

Level 2 Audio/video installation for the digital home technology integrator (7575-006)

Assignment guide for Candidates Assignment B



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Level 2 Audio/video installation for the digital home technology integrator (7575-006)

Assignment B

Introduction – Information for Candidates

About this document

This assignment comprises all of the assessment for Level 2 Audio/video installation for the digital home technology integrator (7575-006).

Health and safety

You are asked to consider the importance of safe working practices at all times.

You are responsible for maintaining the safety of others as well as your own. Anyone behaving in an unsafe fashion will be stopped and a suitable warning given. You will not be allowed to continue with an assignment if you compromise any of the Health and Safety requirements. This may seem rather strict but, apart from the potentially unpleasant consequences, you must acquire the habits required for the workplace.

Time allowance

The recommended time allowance for this assignment is **three** hours.

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Candidate instructions

Candidates are advised to read all instructions carefully before starting work and to check with your assessor, if necessary, to ensure that you have fully understood what is required.

Time allowance: 3 hours

Assignment set up: A scenario is provided below for this assignment.

This assignment is made up of **seven** tasks

- **Task A – Plan and document a local area network to meet a customer's needs**
- **Task B – Install and configure a wired or wireless network in a home environment**
- **Task C – Installing and configure the hardware and software required for sharing A/V media content over a network**
- **Task D – Configure the hardware and software required for VoIP**
- **Task E – Install and configure audio components**
- **Task F – Install and configure a home theatre system according to the customer's requirements and ensure it operates correctly.**
- **Task G – Troubleshoot networks and AV components**

Scenario

You are employed by a company called QHL which specialises in installing networked video and audio systems. For a small charge the company arranges site visits to potential customer's premises so that a digital systems installer can discuss requirements, assess the site and recommend a suitable solution.

The customer has just acquired a five room brick built bungalow consisting of a bedroom, bathroom, a dining room, kitchen and lounge. The bungalow also has an attached double garage linked by a door in the kitchen. During your site visit you have established:

- The double garage has previously been converted ready to become a home theatre;
- Other than aerials and cable for receiving digital TV and FM transmissions (with outlets in the lounge and home theatre rooms). No other cabling or devices have been installed in the bungalow;
- The customer requires the newly converted home theatre room to be installed with suitable A/V equipment and devices.
- The sound system in the home theatre needs to be top of the range;
- The home theatre surround sound system must also be capable of receiving FM broadcasts;
- Broadband is delivered by the ISP over the telephone landline;
- A suitable router is required that also has the facility to physically connect to external media storage devices for media streaming;

- Two PCs are required to share files and access broadband, not only from every room in the bungalow but also from the small garden at the rear of the bungalow;
- An HDTV is required for the lounge that has networking capabilities so that it can receive streamed media.

Your role now is to prepare a solution to the customer's requirements. You will need to install, test and troubleshoot the installation.

Task A – Plan and document a local area network to meet a customer's needs

Please use the Answer Sheet provided to complete Tasks A2 to A6

- 1 Using the plan provided by the Assessor, detail the following:
 - the location of each device
 - the proposed type and layout of transmission media used
 - location of data, phone and power sockets
 - IP addresses and subnet masks to be used by each device
- 2 Produce a detailed report identifying the following:
 - main technical specifications of the products
 - list the sources used to find the specifications
 - cable lengths and connectors
 - any software and device drivers required
 - any architectural considerations that affect the choice of transmission media
- 3 Give **two** reasons why it is important to plan and document customer installations.
- 4 Identify **three** additional software types that will be required on an AV network.
- 5 Briefly describe the function of the following:
 - IP Addressing
 - Subnetting
 - DHCP
 - DNS.
- 6 State **three** different measurements that can be taken using a multimeter.

Task B – Install and configure a wired or wireless network in a home environment

- 1 Install and configure the router and security features. Connect to the broadband and verify Internet connection is established. (The assessor will provide the configuration information.)
- 2 Configure **both** PCs to connect to the wireless network.
- 3 Create a test file on **one** PC and share it over the network.
Access this file from the second PC.

- 4 Name **two** common electrical appliances that are known to sometimes cause interference on Wi-Fi networks.

Task C – Installing and configure the hardware and software required for sharing A/V media content over a network

- 1 Connect the external storage device which contains multimedia content to the router.
- 2 Configure the lounge TV to connect to the network.
- 3 Access the multimedia content on the storage device via the TV interface.
- 4 **Please use the Answer Sheet provided to complete Task C4**
Identify the **two** standalone types of transmission media which are compatible with Digital Right Management.

Task D – Configure the hardware and software required for VoIP

- 1 Install videoconferencing software (eg Skype) and associated hardware. Test the connection. Access manufacturer's website. Check for and download software updates as required.
- 2 **Please use the Answer Sheet provided to complete Task D2**
When connecting an ADSL modem, explain which device is required to allow simultaneous internet and telephone access.

Task E – Install and configure audio components

- 1 Install the sound system ensuring that it meets the customer's requirements and that it functions correctly.
- 2 **Please use the Answer Sheet provided to complete Task E2**
Briefly explain why you have to consider Ohm's Law when installing a surround sound system.
- 3 **Install** and calibrate a **home theatre video** system ensuring that it meets the customer's requirements and that it functions correctly.
- 4 List **three** options available for displaying multimedia transmissions.

When you have finished working:

- Sign each document above your name and label all removable storage media with your name.
- Hand all paperwork and removable storage media to your assessor.

If the assignment is taken over more than one period, all paperwork and removable media must be returned to the test supervisor at the end of each sitting.

End of assignment

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