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SATELLITE DISH INSTALLER

LEARNER GUIDE

National Vocational Certificate Level 4

Version 1 - October, 2019

NAVTTC

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    - This is the main content of your learner's guide with detail of the knowledge and skills (practical activities, projects, assignments, practices etc.) you will require to achieve learning outcomes stated in the curriculum
    - This section will include examples, photographs and illustrations relating to each learning outcome
- **Summary of modules**:
    - This contains the summary of the modules that make up your learner's guide
- **Frequently asked questions**:
    - These have been added to provide further explanation and clarity on some of the difficult concepts and areas. This further helps you in preparing for your assessment.
- **Multiple choice questions for self-test**:
    - These are provided as an exercise at the end of your learner's guide to help you in preparing for your assessment.

SATELLITE DISH INSTALLER

Module-7
LEARNER GUIDE
National Vocational Certificate Level 4

Version 1 - October, 2019

Module 7: 0619001088 Perform Troubleshooting

Objective of the module: The objective of this module is to provide skills and knowledge related to Check Signals, Check Power Supply, check Weather Effects. Check Interference Effects, Diagnose Software Fault and Diagnose Hardware Fault.

Duration **200** hours **Theory:** **10** hours **Practical:** **190** hours

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
LU1: Check Signals	**The student will be able to:** 1. Check LNB with satellite finder 2. Check co-axial cable continuity for signals with multi-meter/satellite finder 3. Check Diseqc switch/splitter with satellite finder 4. Check output down	• Describe the method to check IF connectors • Demonstrate the method to check signal strength with satellite finder • Explain the method to check Diseqc switch/splitter faults • Describe the method to check receiver IF output **Practical-1** Check signal strength at LNB and receiver	Learner guide Multi-media projector Handouts Videos **Tools and Equipment** • Satellite finder • Multi-meter • System Software

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
	converter of receiver with multi-meter		
LU2: Check Power Supply	**The student will be able to:** 1. 1. Check receiver power supply 2. Check LNB power supply from receiver 3. Check power supply of actuator stepper motor for revolving dish 4. Check voltage of limit switches 5. Check low voltage problem	• Describe the procedure to check power supply of receiver and LNB • Explain the method to check power supply of actuator, stepper motor and revolving motor • Describe the voltage range required for switches **Practice-1** Check power supply of LNB, receiver, actuator, and stepper motor.	Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**
LU3: Check Weather Effects	**The student will be able to:** 1. Check LNB/LNA overheating effects 2. Check rusty cables and connectors 3. Check short circuit of LNB/LNA due to thunder/lighting storm 4. Check wind effects	Describe the effect of heat/Temp on LNB/LNA Demonstrate the method of health check of LNB and LNA Explain the effect of wind/rain on antenna system **Practice-1** Prepare health check report of antenna system installed commercially	Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**
LU4: Check Interference Effects	**The student will be able to:** 1. Check no noisy signal in surrounding 2. Check no mobile tower in surrounding	Describe effect of noise on antenna signals Explain effect of cellular tower and power line on dish antenna performance Brief building and trees effect on dish antenna system	Learner guide Multi-media projector Handouts Videos

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
	3. Check no high-tension transmission line **4.** Check no building/trees obstruction Check unwanted signals due to reflection, refraction, diffraction and scattering	Describe signal reflection, diffraction and scattering principals **Practice-1** Check Interference Effect on antenna system installed commercially	**Tools and Equipment as (LU1)**
LU5: Diagnose Software Faults	**The student will be able to:** **1.** Check stuck picture fault **2.** Check if receiver/remote is not working **3.** Check if the receiver is on standby mode **4.** Check receiver hang fault, 5. Check delay in sound &picture 6. Check stuck on the main menu	• Demonstrate check list for each tool and equipment available in inventory. **1. Describe different types of faults in antenna system** • **Stuck picture** • **Receiver not working** • **Delay in sound and picture** **Practice-1** Troubleshoot different faults in antenna system installed commercially	• Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**
LU6: Diagnose Hardware Faults	**The student will be able to:** 1. Check continuity of power cables 2. Check continuity of input/output cables (AV, VGA, HDMI, S-video, Scart) 3. Check continuity of input/output ports 4. Diagnose miss	**Describe different hardware faults for dish system** **Continuity of cables** **Miss scanning** **Auto change channels** **Receiver over heating** **Sound noise**	• Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
	scanning fault 5. Diagnose auto change of channels **6.** Diagnose receiver overheating fault **7.** Diagnose sound noise fault	**Practice-1** Troubleshoot different hardware faults in antenna system installed commercially	

Examples and illustrations

Video	Link
	Troubleshoot Signal Loss **https://www.youtube.com/watch?v=Hnzp8BhYfyo**

Satellite Dish Troubleshooting:

(Link: https://turbofuture.com/home-theater-audio/Detailed-Troubleshooting-Guide-on-how-to-fix-Dish-Satellite-problems)

Here are some common problems encountered with satellite TV systems, with troubleshooting steps:

- No picture on any set
- No picture on any channel
- Missing channels on a Dish or Echostar box
- Poor AV quality
- Remote not working right
- Channels changing by themselves

No Picture on Any Set

- Check all receivers and TVs in the house that are connected to the satellite system. If at least two devices have no picture at all, there is a problem with the signal. Don't troubleshoot one device; call your satellite provider instead.
- If you have a single device and it isn't working, check the signal level there. Select "Menu," then 6, then 1, then 1, then "QAM Setup," and you should see a moving signal bar at the bottom of the screen. If the signal is over 60, the problem is not the signal—that is, it's not a no-picture-on-any set situation—but something else. Continue troubleshooting.
- If the signal is below 60, try bringing it up. On the same screen, change the frequency to 459 and see if the signal strength changes. If that doesn't work, your state may be using a frequency other than 459; to try to find it, you can start at 111 and just go up one at a time till the signal changes.
- If this doesn't work, call your satellite provider.

One Receiver: No Picture on Any Channel

This indicates the cable box is not acquiring a satellite signal.

- Make sure the TV is tuned to the correct input or channel, based on the type of cable that connects the set-top box (STB) to the TV.
- Coaxial: Channel 3.
- Composite: Generally AV 1-3, Composite, or Video 1-3.
- S-Video: Generally AV 1-3, S-Video, or Video 1-3.
- Component: Generally Comp 1-3, Component 1-3, or Video 1-7.
- DVI: Generally DVI or Video 1-7.
- HDMI: Generally HDMI1-3 or Video 1-7.

Press "Power" or "System Info" on the receiver. If it responds to that, it might be just the remote that's not working right.

Reset the receiver using the front panel. Hold the Power button on the front of the receiver until all lights on the box go out, then let go.

Check your connections. Make sure all cables are pushed in all the way.

Powercycle the receiver (turn it off, wait a minute, then turn it on again).

Missing Channels on a Dish or Echostar Box

Make sure you are in either "All Chan" or "All Sub" in the Guide.

If the channels aren't in the list at all, check transponders and signal level.

If you're missing transponders, you may need to run a QAM Scan (if that is outside your skillset, call your satellite provider.)

Check the signal strength as in Step 1 above ("Menu" > 6 > 1 > 1). Remember to set the frequency to 459 (or whatever other frequency your state uses). If the signal level is below 60, reseat the coaxial.

Don't bypass splitters. The dual-tuner receivers need them to function properly.

Before calling Dish, open the "System Info" screen and take down:

Model number of the receiver
Software version
Receiver number
Smartcard number

If the channels are colored red in the Guide, be sure that you are paying for those channels.

If you are in fact subscribed to those channels, contact Dish to make sure your account hasn't been turned off for non-payment.

Poor Picture Quality on Dish or Echostar

If you have multiple receivers, check if the problem happens on more than one. If it does, don't troubleshoot a single receiver.

If everything coming from the receiver looks fuzzy, check the connections between the TV and receiver.

Set the frequency to 459 (or the frequency your state uses), wait a few moments, then read the signal strength again.

If the signal strength stays below 60, unplug the receiver's power cord, reseat the coaxial connections between the receiver and the wall jack, then plug the receiver back in.

If the signal strength is good but you're missing transponders, run a QAM Scan or call your satellite provider.

SATELLITE DISH INSTALLER

Module-8
LEARNER GUIDE
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Module 8: 0619001089 Conduct Site Survey

Objective of the module: The objective of this module is to provide skills and knowledge related to Document Customer Demand, Select Location. Check Environmental factors, Inspect Cable Routing, Locate Satellite and Prepare Feasibility Report.

Duration **200** hours **Theory:** **10** hours **Practical:** **190** hours

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
LU1: Document Customer Demand	**The student will be able to:** 1. Enlist desired channels 2. Prepare estimated budget as per demand 3. Keep record of customer demand	Describe satellite system Explain available channels Describe to prepare budget Demonstrate report writing of customer demand **Practical-1** Prepare report of customer demand for required installation	Learner guide Multi-media projector Handouts Videos **Tools and Equipment** • Measuring tape • Compass • Satellite finder • Report format
LU2: Select Location	**The student will be able to:** 1. 1. Ensure availability of desired channels at installation area 2. Select appropriate place for dish installation as per customer demand 3. Ensure local regulation in installation area 4. Ensure obstruction-free	Describe suitable location of site installation for maximum reception Explain local Government rule and regulation for antenna system installation **Practice-1** Select model location for installation of antenna system	Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
	area for dish installation		
LU3: Check Environmental factors	**The student will be able to:** 1. Take weather history (wind pressure, humidity, temperature, rain and snow fall) of dish installation area 2. Select best quality of dish and dish components as per wind pressure, snow fall and temperature 3. Ensure strong foundation for dish stand against wind pressure	Describe environmental factors which affect transmission of antenna system Explain different models and vendors of dish system in market. Brief about required standard of foundation of antenna system **Practice-1** Chose best quality of dish available in market and model foundation for antenna system installation	Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**
LU4: Inspect Cable Routing	**The student will be able to:** 1. Follow building rules and regulations 2. Draw layout for cable routing 3. Measure length of cable **4.** Identify cable gauge **5.** Identify line amplifier if required	Describe cable routing standards for installation Explain cable requirement for installation of dish system **Practice-1** Prepare layout diagram of cable routing for model site	Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**
LU5: Locate Satellite	**The student will be able to:** 1. Ensure tools and equipment 2. Identify East-West directions with	**Describe tools requirement required to locate satellite** **Explain types of poles**	• Learner guide Multi-media projector Handouts Videos

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
	compass 3. Check availability of satellite as per customer demand in dish installation area 4. Identify dish size for the availability of strong signals of the desired satellite	**Practice-1** Locate satellite for model site	**Tools and Equipment as (LU1)**

Examples and illustrations

Video	Link
	Satellite ground station build - video 3 - surveying https://www.youtube.com/watch?v=4pp5WZRNb8Y

Customer Needs Identification

(Link: https://sites.tufts.edu/eeseniordesignhandbook/2013/customer-needs-identification-2/)

Abstract

Customer Needs Identification is the process of determining what and how a customer wants a product to perform. Customer Needs are non-technical, and they reflect the customers' perception of the product, not the actual design specifications, although frequently they are closely related. This chapter will cover methods of Customer Needs Identification, a case study, and some direct applications of identifying Customer Needs.

Background

Definition

Customer Needs Identification is the process of determining what and how a customer wants a product to perform. Customer Needs are non-technical, and they reflect the customers' perception of the product, not the actual design specifications, although frequently they are closely related.

Exploration

Customer Needs Identification has two major goals:

- To keep the product focused on customer needs
- To identify not just the explicit needs of the customer, but also the latent needs

These customer requirements should be independent of any particular product or potential solution. After all, it's only after identifying Customer Needs that one can begin to meet them.

So with that in mind, the goal is to find out precisely what the customer wants. Here is a four-step method for identifying Customer Needs:

- Gather raw data from customers
- Interpret the data in terms of customer needs
- Organize the needs
- Reflect on the Process

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Module-9
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Module 9: 0619001086 Implement Network Security

Objective of the module: The objective of this module is to provide skills and knowledge related to developnetwork server, Connect Receiver with Network, Provide Scrambled Services, Apply Parental Lock and Follow Security Protocols as per Govt. Policies

Duration **150** hours **Theory:** **10** hours **Practical:** **140** hours

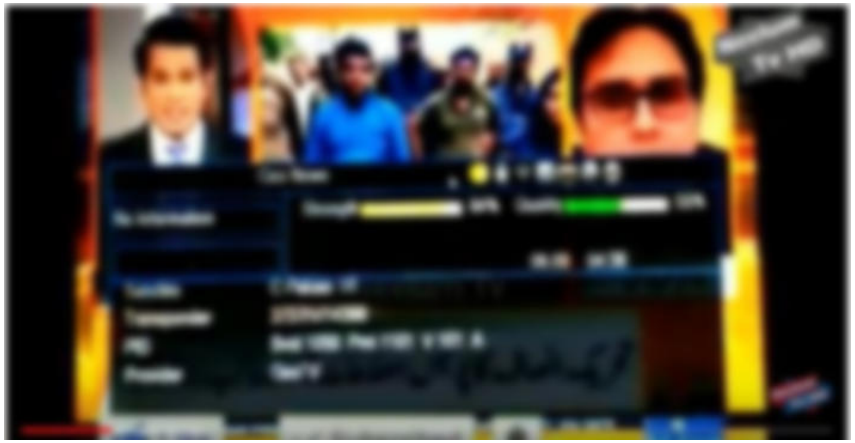
Learning Unit	Learning Outcomes	Learning Elements	Materials Required
LU1: Develop Network	**The student will be able to:** 1. Connect one dish with multiple receivers 2. Connect multiple dishes with one receiver 3. Connect one receiver with multiple displays 4. Connect multiple satellite receivers with multiple dishes.	1. Demonstrate Network topology. • Bus • Mesh • Star 2. Demonstrate the types of splitters. • 2-ports • 3-ports • 4-ports • 5 ports 3. Demonstrate the types of DiSEqC switch. • 2-ports • 3-ports • 4-ports • 5 ports 4. Demonstrate the types of display ports. • VGA • HDMI • AV • RF	Learner guide Multi-media projector Handouts Videos **Tools and Equipment** • Different gauges of coaxial cables. • Multiple ports splitters. • Display cables. • Cable stripper • Knife • Pliers • Cable tester

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
		• Scart 5. Demonstrate using combination of DiSEqC switches and splitters. **Practical-1** Perform Installation of single dish with multiple receivers. **Practical-2** Perform Installation of multiple dishes with one receiver. **Practical-3** Perform installation ofone receiver with multiple displays. **Practical-4** Perform Installation of multiple dishes with multiple receiver.	
LU2: Connect Receiver with Network	**The student will be able to:** 1. Connect satellite receiver with internet through Wi-Fi or Ethernet cable 2. Connect receiver with multiple displays through video transmitter 3. Connect video transmitter with UHF/VHF antenna	1. Demonstrate the receiver connectivity with Ethernet and WIFI. 2. Demonstrate how to check the MAC address of receiver. 3. Describe the types and range of video transmitters. • Short range • Medium range • Long range 4. Describe the types of antenna. • UHF • VHF **Practical-1**	Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
		Install satellite receiver with internet through Wi-Fi or Ethernet cable **Practical-2** Connect receiver with multiple displays through video transmitter and configure video transmitter. **Practical-3** Connect video transmitter with UHF/VHF antenna.	
LU3: Provide Scrambled Services	**The student will be able to:** **1.** Connect satellite receiver with server **2.** Open receiver main menu **3.** Select desired cam **4.** Insert card in the socket to descramblegiven data.	Describe service provider server. Describe CA system Explain different types of Cam modules Describe Smart card/CA card. **Practical-1** Demonstrate the reception of a scrambled channel	Learner guide Multi-media projector Handouts Videos **Tools and Equipment** • CA cards • Cam Modules • Satellite Receiver
LU4: Apply Parental Lock	**The student will be able to:** **1.** Open receiver main menu **2.** Select channel edit option **3.** Select parental lock option **4.** Change the default password **5.** Add channels in the parental lock	**1.** Browse Menu and select the Parental Lock option **2.** Describe method to change default password. **3.** Describe the method to add channels in the parental lock **Practical-1** Demonstrate the use of parental lock in satellite receiver.	Learner guide Multi-media projector Handouts Videos **Tools and Equipment** • Different types of Satellite Receiver with remotes • Universal Remote

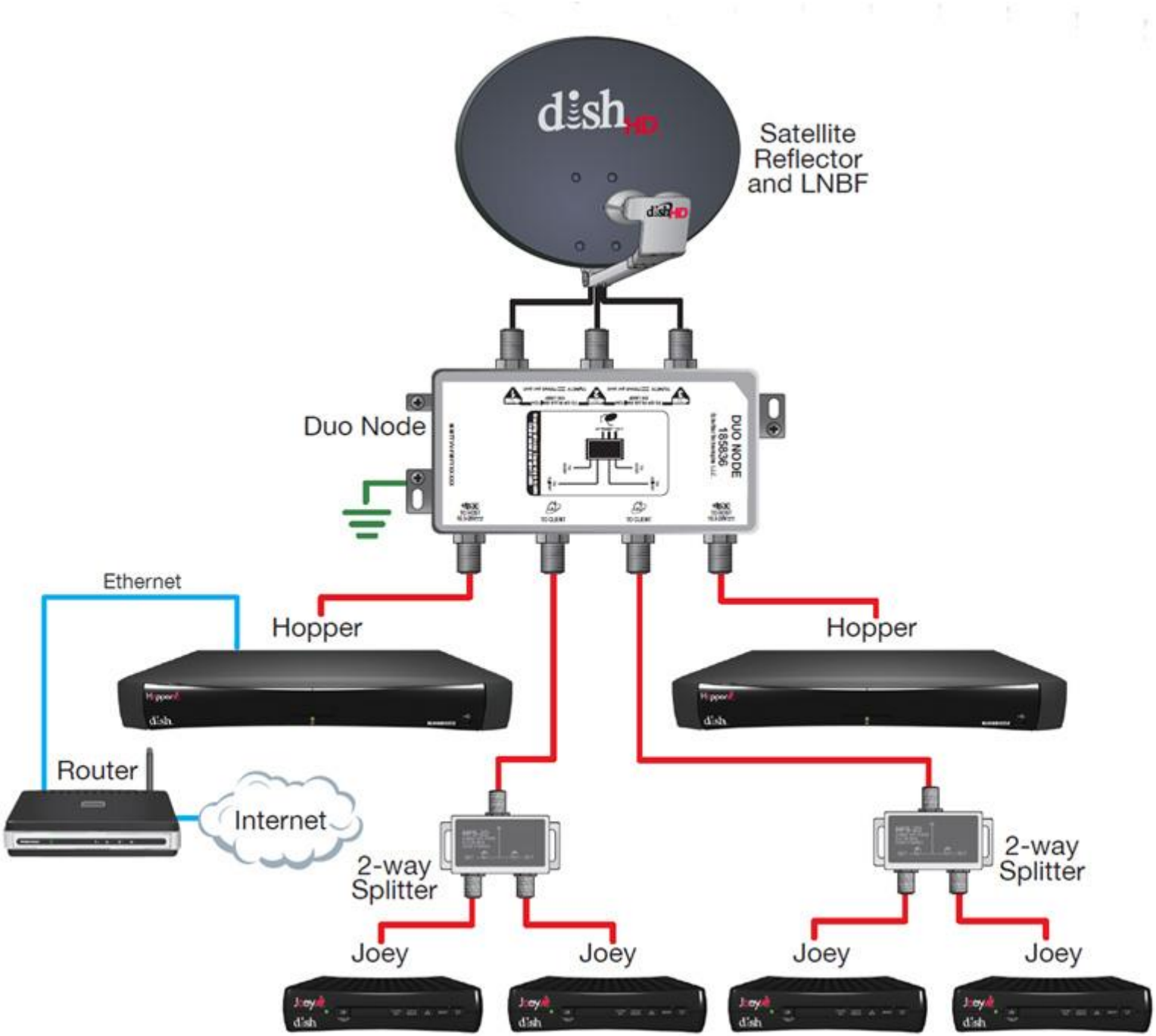
Learning Unit	Learning Outcomes	Learning Elements	Materials Required
LU5: Follow Security Protocols as per Govt. Policies	**The student will be able to:** 1. Interpret government policy about security protocols 2. Follow cyber rules and regulations	1. Explain government policy about security protocols. 2. Describe cyber rules and regulations **Practical-1** Enlist important government policies **Practical-2** Enlist important cyber rules and regulations	• Learner guide Multi-media projector Handouts Videos **Tools and Equipment** • Government Rules Book

Examples and illustrations

Video	Link
	How to Lock Satellite Receiver Channels. https://www.youtube.com/watch?v=NXU0DGem6RQ
	How to connect Multiple satellite to One receiver **https://www.youtube.com/watch?v=dkaOc_k5A58**

	How To connect HD Multi Room TV, 1 source to 4 TVs using HDMI Splitters / Amplifiers **https://www.youtube.com/watch?v=78m2X-GkwXY**

Satellite DISH Network: (http://11.cgbyd.venske-design.de/dish-network-wiring-multiple-tvs.html)


Satellite
Reflector
and LNBF
Duo Node
Ethernet
Hopper
Hopper
Router
Internet
2-way
Splitter
2-way
Splitter
Joey
Joey
Joey
Joey

SATELLITE DISH INSTALLER

Module-10
LEARNER GUIDE
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Module 10: 0619001087 Plan Work

Objective of the module: The objective of this module is to provide skills and knowledge required to assess site hazards, Follow work procedures, Follow symbols and Drawings, Manage Installation Time, Control Installation Quality, Maintain Customer Record and Label Tags on Accessories to Arrange Tools & Equipment, Maintain Tool Kit, Insulate Tools and Equipment, Calibrate measuring instruments and Manage Inventory of tools and equipment.

Duration **50** hours **Theory:** **14** hours **Practical:** **36** hours

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
LU1: Assess site hazards	**The student will be able to:** 1. Inspect site visually 2. Communicate with site supervisor 3. Identify actual and potential hazards	• Describe different type of sites. 1. Indoor 2. outdoor • Demonstrate site inspection information. • Describe different hazards as per site inspection. Height Wind Slips, falls etc Practicals: • To make survey for the site requirement (Identify effective indoor, outdoor sites) • identify potential hazards	Learner guide Multi-media projector Handouts Videos **Tools and Equipment** • Handbooks • Pencils • Rubber • Sharpeners • Paper Cutter • Scissor • Colors • White charts • Brown sheets • White board markers • Permanent markers

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
			• File cover and files • Computer • Printer • Scanner
LU2: Follow work procedures	**The student will be able to:** 1. Identify equipment and attachments needed to do the job. 2. Determine appropriate starting point. 3. Identify access and exit points on site. 4. Plan work procedures for efficiency, effectiveness and safety. 5. Sequence job tasks to co-ordinate activities with others.	1. Demonstrate important tools and equipment for job starting. 2. Demonstrate sequence of operations. 3. Locate exit and entry points on site. 4. Demonstrate a report on effective work procedure and safety Practical: Develop an efficient work plan while considering efficiency, effectiveness and safety.	Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**
LU3: Follow symbols and Drawings	**The student will be able to:** 1. Identify Emergency and Warning symbols 2. Adopt emergency/warning symbols on site 3. Interpret building drawings. 4. Interpret abbreviations and symbols common to Electrical/Electronics/Mech	• Explain different emergency signs. • Explain different warning signs. • Explain different buildings drawings. 1. Structure drawing 2. Electrical/ mechanical drawings 3. MEP drawings Practical:	Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
	anical drawings 5. Follow drawings of gas and water supply lines.	Plan following emergency warnings and symbols for work place environment. 1. Fire 2. Wind 3. Exit point 4. Emergency helpline 5. Electric shock risk	
LU4: Manage Installation Time	**The student will be able to:** **1.** Assemble dish antenna in given time frame as per SOPs. **2.** Schedule time frame for cabling and connections. **3.** Manage time for tuning	**1.** Explain some Standard Operating Procedures (SOPs) for time management. **2.** Describe work timelines for dish assembly, cabling, connections and tuning. Practical: Manage Dish assembly in assigned time limit. Manage cabling and connection in assigned time limit.	Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**
LU5: Control Installation Quality	**The student will be able to:** **1.** inspect cable layout **2.** Adopt satellite dish installation techniques as per service provider's SOPs. **3.** Ensure best signal quality. **4.** Ensure the workability of	• Describe SOPs for quality assurance. • Demonstrate importance of quality assurance. • Demonstrate importance of good quality signals and ensure workable ports. • Development of customer feedback form and measures as per customer feedback.	• Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**

Learning Unit	Learning Outcomes	Learning Elements	Materials Required
	input/ output ports. **5.** Ensure customer satisfactory feedback.	Practical: • Display quality signals and ensure workable ports. Prepare customer feedback form.	
LU6: Maintain Customer Record	**The student will be able to:** **1.** Keep record of customer personal detail **2.** Keep record of dish installation relevant components **3.** Keep record of customer complaints	• Demonstrate how to maintain customer details. • Describe maintenance of customer complaints and track record for complain history. Practical: • Prepare book keeping specimen. • Prepare record maintenance specimen.	• Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**
LU7: Label Tags on Accessories	**The student will be able to:** 1. Provide instructional tags on main devices 2. Provide name tags on different cables	• Describe types of tags. 1. Name tags 2. Instructional tags 3. Colour tags • Describe importance of tags. Practical: • Prepare name tags and paste them respectively. • Prepare instructional tags and paste them respectively	• Learner guide Multi-media projector Handouts Videos **Tools and Equipment as (LU1)**

Examples and illustrations

Video	Link
	Risk Assessment (Hazard Identification) https://www.youtube.com/watch?v=-QbeJvjVWWg
	Satellite TV Install Plan DISH Network https://www.youtube.com/watch?v=uIYc8v9Tl_I

	Educate Yourself With These Safety Symbols and Meanings https://www.youtube.com/watch?v=ELfAZfDhrcY

What are some guidelines for labeling assets? (link: https://blog.ezofficeinventory.com/asset-tagging-best-practices/)

Labeling assets can be a tough task. There are so many different components to keep in mind, such as the type of assets you want to label, the conditions the tag would have to endure, and the data you'd want to add to the label.

To help simplify this process, we've laid down some asset tagging best practices for you to make quick work out of label management at your organization!

1) Pick item IDs with care

One way to devise an asset labeling routine would be to add the location, item and department code within the item ID or AIN itself. This works well if your employees tend to travel extensively with tools and machines. You can assign different codes to different locations, such as NY for the branch in New York.

To add to this, device categories can each have their specific codes as well, such as L00 for laptops. You can then pick a specific set of numbers for different departments, such as 100 for IT. The final code for a laptop from the IT department in New York will therefore be NYL00100. This lets you know all the important details about an item immediately from the item ID.

2) Add procurement details

For items with a high upkeep, it helps to record the year of purchase right on the asset label. Doing so makes it easier for depreciation and maintenance management.

This way, new items that are undergoing maintenance a little too much can be quickly flagged for a more in-depth examination. At the same time, you might see that an item is nearing the end of its useful life, and so shouldn't get a costly upgrade.

3) Color code you tags

Some companies take on new projects every season. They can find it extremely hard to keep different packing lists and custody records straight. Regular businesses might also get confused between the same kinds of assets belonging to different departments, for instance, or between assets that looks the same but have different properties.

To simplify things, you can color code your assets. For example, you can have a green tag for a Dell laptop with a 4GB RAM, and a blue tag for the same kind of laptop with an 8GB RAM.

4) Determine what's worth it

Often, a business does not have the resources to track and label every asset they own. To make business strategies cost effective, you can create a benchmark for the minimum dollar value you'd be willing to tag. Such practices keep your valuable tools safe, and ensure you're not spending time and money tracking items that are just not worth the effort.

5) Customize your data

Depending on the nature of your assets, you can also record specifics to maintain a database that actually provides you with meaningful insights. For example, barcode labels can carry the manufacturer's name, serial numbers and tracking numbers, and details about which project the item is associated with.

All this information allows employees to access detailed history on a certain asset, and run reports later to get actionable data on how processes can be improved.


ASSET TAGGING BEST PRACTICES
FOR SIMPLIFIED EQUIPMENT MANAGEMENT
TYPE
OF LABEL
BARCODE
QR CODE
RFID TAG
LABEL
PURPOSE
SECURITY
MOBILITY
DURABILITY
ADHESION
TAGGING
GUIDELINES
COLOR CODE
CUSTOMIZE
BENCHMARK
www.ezofficeinventory.com
ASSET TRACKING, SIMPLIFIED

Overview of the program

Course: *Satellite Dish Installer, Level - 4*	**Total Course Duration:** 600 hours

Course Overview:
The purpose of the training is to provide skilled manpower to improve the existing capacity of Electronics sector. This training will provide the requisite skills to the trainees to Install Satellite Dish. It will enable the participants to meet the challenges in the field of Satellite Dish industry. Further, to improve the skill level of the technician and prepare them for the Electronics industry to meet the market competition nationally and internationally. The core purpose of this qualification is to produce employable Satellite Dish Installer who could Install Satellite Dish according to national and international standards. In addition this qualification will prepare unemployable youth to employee in this sector.

Module	Learning Unit	Duration
Module 7: Perform Troubleshooting **Aim:** The objective of this module is to provide skills and knowledge related to Check Signals, Check Power Supply, check Weather Effects. Check Interference Effects, Diagnose Software Fault and Diagnose Hardware Fault.	**LU1:** Check Signals **LU2:** Check Power Supply **LU3:** Check Weather Effects **LU4:** Check Interference Effects **LU5:** Diagnose Software Faults **LU6:** Diagnose Hardware Faults	200 hours
Module 8: Conduct Site Survey **Aim:** The objective of this module is to provide skills and knowledge related to Document Customer Demand, Select Location. Check Environmental factors, Inspect	**LU1:** Document Customer Demand **LU2:** Select Location **LU3:** Check Environmental factors **LU4:** Inspect Cable Routing **LU5:** Locate Satellite	200 hours

Module	Learning Unit	Duration
Cable Routing, Locate Satellite and Prepare Feasibility Report		
Module 9: Implement Network Security **Aim:** The objective of this module is to provide skills and knowledge related to developnetwork server, Connect Receiver with Network, Provide Scrambled Services, Apply Parental Lock and Follow Security Protocols as per Govt. Policies	**LU1:** Develop Network **LU2:** Connect Receiver with Network **LU3:** Provide Scrambled Services **LU4:** Apply Parental Lock **LU5:** Follow Security Protocols as per Govt. Policies	150 hours
Module 10: Plan Work **Aim:** The objective of this module is to provide skills and knowledge required to assess site hazards, Follow work procedures, Follow symbols and Drawings, Manage Installation Time, Control Installation Quality, Maintain Customer Record and Label Tags on Accessories to Arrange Tools & Equipment, Maintain Tool Kit, Insulate Tools and Equipment, Calibrate measuring instruments and Manage Inventory of tools and equipment.	**LU1:** Assess site hazards **LU2:** Follow work procedures **LU3:** Follow symbols and Drawings **LU4:** Manage Installation Time **LU5:** Control Installation Quality **LU6:** Maintain Customer Record **LU7:** Label Tags on Accessories	50 hours

Frequently Asked Questions

1. What is Competency Based Training (CBT) and how is it different from currently offered trainings in institutes?	Competency-based training (CBT) is an approach to vocational education and training that places emphasis on what a person can do in the workplace as a result of completing a program of training. Compared to conventional programs, the competency based training is not primarily content based; it rather focuses on the competence requirement of the envisaged job role. The whole qualification refers to certain industry standard criterion and is modularized in nature rather than being course oriented.
2. What is the passing criterion for CBT certificate?	You shall be required to be declared “Competent” in the summative assessment to attain the certificate.
3. What are the entry requirements for this course?	The entry requirement for this course is as follow. • Middle (Grade 8) for level-1 • Level-1 for level-2 • Level-2 for level-3 • Level-3 for level-4
4. How can I progress in my educational career after attaining this certificate?	You shall be able to progress further to National Vocational Certificate Level-4 in satellite Dish Installer; and take admission in a level-5, DAE or equivalent course. In certain case, you may be required to attain an equivalence certificate from The Inter Board Committee of Chairmen (IBCC).
5. If I have the experience and skills mentioned in the competency standards, do I still need to attend the course to attain this certificate?	You can opt to take part in the Recognition of Prior Learning (RPL) program by contacting the relevant training institute and getting assessed by providing the required evidences.

6. What is the entry requirement for Recognition of Prior Learning program (RPL)?	There is no general entry requirement. The institute shall assess you, identify your competence gaps and offer you courses to cover the gaps; after which you can take up the final assessment.
7. Is there any age restriction for entry in this course or Recognition of Prior Learning program (RPL)?	There are no age restrictions to enter this course or take up the Recognition of Prior Learning program
8. What is the duration of this course?	The duration of the course work is ……..
9. What are the class timings?	The classes are normally offered 25 days a month from 08:00am to 01:30pm. These may vary according to the practices of certain institutes.
10. What is equivalence of this certificate with other qualifications?	As per the national vocational qualifications framework, the level-4 certificate is equivalent to Matriculation. The criteria for equivalence and equivalence certificate can be obtained from The Inter Board Committee of Chairmen (IBCC).
11. What is the importance of this certificate in National and International job market?	This certificate is based on the nationally standardized and notified competency standards by National Vocational and Technical Training Commission (NAVTTC). These standards are also recognized worldwide as all the standards are coded using international methodology and are accessible to the employers worldwide through NAVTTC website.
12. Which jobs can I get after attaining this certificate? Are there job for this certificate in public sector as well?	You shall be able to take up jobs in the Satellite Dish Installation industry with the following designations • Domestic Satellite Dish Installer • Industrial Satellite Dish Installer • Satellite dish Technician • Satellite dish supervisor • Satellite installation technician • Satellite dish Trainer • Cable distributer,

	• Internet Service Provider • TV Network distributor, • TV Technician • work in Telecommunication.
13. What are possible career progressions in industry after attaining this certificate?	You shall be able to progress up to the level of supervisor after attaining sufficient experience, knowledge and skills during the job. Attaining additional relevant qualifications may aid your career advancement to even higher levels.
14. Is this certificate recognized by any competent authority in Pakistan?	This certificate is based on the nationally standardized and notified competency standards by National Vocational and Technical Training Commission (NAVTTC). The official certificates shall be awarded by the relevant certificate awarding body.
15. Is on-the-job training mandatory for this certificate? If yes, what is the duration of on-the-job training?	On-the-job training is not a requirement for final / summative assessment of this certificate. However, taking up on-the-job training after or during the course work may add your chances to get a job afterwards.
16. How much salary can I get on job after attaining this certificate?	The minimum wages announced by the Government of Pakistan in 2019 are PKR 17,500. This may vary in subsequent years and different regions of the country. Progressive employers may pay more than the mentioned amount.
17. Are there any alternative certificates which I can take up?	There are some short courses offered by some training institutes on this subject. Some institutes may still be offering conventional certificate courses in the field.
18. What is the teaching language of this course?	The leaching language of this course is Urdu and English.
19. Is it possible to switch to other certificate programs during the course?	Partially no, but if you have covered the Generic and functional competencies of this course and you want to switch to other certificate or want to enroll in other course, then you will take exemptions from the generic and functional competencies of the same level.
20. What is the examination / assessment system in this program?	Competency based assessments are organized by training institutes during the course which serve the purpose of assessing the progress and preparedness of each student. Final /

	summative assessments are organized by the relevant qualification awarding bodies at the end of the certificate program. You shall be required to be declared “Competent” in the summative assessment to attain the certificate.
21. Does this certificate enable me to work as freelancer?	Yes! You can start your small business of Installation of satellite dish or other telecom equipment. You may need additional skills on entrepreneurship to support your initiative.

Test Yourself (Multiple Choice Questions)

MODULE 7

Question 1 AsiaSat 1 launched as Westar 6 on Space Shuttle mission STS-41B, became stranded in orbit, was retrieved by Space Shuttle mission STS-51A in November 1984, sold to AsiaSat, AsiaSat I covers how many countries in Asia?

A 38

B 10

C 28

D 15

Question 2 What is the delay time for satellite transmission from earth transmitter to earth receiver?

A 0.5 s

B 1.0 s

C 5 ms

D 0.25 ms

Question 3 What happen when weather is rainy or cloudy on satellite communication?

A Enhance

B Distort

C Amplify

D Nothing

Question 4 If satellite dish receiver or DVR freezes at regular intervals, suffers signal loss and get into the search mode, then you have to check

A Alignment of Dish antenna

B DVR version

C Remote

D Satellite tv

Question 5 Which tool is necessary to check exact location of specific satellite?

A Compass

B satellite finder

C Cable tester

D Compression tool

MODULE 8

Question 6 When conducting site survey location identified by customer must have

A clear line of sight

B Wall

C Water

D None

Question 7 Engineers and technicians uses different kinds of tools and equipment for safety of human life and materials, in that context what does PPE stands for_____?

A Personal protective equipment

B Programmable protective equipment

C Permanent protective equipment

D Perfect protection equipment

Question 8 It is consideration in site survey to monitor_____, because site survey is the identification and documentation of site and everything impacting its surroundings.

A Water availability

B Weather condition

C Transportation mechanism

D Nearest sea

Question 9 Sometime big numbers are stated in scientific notation (i.e in the powers of tens) to shorten the length of the number, so 1 GHz of frequency will be equal to

A 10^{7} Hz

B 10^{-7} Hz

C 10^{9} Hz

D 10^{-9} Hz

Question 10 Rays that travel in a narrow beam and easily pass through atmosphere of Earth are

A microwaves

B x-rays

C gamma rays

D infrared rays

MODULE 9

Question 11 Angular velocity of a satellite is selected to have fixed point on the equator, so a satellite covers longitude of earth up to

A 110°

B 120°

C 150°

D 180°

Question 12 Geostationary satellites revolves in the same direction as earth and place at an altitude of 22200 miles, so whole world can be covered with____.

A 2 geo-stationary satellites

B 3 geo-stationary satellites

C 4 geo-stationary satellites

D 5 geo-stationary satellites

Question 13 GEO refers to an orbit above earths equator at the altitude of 35786 KM, GEO stands for____.

A Geostationary Earth Orbit

B Geographical Earth Orbit

C Geostructure Element Orbit

D Geostructure Earth Orbit

Question 14 Satellites process microwaves with bidirectional antennas, which is

A Line of Signals

B Line of Sight

C Line of Direction

D Line of Stations

Question 15 Line-of-sight propagation is a characteristic of Electromagnetic wave propagation which means that propagated signals will travel in straight line from transmitter to receiver, it is done by_____.

A MEO Satellites

B GEO Satellites

C LEO Satellites

D None

MODULE 10

Question 16 _____ is the process of collecting job related information.

A Job analysis

B Job design

C Methods of collecting job data

D None of the above

Question 17 What is the reason for carrying multiple transponders in a satellite?

A More number of operating channel

B Better reception

C More gain

D More gain

Question 18 Why are VHF, UHF, and microwave signals used in satellite communication?

A More bandwidth

B More spectrum space

C Are not diffracted by the ionosphere

D Economically viable

Question 19 What is the reason for shifting from c band to ku band in satellite communication?

A Lesser attenuation

B Less power requirements

C More bandwidth

D Overcrowding

Question 20 Which technique uses two different antennas to reduce traffic on the same frequency?

A Spatial isolation

B Frequency reuse

C Multiplexing

D Modulation

National Vocational and Technical Training Commission (NAVTTC)

Plot 38, Kirthar Road, Sector H-9/4, Islamabad, Pakistan

+92 51 9044 322

+92 51 9044 322

info@navttc.org

www.navttc.org