
Electronic Home Entertainment Equipment Installers and Repairers

(O*NET 49-2097.00)

Significant Points

- Employers prefer applicants who have basic knowledge and skills in electronics; many applicants gain these skills at vocational training programs and community colleges.
- Employment is expected to grow more slowly than the average for all occupations because it often is cheaper to replace equipment than to repair it.
- Job opportunities will be best for applicants with knowledge of electronics, related hands-on experience, and good customer service skills.

Nature of the Work

Electronic home entertainment equipment installers and repairers—also called *service technicians*—repair a variety of equipment. They may specialize in one type of product, or may be trained in many different ones. The most common products include televisions and radios, stereo components, video and audio disc players, and video cameras. They also install and repair home security systems, intercom equipment, satellite television dishes, and home theater systems, which consist of large-screen televisions and sophisticated surround-sound audio components.

Customers usually bring small, portable equipment to repair shops for servicing. Repairers at these locations, known as *bench technicians*, are equipped with a full array of electronic tools and parts. When larger, less mobile equipment breaks down, customers may pay repairers to come to their homes. These repairers, known as field technicians, travel with a limited set of tools and parts, and attempt to complete the repair at the customer's location. If the job is complex, technicians may bring defective components back to the shop for diagnosis and repair.

When equipment breaks down, repairers check for common causes of trouble, such as dirty or defective components. Many repairs consist simply of cleaning and lubricating equipment. If routine checks do not locate the trouble, repairers may refer to schematics and manufacturers' specifications that provide instructions on how to locate problems. Repairers use a variety of test equipment to diagnose and identify malfunctions. Multimeters detect short circuits, failed capacitors, and blown fuses by measuring voltage, current, and resistance. Color-bar and dot generators provide onscreen test patterns, signal generators test signals, and oscilloscopes and digital storage scopes measure complex waveforms produced by electronic equipment. Repairs may involve removing and replacing a failed capacitor, transistor, or fuse. Repairers use hand tools, such as pliers, screwdrivers, soldering irons, and wrenches, to replace faulty parts. They also make adjustments to equipment, such as focusing and converging the picture of a television set or balancing the audio on a surround-sound system.

Improvements in technology have miniaturized and digitized many audio and video recording devices. Miniaturization has made repair work significantly more difficult because both the components and the acceptable tolerances are smaller. Also, components now are mounted on the surface of circuit boards, instead of plugged into slots, requiring more precise soldering when a new part is installed. Improved technologies have lowered the price of electronic home entertainment equipment to the point where customers often replace broken equipment instead of repairing it.

Work environment. Most repairers work in well-lighted electrical repair shops. Field technicians, however, spend much time traveling in service vehicles and working in customers' residences.

Repairers may have to work in a variety of positions and carry heavy equipment. Although the work of repairers is comparatively safe, they must take precautions against minor burns and electric shock. Because television monitors carry high voltage even when they are turned off, repairers need to discharge the voltage before servicing such equipment.

Training, Other Qualifications, and Advancement

Employers prefer applicants who have basic electronics skills, good problem-solving skills, and previous repair experience. Good customer service skills are essential for field technicians, as they spend a majority of their time working in customers' homes.

Education and training. Employers prefer applicants who have basic knowledge and skills in electronics as well as previous repair experience. Many applicants gain these skills at vocational training programs and community colleges. Training programs should include both hands-on experience and theoretical education in digital consumer electronics. Entry-level repairers may work closely with more experienced technicians, who provide technical guidance.

Other qualifications. Field technicians work closely with customers and must have good communication skills and a neat appearance. Repairers also must have good problem solving skills, as their main duty is to diagnose and solve problems. Employers also may require that field technicians have a driver's license.

Certification and advancement. Various organizations offer certification for electronic home entertainment equipment installers and repairers. Repairers may specialize in a variety of skill areas, including consumer electronics. To receive certification, re-



Most home entertainment equipment installers and repairers work in electronic stores.

Projections data from the National Employment Matrix

Occupational Title	SOC Code	Employment, 2006	Projected employment, 2016	Change, 2006-16	
				Number	Percent
Electronic home entertainment equipment installers and repairers ..	49-2097	40,000	41,000	1,200	3

NOTE: Data in this table are rounded. See the discussion of the employment projections table in the *Handbook* introductory chapter on *Occupational Information Included in the Handbook*.

pairers must pass qualifying exams corresponding to their level of training and experience.

Experienced repairers with advanced training may become specialists or troubleshooters, helping other repairers to diagnose difficult problems. Workers with leadership ability may become supervisors of other repairers. Some experienced workers open their own repair shops.

Employment

Electronic home entertainment equipment installers and repairers held about 40,000 jobs in 2006. Many repairers worked in electronics and appliance stores that sell and service electronic home entertainment products or in electronic and precision equipment repair and maintenance shops. About 12 percent of electronic home entertainment equipment installers and repairers were self-employed, compared to 7 percent for all installation, maintenance, and repair occupations.

Job Outlook

Employment is expected to increase more slowly than the average for all occupations. Job prospects will be best for applicants with knowledge of electronics, related experience, and good customer service skills.

Employment change. Employment of electronic home entertainment equipment installers and repairers is expected to grow by 3 percent from 2006 to 2016, which is slower than average for all occupations. Demand will be driven by the rising sales of home entertainment equipment.

The need for repairers is expected to grow slowly, however, because home entertainment equipment is less expensive than in the past. As technological developments have lowered the price and improved the reliability of equipment, the demand for repair services has decreased. When a malfunction does occur, it often is cheaper for consumers to replace equipment than to pay for repairs.

Employment growth will be spurred somewhat by the introduction of sophisticated digital equipment, such as high-definition digital televisions and digital camcorders. So long as the price of such equipment remains high, purchasers will be willing to hire

repairers when malfunctions occur. There also will be demand to install sophisticated home entertainment systems, such as home theaters.

Job prospects. Job openings will come about because of employment growth and from the need to replace workers who retire or who leave the occupation. Opportunities will be best for applicants with knowledge of electronics and who have related hands-on experience and good customer service skills.

Earnings

Median hourly earnings of wage-and-salary electronic home entertainment equipment installers and repairers were \$14.42 in May 2006. The middle 50 percent earned between \$11.52 and \$18.24. The lowest 10 percent earned less than \$8.96, and the highest 10 percent earned more than \$22.42. In May 2006, median hourly earnings of electronic home entertainment equipment installers and repairers were \$14.46 in electronics and appliance stores and \$13.18 in electronic and precision equipment repair and maintenance.

Related Occupations

Other workers who install, repair, and maintain electronic equipment include computer, automated teller, and office machine repairers; electrical and electronics installers and repairers; radio and telecommunications equipment installers and repairers; precision instrument and equipment repairers; home appliance repairers; coin, vending, and amusement machine servicers and repairers; maintenance and repair workers, general; and electricians.

Sources of Additional Information

For information on careers and certification, contact:

➤ ACES International, 5241 Princess Anne Rd., Suite 110, Virginia Beach, VA 23462.

Internet: <http://www.acesinternational.org>

➤ Electronics Technicians Association International, 5 Depot St., Greencastle, IN 46135. Internet: <http://www.eta-i.org>

➤ International Society of Certified Electronics Technicians, 3608 Pershing Ave., Fort Worth, TX 76107-4527.

Internet: <http://www.iscet.org>