



# ELECTRONIC COMMUNICATION AND MULTIMEDIA EQUIPMENT SERVICING

NTQF Level-II

## Learning Guide-31

**Unit of Competence:** Install and Repair Antenna and Satellite System  
**Module Title:** Installing and Repairing Antenna and Satellite System  
**LG Code:** EEL CMS2 M08 LO1- LG-310919  
**TTLM Code:** EEL CMS2 M08 TTLM 0919 v1

**LO5: Prepare product and work station for assembly**

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This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics –

- Visually inspecting External part of satellite receiver
- Opening satellite case according to manual
- Freeing from dust Internal part of satellite receiver using blower
- Tightening or re-soldering loose connection with cold solder if appropriate
- Cleaning and lubricating moving parts and head of magnetic tape path
- Cleaning mechanical parts using appropriate cleaning materials

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon completion of this Learning Guide, you will be able to:**

- Visually inspect External part of satellite receiver
- Open satellite case according to manual
- Free from dust Internal part of satellite receiver using blower
- Tighten or re-solder correctly and firmly loose connection with cold solder if appropriate
- Clean and lubricate moving parts and head of magnetic tape path using appropriate materials and tools in accordance with manufacturer's specifications
- Clean mechanical parts using appropriate cleaning materials

### Learning Instructions:

#### Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 20.
3. Read the information written in the information “Sheet 1, Sheet 2, Sheet 3 and Sheet 4”.
4. Accomplish the information “Sheet 1, Sheet 2, Sheet 3, Sheet 4, Sheet 6 and Sheet 6”.
5. Try to answer self-check, you can ask your trainer for correction. If you finished answering the Self-check, take correction or explanation from your trainer if it is not clear.
6. If you scored a satisfactory evaluation proceed to “Information Sheet 2”. Submit your accomplished Self-check 2. This will form part of your training portfolio.
7. Read the information written in the “Information Sheet 2”. Try to understand what are being discussed. Ask you Instructor for assistance if you have hard time understanding them.
8. Accomplish the “Self-check 2” in page\_\_\_\_  
Ask from your teacher for correction (key answers) if any.



9. Read the information written in the “Information Sheets 3. Try to understand what are being discussed and ask you teacher for assistance if you have hard time understanding them.
10. Accomplish the “Self-check 3” in page ---.
11. Ask from your teacher the key to correction (key answers) or you can request your teacher to correct your work. (To get the key answer only after you finished answering the Self-check 3).
12. If you scored a satisfactory evaluation proceed to “Operation Sheet 1” in page\_\_\_\_\_



## Information sheet

## Visually inspect External part of satellite receiver

### 5.1 Visually inspect External part of satellite receiver

- External visual inspection is a process of verifying the attributes of parts such as Device condition, part markings, and evidence of the device, Ports conditions, dimensions and surface quality.
- Visual Inspection, used in maintenance of facilities, mean inspection of equipment and structures using either or all of raw human senses such as vision, hearing, touch and smell and/or any non-specialized inspection equipment.
- Visual **inspection** is, most generally, an organized formal evaluation. In engineering inspection involves the measurements, tests. The results are usually compared to specified requirements and standards for determining whether the service, the products and the activity is in line with the required targets.
- **Visual Inspection**, or Visual Testing (VT), is the oldest and most basic method of inspection. It is the process of looking over a piece of equipment using the naked eye to look for flaws. It requires no equipment except the naked eye of a trained inspector.
- Visual inspection can be used for internal and external surface inspection of a variety of equipment types, including storage tanks, pressure vessels, piping, and other equipment.

#### Inspect visually Physical parts

- ✓ *Accessories of the device*
- ✓ *Buttons of the device*
- ✓ *Cover of the device*

#### Identify whether there is

- ✓ Dust and dirt
- ✓ Loose connection and Disconnection and
- ✓ Study and Identify all external parts



*Fig. Hardware Device of satellite receiver and its ports*



<b>Self-check 1</b>	<b>Written test</b>
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**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

**Part I. Choose the best answer for the following questions? (2 point each)**

1. \_\_\_\_\_ is a process of verifying the attributes.
- A) dismantling      **C) installation**      B) **Inspection**      D) Cleaning
1. Which of the following activity does not need instrument?
- A) **Visual inspection**      B) Measuring      C) cleaning      D) tightening
2. Which of the following connects dish and receiver?
- A) Inclinator  
B) Finder  
C) signal calculator apps  
D) **Coaxial** cable

**Note: Satisfactory rating 3 and 6 points**

**Unsatisfactory below 3 and 6 points**

You can ask you teacher for the copy of the correct answers.

**Answer sheet**

<b>Score</b> _____
<b>Rating</b> _____



Name: \_\_\_\_\_

Date: \_\_\_\_\_

## Short Answer Questions

### Information sheet-2

### Open satellite case according to manual

#### 5.2 Open satellite case according to manual

##### Important Safety Instructions

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean external part only with dry cloth.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



#### Opening procedure

1. Switch off power



2. Disconnect power plugs
3. Disconnect AV or DV output
4. Disconnect coaxial cable
5. Remove USB
6. Open the screws using appropriate tools
7. Remove the cover or case of the top

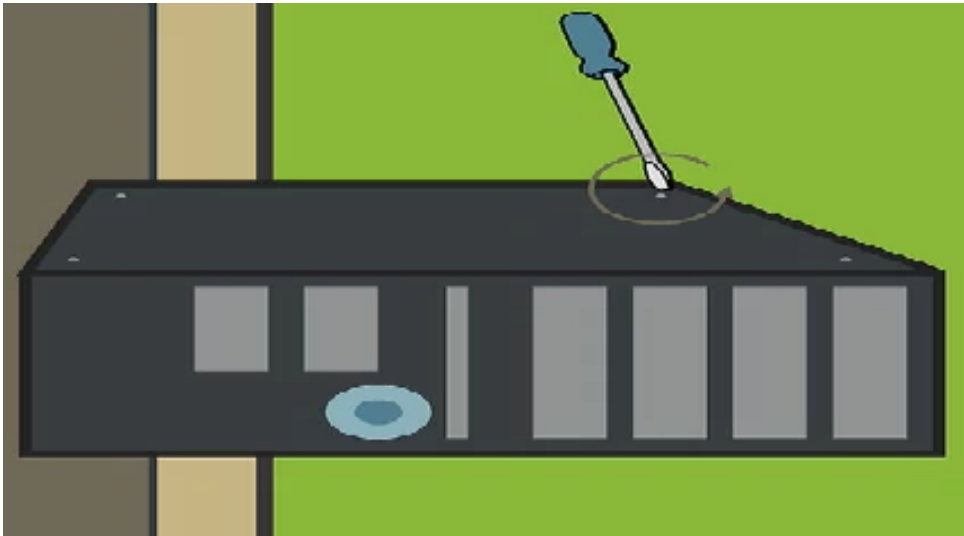


Fig. opening procedure





*Fig. opened receiver for cleaning*

<b>Self-check 2</b>	<b>Written test</b>
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**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

**Part I. Match the following questions? (2 point each)**

- |                    |  |
|--------------------|--|
| 1. Unscrewing      | A) cleaning                                |
| 2. _____<br>device | Instruction provided with<br>B) installing |



3. socket outlet      C) unplugging      Disconnecting device from
4.      D) opening      Disassembling the device
- E) loosing screw
- F) service manual

**Note: Satisfactory rating 3 and 6 points**

**Unsatisfactory below 3 and 6points**

You can ask you teacher for the copy of the correct answers.

**Answer sheet**

<b>Score</b> _____
<b>Rating</b> _____

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Short Answer Questions**

<b>Information sheet-3</b>	<b>Free from dust Internal part of satellite receiver using blower</b>
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**5.3 Free from dust Internal part of satellite receiver using blower**

**Cleaning**

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- Use blower to clean or
- Use appropriate brush if necessary

**Spray compressed air onto the circuit board.** The circuit board will most likely be green, with squiggly, silver lines on it. Spray compressed air in short bursts onto the board, keeping the canister upright and the nozzle a few inches away from the circuit board. This will also give you an opportunity to look for grime and corrosion that may require more extensive cleaning.

Grime and corrosion that is especially large or is building up near a heat generator or on top of circuit pathways should be removed



<b>Self-check 1</b>	<b>Written test</b>
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**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

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**Part I. Choose the best answer for the following questions? (2 point each)**

5. \_\_\_\_\_ is a cleaning method used to remove dust from circuit.
- B) **Inspection** B)  
compressed air C) dusting D) all E) B & C
2. Which of the following activity does not need instrument?
- B) **Visual inspection** B)  
Measuring C) cleaning D) tightening
3. Which of the following connects dish and receiver?
- E) Inclinator  
F) Finder  
G) signal calculator apps  
H) **Coaxial cable**

**Note: Satisfactory rating 3 and 6 points**

**Unsatisfactory below 3 and 6 points**

You can ask you teacher for the copy of the correct answers.

**Answer sheet**

<b>Score</b> _____
<b>Rating</b> _____

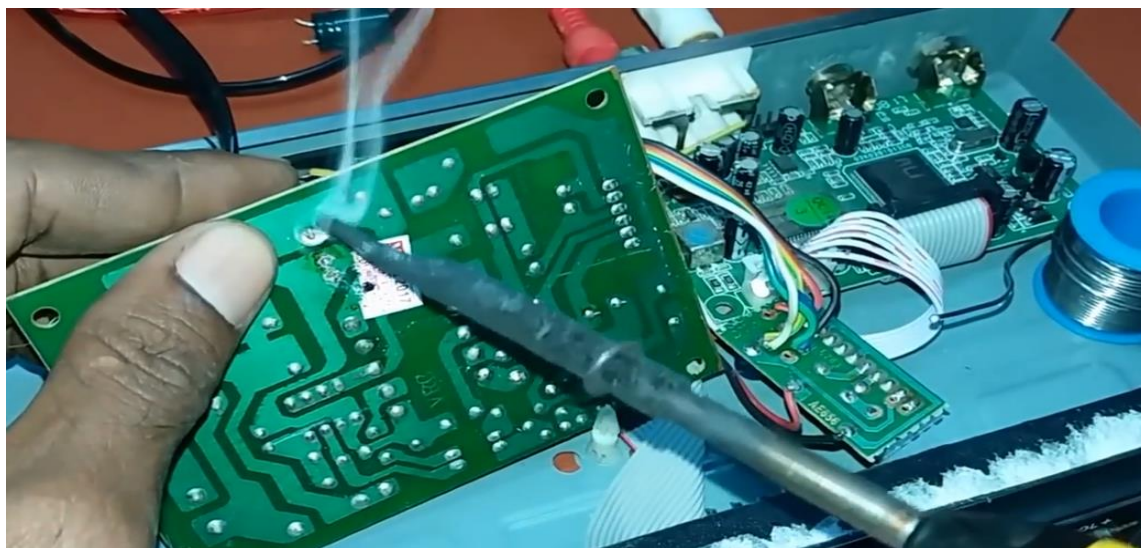
Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Short Answer Questions**

**Information sheet-4****Tighten or re-solder firmly loose connection****5.4 Tighten or re-solder correctly and firmly loose connection with cold solder if appropriate**

- Tighten the connectors if there is loose connection due to blowing of brushing
- Study parts and their position and function
- Ask if there is unclear



<b>Information sheet-5</b>	<b>Clean and lubricate moving parts and head of magnetic tape</b>
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**5.5 Clean and lubricate moving parts and head of magnetic tape path using appropriate materials and tools in accordance with manufacturer's specifications**

**Preservation of magnetic audiotape** comprises techniques for handling, cleaning and storage of magnetic audiotapes in an archival repository. Multiple types of magnetic media exist but are mainly in the form of open reels or enclosed cassettes.

Although digitization of materials on fragile magnetic media in library and information science is a common practice, there remains a need for conserving the actual physical magnetic tape and playback equipment as artifacts.



Fig. a) Magnetic tape cleaning



b) Magnetic tape

<b>Information sheet-6</b>	<b>Clean mechanical parts using appropriate cleaning materials</b>
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**5.6 Clean mechanical parts using appropriate cleaning materials**



## Cleaning Electronics with Isopropyl Alcohol

Chemicals are found throughout the electronic assembly and repair process, but no solvent is more common than isopropyl alcohol. It is universally used for cleaning and as a main constituent of fluxes, but how much do you really know about isopropyl alcohol?

Isopropyl alcohol is also referred to as IPA, isopropanol, 2-propanol, and even rubbing alcohol (more on that later). It dissolves a wide range of polar and non-polar soils, so it is often used to dissolve and remove light oils, fingerprints, cutting fluids, flux residues, carbon deposits, and mold release. It is also readily miscible in water, so can be used as a drying agent as well.

For electronic printed circuit board (PCB) assembly, you will find isopropyl alcohol being used to clean flux residues from recently soldered circuit boards or in PCB repair and rework. IPA is also used to remove solder paste or adhesive from SMT stencils. Maintenance cleaning with isopropyl alcohol is common for removing caked-on and burnt-on flux from SMT reflow ovens, wave soldering fingers, selective soldering nozzles, pallets, and anywhere else flux tends to collect in automated soldering processes.

Dear trainees take care! When a solvent is not compatible with a substrate, it may cause crazing (micro-cracks), soften the material, or in the case of seals or gaskets, cause them to swell, shrink, or become brittle. The following figure shows an example how to use circuit electronics cleaner.



*Fig. how to use circuit electronics cleaner*



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现货供应

品质保障







<b>Self-check 6</b>	<b>Written test</b>
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**Directions:** Answer all the questions listed below. Use the Answer sheet provided in the next page:

**Part I. Choose the best answer for the following questions? (2 point each)**

1. What is the most commonly used cleaning chemical for electronics circuit?  
A) Grease      B) Cotton  
C) isopropanol      D) Brush
2. What will happen if you used incompatible cleaning chemical?  
A) crazing      B) Measuring  
C) shiny and clean      D) tightening
3. What is the most commonly used cleaning chemical for electronics circuit?  
A) Grease      B) Cotton  
C) isopropanol      D) Brush

**Note: Satisfactory rating 3 and 6 points**

**Unsatisfactory below 3 and 6points**

You can ask you teacher for the copy of the correct answers.

**Answer sheet**

<b>Score</b> _____
<b>Rating</b> _____

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Short Answer Questions**



## **Reference**

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