

## **ELECTRONICS SYSTEMS SPECIALIST**

### KIND OF WORK

Advanced-level technical work in planning, installing, calibrating, configuring, maintaining and repairing electronics equipment and performing associated software installation and configuration, computer network administration and routine programming responsibilities.

### NATURE AND PURPOSE

Under limited supervision, employees in this classification are responsible for planning, installing, calibrating, configuring, maintaining and repairing electronics equipment to maintain the operational status of automated building and security systems and voice and video communications. Employees perform software installation and configuration, computer network administration, and routine programming for building and security systems and may provide direction to lower level technicians. Performs related work as required.

### DISTINGUISHING CHARACTERISTICS:

This classification differs from the Electronics Technician, Senior classification in that it requires basic knowledge of information technology, including knowledge of network administration and routine programming, in order to provide technical support of the local area networks (LANs) for building, security and communication systems and to diagnose and troubleshoot software, equipment/hardware and network problems.

This classification differs from information technology classifications in that its focus is electronics work, which requires hybrid knowledge of electronics and computer technology. While positions in this classification perform basic network administration and programming responsibilities, the scope and depth of this work and the customer base are limited and not broad enough to be appropriately placed in the information technology specialist class series.

EXAMPLES OF WORK (A position may not include all the work examples given, nor does the list include all that may be assigned.)

Maintain and provide on-going technical support of the LANs for building automation, security and communication systems and troubleshoot and diagnose network hardware and software problems. This includes installing and configuring software on PC-based servers; assisting in the maintenance of LAN equipment (cabling, switches, bridge) and performance; and assisting with the installation of new or modified equipment and software. Some positions may provide support to staff in the implementation of programming changes, repair of hardware, or procedural changes to improve service and meet performance objectives.

Provide technical support of facility security systems by installing, configuring, and troubleshooting problems with electronics equipment (cameras, doors, intercom, cell duress alarms), which are controlled by touch screen technology in security control centers.

Ensure proper recording and playback of the video recording system by programming camera additions to the system and installing and configuring proprietary software upgrades on the digital loggers (recording computers) and PC-based server.

Provide systems administration of the video recording and touch screen systems by issuing passwords; assigning access levels to users; and providing support to staff on the use of the systems.

Program icon additions to the touch screen maps to control security cameras and other electronic devices.

Troubleshoot interface problems with the touch screen system, intercom and electronic doors using software tools.

Install, program and maintain voice and video communications equipment. This includes specifying and installing the appropriate wiring and wiring layout; installing and configuring voice and video equipment; analyzing and resolving problems with videoconferencing equipment from the router to the videoconferencing site; and providing support to staff in the operation of voice and videoconferencing equipment.

Maintain the operation of the facility radio system, including radios, repeaters, control console and programming of handheld units.

Provide technical support of automated systems to ensure continuous operation. This includes maintaining the access card reader system by adding wiring to a panel and installing cable for doors; monitoring the network operation of the air handling, boiler, energy management, and lighting control systems; maintaining the intercom system by running cable to new intercom stations and programming features, adds, changes, and system parameters; maintaining the operation of the microprocessor-controlled shaker fence and taut wire systems; and overseeing the operation of the inmate telephone system.

Operate and provide technical support of electronic systems, which are required in a secure setting. This includes a microwave detection system; DSS satellite; video education MATV; body alarm system; overhead paging system; metal detectors and x-ray machines.

Service a variety of electronics equipment and systems by applying knowledge of electronics theory, operations and troubleshooting procedures. This includes evaluating and determining repair procedures on equipment and systems; performing complex repairs using hand tools, power tools, test equipment and various chemicals; completing work requests; performing acceptance testing of vendor supplied and repaired equipment; and updating or writing documentation on equipment and systems.

Provide technical advice and assistance in designing specifications for alarm, communication and computer systems, including recommending equipment and system upgrades, modifications, interfaces or replacement; designing and constructing electronic assemblies; recommending, installing and terminating cabling for computer terminals; installing devices, conduit/raceway, cables/wires, assemblies/equipment, connectors, etc. according to regulations and standards; testing equipment and interfaces for proper operation; and collecting or writing documentation on designs, equipment and installation standards.

Maintain and document the inventory of shop tools, test equipment, service literature, parts and supplies to support the work performed and preserve continuous security.

Develop and maintain documentation of work requests, preventative maintenance schedules and projects.

#### KNOWLEDGE, SKILLS, AND ABILITIES REQUIRED

Knowledge of:

Standard practices, materials, test equipment, and tools used to construct, install, calibrate, configure, troubleshoot, repair and maintain complex electronics equipment sufficient to assure safe, efficient and reliable equipment operation.

Electronics equipment, systems and operations sufficient to recommend modification, repair and replacement.

Computer network administration sufficient to install and configure computer hardware and software; troubleshoot hardware, software and network problems; and assign user passwords and appropriate levels of access.

Knowledge of electronics theory; analog and digital theory; radio frequency and signal transmission, modulation and amplification; and basic information technology.

Videoconferencing protocol sufficient to program videoconferencing equipment from menu-based selections and analyze and resolve problems with videoconferencing equipment.

Skill in:

Operating measuring devices sufficient to calibrate electronic product servicing equipment.

Using a personal computer and software tools to troubleshoot electronics equipment and computer network problems.

Ability to:

Troubleshoot, identify and correct problems with computer software and hardware and electronics equipment through computer diagnosis and/or with electronic test equipment and by implementing software and hardware modifications and electronics repairs.

Use of computer software and/or electronics devices sufficient to identify proper calibration levels and adjustments needed.

Write routine programming instructions using computer software that controls electronic security devices.

Identify needed parts, supplies and equipment sufficient to maintain appropriate inventory levels.

Understand and follow oral and written instructions sufficient to carry out required installation, maintenance and repair.

Read and interpret detailed technical information and effectively communicate technical information to non-technical staff.

Maintain effective communications and working relationships with coworkers, customers and vendors.

LEGAL OR LICENSURE REQUIREMENTS (These must be met by employees prior to attaining permanent status in the class)

Some positions may require licensure or registration under the Minnesota Electrical Act and Minnesota Rules 3800.3550 or 3800.3525.

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T.C.: 09/10  
Former Title(s): Corrections Electronic Systems  
Specialist

Chkd: