



Model Curriculum

QP Name: Line Assembler - Telecom Products

QP Code: TEL/Q2502

Version: 5.0

NSQF Level: 3.0

Model Curriculum Version: 5.0

Telecom Sector Skill Council || 3rd Floor, Plot No 126, Sector – 44 Gurgaon – 122003
Email: tssc@tsscindia.com

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Training Parameters

Sector	Telecom
Sub-Sector	Handset
Occupation	Communication Electronics
Country	India
NSQF Level	3.0
Aligned to NCO/ISCO/ISIC Code	NCO-2015/3114.1403
Minimum Educational Qualification and Experience	Grade 10 OR 8th grade pass with 3 years of experience in telecom production OR Previous relevant qualification of NSQF Level 2.5 with 1.5 years of experience in telecom production
Pre-Requisite License or Training	NA
Minimum Job Entry Age	NA
Last Reviewed On	08-05-2025
Next Review Date	30-04-2028
NSQC Approval Date	08-05-2025
QP Version	5.0
Model Curriculum Creation Date	14-05-2025
Model Curriculum Valid Up to Date	30-04-2028
Model Curriculum Version	5.0
Minimum Duration of the Course	450 Hours
Maximum Duration of the Course	450 Hours

Program Overview

This section summarises the end objectives of the program along with its duration.

Training Outcomes

At the end of the program, the learner should have acquired the listed knowledge and skills to:

- Explain the importance of preparing the workspace efficiently before starting assembly operations.
- Discuss the key steps involved in performing assembly operations in a telecom production line.
- Describe the essential considerations for assembling mobile phone accessories while ensuring compliance with industry standards.
- Elucidate the significance of following ESD safe procedures and practices in telecom assembly operations.
- Determine the key sustainability practices that must be followed in telecom production and assembly line processes.
- Discuss the Employability and Entrepreneurship Skills.

Compulsory Modules

The table lists the modules and their duration corresponding to the Compulsory NOS of the QP.

NOS and Module Details	Theory Duration (Hours)	Practical Duration (Hours)	On-the-Job Training Duration (Mandatory) (Hours)	On-the-Job Training Duration (Recommended) (Hours)	Total Duration (Hours)
TEL/N2506: Preparing Workspace for Assembly Operations NOS Version No.: 4.0 NSQF Level: 3.0	30:00	50:00	40:00	00:00	120:00
Module 1: Introduction to the sector and the job role of a Line Assembler - Telecom Products	05:00	00:00	00:00	00:00	05:00
Module 2: Preparing Workspace for Assembly Operations	25:00	50:00	40:00	00:00	115:00
TEL/N2507: Assembly Operations in Production Line NOS Version No.: 4.0 NSQF Level: 3.0	30:00	50:00	40:00	00:00	120:00
Module 3: Performing Assembly Operations in Telecom Production	15:00	25:00	20:00	00:00	60:00
Module 4: Managing Production and Post-Assembly Activities	15:00	25:00	20:00	00:00	60:00

TEL/N2510: Assembly of Mobile Phone Accessories NOS Version No.: 1.0 NSQF Level: 3.0	10:00	30:00	20:00	00:00	60:00
Module 5: Assembly and Testing of Mobile Phone Accessories	10:00	30:00	20:00	00:00	60:00
TEL/N2508: ESD Safe Procedures and Practices NOS Version No.: 4.0 NSQF Level: 3.0	10:00	30:00	50:00	00:00	90:00
Module 6: ESD Safe Procedures and Best Practices	10:00	30:00	50:00	00:00	90:00
TEL/N9107: Follow sustainability practices in telecom production and assembly line processes NOS Version No.: 1.0 NSQF Level: 4.0	10:00	20:00	00:00	00:00	30:00
Module 7: Sustainable Practices in Telecom Production and Assembly	10:00	20:00	00:00	00:00	30:00
DGT/VSQ/N0101: Employability Skills (30 Hours) NOS Version No.: 1.0 NSQF Level: 2.0	30:00	00:00	00:00	00:00	30:00
Module 8: Employability Skills (30 Hours)	30:00	00:00	00:00	00:00	30:00
Total Duration	120:00	180:00	150:00	00:00	450:00

Module Details

Module 1: Introduction to the sector and the job role of a Line Assembler - Telecom Products

Mapped to TEL/N2506, v4.0

Terminal Outcomes:

- Explain the importance of Telecom Sector.
- Discuss the roles and responsibilities of a Line Assembler - Telecom Products.

Duration (in hours): 05:00	Duration (in hours): 00:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Explain the significance of the telecom sector in the manufacturing and assembly of telecom products. • Elucidate the key skills and technical expertise required for a Line Assembler - Telecom Products. • Describe the challenges faced in assembling and testing telecom equipment. • Determine the impact of precision and quality control in telecom product assembly. • Discuss the roles and responsibilities of a Line Assembler - Telecom Products in ensuring efficient production.	
Classroom Aids	
Training Kit - Facilitator's Guide, Participant's Handbook, Presentations and Software, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
Nil	

Module 2: Preparing Workspace for Assembly Operations

Mapped to TEL/N2506, v4.0

Terminal Outcomes:

- Explain the importance of arranging components and the assembly bench efficiently before starting assembly operations.
- Describe the key considerations when selecting and arranging tools and equipment for an assembly task.
- Discuss the factors that influence the preparation of workspaces for advanced assembly methods.

Duration (in hours): 25:00	Duration (in hours): 50:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Explain the types and specifications of electronic components used in assembly operations. • Describe the safe handling procedures for electronic components to prevent damage or defects. • Elucidate the types of mechanical fasteners and their applications in assembly. • Discuss the use and maintenance of assembly tools and semi-automatic tools. • Determine the appropriate selection and handling of soldering consumables for different assembly tasks. • Explain the safety and environmental standards that must be followed in assembly operations. • Describe the use of ERP systems for inventory and production tracking in an assembly setup. • Discuss the role of IoT-enabled tools in compliance monitoring during assembly processes. • Explain the applications of 3D printing in assembly and prototyping. • Elucidate the handling and assembly procedures for 5G-specific hardware components.	• Demonstrate how to retrieve assembled electronic PCB boards, enclosures, accessories, and hardware components from stores and verify them against inventory records. • Show how to interpret and confirm understanding of work and assembly instructions. • Demonstrate how to arrange the required assembly parts ergonomically for smooth assembly. • Show how to check all assembly parts, including electronic PCB boards, metal enclosures, and hardware items, for defects, mismatches, or non-conformance, and report identified issues. • Demonstrate how to identify and segregate 5G-specific hardware for assembly tasks. • Show how to update inventory records using the ERP system to ensure material availability. • Demonstrate how to collect, check calibration, and test tools and equipment for functionality, compliance, and report malfunctions. • Show how to use IoT-enabled tools to monitor tool compliance and performance. • Demonstrate how to set up and calibrate 3D printing workstations for prototyping, small-batch production, and ensure printed parts meet specifications.

	Show how to follow best practices for using 3D-printed components in assembly.
Classroom Aids	
Training Kit - Facilitator's Guide, Participant's Handbook, Presentations and Software, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
Apron, ESD Wrist Strip, Anti-Electrostatic Floor, Finger Cuts Full & Half, Foot Switch), Electronic Components Storage Cabinet (Small, Medium, and Big – ESD Protective), Components Tray/Bins/Strips Bobbin (All Sizes – ESD Protective), PCB Cleaning Solution (IPA), Adhesives and Cleaning Products, Conveyor Pallet, Magnifying Lamp.	

Module 3: Performing Assembly Operations in Telecom Production

Mapped to TEL/N2507, v4.0

Terminal Outcomes:

- Explain the process of assembling telecom devices/products in a production line.
- Discuss how automation and smart manufacturing methods improve efficiency in telecom device assembly.

Duration (in hours): 15:00	Duration (in hours): 25:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Explain the applicable quality standards, compliance requirements, and health and safety policies in telecom assembly operations. • Describe the roles, responsibilities, and reporting structures in the assembly line. • Discuss the handling and assembly of various electronic and mechanical parts in telecom devices. • Elucidate the different electronic components used in mobile phones and their functions. • Determine the importance of polarity in electronic components and its impact on device functionality, along with the mechanical items used in the assembly process. • Describe the safe and correct usage of assembly tools such as screwdrivers, pliers, and tweezers. • Explain the working principles and applications of semi-automatic and automated assembly tools. • Discuss the proper handling and storage of PCBs, including baking and flux application. • Elucidate basic soldering techniques, defect identification, and rework procedures.	• Demonstrate how to check the availability of all required parts, tools, and components as per assembly specifications. • Show how to ensure all required tools and equipment are operational and properly calibrated before assembly. • Demonstrate the process of conducting pre-assembly safety compliance checks before starting operations. • Show how to arrange parts and sub-assemblies in the correct sequence for an efficient workflow. • Demonstrate how to interpret technical diagrams, specifications, and schematics accurately for assembly. • Show how to handle components carefully and ensure proper fitment using appropriate tools. • Demonstrate the correct procedures and sequences for assembling components such as RFID tags, Wi-Fi, and Bluetooth modules. • Show how to perform basic quality checks to verify correct assembly before moving to the next stage. • Demonstrate the use of IoT sensors to track assembly items and ensure placement accuracy and efficiency. • Show how to operate Robotic Process Automation (RPA) tools for automated pick-and-place assembly. • Demonstrate how to use machine vision systems for real-time quality inspection and defect detection.

	• Show how to use Augmented Reality (AR) tools for interactive training and troubleshooting of assembly processes.
Classroom Aids	
Training Kit - Facilitator's Guide, Participant's Handbook, Presentations and Software, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
Soldering Gun (Temperature Controlled) & Iron Tips, Soldering Tip Polisher, Soldering Tester, Lead-Free Solder Paste (with/without Flux), Liquid Dispensers (Liquid Flux, Epoxy), Axial Lead Formation Tool, Axial Components Lead Cutting Tools, Component Former, Electric/Pneumatic Torque Screwdriver, Dipliner, Testing Jig (Sample), Stencil Sets & Racks, Strippers, Squeezing Forceps, Desoldering Pump, Through-Hole Component Insertion Module (with SMT Components Mounted – Reject PCBs).	

Module 4: Managing Production and Post-Assembly Activities

Mapped to TEL/N2507, v4.0

Terminal Outcomes:

- Describe the use of digital tools for inventory and production management in telecom manufacturing.
- Elucidate the key post-assembly activities required to ensure product quality and compliance.

Duration (in hours): 15:00	Duration (in hours): 25:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Explain the fundamentals of voltage, current, resistance, and power measurement in telecom equipment. • Describe the interpretation of electronic circuit diagrams, schematics, and assembly drawings. • Discuss the assembly and testing of telecom RF circuits, power supplies, and multiplexers. • Determine the identification, pin configuration, and specifications of connectors, cables, and wires used in telecom manufacturing. • Elucidate the role of IoT, RPA, and SMT in modern assembly lines for enhanced efficiency and accuracy. • Explain the application of AR-based interactive tools for assembly training and troubleshooting. • Discuss the implementation of machine vision for defect detection and process validation in telecom production. • Describe the waste management and disposal protocols for hazardous materials in telecom manufacturing.	• Demonstrate how to use ERP systems to track materials and schedule production efficiently. • Show how to log component usage accurately to maintain proper stock levels. • Demonstrate the process of coordinating inventory management with production teams. • Show how to conduct intermediate and final compliance checks for assembly verification. • Demonstrate how to secure the workstation by removing loose components and consumables post-assembly. • Show how to reconcile used components with issued inventory and document discrepancies. • Demonstrate the correct store procedures for returning unused components and tools. • Show how to maintain proper documentation of completed work and inventory usage. • Demonstrate the safe disposal of hazardous and non-hazardous waste in designated areas. • Show how to align assembly processes with ISO/IEC 9001 quality management and 27001 information security standards.
Classroom Aids	
Training Kit - Facilitator's Guide, Participant's Handbook, Presentations and Software, Whiteboard, Marker, Projector, Laptop, Video Films	

Tools, Equipment and Other Requirements

Master Design File, Model with Sub Assemblies (Smartphone), Model with Sub Assemblies (Keypad Phone), High Voltage Tester, RF Testing Instrument, Digital Multimeter, PCB Repair Kit, Hot Air Gun/Blower, Glue Stick Melter/Guns, Air Driller/Miller/Puncher, Lead Screws with Ultra-Fine Pitch.

Module 5: Assembly and Testing of Mobile Phone Accessories

Mapped to TEL/N2510, v1.0

Terminal Outcomes:

- Explain the process of assembling mobile phone accessories while ensuring compliance with industry standards.
- Discuss the key quality inspection and testing methods used in mobile phone accessory manufacturing.
- Describe the essential post-assembly activities required for packaging and finalizing mobile phone accessories.

Duration (in hours): 10:00	Duration (in hours): 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Explain the types, functions, and basic specifications of mobile phone accessories such as chargers, cables, batteries, and audio devices, along with their key components. • Elucidate the fundamental concepts of electronic circuits, including voltage, current, and resistance, and their role in the functionality of mobile accessories. • Discuss the standard procedures for assembling different types of mobile accessories, including handling sequence, safety protocols, and quality considerations. • Describe the basic working principles and safe operation of specialized tools such as crimping tools, ultrasonic welders, and semi-automated/automated assembly systems. • Determine the importance of electrostatic discharge (ESD) safety measures and proper grounding techniques for the safe handling of sensitive electronic components. • Explain the key quality parameters and fundamental methods for real-time defect detection and basic automated testing of assembled accessories. • Discuss common assembly defects, their causes, and basic troubleshooting techniques using visual inspection and simple testing tools. • Describe the relevant industry standards and basic regulatory guidelines, such as BIS certification.	• Demonstrate the process of assembling mobile phone accessories according to technical diagrams and process specifications. • Show how to ensure correct positioning and secure connection of electronic and mechanical parts during assembly. • Demonstrate the use of appropriate tools such as screwdrivers, crimping tools, ultrasonic welders, and automated assembly machines. • Show how to follow ESD-safe handling procedures to prevent static discharge damage to sensitive components. • Demonstrate the application of automation and smart manufacturing techniques such as robotic assembly and AI-assisted quality checks. • Show how to conduct basic visual inspections as per the quality checklist for defects such as misalignment, loose connections, or surface damage. • Demonstrate the use of appropriate measuring tools such as calipers, multimeters, or gauges to verify dimensions and electrical properties. • Show how to test assembled accessories for electrical functionality, durability, and compliance with applicable quality standards.

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| <ul style="list-style-type: none"> • Elucidate the importance of proper waste disposal and safe handling of defective components. • Discuss the role of digital production records and basic ERP system usage for tracking components and production progress. | <ul style="list-style-type: none"> • Demonstrate how to identify and rectify minor assembly errors, escalating critical issues to the supervisor. • Show how to use digital tools and ERP systems to track component usage and production progress. • Demonstrate the appropriate quality checks on assembled accessories to ensure compliance with industry standards. • Show how to follow standard procedures for packaging, labeling, and storing finished accessories to prevent damage. • Demonstrate how to document and report production outputs, quality issues, and inventory usage using digital tracking tools. • Show how to dispose of defective or rejected components following applicable guidelines. • Demonstrate adherence to workplace safety and cleanliness guidelines throughout the process. |
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Classroom Aids

Training Kit - Facilitator's Guide, Participant's Handbook, Presentations and Software, Whiteboard, Marker, Projector, Laptop, Video Films

Tools, Equipment and Other Requirements

Specification Charts (for critical components like ICs, Microphone, Ear Piece, Connectors), Soldering Gun (Temperature Controlled) & Iron Tips, RF Testing Instrument, Solder Mask, Schematics & Designs, Testing Jig (Sample), PCB Repair Kit, Radial Lead Formation Tool, Electronic Components Forming Tool, Electronics Components Storage Cabinet (Small, Medium, and Big – ESD Protective).

Module 6: ESD Safe Procedures and Best Practices

Mapped to TEL/N2508, v4.0

Terminal Outcomes:

- Explain the importance of complying with ESD processes and procedures in assembly operations.

Duration (in hours): 10:00	Duration (in hours): 30:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Explain the necessity of following ESD policies, procedures, and safety guidelines to protect electronic components and ensure product quality. • Elucidate the basics of Electrostatic Discharge (ESD), its sources in the workplace, and its impact on electronic components and product performance. • Discuss the methods for identifying ESD-sensitive parts, packages, and areas, including the use of precautionary labels, packaging, and handling instructions. • Describe the classification and properties of ESD-safe materials, appropriate PPEs, and the use of storage/packaging solutions like trays and bags. • Determine the voltage buildup during routine activities (walking, soldering, cleaning), discharge paths, and associated risks in non-ESD safe areas. • Explain essential grounding techniques and accessories (tables, mats, flooring, wrist straps) for minimizing electrostatic risks, including regular inspections and audits. • Discuss the procedures for conducting ESD audits on workstations, flooring, protective gear, and facility areas, ensuring compliance with ISO 9001 (quality) and ISO 27001 (information security). • Describe proper handling, storage, and stacking methods for ESD-sensitive components, sub-assemblies, and assemblies to prevent failures. • Elucidate the use of ionized air guns, machine vision systems, and smart manufacturing techniques for real-time ESD	• Demonstrate how to follow safe work practices as per the ESD process and protocol. • Show how to properly ground all components in the work area. • Demonstrate the correct use of ESD tools/equipment such as static voltage checkers, wrist straps, shoe grounders, air ionizers, and ionized air guns. • Show how to identify and remove non-essential items and equipment carrying electrostatic generating potential. • Demonstrate the correct method to pack and unpack electronic components in compliance with ESD processes. • Show how to handle semi-finished products after assembly operations using ESD-free trays and conveyor lines. • Demonstrate the use of machine vision systems to identify ESD safety violations and ensure compliance. • Show how to implement advanced grounding techniques to mitigate electrostatic risks. • Demonstrate how to ensure compliance with ISO 27001 standards for information security in ESD-sensitive operations.

monitoring and automated quality inspection.	
Classroom Aids	
Training Kit - Facilitator's Guide, Participant's Handbook, Presentations and Software, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
Personal Protective Equipment (ESD Proof Apron, ESD Wrist Strip, Anti-Electrostatic Floor, Finger Cuts Full & Half, Foot Switch), PCB Cleaning Solution (IPA), EMI/ROHS/WEEE Standard Documents, Preventive Do's & Don'ts Placards from Industry, Internal Quality Control (IQC)/QMS/TQM Covering All Stages, Digital Multimeter.	

Module 7: Sustainable Practices in Telecom Production and Assembly

Mapped to TEL/N9107, v1.0

Terminal Outcomes:

- Explain the process of identifying and segregating recyclable, refurbishable, and hazardous telecom components.
- Discuss the importance of following green manufacturing and sustainable assembly practices in telecom production.
- Describe the correct procedures for disposing of and recycling waste in telecom assembly lines.
- Determine the key environmental and sustainability regulations that must be complied with in telecom manufacturing.

Duration (in hours): 10:00	Duration (in hours): 20:00
Theory – Key Learning Outcomes	Practical – Key Learning Outcomes
• Explain the organization's sustainability policies and goals. • Elucidate the key aspects of EPR guidelines, ISO 14001, and e-waste disposal laws. • Discuss the methods for identifying recyclable and hazardous components in telecom production. • Describe green manufacturing practices, including energy-efficient tools, lead-free soldering, and automation. • Explain the proper handling, storage, and disposal methods for e-waste. • Determine techniques for reducing material wastage without impacting production quality. • Discuss the safe and responsible handling of hazardous and non-hazardous materials in telecom manufacturing. • Describe environmental impact assessment techniques for telecom production. • Explain the documentation requirements for sustainability audits and compliance tracking.	• Demonstrate how to inspect, categorize, and store telecom components such as PCBs, cables, batteries, and plastic casings for appropriate processing, ensuring compliance with EPR guidelines. • Show how to maintain an inventory of recyclable and hazardous materials while tracking waste management and reporting improper disposal practices. • Demonstrate the use of energy-efficient equipment, tools, and automated systems to reduce carbon footprint and optimize material, water, and electricity consumption. • Show how to follow low-emission soldering and lead-free assembly processes while ensuring compliance with ISO 14001 (Environmental Management System). • Demonstrate the process of maintaining and calibrating energy-efficient machinery to ensure optimal performance and minimize environmental impact. • Show how to properly dispose of hazardous waste (e.g., lithium batteries, chemical residues) and deposit non-hazardous recyclable materials (e.g., plastics, aluminum, copper) in designated collection areas. • Demonstrate how to maintain documentation for waste disposal, conduct

	periodic waste audits, and identify opportunities for further waste reduction. • Show how to coordinate with authorized e-waste recyclers to ensure proper processing and disposal of materials. • Demonstrate how to follow national and international environmental laws, participate in sustainability audits, check for adherence to guidelines, and implement corrective actions based on assessments.
Classroom Aids	
Training Kit - Facilitator's Guide, Participant's Handbook, Presentations and Software, Whiteboard, Marker, Projector, Laptop, Video Films	
Tools, Equipment and Other Requirements	
Lead-Free Solder Paste (with/without Flux), EMI/ROHS/WEEE Standard Documents, Internal Quality Control (IQC)/QMS/TQM Covering All Stages, Adhesives and Cleaning Products, 5S Items, Charts, Checklists, PCB Cleaning Solution (IPA), Stencil Sets & Racks, Conveyor Pallet, Specification Charts (for critical components like ICs, Microphone, Ear Piece, Connectors).	

Module 8: Employability Skills (30 Hours)

Mapped to DGT/VSQ/N0101, v1.0

Duration (in hours): 30:00

Key Learning Outcomes

After completing this programme, participants will be able to:

Introduction to Employability Skills Duration: 1 Hour

1. Discuss the importance of Employability Skills in meeting the job requirements

Constitutional values - Citizenship Duration: 1 Hour

2. Explain constitutional values, civic rights, duties, citizenship, responsibility towards society etc. that are required to be followed to become a responsible citizen.
3. Show how to practice different environmentally sustainable practices

Becoming a Professional in the 21st Century Duration: 1 Hour

4. Discuss 21st-century skills.
5. Display a positive attitude, self-motivation, problem-solving, time management skills and continuous learning mindset in different situations.

Basic English Skills Duration: 2 Hours

6. Use appropriate basic English sentences/phrases while speaking

Communication Skills Duration: 4 Hours

7. Demonstrate how to communicate in a well-mannered way with others.
8. Demonstrate working with others in a team

Diversity & Inclusion Duration: 1 Hour

9. Show how to conduct oneself appropriately with all genders and PwD
10. Discuss the significance of reporting sexual harassment issues in time

Financial and Legal Literacy Duration: 4 Hours

11. Discuss the significance of using financial products and services safely and securely.
12. Explain the importance of managing expenses, income, and savings.
13. Explain the significance of approaching the concerned authorities in time for any exploitation as per legal rights and laws

Essential Digital Skills Duration: 3 Hours

14. Show how to operate digital devices and use the associated applications and features, safely and securely
15. Discuss the significance of using the internet for browsing, and accessing social media platforms, safely and securely

Entrepreneurship Duration: 7 Hours

16. Discuss the need for identifying opportunities for potential business, sources for arranging money and potential legal and financial challenges

Customer Service Duration: 4 Hours

17. Differentiate between types of customers

18. Explain the significance of identifying customer needs and addressing them

19. Discuss the significance of maintaining hygiene and dressing appropriately

Getting ready for Apprenticeship & Jobs Duration: 2 Hours

20. Create a biodata

21. Use various sources to search and apply for jobs

22. Discuss the significance of dressing up neatly and maintaining hygiene for an interview

23. Discuss how to search and register for apprenticeship opportunities

Module 9: On-the-Job Training

Mapped to Line Assembler - Telecom Products

Mandatory Duration (in hours): 150:00	Recommended Duration (in hours): 00:00
Location: On-Site	
Terminal Outcomes • Demonstrate the efficient arrangement of components and the assembly bench before starting assembly operations. • Show how to select and arrange tools and equipment optimally for an assembly task. • Demonstrate the preparation of workspaces for advanced assembly methods, considering key influencing factors. • Show how to assemble telecom devices/products in a production line following industry best practice. • Demonstrate how automation and smart manufacturing methods enhance efficiency in telecom device assembly. • Show how to utilize digital tools for inventory and production management in telecom manufacturing. • Demonstrate the execution of key post-assembly activities to ensure product quality and regulatory compliance. • Show how to assemble mobile phone accessories while adhering to industry standards and best practices. • Demonstrate the application of key quality inspection and testing methods used in mobile phone accessory manufacturing. • Show how to perform essential post-assembly activities for packaging and finalizing mobile phone accessories. • Demonstrate compliance with ESD processes and procedures during assembly operations. • Show how to identify and segregate recyclable, refurbishable, and hazardous telecom components effectively. • Demonstrate adherence to green manufacturing and sustainable assembly practices in telecom production. • Show how to execute correct procedures for disposing of and recycling waste in telecom assembly lines. • Demonstrate compliance with key environmental and sustainability regulations in telecom manufacturing. • Show how to perform tasks according to quality standards in telecom infrastructure projects. • Demonstrate the steps required to maintain a safe, healthy, and secure working environment during telecom operations. • Show how to implement material, energy, and electricity conservation practices in telecom projects. • Demonstrate effective waste management and recycling techniques in telecom infrastructure work.	

Annexure

Trainer Requirements

Trainer Prerequisites						
Minimum Educational Qualification	Specialisation	Relevant Industry Experience		Training Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate	Electronics and Communication /Telecom/ Information Technology/ Computer Science and other relevant fields	5	Optical Fiber Domain			

Trainer Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Line Assembler - Telecom Products” mapped to QP: “TEL/Q4200, v5.0”. Minimum accepted score is 80%.	Recommended that the Trainer is certified for the Job Role: “Trainer (VET and Skills)”, mapped to the Qualification Pack: “MEP/Q2601, v2.0”. The minimum accepted score as per MEPSC guidelines is 80%.

Assessor Requirements

Assessor Prerequisites						
Minimum Educational Qualification	Specialization	Relevant Industry Experience		Training/Assessment Experience		Remarks
		Years	Specialization	Years	Specialization	
Graduate	Electronics and Communication /Telecom/ Information Technology/ Computer Science and other relevant fields	5	Optical Fiber Domain			

Assessor Certification	
Domain Certification	Platform Certification
Certified for Job Role: “Line Assembler - Telecom Products” mapped to QP: “TEL/Q4200, v5.0”. Minimum accepted score is 80%.	Certified for the Job Role: “Assessor (VET and Skills)”, mapped to the Qualification Pack: “MEP/Q2701, v2.0”, with a minimum score of 80%.

Assessment Strategy

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SDSM/SIP or email
- Assessment agencies send the assessment confirmation to VTP/TC looping SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process & records

2. Testing Environment:

- Confirm that the centre is available at the same address as mentioned on SDMS or SIP
- Check the duration of the training.
- Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
- If the batch size is more than 30, then there should be 2 Assessors.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
- Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
- Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
- Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:

- Question papers created by the Subject Matter Experts (SME)
- Question papers created by the SME verified by the other subject Matter Experts
- Questions are mapped with NOS and PC
- Question papers are prepared considering that levels 1 to 3 are for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
- Assessor must be ToA certified & trainer must be ToT Certified
- Assessment agency must follow the assessment guidelines to conduct the assessment

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location
- Center photographs with signboards and scheme specific branding
- Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
- Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos

5. Method of verification or validation:

- Surprise visit to the assessment location
- Random audit of the batch
- Random audit of any candidate

6. Method for assessment documentation, archiving, and access

- Hard copies of the documents are stored

- Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage
- Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

The trainee will be tested for the acquired skill, knowledge and attitude through formative/summative assessment at the end of the course and as this NOS and MC is adopted across sectors and qualifications, the respective AB can conduct the assessments as per their requirements.

References

Glossary

Term	Description
Declarative Knowledge	Declarative knowledge refers to facts, concepts and principles that need to be known and/or understood in order to accomplish a task or to solve a problem.
Key Learning Outcome	Key learning outcome is the statement of what a learner needs to know, understand and be able to do in order to achieve the terminal outcomes. A set of key learning outcomes will make up the training outcomes. Training outcome is specified in terms of knowledge, understanding (theory) and skills (practical application).
OJT (M)	On-the-job training (Mandatory); trainees are mandated to complete specified hours of training on site
OJT (R)	On-the-job training (Recommended); trainees are recommended the specified hours of training on site
Procedural Knowledge	Procedural knowledge addresses how to do something, or how to perform a task. It is the ability to work, or produce a tangible work output by applying cognitive, affective, or psychomotor skills.
Training Outcome	Training outcome is a statement of what a learner will know, understand and be able to do it upon the completion of the training.
Terminal Outcome	Terminal outcome is a statement of what a learner will know, understand and be able to do upon the completion of a module. A set of terminal outcomes help to achieve the training outcome.

Acronyms and Abbreviations

Term	Description
NCVET	National Council for Vocational Education and Training
QP	Qualification Pack
MC	Model Curriculum
NSQF	National Skills Qualification Framework
NSQC	National Skills Qualification Committee
NOS	National Occupational Standards
NCO	National Classification of Occupations
ES	Employability Skills
TSSC	Telecom Sector Skill Council
TRAI	Telecom Regulatory Authority of India
PCB	Printed Circuit Board
RPA	Robotic Process Automation
ERP	Enterprise Resource Planning
AR	Augmented Reality
IoT	Internet of Things
SMT	Surface Mount Technology
ESD	Electrostatic Discharge
EPR	Extended Producer Responsibility