Dear Certification Seeker,

Electronics is one of the fastest growing industries today. We have come a long way from vacuum tubes and mechanical switches. ETA® International has remained committed to serving technicians and modeling certification programs to keep pace with emerging technologies.

ETA offers a career path that ranges from students with little or no experience to a master level for those who have dedicated several years to improving and expanding their skill sets. ETA International’s certifications are important for both individuals and business organizations.

For an individual, certifications:
- are a quantifiable milestone of achievement
- are a way to benchmark skills sets
- link competency to compensation
- enable advancement or flexibility in conditions of job change
- create industry visibility of one of the highly recognized electronics certifications
- are personal and portable certifications
- show levels of certification progression and disciplines to continued skills development
- are proof of mastery of the technologies in the industry

For a business/organization, certifications:
- show workmanship that results in both internal and external customer satisfaction
- enhance credibility within the organization and with external customers
- identify employees who are qualified to provide leadership to team members
- maximize investment by accurately determining individual and organizational training needs
- support decisions of appropriate skill level when hiring or promoting
- support employee retention plans - present new challenges and career path choices to employees
- provide the company with confidence that contracted vendors are technically qualified

For a school/training facility, certifications:
- increase curriculum value by providing industry-recognized credentials
- increase marketability of programs
- provide end of course assessments
- satisfy Perkins and other federal requirements
- allow participating states to give students verified credits

ETA distinguishes itself from other associations by being an organization primarily composed of individuals. ETA is comprised of technicians, educators, trainers, and engineers from every conceivable area of electronics, communications, and technology. The interchange of information and the broad viewpoints that members are exposed to creates a unique and valuable entity.

The intent of ETA is to Connect (leaders in our industry); Innovate (through networking and discussions); and Evolve (initiatives that revitalize and strengthen our industry). This information booklet will help move you forward in your industry through certifications.

Sincerely,

Teresa Maher, CSS, KD9DCV
President
History

ETA® International (Electronics Technicians Association, International) founded in 1978, is a not-for-profit, professional association promoting excellence in electronics technologies through certification.

The association’s initiatives are to provide prominent certification programs of competency criteria and testing benchmarks that include international electronics standards and provide renowned professional electronics credentials.

The organization began with leaders like Richard “Dick” Glass, CETsr, Ron Crow, CETma, D.C. “Snow” Larson, CET and others who had earned much respect in the electronics industry. In the late 1970s, the founders decided never to affiliate too closely with any manufacturer. ETA was to be truly a group of technicians by technicians for technicians. Today, ETA is a strong and well-known organization with over 10,000 members and over 200,000 certifications and licenses delivered to date. ETA’s focus is to help new and upcoming technicians and the technical schools they attend achieve their career goals.

Although certification, specifically, was not an original goal, it occurred naturally as ETA grew. As a non-vendor-specific, independent third-party certifying organization, ETA receives inquiries each month from schools asking for assistance in either recommending and/or certifying curriculums or texts. In addition, the U.S. military, through their individual education offices, works with ETA for both ETA and FCC Commercial License testing at all U.S. military facilities worldwide.

ETA is not only strong in the certification field, but it provides many other services for technicians and electronics service firms. ETA has participated in governmental law and rule-making by commenting on behalf of technicians regarding pending local, state, or national actions of governments. The association works closely with other organizations such as the Army, Navy, Marine Corps, and Air Force COOL programs, National Technical Honor Society (NTHS), U.S. Department of Labor’s Career One Stop, the FCC, and Certified Service Centers as well as other local, state, national, and international groups.

While ETA membership is also available to service dealerships and other institutions, the typical member is an electronics technician. By having a membership composed of technicians from every conceivable area of electronics, communications and networking technology, the interchange of information and the broad viewpoint members are exposed to creates a unique and valuable entity.

Hundreds of members have taken an active role in the association by participating as area representatives, becoming certification administrators, writing for the publications and journals or by teaching a class at seminars and conventions. ETA is not just an association that collects your dues and then issues an occasional report. It is a fellowship of technicians who love their jobs and see ETA as the adhesive that binds real professional technicians together for the greater good.

Benefits of ETA Certification

ETA certification signifies that the holder has demonstrated professional proficiency and has the technical knowledge and hands-on skills to meet international electronics industry standards.

Earning an ETA certification:

- Gives U.S. Armed Forces personnel validation of their Military Occupational Skill (MOS) training for meeting active duty responsibilities and transitioning to civilian careers as veterans
- Allows high school and postsecondary students, as well as working adults seeking new employment opportunities, to demonstrate and validate their technical electronics knowledge and skill with recognized industry credentials
- Assists experienced industry professionals in advancing their knowledge and excelling in their careers
- Provides employers with clear criteria for hiring and promotion that can lead to enhanced productivity and customer satisfaction

ETA certification exams are administered by ETA Certification Administrators, which ensures quality control. ETA testing sites are easily accessible with over 1,200 exam administrators at colleges, businesses, trade schools, and military bases worldwide.
Industry-recognized Standards

An ETA certification signifies that the holder demonstrates professional proficiency within a certain discipline. Certification holders are recognized as having the necessary knowledge and technical skill to design, install, service, or repair electronic equipment according to industry standards—not specific to a manufacturer, vendor, or product.

Since 1965, the program has been proven effective. Aligning with the ISO 17024 standard, and collaborating with education providers and industry professionals, ETA provides the criteria which tests the knowledge and/or hands-on skills needed in today’s electronics industries. However, ETA constantly seeks information from employers, schools, and individuals verifying the validity and current relevance of its assessments.

Accreditation:
ETA’s industry-based examinations are modeled after international competency standards. Each discipline utilizes its own group of educators and practitioners, plus industry-wide reviews, to align with the industry standards. The standards clearly articulate the skills and knowledge relevant to specific segments of the industry. ETA certifications are personal, portable worldwide, and are accredited by the International Certification Accreditation Council (ICAC). ICAC is an alliance of organizations dedicated to assuring competency, professional management, and service to the public by encouraging and setting standards for licensing, certification, and credentialing programs.

About ICAC

In 1996, a group of association executives chartered the ICAC as a not-for-profit organization with the purpose of evaluating certification programs at an affordable rate that smaller organizations can afford. Over the years, the ICAC has developed a comprehensive process to evaluate certification programs against international standards. In this way, accredited organizations can both improve existing certification programs as well as demonstrate to the public that their programs comply with industry best practices.

By accrediting certification programs, the public and the industries represented have an additional level of assurance, knowing that the program has been reviewed by a neutral third party and been found to meet or exceed reasonable levels of record keeping, security, objectivity, and professionalism.

The ICAC itself operates under the international guidelines established as a quality assurance regime for accreditation bodies (ISO/IEC 17011 – Conformity Assessment: General Requirements for Accreditation Bodies Accrediting Conformity Assessment Bodies), and has established assessment tools and processes that assure certification bodies are in compliance with ISO/IEC 17024 (2012): Conformity Assessment – General Requirements for Bodies Operating Certification of Persons.

Who Takes ETA Exams?

ETA certifies professionals from many different areas and industries. Whether it’s a military fiber installer, biomedical technician, service manager, or student, ETA has you covered! Every year ETA creates a snapshot of professionals and students who have taken an ETA exam during the previous year. You can see the results from 2017 on the right.

ETA certifications are listed on the Career One Stop website. Career One Stop is sponsored by the U.S. Department of Labor, and is a partner of the American Job Center network. The website provides tools to help job seekers, students, businesses, and career professionals find their pathway to success. Please visit www.careeronestop.org for more information.

Global Skills X-Change’s (formerly National Skills Standards Board) feasibility study concluded the ETA program was among the best industry certification programs available.
**About ETA**

**Certification Administrators**

ETA believes that legitimate third parties, such as experts, practitioners, and instructors in the field, rather than those who may have a direct interest in the outcome of the programs, should administer and approve certified electronics technicians exams. ETA serves as that third party administrator to technical education, providing a way for school systems to validate their electronics courses.

ETA continually strives to make its exam testing sites easily accessible for examinees who wish to take one of the more than 80 different ETA certification exams. We currently have 1,200 exam administrators at college electronics programs, community colleges, trade schools, military bases, proprietary trainers, and vocational-technical schools throughout the world. If your accredited institution/school or training facility is interested in becoming an ETA-approved examination site, please complete the online Certification Administrator application. Print a copy of the agreement form for your records and email an additional copy of each form to us at eta@eta-i.org.

Authorization to administer ETA certification exams is given to the individual. By gaining approval from ETA’s President, a Certification Administrator’s location is listed for the public to contact using the CA Locator. CAs are given the option to have their location listed or remain private. Upon approval, a CA may proctor all ETA certification exams that do not require hands-on skills assessments and FCC commercial operator licensing exams.

**Course Approvals**

Approval of training for technicians is not something that should be done solely by educators who work mostly with the theoretical side of the field being critiqued. It should also not be done by those with a direct interest in the course providers. It should be done by a legitimate third party - composed of experts in the field; practitioners and educators at all levels. ETA has a network of more than 600 Subject Matter Experts (SMEs) in place to assist with course and text reviews. ETA’s Subject Matter Experts span all of the fields of certification available through ETA.

Today, with many governmental agencies (at all levels) looking to validate their educational processes, the need for recognition has become a mandate. Some states now use ETA certification as 3rd party final exams for electronics course students, but the process is not yet complete. A more formal program of validation is still needed. School systems are requiring the educational institutions to prove that their training actually is giving the student his or her money’s worth. They want proof that the time and money spent in learning this profession will pay off with a good career after graduation.

ETA has instituted a program to answer this call for help. We currently have over 1,200 Certification Administrators along with our 600 Subject Matter Experts. Because of this extensive network, ETA is in a position of being accountable to industry for reliable test results. ETA serves in its capacity as a 3rd party to technical education, providing a way for school systems to validate their courses. ETA is meeting these industry and educational needs.

ETA provides third-party reviews that many schools require of electronics courses, evaluating the instructor credentials, lab and classroom equipment, course outlines, etc. The reviews have been used by all levels of education, both public and commercial, as well as military.

**State Representatives**

ETA has both state and national volunteer representatives who promote ETA within their community. We are always looking for new members to apply. Holding the title of state and/or national representative includes duties such as promoting ETA; contacting ETA with any local developments reported by the industry or in the education of electronics related fields; offering clarification, when a situation arises in the area, and providing further details; for example, a licensing requirement or change; reaching out to local schools or businesses with ETA material; visiting a school or business which has shown interest in ETA; being available to attend a show or event, including a career day or job fair.
ETA Certification Administration

ETA has over 1,200 certification administrators (CAs) around the world. Each examination must be proctored by a CA. To find a CA, either visit the ETA website or contact ETA. If a test site is not near the examinee’s location, then please call ETA at (765) 653-8262, or email at eta@ eta-i.org for more information. All ETA exams must be proctored by an independent third party.

ETA Examination Materials

ETA aligns with individual professional goals, vocational and education curriculums, and businesses’ resource initiatives through certification programs, conferences, speaking engagements, books, and journal publications. ETA actively supports training and education through the development of study guides and seminars, as well as working with a large number of ETA-approved schools and courses. ETA also works with high schools, vocational schools, colleges, universities, educators, corporate trainers, correctional facilities, and electronics industry professionals to find proper and sufficient training resources in their area.

When preparing for an ETA certification examination, examinees are encouraged to use suggested study materials listed on the available competencies. In addition to the many offerings in the ETA online store, ETA offers study materials developed exclusively for the ETA Customer Service and Associate CET examinations. These were written by ETA professionals for ETA professionals.

$25 Members / $30 Non-Members

The CSS Study Guide contains all of the workforce readiness and soft skills information in previous editions plus new chapters such as Social Media. The best way to prepare for the popular Customer Service Specialist exam also prepares you for working with other technicians and service personnel at your place of employment and at the other firms your company may deal with. It contains chapter quizzes and an overall practice exam quiz similar to the actual CSS exam.

The information contained in this guide is applicable to anyone who works with the public: helpdesk, sales, educators, business owners, nurses, repair technicians, and coworkers!

The Associate CET Study Guide, 6th Edition
$50 Members / $60 Non-Members

The latest Associate CET Study Guide features 22 chapters authored by 16 practicing technicians and instructors from around the world, as well as new practice exams and test site locator access.

Technical topics range from Electronic Components, DC Circuits, Microprocessors and Transmitters to essential skills every Certified Electronics Technician needs such as Record Keeping and Technical Writing. Each chapter is followed by a practice quiz and the entire guide is covered in a final Online Practice Examination, which will further prepare an individual for the Associate CET examination. It also comes with a link to a complete online listing of current Certification Administrator locations. With this, an exam candidate can easily find a location for testing.

ETA’s store also offers study materials created by ETA members for ETA certifications. These materials are tailored to their specific certification exams.

The EM-series of digital study guides gives students the knowledge they need to qualify as entry-level technicians, and provides the necessary foundation for further studies in specialized fields. The study guides are closely coordinated with the ETA competencies and exams. Each study guide builds on the one before it. Together they form an efficient, no-time wasted path to knowledge and certification.

The basic goal of the study guides is the same as the goal of the EM certifications themselves: each milestone on the way to eventual mastery is useful in and of itself, giving students immediately useful information and permitting them to earn graduated certifications commensurate with their growing knowledge.

There are five EM study guides covering: DC Basics, AC Basics, Analog Basics, Digital Basics, and Comprehensive. Please visit www.eta-i.org to order.
**Taking an ETA Examination**

1. Decide which ETA certification(s) you would like to take and review the free objectives/competencies provided by ETA. Call to see if additional study materials are available.
2. Find an ETA certification administrator (CA) close to you to proctor the exam. You can search ETA’s online database of test sites at www.eta-i.org/test_sites.html, or contact ETA at (765) 653-8262.
3. Decide whether to take the exam online with Trapeza or paper/pencil. Note: A certification administrator must be present regardless of which test format is chosen.
4. Arrange a time to take the exam with the chosen certification administrator.
5. Arrive early with the proper materials to take the exam. You may bring scratch paper and a non-programmable calculator to the exam. For most exams, you will be given two hours if needed. Photo ID and #2 pencils required. No electronic devices are permitted.
6. Once completed, the certification administrator will submit your exam and information along with payment. If you test online with ETA, then you will be able to view your score(s) immediately.
7. Examinations are processed within 7-10 business days of arrival at ETA headquarters. However, scores may be requested online through the ETA website (www.eta-i.org/results_reviews.html).

**As provided for under the ADA (American’s with Disabilities Act), if you require special needs accommodation in order to complete the certification process, then please notify your Certification Administrator when scheduling your exam.**

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**Ladder of Career Progression:**

ETA provides a stackable, latticed path for career advancement. Basic entry levels for Student (SET) and Associate Electronics (CETa); Journeyman (CET), Senior (CETsr), Master Specialty (CETms), and Master (CETma); Basic, Journeyman and Master Residential Electronics Systems Integrator (RESI); Master Satellite Installer; Fiber Optics-Installer (FOI), Fiber Optics-Outside Plant (FOT-OSP), Fiber Optics Technician (FOT), and Fiber Optics Designer (FOD), or endorsements for specific disciplines have been designed into the program as the need occurs.
Associate Certified Electronics Technician (CETa)

*Associate exam FREE if taken with a Journeyman exam at the same time.

The Associate certification is designed for technicians who have less than two years experience or trade school training for electronics technicians. The Associate certification is valid for four years. It is also the foundation for the Journeyman certification program. The CETa is more in-depth than the Student Electronics Technician (SET) as it expands on all of the topics listed within the SET. A hands-on skills test is available. The CETa is now a renewable certification.

Electronics Modules (EM1-5)
The EM5 program is based on ETA’s Associate level certification (CETa). The CETa competencies have been divided into five sections called “modules.” The purpose of this is to align with a growing portion of the electronics education industry that is charged with providing electronics training that does not include the total content of traditional Basic Electronics courses. In some instances, technical institutions are asked to provide training in only certain portions of electronics. This is so that companies that need only narrower skills and knowledge (than one expects of a complete CETa) can employ workers who have required knowledge and skills for only the technology and processes they currently use at that company.

To provide a path for the technician leading to the CETa credential, the five BASIC modules of the CETa can be acquired individually. Once a technician attains all five module certifications, ETA will issue an official CETa certification (all five must be passed within a two-year period). The technician may also choose to gain only those modules needed in order to be employable.

The five basic Electronics Modules are:
- Direct Current (DC)
- Alternating Current (AC)
- Analog
- Digital
- Comprehensive

Student Electronics Technician (SET)
The SET allows high school students and entry-level technicians the opportunity to earn a basic beginner’s certification. The examination covers a variety of topics including: Electrical Theory; Electronic Components; Soldering-Desoldering and Tools; Block Diagrams-Schematics-Wiring Diagrams; Cabling; Power Supplies; Test Equipment and Measurements; Safety Precautions; Mathematics and Formulas; Electronic Circuits; Series and Parallel; Amplifiers; Interfacing of Electronics Products, Digital Concepts and Circuitry; Computer Electronics; Computer Applications; Audio & Video Systems; Optical Electronics; Basic Telecommunications; and Technician Work Procedures. The SET also has an optional hands-on component that can be used as a part of the training process and will be noted upon completion and passing of the SET examination.

Systems Level Technician (SLT)
The Systems Level Technician standalone certification is for individuals trained in the basic foundational levels of electronics used in troubleshooting complex functions without the need for component circuit analysis. The intent is to introduce a foundation of skills (in a wide variety of electronic industries) needed by technical personnel to advance their competency and efficiency with their work endeavor. Electronics systems based learning covers a wider range of circuitry interactions by industry best practices. If not specifically stated, the most recent technical standard revision is referenced.

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Biomedical Electronics Technician (BMD)  
Journeyman Option  
BMD — $75.00  
Biomedical electronics technicians are expected to obtain knowledge of the principles of modern biomedical techniques, the proper procedure in the care, handling, and maintenance of biomedical equipment and to display an attitude/behavior expected of an electronics technician who works in a hospital or healthcare environment.

Biomedical Imaging Equipment Technician (BIET)  
Journeyman Option or Stand-Alone  
BIET — $75.00  
A BIET should be familiar with the following topics: Anatomy, Medical Terminology, Computer, Electro/Mechanical Safety, Picture Archive Communication System, Diagnostic Ultrasound Equipment, Building Wiring, Basic Radiographic Equipment, Film Processing, Test Equipment, Magnetic Resonance Imaging, Computed Tomography, Nuclear Medicine, Codes and Regulations, Troubleshooting, Radiation Safety, Radiation Physics, and Linear Accelerators.

BMD Exam Info  
Price: $75  
Type of Certification: Journeyman  
Renewal/Maintenance Required: Yes  
Certification Term: 4 Yrs  
Hands-On Required: No  
Questions on Exam: 75  
Passing Score: 75%  
Time Allowed to Test: 2 hours

BIET Exam Info  
Price: $75  
Type of Certification: Journeyman or Stand-Alone  
Renewal/Maintenance Required: Yes  
Certification Term: 4 Yrs  
Hands-On Required: No  
Questions on Exam: 100  
Passing Score: 75%  
Time Allowed to Test: 2 hours

ETA SUBJECT MATTER EXPERTS

ETA’s certification committees, specific for each certification, are composed of subject matter experts (SMEs) who are demographically and educationally diverse with a broad range of experience. Certification committees require decisions on when the current exam(s) should be replaced; editing, adding, deleting current exams; seeking input to aid in keeping exams at the current state of the technology; inputting new questions and graphics; reviewing questions; editing the beta exams and going over new exams with a ‘fine tooth comb’ to make sure errors are at a minimum. Task analysis by educators, employers, and practitioners is an important part of the process of developing industry-based competencies, upon which the certification exams are based. Both internal and external judgments are included in development.

ETA’s panels of experts are second to none. Strong educator input by committees of SMEs, multiple reviews by the ETA Advisory Board, many national associations, and technicians currently working in the field provide a level of review unprecedented in the electronics industry. Educators, practitioners, students, and employers have subjected ETA’s assessments to critical scrutiny. Reliability, Validity, and Consistency are hallmarks of ETA certifications. ETA examinations are reviewed for updating each year.

If you would like to volunteer as a SME, then please visit www.eta-i.org/subject_matter_experts.html and contact ETA’s test development department.

“Obtaining an ETA certification brought a level of certification to the City of Fort Worth that it never had before. It opened new doors to customers that we previously were not able to obtain.”  
Chris Dusseau, CETsr  
Communications Technician, IT – Radio Services  
City of Fort Worth, TX

“Culminating an educational program with a world-class ETA certification can boost employee performance and advancement potential. We have requests to provide training with an ETA certification option from companies all over the world. The demand is there for employees with this knowledge and skill set.”  
Lee Kellett  
General Manager, Light Brigade  
Tukwila, WA

“Here I am on my new job at the City of Eugene that only an ETA certification would allow me to acquire. ETA helped transform my skills into an awesome career. Thank you ETA!”  
Brian Greig, CETsr  
Radio Communications Technician  
City of Eugene, OR
Advanced Interference Mitigation (AIM)
Advanced RF Interference Mitigation technicians are expected to obtain knowledge of radio frequencies, how they interact in the environment and within equipment, how to identify and to correct complex interference problems using advanced troubleshooting procedures and technology. Prior advanced RF experience with radio systems and equipment, such as spectrum analyzer utilization/techniques, or taking the available two-day Advanced RF Interference Mitigation course with the optional Hands-On, is strongly suggested before comprehending the AIM competencies and sitting for this certification examination.

Certified Satellite Installer (CSI)
*Certified Satellite Installer exam FREE if taken with all four endorsements at the same time

The exams are practical and cover a broad range of hardware and broadcast technology, but are not limited to specific brands of products. The CSI covers: Satellite Communications History & Theory, Satellite Dish Reflectors, Cabling, Amplifiers, Satellite Dish Feed – horns – LNBs & LNBFs, Satellite System Installation – Site Surveys, Satellite Receivers – Digital Technology, Interfacing With Other Consumer Electronics Equipment, Transmission – Internet Systems, Troubleshooting, Repairs, Sun Outage, and Safety.

Available CSI Endorsements:
- Antenna - $60
- C and KU Band - $60
- Commercial - $60
- S-MATV - $60

Distributed Antenna Systems (DAS)
Distributed Antenna Systems technicians and installers cover basic knowledge concepts of distributed antenna systems and antenna/cell installation. This also includes service and skills applicable to all of the functions required to safely and completely install, maintain, troubleshoot and provide support of in-building distributed antenna systems, communications and electronic equipment. Carrier, Public Safety, and mission critical aspects of boosting signal transmission and reception are discussed.

General Communications Technician — Level 1 (GCT1)
The General Communications Technician certification is a program that is modeled after communication systems fundamentals, basic electronics, and the U.S. Department of Homeland Security (DHS) guidelines covering all of the disciplines in the COMT program. The purpose of the GCT is to provide a study guide and training program, along with the appropriate certification testing that covers all of the areas a radio communications technician and engineer will encounter in the public safety communications or business/commercial radio field.

General Communications Technician — Level 2 (GCT2)
*Prerequisite is the General Communications Technician — Level 1 or Associate CET (CETa) certification

The General Communications Technician Level 2 certification is a program modeled after general industry communication systems encompassing more than the basics along with the U.S. Department of Homeland Security (DHS) guidelines covering all of the disciplines in the COMT program. The purpose of the GCT2 is to provide a certification program and testing that expands upon the coverage included in the GCT1 competencies. The GCT2 competency comprises more complex areas radio communications engineers and technicians will encounter in the public safety communications or business / commercial radio fields. This GCT2 certification will involve more knowledge of intricate skills and troubleshooting. The GCT program will require re-testing to renew every four years to keep current in the newest technology for all Levels.
General Communications Technician - Level 3 (GCT3)

*Prerequisite is the General Communications Technician — Level 2 certification

The General Communications Technician Level 3 certification is a journeyman level program that goes beyond the U.S. Department of Homeland Security (DHS) guidelines covering all of the disciplines in the COMT program. The GCT-3 program details all areas that a radio communications technician and/or engineer will encounter in the public safety communications or business - commercial radio fields. GCT-3 explores various communications schemes at the system design and engineering levels. GCT-3 examines the most current technology, and promotes good engineering practices; and in concept, takes into consideration all system design parameters at the engineering level. GCT-3 focuses on system design, examining the advantages and pitfalls associated with modern day communications systems, therefore allowing system designers to create the best systems possible for every unique situation. The GCT certification program follows a stackable certification format. GCT-3 can only be obtained after successful attainment of GCT-2 certification. Please re-examine the General Communication Technician Level 1 and Level 2 competencies for prior descriptions of their knowledge benchmarks.

Line & Antenna Sweep (LAS)

This Frequency Domain Reflectometer (FDR) certification includes hands-on testing and verification of line and antenna sweeping skills using modern FDR equipment, as well as a written exam. The LAS is a stand-alone certification, but it can be used as a Journeyman CET option when the Associate, or basic electronics, is also passed.

Microwave Radio Technician (MRT)

Microwave radio still plays a major role in radio and data transmission systems. Wireless carriers continue to deploy microwave systems for data backhaul, and with the advancement of LTE for public safety, the need for microwave communications continues to grow. This certification includes basic knowledge concepts technicians need to know to install, align, maintain, and operate point-to-point microwave radio systems. Prior experience with radio systems and equipment is suggested. This includes core concepts of radio frequency (RF) energy, including how to identify it and safety requirements when working in an RF environment.

Mobile Communications and Electronics Installer (MCEI)

This certification includes basic knowledge concepts of land mobile radio (LMR) and associated electronics equipment installation. This also incorporates required skills applicable to all of the functions required to safely and completely install mobile communications and associated electronic equipment, including removal and reinstallation.

Multimedia over Internet Protocol (MoIP)

MoIP technicians are versed in telephone and Internet communications. They install, maintain, and repair/replace voice, data, and video over Internet Protocol equipment. They are capable of interconnecting MoIP equipment to local and wide area computer network systems. They are familiar with many acronyms used in the telecom industry. They are capable of performing cable installation, replacement/modernization and interconnection between different cable types and wireless equipment. They are knowledgeable in the protocols being used for the telecommunications industry. They are capable of configuring and provisioning MoIP equipment and transmission media.
Passive Intermodulation Testing (PIM)
Passive Intermodulation (PIM) is a form of interference where intermodulation mixing occurs within the confines of the transmission line and antenna network of a radio system. The ETA PIM certification assures site managers that quality antenna installation has taken place and meets the desired engineering and propagation standard for that site. The PIM test set operator knows how to use the testing equipment hardware, and can do so in a safe and harmless manner. Additionally, the ETA certification is based on the IEC 60237 standard covering the installation of antennas, connectors, jumpers, and related antenna network elements, allowing the holder of that certification to use any manufacturer’s test set at any frequency range. An ETA certified technician has a clear understanding of antenna theory and interference testing and will be well positioned to help resolve site PIM issues, so resolving these interference issues will be easier for the ETA-certified technician.

RF Interference Mitigation (RFIM)
RF interference mitigation technicians are expected to obtain knowledge of radio frequencies, how they interact in the environment and within equipment, how to identify and to correct interference problems. Prior experience with radio systems and equipment is strongly suggested (or taking a RF Interference hunting course) before taking this certification exam.

Radar (RAD)
Radar electronics technicians are expected to obtain knowledge of radar basics and concepts, which are then applicable to various types of avionics, maritime, and land radar systems. Radar electronics technicians must be knowledgeable and have abilities in the following technical areas: Block Diagrams and Schematics, Components, Cabling and Antennas, Hand Tools & Soldering, Mathematics, Amplifiers, Radar Transceivers, Interfacing, Satellite, Wireless, Data Communications, Computers and Digital Concepts, Software-Programming, and Troubleshooting.

Telecommunications (TCM)
Telecommunications electronics technicians are expected to obtain knowledge focused on wired and wireline communications basic concepts, which are then applicable to various types of voice, data and video systems. Telecommunications Electronics Technicians must be knowledgeable and have abilities in technical areas such as: Cabling, Analog Telephony, Equipment, Telecom Safety and Mathematics, Transmission Service Providers and Protocols, Distribution Methods, Digital Telephony, Interfacing, and Troubleshooting.

Wireless Communications (WCM)
ARINC Installer, Technician (AFI, AFT)
ARINC organizes aviation and aerospace fiber optics industry committees, and participates in related industry activities that benefit aviation at large by providing technical leadership and guidance. These activities directly support aviation industry goals: promote safety, efficiency, regularity, and cost-effectiveness in aircraft operations. ARINC recognizes ETA International as the fiber optics industry training certification entity in regards to the aerospace industry in the United States. The ARINC certifications are based on the ARINC 807-3 report and SAE International-recognized standards.

Data Cabling Installer (DCI)
ETA data cabling installers are expected to know the basic concepts of copper cabling installation and service—which are then applicable to all the procedures required to safely and competently install communications cabling. Basic electricity and safety; data communications basics; definitions, symbols and abbreviations; cable construction and types; cable performance characteristics; cabling standards; basic network topologies; basic network architectures; National Electrical Code (NEC®); cabling system components; DCI installation tools; connectors and outlets; cabling system design; cabling installation; connector installation; cabling testing and certification; cabling troubleshooting; documentation.

Fiber Optics Designer (FOD)
The ETA 40 hour Fiber Optics Designer training program is an optical designer certification that will provide an in-depth knowledge of optical local area networks. This certification covers all aspects of a successful fiber optic system design from network protocols, network configurations, optical cabling, industry communications standards, determination of fiber count, hardware selection, splicing/termination methods, and cable system testing and documentation. All that is learned in class is put into practice through multiple and intensive case studies. The ETA-certified Fiber Optics Designer program provides detailed instruction and practice of Local Area Network fiber optic design.

Fiber Optics Installer (FOI)
A fiber optics installer has a general understanding of optical fiber installation, connectorization, splicing, and testing. An FOI is also familiar with optical fiber, connector, and splice performance characteristics described in TIA-568-, TIA-569-, TIA-758-, ITU-T G.671, ITU-T G.652, Telcordia GR-326, and Telcordia GR-20. A fiber optic installer can perform connector endface evaluation as described in TIA-455-57B and is proficient in optical loss testing, as described in TIA-526-14A. He or she also understands the installation requirements described in articles 770 and 250 of the National Electrical Code (NEC®). A fiber optic installer is proficient at the installation of connectors on various types of fiber optic cables, using various types of epoxies, and performing mechanical and fusion splicing.

Fiber Optics Technician (FOT)
*Prerequisite is the Fiber Optics Installer*
A fiber optics technician has a full understanding of inside plant optical fiber, connector, and splice performance characteristics as described in TIA-568 and can use these performance characteristics to create a worst-case power budget for a fiber optic cable plant. An FOT can proficiently perform optical loss testing as described in TIA/EIA-526-14A and perform connector endface evaluation as described in TIA-455-57B. Using an OTDR, an FOT can effectively locate faults in a fiber optic cable, mated connector pair, or splice as well as evaluate optical fiber performance, mated connector pair performance, or splice performance for compliance with TIA-568-.

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|                       | Renewal/Maintenance Required: Yes |
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|                       | Hands-On Required: Yes     |
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|                       | Passing Score: 75%         |
|                       | Time Allowed to Test: 2 hours |

| FOD Exam Info         | Price: $150                |
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|                       | Renewal/Maintenance Required: Yes |
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|                       | Hands-On Required: Yes     |
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|                       | Passing Score: 75%         |
|                       | Time Allowed to Test: 2 hours |

| FOI Exam Info         | Price: $150                |
|                       | Type of Certification:     |
|                       | Stand-Alone                |
|                       | Renewal/Maintenance Required: Yes |
|                       | Certification Term: 4 Yrs  |
|                       | Hands-On Required: Yes     |
|                       | Questions on Exam: 75      |
|                       | Passing Score: 75%         |
|                       | Time Allowed to Test: 2 hours |

| FOT Exam Info         | Price: $150                |
|                       | Type of Certification:     |
|                       | Journeyman or Stand-Alone  |
|                       | Renewal/Maintenance Required: Yes |
|                       | Certification Term: 4 Yrs  |
|                       | Hands-On Required: Yes     |
|                       | Questions on Exam: 75      |
|                       | Passing Score: 75%         |
|                       | Time Allowed to Test: 2 hours |
FIBER OPTICS AND DATA CABLES CONT.

A Fiber Optics Technician – Inside Plant (FOT-ISP)

A fiber optics inside plant technician must be able to properly install, test, and troubleshoot fiber optic communication systems used in premises, LANs, enterprise and data center installations. Included are various techniques applicable to gigabit multimode and single-mode systems consisting of unique test requirements in Ethernet and Fibre Channel, but also pertinent to FTTx, security systems, and CATV networks. As many inside plant installations use multimode fiber, the FOT-ISP technician must recognize the various types - IEC defined OM2, 3, 4 & 5 multimode - and OS2 single-mode fibers along with the various proper launch conditions used when testing fiber spans as also defined by the TIA-568 and TIA-942 standards. Technicians must similarly comprehend various fiber optic cable connector types and termination used in these networks, using best practices for installing and testing fiber links.

Fiber Optics Technician – Outside Plant (FOT-OSP)

A fiber optics outside plant technician must be able to properly terminate, test and troubleshoot single mode fiber optic communication systems. This includes various types of termination techniques applicable to high-speed laser-based systems including SONET, DWDM, FTTx, and CATV networks using ITU-T G.652 and G.655 single mode fibers. Disciplines include mechanical and fusion splicing per the TIA-758 standard and the preparation of fiber optic cables and cable management products. Technicians must also know testing and troubleshooting of each element of the fiber optic communication systems along with unique test requirements of SONET, DWDM, FTTx, and CATV networks.

Fiber To The Antenna (FTTA)

The Fiber To The Antenna stand-alone certification is for individuals who have been trained in the practice of installing fiber optic cabling at wireless and cellular facilities. These disciplines are applicable to all the functions required to safely and competently install pre-terminated fiber optic transmission cable assemblies and connection devices onto equipment and antenna(s), wherever the antenna system may be located indoors or outdoors. Included are how to inspect, clean and test the fiber plant along with how to identify and troubleshoot problems during and after installation.

SAE Fabricator (SFF)

For individuals involved in the manufacturing, installation, support, integration and testing of fiber optics systems. Intended for managers, engineers, technicians, trainers/instructors, third party maintenance organizations, quality assurance and personal production. Both the SAE and ARINC certifications are based on SAE International standards. The Aerospace industry has always required the highest standards of workmanship to be maintained. This certification is universally recognized for competency, ability, and knowledge as an Aerospace Fiber Optics Fabricator (FAB). ETA worked with the SAE International’s Fiber Optics and Applied Photonics Committee to develop this certification. To be recognized for this honor, practicing fabricators must demonstrate the necessary skills and knowledge verifying their proficiency in Aerospace Fiber Optics Fabrication procedures and technology as defined in the SAE International Aerospace ARP5602/3 and ARP5602/4 competencies.

Termination and Testing Technician (TTT)

This certification covers knowledge to properly, terminate, connect, test, and troubleshoot IP-enabled voice/data/video cable and devices to each other. One of the key advantages to using Cat 5e/6/6a, and fiber-optic cables and connectors for electronic security and voice/video/data installations is that these cable connections can be readily built using the proper tools and techniques, which are taught in the required course. This part of the training will emphasize the ETA challenge of being vendor-neutral and applying industry standards for terminations and cable performance. The knowledge gained by the examinees will be applicable to any vendor’s products within the scope of the technology studied. One of the primary principles of the network cabling standard is that if a cable is properly terminated and tests satisfactory, that cable can be used to connect any proper device from any manufacturer. Vendors are making thousands of different devices, all of which can be readily connected to a network if the fiber, coax, and/or copper cable to be used is properly terminated and tested.
Computer Service Technician (CST)
The Computer Service Technician performs hardware servicing and provides systems software skills for personal computers. The knowledge used includes Computer Assembly/Disassembly; Motherboards; Buses; System Resources, Processor Characteristics; Physical and Electronic Memory Characteristics; Secondary Storage Devices; Peripheral Devices; Ports; Power Concepts and Supplies; Basic Networking; Portables; Digital Concepts; Troubleshooting/Preventive Maintenance; Operating Systems; File Management; Safety, Security and Workplace Practices.

Information Technology Security (ITS)
The Information Technology Security certification covers all areas of cybersecurity for information technology. ITS-certified specialists are expected to have the major knowledge, skills, and abilities in order to perform the professional tasks associated with the development of security plans and processes for information technology and cybersecurity. This certification identifies a specialist’s knowledge of computer hardware and software security measures as well as wireless communications security, device security, cryptography, social engineering, virus detection/mitigation, troubleshooting, disaster prevention/recovery and site risk analysis. It is highly suggested that an ITS have prior computer systems and computer networking experience.

Network Computer Technician (NCT)
Network Computer Technicians are expected to obtain knowledge of computer electronics basic concepts, Internet and networking technology applicable to various areas of the computer industry. More specifically, NCTs must be able to function, structure, operate, file manage, install, configure/upgrade, manage memory, diagnose and troubleshoot operating systems and hardware (including motherboard and processors and printers).

Network Systems Technician (NST)
A Network Systems Technician is a network professional who is expected to obtain knowledge of computer network basic concepts, applicable to the various specialty areas of the computer industry. The NST must be familiar with the following: Computer Network Terminology, Network Administration, Wide Area Networks and Devices Used to Extend Networks, Network Architectures, Computer Network Topologies and Classifications, Network Services, Network Operations, Network Standards, Troubleshooting LAN/WAN Test Equipment, Network Server and Workstation Computer System Hardware, Network Operating Systems, and Disaster and Security Planning for Networks.

Wireless Network Technician (WNT)
The Certified Wireless Network Technician is a network professional who is expected to obtain knowledge of the operation and maintenance of wireless networking concepts, RF and IR propagation and modulation technologies, applicable to all the specialty areas of the wireless networking industry. Once the WNT has acquired these skills and knowledge, the technician will be able to enter employment in any part of the wireless networking industry. With minimal training in areas unique to the specific products and protocols, the WNT should become a productive member of computer industry workforce.

CST Exam Info
Price: $75
Type of Certification: Journeyman or Stand-Alone
Renewal/Maintenance Required: Yes
Certification Term: 4 Yrs
Hands-On Required: No
Questions on Exam: 75
Passing Score: 75%
Time Allowed to Test: 2 hours

ITS Exam Info
Price: $100
Type of Certification: Journeyman or Stand-Alone
Renewal/Maintenance Required: Yes
Certification Term: 4 Yrs
Hands-On Required: No
Questions on Exam: 100
Passing Score: 75%
Time Allowed to Test: 2 hours

NCT Exam Info
Price: $75
Type of Certification: Journeyman or Stand-Alone
Renewal/Maintenance Required: Yes
Certification Term: 4 Yrs
Hands-On Required: No
Questions on Exam: 75
Passing Score: 75%
Time Allowed to Test: 2 hours

NST Exam Info
Price: $100
Type of Certification: Journeyman or Stand-Alone
Renewal/Maintenance Required: Yes
Certification Term: 4 Yrs
Hands-On Required: No
Questions on Exam: 100
Passing Score: 75%
Time Allowed to Test: 2 hours

WNT Exam Info
Price: $75
Type of Certification: Journeyman or Stand-Alone
Renewal/Maintenance Required: Yes
Certification Term: 4 Yrs
Hands-On Required: No
Questions on Exam: 75
Passing Score: 75%
Time Allowed to Test: 2 hours
Photonics Technician Operator (PTO)
Photonics Technician Operators work in jobs where they assemble, measure, test, and repair optical components such as lenses, mirrors, filters, fiber optics, and electro-optic or other photonics devices plus optical sources such as lasers and light-emitting diodes (LEDs). Technicians typically work in applications where photonics is an “enabling technology” — manufacturing/materials processing, Internet/communications, biomedical equipment, and defense/homeland security systems development/integration. Due to the high technical standards and safety issues involved, technicians will receive specialized training in both knowledge and hands-on skill items.

Photonics Technician Specialist (PTS)
Photonics Technician Specialists work in areas that utilize the skills and knowledge of the operator level, but also an additional higher level of optics, photonics physics, and technology that require a greater variety of hands-on competencies in laser and optical components and systems. They typically work in applications such as the following: research and development laboratory; product development, test, and production specialists who are team members for original equipment manufacturers (OEMs) of lasers, optics, and photonics components and systems; field service specialists for OEMs or companies that manufacture and/or utilize lasers, optics, and photonics components and systems. They are graduates of AAS degree programs that focus specifically on optics, lasers and photonics.

Specialist in Precision Optics (SPO)
Precision Optics Specialists produce, test, and handle optical (infrared, visible, and ultraviolet) components that are used in lasers and sophisticated electro-optical systems for defense, homeland security, aerospace, biomedical equipment, digital displays, renewable energy production, and nanotechnology. SPOs also integrate precision optical components into these electro-optical systems and maintain them, including handling, storage and transport. SPOs will also have experience in shaping, polishing, and coating precision optics; using optical instruments; understanding procedures and guidelines for verifying optical component dimensions and tolerances. These technicians have a greater range of hands-on competencies and experience with fabrication and test a wider range of types of optics and optical coatings.

Technician in Precision Optics (TPO)
Precision Optics Technicians work in optical component fabrication technical areas in optical shops, optics manufacturers and in quality control departments (incoming and/or outgoing inspection) for organizations that incorporate precision optics into various systems. They must be able to examine the properties and uses of a variety of bulk materials; have experience in the use of equipment and procedures for shaping, polishing, and coating precision optics; and be able to use optical instruments, procedures and guidelines for verifying optical component dimensions and tolerances. They can also handle, store, and ship precision optical components. Precision optics technicians have the minimum required hands-on competencies and experience with fabrication and tests of fewer types of optics. Due to the high technical standards and safety issues involved, technicians will receive specialized training in both knowledge and hands-on skill items.

CHECK OUT ETA ON: [Social Media Icons]
ETA Certifications

RENEWABLE ENERGY

Electric Vehicle Technician (EVT)
Electric Vehicle Technicians (EVTs) work on vehicles powered solely by electricity. They perform routine maintenance like other mechanics; however, EVT must have extensive knowledge of how lithium-ion batteries and automotive systems interact. In addition, they may replace hydraulically assisted systems with electric-powered systems, such as power-steering pumps or air-conditioning compressors, to improve fuel economy.

Certification is for individuals interested in attaining training from an ETA® International-approved EV school. In this program students will develop skills in safety, troubleshooting and repairing of Electric Vehicles. Due to the high voltage (300 VDC and above) and safety issues involved, technicians are required to receive specialized training in both knowledge and hands-on skill items.

Photovoltaic Installer — Level 1 (PVI1)
The Photovoltaics (PV) Level 1 certification is designed for individuals seeking an entry-level position in the solar electric industry. Individuals must have hands-on training from an ETA-approved school and be knowledgeable in topics such as solar resources and principles; proper product identification and selection criteria; system design options; system sizing and design for residential scale systems; proper installation techniques; safe installation practices; as well as maintenance and troubleshooting methods.

Photovoltaic Installer/Designer — Level 2 (PVI2)
The Photovoltaics (PV) Level 2 certification is designed for individuals with existing field experience in the solar electric industry. Individuals will demonstrate experience in the installation of a number of system options, as well as receive training from an ETA-approved program. Current OSHA 10 certification is also a requirement. In addition to the subject matter covered in PV Level 1, successful applications must demonstrate knowledge in commercial-scale system design and installation; project management; site and crew management; economic considerations for various design options; permitting processes; and various paperwork requirements for large-scale systems.

Small Wind Installer — Level 1 (SWI1)
The ETA International Small Wind Installer Certification provides practical assessments in wind power energy generation under 100 kW. Hands-on training from an ETA-approved school is necessary and individuals should be educated in the following topics including the theory of wind energy and electrical generation; site evaluation; design and selection of wind systems; proper installation, components and troubleshooting methods; safety; finance; and environmental assessment and management.

EVT Exam Info
Price: $200
Type of Certification: Stand-Alone
Renewal/Maintenance Required: Yes
Certification Term: 4 Yrs
Hands-On Required: Yes
Questions on Exam: 100
Passing Score: 75%
Passing Score for Safety Portion: 100%
Time Allowed to Test: 2 hours

PVI1 Exam Info
Price: $150
Type of Certification: Stand-Alone
Renewal/Maintenance Required: Yes
Certification Term: 4 Yrs
Hands-On Required: Yes
Questions on Exam: 75
Passing Score: 75%
Time Allowed to Test: 2 hours

PVI2 Exam Info
Price: $150
Type of Certification: Stand-Alone
Renewal/Maintenance Required: Yes
Certification Term: 4 Yrs
Hands-On Required: Yes
Questions on Exam: 75
Passing Score: 75%
Time Allowed to Test: 2 hours

SWI1 Exam Info
Price: $150
Type of Certification: Stand-Alone
Renewal/Maintenance Required: Yes
Certification Term: 4 Yrs
Hands-On Required: Yes
Questions on Exam: 86
Passing Score: 75%
Time Allowed to Test: 2 hours

 ETA’S ANNUAL EDUCATION FORUM

ETA’s Education Forum, a world-class technical education conference, is held annually at various sites in the United States. It is the ideal venue for both professional and curriculum development, regardless of skill level, focusing on hands-on training. The Education Forum is the focal point for technical and educational professionals to discover emerging technologies, network and collaborate with fellow technicians and educators, have access to training and speaking sessions with industry experts, sit for certification examinations, gain continuing education credits, and discuss classroom implementation strategies.

ETA hosts training workshops and sessions provided by industry leaders such as Light Brigade, Motorola Solutions, Corning Optical Communications, Slayton Solutions, Dover Telecommunication Services, Radio System Analytics, Ira Weisenfeld & Associates, Bird Technologies and more. In addition, ETA conducts an Annual Membership Meeting and Awards Banquet at the Education Forum. Visit the the ETA website for the current schedule at www.educationforum.info.
### ETA Certifications

**Certified Alarm Security Technician (CAST)**

Alarm-Security technicians must be able to identify and describe the operations of alarms and have basic understanding of technology and its configuration, fiber optics—telecommunications, software, and computers and locks. The CAST will be able to explain, understand, and use block diagrams and schematics, digital concepts, software, hand tools—soldering, data communications, and cameras and intercoms.

**Electronic Security Networking Technician (ESNT)**

The ESNT was developed for technicians who have gained knowledge and skills needed to properly cable, connect, install, program, and troubleshoot IP-enabled security devices onto local area networks and the Internet. This certification is an acknowledgement of the examinee’s familiarization and understanding of the hardware and theory of operation of this medium. It is a stand-alone certification that can also be used as a Journeyman option.

**Smart Technology Systems (STS)**

*Smart Technology Systems exam FREE if taken with one or more endorsement at the same time*

Smart Technology Systems is a professional certification for those who design and oversee the installation and integration of electronics systems in residences and light commercial buildings. The objective of the STS is to produce a residential or light commercial electronics systems package that will allow all data, control, and communication signals to be integrated at the premise controller and converged into one secure cohesive communication stream, to either be used within the premise or to be passed back and forth through the gateway. A STS should be proficient in the many IoT protocols used over diverse media to communicate with and control residential and light commercial electronics systems.

**Available STS Endorsements:**
- Audio-Video
- Computer Networking
- Security-Surveillance
- Environmental Control

**Master Smart Technology Systems (STSma)**

The Master STS will be proficient in all of the core STS skills and knowledge and in planning and designing electronics and communications equipment systems and layout for new and existing construction. The Master STS is capable of designing the entire system and network for audio, video, data and control of security and environment to function in one IP bit stream converged at the home controller. A Master STS is also capable of troubleshooting and debugging the system and planning installation or modifications. The Master STS has extensive knowledge of the operation and technology and is proficient in each of the basic five subcategories of residential electronics.

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### Exam Info

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Audio-Video Forensic Analyst (AVFA)
An Audio Video Forensic Analyst’s task is to improve the perceived audio or visual clarity of a digital recording. An AVFA also comprehends the limitations of technology and the opinions that can be formed. However, AVFA work will also include measurements, cross referencing data, and handling everything in accordance with the highest ethics in preparation of your expert testimony in the service of justice. An AVFA will be expected to understand industry best practices, stay up-to-date on innovative peer-reviewed technologies and methods, maintain data integrity through the use of hash values and/or chain-of-custody control, keep detailed notes of activity, adapt existing knowledge to unexpected circumstances, and follow the procedures of the rules of evidence applicable to the jurisdiction of the case working solely for the evidence.

Avionics (AVN)
The avionics specialty is designed to assess the knowledge and skills of individuals who install, maintain and adjust electronics equipment, cabling and the accessories used in aviation communications and control equipment. Several of the topics covered in this examination include: Avionics Systems, Cabling, Computers and Digital Concepts, Amplifiers, Interfacing, Antennas and Transmission Lines Components, Mathematics, Network Topologies and Infrastructures, Optical Cabling, Safety, Test Equipment and Tools and Satellite Communications.

Certified Service Manager (CSM)
This is a valuable examination for those who serve as managers, owners or department heads of service businesses such as electronics, computer, communications and appliance repair facilities. Several of the topics covered in this examination include: Manager Responsibilities and Objectives, Personnel Profiles and Job Descriptions, Team Building, Training, Hiring and Employment Laws, Employee Compensation Systems, Customer Relations Policies and Skills, Service Policies, Service/Production Area Development, Test Equipment Needs and Procurement, Financial and Parts Department Management, Warranties and Risk of Liability, Contract Negotiation, Vehicle Procurement and Maintenance, Association Memberships/Involvement, Quality Systems, Security, Safety/OSHA, and Project Management.

Commercial Audio Technician (CAT)
The Commercial Audio Technician (CAT) is a certification for sound system technicians who need to design, install and troubleshoot speech and music sound systems in commercial and institutional environments. Commercial Audio Technicians must be knowledgeable in Acoustics, Microphones, Speakers, Sound & Measurements, Wiring, 70-Volt Systems, Troubleshooting, Safety, and Codes and Standards.

Customer Service Specialist (CSS)
The Customer Service Specialist (CSS) is a certification that validates one’s work readiness skills through employability concepts. Though developed to meet the role of an evolving service oriented electronics technician, CSS is relevant to every industry, employer and employee. Topics included are Safety, Ethics, Respect, Teamwork, Communication, Telephone and E-mail Techniques, Social Media, Problem Solving, Interpersonal Relationships, and Sales and Marketing.
Digital Video Editor (DVE)
Digital video editing is experiencing an unprecedented boom with a worldwide increase of not only professional digital editing, but the melding of amateur and professional video into a product available through the Internet and many social media venues. ETA is proud to announce a new vendor-neutral exam and certification for Digital Video Editor (DVE), created for all media professionals working with digital videos. Many video editor positions may not require a degree or extensive training, however professional video editors will need the knowledge of industry standards and the skills necessary to meet the demands of this growing field. Examinees will be required to know both audio and video fundamentals, screen formats, digital video formats and fundamentals, digital data rates, and fundamental video editing processes. Customer service basics are also covered in regards to schedule requirements, progress reporting, production and transmission costs, and hardware and software requirements for video editing.

Gaming and Vending Technician (GVT)
The Gaming and Vending Technician (GVT) certification is intended for entry-level technicians with a sound background in electronics. Technicians will work in the field to troubleshoot, repair and calibrate gaming and vending type equipment. Money handling, basic electrical, circuitry, computer hardware and software, and safety are topics included in this certification. The GVT is a stand-alone certification and must be maintained every four years.

Industrial (IND)
Industrial journeyman-level electronics technicians are expected to obtain knowledge of industrial electronics basic concepts, which are then applicable to all the various specialty areas of industry. Industrial Electronics Technicians must be knowledgeable and have abilities in the following technical areas: Amplifiers, Optical Wiring, Block Diagrams-Schematics, Robotics, Hydraulics, Power Supplies, Test Equipment-Tools, Mathematics, Computers-Digital Concepts, Safety, Satellite-Wireless-Data, Communications, Cabling, Troubleshooting, Motors, Programmable Logic Controllers, and Software.

Radio Frequency Identification Technical Specialist (RFID)
This certification is intended for an electronics technician with an understanding of RFID. The technician should have a basic understanding of the hardware and theory of operation of radio communications as it applies to RFID radio transceiver technology. RFID is a stand-alone but can be used as a Journeyman option when the Associate exam is also taken and passed.

DVE Exam Info
| Price:     | $100          |
| Type of Certification: | Stand-Alone |
| Renewal/Maintenance Required: | Yes          |
| Certification Term: | 4 Yrs        |
| Hands-On Required: | No           |
| Questions on Exam: | 75           |
| Passing Score: | 75%          |
| Time Allowed to Test: | 2 hours     |

GVT Exam Info
| Price:     | $100          |
| Type of Certification: | Stand-Alone |
| Renewal/Maintenance Required: | Yes          |
| Certification Term: | 4 Yrs        |
| Hands-On Required: | No           |
| Questions on Exam: | 75           |
| Passing Score: | 75%          |
| Time Allowed to Test: | 2 hours     |

IND Exam Info
| Price:     | $75          |
| Type of Certification: | Journeyman |
| Renewal/Maintenance Required: | Yes          |
| Certification Term: | 4 Yrs        |
| Hands-On Required: | No           |
| Questions on Exam: | 75           |
| Passing Score: | 75%          |
| Time Allowed to Test: | 2 hours     |

RFID Exam Info
| Price:     | $100          |
| Type of Certification: | Journeyman or Stand-Alone |
| Renewal/Maintenance Required: | Yes          |
| Certification Term: | 4 Yrs        |
| Hands-On Required: | No           |
| Questions on Exam: | 75           |
| Passing Score: | 75%          |
| Time Allowed to Test: | 2 hours     |

Many ETA Standalone certifications in certification maintenance can be upgraded to a Journeyman Certified Electronics Technician (CET). If the certification holder successfully completes the Associate CET (CETa) certification examination, then the maintained original standalone is combined with the CETa to upgrade to a CET. To apply for the Journeyman CET, you must have two or more years of combined work and electronics training. To upgrade, please fill out the Journeyman CET upgrade form. Journeyman upgrades are $50.

ETA also offers rollovers for popular industry certifications that are comparable to an ETA equivalent certification. Some examples are CompTIA A+ (ce) Rollover to CST, CertTEC BEE to Associate CET, CompTIA Network+ (ce) Rollover to NST, FCC Element 8 + Associate CET/GCT1/Journeyman CET to RADAR, CEA MCEP to MCEI, Anritsu PIM to ETA PIM, and FCC GROL + Associate CET/GCT1/Journeyman CET to WCM.
Commercial Radio Operator Licenses

FCC Licenses are required by law to operate and maintain many types of communications equipment. The broadcast, aeronautics, and maritime industries are the primary employers of commercial license holders, although many other fields now require FCC licenses. ETA has proudly served as an FCC COLEM (Commercial Operator License Examination Manager) since 1993. You can read more about the FCC and its programs at www.fcc.gov.

Marine Radio Operator Permit (MP) — Element 1
MPs, or MROPs, are required to operate radiotelephone stations aboard certain vessels that sail the Great Lakes. They are also required to operate radiotelephone stations aboard vessels of more than 300 gross tons and vessels which carry more than six passengers for hire in the open sea or any tidewater area of the United States. They are also required to operate certain aviation radiotelephone stations and certain coast radiotelephone stations.

General Radiotelephone Operator License (PG) – Elements 1 & 3
A PG, or GROL, is required to adjust, maintain, or internally repair FCC licensed radiotelephone transmitters in the aviation, maritime, and international fixed public radio services. It conveys all of the operating authority of the MP.

Global Maritime Distress and Safety System Operator (DO) – Elements 1 & 7
The DO, or GMDSS Operator, qualifies the holder to operate, and make some basic equipment adjustments to, Global Maritime Distress and Safety System (GMDSS) radio installations. It also confers the operating authority of the MP.

Global Maritime Distress and Safety System Operator - Restricted (RG) – Elements 1 & 7
The RG, or GMDSS Restricted, qualifies the holder to operate, and make some basic equipment adjustments to, Global Maritime Distress and Safety System (GMDSS) radio installations, but only on voyages that remain within twenty (20) nautical miles of shore. It also confers the operating authority of the MP.

Global Maritime Distress and Safety System Maintainer (DM) – Elements 1, 3, & 9
The DM, or GMDSS Maintainer, qualifies personnel as GMDSS radio maintainers to perform at sea repair and maintenance of GMDSS equipment. It also confers the operating authority of the PG and MP. NOTE: In instances where an applicant qualifies for both a DO and a DM, the applicant qualifies to hold a GMDSS Radio Operator/Maintainer License (DB).

Radiotelegraph Operator (T)
The T authorizes the holder to operate, repair, and maintain ship stations, and to repair and maintain coast radiotelegraph stations in the maritime services. It also confers all of the operating authority of a T2.

Ship Radar Endorsement – Element 8
Only persons whose commercial radio operator license bears this endorsement may repair, maintain, or internally adjust ship radar equipment.

FCC Exam Info

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<thead>
<tr>
<th>Service</th>
<th>Price</th>
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<tbody>
<tr>
<td>One element</td>
<td>$50</td>
</tr>
<tr>
<td>Any two elements taken together</td>
<td>$50</td>
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<tr>
<td>Any three elements taken together</td>
<td>$70</td>
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<td>Additional elements taken at same sitting</td>
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<td>License renewals</td>
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ETA Supports STEM Education

“STEM education is an interdisciplinary approach to learning where rigorous academic concepts are coupled with real-world lessons as students apply science, technology, engineering, and mathematics in a context that makes connections between school, community, work and the global enterprise enabling the development of STEM literacy and with it the ability to compete in the new economy.” (Tsopros, 2009) ETA International supports the movement to keep the United States at the forefront of research, innovation, and technology.

As the need for STEM occupations continues to grow, tech-savvy skills are critical. Studies have proven that STEM workers are less likely to experience joblessness than non-STEM workers. (STEM: Good Jobs Now and for the Future, U.S. Department of Commerce, July 2011) As an association for the technician and educator, both can be assured that ETA has always integrated STEM into all of its technical certifications. This allows those who earn ETA certifications the benefit of holding valuable tools as they enter into exciting, rewarding, and innovative careers.
Association membership is voluntary—a fundamental premise of ETA’s member eligibility requirements that sets us apart from most certification associations. If you plan to or are currently working in any technical or related business area, then you are eligible to join ETA. Students, instructors, technicians, trainers, distributors, company owners, military personnel, and certified technicians all hold membership in ETA. Now you can too! Members receive benefits such as the *High Tech News* (ETA’s bi-monthly digital publication), communication with peers through regular members-only technical access message boards and forums, as well as discounts on various industry publications, conferences, and events. ETA International offers six types of membership: individual, student, institutional, master, retiree, and lifetime. All memberships are good for one year with the exception of the lifetime and two-year individual options. Each will receive a wallet card and wall certificate. You can view more information at www.eta-i.org/membership.html.

**Individual:**
**Price:** $40.00 per year or $75.00 for two years

Members of ETA receive a digital subscription to the *High Tech News* (HTN), ETA’s bi-monthly publication and discounts on ETA study materials, merchandise, and the Career Resource Center, in addition to access to the “Members Only” site that includes free practice exams, HTN archives, and many other exclusive materials. ETA also offers a two year individual membership (USA only) for $75.00.

**Student:**
**Price:** $20.00 per year

*Current student ID or course schedule is required.

Student memberships apply to those who are enrolled at state and commercial electronics training institutes or in correspondence and military courses. Students also receive the same benefits as those who are individual members of ETA in addition to assistance in developing a successful career. ETA offers professionals help in improving their resumes and other materials needed by employers.

**Institutional (includes four Individual memberships):**
**Price:** $250.00 per year

Hardware manufacturers, public and private educational institutions, service providers, and affiliated groups can have a voice as an institutional member with ETA. Institutional memberships enjoy the same benefits as individual memberships.

**Master CET:**
**Price:** $25.00 per year

You’ve earned distinction within the industry by becoming a Master Certified Electronics Technician (CETma). ETA can help you connect with other professionals from around the world to discuss issues, share experiences, and learn from one another. In addition, your membership gives you access to our members-only technical publications, seminars, workshops, newsletters and special services, in the same way as the individual membership.

**Retiree:**
**Price:** $10.00 per year

If you have retired, and would like to stay involved in your industry, then an ETA retiree membership might be right for you. These memberships offer the same benefits of an individual membership, but at a reduced cost.

**Lifetime:**
**Price:** $500

If you would like a lifetime membership with no annual renewals at a great discount, then this is the option for you! Included are all of the perks of the individual membership plus the satisfaction of knowing you are supporting your industry with a lifetime commitment to ETA.

<table>
<thead>
<tr>
<th>BENEFITS</th>
<th>Member Benefit</th>
<th>Non-Member</th>
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</thead>
<tbody>
<tr>
<td><em>High Tech News</em>, ETA’s bi-monthly magazine, full of industry news, certification information and technical tips</td>
<td><strong>FREE</strong></td>
<td>$20.00 annually</td>
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<tr>
<td>Online Practice Exams</td>
<td><strong>FREE</strong></td>
<td>Members Only</td>
</tr>
<tr>
<td>Career Resource Center</td>
<td><strong>FREE</strong></td>
<td>FREE Resume and Job Postings</td>
</tr>
<tr>
<td>Study Materials</td>
<td>Discounts on selected texts</td>
<td>Members Only</td>
</tr>
<tr>
<td>Discounted rates for ETA’s annual convention</td>
<td>Discount on registration fees</td>
<td>Members Only</td>
</tr>
<tr>
<td>Innovation &amp; Tech Today magazine</td>
<td><strong>FREE</strong> (contact ETA for details)</td>
<td>Members Only</td>
</tr>
</tbody>
</table>
Where are ETA-Certified Individuals?

In 2017 alone, technicians at the following companies chose to become certified through ETA International. This list does not include the thousands of students in electronics-related industries who also became ETA-certified in 2017.
Where are ETA-Certified Individuals?

City of Little Rock
City of Lompoc
City of Manassas
City of Marietta
City of Memphis
City of Mesa
City of Modesto
City of New Orleans
City of Pasco
City of Port Arthur Police Dept
City of Portland
City of Princetown
City of Renton
City of Richmond
City of Rochelle
City of San Antonio / ITSD-Radio
City of Tempe
City of Tipp City, OH
City of Turtle Creek
City of Valdosta
CJSeto Support Services LLC
Clark Wireless
Clear Choice Communications
Clear Communications & Electronics/Charlottesville
Clear Communications and Electronics/Harrisonburg
Clearwater County
Cleerline
Cloud Computing Solution Pte Ltd
Clyde Light and Power
CNC San Luis Obispo
CNS Pantex
Coastal Pines Technical College
Code Red Underground LLC
Colorado Department of Transportation
Columbia County CSBU
Columbia Public School District
Columbus Communications Inc
Comcast Spectacor Penn Comm
Comm Tech, LLC
Commtronics of Virginia
Communication Association
Communication Plus Inc
Communication Service Center/Greenville
Communication Service Inc/Ashville
Communication Service Integrator
Communication Services
Communication Specialists Inc
Communications & Electronics Inc/Chattanooga
Communications Data Link
Communications Evolutions
Communications Express
Communications Service Inc/La Crosse
Communications Service Inc/Portage
Communications Specialist Inc/Columbia
Communications Technologies Inc/Rock Springs
Communications Workers of America (CWA)
C-Mo Comm Inc
Compcreations Communications
Comtech Construction
Cons Electric Co
Conteeras Gonzalez Spa
Control Communications Inc
Control Electric Inc
Control Technology Inc
Convergent Technology
Copper Valley Telephone Co
CoreSite
Corning
Corporation for Ohio Appalachian Development
Cortelco Systems
Cosner Comtech Inc
County of Bergen
County of Riverside
County of Tuolomne
CPS Energy
Craig’s Repair Service
Creative Communications/Phoenix
CREST Inc
Critical Systems Consulting Group (CSCG)
Crosspoint Communications
Crosstown Electrical & Data
Crown Castle
Crown Consulting
Crystal Movers Services
CT State Department of Education
Culpeper VA HCA
Cumberland Electric
Custom Underground Inc
Customs Border Protection
Cyber Communications Inc / Woburn
Cyber Communications/Warwick
Cyber Fiber LLC
Cyber on Demand
Cybernetics
D & B Services
Daniel Morgan Technology Center
Danielson Inc
Dart Polymers
Day Wireless Systems
Day Wireless/Pasco
DB Consulting Grp
De Agauadilla
De Crane Aerospace/ Audio International
DIE Services
Deca Sealand
Deer Valley Resort
Defense Contract MGT AG
Defense POW/MIA Accounting Agency
Delhaib Co Police
Delaware River and Bay Authority DRBA
Delcom
Dell Telephone Coop
Delmarva Communications Inc
Delta Wireless
Delta Wireless/Sacramento
Denali National Park
Department of Corrections
Department of Defense
Department of Energy
Department of Justice
Department of State
Department of Transportation
Department of Veteran Affairs
Dept of Public Safety OK
Deschutes County 911
Design Solutions & Integration
DFW Communication dba Crosspoint Comm
Diamond Tower Service
Digicel BVI
Digicel Group
Digicel Group Jamaica
Digital Traffic Systems
Digitcom Electronics Inc
Digitcom Electronics/La Junta
Direct Broadcast
Dirigo Wireless, Inc
Diversified Electronics Inc
Diversified Electronics Inc/Forest Park
Diversified Thermal
Division 27 Telecommunications, Inc
DL Integration Services
Docomo Pacific
Docomo
Dothan Utilities
Double Jack Inc
Douglas County PUD
Douglas County Sheriff’s Office
DR Splicing
Dubois Telephone
Ducros Electrical
Duke Energy
DuPont
Duracell
DynCorp International
Eagle Communications
East Kentucky Power Coop
East Mississippi EPA
East Valley School District
Easton Utilities
Eaton Electrical
EB Network & Communication Services LLC
ECD Systems
ECM Automation Networks
Eddy Packing
Education Super Highway
El-Com Services Inc
Electric Conduit 10
Electric Conduit Construction
Electrical Design and Control
Electrical Services LLC
Electrical Technology Services
Electronic Applications Company, Inc
Electronic Engineering
Electronic Engineering/AMES
Electronic Engineering/Columbus
Electronic Manufacturing Service
Electronic Security Services
Electronic Service Solutions/Nutley
eLeet Computer Solutions Inc
Elet & Associates
Elevate Fibre
Elite Contracting Group
Eljay Telephone Co
EMCI Wireless
Emergency Radio Service Inc
Emergency Radio Service Inc/Fort Wayne
Emergency Radio Service Inc/Indianapolis
Emergency Radio Service Inc/Louisville
Emergency Radio Service-Occ
En Touch
Engineer Electrical
Engineering Services Network Inc.
Englewood Hospital and Medical Center
Enhanced Telecommunications
Enterprise Products
Enterprise Security
Entrouch
EPCC/Enterprise Products
EQT Gathering LLC
ERC Inc
Essential Power Operating
ETA International
Evergreen Fire & Safety
Evergreen Fire and Security
Ewing Foley Inc
Excel Communications
Express Technologies
Faith Communications
Farmers Telephone Co
Fair & Sons Home Services
FCI Ray Brook
Federal Emergency Management Agency
Felsburg Holt & Ullevig
Fiber Network Training
Fibercain, LLC
Fiberlink
Fibernet Inc
Fingerlakes Communications
First Digital Telecom
First Native Optics LLC
First Wireless Inc
Fisher Wireless Services Inc/Blythe
Flathead 911
Flathead Electric Co-Op
Fleet Auto Supply
Fleet Numerical
Florida Atlantic University
FNT Fiber Network Training Consulting
Foreign Plus
Fort Smith Police Dept
Four Point Communications
Fremont County Sheriff
Frontier Communications
FSP PIA
Full Keel Marine LLC
Fulton County Gov’t
G Adams LLC
G&S Security
Gately Communication Co
Where are ETA-Certified Individuals?

<table>
<thead>
<tr>
<th>Company/Location</th>
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<tbody>
<tr>
<td>Independence Power &amp; Light</td>
</tr>
<tr>
<td>Indian Hills Community College</td>
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<tr>
<td>Indiana University-Purdue University Indianapolis</td>
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<tr>
<td>Indus Technology</td>
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<tr>
<td>Industrial C &amp; E Inc-Marshfield</td>
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<tr>
<td>Industrial Communications</td>
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<tr>
<td>Industrial Communications and Electronics/Billings</td>
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<tr>
<td>Industrial Communications Inc</td>
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<tr>
<td>INFOP</td>
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<tr>
<td>Innovative Project Solutions</td>
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<tr>
<td>Insiro PTE LTD</td>
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<tr>
<td>Integrated Communications Inc-Batesville</td>
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<tr>
<td>Integrated Communications Inc-Memphis</td>
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<tr>
<td>Integrated LLC (formerly Strategic Comm Inc)</td>
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<td>Integrated Security</td>
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<tr>
<td>Intelligent Decisions</td>
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<tr>
<td>Intellware System</td>
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<td>Interbel Telephone</td>
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<tr>
<td>Intermountain Communications</td>
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<tr>
<td>Intermountain Rural Electric Association</td>
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<td>International Fire &amp; Safety</td>
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<td>International Wireless Com</td>
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<td>Internet Colorado</td>
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<tr>
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<tr>
<td>IT Services / UCLA</td>
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<tr>
<td>IT Tech Direct LLC</td>
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<tr>
<td>IT Tech Solutions</td>
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<td>JTSF Fiber</td>
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<td>IWA Technical Services Inc</td>
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<td>Jackson Purchase 2-Way Radio</td>
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<td>Jackson Rancheria Casino</td>
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<td>Japanese Navy</td>
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<td>Janui Heart Inc</td>
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<td>Jefferson County Sheriff</td>
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<tr>
<td>Jesse Stults Inc</td>
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<td>Joint Communications Support Element</td>
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<td>J's Communications</td>
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<td>Justin Steelman</td>
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<td>K &amp; C Communications</td>
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<td>K &amp; S Technology</td>
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<td>Kalona Cooperative Telephone</td>
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<td>Kenny Electric</td>
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<td>Kinder Morgan</td>
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<td>Krueger Electric</td>
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<td>KSP Technology</td>
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<td>L &amp; K Communications</td>
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<td>Lafayette Utilities System</td>
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<td>Lawrence Livermore National Lab</td>
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<td>Lightcast Inc</td>
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<td>Mobile Radio Engineers LLC dba Day Wireless System</td>
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<tr>
<td>Montana Dakota Utilities Co</td>
</tr>
</tbody>
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Where are ETA-Certified Individuals?
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St Vincent and the Grenadines Community College
Staley Communication Inc/Pittsburgh
Staley Technologies/Canton
Staley Technologies/New Philadelphia
Stanley Technologies
Startec Consulting
Staples Inc
Star Trek Workforce
State Farm Insurance
State of California
State of LA OTS DCO
State of Maine
State of Maine
State of Utah
State of Washington
Staybridge Suites
Sterling Communications & Electronics
Stillaguamish Tribe
Stride Center
Subsea7
Suncoast Comm & Elect Inc
Sunesys, LLC
Superior Slicing Solutions LLC
Supertech Inc
Supra Net Communications
Supreme Radio Comm/Peoria Heights
Sussex Technical High School
Syndex Networks
Syntax Network Solution Pte Ltd
System Services Broadband
T&R Alarm
TAB Electronics Inc
TAC Solutions
Tac Solutions Division of Nucell-Comm Inc/Calgary
Tacona Power
Tacona Public Utilities
Tactical Public Safety LLC
TAFT Broadcasting
Tallies Reunibas Chile Ltd
Talus Development
TAPCO
TASWater
Tatitlek
TE Connectivity
Team Fishel
Team One Communications Inc
Team One Communications Inc/CES
Teanias Reunibas Chile Ltd
Tech Electronics, Inc.
Technical Assistance dba Kelley Communications
Tektronix
Teles Den Inc
Telecom Communications
Telecommunications De l’est
Telect
Teledyne Isco
Tele-Rad Florida
Tele-Rad Inc/Benton Harbor
Tele-Rad Inc/Holland
Telkore Inc
Tellus
Teltronix Inc
Teltronix Inc/Beltsville
Teltronix Inc/Salem
Teltronix Inc/Salisbury
Tetra Tech
Texarkana Water Utilities
Texas A&M Corpus Christi
Texas Communications
Texas Communications Of San Angelo Inc
Texas State Technical College
TFCcomm Inc/Lawrence
TFCcomm Inc/Topika
TG Solutions
Thayer Investments LLC
The Fiber Guys
The Lockwood Group
THE MITRE Corp
The University of Texas
The Warm Company
Think Simple - BV1

Thompson Electronics
Thurston 911 Communications
TideWater Communications & Electronics
Ting Internet
TMC Design
Tobynn's Army Depot
Today's Real Estate
Tohono O'odham Utility
Tomba Communications & Electronics
Tokyo Police Service
Total North Communications LTD
Total Radio
Total Radio-Oklahoma City
Total Safety
Totally Wired
Town of Apex
Town of Littleton
Trace Services, Inc
Tracy Fire Dept
Transcore
Triang Communications Inc
Tribo
Tri-Cities Communications
Tri-Co Communications Inc/Inverness
Tri-County Communications LTD/Weslaco
Trinet Technologies
Trinity Technology Partners
Trotter Electric
Trusys Electronics Repair Shop
Tukee Fin-Itt's OG
Turris Communications
Turris Communications/Cornwall
Turris Communications/Kingston
Twisted Technology Inc.
Two Way Radio Inc
Tyson Foods
U.S. Bureau of Reclamation
U.S. Dept of State
Under/Comm Inc
Underwriters Laboratories
Unilever
United Dairyman of Arizona
United Parcel Service
United Radio Inc
United States Air Force
United States Army
United States Army - 780th MI BDE
United States Army CECOM
United States Army Reserve National Guard
United States Army/780th MI BDE
United States Capital Police
United States Marine Corp
United States Marshals Service
United States Navy
Unit/Infinity
Universals Solutions of North America
University of Alaska Fairbanks
University of Arkansas
University of Florida
University of South Carolina
US Army Corps of Engineers
US Army DFMWR
US Army Ordnance School Land Combat Division
US Capitol Police
US Customs and Border Patrol
US Forest Service
USA Communications
USA Construction Co Inc
USAF R66 Support SQ
USN NOIC Norfolk
USS IWO JIMA
USS Paul Hamilton
UT Battelle
Utah Communications
Utility Communications Inc
Utility Lines Construction
VA International Terminals
VA Port Authority
Valley Fiber

VCI Construction
Vector Engineering Services
Velco VT Electric Company
Verizon Wireless
Verma Systems
Veterans Assembled electronics
Villages of Freepost
Vintage Security
VLS Communications Inc
VU Constructions
Walsh Door and Hardware
Washington Broadband
Washington Department of Transportation
Washington Gas
Washington State
Washington State University
Washtenaw County Reg. Comm. Services
Wave Broadband
Webpass
Wells Communication Service/Troy
Wells Communication Service/Watertown
Wenlight Fiber Optic Services
West River Telecomm
West Rock
West Virginia Network
Westcan Wireless-Edmonton
Western Conn
Western Electrical Contractors Association Inc
Western Farmers Electric Cooperative
Westfield Gas & Electric / Whip City Fiber
Whelen Engineering Company Inc
Whirlpool Corporation
White Cloud Communications Inc/Twin Falls
White Cloud Communications Inc/Garden City
White Coconut Computer
Whiteriver Electric
Whitter's 2-Way Service
Wilson/Crown Castle
Wildflower International LTD
Wilson/Crown Castle
Wiltech Inc
Windstream Communications
Wireless Advanced Communications
Wireless Advanced Communications/Evans
Wireless Comm Inc NC/Morrisville
Wireless Communications Inc/Baltimore
Wireless Communications Inc/Washington
Wireless Communications Inc-NC/Charlottesville
Wireless Communications Inc-NC/Greensboro
Wireless Communications Inc-NC/Morrisville
Wireless Communications Inc-NC/Wilmington
Wireless Communications Inc-North Carolina/Morrisville
Wireless Electronics
Wireless Electronics Inc/Metuchen
Wireless Electronics Inc/West Berlin
Wireless Marketing Pte Ltd
Wireless Technology Equipment Company/Lakeland
Wireless USA/Arnold
Wireless USA/Collinsville
Wireless USA/Jefferson City
Wireless USA/Maryland Heights
Wires R Us
Wolf Creek Federal Services
WoRAD Inc
Wynne Air
Wyoming Department of Transportation
Xpert Techs LLC
XTO Energy
Xzact Technology
Yakama Legends Casino
Zoepaz Inc