

SMART HOME TECHNICIAN

Reference Number: ST0464

Details of standard

Occupation title

Smart Home Technician (SHT)

Generic job titles recognised across the industry

Smart home installation technician /Residential Network Installer, Audio/ Video installer

Occupational Profile

The growth of home networks connected to the internet and the level of communication between people and devices has created a new technological landscape in which almost every aspect of our homes can become one home technology ecosystem. From our audio, video, home cinema, and security systems to our heating, air conditioning, and ventilation systems, and even our window blinds, doors, and gates, our home environments are integrating into single, controllable home experiences.

Today's Smart Home Technician (SHT) is the professional who installs, configures, and maintains this ecosystem. Their work objective is to deliver a simple, secure, reliable, and sustainable user experience according to industry best practice and within project timelines and scope. The SHT will work on construction sites and in homes with senior colleagues such as a Senior SHT, Smart Home Designer, Networking Specialist, or Home Theatre Designer to create integrated systems using a variety of equipment and services from other suppliers. These projects will vary in size and scale from small homes to luxury mansions, yachts, multi-dwelling developments, and will range from simple component installation to creating a complex, electronic integrated systems environment.

The SHT will be able to install, configure, calibrate, and troubleshoot a range of electrically connected Digital Home Technologies or Separated Extra-Low Voltage (SELV) devices. To do this, the SHT will have a good working knowledge of common hardware, software, IP networking, audio & visual distribution, and RF systems and user interfaces. Additionally, they will have appropriate personal skills to deal with home owners and colleagues in associated construction trades, such as electricians, IT professionals, Security, Access Control, Fire and Intruder Alarm companies, Lighting designers and Installers, professional light and sound suppliers, Commercial AV companies

Knowledge Area

Knowledge requirement

Installation documentation

Technical drawings, product specifications, wiring schedules, testing specifications and schematics.

Architectural documentation

Plans, elevations, cross-sectional drawings, isometrics, landscape drawings and Mechanical & Electrical drawings for other services.

Project documentation

Project plans, works orders, change notes, purchase orders, sign-off sheets and performance / functional specifications.

Health and safety

Construction and electrical health and safety specific to personal safety and accident prevention. Includes Safe Isolation & Accessory Replacement.

Electrical Principles

Basic electrical theory (Ohms law, power law, series and parallel circuits, Inductance & capacitance), signal types and modulation methods.

Data / IP networking

Network connected devices (e.g. typical domestic routers, network switches and wireless access points), basic network security and data protection.

Automation & control

Control hardware (e.g. keypads, handsets, apps, control processors & interface standards) and building control systems (e.g. lighting control, HVAC control).

Access control and security systems

Access control hardware e.g. CCTV cameras and recorders, door intercoms, access control keypads, locks and sensors)

Digital Entertainment systems

Audio, video and entertainment hardware, interfaces and content sources (e.g. speakers, amplifiers, processors, disc players, terrestrial & satellite broadcast television & radio, streaming devices, video displays, switching and distribution systems).

Digital Broadcast Reception Systems

Terrestrial & satellite broadcast television, analogue and digital radio receivers.

Equipment placement & mounting

Construction types, fixing methods, cable running, racks, brackets and other mounting hardware.

Digital Communication systems

Communication devices (e.g. telephones, smart phones, tablets, laptops, intercoms etc.)

Environmental & energy systems	Environmental and energy management systems (e.g. HVAC, equipment ventilation and temperature / humidity control, smart meters, battery backup and power storage).
Structured wiring, cables and connectors for digital infrastructure	Structured wiring and typical connectors used in smart home engineering to PAS 35491 (e.g. RJ series, coax connectors, HDMI and other AV types), wired Ethernet to IEEE 802.3 and wireless networks to IEEE 802.11.
System verification and testing	Applicable system specifications, standards, hardware, software, firmware and test equipment.
Construction methods	Construction methods, project stages, MEP (Mechanical Electrical and Plumbing) materials, equipment & tools.
Associated trades & companies	Key job roles and responsibilities of associated trades, suppliers, customers and other officials.

Skills Area

General documentation

Skills Requirement

Using documentation keys, scales and revision numbers.

Using documentation

Reading and following installation, architectural and project documentation.

Health and safety

Following electrical and constructional health and safety procedures and policies for human safety and accident prevention.

Electrical Systems

Safe isolation & accessory replacement.

Data / IP networking

Connecting and configuring various network connected devices (e.g. typical domestic routers, network switches and wireless access points), securing a network using physical and cryptographic means.

Automation & control

Installing and testing typical control hardware.

Access control and security systems

Installation, configuration and testing of typical access control hardware.

Digital Entertainment systems

Installing, configuring, troubleshooting, maintaining and basic calibration of audio, video, and home entertainment systems.

Digital Entertainment Systems

Installation and testing of terrestrial & satellite broadcast television, analogue and digital radio receivers.

Equipment placement & mounting

Placing and mounting typical hardware of all types listed within the individual subject areas of this standard.

Communication systems

Installing, configuring and testing communication devices.

Environmental & energy systems

Installing equipment ventilation and battery backup system (UPSs) and interfacing with HVAC and other energy management systems.

Structured wiring, cables and connectors for digital infrastructure

Installing and testing structured wiring systems using verification tools to PAS 35491.

System verification and testing

Testing, fault finding and troubleshooting cabling infrastructure, hardware, software, and firmware. Using applicable test equipment to check compliance with agreed specifications.

Construction methods

Making modifications to existing construction (e.g. drilling, channelling, cable running, choosing and using appropriate anchoring devices).

Troubleshooting

Troubleshooting basic systems to rectify simple faults.

Behaviours

Behaviour Requirement

Communication	To make effective use of personal communication skills with colleagues, customers, third parties and associate companies using relevant, concise language in line with organisational style/culture.
Honesty & integrity	To instigate, develop and maintain trust with colleagues, customers and related trades building credibility and confidence. To behave in an ethical manner and in accordance with local laws and directives.
Attitude	To be positive and pro-active at all times. Ability to work independently and take responsibility.
Continual learning	To be ready to learn new skills, gain new knowledge and continually appraise new technologies. Be well informed of new legislation/regulations and apply these correctly.
Professionalism	Maintain a productive, professional, respectful and secure working environment when working alone or with others.
Safe and sustainable working	Work in a healthy and safe manner and adhere to local rules and guidelines. Use resources wisely and take into account environmental, social and economic factors when working.
Customer Service	To deliver excellent customer service, providing the right solutions to meet the customer's expectations within the agreed timeline.

Duration

Typically, 18 - 24 months

Qualifications

Apprentices must achieve level 2 English & maths prior to taking the end-point assessment. For those with an education, health and care plan or a legacy statement the apprenticeships English & maths requirement in Entry Level 3 and British Sign Language qualification are an alternative to English qualifications for whom this is their primary language.

Level

Level 3 Apprenticeship

Review date

After three years

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