



Advanced Systems & Technologies

Document Title:

## Quality Assurance Purchase Order Requirements

Form. No.: L3US-QAP-009

Rev: H

Date: 4 December 2018

### **QAPOR 0- NO PURCHASE CODES ASSIGNED**

NO PURCHASE CODES ASSIGNED

### **QAPOR 1- SOURCE INSPECTION**

BUYER SOURCE INSPECTION IS REQUIRED PRIOR TO SHIPMENT OF ARTICLES FROM THE SELLER'S FACILITY. UPON RECEIPT OF THIS ORDER AND PRIOR TO COMMENCING WORK, PROMPTLY NOTIFY THE BUYER'S QUALITY ASSURANCE REPRESENTATIVE SO THE APPROPRIATE INSPECTION PLAN CAN BE COORDINATED. BUYER RESERVES THE RIGHT TO PERFORM IN-PROCESS INSPECTION, IN-PROCESS SURVEILLANCE, AND AUDITS FOR THE DURATION OF THIS SUBCONTRACT.

SOURCE INSPECTION SHALL BE CONDUCTED BY THE BUYER AT THE SELLER'S FACILITY OR WHERE DESIGNATED IN THE ORDER. THE SELLER SHALL NOTIFY THE BUYER'S OFFICE A MINIMUM OF 10 WORKING DAYS IN ADVANCE OF THE TIME THE ARTICLES OR MATERIALS ARE READY FOR INSPECTION OR TEST.

THE SELLER SHALL MAKE AVAILABLE ALL APPLICABLE DRAWINGS, SPECIFICATIONS, PROCEDURES, STATEMENTS OF WORK, BUYER'S ORDER, TEST SOFTWARE, AND CHANGES THERETO, RELATED INSPECTION AND/OR TEST EQUIPMENT, AND SUCH OTHER INFORMATION AS MAY BE REQUIRED TO SATISFACTORILY PERFORM THE INSPECTIONS AND TESTS REQUIRED UNDER THIS ORDER.

EVIDENCE OF SOURCE INSPECTION SHALL BE PROVIDED WITH EACH SHIPMENT. IF A COMPLETED SOURCE INSPECTION CHECKLIST IS PROVIDED AT THE TIME OF THE INSPECTION ACTIVITY, THIS DOCUMENT SHALL BE INCLUDED WITH THE SHIPMENT.

SOURCE INSPECTION DOES NOT RELIEVE SELLER OF RESPONSIBILITY FOR NONCONFORMING HARDWARE FOUND AT BUYER'S FACILITY. FINAL ACCEPTANCE OF PRODUCT DELIVERED UNDER THIS SUBCONTRACT OCCURS AT BUYER'S FACILITY.

### **QAPOR 2 – GOVERNMENT SOURCE INSPECTION**

GOVERNMENT INSPECTION IS REQUIRED PRIOR TO SHIPMENT FROM YOUR PLANT. UPON RECEIPT OF THIS ORDER, PROMPTLY NOTIFY THE GOVERNMENT REPRESENTATIVE WHO NORMALLY SERVICES YOUR PLANT SO THAT APPROPRIATE PLANNING FOR GOVERNMENT INSPECTION CAN BE ACCOMPLISHED. IN THE EVENT THAT THE REPRESENTATIVE OF OFFICE CANNOT BE LOCATED, THE L3 BUYER SHALL BE NOTIFIED IMMEDIATELY.

### **QAPOR 3 – SHELF LIFE MATERIAL**

EACH CONTAINER OF LIMITED SHELF LIFE MATERIAL SHALL HAVE THE SHELF LIFE EXPIRATION DATE CLEARLY MARKED ON THE CONTAINER AND/OR ANNOTATED IN CERTIFICATIONS PROVIDED WITH THE MATERIAL.

MATERIAL FURNISHED IN KITS CONSISTING OF TWO OR MORE COMPONENTS MUST HAVE EQUAL SHELF LIFE DATES.

MATERIAL RECEIVED WITH LESS THAN 75% OF THE OF SHELF LIFE REMAINING SHALL RESULT IN THE REJECTION OF MATERIAL.



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### QAPOR 4 – CERTIFICATION OF CONFORMANCE REQUIRED

SELLER SHALL SUBMIT A SIGNED/STAMPED AND DATED CERTIFICATE OF CONFORMANCE (C OF C) WITH EACH SHIPMENT.

NOTE: FOR BUYER VENDOR ITEM CONTROL OR SOURCE CONTROL DRAWINGS, SELLER SHALL CERTIFY TO THE PART NUMBER SPECIFIED ON THE PURCHASE ORDER.

FOR BUYER PART NUMBERS, VENDOR ITEM CONTROL, OR SOURCE CONTROL DRAWINGS, C OF C SHALL IDENTIFY AT A MINIMUM:

1. MANUFACTURER'S NAME
2. BUYER PURCHASE ORDER NUMBER
3. MATERIAL QUANTITY
4. BUYER DRAWING NUMBER AND REVISION
5. TRACEABILITY (AS APPLICABLE)
6. SELLER PART NUMBER AND REVISION WHEN SPECIFIED AS PART OF THE BUYER DRAWING REQUIREMENTS

FOR SELLER PART NUMBERS, C OF C SHALL IDENTIFY AT A MINIMUM:

1. SELLER'S NAME
2. BUYER PURCHASE ORDER NUMBER AND LINE ITEM
3. MATERIAL QUANTITY
4. SELLER PART NUMBER
5. TRACEABILITY (AS APPLICABLE)

### QAPOR 5 – SQAR DOCUMENT

DELETED.

### QAPOR 6 – INSPECTION AND INSPECTION DATA

SUPPLIER SHALL RECORD (AFTER FINAL FINISH) ALL MECHANICAL/DIMENSIONAL FEATURES ON ONE PART FROM EACH LOT/BATCH SHIPPED AGAINST THIS PURCHASE ORDER.

**THE RESULTS OF THIS INSPECTION MUST BE FURNISHED WITH THE SHIPMENT. ACTUAL DIMENSIONS FOR EACH MECHANICAL/DIMENSIONAL FEATURE AND THE MINIMUM AND MAXIMUM TOLERANCE RANGE MUST BE PART OF THE INSPECTION DATA.**

**THIS INSPECTION DATA DOCUMENT SHALL BE SIGNED AND/OR STAMPED BY A MEMBER OF THE QUALITY ASSURANCE GROUP AT THE SUPPLIER'S FACILITY.**

THE REMAINDER OF THE LOT SHALL BE INSPECTED 100% OR IN LIEU OF 100% INSPECTION, THE ZERO-BASED ACCEPTANCE SAMPLING PLAN SHOWN BELOW MAY BE USED, USING A 1% AQL. ONE INSTANCE OF A NONCONFORMANCE SHALL CAUSE THE SAMPLING INSPECTION TO STOP AND THE LOT/BATCH INSPECTED 100% FOR THE OUT OF TOLERANCE FEATURE. IF NO ADDITIONAL PRODUCT IS FOUND DISCREPANT, THE SAMPLING PLAN MAY BE CONTINUED.

THE ACCEPTANCE OF PRODUCT USING STATISTICAL SAMPLING DOES NOT RELIEVE THE SUPPLIER FROM THE RESPONSIBILITY OF DELIVERING ALL PRODUCT CONFORMING TO SPECIFICATION/DRAWING REQUIREMENTS.



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## Acceptable Quality Level (AQL)

LOT SIZE	.010%	.015%	.025%	.040%	.065%	.10%	.15%	.25%	.40%	.65%	1.0%	1.5%	2.5%	4.0%	6.5%	10.0%
1-8	A	A	A	A	A	A	A	A	A	A	A	A	5	3	2	2
9-15	A	A	A	A	A	A	A	A	A	A	13	8	5	3	2	2
16-25	A	A	A	A	A	A	A	A	A	20	13	8	5	3	3	2
26-50	A	A	A	A	A	A	A	A	32	20	13	8	5	5	5	2
51-90	A	A	A	A	A	A	80	50	32	20	13	8	7	6	5	4
91-150	A	A	A	A	A	125	80	50	32	20	13	12	11	7	6	5
151-280	A	A	A	A	200	125	80	50	32	20	20	19	13	10	7	6
281-500	A	A	A	315	200	125	80	50	48	47	29	21	16	11	9	7
501-1200	A	800	500	315	200	125	80	75	73	47	34	27	19	15	11	8
1201-3200	1250	800	500	315	200	125	120	116	73	53	42	35	23	18	13	9
3201-10,00	1250	800	500	315	200	192	189	116	86	68	50	38	29	22	15	9
10,001-35,000	1250	800	500	315	300	294	189	135	108	77	60	46	35	29	15	9
35,001-150,000	1250	800	500	490	476	294	218	170	123	96	74	56	40	29	15	9
150,001-500,000	1250	800	750	715	476	345	270	200	156	119	90	64	40	29	15	9
500,000 & Over	1250	1200	1112	715	556	435	303	244	189	143	102	64	40	29	15	9

**“A” Indicates that the entire lot/batch must be inspected.**

### QAPOR 7– PRODUCT INSPECTION

ALL PRODUCT FURNISHED AGAINST THIS PURCHASE ORDER SHALL BE INSPECTED 100% FOR ALL DRAWING/SPECIFICATION/TECHNICAL DATA PACKAGE REQUIREMENTS. SAMPLING INSPECTION IS NOT PERMITTED.

### QAPOR 8 – FUNCTIONAL TEST

EACH COMPLETED PART/ASSEMBLY DELIVERED ON THIS PURCHASE ORDER, MUST BE FUNCTIONALLY AND/OR ELECTRICALLY TESTED, AS APPLICABLE. EACH TEST DATA PACKAGE SHALL REFLECT THE ACTUAL RESULTS OF EACH PARAMETER TESTED. THE TEST DATA MUST BE SIGNED AND DATED BY THE TEST CONDUCTOR, AS CERTIFICATION THAT THE ITEM(S) SHIPPED HAVE BEEN FUNCTIONALLY TESTED AND MEET ALL OF THE REQUIREMENTS OF THE FUNCTIONAL TEST. A COPY OF THIS DATA PACKET MUST ACCOMPANY EACH ITEM BEING DELIVERED.

### QAPOR 9 – RAW MATERIAL CERTIFICATION

COPY OF ORIGINAL MILL AND/OR MANUFACTURING MATERIAL CERTIFICATIONS (CHEMICAL AND PHYSICAL TEST REPORTS) MUST ACCOMPANY SHIPMENT.

A MANUFACTURER’S TEST REPORT SHALL BE SUBMITTED TO THE BUYER AND INCLUDE THE FOLLOWING INFORMATION (AS APPLICABLE) BASED ON THE PRODUCT BEING SHIPPED:

1. MANUFACTURER’S NAME
2. PART NUMBER WITH REVISION & SPECIFICATION
3. TRACEABILITY SUCH AS BATCH, HEAT OR LOT NUMBER
4. DATE OF MANUFACTURE
5. CHEMICAL ANALYSIS WITH ACTUAL TEST VALUES
6. MECHANICAL ANALYSIS WITH ACTUAL TEST VALUES
7. TEMPER OR GRADE

IF THE SELLER IS NOT THE MANUFACTURER, THE SELLER SHALL PROVIDE A PHOTOCOPY OF THE ORIGINAL MANUFACTURER’S TEST REPORT.

### QAPOR 10 – WELDER CERTIFICATION

WELDING SHALL ONLY BE PERFORMED BY WELDERS CERTIFIED TO THE REQUIREMENTS OF THE WELDING SPECIFICATION LISTED ON THE DRAWING.



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### QAPOR 11 – SPECIAL PROCESS CERTIFICATION

WHEN SPECIAL PROCESSES (I.E. PLATING, WELDING, HEAT TREATING, ANODIZING, PAINT, CHEMICAL COATING, ETC) ARE SPECIFIED ON THE DRAWING(S) AND/OR SPECIFICATION(S) AND/OR ADDITIONAL TECHNICAL REQUIREMENTS CITED ON THE PURCHASE ORDER, THE SUPPLIER SHALL INCLUDE IN EACH SHIPMENT A CERTIFICATION FOR EACH SPECIAL PROCESS PERFORMED. THE PROPERTIES LISTED SHALL INCLUDE THOSE SPECIFIED ON THE DRAWING (S) AND/OR SPECIFICATION(S) AND/OR ADDITIONAL TECHNICAL REQUIREMENTS CITED ON THE PURCHASE ORDER. THE SPECIAL PROCESS CERTIFICATION SHALL INCLUDE AS A MINIMUM

- THE BUYER'S PART NO. INCLUDING REVISION
- NAME AND ADDRESS OF SPECIAL PROCESSOR
- THE SPECIAL PROCESS SPECIFICATION INCLUDING REVISION, AND COMPLETE DESIGNATION (E.G., ASSOCIATED GRADE, CLASS, TYPE, ETC.)
- QUANTITY PROCESSED
- THE DATE(S) OF WHICH THE SPECIAL PROCESS WAS PERFORMED
- FOR HEAT-TREATED MATERIAL THE ACTUAL HARDNESS READING(S).

THE CERTIFICATE SHALL BEAR THE SIGNATURE AND TITLE OF AN AUTHORIZED AGENT OF THE SUPPLIER THAT PERFORMED THE PROCESS. UNSIGNED CERTIFICATIONS ARE ACCEPTABLE IF IT CONTAINS A STATEMENT CONFIRMING THE VALIDITY OF THE DOCUMENT.

### QAPOR 12 - COUNTERFEIT PARTS PREVENTION (Subcontractors and Contract Manufacturers)

DELETED.

### QAPOR 13 - COUNTERFEIT PARTS PREVENTION (Independent Distributor - Active Components and Hybrids)

INDEPENDENT DISTRIBUTOR'S PROCEDURES SHALL MEET THE REQUIREMENTS OF IDEA-STD-1010 AND AS6081. QUALITY MANAGEMENT SYSTEM SHALL BE CERTIFIED TO AS9120 AND/OR AS9100. INSPECTIONS AND TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH IDEA-STD-1010 AND AS6081. IDEA-STD-1010 AND THE INSPECTION AND TESTS DEFINED BELOW SHALL TAKE PRECEDENCE OVER AS6081 FOR CONFLICTS IN INSPECTION METHODOLOGY AND DEFECT CRITERIA. MANUFACTURER SPECIFICATIONS AND PARAMETERS SHALL BE USED FOR PART REQUIREMENTS AS APPLICABLE. RECORDED EVIDENCE OF ALL TESTING PERFORMED SHALL BE INCLUDED WITH EACH SHIPMENT. WHEN AVAILABLE, OEM/OCM AND/OR AD CERTIFICATES OF CONFORMANCE (C OF CS) SHALL ALSO ACCOMPANY EACH SHIPMENT.

THE FOLLOWING INSPECTIONS AND TESTS ARE REQUIRED FOR ACTIVE COMPONENTS AS APPLICABLE BASED ON DEVICE PACKAGE TYPE.

- VISUAL MICROSCOPY INSPECTION OF ALL PARTS IN THE ORDER IS REQUIRED TO A MAGNIFICATION LEVEL CAPABLE OF IDENTIFYING NONCONFORMITIES RELATED TO PART SIZE. THIS INCLUDES VISUAL INSPECTION REQUIREMENTS FOR PACKAGING.
- GENERAL EXTERNAL VISUAL INSPECTION REQUIREMENTS SHALL BE 100% OF THE LOT
- SAMPLING INSPECTION OF DETAILED EXTERNAL VISUAL REQUIREMENTS, INCLUDING MECHANICAL DIMENSION MEASUREMENTS, SHALL BE AS DEFINED BY THE SELLER'S INTERNAL PROCEDURES BASED ON INDUSTRY STANDARDS AS A GUIDE
- X-RAY INSPECTION (100% OF THE LOT)
- XRF/ROHS (3 PARTS PER LOT DATE CODE)
- SOLDERABILITY TESTING PER IPC/EIA J-STD-002 (3 PARTS PER LOT DATE CODE), EXCEPTION FOR BALL GRID ARRAY (BGA) PARTS, COLUMN GRID ARRAY (CGA) PARTS, AND GOLD PLATED TERMINATIONS ON PARTS



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- SCANNING ELECTRON MICROSCOPY (1 PART PER LOT DATE CODE)
- SOLVENT TESTING FOR REMARKING (3 PARTS PER LOT DATE CODE)
- SOLVENT TESTING FOR RESURFACING W/ACETONE, (SAME 3 PARTS PER LOT DATE CODE)
- SCRAPE TESTING - ONLY APPLICABLE TO PARTS THAT CANNOT BE HEATED SOLVENT TESTED (SAME 3 PARTS PER LOT DATE CODE)
- SOLVENT TESTING FOR RESURFACING (IF PASS ACETONE TEST) - HEATED SOLVENT TESTING W/ DYNASOLVE 750, (SAME 3 PARTS PER LOT DATE CODE)
- DE-LID AND DIE VERIFICATION (3 PARTS PER LOT DATE CODE)
- FLASH AND PROGRAMMABLE MEMORY DEVICES SHALL BE VERIFIED (100%) FOR CLEAN MEMORY, NOT PRE-PROGRAMMED

IF SUSPECT/COUNTERFEIT PARTS ARE FURNISHED UNDER THIS SUBCONTRACT AND ARE FOUND IN ANY OF THE GOODS DELIVERED HEREUNDER, SUCH ITEMS WILL BE IMPOUNDED BY BUYER. THE SELLER SHALL PROMPTLY REPLACE SUCH SUSPECT/COUNTERFEIT PARTS WITH PARTS ACCEPTABLE TO THE BUYER AND THE SELLER SHALL BE LIABLE FOR ALL COSTS RELATING TO THE REMOVAL AND REPLACEMENT OF SAID PARTS AS SPECIFIED IN THE SUBCONTRACT REQUIREMENTS OR DISTRIBUTOR'S INSURANCE POLICIES. BUYER RESERVES ALL CONTRACTUAL RIGHTS AND REMEDIES TO ADDRESS GRIEVANCES AND DETRIMENTAL IMPACTS CAUSED BY SUSPECT/COUNTERFEIT PARTS.

SELLER SHALL REPORT ALL OCCURRENCES OF COUNTERFEIT PARTS TO GIDEP AND ERAI.

### **QAPOR 14 - COUNTERFEIT PARTS PREVENTION (INDEPENDENT DISTRIBUTOR PASSIVE COMPONENTS AND CONNECTORS)**

INDEPENDENT DISTRIBUTOR PROCEDURES SHALL MEET THE REQUIREMENTS OF IDEA-STD-1010 AND AS6081. QUALITY MANAGEMENT SYSTEM SHALL BE CERTIFIED TO AS9120 AND/OR AS9100. INSPECTIONS AND TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH IDEA-STD-1010 AND AS6081. IDEA-STD-1010 AND THE INSPECTION AND TESTS DEFINED BELOW SHALL TAKE PRECEDENCE OVER AS6081 FOR CONFLICTS IN INSPECTION METHODOLOGY AND DEFECT CRITERIA. MANUFACTURER SPECIFICATIONS AND PARAMETERS SHALL BE USED FOR PART REQUIREMENTS AS APPLICABLE. RECORDED EVIDENCE OF ALL TESTING PERFORMED SHALL BE INCLUDED WITH EACH SHIPMENT. WHEN AVAILABLE, OEM/OCM AND/OR AD CERTIFICATES OF CONFORMANCE (C OF CS) SHALL ALSO ACCOMPANY EACH SHIPMENT.

THE FOLLOWING INSPECTIONS AND TESTS ARE REQUIRED FOR PASSIVE COMPONENTS AND CONNECTORS AS APPLICABLE BASED ON DEVICE PACKAGE TYPE:

- VISUAL MICROSCOPY INSPECTION OF ALL PARTS IN THE ORDER IS REQUIRED TO A MAGNIFICATION LEVEL CAPABLE OF IDENTIFYING NONCONFORMITIES RELATED TO PART SIZE. THIS INCLUDES VISUAL INSPECTION REQUIREMENTS FOR PACKAGING.
- GENERAL EXTERNAL VISUAL INSPECTION REQUIREMENTS SHALL BE 100% OF THE LOT
- SAMPLING INSPECTION OF DETAILED EXTERNAL VISUAL REQUIREMENTS, INCLUDING MECHANICAL DIMENSION MEASUREMENTS, SHALL BE AS DEFINED BY THE SELLER'S INTERNAL PROCEDURES BASED ON INDUSTRY STANDARDS AS A GUIDE
- X-RAY INSPECTION FOR NON-GLASS DIODES AND TANTALUM CAPACITORS (100% OF THE LOT)
- XRF/ROHS (3 PARTS PER LOT DATE CODE)
- SOLDERABILITY TESTING PER IPC/EIA J-STD-002 (3 PARTS PER LOT DATE CODE), EXCEPTION FOR BALL GRID ARRAY (BGA) PARTS, COLUMN GRID ARRAY (CGA) PARTS, AND GOLD PLATED TERMINATIONS ON PARTS
- SCANNING ELECTRON MICROSCOPY (1 PART PER LOT DATE CODE)
- SOLVENT TESTING FOR REMARKING (3 PARTS PER LOT DATE CODE)
- SOLVENT TESTING FOR RESURFACING W/ACETONE, (SAME 3 PARTS PER LOT DATE CODE)
- SCRAPE TESTING - ONLY APPLICABLE TO PARTS THAT CANNOT BE HEATED SOLVENT TESTED (SAME 3 PARTS PER LOT DATE CODE)
- SOLVENT TESTING FOR RESURFACING (IF PASS ACETONE TEST) - HEATED SOLVENT TESTING W/ DYNASOLVE 750, (SAME 3 PARTS PER LOT DATE CODE)



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ALL ELECTRICAL TEST REPORTS SHALL CONTAIN A READ/RECORD DATA TABLE SHOWING THE MEASURED VALUES OF EACH DEVICE TESTED. ELECTRICAL TEST SHALL BE PERFORMED AFTER PARTS HAVE PASSED THE INSPECTION AND TESTS LISTED ABOVE. SAMPLE VALUE MEASUREMENTS REQUIRED PER ANSI/ASQ Z1.4 AT AMBIENT TEMPERATURE, 1% AQL LEVEL II. COMPONENT VALUE TESTS ARE DEFINED IN THE FOLLOWING CHART:

COMPONENT	TEST
RESISTORS	DC RESISTANCE
CAPACITORS	CAPACITANCE
INDUCTORS	INDUCTANCE
TRANSFORMERS (OPEN FRAMED/WIRING)	WINDING-TO-WINDING ISOLATION, WINDING CONTINUITY, WINDING INDUCTANCE, TURNS OR VOLTAGE RATIO
CONNECTORS	CONTINUITY ON A 1% AQL SAMPLE OF PINS/CONNECTIONS
RELAYS	CONTACT AND COIL RESISTANCE

IF SUSPECT/COUNTERFEIT PARTS ARE FURNISHED UNDER THIS SUBCONTRACT AND ARE FOUND IN ANY OF THE GOODS DELIVERED HEREUNDER, SUCH ITEMS WILL BE IMPOUNDED BY BUYER. THE SELLER SHALL PROMPTLY REPLACE SUCH SUSPECT/COUNTERFEIT PARTS WITH PARTS ACCEPTABLE TO THE BUYER AND THE SELLER SHALL BE LIABLE FOR ALL COSTS RELATING TO THE REMOVAL AND REPLACEMENT OF SAID PARTS AS SPECIFIED IN THE SUBCONTRACT REQUIREMENTS OR DISTRIBUTOR'S INSURANCE POLICIES. BUYER RESERVES ALL CONTRACTUAL RIGHTS AND REMEDIES TO ADDRESS GRIEVANCES AND DETRIMENTAL IMPACTS CAUSED BY SUSPECT/COUNTERFEIT PARTS.

SELLER SHALL REPORT ALL OCCURRENCES OF COUNTERFEIT PARTS TO GIDEP AND ERAI.

## QAPOR 15 - FOD PREVENTION

SELLER SHALL DEVELOP AND MAINTAIN A FOREIGN OBJECT DEBRIS/DAMAGE (FOD) PREVENTION PROGRAM FOR THE MANUFACTURING AREAS TO PREVENT INTRODUCTION OF FOREIGN OBJECTS DELIVERED UNDER THIS SUBCONTRACT.

SELLER SHALL EMPLOY APPROPRIATE HOUSEKEEPING PRACTICES TO ASSURE TIMELY REMOVAL OF RESIDUE/DEBRIS GENERATED, IF ANY, DURING MANUFACTURING OPERATIONS. SELLER SHALL DETERMINE THE NEED FOR, AND IMPLEMENT FOD PREVENTION AWARENESS TRAINING.

## QAPOR 16 - ESD PROGRAM

THE SELLER SHALL DOCUMENT AND IMPLEMENT AN ESD CONTROL PROGRAM IN ACCORDANCE WITH ANSI/ESD S20.20, ESD ASSOCIATION STANDARD FOR THE DEVELOPMENT OF AN ELECTROSTATIC DISCHARGE CONTROL PROGRAM FOR PROTECTION OF ELECTRICAL AND ELECTRONIC PARTS, ASSEMBLIES AND EQUIPMENT (EXCLUDING ELECTRICALLY INITIATED EXPLOSIVE DEVICES). PARTS MUST BE PROPERLY PACKAGED AND IDENTIFIED AS REQUIRED IN ANSI/ESD-S20.20. ALL GOODS WILL BE PLACED IN CONDUCTIVE OR STATIC-DISSIPATIVE PACKAGES, TUBES, CARRIERS, CONDUCTIVE BAGS, ETC., FOR SHIPMENT. THE PACKAGING MUST BE CLEARLY LABELED TO INDICATE THAT IT CONTAINS ELECTROSTATIC SENSITIVE GOODS. ELECTRICAL PARTS THAT MAY BE USED OR SHIPPED IN CONJUNCTION WITH ESD SENSITIVE PARTS SHALL BE TREATED AS ESD SENSITIVE.



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AMINE AND AMIDE TREATED ANTISTATIC MATERIAL, COMMONLY REFERRED TO AS “PINK POLY,” SHALL NOT BE USED AS PRIMARY PACKAGING ON ELECTROSTATIC DISCHARGE SENSITIVE DEVICES.

### QAPOR 17 - FIRST ARTICLE INSPECTION

SELLER SHALL CONDUCT A COMPLETE FIRST ARTICLE INSPECTION (FAI) IN ACCORDANCE WITH SAE AS9102 FOR THE PRODUCT LISTED ON THIS SUBCONTRACT. BUYER RESERVES THE RIGHT TO WITNESS FAI(S). SELLER SHALL NOTIFY BUYER NO LESS THAN TEN BUSINESS DAYS PRIOR TO THE PLANNED INSPECTION TO ALLOW FOR BUYER’S PARTICIPATION, IF REQUIRED. FOR PRODUCTS THAT ARE CREATED FROM A DIE OR MOLD, THE FAI SHALL BE PERFORMED ON ONE PIECE PER CAVITY. FIRST ARTICLE ITEM(S) SHALL BE IDENTIFIED USING TAGS OR LABELS TRACEABLE TO THE ITEM(S).

THE FAI SHALL BE APPROVED BY BUYER’S QUALITY ASSURANCE REPRESENTATIVE PRIOR TO SHIPMENT TO BUYER’S FACILITY. SELLER SHALL DELIVER A COMPLETE COPY OF THE BUYER-APPROVED (SIGNED) FAI REPORT AND SUPPORTING DATA WITH THE SHIPMENT CONTAINING THE FIRST ARTICLE PART(S). SUBSEQUENT SHIPMENTS SHALL INCLUDE A COPY OF THE BUYER-APPROVED AS9102 FORM 1. SELLER SHALL MAINTAIN A COPY OF ALL FAI REPORTS AND SUPPORTING DOCUMENTATION AS REQUIRED ELSEWHERE IN THIS SUBCONTRACT.

SELLER SHALL PERFORM A FULL FAI OR A PARTIAL FAI FOR AFFECTED CHARACTERISTICS AS REQUIRED PER AS9102, PARAGRAPH 4.6 WITH THE FOLLOWING DEVIATIONS: (A) A LAPSE IN PRODUCTION OF TWO YEAR OR GREATER SHALL REQUIRE A FULL FAI, (B) BUYER MAY REQUEST A FULL FAI OR PARTIAL FAI DUE TO QUALITY CONCERNS.

FIRST ARTICLE INSPECTION DOES NOT RELIEVE SELLER OF RESPONSIBILITY FOR NONCONFORMING HARDWARE FOUND AT BUYER’S FACILITY. FINAL ACCEPTANCE OF PRODUCT DELIVERED UNDER THIS SUBCONTRACT OCCURS AT BUYER’S FACILITY.

### QAPOR 18 - REPAIR REPORTS

IF THIS ITEM IS BEING RETURNED FOR REPAIR, A DETAILED DESCRIPTION OF THE REPAIR ACTION TAKEN INCLUDING PART NUMBERS, SERIAL NUMBERS (IF APPLICABLE) AND NOMENCLATURE OF REPLACED COMPONENTS/ASSEMBLIES SHALL BE RETURNED WITH THE REPAIRED PRODUCT.

### QAPOR 19 – PART OBSOLESCENCE MANAGEMENT

SUPPLIER SHALL BE RESPONSIBLE FOR MANAGING PART OBSOLESCENCE OVER THE ENTIRE PERIOD OF THE PURCHASE ORDER, AND NOTWITHSTANDING ANY OBSOLESCENCE ISSUES OR PROBLEMS, THE SUPPLIER REMAINS RESPONSIBLE FOR MEETING ALL PERFORMANCE AND OTHER REQUIREMENTS OF THE PURCHASE ORDER. THIS OBSOLESCENCE MANAGEMENT RESPONSIBILITY INCLUDES AN ONGOING REVIEW AND IDENTIFICATION OF ACTUAL AND POTENTIAL OBSOLESCENCE ISSUES, INCLUDING BUT NOT LIMITED TO OBSOLESCENCE OF COMPONENTS, ASSEMBLIES, SUB-ASSEMBLIES, PIECE PARTS, AND MATERIAL.

THE SUPPLIER IS RESPONSIBLE FOR OBTAINING A REPLACEMENT IF AND WHEN ANY PARTS AND/OR MATERIAL BECOME OBSOLETE. THIS INCLUDES, BUT IS NOT LIMITED TO THE INVESTIGATING OF PART AVAILABILITY, INTERCHANGEABILITY AND SUBSTITUTABILITY, LOCATING PART REPLACEMENT, DRAWING CHANGES, ETC. THE SELLER SHALL NOTIFY L3 AS&T, PRIOR TO IMPLEMENTATION, OF ANY CONFIGURATION CHANGES THAT AFFECT THE FIT, FORM, OR FUNCTION OF ANY PURCHASE ORDER END ITEM DUE TO PARTS AND/OR MATERIAL OBSOLESCENCE. IN ADDITION, THE L3 BUYER SHALL BE NOTIFIED IMMEDIATELY WHEN ANY PURCHASE ORDER END ITEM WILL BE NO LONGER AVAILABLE (LAST TIME BUY/END OF LIFE) DUE TO PARTS AND/OR MATERIAL OBSOLESCENCE.



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### QAPOR 20 – FIRST PIECE INSPECTION BY BUYER

IF SUPPLIER IS MANUFACTURING THIS PART NUMBER AND/OR DASH NUMBER FOR FIRST TIME, ONE PART (FIRST ARTICLE) SHALL BE SUBMITTED TO THE BUYER FOR APPROVAL PRIOR TO SHIPMENT OF THE REMAINING ORDER.

### QAPAR 21 - INDEPENDENT DISTRIBUTOR – COTS ASSEMBLIES (INCLUDING ELECTRO-MECHANICAL ITEMS, HARD DRIVES, NETWORK EQUIPMENT, AND PERIPHERAL CARDS)

INDEPENDENT DISTRIBUTOR PROCEDURES SHALL MEET THE REQUIREMENTS OF IDEA-STD-1010 AND AS6081. QUALITY MANAGEMENT SYSTEM SHALL BE CERTIFIED TO AS9120 AND/OR AS9100.

MANUFACTURER SPECIFICATIONS AND PARAMETERS SHALL BE USED FOR PART REQUIREMENTS AS APPLICABLE. RECORDED EVIDENCE OF ALL TESTING PERFORMED SHALL BE INCLUDED WITH EACH SHIPMENT. WHEN AVAILABLE, OEM/OCM AND/OR AD CERTIFICATES OF CONFORMANCE (C OF CS) SHALL ALSO ACCOMPANY EACH SHIPMENT.

THE FOLLOWING INSPECTIONS AND TESTS ARE REQUIRED FOR GENERAL COTS ASSEMBLIES, HARD DRIVES, NETWORK EQUIPMENT AND PERIPHERAL CARDS:

#### GENERAL COTS ASSEMBLIES

- PACKAGING INSPECTION (PART NUMBER, EVIDENCE OF TAMPERING, ETC.)
- MECHANICAL DIMENSIONS (3 PARTS MINIMUM PER LOT)
- VISUAL INSPECTION (100%) FOR INDICATIONS OF PRIOR USAGE/REFURBISHMENT/COUNTERFEITING INCLUDING DAMAGE TO:
  - COMPONENTS VISIBLE ON CIRCUIT CARDS WHEN APPLICABLE
  - INTERFACE CONNECTOR(S)/CONTACT(S)
  - CRIMPED, CUT, SPLICED, PINCHED, AND/OR BROKEN WIRE(S) WHERE APPLICABLE
- MANUFACTURER LABEL BAR CODE INFORMATION VERIFICATION

#### HARD DRIVES

- PACKAGING INSPECTION (PART NUMBER, EVIDENCE OF TAMPERING, ETC.)
- MECHANICAL DIMENSIONS (3 PARTS MINIMUM PER LOT)
- VISUAL INSPECTION (100%) FOR INDICATIONS OF PRIOR USAGE/REFURBISHMENT/COUNTERFEITING INCLUDING DAMAGE TO:
  - COMPONENTS VISIBLE ON CIRCUIT CARDS WHEN APPLICABLE
  - INTERFACE CONNECTOR(S)/CONTACT(S)
  - CASING
- MANUFACTURER LABEL BAR CODE INFORMATION VERIFICATION
- 100% POWER ON TEST
- 100% READ/WRITE BENCHMARK
- 100% SELF-MONITORING, ANALYSIS, AND REPORTING TECHNOLOGY (S.M.A.R.T.) DATA PULL (WHEN APPLICABLE)
  - VERIFICATION OF SERIAL NUMBER
  - TOTAL POWER ON HOURS
- SERIAL NUMBERS RECORDED

#### NETWORK EQUIPMENT

- PACKAGING INSPECTION (PART NUMBER, EVIDENCE OF TAMPERING, ETC.)
- MECHANICAL DIMENSIONS (3 PARTS MINIMUM PER LOT)
- VISUAL INSPECTION (100%) FOR INDICATIONS OF PRIOR USAGE/REFURBISHMENT/COUNTERFEITING INCLUDING DAMAGE TO:





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- COMPONENTS VISIBLE ON CIRCUIT CARDS WHEN APPLICABLE
- INTERFACE CONNECTOR(S)/CONTACT(S)
- CASING
- MANUFACTURER LABEL BAR CODE INFORMATION VERIFICATION
- 100% POWER ON TEST
- 100% TEST RJ-45 PORTS (WHEN APPLICABLE)
- SERIAL NUMBERS RECORDED

### PERIPHERAL CARDS

- PACKAGING INSPECTION (PART NUMBER, EVIDENCE OF TAMPERING, ETC.)
- MECHANICAL DIMENSIONS (3 PARTS MINIMUM PER LOT)
- VISUAL INSPECTION (100%) FOR INDICATIONS OF PRIOR USAGE/REFURBISHMENT/COUNTERFEITING INCLUDING DAMAGE TO:
  - COMPONENTS VISIBLE ON CIRCUIT CARDS WHEN APPLICABLE
  - INTERFACE CONNECTOR(S)/CONTACT(S)
- MANUFACTURER LABEL BAR CODE INFORMATION VERIFICATION

IF SUSPECT/COUNTERFEIT PARTS ARE FURNISHED UNDER THIS SUBCONTRACT AND ARE FOUND IN ANY OF THE GOODS DELIVERED HEREUNDER, SUCH ITEMS WILL BE IMPOUNDED BY BUYER. THE SELLER SHALL PROMPTLY REPLACE SUCH SUSPECT/COUNTERFEIT PARTS WITH PARTS ACCEPTABLE TO THE BUYER AND THE SELLER SHALL BE LIABLE FOR ALL COSTS RELATING TO THE REMOVAL AND REPLACEMENT OF SAID PARTS AS SPECIFIED IN THE SUBCONTRACT REQUIREMENTS OR DISTRIBUTOR'S INSURANCE POLICIES. BUYER RESERVES ALL CONTRACTUAL RIGHTS AND REMEDIES TO ADDRESS GRIEVANCES AND DETRIMENTAL IMPACTS CAUSED BY SUSPECT/COUNTERFEIT PARTS.

SELLER SHALL REPORT ALL OCCURRENCES OF COUNTERFEIT PARTS TO GIDEP AND ERAI.

### QAPOR 22 - TEST LAB PURCHASE ORDER CLAUSE – MECHANICAL PARTS AND MATERIALS

MANUFACTURER SPECIFICATIONS AND PARAMETERS SHALL BE USED AS APPLICABLE FOR PART AND MATERIAL REQUIREMENTS. RECORDED EVIDENCE OF ALL TESTING PERFORMED SHALL BE INCLUDED WITH EACH SHIPMENT.

THE FOLLOWING INSPECTIONS AND TESTS ARE REQUIRED FOR MECHANICAL PARTS AND MATERIALS BY AN ACCREDITED THIRD PARTY TESTING FACILITY:

- PACKAGING INSPECTION (PART NUMBER, EVIDENCE OF TAMPERING, ETC.)
- PART/PACKAGING MARKING INSPECTION FOR EVIDENCE OF REMARKING OR ALTERATIONS (PART NUMBER, MFG.NAME, TRADEMARK OR LOGO, LOT OR DATE CODE, GRADE, ETC.) - SAMPLE OF 3 PIECES PER LOT FOR PART MARKINGS.
- MECHANICAL PARTS EXTERNAL VISUAL INSPECTION (100%) FOR DAMAGE, WEAR, CONTAMINATION, OR USE.
- MECHANICAL PARTS DIMENSIONAL INSPECTION – SELECTED CRITICAL DIMENSIONS SHALL BE VERIFIED PER MANUFACTURER SPECIFICATIONS ON A SAMPLE OF 3 PIECES PER LOT.
- PLATING VERIFICATION (E.G., XRF) - SAMPLE OF 3 PIECES PER LOT.
- BASE MATERIAL VERIFICATION (CERTIFICATION OF COMPOSITION/CHEMICAL ANALYSIS, HEAT TREATMENT, HARDNESS TESTING, TENSILE STRENGTH, TORQUE TESTING, MAGNETIC PARTICLE, ETC. AS APPLICABLE PER MATERIAL SPECIFICATION) - SAMPLE OF 1 PIECE PER LOT.
- MECHANICAL ITEM TEST VERIFICATION (IF REQUIRED BY THE ITEM SPECIFICATION) - SAMPLE OF 1 PIECE PER LOT.

SELLER SHALL REPORT ALL OCCURRENCES OF COUNTERFEIT PARTS TO GIDEP AND ERAI.



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### **QAPOR 23 – BOTTOM TERMINATED COMPONENTS X-RAY INSPECTION**

ALL BTC (NO-LEAD COMPONENTS) INCLUDING BGAs SHALL BE X-RAYED 100% ON ALL CCAS. ACCEPTABILITY SHALL BE COMPLIANT WITH THE IPC-610 CLASSIFICATION SPECIFIED ON THE DRAWING.

VOID ACCEPTABILITY CRITERIA FOR THERMAL/GROUND PAD TYPE TERMINATIONS ON COMPONENTS SUCH AS QFNS SHALL BE LESS THAN 30%.

X-RAY DATA SHALL BE ANNOTATED WITH BOARD SERIAL NUMBER AND COMPONENT REFERENCE DESIGNATOR AND DELIVERED WITH THE PRODUCT.

### **QAPOR 24 – NONCONFORMING MATERIAL**

NONCONFORMING MATERIAL SHALL BE IDENTIFIED, DOCUMENTED, EVALUATED, SEGREGATED AND DISPOSITIONED TO PREVENT ITS UNINTENDED USE. UNLESS OTHERWISE STATED IN THE PURCHASE ORDER, THE SELLER IS AUTHORIZED TO CONDUCT LIMITED MATERIAL REVIEW AND DISPOSITION OF NONCONFORMING PRODUCTS IDENTIFIED BY THE SELLER USING THE FOLLOWING DISPOSITION ALTERNATIVES:

- A. REWORK TO APPLICABLE REQUIREMENTS,
- B. SCRAP, OR
- C. RTV – RETURN TO (THE SUPPLIER'S) SUB-TIER SOURCE FOR REWORK OR REPLACEMENT

THE SELLER MAY PROPOSE AND SHALL FORMALLY REQUEST "USE-AS-IS" OR REPAIR DISPOSITIONS FROM L3 AS&T BY ELECTRONICALLY SUBMITTING FORM AST-11901-100, "SUPPLIER INFORMATION REQUEST" TO THE L3 PROCUREMENT REPRESENTATIVE. ALL USE AS IS AND REPAIR DISPOSITION REQUESTS MUST HAVE THE ROOT CAUSE AND CORRECTIVE ACTION SECTIONS ON THE SIR COMPLETED. NO NONCONFORMING PRODUCT MAY SHIP WITHOUT AN L3 APPROVED SIR. ADDITIONAL DETAIL FOR EACH QUALITY ASSURANCE PURCHASE ORDER REQUIREMENT DOCUMENT CAN BE FOUND BY NAVIGATING TO [HTTPS://WWW2.L3T.COM/UAS](https://www2.l3t.com/uas) AND SELECTING THE DOCUMENT LINKS UNDER "SUPPLIERS"

UNDER "SUPPLIERS" IN ADDITION, REQUESTS FOR DEVIATION FROM DRAWING/SPECIFICATION REQUIREMENTS, MATERIAL, FINISH, ETC. INCLUDING DEVIATIONS CAUSED BY CONFLICTS/ERRORS/UNCLEAR REQUIREMENTS IN L3 AS&T DRAWING OR SPECIFICATION DOCUMENTATION, SHALL ONLY BE APPROVED VIA AN APPROVED SIR OR PURCHASE ORDER.

A COPY OF THE APPROVED SIR MUST BE SHIPPED WITH THE PRODUCT.

ANY PRODUCT RECEIVED FROM THE SELLER THAT DEVIATES FROM THE DRAWING, SPECIFICATION OR PURCHASE ORDER REQUIREMENTS, FOR ANY REASON, THAT HAS NOT BEEN AUTHORIZED BY AN L3 APPROVED SIR OR DETAILED IN THE PURCHASE ORDER, WILL BE REJECTED.

### **QAPOR 25 – PLAN OF INSPECTION**

A DETAILED LISTING OF ALL INSPECTION POINTS AND INSPECTION/TEST EQUIPMENT TO BE USED IS REQUIRED. THE COMPLETED PLAN SHALL BE REVIEWED/APPROVED BY SELLER'S ENGINEERING AND PRODUCTION PLANNING & CONTROL TO VERIFY THE PLAN'S COMPATIBILITY WITH THE SELLER'S MANUFACTURING AND TEST PLANS. A COPY OF THE PLAN OF INSPECTION IS TO BE SUBMITTED TO BUYER'S PROCUREMENT REPRESENTATIVE FOR REVIEW/APPROVAL BY QUALITY ASSURANCE PRIOR TO THE START OF PRODUCTION.



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### **QAPOR 26 – WORK INSTRUCTIONS**

ALL WORK AFFECTING THE QUALITY OF SELLER'S PRODUCT(S) SHALL BE PRESCRIBED IN CLEAR AND COMPLETE DOCUMENTED INSTRUCTIONS. SELLER'S MANUFACTURING, INSPECTION AND TEST PLANNING SHALL INCLUDE THE SEQUENCE OF OPERATIONS TO BE PERFORMED, INCLUDING ALL INSPECTION, TEST AND PROCESS CONTROL POINTS. UPON REQUEST, SELLER SHALL SUBMIT A COPY OF SELLER'S PLANNING AND/OR ASSOCIATED WORK INSTRUCTIONS TO BUYER'S PROCUREMENT REPRESENTATIVE FOR REVIEW/APPROVAL BY OPERATIONS PRIOR TO THE START OF PRODUCTION. ALL SUCH PLANNING SHALL BE MADE AVAILABLE TO BUYER'S REPRESENTATIVES FOR REVIEW AT SELLER'S FACILITY.

### **QAPOR 27 – NON-DELIVERABLE SOFTWARE**

ALL NON-DELIVERABLE SOFTWARE USED TO PRODUCE OR TEST PRODUCTION ITEMS SHALL BE PLACED UNDER INTERNAL CONFIGURATION CONTROL PRIOR TO ITS USE.

### **QAPOR 28 – CHANGE OF PRODUCT OR PROCESS**

SELLER SHALL NOT IMPLEMENT ANY CHANGES IN DESIGN, MATERIALS, PROCESSES, OR CONTROLS WITHOUT PRIOR WRITTEN APPROVAL OF BUYER WHERE BUYER CONTROLS THE SPECIFICATIONS AND PROCESSES. THE INTENT OF THIS REQUIREMENT IS TO ENSURE THAT ALL PRODUCT SUPPLIED UNDER THIS ORDER SHALL BE HOMOGENEOUS AND THE PERFORMANCE, RELIABILITY, AND QUALITY OF THE PRODUCT IS NOT DEGRADED. CHANGED ARTICLES SHALL BE CLEARLY IDENTIFIED AND IN A DIFFERENT MANNER FROM PREVIOUSLY SUPPLIED ARTICLES.

### **QAPOR 29 – SUPPLIER CORRECTIVE ACTION REQUESTS**

SELLER AGREES TO PROVIDE FORMAL RESPONSE TO ALL SUPPLIER CORRECTIVE ACTION REQUESTS (SCAR) WITHIN THE TIMEFRAME INDICATED ON THE SCAR. FAILURE TO ANSWER SCARS PROMPTLY NEGATIVELY AFFECTS SELLER'S QUALITY RATING AND COULD RESULT IN SUSPENSION OR REMOVAL FROM THE BUYER'S APPROVED SUPPLIER LIST.

SELLER SHALL GIVE PRIORITY TO ROOT CAUSE ANALYSIS AND CORRECTIVE ACTION TO PREVENT FURTHER NONCONFORMANCES FROM OCCURRING. ANY FAILURE ANALYSIS PERFORMED AS PART OF SELLER'S INVESTIGATION SHALL BE INCLUDED IN THE SCAR RESPONSE.

### **QAPOR 30 – TEST DATA**

LEGIBLE COPIES OF ACTUAL TEST DATA SHALL BE FURNISHED WITH SHIPMENT AND MUST BE TRACEABLE BY SUBCONTRACT/PURCHASE ORDER, PART NUMBER, SERIAL NUMBER, LOT OR BATCH. THE RESULTS MUST BE CLEAR AND IDENTIFIABLE WITH TEST PARAMETERS DEFINED AS OPERATIONAL, MECHANICAL, ELECTRICAL, ETC., FOR THE TESTED ITEMS. ANY TEST ARTICLES REQUESTED MUST BE INCLUDED WITH THE DATA.



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### **QAPOR 31 – RECORD RETENTION**

QUALITY AND INSPECTION RECORDS SHALL BE ESTABLISHED AND MAINTAINED BY THE SELLER TO PROVIDE EVIDENCE OF CONFORMITY TO REQUIREMENTS AND THE EFFECTIVE OPERATION OF THE QUALITY MANAGEMENT SYSTEM.

AS A MINIMUM, RECORDS MUST BE MAINTAINED FOR A PERIOD OF SEVEN (7) YEARS AFTER COMPLETION OF THIS PURCHASE ORDER (PO) OR AS OTHERWISE STATED ELSEWHERE IN THIS PO. RECORDS MAY BE ARCHIVED TO AN OFFSITE LOCATION, BUT SHALL REMAIN LEGIBLE AND READILY RETRIEVABLE. THESE RECORDS SHALL BE AVAILABLE FOR REVIEW BY BUYER OR ITS CUSTOMERS. BUYER RESERVES THE RIGHT TO PERIODICALLY AUDIT THE SELLER'S HISTORICAL RECORDS, RETENTION POLICIES AND PRACTICES.

### **QAPOR 32 – KEY CHARACTERISTICS**

WHEN KEY CHARACTERISTICS ARE SPECIFIED ON THE DRAWING OR SUBCONTRACT, SELLER SHALL UTILIZE METHODS TO COLLECT AND ANALYZE KEY CHARACTERISTIC DATA AND TAKE APPROPRIATE ACTION TO REDUCE VARIATION. DOCUMENTED METHODS AND PROCEDURES FOR VARIABILITY REDUCTION SHALL BE ESTABLISHED AND MAINTAINED. USE OF STATISTICAL PROCESS CONTROL (SPC) METHODS IS RECOMMENDED. WHEN KEY CHARACTERISTICS ARE NOT SPECIFIED, SELLER IS ENCOURAGED TO UTILIZE VARIABILITY REDUCTION METHODS TO IMPROVE PRODUCT QUALITY AND REDUCE QUALITY COSTS.

### **QAPOR 33 – STATISTICAL PROCESS CONTROL**

STATISTICAL PROCESS CONTROL (SPC) IS REQUIRED DURING THE MANUFACTURE OF THE PRODUCT(S) FOR WHICH THIS CLAUSE IS SPECIFIED. SPC SHALL BE IN ACCORDANCE WITH A PLAN APPROVED BY BUYER'S QUALITY ASSURANCE PRIOR TO THE START OF PRODUCTION. THIS DOCUMENT IS TO BE SUBMITTED THROUGH BUYER'S PROCUREMENT REPRESENTATIVE. KEY, CRITICAL & SIGNIFICANT CHARACTERISTICS ARE REQUIRED TO MEET CPK 1.33 MIN. REQUIREMENTS. CONTROL CHARTS SHALL BE SUBMITTED WITH SHIPMENT.

### **QAPOR 34 – SAFETY DATA SHEET (SDS)**

SELLER SHALL PROVIDE A REPRODUCIBLE COPY OF THE SAFETY DATA SHEET (SDS) WITH EACH SHIPMENT OF ANY CHEMICAL, AND FOR ALL HAZARDOUS OR REGULATED MATERIALS. ALL HAZARDOUS MATERIALS SHALL BE PACKAGED AND SHIPPED IN ACCORDANCE WITH THE CODE OF FEDERAL REGULATIONS (CFR) 49. IN THE CASE OF CERTAIN HAZARDOUS OR REGULATED MATERIALS, THE DETAIL SPECIFICATION SHALL TAKE PRECEDENCE OVER, OR IN CONCURRENCE WITH, THIS REQUIREMENT.

### **QAPOR 35 – MOISTURE SENSITIVE DEVICES**

THE DEVICE(S) ON THIS ORDER HAVE BEEN IDENTIFIED AS MOISTURE SENSITIVE. THEREFORE, DEVICES SUPPLIED UNDER THIS SUBCONTRACT SHALL BE PACKAGED AND LABELED IAW THE LATEST REVISION OF IPC/JEDEC J-STD-033.

### **QAPOR 36 – REQUIREMENTS FLOW DOWN**

ALL APPLICABLE REQUIREMENTS THAT ARE INVOKED OR APPLIED TO THE BUYER'S PURCHASING DOCUMENT, INCLUDING THIS CLAUSE, SHALL BE FLOWED DOWN TO SELLER'S SUB-TIER SUPPLIERS.



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### **QAPOR 37 – COMMERCIAL PACKAGING**

THE SELLER SHALL BE RESPONSIBLE FOR ENSURING THAT ITEMS PROVIDED UNDER THIS SUBCONTRACT/PURCHASE ORDER ARE PACKAGED IN SUCH A MANNER THAT THE DIMENSIONAL INTEGRITY IS PRESERVED, CONTAMINATION AND CORROSION ARE PREVENTED, AND NO PHYSICAL DAMAGE OCCURS. PACKAGING WHEN SPECIFIED SHALL BE IN ACCORDANCE WITH THE DRAWING, APPROPRIATE ASTM, MIL, OR OTHER APPLICABLE BUYER SPECIFIED REQUIREMENT AND PREVENTS DAMAGE, DETERIORATION, SUBSTITUTION OR LOSS IN TRANSIT.

AT A MINIMUM, PRESERVATION, PACKAGING, AND PACKING OF ALL DELIVERABLE GOODS SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF ASTM D3951, STANDARD PRACTICE FOR COMMERCIAL PACKAGING, UNLESS OTHER REQUIREMENTS ARE SPECIFIED IN THIS ORDER.

THE SELLER SHALL LABEL THE EXTERIOR OF THE PACKAGE TO ENSURE ADEQUATE IDENTIFICATION OF PRECAUTIONS NEEDED TO ENSURE THE INTEGRITY OF THE PRODUCT BEING SHIPPED. THE SELLER MUST SPECIFY THE HANDLING AND SHIPPING METHODS THAT ENSURE PROPER AND ON-TIME DELIVERY WITHOUT DAMAGE TO THE PRODUCT. THE SELLER SHALL ENSURE THAT SPECIAL LABELING REQUIREMENTS SHALL ALSO BE LISTED IN THE APPROPRIATE SHIPPING DOCUMENTS AND ON EACH PACKAGE.”

### **QAPOR 38 – SPECIAL PACKAGING**

AN ARTICLE THAT IS CONSIDERED SENSITIVE AND IS SUSCEPTIBLE TO TRANSPORTATION AND/OR ENVIRONMENTAL DAMAGE MAY REQUIRE SPECIAL PACKAGING. THIS NOTE TAKES PRECEDENCE OVER THE BUYER’S COMMERCIAL PACKAGING NOTE.

METHOD OF PACKAGING AND/OR SHIPPING OF SENSITIVE ARTICLES SHALL BE LISTED SEPARATELY UNDER SUBCONTRACT TEXT BY BUYER. IF NO METHOD IS STATED, SELLER’S PROPOSED METHOD OF PACKAGING AND/OR SHIPPING OF SENSITIVE ARTICLES SHALL BE PRESENTED TO BUYER’S PROCUREMENT REPRESENTATIVE AND BE APPROVED BY BUYER’S QUALITY ASSURANCE PRIOR TO INITIAL SHIPMENT. FAILURE TO COMPLY WITH THIS REQUIREMENT WITHOUT PRIOR WRITTEN AUTHORIZATION WILL RESULT IN THE RETURN OF THE SHIPMENT TO THE SELLER AT THE SELLER’S EXPENSE.

### **QAPOR 39 – AS9100 AND/OR ISO 9001**

SELLER’S QUALITY MANAGEMENT SYSTEM SHALL MEET THE REQUIREMENTS OF INDUSTRY STANDARD QUALITY MANAGEMENT SYSTEM AS9100 AND/OR ISO 9001. SELLER SHALL ACTIVATE AND MAINTAIN CERTIFICATIONS FROM AN INTERNATIONAL ACCREDITATION FORUM (IAF) ACCREDITED REGISTRAR TO THE INDUSTRY STANDARD QUALITY SYSTEM OF AS9100 OR ISO9001. AUTHORIZED DISTRIBUTORS MAY ELECT CERTIFICATION TO AS9120 IN LIEU OF AS9100 OR ISO 9001. ANY EXCEPTIONS TO THESE REQUIREMENTS SHALL REQUIRE WRITTEN APPROVAL FROM BUYER.

### **QAPOR 40 – SERIAL NUMBER TRACEABILITY**

TRACEABILITY IS REQUIRED FOR THIS SUBCONTRACT. SERIAL NUMBER SCHEMES SHALL BE DEVELOPED, CONTROLLED, AND IMPLEMENTED BY SELLER, UNLESS OTHERWISE SPECIFIED, AND APPROVED BY BUYER.

EACH DELIVERABLE PART, ASSEMBLY, OR END ITEM SHALL BE SERIALIZED SEQUENTIALLY AND CONSECUTIVELY. SERIAL NUMBERS SHALL BE UNIQUE FOR EACH PART NUMBER AND MUST BE USED ONCE ONLY, FOR THIS AND ANY FOLLOW-ON ORDERS. A LIST OF SERIAL NUMBERS TO BE SHIPPED MUST BE PRINTED ON THE DELIVERY SHEET OR ATTACHMENT.



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### **QAPOR 41 – REVISION LEVEL CONTROL**

WHEN PROVIDING PRODUCTS TO BUYER'S DRAWINGS, SELLER SHALL USE THE FOLLOWING METHODOLOGY FOR DETERMINING REVISIONS OF MILITARY, INDUSTRIAL, AND COMMERCIAL REFERENCES. SELLER SHALL USE THE LATEST REVISION AT THE TIME OF SUBCONTRACT PLACEMENT, UNLESS OTHERWISE STATED IN THE SUBCONTRACT. FOR CANCELLED SPECIFICATIONS, THE SELLER SHALL CONTACT BUYER'S PROCUREMENT REPRESENTATIVE FOR GUIDANCE.

### **QAPOR 42 – FIVE YEAR DATE CODE AGE LIMIT ON COMPONENTS**

ALL ELECTRICAL, ELECTRONIC OR ELECTROMECHANICAL (EEE) PARTS PROCURED FROM THE SELLER OR ITS SUPPLIERS SHALL HAVE BEEN MANUFACTURED WITHIN FIVE (5) YEARS FROM THE DELIVERY DATE. THIS SHALL INCLUDE ALL SUB-ASSEMBLIES OF THE ARTICLE BEING PROCURED. MANUFACTURED DATE CODE MUST BE INDICATED ON EITHER PARTS OR DOCUMENTATION PROVIDED AND MARKED OR LABELED AS SUCH. ANY DEVIATION FROM THIS REQUIREMENT SHALL BE IN THE FORM OF A WRITTEN AUTHORIZATION FROM THE BUYER, AND THE AUTHORIZATION SHALL BE INCLUDED WITH EACH SHIPMENT.

### **QAPOR 43 – MANDATORY AWARENESS PROGRAMS**

SELLER SHALL ESTABLISH A COMMUNICATION METHOD THAT ENSURES ALL PERSONNEL ARE AWARE OF THEIR CONTRIBUTION TO PRODUCT OR SERVICE CONFORMITY, THEIR CONTRIBUTION TO PRODUCT SAFETY, AND THEIR CONTRIBUTION TO THE IMPORTANCE OF ETHICAL BEHAVIOR. THIS METHOD SHALL ESTABLISH A FREQUENCY OF COMMUNICATION THAT IS APPROPRIATE TO THE ORGANIZATION AND THIS COMMUNICATION WILL OCCUR ANNUALLY AT A MINIMUM. SELLER SHALL MAINTAIN RECORDS OF THIS COMMUNICATION.

### **QAPOR 44 – PRODUCTION LINE VALIDATION**

THE PRODUCTION LINE VALIDATION (PLV) SHALL CONSIST OF A PHYSICAL DEMONSTRATION OF THE "CRITICAL" OPERATIONS AS DETERMINED BY THE BUYER ON THE SELLER'S PRODUCTION LINE. SELLER SHALL DEMONSTRATE THE USE OF PRODUCTION DOCUMENTATION AND TOOLING IN THE FABRICATION OF EACH CONFIGURATION ITEM.

SELLER SHALL PROVIDE APPROPRIATE SUBJECT MATTER EXPERTS (SME) TO COORDINATE AND PROVIDE ESCORT FOR THE DEMONSTRATION. SELLER'S SME(S) SHALL BE CAPABLE AND RESPONSIBLE FOR ANSWERING TECHNICAL QUESTIONS FOR A MULTIFUNCTIONAL TEAM CONSISTING OF BUYER'S REPRESENTATIVES AND GOVERNMENT REPRESENTATIVES WHO WILL WITNESS THE DEMONSTRATION.

SELLER SHALL PLAN AND SCHEDULE THE PLV SO AS TO MEET ALL CONTRACTUAL DELIVERY DATES.

SELLER SHALL PROVIDE A MINIMUM OF TEN BUSINESS DAYS' ADVANCE NOTICE OF PLV COMMENCEMENT. SELLER SHALL SUBMIT A PLAN, IN THE SELLER'S FORMAT AND A PROCESS FLOW FOR APPROVAL BEFORE COMMENCING THE PLV.

SELLER SHALL ADDRESS ALL PLV CORRECTIVE AND PREVENTIVE ACTION ITEMS GENERATED FROM THE PLV IN A TIMELY MANNER FOR UTILIZATION IN FUTURE PRODUCTION FABRICATIONS. ALL RESPONSES TO PLV ACTION ITEMS SHALL BE PRESENTED TO THE BUYER FOR ACCEPTANCE.

AFTER THE INITIAL PLV ACCEPTANCE, SELLER SHALL NOTIFY THE BUYER OF SIGNIFICANT PRODUCTION PROCESS AND OR TOOLING/EQUIPMENT CHANGES AND SUBMIT A PLAN AND SCHEDULE TO CONDUCT A



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DELTA OR REPEAT PLV REGARDING THE PORTIONS OF THE PRODUCTION PROCESS CHANGED; PRIOR TO RESUMPTION OF PRODUCT DELIVERIES.

SIGNIFICANT CHANGES INCLUDE: A CHANGE IN THE DESIGN AFFECTING FORM, FIT, OR FUNCTIONS OF THE PART; A SIGNIFICANT CHANGE IN MANUFACTURING SOURCE(S), PROCESSES, INSPECTION METHOD(S), LOCATION, TOOLING, MACHINE OR MATERIALS WITH THE POTENTIAL OF AFFECTING FIT, FORM OR FUNCTION; OR A LAPSE IN PRODUCTION OF ONE (1) YEAR OR MORE.



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A	15 October, 2012	Initial Release
B	1 October, 2014	Modified QAPOR4 by removing Line Item requirement from the C of C requirements
C	11 December, 2014	Added QAPOR 0
D	7 May, 2015	Added QAPOR 18
E	24 July, 2015	Added QAPOR 19
F	10 September, 2015	Added QAPOR 20
G	17 September, 2015	Added QAPOR 21 and 22. Modified QAPOR 13 and 14 in accordance with CP602 Revision 1, Deleted QAPOR 12, Modified QAPOR 3
H	1 November 2018	Updated QAPOR 13, 14, 21 and 22 to reflect Corporate Policy 602, Revision 2. Added QAPOR 23 and 24. Deleted QAPOR 5. Merged PO codes with AS&T Plano