**PACTICAL EXAMINATION ON: OPERATIONAL INFO SYSTEM**

**ETC MK-II & III HARDWARE RELATED**

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| **Defects**  **Reported** | **Actual Defects** | **FAULTY**  **Components / Modules** | **Remedial Action** | **Probable Cause of**  **Defect** | **Corrective Measures** |
| **Not Switching**  **ON** | Not Switching ON | EM , PS Module ,Input filter assembly & VRMS Card | EM , PS Module ,Input filter assembly & VRMS Card Repair/replaced | - | No corrective measure envisaged since pattern of failure not emerging. |
| **System**  **error** | Access Key not found. | Multi Use Adaptor ,EM module | Multi Use Adaptor ,EM Repaired /Replaced | - | - |
| Application not opening. | EM , Backplane &HDD | EM &Backplane card HDD Repair/replaced |
| Authentication Failure. | ATD &, .ETD & wrong key in ETD&ATD | ATD& ETD Replace and regenerate of KEY |
| BSW Error. | Modules reinserted | |
| Commn Problem. Unable to load Image. | Backplane card | Backplane card Repair/replaced |
| Hardware Failure. | PS Module ,Modem & PCMCIA card | PS Module, Modem & PCMCIA card Repair/replaced |
| Oracle error. | HDD& EM module replaced | EM module & HDD Repair/replaced |
| **Not Booting** | Not Booting | HDD, Backplane card & EM module replaced | Backplane card & EM module and HDD Repair/replaced. | - | No corrective measure envisaged since pattern of failure not emerging. |  |

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| **Defects**  **Reported** | **Actual Defects** | **Faulty**  **Components / Modules** | **Remedial Action** | **Probable Cause of**  **Defect** | **Corrective Measures** |
| **Display not proper** | No display | Display Assy ,Electronic Module replaced & Perform BIT Test | Display assy &Electronic module Repair/replaced . | **-** | No corrective measure envisaged since pattern of failure not emerging |
| Display flickering | Display Assy | Display Assy Repair/replaced . |
| Cursor not static. | LCD Interface card | LCD Interface card Repair/replaced. |
| Calibration problem. | Touch Panel Re-calibrate | **-** |
| Pointing Device problem | Display Assy & brightness up down key | Display Assy Repair/replaced Perform BIT Test |
| Brightness Fn problem. |
| **USB not detecting** | USB not detecting | MUA replaced | MUA Repair/replaced | **-** | **-** |
| **No Battery back up.** | No Battery backup | PS Module | PS Module Repair/replaced | **-** | **-** |

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| **ETC MK-II&MK-III SOFTWARE RELATED** | | | | | |
| **ATD & ETD related.** | Authentication failed . | ATD/ETD keys change. | MAC ID reloaded &  Keys regenerated | Use of wrong ATD/ETD Keys | **-** |
| Invalid ATD & ETD |
| Access Key not Found | Keys regenerated |
| Password Blocked |
| **Password related** | Password not accept | System locked& Invalid password. | Password reset.  Login in super user | Feeding of wrong password | Password log to be maintained in the unit. |

**GDU MK-II HARDWARE RELATED**

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| **Defects**  **Reported** | **Actual Defects.** | **Faulty**  **Components / Modules** | **Remedial Action** | **Probable Cause of**  **Defect** | **Corrective Measures** |
| **Not switching ON** | Not switching ON | DC DC charger card,Fuse,I/P filter Assy& SBC card replaced. | DC DC charger card, Fuse, I/P filter Assy & SBC card repair/replaced. | Usage of wire in lieu of rated ,3.15 A fuse, Wrong I/P Power Supply(24V instead of 12 V) | 1. Use of 3.15A fuse and no wire wrapped fuse should be used.  2. Ensure that the position of change over switch is in 12V in AC/DC adaptor. Ensure that GDU is shut down only after Msg appears . | Standard  Operating  Procedure (SOP) is issued. |
| **Not booting** | Not booting | SBC & HDD | SBC card repair/replaced and HDD replace | Improper shutting down of GDU. | Ensure that GDU is shut down only after Msg appears. PLEASE IT IS SAFE TO SWITCH OFF |
| **No communication** | No communication with GUN BOFORCE | Audio & RIA Card repair & check missing 12V I/P on Audio & RIA Card | Audio & RIA Card Repair/replaced |
| **No Battery Back Up** | No Battery Back Up | Internal Bty Replaced & DC-DC charger card repaired | DC-DC charger card repair/replaced |
|  | Power connector &  Fuse Broken Holder Broken | Power Connector &  Fuse Holder | Power Connector replaced .Fuse Holder replaced **-** | **Improper**  Handling | **-** |
| **No Display** | No Display | Display Card & SBC Card | Display card &  SBC card Repair/ replaced | **-** | **Perform BIT test** |
| **No VGA O/P** | No VGA O/P | SBC Card & SDRAM | SDRAM replaced & SBC Card repair/replaced | **-** | **Check external display** |
| **No Audio** | No Audio | System Mute & Speaker , Audio & RIA card | Speaker , Audio & RIA card Repair/replaced | **-** | **Perform BIT test** |
| **Low Brightness** | Low Brightness | Manually increase & Display card | Display card Repair/replaced | **-** | **-** |
| **Keypad Problem** | Keypad Problem | Keypad & key pad cable | Perform BIT Test & Keypad replaced - | **-** | **-** |
| **GDU Version not displayed in free text & Unable to load the Image**. | Image not loading | 1. CDROM Drive problem  2 .Image CD/DVD corrupt  3. SBC , processor card & HDD replaced | SBC & CD ROM Repair/replaced and image CD replace | **-** | **-** |

# HHC-MKII HARDWARE RELATED

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| **Defects**  **Reported** | **Actual Defects** | **Faulty**  **Components / Modules** | **Remedial Action** | **Probable Cause of**  **Defect** | **Corrective Measures** |
| **Not Switching ON** | Not Switching ON | Power Adaptor , Battery Assy ,Processor Card & GPS card | Processor Card & GPS card repair/replaced | **-** | There is no definite pattern. If pattern exist, necessary corrective measure shall be taken. |
| **Touch screen not working & Touch screen not calibrate** | Touch screen not working | 1. Touch panel Re-calibrate  2. Touch screen (Perform BIT TEST)  3. Processor Card & 4GB Memory card replaced | Touch panel replaced &  Processor Card repair/ replaced | **-** |
| **Not shutting down** | Not shutting down | Memory card formatted and used again. | Memory card (COTS) replaced | Infected due to virus | Not to load Maps in HHC through Virus infected Thumb drive. |
| **Bty not holding charge** | Bty not holding charge | GPS card & Battery Assy | GPS card repair/replaced and replace Baty | - | - |
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| **Application Error** | Application Error. | Processor card & Memory card (COTS) | Processor Card & Memory card replaced | Handling |  |

**HHC &HHC MK-II SOFTWARE RELATED**

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| **Defects**  **Reported** | **Actual Defects** | **Faulty**  **Components / Modules** | **Remedial Action** | **Probable Cause of**  **Defect** | **Corrective Measures** |
| 1.System Blocked  2.System Error   1. Oracle error   4.Unable to load Image | Error Image Loading | OS ,FOT, and MAP corrupted | OS ,FOT, and MAP corrupted | Feeding of wrong password | Password log to be maintained in the unit. By Users |
| No display only power on LED on | OS problem | Operating system loaded | **Load OS** | During update old version to new version | - |
| Password not accept | Password related | Password reset  login in super user | Password resetlogin in super user | Feeding of wrong password | Password log to be maintained in the unit. By Users |

**GDU LINE TERMINATION UNIT HARDWARE RELATED**

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| **Defects**  **Reported** | **Actual Defects Obs by EME Reps.** | **Faulty**  **Components / Modules** | **Remedial Action** | **Probable Cause of**  **Defect** | **Corrective Measures** |
| **Not Working** | No Line communication at GDU | 1. Check fuse F1 to F16 at PCB 2. Check VR1 to VR8 at PCB 3. Check Surge Arrestor E1 to E8 at PCB 4. Replaced any physically damage component at PCB   **HELP OF DIGITAL MULTIMETER** | GDU LTU PCB repair/replaced | **-** | **-** |

**LIU HARDWARE RELATED**

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| **Defects**  **Reported** | **Actual Defects Obs by EME Reps.** | **Faulty**  **Components / Modules** | **Remedial Action** | **Probable Cause of**  **Defect** | **Corrective Measures** |
| **Not switching ON.** | **Not switching ON.** | LIU PCB, power connector, Input power cable, fuse & ON/OFF power switch | DC-DC convertor repair/replaced | Pin bent at I/P power connector resulted in shorting & DC-DC Converter faulty, Dry solder at R13. | Power cable to be connected by proper alignment |
| **No communication** | Line 1 faulty  Or No communication | LIU PCB , binding post & LIU to ETC data cable | LIU PCB repaired/replaced |  |