

## **IFE/CPT Quality Codes – Released October 17, 2019**

### **Q1 – IFE/CPT APPROVED QMS**

The supplier shall provide and maintain a Quality Management System (QMS) acceptable to IFE/CPT. IFE/CPT's acceptance of supplier's quality system shall be formally documented. The supplier's QMS shall ensure all items delivered are in full compliance with the requirements of the purchase order. The supplier QMS may be subject to review by IFE/CPT at any time.

### **Q2 – ISO-9001 REGISTERED QMS**

The supplier shall provide and maintain a Quality Management System that is registered to ISO 9001:2008 or later. The certification must be current.

The supplier, if not ISO 9001 registered, shall provide and maintain a Quality Management System that complies with ISO-9001 or an Industry Derivative. The system is subject to review at all times by IFE/CPT or its customers. Resulting records shall be made available for review by IFE/CPT at any time. All products delivered to the requirements of a purchase order are required to be designed and produced using the criteria of the supplier's standard quality system.

### **Q3 – INSPECTION**

The supplier shall perform or have performed the inspections and tests required to substantiate that the supplies and services provided under this order conform to the drawing, specification and/or other applicable technical requirements. Where applicable, supplier shall establish and/or maintain a calibration system that is traceable to the National Institute of Standards and Technology for all measuring and test equipment used on this order. This system is subject to review at all times by IFE/CPT Quality Assurance.

### **Q4 – FINAL SOURCE INSPECTION**

Source inspection is required on all items covered by this order at the supplier's facility prior to shipment. The supplier shall provide the necessary facilities, equipment and personnel qualified to demonstrate conformance to the order requirements to the IFE/CPT Quality Assurance representative for this inspection. The supplier shall provide tentative notice ten days in advance of inspection readiness and confirmation no less than forty-eight hours in advance thereof.

### **Q5 – IN-PROCESS SOURCE INSPECTION**

In-process source inspection is required on all items covered by this order at the supplier's facility prior to shipment. In-process inspection shall verify acceptability of quality characteristics which cannot be readily inspected in completed items. In-process inspection points shall be as defined in the order and shall be mutually agreed upon by IFE/CPT Quality Assurance and the supplier prior to start of manufacturing. The supplier shall provide the necessary facilities, equipment and personnel qualified to demonstrate conformance to the order requirements to the IFE/CPT Quality Assurance representative for this inspection. The supplier shall provide tentative notice ten days in advance of inspection readiness and confirmation no less than forty-eight hours in advance thereof.

**Q6 – FIRST ARTICLE INSPECTION**

A complete verification inspection of one item of the first deliverable lot produced under this order is required. The supplier shall verify and document evidence of conformance (measurement data) of all physical, chemical and test requirements required by drawings and specifications. The supplier shall provide IFE/CPT with the First Article Report for inspection and approval. Format is required to comply with AS9102. The supplier shall obtain written acceptance of the First Article prior to shipments.

**Q7 – RADIOGRAPHIC INSPECTION**

The items on this order require radiographic inspection by a government or buyer-approved x-ray laboratory. Film will be read and interpreted by the laboratory and the findings reported on an appropriate form. The x-ray film and one copy of the x-ray report must accompany the material. The x-ray film must be identified with the buyer's order number and the report shall contain the signature and title of a responsible representative of the laboratory.

**Q8 – FUNCTIONAL TEST REPORTS**

Each shipment shall be accompanied by one legible copy of a test report showing actual data identifiable to those test parameters and serial numbers of items submitted. These reports shall contain the signature and title of a responsible representative of the supplier who performed the test indicating conformance to the specified requirements. The specifications must be listed, including the revision letter.

**Q9 – CALIBRATION CERTIFICATION**

The supplier shall maintain a calibration system that complies with MIL-STD-45662, ANSI-Z540 or ISO10012-1. Product shipped to IFE/CPT shall be accompanied by one legible copy of the supplier's certification of accuracy and calibration data (Calibration Certification). This certificate must contain the signature and title of a responsible representative of the supplier. All serialized unit(s) shall have their serial number(s) annotated on the certificate.

**Q10 – AGE/ENVIRONMENT SENSITIVE MATERIAL (SHELF LIFE)**

The supplier shall identify all materials and articles which have definite characteristics of quality degradation with age and/or environment. Identification shall include the date useful life was initiated and the date and/or the cycle at which the useful life will be expended. When environment is a factor in determining useful life, the identification shall include storage conditions required to achieve the stated useful life. Limited shelf life material containers shall be marked with the date of manufacture and the shelf life expiration date. The shelf life shall not exceed the requirements and a minimum of 75% of the shelf life shall remain at the time of shipment. Special storage requirements, if required, shall be provided with each shipment.

**Q11 – MATERIAL CERTIFICATIONS**

Each shipment of material shall be accompanied by one legible copy of chemical analysis and/or physical test reports verifying compliance to applicable buyer's specifications.

**Q12 – SPECIAL PROCESS SAMPLES**

The special processes called for in this order shall be applied to samples of material of the same type to be used in manufacturing of deliverable items. The supplier shall include the sample with each shipment and shall identify the sample to the order by part number and date of shipment. Each sample shall be approximately 1" wide by 3" long.

### **Q13 – ACCEPTANCE TEST PROCEDURE**

The supplier shall submit to IFE/CPT one legible copy of the acceptance test procedure (ATP) to be used for determining acceptability of the articles to be delivered under this order at least ten days prior to shipment of the articles, as applicable. As a minimum, the ATP shall:

1. Be identified with a control number and revision status.
2. Exhibit approval by the supplier's quality function.
3. Address acceptance testing of all performance and mechanical characteristics of the IFE/CPT specification that are applicable to the level of testing required, i.e., qualification, first article and/or production.
4. Contain a clear and concise description of the test methods to be used in performing each test.
5. Contain a list of test equipment to be used, including the manufacturer's name and model number.
6. Contain block diagrams of test equipment set-ups identifying interconnection points and equipment used.
7. Contain data sheets which present specified information.

In the event of a required revision to the ATP during performance under this order, the supplier shall furnish one legible copy of the revision to IFE/CPT. The revision shall be identified as described above and shall exhibit evidence of approval by the supplier's quality function.

### **Q14 – MECHANICAL MEASUREMENTS REPORTS**

Each part shall be accompanied by one legible copy of a report of actual variables mechanical measurements identifiable to all mechanical parameters listed on the drawing. These reports shall contain the signature and title of a responsible representative of the supplier who performed the measurements indicating conformance to the specified requirements. The drawing number must be listed, including the revision letter. In the event that measurements data are represented by sampling send data on those samples by the AQL selected. Place an identification tag or other temporary marking on all parts measured to assure positive data correlation upon receipt at IFE/CPT.

### **Q15 – STATEMENT OF CONFORMANCE / C of C**

The supplier shall provide with each shipment one reproducible copy of a written statement which attests to the conformance of material to the applicable specification and the subcontract/purchase order requirements. The statement shall reference the order number, the part or specification number and revision, and shall contain the signature and title of the supplier's Quality Assurance representative. The statement of conformance/compliance shall be furnished with each lot of material shipped. This certification shall contain the following information as a minimum (not necessarily in the order given below).

1. IFE/CPT purchase order number
2. Part number ordered
3. Part Revision
4. Part Traceability information – must contain the manufacture or distributor, Lot /Date Code, and/ or Serial Number
5. Statement attesting to the supplier's compliance with the purchase order requirements which are contained in specific purchase order clauses
6. Signature of authorized representative of the company
7. The certification shall be dated

The supplier shall maintain records which will furnish validation of the information attested in the certification and which shall be made available for review upon request.

**Q16 – EXCLUSION OF MERCURY**

Supplies and/or products furnished under this order shall contain no elemental mercury (the element Hg) or mercury compounds known to be chemically or thermally unstable in the environment in which the supplies furnished are to operate. Mercury contamination of the supplies will be cause for rejection of the material.

**Q17 – IN-PROCESS SOURCE INSPECTION**

In-process source inspection is required on all items covered by this order at the supplier's facility during the duration of the order. It is intended that random source inspections will be conducted at periodic intervals. Generally these inspections will consist of a review of selected process controls procedures and documentation associated with the manufacture of the articles covered by this order. This supplier shall provide tentative notice ten days in advance of commencing manufacture and confirmation not less than forty-eight hours in advance thereof. At the time of confirmation, supplier shall supply the dates comprising of the start and the end of the manufacturing cycle.

**Q18 – SUPPLIER'S LOT OR BATCH NUMBER IDENTIFICATION**

All parts and/or material, and applicable documents, must be identified by a manufacturing lot or batch number by the supplier. Where identification of individual parts is not practical due to size or shape, the manufacturing lot or batch number shall be placed on the smallest unit package. A lot or batch number shall be defined as parts and/or material produced by one manufacturer in one unchanged process, in accordance with the same drawing and/or specification.

**Q19 – FAILURE ANALYSIS /REPAIR REPORT**

The supplier is required to submit a failure analysis/repair report for each item being returned for rework in accordance with IFE/CPT QP-1301 procedures. The report shall be documented on IFE/CPT generated document number QP-1301a "Defective Material Report".

**Q20 – COMPONENT REQUIREMENT STATEMENT**

Products furnished under this order shall be products which are listed on the Qualified Products List (QPL) applicable to the device ordered. The supplier shall make details of their inventory system and traceability documentation available to the authorized representative for inspection (acceptance) upon request.

**Q21 – LOCATION OF MANUFACTURER**

Only those products manufactured within the North American continent shall be supplied.

**Q22 – ELECTROSTATIC DISCHARGE CONTROL AND PACKAGING**

If this order is for a device that is Electrostatic Discharge Sensitive (ESDS), the Supplier shall maintain an Electrostatic Discharge Control program in accordance with the most recent version of MIL-STD-1686, ANSI S20.20. The program shall be subject to review by IFE/CPT. The item shall be packaged in materials that are non-charge generating on the inside surface next to the part as well as providing conductive shielding protection. The protective container shall be labeled with an industry recognized ESDS cautionary statement.

**Q23 – VENDOR DATA SHEET**

The supplier shall provide with each shipment a specification sheet or catalog page pertaining to the item submitted.

**Q24 – Safety Data Sheet (SDS)**

The supplier shall provide a copy of the Safety Data Sheet (SDS) with each delivery.

**Q25 – MRB Authority**

Any repair actions not sanctioned by the assembly's design documentation will require Buyer approval prior to work being performed.

**Q26 – PROHIBITED MATERIALS**

All tin plating, solder or tin finishes shall have a minimum of 3% lead content by weight. Parts shall also be free of Zinc, Cadmium, and Mercury.

The use of **Hexavalent chromium** is also prohibited for in any of our parts.

Supplier shall provide a written/signed Certificate of Compliance (C of C) with each shipment that attests to meeting this requirement

**Q27 – SINGLE DATE/LOT CODE**

Supplier shall deliver parts from a Single Lot / Date code against this PO.

**Q28 – TAPE AND REEL PACKAGING REQUIRED**

Supplier shall provide surface mount parts on a Tape and Reel for the Pick and Place machine. The Reel should be constructed of high temperature anti-static material and the Carrier tape should be made of conductive polystyrene material or equivalent to protect devices from ESD damage. The Tape and Reel parts packaging shall be fully compliant to EIA-481.

**Q29 – COUNTERFEIT PARTS REQUIREMENT**

All parts and materials shall be procured only through OEMs/OCMs, or their franchised dealer or distributors.

The supplier shall verify the procurement source, authenticity of the parts, and associated certifying paperwork. Verification shall be in accordance with AS5553, DFARS 252.246-7007 Par. (a to e), DFARS 252.246.7008, and/or equivalent standard.

Appropriate incoming inspection test methods shall be used to detect potential Counterfeit Parts and materials. The supplier **shall not** use unapproved brokers (any company, person, or entity who is not an OEM/OCM or not an OEM/OCM authorized franchised dealer or distributor) for the purchase of components/materials/parts unless pre-approval (in writing) has been granted by IFE/CPT.

**Q30 – Purchase Order Lot Control Marking**

When applicable, this requirement is for all Metal Work where the drawing requires the Part Number to be marked. The Supplier shall also mark their cage code or the Supplier number (found under "Supplier" on the PO) and a lot number of Manufacturer's choice that will give lot traceability.

**Q31 - DFARS 252.225-7001/7002**

Buy American Act (DFARS 252.225-7001) and Qualified Countries (DFARS 252.225-7002) is imposed on this contract.

**Q32 – Defense Priorities Allocations Systems**

This is a rated order certified for National Defense Use, and you are required by law to follow the provisions of the Defense Priorities Allocations System (15 CFR 700).

Authorized vendor representative must accept or reject a rated order in writing or electronically within fifteen (15) working days after receipt of a “DO” rated order, and within ten (10) working days after receipt of a “DX” rated order. If the order is rejected, the representative must give reasons in writing (NOT electronically) for the rejection, directed to the listed Buyer on the subject order.

If a rated order has been accepted, and vendor/vendor’s representative subsequently finds that shipment or performance will be delayed, notification must be provided to IFE/CPT immediately, providing the reasons for the delay, and advising of a new shipment/performance date. If notification is given verbally, written or electronic confirmation must be provided within five (5) working days.

**Q33 – Conflict Minerals**

IFE/CPT has pronounced our concerns regarding the human rights brutalities occurring in the Democratic Republic of the Congo and the adjoining countries. Accordingly, we are continuously monitoring and working to develop key processes and controls that would help us declare our supply chain as being “DRC Conflict Free”.

In response to these concerns, a final rule regarding sourcing of related minerals under Section 1502 of the Dodd-Frank Wall Street Reform and Consumer Protection Act was approved by the U.S. Securities and Exchange Commission ("SEC") on August 22, 2012. The rule designates certain minerals and derivatives as "Conflict Minerals" regardless of where they are sourced, including metals like tin, tungsten, tantalum and gold. The rule also requires publicly-traded companies regulated by the SEC to report annually the presence of Conflict Minerals originating in the DRC or adjoining countries ("Covered Countries") in the products they manufacture or contract to manufacture, if such Conflict Minerals are necessary to the functionality or production of their product.

We are committed to sourcing components and materials in an ethical and responsible manner. In addition, we are committed to taking all the necessary steps to comply with the Conflict Minerals legislation as it stands today.

In order to be fully compliant with this directive, we require all of our suppliers to complete the CFSI’s Conflict Minerals Reporting Template (CMRT form Revision 4.20) in order to obtain information about the raw materials being supplied to either division. Obtaining accurate information from our suppliers about whether components contain any amount of tin, tantalum, tungsten or gold are our primary concern. If any of those substances are present as reported, they will be traced back to their source.

Failure to supply the information necessary to make an accurate assessment of our supply chain may preclude suppliers from future opportunities with IFE/CPT. This only applies to all PCB manufacturers and suppliers of plated product.

**Q34 – Flow down of Requirements**

The supplier’s quality system shall assure that all relevant purchase order requirement are flowed down

to their sub-tier suppliers. These sub-tier suppliers will be responsible to further comply with the same requirements specified on the IFE/CPT purchase order.

#### **Q35 – Quality Record Retention**

The supplier shall retain any quality records as it pertains to IFE/CPT parts or processes. Records shall be maintained for a period of no less than (8) years or unless otherwise specified by an IFE/CPT quality representative. Quality records traceable to sub-tier suppliers shall also be maintained and retained for the same (8) years. Any record shall be made available for review upon request.

#### **Q36 – Rohs Compliance**

In an effort to diversify our business into both the commercial, military and the European marketplace, we are required to comply with the numerous governmental regulations, which in certain instances, must be flowed down to our suppliers. This declaration mainly encompasses the implementation of the EU Rohs List of banned substances directive, WEEE (Waste from Electrical and Electronic Equipment), and the Defense Federal Acquisition Regulation (DFAR 252.225-7009) defining the special provisions for the use of domestic specialty metals.

IFE/CPT has made permanent design changes on product lines that contain lead, have a banned substance and/or are not in compliance with the aforementioned directives. These necessary changes, where applicable, incorporate the use of lead free solder, compliant materials and/or non-hazardous substances during each stage of the manufacturing process. Both companies incorporate these practices specifically in the areas of chassis plating/finishes and have implemented other application specific assembly procedures in order to integrate the use of lead free materials/substances in compliance with the ISO-14001 standards for environmental safety.

Therefore, the parts purchased or materials used process IFE/CPT products must be Rohs compliant

#### **Q37– Non Rohs Compliance**

This quality code allows for the purchase of and use of leaded parts/materials during the manufacture of IFE/CPT products. The use of lead-free parts or processes are not allowed. Any request for a deviation to this clause must be submitted (in writing) to an IFE/CPT quality representative for further review within one day of purchase order receipt. Action/work is not to commence until proper authorization is either denied or granted by an IFE/CPT quality representative.

#### **Q38 – Restriction on Acquisition of Certain Articles containing Specialty Metals**

When cited in any IFE/CPT terms and conditions or any purchase order requirements, the latest revision to DFARS 252.225-7009 shall apply to this procurement.

#### **Q39 - Dissimilar Metals**

Dissimilar metals defined in MIL-STD-889 Type I, shall not be used if it is possible to avoid them. If used, they shall be suitably protected against electrolytic action.

#### **Q40 – Packaging**

All purposed product must be packaged in accordance with IFE/CPT WI-1002 “HSPDD”

#### **Q41 – International Traffic in Arms Regulations**

This order contains technical data, export of which is restricted by the International Traffic in Arms Regulations (ITAR) or Export Administration Regulations (EAR). Disclosure to foreign persons without

prior U.S. Government approval is prohibited. Violations of these export laws and regulations are subject to severe civil and criminal penalties.

#### **Q42 – Products deemed to be Moisture Sensitive**

Products deemed to be susceptible to excess humidity levels shall be packaged in accordance with the latest revision to the IPC/JEDEC J-STD-033 “Handling, Packing, Shipping, and Use of Moisture/Reflow Sensitive Surface Mount Devices” standard.

#### **Q43 – Wood Packaging Requirements**

Wood packaging material (WPM) includes but is not limited to pallets, skids, load boards, pallet collars, wooden boxes, reels, dunnage, crates, frames and cleats. This requirement excludes materials that have undergone a manufacturing process, such as corrugated fiberboard, plywood, particleboard, veneer, and oriented strand board (OSB).

All WPM shall meet the requirements of the International Standards for Phyto sanitary Measures (ISPM) Number 15, "Regulation of Wood Packaging Material in International Trade". DoD shipments inside and outside of the United States Shall meet the requirements of ISPM 15 whenever WPM is used to ship DoD cargo. <https://ispm15.com/>

All WPM shall comply with the official Quality Control Program for heat treatment (HT) or kiln dried heat treatment (KDHT) IAW American Lumber Standard Committee (ALSC), Incorporated, Wood Packaging Material Program and WPM Enforcement Regulations (see <http://www.alsc.org/>).

All WPM shall include certification/quality markings IAW the ALSC standard. Markings shall be placed in an unobstructed area that will be readily visible to inspectors. Pallet markings shall be applied to the stringer or block on diagonally opposite sides of the pallet and be contrasting and clearly visible. All containers shall be marked on a side other than the top or bottom, contrasting and clearly visible. All DUNNAGE used in configuring and/or securing the load shall also comply with ISPM 15 and be marked with an ALSC Approved DUNNAGE stamp.

Failure to comply with these requirements may result in refusal, destruction, or treatment of materials at the point of entry. The Government reserves the right to recoup from the Subcontractor any remediation costs incurred by the Government.

Handling, Storage, Preservation, Packaging and Shipping. The Subcontractor Shall establish, maintain, control and be responsible for the handling, storage, preservation, packaging and shipping to protect the quality of the materials and to prevent damage from loss, deterioration, degradation, or substitution of products.

#### **Q44 - No Changes without Approval**

No changes in materials, processes, procedures, design interfaces or software which affects the form, fit, function, safety, weight, maintainability, service life, reliability, replace ability or interchangeability of the items to be delivered to IFE shall be made without prior written approval from the IFE Buyer.

Listed below are examples (not all inclusive) of events which the supplier shall evaluate for product impacts as defined above.



- Plant Relocation • New Equipment
- Material Change • Name/Cage Code Change
- Equipment Relocation • Process Change
- Design Change • Drawing conflict
- Sub-Tier Supplier Change

It is the supplier's responsibility to fully comply with all the instructions listed on the IFE Purchase Order. Lack of written approval shall not relieve the supplier of the responsibility to fully comply with all of the requirements of the purchase order. The supplier shall not receive compensation in any form from IFE for unauthorized activity.

#### **Q45 – Soldering Requirements**

Soldered devices shall comply with the requirements of IPC J-STD- 001F Class 3 unless otherwise specified on the IFE Purchase Order.

#### **Q46 – Right to Audit**

Seller shall grant the buyer the right to audit.

IFE reserves the right to perform inspections, audits, evaluations, reviews, and/or witness the execution of the processes being performed at the supplier's facilities in support of this purchase order.

This requirement applies to the supplier's sub-tiers and shall be flowed down accordingly.

#### **Q47 - IUID Markings**

Items supplied against this order shall comply with the requirements of DFAR 252.211-7003

Each Item shall be marked with an IUID in accordance with MIL-STD-130

The data matrix bar code shall comply with ISO 15418 Semantics and ISO 15434 Syntax Configuration of the IUID Data Matrix shall be Construct 2, DI format 06 called UID2PN using designators (17V), (1P), (S)

Unless otherwise specified, the Enterprise Identifier (EID) and Enterprise Serial Number shall be used along with the Part Number specified on the Purchase Order.

Location for each IUID marking shall be in accordance with the associated drawing

The Seller shall verify and validate each IUID and archive the associated verification and validation record for a minimum of five (5) years

#### **Q48 – Connector Protection**

The supplier shall protect all unmated connectors at all times during assembly, storage and test.

The supplier shall protect individual assembled connector(s) that have contacts or sockets with protective caps or other suitable packaging prior to shipment.

The supplier shall ensure connectors are free of foreign objects prior to placing caps on connectors. Non-conductive caps may be used if the part is not ESD Sensitive.

**Q49 – Foreign Object Debris (FOD)**

Seller shall ensure items supplied and the packaging will not be a source of Foreign Object Damage (FOD) and/or other contaminants.

**Q50 – Security**

Seller shall develop and implement a security awareness and education program across all seller locations and activities. This requirement shall flow down to all subcontractors engaged by the seller.

**Q51 – Corrosion Resistant Steel (CRES)**

Unless other specified under contract, the seller is to utilize CRES hardware and fasteners for all fabricated devices.