

SURVEILLANCE CHECK LIST INSTRUMENT SHOP

Name of Organisation:

Name of QCM:

Name of Shop i/c:

Scope of approval:

Location:

Name & Designation of Inspecting Officer:

Date of Inspection:

Check the followings in addition to common checks of shop (DGCA STD.DOC/CL/15):

| S/N | ITEMS OF INSPECTION | SAT/UNSAT | REMARKS |
|-----|--|-----------|---------|
| 1. | Rectification of Previous inspection findings. | | |
| 2. | Check availability of following documents/ literatures: <ul style="list-style-type: none"> • Approved capability list; • Latest technical literature issued by manufacturer/ vendor; • Approved Bench Check/ Procedure Sheet etc.; • IPC • Approved Release Note/ Serviceable Tag; • Approved Quality Control/ Maintenance System Manual; | | |
| 3. | Availability of Integrated Circuits, Printed Circuit Boards, other spares/ materials and procured from approved sources. | | |
| 4. | Whether facilities for bench check/ overhaul as per manufacturer recommendations. | | |
| 5. | Gyroscopic instrument test rig - appropriate and lubrication of bearings as per manufacturer's recommendations. | | |
| 6. | Personnel handling gyroscopic instruments are trained, qualified and adequate. | | |
| 7. | Validation of software of computers used as test equipment by the manufacturer and proper records. | | |

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| 8. | Whether bench check/ overhaul of CVR/ FDR are undertaken? If yes, check availability of proper Bench check/ Overhaul facilities as recommended by the manufacturer for CVR/ FDR/ DFDR. | | |
| 9. | Standard Room- Check for cleanliness, free of dust, proper records of all test equipments and gauges available with history of their test and certification. | | |
| 10. | Whether staffs are aware and are following the company procedures and safety precautions. | | |
| 11. | Availability of adequate and qualified personnel for Bench Check, Overhaul etc. | | |
| 12. | Foolproof procedures to ensure that at all stages of maintenance only approved materials are being utilised. | | |
| 13. | Microfilm is current and reader is available. | | |
| 14. | Incoming and out going components are segregated. | | |
| 15. | Modification control and system to review all ADs/ SBs on the components. Procedure of ensuring incorporation of all applicable modifications. | | |
| 16. | Check History cards if maintained at the shop are updated and all columns are filled up. Whether this reflect modification status. | | |
| 17. | Check component reliability report by Q.C. is available in the shop. | | |
| 18. | Check for records of environment control like temperature, humidity, dust particle count etc. | | |

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| 19. | Check test benches for clean layout and proper wiring. Check for proper routing of earthing wires. | | |
| 20. | Check supply voltage & frequency are within limits. | | |
| 21. | Check that the Automatic Test Equipment is serviceable. Do they modify the software. Check that the software is current and check currency of interface module. Check that the personnel working with ATE are trained and approved. | | |
| 22. | Check that the PCB repair station is well equipped with static charge protective devices such as insulated mats, proper earthing and wrist straps etc. | | |
| 23. | Check items like rubber seals are stored properly. | | |
| 24. | Check all out going units has serviceable tag and are properly blanked and packed. | | |
| 25. | Check whether the shop undertakes any maintenance of ESDs. If yes, Check the followings: | | |
| (a) | The air in the shop has a relative humidity of 40% to 60%. | | |
| (b) | Work surface of the bench is covered with a conductive mats/ dissipative surface. | | |
| (c) | The floor area in front of the working bench has conductive mat, which is electrically bonded to the work surface by means of a bonding strap. <i>(The bonding strap should have a resistance of 2000-4000 ohms per linear foot and should be as short as possible)</i> | | |

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| (d) | Working personnel wears wrist strap that is connected to the workbench. <i>(The strap should have a resistance of 200 K ohms)</i> | | |
| (e) | The work surface is connected to a suitable ground. <i>(Under no circumstances the work surface of a static free workstation be connected to the electrical power supply ground circuit of the building.)</i> | | |
| (f) | Electric soldering iron in use should be grounded at the tip. | | |
| (g) | All testing of equipment with ESDs devices are as per manufacturer's instructions. | | |
| (h) | Hand tools with painted wooden or plastic handles are not used in the static controlled work area in case the maintenance personnel does not use wrist strap. | | |
| (i) | Whether tools with highly static generative handle are used? If yes, whether these are checked for static generation with an Electrostatic detecting meter before use. | | |
| (j) | Whether manuals, technical documents are carried to a static control work station in plain plastic envelope. <i>(This should be avoided. Such documents can be carried in cardboard binder or stiff paper.)</i> | | |
| (k) | Check whether personnel working on ESDs are not wearing dress made of nylon or synthetic fabric. | | |
| (l) | Ensure that the body is grounded before commencing any work on the ESDs. | | |
| (m) | Whether proper safety techniques as recommended by the vendors are followed strictly while testing the units with ESDs devices under power. | | |

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| (n) | Whether effectiveness of the electro-static free workstation is periodically checked using electrostatic detecting meter. <i>(The electro-static detecting meter should able to detect the polarity and level of static electricity ranging from 30 to 50,000 volts at a distance of 6.5 to 30 cm.)</i> | | |
| (o) | Whether periodic checking of the followings are carried out atleast once in six months: <ul style="list-style-type: none"> • work bench; • ground connection; • cords; • limiting resistors; • work mats | | |
| (p) | Whether wrist strap integrity is measured with wrist strap tester or standard ohmmeter? <i>(The resistance value should be between 2,50,000 ohms to 1.5 mega ohms.)</i> | | |
| (q) | Check that the resistance value of the conductive work surface is less than 1000 mega ohms? | | |
| (r) | Check that the resistance value of conductive floor and anti-static work surface is less than one tera-ohms. | | |
| (s) | Check whether the following caution is displayed in the work station in capital letters: " CAUTION: REMOVE ESDs DEVICES FROM AREA BEFORE USING THE MEGOMMETER". | | |
| (t) | Whether procedure exists for intimation to Customs Department for proper handling of ESDs. | | |
| (u) | Whether any Electro-static device is kept along side non-electrostatic devices. | | |
| (v) | Whether ESDs components are packed in conductive material? | | |

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| (w) | Check that the racks/ cupboards used for keeping ESDs are provided with conductive mats. Whether these are grounded properly? | | |
| (x) | Check whether the ESDs are transported to/ from shop with proper container and taking proper precautions. | | |