SPACE WORKFORCE INCUBATOR FOR TEXAS

Electronics Technician

Industry-Validated Occupational Standard

FINAL - PUBLIC RELEASE | Version 1.0 | Approved October 8, 2026

PURPOSE

This final standard defines the shared core knowledge, technical skills and workplace competencies expected of an entry-level Electronics Technician working in space manufacturing. It provides a common industry foundation that employers, high school CTE programs, colleges, workforce organizations and training providers can use for alignment.

Approval record	Details
Status	Final - Public Release; approved as submitted without amendment by the SWIFT Space Workforce Advisory Committee industry voting quorum
Approval date	October 8, 2026
Evidence base	Analysis of 115 job postings across 19 selected companies in the space economy, supplemented by education standards and industry input
Maintained by	Space Workforce Incubator for Texas (SWIFT)

HOW TO USE THIS STANDARD

Use the standard as an industry reference for role design, program alignment, capstone development, work-based learning and credential planning. Local employers and education partners should determine the appropriate depth, sequence, instructional hours, equipment and assessment methods for their setting.

WHAT THIS STANDARD DOES NOT MEAN

It is not a curriculum, a hiring commitment, a guarantee of employment or an endorsement of a particular program, provider or credential. Not every competency applies equally to every employer, worksite or role. Employers retain their own hiring, safety, quality, training, certification and qualification requirements.

1. Occupation Profile

Role description

An electronics technician builds and tests the electronics used in space hardware. The technician reads schematics, wiring diagrams and work instructions; builds electrical and electro-mechanical subassemblies; integrates them into larger assemblies; fabricates cable and wire harnesses; and hand-solders or reworks circuit boards.

The work follows IPC workmanship frameworks, including J-STD-001, IPC/WHMA-A-620 and IPC-A-610. Multimeters, oscilloscopes and spectrum analyzers are the primary test tools identified in the source data. Technicians support engineers during development, validation and qualification, communicate quality issues and design discrepancies, and maintain build and test records that support traceability and compliance.

Most employers seek a high school diploma or equivalent together with relevant hands-on experience in electro-mechanical assembly or precision manufacturing. Employer-specific tools, certifications and qualification requirements vary.

Representative job titles in the source data

- Avionics Dev Lab Technician Level II (4)
- Avionics R&D; Technician I or II (2)
- AIT Technician - GNC Module Assembly, Weekend Shift (1)
- Assembly Technician - Lasers Department (1)
- Avionics Dev Lab Technician (1)
- Avionics Electrical Technician (1)
- Avionics Dev Lab Technician Level III (2)
- Technician - Avionics Integration Engineering III (2)
- Antenna Test Technician II (1)
- Avionics Battery Technician (1)
- Avionics Dev Lab Technician Level I (1)
- Avionics HITL and Test Technician (1)

SOURCE NOTE

Posting counts are retained as supporting evidence. The titles show the range of technician roles included in the analysis used to identify the shared entry-level foundation.

2. Core Tasks

An entry-level Electronics Technician should be prepared to perform the following work at a level appropriate to the employer's procedures, supervision and qualification requirements.

Tier	Task
Core	Read, interpret and create schematics, wiring diagrams, engineering drawings and work instructions or procedures.
Core	Build small electrical and electro-mechanical subassemblies and integrate them into higher assemblies.
Core	Assemble and fabricate cable and wire harnesses, cable assemblies and electronic subassemblies, including crimping, routing and connectorization.
Core	Support engineering during development, validation and qualification, and provide feedback on quality issues and discrepancies.
Core	Document work performed, test results and build records for traceability and compliance.
Core	Hand-solder, de-solder and rework electronic assemblies and printed circuit boards.

ENTRY-LEVEL PROFICIENCY
This standard identifies what belongs in the shared entry-level foundation. It does not set one universal proficiency level for every task. Employers may require awareness, performance with guidance or independent performance depending on the work, risk, qualification process and job assignment.

3. Knowledge, Experience and Education

Knowledge

Tier	Knowledge area
Core	Basic electronics theory: voltage, resistance, current and analog and digital circuits.
Supplemental	Requirements for electrostatic discharge and foreign object debris controlled environments.
Supplemental	IPC workmanship requirements for assembly and inspection.
Related	Documentation control and configuration management.

Relevant experience

Tier	Experience area	Approved hiring note
Core	Electro-mechanical assembly, integration or precision-manufacturing experience.	
Core	Hands-on experience with mechanical and electronics hardware.	
Not assigned	Use of hand tools, power tools and standard shop equipment.	
Core	Wire harness or cable assembly fabrication and inspection.	
Core	Soldering, de-soldering and rework of electronic assemblies.	Optional at entry

Education and credentials

Tier	Education or credential	Approved hiring note
Core	High school diploma or equivalency (GED).	
Core	Associate degree or technical diploma in electronics, electrical engineering technology, mechatronics or a related field.	Helpful, not required
Supplemental	Vocational or trade-school certificate, or apprenticeship completion.	Helpful, not required

EMPLOYER DISCRETION
Education and credential language describes the shared market pattern. An employer may accept equivalent experience, require additional qualifications or train specific competencies after hire.

4. Tools and Technologies

Specific makes, models and software platforms vary by employer. The lists below identify tools and technologies found in the source data; they are not universal purchasing requirements for an education program.

Software and digital systems

Category	Examples from job postings	Entry-level interpretation
Computer-aided design	NX; Altium; Mentor PCB; CATIA; SolidWorks; Mentor	Helpful, not universally required
Content workflow	Jira	Helpful, not universally required
Project and product data management	Confluence; Teamcenter; Microsoft Teams	Helpful, not universally required
Enterprise resource planning	ERP systems; NetSuite	Helpful, not universally required

Hardware, instruments and shop equipment

Category	Examples from job postings
Electrical measurement and observation	Multimeters; oscilloscopes; spectrum analyzers; signal generators; vector network analyzers; network analyzers
Precision measurement	Calipers; micrometers
Assembly and rework	Soldering irons and associated soldering or brazing accessories and supplies

PROGRAM AND EQUIPMENT PLANNING

Education partners should select equipment only after confirming the intended course outcomes, safety controls, facility requirements, instructor capability, consumable costs and local employer priorities. Exposure to a tool category may be more appropriate than mastery of every listed platform or instrument.

5. Standards, Quality Systems and Methods

Standard or concept	Relevance
IPC J-STD-001	Requirements for soldered electrical and electronic assemblies.
IPC/WHMA-A-620	Requirements and acceptance for cable and wire harness assemblies.
IPC-A-610	Acceptability of electronic assemblies; associated CIS and CIT certification pathways.
5S	Workplace organization method supporting order, cleanliness, consistency and visual control.
ESD	Electrostatic discharge awareness and control practices for sensitive electronics.
FOD / NAS-412	Foreign object debris and damage prevention concepts and controls.
AS9100	Aerospace quality management system standard; certification applies at the organizational level.

CERTIFICATION IS NOT ASSUMED

Inclusion in this standard identifies an important industry framework or concept. It does not mean that every entry-level candidate must hold certification. Employers and education partners should determine whether awareness, working knowledge, practical demonstration or formal certification is appropriate for a specific role or program.

6. Publication Record and Use

FINAL APPROVAL
This is the final public-release edition approved as submitted by the SWIFT Space Workforce Advisory Committee industry voting quorum on October 8, 2026. No additional review or approval is pending.

Authorized use

The standard is published as a shared industry and education resource. Employers, high school CTE programs, colleges, workforce organizations and training providers may use it as guidance for role alignment, program planning, capstone development, work-based learning and credential discussions.

Future versions

This Version 1.0 remains the approved standard unless SWIFT publishes a later version. Any future substantive change will be issued under a new version number and will undergo a new industry-validation action before publication.

Version	Approval date	Change summary
1.0	October 8, 2026	Initial industry-approved publication.

PUBLIC-USE NOTICE
This standard may be used as workforce and education guidance with attribution to the Space Workforce Incubator for Texas (SWIFT). Use of the standard does not authorize use of SWIFT's logo or imply SWIFT approval of a specific curriculum, provider, credential or employer practice.