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Part 1: General Quality Requirements

NOTE: Mercury Mission Systems LLC, Torrance, CA noted as MMS herein

Requirement Name	Requirement
Quality Management System	The supplier shall maintain a quality system meeting the requirements of ISO 9001 or AS9100. Third-party registration by an accredited registrar is preferred. Suppliers declaring compliance with no formal accredited registration may require review. For suppliers not meeting these specifications, MMS will review and determine if system implemented is sufficient based upon the nature and levels of control required by the parts, materials, or services being procured.
Design, Process, or Material Changes	The supplier shall not implement any changes to MMS drawings and/or specifications and/or materials without written approval from MMS in the form of a MMS-approved Request for Deviation/Waiver (MMS form F-021, see below).
Submission of Nonconforming Material to MMS	Items not in conformance with the requirements of the Purchase Order, MMS drawings, specifications, and industry standards referenced therein, or that cannot be corrected through continuation of the original manufacturing process or by rework, shall not be submitted without prior written approval from MMS in the form of an approved Request for Deviation/Waiver (form F-021, see below).
Deviation / Waiver	Should the supplier not be able to meet the requirements of the PO, supplier may prepare and submit a Request for Deviation/Waiver (form F-021), available from MMS Purchasing or Quality Assurance. Submittals shall include supplier-recommended disposition(s) with sufficient technical, quality, and reliability justification.
Resubmission of Material	Nonconforming items returned from MMS which are subsequently resubmitted by the supplier shall include indication of resubmission on the accompanying paperwork and shipping documents. Reference shall be made to the MMS rejection documentation and evidence presented to demonstrate that the causes for rejection have been corrected.
Notification of Previous Delivery of Defective Material	In the event the supplier / special processor determines that material previously delivered to MMS was defective, written notification to the MMS Purchasing representative is required within thirty (30) calendar days.
First Article Inspection	MMS may perform First Article inspection per SAE AS9102 under the following conditions: 1) new supplier; 2) new part number; 3) revision change; 4) same manufacturer but lapse between production runs; 5) verification of implementation of corrective & preventive actions; 6) new facility; or 7) change of ownership.
Key Characteristics	When key characteristics are identified on MMS drawings, the supplier shall implement process controls as required by the drawing, or if not specified, as appropriate to ensure that the key characteristic is satisfied.
Corrective Action	When requested by MMS, the supplier shall investigate nonconformities to determine the root cause(s) of failures and take effective action(s) as appropriate to correct the items and prevent future failures. Unless otherwise requested by MMS, such corrective action(s) may be documented in the supplier's format. Suppliers CAR system shall be a closed-loop system.
Calibration	The supplier shall only utilize inspection and test equipment for acceptance that has been calibrated to the requirements of ANSI/NCCL Z540.1 (latest revision) or other recognized standards.
Preservation & Packaging	Unless otherwise specified, the supplier shall use best commercial practices for preservation and packaging of items supplied to MMS.
Flow Down of Requirements	The supplier shall insure that requirements be flowed down to sub-tier suppliers, including key characteristics, materials selection, first article inspection, process control where required.
Traceability	The supplier shall maintain traceability to the raw material level and shall be able to provide such traceability within a reasonable time frame if requested by MMS.
Shelf-Life	Materials utilized on this order shall be within the applicable shelf-life dates. Expired materials shall not be used.
Record Retention	Suppliers and special processors, as well their subcontractors, shall maintain records to substantiate product compliance to the MMS purchase order requirements and must be capable of furnishing copies of these records upon request of MMS, MMS customers, and government / regulatory representatives as applicable. Such records shall be maintained for a minimum of 10 years after date of delivery to MMS, or as otherwise agreed upon and documented.

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Part 1: General Quality Requirements

NOTE: Mercury Mission Systems LLC, Torrance, CA noted as MMS herein

Requirement Name	Requirement
<p>Counterfeit Parts & Materials</p>	<p>SUPPLIER AND ITS SUPPLY CHAIN SHALL HAVE A COUNTERFEIT MATERIAL AVOIDANCE, DETECTION, MITIGATION, AND DISPOSITION PROGRAM MEETING THE REQUIREMENTS OF AEROSPACE STANDARD AS5553, DFARS 252.246-7007 AND DFARS 252.246-7008. THE SUPPLIER'S COUNTERFEIT MATERIAL PROGRAM SHALL COVER BOTH COUNTERFEIT ELECTRONIC PARTS AS WELL AS NON-ELECTRONIC PARTS AND MATERIALS. SELLER SHALL ONLY DELIVER AUTHENTIC COMPONENTS, MATERIAL, DEVICES, PIECES, MODULES, ASSEMBLIES, SUBASSEMBLIES, GOODS, ETC. THAT ARE MANUFACTURED BY OR OBTAINED FROM ORIGINAL EQUIPMENT MANUFACTURERS (OEMS), ORIGINAL COMPONENT MANUFACTURERS (OCMS), OR AUTHORIZED DISTRIBUTORS. SUPPLIER SHALL NOT PROVIDE REFURBISHED OR RE-USED EEE PARTS, COMPONENTS, HARDWARE, OR MATERIALS. IF SUPPLIER IS NOT AUTHORIZED TO SUPPLY PARTS FOR WHICH THEY ARE SUPPLYING, SUPPLIER SHALL DISCLOSE THE INFORMATION TO MMS. SUPPLIER SHALL MAKE AVAILABLE DOCUMENTATION THAT AUTHENTICATES AND PROVIDES TRACEABILITY OF THE PARTS OR MATERIALS TO THE APPLICABLE OEM, OCM, OR DISTRIBUTORS. DISTRIBUTORS AND VALUE-ADDED SUPPLIERS PURCHASING ON BEHALF OF MMS SHALL BE MEMBERS OF THE GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM (GIDEP). FOR ADDITIONAL GUIDANCE, IT IS RECOMMENDED THAT THE SUPPLIER CONSULT THE COUNTERFEIT PARTS PREVENTION GUIDANCE LOCATED IN THE SUPPLY CHAIN MANAGEMENT HANDBOOK POSTED AT THE IAQG WEBSITE AT WWW.SAE.ORG.</p>
<p>Change of Facility or Ownership</p>	<p>The supplier shall notify MMS when manufacturing operations being performed in support of this purchase order are moved to another facility with a separate street and/or city address. Supplier shall also notify MMS if ownership of the supplier has changed.</p>
<p>MMS-Furnished Material</p>	<p>If applicable, supplier shall certify that material used in fabrication is the material furnished by MMS. Certification shall reference MMS's Purchase Order of the material being supplied.</p>
<p>MSDS Sheets</p>	<p>If applicable, Material Safety Data Sheets are required for the product identified on this line of the Purchase Order. Please include these sheets in an envelope that is identified on the outside as the MSDS sheets with the packing list.</p>
<p>Surveillance & Right of Entry</p>	<p>Representatives of MMS, its customers, Government, and/or regulatory agencies (if applicable) reserve the right to visit the supplier and its suppliers with the intent of resolving delivery and quality issues, etc.</p>
<p>Mercury Exclusion</p>	<p>The items supplied under this Purchase Order shall contain no metallic mercury or mercury compounds and must be free from mercury contamination. During manufacturing, testing, or inspection, the items supplied shall not come in contact with mercury or any of its compounds nor with any mercury-containing devices employing only a single boundary of containment. Note: A single boundary of containment is one not backed by a second seal or barrier to prevent contamination in the event of an accidental rupture of the primary seal or barrier. In the event this requirement cannot be met, contact the MMS Purchasing representative.</p>
<p>Use of Ozone Depleting Chemicals</p>	<p>The use of Ozone Depleting Chemicals (ODC's) in the processing of materials or products delivered on this order is not allowed. If the product requires the use of ODC's, this must be brought to the attention of the MMS buyer prior to any such processing. The notification to MMS must include the reason that alternative chemicals or processing cannot be substituted for ODC usage. Written authorization from MMS is required prior to processing products for this order with ODC's. This requirement must be imposed on any sub-tier supplier or processor utilized in the production of this order.</p>
<p>Foreign Object Detection</p>	<p>Materials, parts, and assemblies must be protected from the intrusion of foreign object debris that could potentially cause damage. As appropriate, the supplier have a Foreign Object Damage/Foreign Object Debris Prevention Program using National Aerospace Standard (NAS) 412 as a guideline.</p>
<p>Electro-static Discharge Sensitive (ESDS) Materials</p>	<p>If applicable, the supplier shall maintain an ESD Program meeting the requirements of ANSI/ESD S20.20 for the control, handling, packaging, and identification of ESDS parts and materials.</p>

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Part 1: General Quality Requirements
NOTE: Mercury Mission Systems LLC, Torrance, CA noted as MMS herein

Requirement Name	Requirement
<p>Certificate of Conformance</p>	<p>A legible "Certificate of Conformance" (C of C) statement shall be provided with each shipment submitted to MMS. The C of C shall be in the supplier's format and may either be a separate document or may be included within the packing list. The C of C statement shall state that the items were produced in conformance with requirements as specified in the MMS purchase order. As a minimum, the C of C shall note 1) the manufacturer or distributor's name and address; 2) the MMS purchase order number; 3) the part number(s) and revision(s) when applicable; 4) traceability information including serial numbers, lot codes, or date codes as appropriate; 5) shelf-life expiration dates if applicable; and 6) signature of the supplier's authorized representative.</p>
<p>Supplier Awareness</p>	<p>MMS Quality and Safety Policies are 1) meet or exceed customer's expectation by providing quality products, on time, and in compliance with customer, regulatory, and authority requirements; 2) commitment to product safety, and providing a safe environment for employees and visitors, in compliance with customer, industry, regulatory, and authority safety requirements. Supplier contribute to the compliance of MMS's Quality and Safety Policies, therefore, supplier personnel should be aware of 1) their contribution to products or service conformity; 2) their contribution to product safety; and 3) the importance of ethical behavior when providing products and/or services to MMS.</p>

Part 2: Specific Quality Clauses
NOTE: Mercury Mission Systems LLC, Torrance, CA noted as MMS herein

Quality Clause	Quality Clause Name	Quality Clause Requirement(s)
<p>01</p>	<p>Inspection and Test Data</p>	<p>The supplier shall provide inspection and test data with the subject item(s). Such test data shall include individual or summary parameter measurements as appropriate.</p>
<p>02</p>	<p>MMS Source Inspection</p>	<p>MMS source inspection is required prior to shipment from supplier's facility. MMS shall be notified a minimum of 24 hours prior to intended shipment when items are ready for MMS source inspection. To schedule, contact the MMS buyer or Quality Assurance.</p>
<p>03</p>	<p>Government Source Inspection</p>	<p>Government inspection is required prior to shipment from supplier's facility. Upon receipt of purchase order, the supplier shall notify the government representative(s) who normally service the supplier's facility, for coordination and scheduling of inspection(s).</p>
<p>04</p>	<p>First Article Inspection</p>	<p>Supplier shall perform a First Article Inspection (FAI) on one piece chosen at random from the first lot presented for MMS acceptance. The FAI shall be performed and documented per the requirements of SAE AS9102, or the supplier's equivalent format. A copy of the FAI report shall be submitted to MMS with the shipment. If discrepancies are noted during the FAI, the supplier shall notify the MMS purchasing representative for guidance. Full or delta FAI's shall be required as appropriate for 1) Revision change since the previous FAI (delta); 2) Changes to supplier's process (delta or full depending on change(s)); 3) Break in production exceeding 18 months (full FAI); or 4) Change of facility (full FAI).</p>
<p>05</p>	<p>Limited-Life Material Requirements</p>	<p>The supplier shall not submit limited-life material(s) with less than 75% of the useful life remaining without written approval from MMS in the form of a MMS-approved Supplier Deviation / Waiver (MMS form F-021, refer to General Quality Clauses). The supplier shall label <u>each individual container</u> of limited-life materials (i.e. epoxy, RTV silicone, shrink tube/sleeve, etc.) with 1) Purchase order number; 2) Manufacturer's name; 3) Batch/lot number; 4) Date of manufacture, or cure date; 5) Date of expiration; 6) Raw material identification (if applicable); 7) Storage conditions (if applicable); and 8) Applicable specification numbers (military and/or industry, as applicable). In addition, a Certificate of Conformance shall accompany each shipment with the information noted in this clause.</p>

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Part 2: Specific Quality Clauses

NOTE: Mercury Mission Systems LLC, Torrance, CA noted as MMS herein


Quality Clause	Quality Clause Name	Quality Clause Requirement(s)
06	Failure Reporting and Corrective Action System (FRACAS)	Utilizing MIL-HDBK-2155 as a guide, the supplier / subcontractor shall maintain a closed loop FRACAS that collects and records all hardware and software failures that occur during device screening or acceptance testing, and upon product returned from MMS, including previously fielded products. Failure analysis shall be conducted to the lowest level of indenture necessary to identify the root failure cause and mechanism. Corrective action investigations shall specifically address the root cause identified by the failure analysis to permanently eliminate the failure cause from the product and/or process. The closed loop system shall contain a suspense audit system for closure of failure analysis and corrective action investigations from date of failure. The supplier / subcontractor shall provide Failure Analysis and Corrective Action Reports (FACAR's) utilizing their own format, or a specific format as provided or directed by MMS. MMS reserves the right to participate in the supplier / subcontractor's Failure Review Board (FRB).
07	Calibration Services	Calibration services shall calibrate and provide test reports in accordance with ANSI/NCSL Z540.1 (latest revision) or other recognized metrology standards.
10	Tool Proofing	Acceptance of production tooling on this Purchase Order shall be contingent upon inspection and acceptance by MMS.
11	MMS Furnished Tooling	Tooling (fixtures, jigs, molds, etc.) and test equipment fabricated by the supplier at MMS expense, or furnished by MMS, is considered property of MMS unless otherwise agreed upon. MMS is responsible for routine and periodic maintenance and calibration of such items. Suppliers are responsible for insuring appropriate protection during transport, storage, and use. Some amount of wear and tear is expected through usage. Said tooling, or replacement tooling of equal quality, shall be returned in an acceptable condition upon demand.
12	Calibration - ISO 17025 Accredited Service	Calibration service is required to possess and maintain a current ISO 17025 Calibration accreditation.
13	Test - ISO 17025 Accredited Service	Testing service is required to possess and maintain a current ISO 17025 Test Laboratory accreditation.
15	Acceptance Sampling	Acceptance sampling inspection may be utilized during performance of this order. Prior to use, the sampling plan must be submitted and approved by MMS Quality Assurance. The use of a sampling plan in no way effects MMS's right to reject any unit(s) of product found defective.
16	Solderability, Date Codes > 4 years	Unless otherwise agreed upon between MMS and supplier, EEE parts with date codes older than 4 years must perform a minimum 1-piece solderability test (in accordance with or equivalent to Quality Clause 18) with evidence including photos provided to MMS QA and Project Lead for review and approval before any assembly can be produced with the parts.
17	MMS-Directed Source	The Supplier shall use only those sources of goods or services that have been approved by MMS. Such direction is generally provided on the MMS purchase order. If not specified, contact assigned MMS Procurement Representative for direction.
18	Solderability	Component leads, terminations, lugs, terminals, and wires shall be capable of meeting the solderability requirements of IPC/EIA J-STD-002. Printed wiring boards shall be capable of meeting the solderability requirements of IPC/EIA J-STD-003.
19	Material from Different Lots	The Supplier may furnish material from different heats, lots, or batches, as applicable. Where shipments contain parts with different cure dates or are from different heats, lots, or batches, sub-lot separation with a separate certification for each sub-lot is required.
20	Single Lot / Date Code Traceability	Parts and materials provided against this line item shall be from one lot, manufactured and/or processed at the same time, and shall be traceable to the same raw material lot(s). For example, machined parts shall be manufactured in the same production run and utilize raw material from the same lot.

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Part 2: Specific Quality Clauses

NOTE: Mercury Mission Systems LLC, Torrance, CA noted as MMS herein

Quality Clause	Quality Clause Name	Quality Clause Requirement(s)
22	Specialty Metals	1) This order is subject to the requirements of DFARS 252.225-7009 Restriction of Acquisition of Article Containing Specialty Metals or DFARS 252.225-7014 Preference for Domestic Specialty Metals and Alternate 1. 2) A statement certifying compliance to DFARS 252.225-7009 or DFARS 252.225-7014 <u>shall be included</u> for each shipment of the item delivered. This statement shall be signed with the title of the signer noted and may be included as a part of the Certificate of Conformance. The statement shall identify the material or item by lot, date of manufacture, and/or serial number, revision date, and/or grade, as applicable.
23	Raw Material Test Reports or Certifications	Supplier shall provide <u>either</u> 1) raw material test reports containing detailed physical and chemical analysis and data; <u>or</u> 2) evidence of conformance (raw material Certificate of Conformance) to <u>recognized specifications</u> (ASTM, Mil-Spec, WS spec, etc.). <u>For additional shipments</u> utilizing the same raw materials, the supplier may either 1) provide additional copies of the same raw material test reports or certifications; or 2) reference previous shipments.
25	Date Codes > 5 Years	Electronic components with manufacturing date codes in excess of 5 years old shall not be provided. Should it not be possible to meet this requirement, supplier must contact MMS purchasing representative for direction.
26	Marking Permanency	Marking on items provided shall meet the marking permanency requirements of MIL-STD-202 Method 215, MIL-STD-750 Method 1022, or MIL-STD-883 Method 2015 as appropriate.
29	Traceability – Part Serial Number (If Applicable)	Each part, component, or assembly specified on this Purchase Order shall be identified with a distinct serial number. Serial numbers shall not be duplicated for one part, component, or assembly number when manufactured in sequential lots and noted on shipment documentation.
30A	Printed Circuit Boards, Class 3	Unless otherwise specified on the MMS fabrication drawing, printed circuit boards (PCB's) shall meet the requirements of IPC-6012 and IPC-A-600, Class 3.
30C	Soldering Workmanship, Class 3	Soldering and assembly workmanship shall be in accordance with the requirements of IPC/EIA J-STD-001, Class 3. Acceptance requirements shall be in accordance with IPC-A-610, Class 3.
30D	Soldering Program, Class 3	The manufacturer shall be responsible for maintaining certified personnel, facilities, and processes in accordance with the latest revision of IPC/EIA-J-STD-001, IPC-A-610 Class 3. All certifications must be an IPC (registered) approved certificate. MMS reserves the right to verify compliance.
30E	Printed Circuit Boards, Class 2	Unless otherwise specified on the MMS fabrication drawing, printed circuit boards (PCB's) shall meet the requirements of IPC-6012 and IPC-A-600, Class 2.
30F	Soldering Workmanship, Class 2	Soldering and assembly workmanship shall be in accordance with the requirements of IPC/EIA J-STD-001, Class 2. Acceptance requirements shall be in accordance with IPC-A-610, Class 2.
30H	Harnesses and Cables Workmanship, Class 3	Soldering and assembly workmanship shall be in accordance with the requirements of IPC/WHMA-A-620, Class 3.
30I	Harnesses and Cables Program, Class 3	The manufacturer shall be responsible for maintaining facilities, certified personnel, processes, and procedures in accordance with the latest revision of IPC/WHMA-A-620, Class 3.
31	Lead-Free Finish or Solder	When any change in product or part number is made or planned which would incorporate lead (Pb)-free finish solders, supplier is required to inform MMS Purchasing and/or Quality Assurance. Supplier shall include the substance of this clause in every applicable purchase order for parts specified in MMS bills of material and/or parts list (when applicable). Change notifications received from supplier's suppliers in response to this clause shall be forwarded to MMS Purchasing and/or Quality Assurance for disposition.
33	Printed Wiring Boards	Independent testing is required prior to shipping the printed wiring boards. All test results and test specimens shall accompany this shipment.
35	PWB Certification	Fabricators of printed wiring boards shall be certified to MIL-PRF-55110, MIL PRF 31032, or MIL-P-50884 as appropriate. NOTE: PWB's fabricated for MMS are not required to be certified to the appropriate specification. The intent is for the fabrication to occur utilizing the QML certified manufacturing, inspection, and testing processes.

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Part 2: Specific Quality Clauses

NOTE: Mercury Mission Systems LLC, Torrance, CA noted as MMS herein

Quality Clause	Quality Clause Name	Quality Clause Requirement(s)
36	Parts Obsolescence Program	The Supplier represents that it will: 1) Maintain sufficient components and materials necessary to perform this order, including obtaining commitments from its suppliers required to meet all obligation and option requirements. 2) Ensure that it can provide adequate notice of parts and materials that will no longer be available for a period of 24 months. 3) Notify MMS of part and materials which are due to be discontinued.
40	Nadcap-Approved Special Processors Required	The supplier shall utilize Nadcap-approved special processors to perform special processes as defined by Nadcap. Nadcap-approved special processors are listed in the eAuditnet Online QML at: https://www.eauditnet.com/eauditnet
43	Export Control	Export Control Notice. This P.O. may contain technical data whose export, transfer, and /or disclosure may be controlled by the U.S. International Traffic and Arms Regulation (ITAR) 22 CFR part 120-130 or the Export Administration Regulations Commerce.
45	Special Processors, Certifications, and Reports	Suppliers are encouraged to utilize Nadcap-approved special processors wherever possible. Otherwise, special processors shall be capable of certifying their processes to the applicable industry specification(s) as required by the MMS drawing. Applicable special process specification(s), type, class, etc. as specified on the MMS drawing or industry specification shall be referenced on the certificate of conformance. If applicable, documentation shall also include actual measurements to verify conformance to requirements. For MIL-A-8625 anodic coatings, no dimensional inspection is required unless directed by MMS documentation, including retroactive processing.
46	MMS-Directed Special Processors	<u>Special Processor Selection:</u> The supplier must use special processors as directed by MMS on the PO. If direction is not provided, contact MMS Purchasing for direction before proceeding. <u>Certification Requirements:</u> The supplier shall furnish a special process certification <u>in addition to</u> the certificate of conformance as required by the general requirements. The certification shall specify the applicable special process specification(s) (plating, heat treat, passivation, etc.), type, class, etc. as specified on the MMS drawing or industry specification, plus as applicable, documentation noting actual measurements verifying conformance to requirements.
49	Circuit Card Assembly, MMS-Provided Material	The supplier is required to satisfy the following: 1) All general requirements as noted in Part 1, with the exception of: <u>Traceability</u> and <u>Counterfeit Parts & Materials</u> . 2) All notes as documented on pertinent MMS fabrication, specification and source control, and assembly drawings. 3) All documents referenced within the PO, drawing package, and BOM including test and inspection procedures. 4) The following specific quality clauses: 01, 19, 29, 30C, 31, 43, 51
50	Circuit Card Assembly, Turn-key, Supplier-Provided Material	The supplier is required to satisfy the following: 1) All general requirements as noted in Part 1; 2) All notes as documented on pertinent MMS fabrication, specification and source control, and assembly drawings. 3) All documents referenced within the PO, drawing package, and BOM including test and inspection procedures. 4) The following specific quality clauses: 01, 04, 16, 19, 25, 29, 30C, 31, 36, 43, 51
51	Circuit Card Assemblies Returned for Rework - Providing Removed Components	Supplier performing rework operations on circuit card assemblies shall provide removed and replaced components in an ESD bag, labeled with the corresponding CCA serial number, to MMS upon return of CCA(s), or as otherwise directed by MMS. If component(s) cannot be removed intact, supplier shall notify MMS Purchasing or Quality Assurance for direction prior to proceeding with component removal.
52	Certificate of Conformance for Parts or Assemblies Returned for Rework	A legible "Certificate of Conformance" (C of C) statement shall be provided with each shipment submitted to MMS. The C of C shall meet the requirements stated in Certificate of Conformance clause of this document (Part 1). In addition, the C of C shall contain the NC or NCMR number associated with the Rework and a statement of the rework performed. The statement must maintain lot or serialized traceability, as applicable to the reworked part or assembly.