any individuals who use or receive the services or products that your work unit produces, including the general public, individuals who work in the agency, other agencies, or organizations outside the Government) to assess their needs, provide information or assistance, resolve their problems, or satisfy their expectations; knows about available products and services; is committed to providing quality products and services.

### ***Physical Demands:***

Standing: Remaining on one's feet in an upright position.

Lifting: Raising or lowering an object from one level to another.

Carrying transporting an object, usually by hand, arm, or shoulder.

Climbing: Ascending or descending objects usually with hands/feet.

Reaching: Extending the hand(s) and arm(s) in any direction.

Fingering: Picking, pinching, or otherwise working with fingers.

Talking: Expressing or exchanging ideas by means of spoken.

Hearing: Perceiving the nature of sounds by the ear.

Repetitive Motions: Making frequent movements with a part of the body.

Lifting: Raising or lowering an object more than 50 pounds.

Far Acuity: Ability to see clearly at 20 feet or more.

Near Acuity: Ability to see clearly  
Depth Perception: Ability to judge distances and space relationships.  
Field of Vision: Ability to see peripherally.  
Accommodation: Ability to adjust vision to bring objects into focus.  
Color Vision: Ability to distinguish and identify different colors.

***Working Environment:***

Exposure to hazards from electro/mechanical/power equipment.  
Exposure to toxic chemicals.  
Works in precarious or high locations i.e. ladders, scaffolding, etc.  
Extreme Cold: Temperature cold enough to cause marked bodily discomfort.  
Extreme Heat: Temperature hot enough to cause marked bodily discomfort.  
Temperature Changes: Variations in temperature from hot to cold.

***Education Requirement:***

Graduation from high school or possession of a GED Certificate supplemented by a certificate in electronics from a recognized training facility program.

***Experience Requirement:***

Three years of current experience in electronic audio and digital equipment repair which must have included bench repair to the component level in radio transmitting and receiving equipment.

***Education/Experience Equivalency:***

A combination of appropriate education and experience may be substituted for the minimum education and experience requirements.

***Licensure and/or Certification:***

Possession of a valid Colorado Class "R" Driver's License at the time of application.

By position, requires FCC General Radio Telephone Operator's License by the end of the probationary period.

**CLASS DETAIL**

***FLSA CODE:*** Non-Exempt

***ESTABLISHED DATE:*** 10/01/1999

***REVISED DATE:*** 09/01/2005

***REVISED BY:*** Hameed Pousti

***CLASS HISTORY*** This class was originally established on 10/01/1999. This is to revise the equivalency and licensure sections of the class specification.