

80 Cabot Court, Hauppauge, New York, 11788-3729

**STANDARD QUALITY ASSURANCE CLAUSES AND NOTES**

OIC - QC-5 REV W (ECN 049-20 dated 9/23/20)

The following Quality Assurance Clauses pertain to Orbit Electronics Group (OEG), Tulip Development Laboratory, Behlman Electronics, Orbit Power Group (OPG), and Q-Vio. Clauses apply when **specified on the Purchase Order**, and are in addition to, but not in lieu of, additional purchase order requirements. Changes to this document are the sole responsibility of the Senior Director of Quality Assurance or his designee.

1. **QUALITY MANAGEMENT SYSTEM.** The supplier shall establish and maintain a Quality Management System that is registered to ISO 9001: 2015, "*Quality Management Systems Requirements.*" Compliance with the provisions of this clause in no way relieves the supplier of the final responsibility of furnishing acceptable supplies or services as specified in the purchase document. This system shall be subject to approval by OEG/OPG.
2. **SUPPLIER QUALITY PROGRAM.** The supplier shall maintain a documented and effective quality program acceptable to OEG/OPG for all material and services provided under the purchase document. The supplier's calibration system shall conform to ISO 10012-1, ANSI/NCSL Z540-2, or equivalent. MRB authority is **not** granted for this Purchase Order. The supplier shall develop and maintain a product recall system (traceable to the serial number/date code, location and date of manufacture) which is capable of notifying OEG/OPG of any circumstances that might affect the integrity of products previously delivered. OEG/OPG reserves the right to perform audits at the supplier's facility, as necessary, to assure conformance to the Quality Assurance requirements of the latest Purchase Order issued. OEG/OPG also reserves the right to request Corrective Action for noncompliance.
3. **GOVERNMENT SOURCE INSPECTION.** Government inspection is required prior to shipment from your facility. Upon receipt of this order, promptly notify the Government Representative who normally services your facility, so that appropriate planning for Government Inspection can be accomplished.
4. **OEG/OPG SOURCE INSPECTION.** OEG/OPG source inspection is required prior to shipment from your facility. Notify OEG/OPG Quality Assurance three (3) days prior to the date that the material will be ready for our inspection. Acceptance at the supplier's facility does not guarantee final acceptance. Final acceptance shall be at OEG/OPG unless otherwise specified on the purchase document.
5. **FIRST ARTICLE INSPECTION.**
  - A. The first item produced on this purchase order is subject to first article acceptance prior to further fabrication. If the first piece submitted fails to meet the inspection acceptance requirements, a new first piece shall be submitted for approval. This procedure shall be continued until an acceptable first article has been approved. First article acceptance shall be based on the requirements of the drawing, specification and purchase document, as applicable. Any cost expended for production prior to acceptance of the first article are at the exclusive risk of the supplier. Acceptance of the first article shall not be considered a blanket acceptance of subsequent part production. The submission of a first article shall be accompanied by one legible and reproducible copy of all applicable data.
  - B. **SAE AS9102, FIRST ARTICLE INSPECTION REPORT (FAIR)** is required **prior** to the first delivery of the

product baseline configuration. FAI shall be performed in accordance with all the requirements defined in SAE AS9102 (latest revision). When documenting the FAI, the supplier may use the forms contained within AS9102 or their equivalent, so long as the forms contain all the information required by AS9102. OEG Quality Assurance will either review FAI activity, subsequent to the accepted baseline FAI, or the FAI report will be sent to OEG Quality Assurance for review. OEG Quality Assurance reserves the right to perform some or all aspects of the FAI activities at the supplier's or OEG's facility. OEG assumes no responsibility for material delivered prior to first article approval.

First Article Inspection shall be required in the event:

1. Change in the design affecting the form, fit or function of the part;
  2. Change in the location point of manufacture or other changes that can potentially affect the form, fit, or function of the part including, but not limited to, changes of the manufacturing source(s), process(es), tooling, or materials; or
  3. The supplier can utilize qualification units to complete the AS9102 report, in the event changes occur from qualification units to production units a delta AS9102 FAI shall be required, and submitted to OEG/OPG Quality Assurance; or
  4. Lapse in production for two years, or a period specified by OEG/OPG.
6. **TEST DATA.** Each shipment must be accompanied by one (1) legible and reproducible copy of test data identifying the product tested. Reports must contain the purchase order number, part number, specification and revision and serial number of the item(s) tested. Reports must contain the signature of a Quality Control representative who witnessed the test.
  7. **CERTIFICATE OF CONFORMANCE.** Shipments made against this order must be accompanied by a certificate of compliance signed by an authorized member of the supplier's quality organization or executive management staff. The certificate must state that the item(s) supplied were made from material(s) that meets the requirements of the Purchase Order, and Drawing/Specifications. As applicable, actual test reports shall be kept on file. As a minimum, the certification must include the date, purchase order number, item part number and revision, quantity, serial numbers and/or date codes (as applicable), as well as the signature of the individual authorizing the certificate. Data supporting the certificate must be kept on file and available for review by OEG/OPG Quality Assurance upon request. Supporting data shall be retained in accordance with Clause 20.
  8. **CERTIFICATION OF SHELF LIFE MATERIAL.** Storage and shipment of age sensitive elastomers, paints, adhesives, or other material shall be controlled as per manufacturer's requirements, and shall not cause deleterious effects or deterioration of material properties or requirements. A certificate of shelf life shall accompany each lot, signed by the supplier's

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authorized representative, declaring that the material has been stored in accordance with manufacturer's recommendations / requirements. The certificate shall identify lot/batch numbers (as applicable) and the manufacturing date and expected shelf life or expiration date. Shelf life must be marked on each container, and should indicate storage conditions to preserve the shelf life. All material will have a minimum 75% remaining shelf life upon receipt at OEG/OPG. OEG/OPG Quality Assurance will reject material received with less than 75% remaining shelf life. This certificate can be integrated with the Certificate of Compliance, if applicable.

9. **EQUIPMENT/MATERIAL PACKAGING.** If not covered by specific instructions, all material shall be protected against corrosion, contamination, damage, deterioration or other spoilage during transit. All material shall be packed with suitable protection so as to prevent damage from handling, in transit and during storage, prior to usage. Packaging shall conform to "Best Commercial Practice" unless otherwise stated. Electrostatic Sensitive Devices shall be shipped with appropriate ESD identification, packaging, and controls.
10. **SUPPLIER NONCONFORMING MATERIAL.** Supplies that do not completely conform to all drawings, specifications, or other contractual requirements and cannot be reprocessed to achieve conformity shall not be shipped against this order without prior written approval of OEG/OPG Quality Assurance. The supplier shall submit a detailed description, cause and corrective action of the nonconformance in advance to OEG/OPG. OEG/OPG Quality Assurance will review the nonconformance(s) and inform the supplier of the disposition of the material.
11. **FACILITY ACCESS FOR AUDIT.** During execution of this order, the supplier's Quality Management System and manufacturing processes and all applicable records are subject to review and audit by authorized representatives of OEG, OPG, and OEG's/OPG's customer representatives and government authorities.
12. **DESTRUCTIVE PHYSICAL ANALYSIS (DPA) SPECIMENS.** The supplier shall provide one (1) specimen (configuration optional) with each lot shipped for destructive testing of applied coatings / plating / finishes. This specimen shall have been processed concurrently with the lot that it represents. Prominently identify specimen and mark packing slip "DESTRUCTIVE PHYSICAL ANALYSIS SAMPLE ENCLOSED."
13. **DRAWING AND DOCUMENT CONTROL.** The supplier's Quality Management System shall assure that the latest applicable documents, drawings, specifications, technical requirements, purchase order information and any changes thereto are available to operations and inspection personnel during manufacturing and inspection of material, as well as to source surveillance personnel at the time and place source inspection is (or may be) required. All changes shall be processed in a manner that assures implementation to affected material at the specified effectivity points.
14. **CALIBRATION.** The supplier shall implement and maintain a calibration system in accordance with ISO 10012-1, ANSI/NCSL Z540-1, or equivalent. Equipment, instruments and gages used during inspection and/or test to determine the acceptability of supplies must be appropriately calibrated and traceable to the standards of the National Institute of Standards and Technology. Calibration must be current.
15. **RESUBMISSION OF REJECTED MATERIAL.** Material rejected by OEG/OPG Quality Assurance, and subsequently resubmitted by the supplier, must bear adequate indication of such resubmission on those items and on their shipping documents. When requested, the cause of the nonconformance(s) and corrective action taken to preclude recurrence implemented by the supplier will be documented and included with the resubmission of the material.
16. **MERCURY EXCLUSION.** All supplies furnished under this order shall not contain mercury. The supplier shall notify OEG/OPG prior to proceeding with manufacturing or shipping if the presence of mercury or mercury contamination is suspected. Deliverable materials against this order shall not come into direct contact with any devices which may contain mercury.
17. **ELECTROSTATIC DISCHARGE SENSITIVE DEVICES (ESD).** The supplier shall have an ESD Control Program per ANSI/ESD S20.20 or MIL-STD-1686 (the revision in effect at the time of this order). All ESD-sensitive devices must be handled using proper precautionary controls and stored and shipped with ESD-protective packaging. Packaging must be identified with appropriate ESD precautionary labels (ref: MIL-STD-129).
18. **GOVERNMENT FURNISHED EQUIPMENT (GFE).** The subcontractor is required to maintain a program for material identification, segregation, and control of GFE. This program shall provide for the notification of the appropriate Government Inspection Agency and OEG/OPG Quality Assurance of any deficiency or failure noted to the GFE material.
19. **QUALITY ACCEPTANCE AND WORKMANSHIP CRITERIA.** Unless otherwise specified, minimum quality acceptance and workmanship criteria shall be per MIL-HDBK-454, Guideline 9, of the issue currently in effect at the time of procurement.
20. **RECORD RETENTION.** Unless otherwise specified, quality records shall be retained for a period of seven (7) years. Quality records are defined as those records used in the processing, test and inspection of product, and/or services provided to OEG/OPG.
21. **CHANGE AUTHORIZATION.** No unauthorized changes to manufacturing processes or product construction are permitted subsequent to original approval of material without prior written authorization from OEG/OPG Quality Assurance.
22. **PRINTED WIRING BOARDS (PWB).** PWB's shall be fabricated in accordance with the requirements of this purchase order and specification. Unless otherwise specified, minimum acceptance criteria will be determined by IPC-A-600, Class 2, for PWB's designated for COTS products. Acceptance criteria for MIL-SPEC applications are specified by MIL-PRF-31032 (superseding MIL-PRF-55110) and/or IPC-A-600 Class 3, as applicable. Military specifications take precedence unless otherwise specified in the purchase order.
23. **INSPECTION DATA.** The supplier shall inspect and verify all dimensional, electrical, color, and/or photometric variables data, as applicable, in accordance with criteria specified in the applicable specification / drawing, unless otherwise specified in the purchase order. Evidence of inspection in any form, for example, actual read/record data (preferred), process traveler

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identifying criteria and bearing evidence of inspection, or checked-off drawing bearing evidence of inspection, etc., shall be delivered with material. This data shall be provided with each shipment to OEG/OPG and shall be representative of the batch or lot of material delivered.

24. **MANUFACTURING LOT TRACEABILITY.** Evidence of manufacturing lot traceability is required with each shipment. Material shall be traceable to the extent applicable to raw materials and/or wafer lots, fabrication facilities, processing/test equipment used, and applicable conformance tests, inspections and/or laboratory analyses performed during the manufacturing of the received lot of product. Detailed records shall be provided upon request. Product shall be identified or marked with the manufacturer's name or logo, serial number, batch/lot code, and/or date code and records shall be traceable to the same identification.

25. **COUNTERFEIT PARTS CONTROL PROGRAM.** OEG/OPG requires that all suppliers of electrical parts or assemblies, raw material, hardware, and chemicals shall document and implement a policy in accordance with the current revision of SAE AS5553: Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition, AS6174: Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming Materiel, or the equivalent. Suppliers of mechanical parts are to comply with similar methodology by adopting and implementing standard counterfeit mitigation processes applicable to their industry. Suppliers shall purchase material directly from original equipment manufacturers, original component manufacturers, raw material manufacturers, or their authorized distributors.

In order to mitigate the possible introduction of counterfeit parts, the use of "Brokers" for the acquisition of any parts or materials on this purchase document is **prohibited** without written approval from OEG/OPG. A "Broker" is a non-approved supplier that is not a manufacturer or an authorized distributor. The proposed use of a Broker must be approved by OEG/OPG, in writing, **prior to** acquiring the item. The supplier is responsible for the successful completion of all additional testing that may be required to obtain approval. Suppliers are required to maintain a file of all OEG/OPG approvals. Product provided by component brokers shall be received with OEM certifications. See DFARS 252.246-7007, Contractor Counterfeit Electronic Part Detection and Avoidance System

26. **DELETED.**

27. **SOLDERABILITY.** Each shipment made against this purchase order must contain a statement certifying:

- a. "The supplies furnished under this order have been acceptably tested to the solderability test procedures of ANSI/J-STD-002." The date of testing shall be supplied if other than the date code of the supplied devices.
- b. Material shall be received with hot solder-dipped leads having been tinned using SN60 or SN63 solder manufactured in accordance with J-STD-006. Devices shall be received within six months of being tinned unless otherwise waived, in writing, by OEG/OPG Quality Assurance.

Lack of, or unavailability of, such certificates shall invoke solderability testing at OEG/OPG prior to acceptance. Rejected lots will be returned at OEG's/OPG's discretion.

28. **DELETED.**

29. **ELECTRONIC SOLDERING/ASSEMBLY WORKMANSHIP (CLASS 3).** Soldering shall meet the requirements of IPC J-STD-001, Class 3, of the revision in effect at the time of procurement, unless otherwise noted on this purchase document or product specification. Acceptance of workmanship shall be based upon Class 3 criteria defined in IPC-A-610, of the revision in effect at the time of procurement, unless otherwise noted on the purchase document or product specification.

30. **SEMICONDUCTOR DEVICE TRACEABILITY (MIL-PRF-19500 DEVICES ONLY).** The supplier shall include the documentation specified in paragraph 3.7a (Manufacturer documentation) or 3.7b (Distributor documentation) of MIL-PRF-19500 with each shipment, as applicable.

31. **RADIOGRAPHIC INSPECTION (X-RAY).** Radiographic inspection is required for all assemblies containing Ball Grid Array (BGA), Micro BGA, Land Grid Array (LGA) or Column Grid Array (CGA) devices. The supplier shall include X-ray(s) in either film or digital format, along with a copy of the inspection report with each delivery.

Acceptance criteria shall be in accordance with IPC-A-610, clause 8.3.12.4 and Table 8-13.

32. **PURE TIN (SN) FINISH EXCLUSION.** Material furnished in fulfillment of this purchase order is to be supplied **without** the use of 100% pure tin (Sn) finishes, externally on lead finishes, or internally within device cavities. If alternate finishes are not available, OEG/OPG shall be notified immediately. Product containing pure tin finishes shall not be shipped without prior notification and written authorization from OEG/OPG Quality Assurance.

33. **CERTIFICATE OF CALIBRATION / CALIBRATION OR TESTING SERVICES.** Equipment purchased, supplied, repaired and / or calibrated under contract by OEG/OPG shall be accompanied by a Certificate of Calibration. Calibration OR testing services provided by the supplier shall be in compliance with or registered to the requirements of ISO/IEC 17025: "General Requirements for Competence of Test and Calibration Laboratories" and/or ANSI/NCSL Z540-1. All standards used shall be traceable to the standards of the National Institute of Standards and Technology.

Calibration certificates shall indicate the procedure number and / or method used (and its revision) for the testing / calibration of the item being certified including, but not limited to, reporting procedures for the device precision and accuracy requirements. OEG will be notified of changes to procedures prior to performing the required calibration. Calibration standards used shall be a minimum of four times (4X) more accurate than the equipment being calibrated. Certificates / Reports of calibration shall identify when an out of tolerance condition is encountered and shall indicate the before and after conditions of the parameter found out of tolerance.

34. **CONFLICT MINERALS.** Orbit International prohibits the supplier from using "**Conflict Minerals**" in products manufactured for Orbit International, or its subsidiaries and divisions, if any of the Minerals contained in the final manufactured products are obtained from the following countries: (i) Democratic Republic of Congo; (ii) Angola; (iii) Burundi; (iv)

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Central African Republic; (v) The Republic of the Congo; (vi) Rwanda; (vii) South Sudan; (viii) Tanzania; (ix) Uganda; or (x) Zambia.

As identified by Section 1502 of the Dodd-Frank Wall Street and Consumer Protection Act (“Dodd-Frank Act”), “conflict minerals” are defined as: i) Cassiterite; (ii) Columbite-tantalite (coltan); (iii) Wolframite; (iv) Tin; (v) Tantalum; (vi) Tungsten; or (vii) Gold (collectively, the “Minerals”).

If any of these minerals used in final products manufactured for Orbit originate from the regions defined by the Dodd-Frank Act or are from recycled or scrap source, the supplier is required to notify the Orbit buyer prior to acceptance of this order or manufacturing the product. Use of these “conflict minerals” without prior written authorization from Orbit International is strictly prohibited.

35. **DPAS RATING (IF APPLICABLE).** PLEASE NOTE: DPAS ratings are regulated by the Code of Federal Regulations, Title 15, Commerce and Foreign Trade. As stated in that document under 700.74 - Violations, penalties, and remedies.

(a) Willful violation of the provisions of Title I or Sections 705 or 707 of the Defense Production Act, the priorities provisions of the Selective Service Act and related statutes, this part, or an official action, is a crime and upon conviction, a person may be punished by fine or imprisonment, or both. The maximum penalty provided by the Defense Production Act is a \$10,000 fine, or one year in prison, or both.

Per 15 CFR 700.13 - Acceptance and rejection of rated orders.

- a) Mandatory acceptance.
  - (1) Except as otherwise specified in this section, a person shall accept every rated order received and must fill such orders regardless of any other rated or unrated orders that have been accepted.
  - (2) A person shall not discriminate against rated orders in any manner such as by charging higher prices or by imposing different terms and conditions than for comparable unrated orders.
- b) Mandatory rejection. Unless otherwise directed by Commerce:
  - (1) A person shall not accept a rated order for delivery on a specific date if unable to fill the order by that date. However, the person must inform the customer of the earliest date on which delivery can be made and offer to accept the order on the basis of that date. Scheduling conflicts with previously accepted lower rated or unrated orders are not sufficient reason for rejection under this section.

**DO NOT ACCEPT THIS ORDER IF YOU CANNOT DELIVER BY THE REQUIRED DATE.** Also, if at any time after the order has been placed the Seller becomes aware that the rated order will not be able to be delivered on time, they are required by Federal Law to inform the Buyer immediately.

36. **REQUIRED FIRST PIECE INSPECTION REPORTS.** All product defined by engineering drawings or model based definitions issued by this purchase order shall require first piece inspection reports that verify that all dimensions and design characteristics defined on the drawing have been met. This data shall be provided when any of the following are true:

- At new part or part number introduction.

- Any time a new supplier or subcontractor is involved in production of the part.
- Any time there is a lapse of more than 2 years since the part was last procured.
- Any time there is a revision to the part drawing.
- Any time there is a change in the method of manufacture (Tooling Change, Machine Used, and Numerical Control Program Change).

The following items **do not** require first piece inspection reports but do require a Certificate of Conformance (C of C) that states that all specifications that define the component have been met:

- Standard Parts
- Electronic Components
- Commercial-Off-The-Shelf (COTS) items

Certificates of Conformance **must** comply with clause 7.

NOTE: FPI reports are required to be submitted **prior** to production of the quantity on order. First Piece Inspection is **NOT** to be submitted in lieu of a First Article Inspection Report (Clause 5A or 5B).

37. **MATERIAL CERTIFICATION.** Each shipment by the seller shall be accompanied by a statement of conformance in accordance with the above.

When the item or the items contained within an assembly, sub-assembly, or detail part of the purchase order are supplied by a distributor, a copy of the statement of conformance from the original manufacturer must accompany each shipment.

38. **CUSTOMER AND GOVERNMENT SURVEILLANCE.** During performance on this effort, seller’s quality program or inspection system and manufacturing processes are subject to review, verification, and analysis by authorized customer/government representatives. Customer/Government inspection or release of product prior to shipment is not required, unless seller is otherwise notified. Supplier’s sub-tier suppliers are also subject to this surveillance.

39. **ORDER OF PRECEDENCE.** If there is a conflict between this OEG/OPG purchase order, any engineering drawing, any specification, or any other provided instructions related to the items being purchased, there is no order of document precedence. OEG/OPG shall be notified of the conflict and will provide a written resolution.

40. **SAFETY DATA SHEETS (SDS) REQUIREMENT.** The supplier shall provide a Safety Data Sheet (SDS) for each chemical supplied. Include the SDS with the shipping documents.

41. 48 CFR 52.244-6 Subcontracts for Commercial Items

42. **THE FOLLOWING FAR/DFARS CLAUSES APPLY:**

- 52.203-3 Gratuities
- 52.203-5 Covenant Against Contingent Fees
- 52.203-8 Cancellation, Rescission, and Recovery of Funds for Illegal or Improper Activity
- 52.203-10 Price or Fee Adjustment for Illegal or Improper Activity
- 52.215-17 Waiver of Facilities Capital Cost of Money
- 52.222-2 Payment for Overtime Premiums
- 52.222-3 Convict Labor
- 52.222-19 Child Labor—Cooperation with Authorities and Remedies



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52.222-20	Walsh-Healey Public Contracts Act
52.222-26	Equal Opportunity
52.222-35	Equal Opportunity for Veterans
52.222-36	Affirmative Action for Workers with Disabilities
52.222-50	Combating Trafficking in Persons
52.223-11	Ozone-Depleting Substances
52.229-3	Federal, State, and Local Taxes
52.249-2	Termination for Convenience of the Government (Fixed-Price)
252.204-7012	Safeguarding Covered Defense Information and Cyber Incident Reporting (if applicable)