

Vendor Quality Requirements		Procedure No.: QPUR05-1 Revision: 10 Date Revised: 31 Mar 11
Approvals		
Change History		
Revision	Description of Change	Date
W2	Added Workmanship Manual reference, Added VQR34, VQR35, VQR36	
W4	Changed Logo	
W5	Updated 1.0 to define scope, added engineering responsibility, corrected table references and footers, Changed inspection to verification.	
2	Updated to include Clause 38 & Verification, test and measurement equipment, updated logo	
3	Replaced Seimac, Changed scope to apply to All CT&L. Change Logo, Updated process to reflect current practice. Revised Table 1 and reduced requirements. Updated VQR 6 & 7 to allow Class 2 and Class 3 workmanship. Deleted VQR 30. Updated VQR 31 to provide evidence of pull tests. Added requirements for special processes and services. Added Para 5.5, Purchasing BOM approval.	
4	Updated procedure to include a VQR for Moisture sensitive parts, for proper handling, packing, shipping and use of moisture sensitive devices follow J-STD-033B. Approval section updated and an update made to the Cobham Logo. Added appendices to J-STD-001	1 Jun 09
5	Added VQR 39 to identify Controlled Goods	4 Jul 09
6	Add VQR 30 for Painting Processes and VQR 40 for Helicoil installation. General clean up of procedure to match current Procedure format.	23 Apr 10
7	Revised and rewritten to incorporate turnkey procurement requirements	27 May 10
8	Corrected Turn-Key definitions, updated VQR 7, 31, 44, and added 7A, & 44P	1 Jun 10
9	Added VQR 2A for electronic parts purchased from brokers (Counterfeit verification). Updated Table 1 for VQR 2A at all levels. Split procedure into two (Ref QPUR10-6), updated table 1, removed references to M2M	7 Jul 10
10	Updated VQR 15 for clarity	31 Mar 11

1.0 PURPOSE

This instruction defines the Vendor Quality Assurance Requirements as specified on the Cobham Purchase Orders by product types or commodity.

This procedure applies to all Purchase Orders issued by Cobham for material that is incorporated into customer deliverable products (including prototypes and qualification/certification units). Generally, the requirements apply to custom items made to Cobham drawings. Standard off-the-shelf parts have minimal requirements.

Items that are purchased for Cobham administrative purposes or pure product development are not covered by this procedure.

2.0 RESPONSIBILITY

The Materials department is responsible for ensuring that this procedure is followed.

Quality Assurance is responsible for ensuring that this procedure is adequate to meet the needs of the company and for auditing to ensure the instruction is being followed.

R&D has the responsibility for defining which items will be delivered to the customer as part of engineering programs.

The vendor is responsible to follow these requirements

3.0 REFERENCES

- QAM06-1 Cobham Quality Assurance Manual
- QCM06-1 Preparation and Approval of Drawings, Documents and Production Tooling/Test Sets

4.0 Definitions

VQR: A specific Vendor Quality Requirement (VQR) clause as defined in Table 2 of this document.

NTK: Non-Turn-Key Procurement; Vendor supplies parts to print or builds assemblies from kits supplied by Cobham.

TKC: Turn-Key Controlled Procurement; Vendor procures parts and builds assemblies using Cobham approved suppliers on the BOM and/or AVL for custom parts, and approved distributors for off-the-shelf parts. The vendor purchases the parts, inspects them and maintains control over the procurement and build of the product.

TKV: Turn Key Vendor Controlled Procurement; Vendor procures parts and builds assemblies using their internal approved suppliers for custom parts, and approved distributors for off-the-shelf parts. The vendor purchases the parts, inspects them and maintains control over the procurement and build of the product.

5.0 How to Determine Quality Requirements from the Cobham PO

The PO contains VQR data; in each PO line item there is a reference to either specific VQR's or this document (QPUR05-1), example:

Item	Part / Rev / Description / Details
1	SUB-OR0503 Rev 003 U/M EA CONTRACTING OUT MAG PLATE GA58 HAWK 3 CELL BATT PK VQR:1,9,9A,11A,15,16,29,36 Order Quantity: Purchasing Category : JO 107D4-0000

5.1 VQR Coding Types

Coding Type on PO	Meaning
QA VQR 1, 4, 5	Means that specific VQRs within QPUR05-1 apply to the part in a non-turn-key procurement.
QPUR05-1,CMA,TKC	Means that the VQRs under commodity code CMA (Custom Machined parts), Turn-Key/Controlled column apply. VQR's: 1, 5, 9, 9A, 11A, 13, 14B, 15, 29, 30, 36, 40, 41, 44,

5.2 Where to get QPUR05-1

The PO references a website address to obtain a .pdf version of this document.

Please confirm receipt of PO, due date and acceptance of the Terms & Conditions.
 Please Review our Purchase Terms & Conditions posted on the following link:
www.cobhamtl.com/purchase_agreement_v5.pdf (Terms update June 8, 2010)
 Please Review our Vendor Quality Requirements posted on the following link:
www.cobhamtl.com/VQR_V5.pdf

Table 1, VQR Guidelines

Code	Commodity	VQR Code		
		Non-Turn-Key (NTK)	Turn-Key Controlled (TKC)	Turn-Key Vendor (TKV)
RM	Raw Metals	None	NA	NA
SSP	Solder & Solder paste	28	NA	NA
NMRM	Non-Metallic Raw Material <ul style="list-style-type: none"> • Ceramics • Plastics & Laminates • Plastic Resins • Rubber • Substrates 	99	NA	NA
CAS	Castings (metal)	1, 14B, 15, 29, 36, 41	1, 5, 14B, 15, 29, 30, 36, 41,	1, 5, 14B, 15, 29, 30, 36, 41,44
IMP	Injection Moulded Parts (Custom)	1, 14B, 15, 29, 44, 48	1, 14B, 15, 29, 44, 48	1, 14B, 15, 29, 44, 48
CHEM	Chemicals: <ul style="list-style-type: none"> • Paint • Flux • Lubricants Glue • Adhesives • Cleaners 	25, 28	NA	NA
SHW	Standard Fasteners & Hardware <ul style="list-style-type: none"> • Other • Screws • Bolts • Rivets Inserts • Washers • Nuts • Hinges • Standoffs 	99	NA	NA
CHW	Custom Hardware Made to CT&L Drawings	1,5, 9, 9A, 11A, 13, 14B, 15, 36, 41,	1, 5, 9, 9A, 11A, 13, 14B,15, 29, 30, 36, 40, 41, 44	1, 5, 5A, 9, 9A, 13, 14B,15, 29, 30, 36, 40, 41, 44
OTSP	Off The Shelf Mechanical Products, Devices & Assemblies <ul style="list-style-type: none"> • Gas Bottles • General • Bearings (Standard) • O-Rings • Holders • Ceramic Parts • Vibration Mounts/Shock Absorbers • Terminals/Terminal Boards (Standard) • Sockets • Bushings • Filters • Gaskets • Dials/Edge lit Blowers, 	99	NA	NA

Code	Commodity	VQR Code		
		Non-Turn-Key (NTK)	Turn-Key Controlled (TKC)	Turn-Key Vendor (TKV)
	<ul style="list-style-type: none"> Fans • Heat Exchangers • Heat Sinks • Magnets • Machined Castings & Forgings • Brackets • Panels • Chassis • Cabinets • Housings • Labels • Packaging • Mechanisms • Machined Part • Mounting Plate • Metal Tubing • Panels • Coils, Bobbins • Name Plates 			
CMA	Custom Machined or Stamped Parts (unfinished)	1, 5, 9, 9A, 11A, 13, 14B, 15, 29, 36, 41	1, 5, 9, 9A, 11A, 13, 14B, 15, 29, 30, 36, 40, 41, 44,	1, 5, 5A, 9, 9A, 13, 14B, 15, 29, 30, 36, 40, 41, 44
CMAF	Custom Machined or Stamped Assemblies (Assembled & Plated and Painted or Coated)	1, 5, 9, 9A, 11A, 13, 14B, 15, 29, 30, 36, 40, 41, 44	1, 5, 9, 9A, 11A, 13, 14B, 15, 29, 30, 36, 40, 41, 44,	1, 5, 5A, 9, 9A, 13, 14B, 15, 29, 30, 36, 40, 41, 44
CFAB	Other Custom Welded or Fabricated Parts. <ul style="list-style-type: none"> • O-Rings • Holders • Bushings • Gaskets • Dials/Edge lit Panels • Coils, Bobbins • Name Plates • Heat Sinks • Magnets • Labels • Packaging 	1, 5, 9, 9A, 11A, 13, 14B, 15, 29, 30, 36, 40, 41, 44	1, 5, 9, 9A, 11A, 13, 14B, 15, 29, 30, 36, 40, 41, 44	1, 5, 5A, 9, 9A, 13, 14B, 15, 29, 30, 36, 40, 41, 44,
SEMO	Electronic Components/Semiconductors (Off the shelf)	8, 2A	8, 2A	8, 2A
SEMC	Electronic Components/Semiconductors (Custom or modified)	TBD Per Part	TBD Per Part	TBD Per Part
BAT	Batteries	25, 28	NA	NA
PWBR	Bare Printed Wiring Boards (PWBs) Single, Double or Multilayer	6CL2 or 6CL3, 46	NA	NA

Code	Commodity	VQR Code		
		Non-Turn-Key (NTK)	Turn-Key Controlled (TKC)	Turn-Key Vendor (TKV)
PWBF	Bare Printed Wiring Boards (PWBs) Flex	6FL2 or 6FL3, 46	NA	NA
CCA	Circuit Card Assemblies (CCA's) <ul style="list-style-type: none"> • Single Layer • Double Multi Layer • Flex 	1, 7CL2, or 7CL3,8, 9, 9A, 16, 44, VQRMS, 2A	1, 6CL2 or 6CL3, 6A, 13, 7CL2, or 7CL3, 8, 9, 9A, 16, 44, VQRMS, 2A	1, 6CL2 or 6CL3, 6A, 13, 7CL2, or 7CL3, 8, 9, 9A, 16, 44, VQRMS, 2A
BCH	Complete Box/Chassis/Housing Build (Completely enclosed assemblies) A separate QCI is recommended for box build	1, 5, 7CL2 or 7CL3, 8, 9A, 11A, 12, 13, 14B, 15, 16, 18, 28A, 31, 33, 36, 40, 41, 42CL2 or 42CL3, 43, 44, 45, 7A, 2A	1, 5A, 6CL2 or 6CL3, 7CL2 or 7CL3, 8, 9, 9A, 11A, 12, 13, 14B, 15, 16, 16A, 18, 19, 28A, 30, 31, 33, 36, 40, 41, 42CL2 or 42CL3, 43, 44, 45, 48, VQRMS, 7A, 2A	1, 5A, 6CL2 or 6CL3, 7CL2 or 7CL3, 8, 9, 9A, 11A, 12, 13, 14B, 15, 16, 16A, 18, 19, 28A, 30, 31, 33, 36, 40, 41, 42CL2 or 42CL3, 43, 44, 45, 46, 48, VQRMS, 7A, 2A
CONO	Connectors (Off the Shelf)	99	NA	NA
CONC	Connectors (Custom)	NA	NA	1, 9, 9A, 11A, 13, 14B, 15, 16, 33, 44, 46,
WIR	Wire (Off the Shelf)	99	NA	NA
SEW	Sewn Products i.e. Lanyards, parachutes& drogues	9, 9A, 15, 36	9, 9A, 15, 36	9, 9A, 15, 36
ANT	Antennas (Off the shelf only)	99	99	99
CAB	Wire Harnesses & Cable Assemblies/Adapters (Crimped or Soldered)Including modified antennas	1, 7CL2 or 7CL3, 8, 9, 9A, 15, 31, 42	1, 7CL2 or 7CL3, 8, 9, 9A, 15, 31, 42, 44	1, 7CL2 or 7CL3, 8, 9, 9A, 15, 31, 42, 44, 46
VTME	Verification, Test and Measurement Equipment (Calipers, Oscilloscopes, spectrum analyzers, multi meters, etc)	37, 38	NA	NA

COBHAM Vendor Quality Requirements (VQR)

Table 2

COBHAM VENDOR QUALITY REQUIREMENTS

The following pages contain Vendor Quality Requirements (VQRs) that may form part of Cobham purchase order requirements. The applicable VQRs will vary by part number. The codes for each specific part number will be listed on the Purchase Order after each line item on the purchase order. Copies of this list are available in electronic or hard copy form. The latest copy of this list or information regarding these requirements may be obtained from the Cobham Buyer. In case of conflict with drawing requirements, contact the Quality Assurance Dept.

Should the seller fail to meet the VQR requirements defined in the Purchase Order, the seller agrees to correct or replace the item within thirty (30) days of discovery of any non-compliance, at no cost to Cobham.

VQR #	Description
VQR1	MINIMUM INSPECTION SYSTEM REQUIREMENTS: The Supplier is responsible for ensuring that all inspections and tests have been performed that are necessary to substantiate that the supplies or services furnished under this purchase order conform to specification requirements for the manufacturer's parts. All Inspection, Test and Measurement equipment used in the manufacture and processing of the items shall be calibrated and traceable to known national standards. The Inspection program shall include receiving inspection, In-Process Inspection and Final outgoing inspection. Records shall be kept of what was inspected, the results of the inspection and who performed the inspection.
VQR2	CERTIFICATE OF CONFORMANCE: The Supplier shall send a Certification of Conformance (C of C) with each shipment. It shall include as a minimum, the following: <ul style="list-style-type: none"> • Purchase order number • Specification or drawing number including revision • Quantity • A statement that the materials conform to the applicable specifications and signature.
VQR2A	Certificate of Conformance for Electronic Components: The supplier shall provide a certificate of conformance from the original equipment manufacturer (OEM) or franchised distributor. If the components are procured from a broker or non-authorized distributor, the supplier must provide a certificate of compliance that warrants the components to be new & original (not refurbished, recovered, or reworked) and traceable to the OEM. Electronic components means; resistors, capacitors, inductors, diodes, transistors, FETs, integrated circuits, hybrids, ASICs, wound components and relays.
VQR3	GOVERNMENT INSPECTION: The Supplier is required to have government inspection prior to shipment. On receipt of this order, promptly contact the government representative who normally services your plant. If no representative services your plant, contact the Buyer for the nearest National Defence Quality Assurance Representative.
VQR4	COBHAM SOURCE INSPECTION: Inspection of the items at the supplier's facility is required by Cobham. The supplier shall provide all necessary inspection data, facilities, equipment and inspection / test personnel to perform the inspection. Cobham shall be notified at least five (5) full working days prior to the inspection point. If the Inspection requirement is waived, a copy of the waiver shall be included with the shipping documents. If the inspection is performed, the supplier shall include a copy of the completed source inspection form with the shipping documents. Final acceptance of the product will be at Cobham. <p>A. IN-PROCESS INSPECTION: Cobham shall perform an In-Process or Pre-Encapsulation Inspection at the supplier's facility. The Supplier shall establish an appropriate point in the process to accomplish this Inspection.</p> <p>B. FINAL INSPECTION/TEST WITNESS: Cobham shall perform a final inspection or witness final tests at the supplier's facility.</p>
VQR5	SUPPLIER MATERIAL REVIEW BOARD (MRB) AUTHORITY: The Supplier does not have the authority to determine Use-As-Is or Repair MRB dispositions under this PO.

COBHAM Vendor Quality Requirements (VQR)

VQR #	Description
VQR5A	SUPPLIER MATERIAL REVIEW BOARD (MRB) AUTHORITY: The Supplier has the authority to determine rework MRB / Nonconforming Material (NCM) dispositions (except repair) under this PO for supplier defects that do NOT affect, fit, form, function, cosmetics, or reliability of the High Level Assembly (HLA). All "use as is" or "repair" supplier NCM's shall be sent to Cobham for information. NCM's that affect fit, form, function, cosmetics, or reliability of the HLA shall be sent to Cobham for approval.
VQR6	PRINTED WIRING BOARDS (PWB): Rigid & Flex Printed Wiring Boards (PWB) shall meet the requirements of; <ul style="list-style-type: none"> • 6CL2: IPC-A-600 Class 2 (Rigid) • 6CL3: IPC-A-600 Class 3 (Rigid) • 6FL2: IPC-6013 Class 2 (Flex) • 6FL3: IPC-6013 Class 3 (Flex) All PWB's shall be sealed to prevent deterioration of solderability or damage. PWBs shall be traceable by Date Code to the materials used and the process controls used at the time of manufacture. A micro-section report and sample button shall be provided with each Part number and Date Code for multilayer & Flex boards.
VQR6A	QUALIFICATION OF NEW PWB SUPPLIER: In order to qualify a new PWB supplier, the vendor shall provide the following documentation: <ol style="list-style-type: none"> a) PWB vendor's IPC-1710A evaluation form. b) Vendor's supplier quality survey and/or on-site vendor audit results. c) Independent 3rd party micro-section analysis of each board P/N to IPC-A-600, Class 3 requirements. This shall include an evaluation of, PTH, VIA, laser, blind and buried vias as applicable for the board being assessed. d) Vendors Supplier Quality Assurance assessment and reason for approval.
VQR7	SOLDERING WORKMANSHIP: Circuit Card Assemblies (CCAs) shall meet the requirements of IPC-A-610, and J-STD-001, including Appendices and as supplemented by the requirements of QCI10-68. They shall be cleaned and tested for ionic contamination prior to shipment (as applicable). The supplier shall provide evidence of inspection to the appropriate standard with each delivered lot. <ul style="list-style-type: none"> • 7CL2: IPC-A-610/J-STD-001, Class 2 • 7CL3: IPC-A-610/J-STD-001, Class 3 • QCI10-68 Cobham Circuit Card Assembly Workmanship
VQR7A	SUB-ASSEMBLY AND BOX BUILD WORKMANSHIP: Sub and final box build assemblies shall meet the requirements of QCI10-67.
VQR8	ELECTROSTATIC DISCHARGE (ESD) PROTECTION: ESD Sensitive Devices and Assemblies shall be packaged, marked and handled in a manner that will prevent mechanical / electrical damage. The packaging shall withstand normal transport and handling requirements. ESD sensitive devices shall be packaged in static shielding materials.
VQR9	BILL OF MATERIAL PART/MATERIAL SUBSTITUTIONS: The Supplier shall not substitute different materials or components that are defined as source controlled (i.e. approved manufacturer) in the Cobham BOM or on the drawing. The supplier shall request approval from Cobham for proposed parts substitutions as per QPUR06-4, Vendor Deviation Request.
VQR9A	DEVIATION REQUESTS: The vendor may request a change to the Cobham requirements (Drawings, MI's, QCI's, Test procedures etc) through the use of the Vendor Deviation Request Process as defined in QPUR06-4. Processes, tests, materials, QA requirements or design may not be changed unless an approved deviation is obtained.
VQR10	QUALIFICATION OF PARTS: This part is Qualified or Certified as an Aircraft part. The supplier shall not incorporate any changes in design, material, or processes without prior notification and approval from Cobham as per QPUR06-4, Vendor Deviation Request.
VQR11	QUALIFIED PRODUCTS LIST (QPL) ITEM: The manufacturer of the product supplied to this purchase order shall be certified and the product listed in the Qualified Products List (QPL). In the case of microcircuits, be listed in MIL-HDBK-103 at time of manufacture. Suppliers shall certify that the item supplied is a certified, QPL item.
VQR11A	SUBCONTRACT: The vendor may not subcontract any part of the assembly without first notifying Cobham and obtaining approval via first article submission as per VQR 15.

COBHAM Vendor Quality Requirements (VQR)

VQR #	Description
VQR12	<p>REFURBISHED / USED / REPAIRED MATERIALS: Material supplied shall be of new manufacture. Used, repaired or refurbished parts/material shall not be supplied. Repair to out of specification conditions is not authorized without prior Cobham approval. Requests for repair are to be submitted to the Cobham Buyer for approval. Cobham reserves the right to deny requests to repair any out of specification material submitted for approval.</p> <p>Repair: Is defined as the process used to bring the non-conformance into an acceptable condition other than to print or specification. It is the act of restoring the functional capability of a defective part without necessarily restoring appearance, interchangeability, and uniformity.</p> <p>Rework: Is defined as the reprocessing of a non-conformance to make it conform completely to the established drawing, specification or contract requirements. Cobham approval is not required for rework.</p>
VQR13	<p>SEVEN YEAR RECORDS RETENTION: The Supplier shall retain on file for a period of at least 7 years all traceability, Quality and Test records of the material provided on this Purchase Order.</p>
VQR14	<p>INSPECTION REPORT: The vendor shall perform an inspection of the part and provide a dimensional inspection report. The report shall include actual read and record data and be sent to Cobham with the parts. The report may be tailored to critical dimensions after adequate supplier performance has been achieved. The inspection sample shall be tagged to ensure that it can be measured at Cobham as well. The Test / Inspection results may be in the form of a list, computer printout or other means, but must clearly identify the dimensions / characteristics they represent and be clearly related to the item from which they were derived.</p> <ul style="list-style-type: none"> 14A) One Part per P/N per Purchase Order 14B) The first and last items of each batch supplied. 14C) Each of the first five items manufactured in any individual batch. 14D) Each fifth item of any individual batch. 14E) A random sample selected in accordance with MIL-STD-1916. Verification Level II

COBHAM Vendor Quality Requirements (VQR)

VQR #	Description
VQR15	<p>FIRST ARTICLE INSPECTION: The supplier shall perform first article inspection on parts and subassemblies supplied to this purchase order when specified on the purchase order or when:</p> <ul style="list-style-type: none"> A. The parts are being built by the supplier for the first time. B. There has been a major drawing revision since the last shipment to CT&L of the same parts. C. The last delivery of the same parts has been over one year (1). D. The supplier has introduced a major tooling, artwork or process change/modification in the manufacture of the parts <p>Delivery of First Article: The Supplier is required to deliver the first article quantity and First Article Report, prior to shipment of the balance of the Purchase Order, unless otherwise specified. The suppliers' first article report shall be validated by the vendors Quality Assurance Representative.</p> <p>The first article quantity shall be representative in materials and processes of the production lot.</p> <p>The first article report shall include:</p> <p>1) A definition of the part/assy being made, including: P/N, Drawing, MI, BOM, PWB, QCI and TP number and revision of each document.</p> <p>2) Mechanical Parts or Assemblies: Attach Raw material and special process (Chemical conversion coat, Anodizing & Black Oxide) C of C's. Read and record data for each drawing dimension and drawing notes. Evidence of verification to QCI, MI, TP, BOM, PO and VQR requirements, attach documents as required.</p> <p>3) Electrical Assemblies: Evidence of verification to QCI, MI, TP, BOM, PO and VQR requirements, attach documents as required. Component placement & orientation, crimp pull tests, adhesive shelf life, BGA X-rays, thermal profile validation, MSL rating & bakeout, and cleanliness.</p> <p>The suppliers form may be used as long as all the above requirements are met.</p>
VQR16	<p>TEST REPORTS: Test reports shall contain the results of tests which indicate conformance to the requirements detailed in the Cobham drawing and / or other applicable specifications. These reports must be identifiable with the materials furnished. Copies of the test reports shall be included with each shipment.</p>
VQR16A	<p>TEST DATA TRACEABILITY: All in process and final test data shall be traceable to the serial number of the board or assembly being tested.</p>
VQR17	<p>ACCEPTANCE TEST PROCEDURES: The supplier shall prepare and submit an Acceptance Test Procedure (ATP) for Cobham review and approval prior to the first shipment of parts.</p>
VQR18	<p>INSPECTION AND TEST PLAN: The supplier shall prepare and submit an Inspection and Test Plan for Cobham review and approval prior to the first shipment of parts.</p>
VQR19	<p>QUALITY ASSURANCE PLAN: The supplier shall prepare and submit a Quality Assurance Plan for Cobham review and approval prior to the first shipment of parts.</p>
VQR20	<p>CHEMICAL AND PHYSICAL ANALYSIS: Each shipment of metallic or non-metallic raw material must be accompanied by a Chemical and Physical analysis test report containing:</p> <ul style="list-style-type: none"> • Name & Location of the raw material manufacturer or mill. • Material identification by specification number and material condition. • Manufacturer or mill lot identification number of the raw material. • Actual chemical and physical test results as specified in the applicable material specifications.
VQR21	<p>RAW MATERIAL TRACEABILITY: Each shipment of finished or semi finished goods manufactured from metallic or non-metallic raw material must be accompanied by a certificate from the Supplier containing:</p> <ul style="list-style-type: none"> • Name & location of the raw material manufacturer. • Material identification by specification number. • Manufacturer or mill lot or batch number of the raw material.

COBHAM Vendor Quality Requirements (VQR)

VQR #	Description
VQR22	AS-BUILT MATERIAL IDENTIFICATION AND TRACEABILITY: The supplier shall furnish an As-Built Material Identification and Traceability List (P/N, Lot, Date Code, or Batch #) with the first shipment. Subsequent shipments from the same lot, manufactured from the same lot of materials, may reference that the list was sent with the first shipment and they are on file and available upon request.
VQR23	DYE PENETRANT TEST: The Supplier must perform a dye penetrant test on 5 samples from the batch ordered. Results of this test must be recorded and the samples identified by tag or other means. The samples and test results must be included with each batch shipment.
VQR24	RADIOGRAPHIC TEST: The Supplier must perform a radiographic examination of samples selected in accordance with MIL-STD-1916, Verification Level 2 from the batch ordered. Results of this examination must be recorded and the samples identified by tag or other means. The samples, examination results and photographic records must be included with each batch shipment.
VQR25	HAZARDOUS MATERIAL: The Supplier is required to submit "Material Safety Data Sheets" (MSDS) with each shipment. Outside shipping containers shall be identified with the appropriate warning labels.
VQR27	MERCURY CONTAMINATION: Material supplied to this purchase order shall not contain mercury. Usage of equipment which might cause mercury contamination in the manufacture, fabrication, assembly or test of this material is prohibited. This requirement must be passed on to all subcontractors. The Supplier shall provide certification stating material is free from mercury contamination with each shipment.
VQR28	SHELF LIFE MATERIAL: When providing shelf life materials to Cobham, each unit package, shall be identified with the part number, Date of Manufacture, Storage Temperature, Date of storage expiration, and name of manufacturer as applicable. At least 75% of the shelf life must remain at the time of receipt by CT&L unless otherwise specified on the purchase order.
VQR28A	SHELF LIFE CONTROL PROGRAM: The supplier shall implement a shelf life and storage control program for adhesives and similar products. Adhesives shall be labelled with their shelf life expiry date as defined by the manufacturer and removed from use if expired.
VQR29	PACKAGE IDENTIFICATION: The supplier shall mark package(s) with the part number, revision number (if Cobham part number), quantity and supplier identification. Unless otherwise defined by Cobham drawing.
VQR30	PAINTING PROCESS CONTROL: The supplier shall provide the following: <ul style="list-style-type: none"> • LIQUID PAINT: The supplier shall provide a completely filled in Painting Data Sheet as per QCI07-20 • POWDERCOAT PAINT: The supplier shall meet the requirements of QCI10-66
VQR31	CRIMPING PROCESS CONTROL: The supplier shall perform assembler level training and crimp pull tests on crimp contacts and ferrules to ensure that the crimping process meets the pull strength as stated in the manufacturers data sheets, MI or drawing. Pull tests shall be conducted as per QCI05-2 or internal equivalent. Evidence of sample crimp pull tests shall be delivered with each shipment. QCI10-31 may be used for reference.
VQR33	PRESSURE TEST: The supplier shall perform pressure tests as per drawing to ensure there are no leaks.
VQR34	CERTIFIED PART-ROUTE TO STOCK: This requirement is for Cobham receiving only. This part is certified, route directly to stock.
VQR35	Deleted:
VQR36	COSMETIC SURFACES: This part has cosmetic surfaces that are visible to our customers. Any visual defects such as, colour variation, nicks, dents, scratches, digs or foreign material are cause for rejection. Ensure adequate packaging for transport to prevent damage to cosmetic surfaces.
VQR37	ROUTE TO CALIBRATION: This requirement is for Cobham Ltd receiving only. Route this item to Calibration.
VQR38	CALIBRATION CERTIFICATE: The vendor shall provide a valid calibration certificate with the test and measurement equipment being purchased.

COBHAM Vendor Quality Requirements (VQR)

VQR #	Description
VQR39	CONTROLLED GOODS / ITAR: Warning: This part and technology is specifically designed for Military use and classified as per; Canadian Export Control List, and USA International Trade in Arms Regulations ITAR / USML. Vendors quoting or manufacturing this component must be registered with the Canadian Controlled Goods Directorate or the US Dept of State (as applicable). The re-export of this part or its technology outside the USA or Canada without a valid export permit from either country is against the law. Failure to comply can result in personal fines up to \$2,000,000 and/or imprisonment up to 10 years.
VQR40	HELICOIL INSTALLATION: Helicoils shall be installed as per drawing and verified as per QCI10-62.
VQR41	SPECIAL PACKAGING REQUIREMENTS: This part is extremely fragile, has cosmetic surfaces, critical O-ring, or sealing surfaces that may be easily damaged. Special packaging precautions or re-useable packaging <u>must</u> be used to transport this part to prevent any damage to these parts during shipment.
VQR42	CABLE ASSEMBLY AND WIRE HARNESS WORKMANSHIP-IPC-A-620: Cables & wire harnesses shall meet the requirements of IPC-A-620, including Appendices. The supplier shall provide evidence of inspection to the appropriate standard with each delivered lot. <ul style="list-style-type: none"> • 42CL2: IPC-A-620, Class 2 • 42CL3: IPC-A-620, Class 3
VQR43	VACUUM TEST: The vendor shall perform a vacuum test as per the applicable MI.
VQR44	TURN-KEY VENDOR TYPES: VQR 44 is intended to define the QA system requirements for TKBC & TKVC. When VQR 44 is specified, all sub requirements of VQR 44 apply, i.e. 44A thru VQR 44P.
VQR44A	CONFIGURATION CONTROL: The supplier shall have a documented change control process to manage the configuration of the internal and customer build documents; as well as the actual As-Built assembly configuration (revision).
VQR44B	INVENTORY CONTROL PROCESS: The supplier shall have a documented inventory storage and control process to ensure accurate inventory records and storage of product to prevent deterioration.
VQR44C	SHIPPING & RECEIVING PROCESS: The supplier shall have a documented shipping and receiving process to ensure the correct QTY, part number and revision of products are received and shipped.
VQR44D	MATERIAL STORAGE & HANDLING PROCESS: The supplier shall have a documented material storage and handling process. The process shall control shelf life limited materials, ESD and moisture sensitive parts.
VQR44E	MANUFACTURING CONTROL PROCESS: The supplier shall have a documented manufacturing control process (Travelers / KANBAN / Work Order) process. Operations performed must be traceable to the individual who performed the work. All work and test data shall be traceable to the work order or batch. Test data shall traceable to the serial number of the board.
VQR44F	MANUFACTURING PROCESS VALIDATION: The supplier shall have a documented manufacturing process validation process. The process shall ensure that unproven processes are not used to manufacture customer deliverable product.
VQR44G	NON-CONFORMANCE CONTROL PROCESS: The supplier shall have a documented Non-conformance process that identifies and segregates non-conforming material from acceptable material.
VQR44H	TRAINING PROCESS: The supplier shall have a training program and documented evidence of employee training to internal build, test and quality documents for the products being manufactured for Cobham.
VQR44I	CORRECTIVE AND PREVENTIVE ACTION PROCESS: The supplier shall have a corrective and preventive action system.
VQR44J	CALIBRATION PROCESS: All Inspection, Test and Measurement equipment used in the manufacture and processing of the items shall be periodically calibrated and traceable to known national standards.
VQR44K	RMA PROCESS: The supplier shall have an RMA process to ensure returned material is traceable.

COBHAM Vendor Quality Requirements (VQR)

VQR #	Description																						
VQR44L	WORKMANSHIP STANDARDS: The supplier shall maintain a workmanship standard for the part or assembly being built indicating acceptable and non-acceptable conditions.																						
VQR44M	FAILURE ANALYSIS: In the event of serious malfunction, unacceptable performance trends, Customer RMA's, lot rejections or Cobham line stoppage attributed to product made by the vendor, the vendor shall provide timely failure analysis to identify root cause and implement corrective action.																						
VQR44N	SOLDERING IRON VERIFICATION: The vendor shall have a soldering iron verification program that verifies the tip voltage and resistance. QCAL07-2 shall be used as a guide.																						
VQR44O	CCA ASSEMBLY WASHING: All circuit card assemblies shall be washed in DI water and saponifier and tested for cleanliness as per the applicable MI. NOTE: Some parts are not washable and must be installed by hand and cleaned locally only, these are identified in the MI.																						
VQR44P	COUNTERFEIT PARTS: The supplier shall maintain a counterfeit parts program equivalent to QPUR10-5.																						
VQR45	PRODUCTION LOT TEST REQUIREMENTS: The parts on this PO are subject to a production lot test requirement for acceptance.																						
VQR46	QUALITY SYSTEM REQUIREMENTS: The vendor for this part shall be ISO 9001 registered.																						
VQR47	PROCESS CAPABILITY (CPK): The vendor shall identify and measure / inspect parameters to be analyzed for process capability. These shall be reported once a month. The production CpK target is 1.33.																						
VQR48	INJECTION MOLDED PARTS: The parts shall meet the requirements of QCI10-XX.																						
VQR99	NO VENDOR QUALITY REQUIREMENTS: The Part requirements were reviewed; there are no special quality clauses applied.																						
VQRMS	<p>MOISTURE SENSITIVE DEVICES: This requirement applies to all Cobham's Vendors. All moisture sensitive (MS) designated parts shall be handled, packed, identified, stored and shipped in moisture resistant packaging as defined by documents: J-STD-020 'Moisture/Reflow Sensitivity Classification for Non-hermetic Solid State Surface Mount Devices' and J-STD-033B 'Handling, Packing, Shipping and Use of Moisture/Reflow Sensitive Surface Mount Devices'.</p> <p>Each package shall have a label and moisture sensitivity rating defined by: IPC/JEDEC J-STD-033B and below. Parts shall be baked out if floor life is exceeded.</p> <table border="1" data-bbox="435 1209 1385 1717"> <thead> <tr> <th>VQR Designation</th> <th>Floor Life (out of bag at factory ambient $\leq 30^{\circ}\text{C}/85\% \text{ RH}$ or as stated.</th> </tr> </thead> <tbody> <tr> <td>MS</td> <td>Generic moisture sensitivity designator—moisture sensitivity level is not defined and parts must be baked out before use.</td> </tr> <tr> <td>MS1</td> <td>Unlimited at $\leq 30^{\circ}\text{C}/85\% \text{ RH}$</td> </tr> <tr> <td>MS2</td> <td>1 Year</td> </tr> <tr> <td>MS2a</td> <td>4 weeks</td> </tr> <tr> <td>MS3</td> <td>168 hours</td> </tr> <tr> <td>MS4</td> <td>72 hours</td> </tr> <tr> <td>MS5</td> <td>48 hours</td> </tr> <tr> <td>MS5a</td> <td>24 hours</td> </tr> <tr> <td>MS6</td> <td>Mandatory bake before use. After bake, must be reflowed within the time limit specified on the label.</td> </tr> <tr> <td>MSN</td> <td>Part was reviewed for moisture sensitivity and there is no rating.</td> </tr> </tbody> </table>	VQR Designation	Floor Life (out of bag at factory ambient $\leq 30^{\circ}\text{C}/85\% \text{ RH}$ or as stated.	MS	Generic moisture sensitivity designator—moisture sensitivity level is not defined and parts must be baked out before use.	MS1	Unlimited at $\leq 30^{\circ}\text{C}/85\% \text{ RH}$	MS2	1 Year	MS2a	4 weeks	MS3	168 hours	MS4	72 hours	MS5	48 hours	MS5a	24 hours	MS6	Mandatory bake before use. After bake, must be reflowed within the time limit specified on the label.	MSN	Part was reviewed for moisture sensitivity and there is no rating.
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