



ASSOCIATION CONNECTING
ELECTRONICS INDUSTRIES®

IPC-1710A

OEM Standard for Printed Board Manufacturers' Qualification Profile

Developed by the OEM council of the IPC, the MQP sets the standard for assessing PWB manufacturers capabilities and allows PWB manufacturers to more easily satisfy customer requirements.

IPC-1710A
May 2004

A standard developed by IPC

2215 Sanders Rd, Northbrook, IL 60062-6135
Tel. 847.509.9700 Fax 847.509.9798
www.ipc.org

NOTICE

IPC standards and publications are designed to serve the public interest through eliminating misunderstandings between manufacturers and purchasers, facilitating interchangeability and improvement of products, and assisting the purchaser in selecting and obtaining with minimum delay the proper product for his particular need. Existence of such Standards and Publications shall not in any respect preclude any member or non-member of IPC from manufacturing or selling products not conforming to such Standards and Publications, nor shall the existence of such Standards and Publications preclude their voluntary use by those other than IPC members, whether the standard is to be used either domestically or internationally.

Recommended Standards and Publications are adopted by IPC without regard to whether their adoption may involve patents on articles, materials or processes. By such action, IPC does not assume any liability to any patent owner, nor do they assume any obligation whatever to parties adopting the recommended Standard or Publication. Users are also wholly responsible for protecting themselves against all claims of liabilities for patent infringement.

The material in this standard was developed by the OEM Council of the Institute for Interconnecting and Packaging Electronic Circuits.

FOREWORD

It is not intended that this Manufacturers' Qualification Profile (MQP) satisfies all the requirements of the customer, however, conscientious maintenance of this document and or registration to ISO 9000 requirements should satisfy the major concerns. Thus, audits should be simpler, required less frequently, and facilitate less paper work as customers and suppliers work closer to meeting each others needs.

ACKNOWLEDGMENTS

The IPC is indebted to the members of the OEM council who participated in the development of this document. A note of thanks is also expressed to the members of the IPC Presidents Council for their review and critique and construction recommendations in finalizing the principles developed for the MQP.

Although the IPC is grateful for all the involvement and individual contributions made in completing the MQP a special acknowledgment is extended to the following individuals. It was their dedication and foresight that made this publication possible.

Rudolfo Archbold
Digital Equipment Corp

Rick Iantaffi
Northern Telecom

Don Noel
Harris Corp. - Computer Sys. Div

Mario Suarez-Solis
Encore Computer Corp.

Patrick Bernardi
IBM

Sue Jones
Wilcox Electric

Rick Smith
Compaq Computer Corp.

Gordon Wolfram
Raytheon Company

Vernon Brown
Motorola, Inc.

Chuck Krzesicki
Honeywell Avionics Division

Peter Solecky
IBM

Jerald G. Rosser
Hughes Missile Operations Div.

Don Holt
Texas Instruments

Thomas Kurtz
Hughes Defense Communications

Joseph F. Sterba
Honeywell, Inc.

Jamie Zanios
Wellborn Industries Ltd.

CONTENTS

<u>Sections:</u>	<u>Pages:</u>
1.1 Company Description	1
1.2 Site Description	2
2.1 Process	3-4
2.2 Electrical Test Equipment	5-7
2.3 Product Type	8-10
2.4 Product Complexity	11-14
2.5 Quality Development	15-16
3.0 Equipment Profile	17-21
Master Equipment Listing	22
4.0 Technology Profile Specifics	23-30
5.0 Quality Profile	31-41
6.0 Manufacturing History	42
7.0 Identification of Previous Audits	43
8.0 Financial Review	44
9.0 MQP Electronic Editing	45

SECTION 1.1

COMPANY DESCRIPTION

DATE COMPLETED 10/26/2023

GENERAL INFORMATION			
LEGAL NAME GORILLA CIRCUITS			
PHYSICAL ADDRESS 1445 Oakland Road			
CITY San Jose	STATE CA	ZIP 95112	
PROVINCE	COUNTRY USA		
TELEPHONE NUMBER (408)294-9897	FAX NUMBER (408) 297-1540	TELEX NUMBER	
E-MAIL ADDRESS brett@gorillacircuits.com	MODEM NUMBER	DATE FOUNDED <input type="checkbox"/> PUBLIC <input checked="" type="checkbox"/> PRIVATE	
INTERNET URL www.gorillacircuits.com	FTP SITE		

MANAGEMENT
PRESIDENT Mario Borjon
GENERAL MANAGER Adam Presley Najar
VICE PRESIDENT OF MANUFACTURING Stephen Kersten
VICE PRESIDENT OF QUALITY Nellie Gutierrez
VICE PRESIDENT N/A
VICE PRESIDENT OF SALES Brett Dobens
WASTE TREATMENT MANAGER (POLLUTION PREVENTION) Fermin Aviles

CORPORATE DESCRIPTION	NUMBER OF EMPLOYEES		COMMENTS
	CORPORATE	SITE	
DESIGN AND DEVELOPMENT Plan/CAM		24	
ENGINEERING		5	
MANUFACTURING CONTROL		6	
MANUFACTURING	DIRECT	175	
	INDIRECT		
QUALITY CONTROL	QUALITY ENGINEERS	27(inspectors)	
	INTERNAL AUDITORS	3	
	GENERAL MANAGEMENT	2	
ADMINISTRATION		27	
TOTAL		269	

SECTION 1.2

SITE DESCRIPTION

(TO BE COMPLETED FOR EACH SITE)

DATE COMPLETED **10/26/2023**
ATTACH APPROPRIATE CHARTS (OPTIONAL)

MANUFACTURING FACILITY			
COMPANY NAME		Gorilla Circuits	
PHYSICAL ADDRESS 1445 Oakland Road & 1509 Berger Drive			
CITY	San Jose	STATE	CA
PROVINCE		COUNTRY USA	
TELEPHONE NUMBER	(408)294-9897	FAX NUMBER	(408)297-1540
E-MAIL ADDRESS		MODEM NUMBER	YEARS IN BUSINESS
sales@gorillacircuits.com			45 years
INTERNET URL		FTP	
www.gorillacircuits.com			
PRINCIPLE PRODUCTS/SERVICES/SPECIALTIES		BUSINESS CHARACTERIZATION (HIGH VOLUME, QUICK TURN-AROUND, ETC.)	
Printed Circuit Boards		High quality, med vol, proto type, quick turn – high tech	

FACILITY MANAGEMENT	TITLE	REPORTS TO (Function/Job Title)
OVERALL OPERATION RESPONSIBILITY FOR THIS SITE Stephen Kersten	VP of Operations	President
MANUFACTURING Adam Najjar Presley	General Manager	VP of Operations
TECHNICAL/ENGINEERING Javier Villa	Process Engineer Manager	VP of Operations
MATERIALS/PRODUCTION CONTROL Hazy Bautista	Materials Supervisor	General Manager
PURCHASING Jennifer Petty	Purchasing	VP of Operations
QUALITY Nellie Gutierrez	Director of Quality	President
SALES REPRESENTATIVE Brett Dobens	VP of Sales	President
WASTE MANAGEMENT Fermin Aviles	WT Manager	VP of Operations

BUILDINGS				SYSTEMS (INDICATE % COVERAGE)						
	AGE	AREA (Sq. Ft.)	Construction (Wood/Brick)	Power Conditioning	Heating	Ventilation	Air Conditioning	Sprinklers	Waste Treatment	Other
Office	50	20k sf	Block	x	x	x	x	x		
Manufacturing	50	45k sf		x	x	x	x	x	x	
Storage	50	10k sf		x	x	x	x	x		
Planned additions										

SAFETY AND REGULATORY AGENCY REQUIREMENTS				
Are fire extinguishers functional and accessible to employees?	x YES	<input type="checkbox"/> NO	What is the distance to the nearest fire station? (in minutes)	2 Minutes
Do you conform to local/federal environment protection agency requirements?	x YES	<input type="checkbox"/> NO	Date of last OSHA visit	
			Date of last EPA visit	
Are you currently operating under a waiver or in violation of local government requirements?	<input type="checkbox"/> YES	x NO	Other Agency Audits, UL, ISO 9000, NECQ, CSA Approval and Number	X UL # <u>E46606</u> <input type="checkbox"/> CSA # _____ X ISO 9001:2008 <u>A11516</u> <input type="checkbox"/> Other _____
Do you have a safety program? Describe below.	x YES	<input type="checkbox"/> NO	Hazardous Waste Number Trade Waste Account Number	CAD981454317

PLANT PERSONNEL (TOTAL EMPLOYEES)										
Regular	Contract	Office	Technical/Engineering	Production	Full-Time QA	Part-Time QA	Union	Non-Union	Union Name	Contract Expires (Date)
90		27	5	109	38					

COMMENTS

SECTION 2.1

PROCESS

DATE COMPLETED
10/26/2023

This section is intended to provide overview information on the processes used to fabricate printed board products.

Site Capability Snapshot (Please Check all that apply)

Designators		Remarks
A	<p>Conductor Forming Processes</p> <p><input type="checkbox"/> Subtractive</p> <p>X Thin Foil Subtractive less than .5 oz.</p> <p><input type="checkbox"/> Semi-Additive</p> <p>X Additive (Electro-less)</p> <p><input type="checkbox"/> Black Hole</p> <p><input type="checkbox"/> Thick Film Paste and Fire</p> <p><input type="checkbox"/> Thin Film Semi-conductor Sputtering</p> <p><input type="checkbox"/> Other:</p>	
B	<p>PTH Materials and Processes</p> <p>X Acid Copper</p> <p><input type="checkbox"/> Pyro-Phosphate Copper</p> <p><input type="checkbox"/> Full Built Electro-Less</p> <p><input type="checkbox"/> Gold Paste</p> <p><input type="checkbox"/> Copper Paste</p> <p><input type="checkbox"/> Gold Conductor Sputtering</p> <p><input type="checkbox"/> Nickel Conductor Sputtering</p> <p><input type="checkbox"/> Other:</p>	
C	<p>Permanent Over-plating</p> <p><input type="checkbox"/> Tin</p> <p>X Tin-Lead</p> <p><input type="checkbox"/> Tin-Nickel Alloy</p> <p>X Nickel</p> <p>X Nickel Gold (Hard)</p> <p>X Nickel Gold (Soft)</p> <p><input type="checkbox"/> Nickel Rhodium</p> <p><input type="checkbox"/> Conductive Polymer</p> <p>X Other: ENEPIG</p>	

D	Permanent Selective Plating	<input type="checkbox"/> Tin <input checked="" type="checkbox"/> Tin-Lead <input type="checkbox"/> Tin-Nickel Alloy <input checked="" type="checkbox"/> Nickel <input checked="" type="checkbox"/> Nickel Gold (Hard) <input checked="" type="checkbox"/> Nickel Gold (Soft) <input type="checkbox"/> Nickel Rhodium <input type="checkbox"/> Other:	
E	Permanent Mask or Coating	<input type="checkbox"/> Photo Dry Film <input checked="" type="checkbox"/> Photo Liquid <input checked="" type="checkbox"/> Image Transfer Screen Mask <input type="checkbox"/> Conformal Coating Solder Mask <input type="checkbox"/> Cover Coat <input type="checkbox"/> Other:	
F	Other Surface Finishes	<input checked="" type="checkbox"/> Tin-Lead Fused <input type="checkbox"/> Immersion Tin <input checked="" type="checkbox"/> Solder Leveled <input type="checkbox"/> Roll Soldered <input type="checkbox"/> Electro-less Solder Fused <input type="checkbox"/> Solder Bumped Lands <input type="checkbox"/> Solder Paste Fused <input checked="" type="checkbox"/> Azole Organic Protective Covering <input type="checkbox"/> Flux Protective Covering <input type="checkbox"/> Other:	

SECTION 2.2

ELECTRICAL TEST EQUIPMENT

DATE COMPLETED
10/26/2023

This section is intended to provide overview information on the test equipment and testing capability of the manufacturer.

Site Capability Snapshot (Please Check the column that applies furthest to the right.)

Designators			Remarks
A	Number of Nets	<input type="checkbox"/> <200 <input type="checkbox"/> 200 <input type="checkbox"/> 500 <input type="checkbox"/> 1000 <input type="checkbox"/> 2000 <input type="checkbox"/> 3000 <input type="checkbox"/> 4000 <input type="checkbox"/> 5000 <input type="checkbox"/> >5000 <input type="checkbox"/> Other:	
B	Number of Nodes	<input type="checkbox"/> <500 <input type="checkbox"/> 500 <input type="checkbox"/> 1000 <input type="checkbox"/> 2000 <input type="checkbox"/> 3000 <input type="checkbox"/> 4000 <input type="checkbox"/> 5000 <input type="checkbox"/> 6000 <input type="checkbox"/> >6000 <input type="checkbox"/> Other:	
C	Probe Point Pitch	<input type="checkbox"/> >1.0 [.040] <input type="checkbox"/> 1.0 [.040] <input type="checkbox"/> 0.8 [.032] <input type="checkbox"/> 0.65 [.025] <input type="checkbox"/> 0.50 [.020] 0.40 [.016] <input type="checkbox"/> 0.30 [.012] <input type="checkbox"/> 0.20 [.008] <input checked="" type="checkbox"/> <0.20 [.008] <input type="checkbox"/> Other:	

D	Test % Single Pass	<input type="checkbox"/> None <input type="checkbox"/> <60% <input type="checkbox"/> 60% <input type="checkbox"/> 70% <input type="checkbox"/> 80% <input type="checkbox"/> 90% <input type="checkbox"/> 95% <input type="checkbox"/> 99% <input checked="" type="checkbox"/> 100% <input type="checkbox"/> Other:	
E	Probe Accuracy (DTP)	<input type="checkbox"/> >0.2 [.008] <input type="checkbox"/> 0.2 [.008] <input type="checkbox"/> 0.15 [.006] <input type="checkbox"/> 0.125 [.005] <input type="checkbox"/> 0.1 [.004] <input type="checkbox"/> 0.075 [.003] <input checked="" type="checkbox"/> <0.075 [.003] <input type="checkbox"/> Other:	
F	Grid Density	<input type="checkbox"/> Single Side Grid (OUTSIDE SERVICE) <input type="checkbox"/> Double Sided Grid <input type="checkbox"/> Double Density Grid <input checked="" type="checkbox"/> Double Density Double Sided <input type="checkbox"/> Quad Density <input type="checkbox"/> Double Sided Quad Density <input checked="" type="checkbox"/> Flying Probe (5X) <input type="checkbox"/> Other:	
G	Netlist Capability	<input type="checkbox"/> Golden Board <input checked="" type="checkbox"/> IPC-D-356 <input checked="" type="checkbox"/> Net List Extraction <input checked="" type="checkbox"/> CAD/CAM Net List Compare <input type="checkbox"/> Other:	

H	Test Voltage	<input checked="" type="checkbox"/> <20 VDC <input type="checkbox"/> 20 VDC <input type="checkbox"/> 40 VDC <input type="checkbox"/> 60 VDC <input type="checkbox"/> 80 VDC <input type="checkbox"/> 100 VDC <input type="checkbox"/> 500 VDC (Max capability) <input type="checkbox"/> 1000 VDC <input checked="" type="checkbox"/> >1000 VDC outside service <input type="checkbox"/> Other:	
J	Impedance Meas	<input checked="" type="checkbox"/> Micro Section <input checked="" type="checkbox"/> Inboard Circuit <input checked="" type="checkbox"/> Coupon <input checked="" type="checkbox"/> Manual TDR <input type="checkbox"/> Automated TDR <input type="checkbox"/> Other:	
K	Impedance Tolerance	<input type="checkbox"/> None <input type="checkbox"/> >20% <input type="checkbox"/> 20% <input type="checkbox"/> 15% <input checked="" type="checkbox"/> 10% <input checked="" type="checkbox"/> 7% <input checked="" type="checkbox"/> 5% <input type="checkbox"/> 2% <input type="checkbox"/> <2% <input type="checkbox"/> Other:	

SECTION 2.3

PRODUCT TYPE

DATE COMPLETED 10/26/2023

This section is intended to provide overview information on the printed board product types being fabricated by the manufacturer.

Site Capability Snapshot (Please Check all that apply.)

Designators			Remarks
A	Product Type	<input checked="" type="checkbox"/> Rigid Printed Board <input type="checkbox"/> Flex Printed Board <input type="checkbox"/> Rigid/Flex Board <input checked="" type="checkbox"/> Rigid Back Plane <input type="checkbox"/> Molded Product <input type="checkbox"/> Ceramic Printed Board <input type="checkbox"/> Multichip Module <input checked="" type="checkbox"/> Laminated Multichip Module <input type="checkbox"/> Deposited Dielectric Multichip Modules <input type="checkbox"/> Other:	
B	Circuit Mounting Type	<input checked="" type="checkbox"/> Single Sided <input checked="" type="checkbox"/> Double Sided <input checked="" type="checkbox"/> Multilayer <input type="checkbox"/> Single-sided Bonded to Substrate <input type="checkbox"/> Double-sided Bonded to Substrate <input checked="" type="checkbox"/> Multilayer Bonded to Substrate <input type="checkbox"/> Constrained Multilayer <input type="checkbox"/> Distributed Plane Multilayer <input type="checkbox"/> Other:	
C	Via Technology	<input type="checkbox"/> No-Vias <input checked="" type="checkbox"/> Thru Hole Vias <input checked="" type="checkbox"/> Buried Vias <input checked="" type="checkbox"/> Blind Vias <input checked="" type="checkbox"/> Thru Hole & Blind Vias <input checked="" type="checkbox"/> Thru Hole & Buried Vias <input checked="" type="checkbox"/> Thru Hole Buried & Blind Vias <input checked="" type="checkbox"/> Buried & Blind Vias <input checked="" type="checkbox"/> Other: STACKED VIAS	

D	Laminate Material	<input type="checkbox"/> Phenolic <input type="checkbox"/> Epoxy Paper <input checked="" type="checkbox"/> Epoxy Glass <input checked="" type="checkbox"/> Modified Epoxy Composite <input checked="" type="checkbox"/> Polyimide Film & Reinforce <input checked="" type="checkbox"/> Cyanate Ester <input checked="" type="checkbox"/> Teflon <input checked="" type="checkbox"/> Ceramic Glass Types <input checked="" type="checkbox"/> Various Combinations <input checked="" type="checkbox"/> Other: Halogen free	
E	Core Material	<input type="checkbox"/> No Core <input type="checkbox"/> Polymer <input type="checkbox"/> Copper <input type="checkbox"/> Aluminum <input type="checkbox"/> Graphite <input type="checkbox"/> Copper Invar/Copper <input type="checkbox"/> Copper Moly/Copper <input type="checkbox"/> Other:	
F	Copper Thickness (Oz.)	<input type="checkbox"/> 1/8 Minimum <input checked="" type="checkbox"/> 1/4 Minimum <input checked="" type="checkbox"/> 3/8 Minimum <input checked="" type="checkbox"/> 1/2 Nominal <input checked="" type="checkbox"/> 1 Nominal <input checked="" type="checkbox"/> 2 Nominal <input checked="" type="checkbox"/> 3-5 Max <input type="checkbox"/> 6-9 Max <input type="checkbox"/> >10 <input type="checkbox"/> Other:	
G	Construction	<input checked="" type="checkbox"/> ≤4 Planes <input checked="" type="checkbox"/> >4 Planes <input checked="" type="checkbox"/> THK to TOL ≤0.2 mm <input type="checkbox"/> THK to TOL >0.2 mm <input checked="" type="checkbox"/> Bow/Twist ≤1% <input type="checkbox"/> Bow/Twist >1% <input checked="" type="checkbox"/> ≤0.3 mm Profile Tolerance <input type="checkbox"/> 0.3 mm Profile Tolerance <input type="checkbox"/> Other:	

H	Coatings and Markings	<p>X ≤ 0.1 mm Mask Clearance</p> <p><input type="checkbox"/> > 0.1 mm Mask Clearance</p> <p><input type="checkbox"/> One Side (Legend)</p> <p>X Two Side (Legend)</p> <p><input type="checkbox"/> None (Legend)</p> <p>X UL Material Logo</p> <p>X U.L. V₀ Logo</p> <p><input type="checkbox"/> U.L. V₁ Logo</p> <p><input type="checkbox"/> U.L. V₂ Logo</p>	
---	-----------------------	--	--

SECTION 2.4

PRODUCT COMPLEXITY

DATE COMPLETED
10/26/2023

This section is intended to provide overview information on product complexity being fabricated by the manufacturer.

(Please check the column that applies farthest to the right)

Designators			Remarks
A	Board Size Diagonal	<input type="checkbox"/> <250 [10.00] <input type="checkbox"/> 250 [10.00] <input type="checkbox"/> 350 [14.00] <input type="checkbox"/> 450 [17.50] <input type="checkbox"/> 550 [21.50] <input type="checkbox"/> 650 [25.50] <input type="checkbox"/> 750 [29.50] <input type="checkbox"/> 850 [33.50] <input checked="" type="checkbox"/> >850 [33.50] <input type="checkbox"/> Other:	
B	Total Board Thickness	<input type="checkbox"/> 1,0 [.040] <input type="checkbox"/> 1,0 [.040] <input type="checkbox"/> 1,6 [.060] <input type="checkbox"/> 2,0 [.080] <input type="checkbox"/> 2,5 [.100] <input type="checkbox"/> 3,5 [.135] <input type="checkbox"/> 5,0 [.200] <input type="checkbox"/> 6,5 [.250] <input type="checkbox"/> X >6,5 [.250] <input type="checkbox"/> X Other: .325 MAX	
C	Number Conductive Layers	<input type="checkbox"/> 1-4 <input type="checkbox"/> 5-6 <input type="checkbox"/> 7-8 <input type="checkbox"/> 9-12 <input type="checkbox"/> 13-16 <input type="checkbox"/> 17-20 <input type="checkbox"/> 21-24 <input type="checkbox"/> 25-28 <input type="checkbox"/> X >28 <input checked="" type="checkbox"/> Other: UP TO 60 LAYERS	

D	Dia Drilled Holes	<input type="checkbox"/> >0,5 [.020] <input type="checkbox"/> 0,5 [.020] <input type="checkbox"/> 0,4 [.016] <input type="checkbox"/> 0,35 [.014] <input type="checkbox"/> 0,30 [.012] <input type="checkbox"/> 0,25 [.010] <input type="checkbox"/> 0,20 [.008] 0,15 [.006] <input type="checkbox"/> <0,15 [.006] <input checked="" type="checkbox"/> Other: .003	
E	Total PTH TOL (Max-Min)	<input type="checkbox"/> >0,250 [.010] <input type="checkbox"/> 0,250 [.010] <input type="checkbox"/> 0,200 [.008] <input type="checkbox"/> 0,150 [.006] <input type="checkbox"/> 0,125 [.005] <input type="checkbox"/> 0,100 [.004] <input checked="" type="checkbox"/> 0,075 [.003] <input type="checkbox"/> 0,050 [.002] <input type="checkbox"/> X <0,050 [.002] <input type="checkbox"/> Other:	
F	Hole Location TOL DTP	<input type="checkbox"/> >0,50 [.020] <input type="checkbox"/> 0,50 [.020] <input type="checkbox"/> 0,40 [.016] <input type="checkbox"/> 0,30 [.012] <input type="checkbox"/> 0,25 [.010] <input type="checkbox"/> 0,20 [.008] <input type="checkbox"/> 0,15 [.006] <input type="checkbox"/> 0,10 [.004] <input type="checkbox"/> X <0,10 [.004] <input type="checkbox"/> Other:	
G	Internal Layer Clearance (Min)	<input type="checkbox"/> >0,350 [.014] <input type="checkbox"/> 0,350 [.014] <input type="checkbox"/> 0,250 [.010] <input type="checkbox"/> 0,200 [.008] <input type="checkbox"/> 0,150 [.005] 0,125 [.005] <input checked="" type="checkbox"/> 0,100 [.004] <input type="checkbox"/> 0,075 [.003] <input type="checkbox"/> <0,075 [.003] <input type="checkbox"/> Other:	

H	Internal Layer Conductor Width (Min)	<input type="checkbox"/> >0,250 [.010] <input type="checkbox"/> 0,250 [.010] <input type="checkbox"/> 0,200 [.008] <input type="checkbox"/> 0,150 [.006] <input type="checkbox"/> 0,125 [.005] <input type="checkbox"/> 0,100 [.004] <input checked="" type="checkbox"/> 0,075 [.003] <input type="checkbox"/> 0,050 [.002] <input type="checkbox"/> <0,050 [.002] <input type="checkbox"/> Other:	
J	Internal Layer Process Allowance	<input type="checkbox"/> >0,100 [.004] <input type="checkbox"/> 0,100 [.004] <input type="checkbox"/> 0,075 [.003] <input type="checkbox"/> 0,050 [.002] <input type="checkbox"/> 0,040 [.0015] <input type="checkbox"/> 0,030 [.0012] <input type="checkbox"/> 0,025 [.001] <input type="checkbox"/> 0,020 [.0008] <input checked="" type="checkbox"/> <0,020 [.0008] <input type="checkbox"/> Other:	
K	External Layer Clearance (Min)	<input type="checkbox"/> >0,350 [.014] <input type="checkbox"/> 0,350 [.014] <input type="checkbox"/> 0,250 [.010] <input type="checkbox"/> 0,200 [.008] <input type="checkbox"/> 0,150 [.006] <input type="checkbox"/> 0,125 [.005] <input type="checkbox"/> 0,100 [.004] <input checked="" type="checkbox"/> 0,075 [.003] <input checked="" type="checkbox"/> <0,075 [.003] <input type="checkbox"/> Other:	
L	External Layer Conductor Width (Min)	<input type="checkbox"/> >0,250 [.010] <input type="checkbox"/> 0,250 [.010] <input type="checkbox"/> 0,200 [.008] <input type="checkbox"/> 0,150 [.006] <input type="checkbox"/> 0,125 [.005] <input type="checkbox"/> 0,100 [.004] <input checked="" type="checkbox"/> 0,075 [.003] <input type="checkbox"/> 0,050 [.002] <input type="checkbox"/> <0,050 [.002] <input type="checkbox"/> Other:	

M	External Layer Process Allowance	<input type="checkbox"/> >0,100 [.004] <input type="checkbox"/> 0,100 [.004] <input type="checkbox"/> 0,075 [.003] <input type="checkbox"/> 0,050 [.002] <input type="checkbox"/> 0,040 [.0015] <input type="checkbox"/> 0,030 [.0012] <input type="checkbox"/> 0,025 [.001] <input type="checkbox"/> 0,020 [.0008] <input checked="" type="checkbox"/> <0,020 [.0008] <input type="checkbox"/> Other:	
N	Feature Location DTP	<input type="checkbox"/> >0,50 [.020] <input type="checkbox"/> 0,50 [.020] <input type="checkbox"/> 0,40 [.016] <input type="checkbox"/> 0,30 [.012] <input type="checkbox"/> 0,25 [.010] <input type="checkbox"/> 0,20 [.008] <input type="checkbox"/> 0,15 [.006] <input type="checkbox"/> 0,10 [.004] <input checked="" type="checkbox"/> <0,10 [.004] <input type="checkbox"/> Other:	

All Dimensions are in millimeters [inches shown in brackets]

SECTION 2.5

QUALITY DEVELOPMENT

DATE COMPLETED
10/26/2023

This section is intended to provide overview information on the quality systems in place in the manufacturing facility.

Site Capability Snapshot (Please Check all that apply.)

Designators		Remarks
A	Strategic Plan	<input checked="" type="checkbox"/> Functional Steering Committee Formed <input checked="" type="checkbox"/> TQM Plan & Philosophy Established & Published X Documented Quality Progress Review <input checked="" type="checkbox"/> Implementation & review of Project Team Recommendations <input checked="" type="checkbox"/> TQM Communicated throughout organization <input checked="" type="checkbox"/> Controlled New process Start-up <input checked="" type="checkbox"/> Management Participates in TQM Audits X Employee Recognition Program <input type="checkbox"/> Total TQM Plan/Involvement Customer Training <input type="checkbox"/> Other:
B	Employee Involvement	<input checked="" type="checkbox"/> Certified Training Available X Training of Employee Base <input type="checkbox"/> TQM Team Trained <input checked="" type="checkbox"/> Design of Experiment Training and Use X New Process Implementation Training <input type="checkbox"/> Support Personnel Training <input type="checkbox"/> Advanced Statistical Training <input type="checkbox"/> Quality Functional Deployment <input checked="" type="checkbox"/> Ongoing Improvement Program for Employees <input type="checkbox"/> Other:
C	Quality Manual	<input type="checkbox"/> Quality Manual Started <input type="checkbox"/> Generic Quality Manual for Facility <input type="checkbox"/> 10% of manufacturing depts. have process specifications <input type="checkbox"/> 25% of manufacturing depts. have process specifications <input type="checkbox"/> 50% of manufacturing depts. have process specifications <input type="checkbox"/> Non-manufacturing Manuals Developed <input type="checkbox"/> 25% of all departments have quality manuals <input type="checkbox"/> 50% of all departments have quality manuals X All Manufacturing and support depts. have controlled quality manual <input type="checkbox"/> Other:

D	Instructions	<input type="checkbox"/> Work Instructions Started <input type="checkbox"/> Quality Instructions Started <input type="checkbox"/> 10% Work Instructions Completed <input type="checkbox"/> 10% Quality Instructions Completed <input type="checkbox"/> 25% Work Instructions Completed, Controlled <input type="checkbox"/> 25% Quality Instructions Completed, Controlled <input type="checkbox"/> 50% Work Instructions Completed, Controlled <input type="checkbox"/> 50% Quality Instructions Completed, Controlled <input checked="" type="checkbox"/> Quality and work Instruct. Completed, Controlled <input type="checkbox"/> Other:	
E	SPC Implementation IPC-PC-90	<input type="checkbox"/> Plan Exists <input type="checkbox"/> Training Started <input checked="" type="checkbox"/> Process Data Collected & Analyzed <input type="checkbox"/> All Employees Trained <input type="checkbox"/> First Process Stable & Capable <input type="checkbox"/> Several Major Processes Stable & Capable <input type="checkbox"/> Continued Improvement of Stable Processes <input type="checkbox"/> Additional Mfg Processes under Control <input type="checkbox"/> All Processes Under Control <input type="checkbox"/> Other:	
F	Supplier Programs/Controls	<input checked="" type="checkbox"/> Supplier Rating Program <input type="checkbox"/> Monthly Analysis Program <input type="checkbox"/> Key Problems Identified <input checked="" type="checkbox"/> Supplier Reviews Performance Data provided <input type="checkbox"/> TQM Acceptance by suppliers <input type="checkbox"/> 10% of Suppliers Using SPC <input type="checkbox"/> 25% of Suppliers Using SPC <input type="checkbox"/> 50% of Suppliers Using SPC <input type="checkbox"/> All Key Suppliers using Certified parts program <input type="checkbox"/> Other:	
G	Third Party IPC-QS-95	<input type="checkbox"/> Instrument Controls in Place <input type="checkbox"/> Measurement System in Control IPC-PC-90 <input type="checkbox"/> Document Controls in Place <input type="checkbox"/> Reduced Lot Sampling <input type="checkbox"/> 10% of Processes Under Audit Control <input type="checkbox"/> 50% or Greater of Processes Under Audit Control <input type="checkbox"/> ISO-9003 Certified ISO-9002 Certified <input checked="" type="checkbox"/> ISO-9001 <input type="checkbox"/> Other:	

SECTION 3

EQUIPMENT PROFILE (Pre-Site Audit)

DATE COMPLETED 10/26/2023

* Examples of equipment limitations include:
min/max board size & min/max working area

3.1 PHOTOTOOL CAPABILITY	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) AOI of phototool	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
B) AOI CAD reference (CAM)	X	<input type="checkbox"/>			
C) Photoplotting	X	<input type="checkbox"/>	Orbotech 7008		
D) Photo reductions	<input type="checkbox"/>	X			
E) Film scan and conversion	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Outside service		
F) Film processing <input type="checkbox"/> air-dried <input type="checkbox"/> force-dried X processed in automatic processor	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
G) Media types X silver halide film <input type="checkbox"/> glass <input type="checkbox"/> diazo	<input type="checkbox"/>	<input type="checkbox"/>			

3.2 DRILLING EQUIPMENT	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Manual	<input type="checkbox"/>	<input type="checkbox"/>			
B) Optical (single spindle)	X	<input type="checkbox"/>			
C) N.C. drill	X	<input type="checkbox"/>			

3.3 ROUTING EQUIPMENT	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Edge beveler	X	<input type="checkbox"/>			
B) Hand router (pin router)	<input type="checkbox"/>	<input type="checkbox"/>			
C) N.C. router	X	<input type="checkbox"/>			
D) N.C. driller/router	X	<input type="checkbox"/>			
E) Scoring (profile)	X	<input type="checkbox"/>	NC Router		
F) Scoring (straight line)	X	<input type="checkbox"/>			

3.4 MECHANICAL EQUIPMENT	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Punch press	<input type="checkbox"/>	<input type="checkbox"/>			
B) Shear	<input type="checkbox"/>	<input type="checkbox"/>			
C) Milling machine	X	<input type="checkbox"/>	NC Router		

3.5 HOLE PREPARATION (DESMEAR)	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Permagnate	X	<input type="checkbox"/>			
B) Plasma	X	<input type="checkbox"/>			
C) Mechanical	<input type="checkbox"/>	<input type="checkbox"/>			
D) Etchback	<input checked="" type="checkbox"/>	<input type="checkbox"/>			

3.6 PRIMARY IMAGE APPLICATION	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Dry film	X	<input type="checkbox"/>	Laser direct Imaging		
B) Hand screening	<input type="checkbox"/>	<input type="checkbox"/>			
C) Machine screening	<input type="checkbox"/>	<input type="checkbox"/>			
D) Wet film	<input type="checkbox"/>	<input type="checkbox"/>			
E) Liquid photoimageable	<input type="checkbox"/>	<input type="checkbox"/>			

3.7 TYPE OF TREATMENT FOR MULTILAYER INNERLAYERS	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Black oxide	<input type="checkbox"/>	<input type="checkbox"/>			
B) Red oxide	<input type="checkbox"/>	<input type="checkbox"/>			
C) Copper scrub	<input type="checkbox"/>	<input type="checkbox"/>			
D) Durabond	<input type="checkbox"/>	<input type="checkbox"/>			
E) Other	X	<input type="checkbox"/>	Cobra Bond Oxide Replacement		

3.8 LAMINATION	YES	NO	MATERIAL	QTY	APPLICATION TECHNIQUE
A) High pressure	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
B) High temperature	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
C) Vacuum	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
D) Vacuum assist	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
E) Foil heat assist	<input type="checkbox"/>	<input type="checkbox"/>			
F) Separate cool-down	<input checked="" type="checkbox"/>	<input type="checkbox"/>			

3.9 ELECTROLESS COPPER PLATING	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Fully additive application	<input type="checkbox"/>	<input type="checkbox"/>			
B) Electroless deposition (semiadditive)	<input type="checkbox"/>	<input type="checkbox"/>			
C) Through-hole and via	<input checked="" type="checkbox"/>	<input type="checkbox"/>			

3.10 COPPER ELECTROPLATING	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Copper sulfate	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
B) Pyrophosphate	<input type="checkbox"/>	<input type="checkbox"/>			
C) Copper fluoborate	<input type="checkbox"/>	<input type="checkbox"/>			
D) Other	<input type="checkbox"/>	<input type="checkbox"/>			

3.11 TIN/LEAD SURFACE PLATINGS/COATINGS	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Tin/lead electroplated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Installing as part of automated plating line		
B) Immersion tin or tin/lead (electroless)	<input type="checkbox"/>	<input type="checkbox"/>			
C) Hot air solder leveled (HASL)	<input checked="" type="checkbox"/>	<input type="checkbox"/>			

3.12 FUSING PROCESSES	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) I.R. reflow	<input type="checkbox"/>	<input type="checkbox"/>			
B) Hot oil reflow	<input type="checkbox"/>	<input checked="" type="checkbox"/>			
C) Horizontal (hot air level)	<input type="checkbox"/>	<input type="checkbox"/>			
D) Vertical (hot air level)	<input type="checkbox"/>	<input checked="" type="checkbox"/>			

3.13 NICKEL SURFACE PLATING	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Electroless nickel	X	<input type="checkbox"/>			
B) Electroplated nickel	X	<input type="checkbox"/>			

3.14 GOLD SURFACE PLATING	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Electroless gold	X	<input type="checkbox"/>			
B) Electroplated gold	X	<input type="checkbox"/>			

3.15 PALLADIUM SURFACE PLATING	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Electroless palladium (immersion)	<input checked="" type="checkbox"/>	<input type="checkbox"/>			
B) Electroplated palladium	<input type="checkbox"/>	<input type="checkbox"/>			

3.16 SOLDERMASK	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Screened deposited image	X	<input type="checkbox"/>			
B) Dry film photoimageable		<input checked="" type="checkbox"/>			
C) Liquid photoimageable	X	<input type="checkbox"/>			
D) Dry film/liquid combination		<input checked="" type="checkbox"/>			

3.17 ORGANIC SURFACE PROTECTION	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Benzotriazole	<input type="checkbox"/>	<input type="checkbox"/>			
B) Imidazole	<input type="checkbox"/>	<input type="checkbox"/>			
C) Benzimidazole	X	<input type="checkbox"/>			

3.18 MICROSECTION CAPABILITY	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Manual	X	<input type="checkbox"/>			
B) Single cavity automated	<input type="checkbox"/>	<input type="checkbox"/>			
C) Multiple cavity automated	<input type="checkbox"/>	<input type="checkbox"/>			
D) Plating thickness analysis	X	<input type="checkbox"/>			

3.19 CHEMICAL ANALYSIS	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Etching chemistry	X	<input type="checkbox"/>			
B) Plating chemistry	X	<input type="checkbox"/>			
C) Effluent (PPM) analysis	X	<input type="checkbox"/>			

3.20 ELECTRICAL TEST EQUIPMENT	YES	NO	EQUIPMENT	QTY	EQUIPMENT LIMITS
A) Continuity and shorts	X	<input type="checkbox"/>			
B) Fixture development	X	<input type="checkbox"/>			
C) Flying probe test	X	<input type="checkbox"/>			
D) Impedance control	X	<input type="checkbox"/>			

SECTION 4

TECHNOLOGY PROFILE SPECIFICS

DATE COMPLETED 10/23/2023

4.1 ADMINISTRATION

4.1.1 CAPACITY PROFILE	EST %	COMMENTS
A) Total annual capacity in square meters (surface area) per month		(36864 ft ²) per month
B) Presently running at ___ % of capacity	75%	

4.1.2 PERCENTAGE OF DOLLAR VOLUME	EST %	COMMENTS
A) Single sided (rigid)	5%	
B) Double sided (rigid)	10%	
C) Multilayer (rigid)	85%	
D) Single side (unreinforced-flex)	0	
E) Double sided (unreinforced-flex)	0	
F) Multilayer (unreinforced-flex)	0	
G) Multilayer (rigid/flex)	0	

4.1.3 PANEL PRODUCTION PROFILE	UNITS PER MONTH
A) Size of a production lot in panels	
1) Normal	25 Panels
2) Smallest	3 Panels
B) Number of panels per month	
1) High Production	>400 panels
2) Medium Production	400 Panels
3) Low Production	100 Panels
3) Short run	25 Panels
4) Prototype	3 Panels

C) Average lead time (delivery) as defined in B)			
1) High Production	Check for leadtimes		
2) Medium Production	Check for leadtimes		
3) Low Production	3 Weeks		
3) Short run	2 Weeks		
4) Prototype	1 Week		
Quick turn - No. of days <u>1</u> .			
D) Product delivered in full panel or array sub-panel format	Both		
1) Total in panel or array format	20%		
2) Scored format	5%		
3) Tab breakaway format	15%		
4) Other			
5) Total to customer layout	100%		
6) Total to manufacturing layout			
E) Product delivered in board format			
1) Total in board format	70%		
2) Extracted: scored to size	10%		
3) Extracted: sheared to size			
4) Extracted: routed to size	20%		
4.1.4 APPROVAL AND CERTIFICATION	YES	NO	COMMENTS
A) Company approvals			
1) UL approval	<input checked="" type="checkbox"/>	<input type="checkbox"/>	94V Level <u>0</u>
2) Canadian standards	<input type="checkbox"/>	<input type="checkbox"/>	
3) MIL-P-55110	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Revisions F and newer Under MIL-PRF-31032
4) MIL-P-50884	<input type="checkbox"/>	<input type="checkbox"/>	
5) ISO-9002	<input type="checkbox"/>	<input type="checkbox"/>	
6) ISO-9001	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ISO9001:2015
7) ISO-14000	<input type="checkbox"/>	<input type="checkbox"/>	
8) BABT	<input type="checkbox"/>	<input type="checkbox"/>	
9) EEC	<input type="checkbox"/>	<input type="checkbox"/>	
10) Customer satisfaction	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
B) Other certification information			
1) Laminate	X	<input type="checkbox"/>	

2)Quality standards	X	<input type="checkbox"/>	
3)Equipment calibration	X	<input type="checkbox"/>	

4.1.5 CUSTOMER INTERFACE PROFILE	YES	NO	COMMENTS
A) Modem capability	X	<input type="checkbox"/>	
B) Baud rate			
C) Data verification technique	X	<input type="checkbox"/>	
D) Engineering change order process	X	<input type="checkbox"/>	
E) Job status reporting to customers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	As required

4.1.6 OTHER CAPABILITIES	YES	NO	COMMENTS
A) Facility research and development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
B) (Automated) On-line shop floor control/MRP system	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
C) Process control system	X	<input type="checkbox"/>	
D) Operator training system	X	<input type="checkbox"/>	

4.2 PROCESS ORIENTATION

4.2.1 LAMINATE MATERIAL	EST %	COMMENTS
A) Most commonly used laminates (G10, FR4, etc.)		Brand name FR4 Isola Type FR4 370 Brand name Isola Type 408HR Brand name Nelco Type 4000-13 Brand name Rogers Type 4000 Brand Name Arlon Type 25N & 85N
B) Other laminate material		
1) Planar resistor layers	X	UL approved <input type="checkbox"/> Currently being evaluated
2) BT epoxy		UL approved <input type="checkbox"/>
3) Kevlar		UL approved <input type="checkbox"/>
4) Teflon	X	UL approved <input type="checkbox"/>
5) Polyimide	X	UL approved <input type="checkbox"/>
6) Cyanate ester	X	UL approved <input type="checkbox"/>
7) Other		UL approved <input type="checkbox"/>
C) Specification to which laminate is purchased (check all that apply) <input type="checkbox"/> MIL-P-13949 <input type="checkbox"/> IPC-4204 <input checked="" type="checkbox"/> IPC-4101 <input checked="" type="checkbox"/> UL Approved <input type="checkbox"/> IPC-4103 <input type="checkbox"/> Other <input type="checkbox"/> IPC-4202 <input type="checkbox"/> IPC-4203		MIL-P-13949 is obsolete
D) Laminate storage Uncontrolled Laminate cores X Humidity controlled (Prepregs) X Temperature controlled (Prepregs) <input type="checkbox"/> Dry box <input type="checkbox"/> JIT inventory		
E) Panel size configurations in X, Y dimensions maximum X <u>24</u> Y <u>30</u> in minimum X <u>16</u> Y <u>18</u> in other X <u>18</u> Y <u>24</u> in		

4.2.2 PROCESS PRECISION SPECIFICS	YES	NO	VALUE	COMMENTS
A) Maximum printed board thickness built in volume				
1) Single sided	X		.125	
2) Double sided	X		.125	
3) Multilayer	X		.125	
4) Rigid flex			N/A	
B) Printed board electrical performance capability				
1) Impedance control	X	<input type="checkbox"/>		
2) Capacitance control	<input type="checkbox"/>	<input type="checkbox"/>		
3) Microstrip boards	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
C) Tooling system description				MultiLine 8 hole system, 4 slot 4 round
1) Same holes in panels used for all processes	<input type="checkbox"/>	X		
2) Optical registration	X	<input type="checkbox"/>		Post-Etch Punch
3) Other	<input checked="" type="checkbox"/>	<input type="checkbox"/>		LDI (Laser Direct Imaging)

4.2.3 OTHER PROCESS ORIENTATION SPECIFICS	YES	NO	SYSTEM	COMMENTS
A) Solder mask over bare copper	X	<input type="checkbox"/>		
B) Plating/coating information				
1) Tin/lead reflow	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
2) Hot air leveling	X	<input type="checkbox"/>		
3) Azole organic	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
4) Conductive	<input type="checkbox"/>	<input type="checkbox"/>		
C) Hole formation				
1) Hole cleaning	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
2) Hole cleanliness verified	X	<input type="checkbox"/>		

4.3 PRODUCT DESCRIPTION

*CONSISTENCY IMPLIES YIELDS IN EXCESS OF 80%

4.3.1. THROUGH HOLE INSERTION	EST %	SIZE (MM) - +/- TOL	COMMENTS
A) Smallest conductor width and tolerance produced with consistency			
1) Outer layers (print and etch)		Size ____ mm Tol ± ____ .mm	.004 +/- .0005
2) Inner layers (print and etch)		Size ____ mm Tol ± ____ .mm	.004 +/- .0005
3) Outer layers (plated)		Size ____ mm Tol ± ____ .mm	.004 +/- .0005
4) Inner layers (plated)		Size ____ mm Tol ± ____ .mm	.004 +/- .0005
5) Outer layers (additive plating)		Size ____ mm Tol ± ____ .mm	N/A
6) Inner layers (additive plating)		Size ____ mm Tol ± ____ .mm	N/A
B) Smallest plated-through hole (PTH) and tolerance consistently produced in 1.5mm thickness material or multilayer board			.0079 +/- .003
1) Minimum PTH diameter		Size ____ mm Tol ± ____ .mm	.006 -.006
2) Largest panel where this hole can be controlled (across diagonal)		Size ____ mm Tol ± ____ .mm	18x24
C) Largest hole size that can be drilled and plated through in a 1.25mm diameter land while maintaining an annular ring of 0.125mm in large/small boards			.035"
1) Largest board size (across diagonal)		Size ____ mm	34.05 (22x26)
2) Largest hole diameter		Size ____ mm	.277"
3) Smallest board size (across diagonal)		Size ____ mm	.5x.5
4) Largest hole diameter		Size ____ mm	.062"
D) Surface mount land pattern pitch (check all that apply) X 1.27mm [.050] X 0.63mm [.025] X 0.5mm [.020] X 0.4mm [.016] X 0.3mm [.012] <input checked="" type="checkbox"/> 0.25mm [.010] <input type="checkbox"/> Other ____ .			

E) Solder mask dam between lands (check all that apply) X 1.27mm [.050] X 0.63mm [.025] X 0.5mm [.020] X 0.4mm [.016] X 0.3mm [.012] X 0.25mm [.010] <input checked="" type="checkbox"/> Other <.010" .			
F) Flatness tolerance (bow & twist) after reflow or solder coating <input type="checkbox"/> 1.5% <input type="checkbox"/> 1.0% X 0.5% <input type="checkbox"/> Other ____			

4.3.2 PRODUCT QUALITATIVE AND QUANTITATIVE INFORMATION	YES	NO	QUANTITY OF PANELS	NUMBER or DIMENSION	COMMENTS
A) Multilayer layer count					
1) Maximum layers fabricated in volume (Maximum Lot)	18 Layer		400		
2) Maximum layers fabricated in prototype (Minimum Lot)	60 Layers		3		
B) Buried vias produced consistently in volume	X	<input type="checkbox"/>			
1) Size	.008"				
2) Number of layers	20+				
B) Blind vias produced consistently in volume	X	<input type="checkbox"/>			
1) Size	>3 mil				
2) Number of layers	20+				
1) Controlled depth drilling	X	<input type="checkbox"/>			
2) Total number of layers					L3 for blind vias

4.4. TESTING CAPABILITY

4.4.1 TEST AND TEST EQUIPMENT CAPABILITY	YES	NO	COMMENTS
A) SMT centerline pitch that can be electrically tested X 0.63mm [.025] X 0.5mm [.020] X 0.4mm [.016] X 0.3mm [.012] X 0.25mm [.010] <input type="checkbox"/> Other			Flying Probes
B) Double sided simultaneous electrical testing	X	<input type="checkbox"/>	Outside Service
1) Equipment type	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Everett Charles ATG
2) X-ray fluorescence inspection equipment	X	<input type="checkbox"/>	
3) TDR equipment	X	<input type="checkbox"/>	
4) Hi-pot test equipment	X	<input type="checkbox"/>	In "Flying Probe"
5) Four-wire kelvin tester	<input type="checkbox"/>	<input type="checkbox"/>	
6) Capacitance meter	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
7) Cleanliness testing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Ionic Testing

4.4.2 AUTOMATED OPTICAL INSPECTION USAGE	EST %	COMMENTS
A) Before etching	0	
B) After etching	Yes	Conductors below .006
C) Internal layers	100%	Signal Layers
D) Final inspection	NO	

E) Other	YES	PREMASK
F) Conductor/clearance normally inspected by AOI equipment		
1) <input type="checkbox"/> 0.05mm [.002]		
2) X 0.05-.10mm [.002-.004]	100	
3) X >.10mm [.004]	100	
4) <input checked="" type="checkbox"/> Planes	100	Internal Planes
G) CAD download to AOI	Yes	

SECTION 5

QUALITY PROFILE

DATE COMPLETED 10/23/2023

GENERAL INFORMATION	
COMPANY NAME Gorilla Circuits	
CONTACT Nellie Gutierrez	
TELEPHONE NUMBER (408) 294-9897 x137	FAX NUMBER (408) 297-1540

This section of the Manufacturer's Qualification Profile is intended to describe the Total Quality Management (TQM) activity in place of being implemented at the manufacturing facility identified in the site description of this MQP.

To ease in the task of identifying the TQM program being planned or underway at the manufacturing site, the activities have been divided into twenty sections which when completed, provide the total picture of the posture toward managing quality issues. Each section contains a number of questions with regard to the topic under review.

It is not the intent to have the questions be all encompassing, nor is every question applicable to all manufacturers. However, identification of the status, related to each questions, when considered as a whole will convey an impression of the progress that the company has achieved in adopting the principles of total quality management.

The twenty sections, in order of the occurrence are:

- | | |
|---------------------------------------|--|
| 5.1 General Quality Programs | 5.11 Statistical Process Control |
| 5.2 New Products/Technical Services | 5.12 Problem Solving |
| 5.3 Customer Satisfaction | 5.13 In-Process Control |
| 5.4 Computer Integrated Manufacturing | 5.14 Receiving Inspection |
| 5.5 Process Documentation | 5.15 Material Handling |
| 5.6 Quality Records | 5.16 Non-Conforming Material Control |
| 5.7 Skill, Training & Certification | 5.17 Inspection and Test Plan |
| 5.8 Subcontractor Control | 5.18 Product Inspection/Final Audit |
| 5.9 Calibration Control | 5.19 Tooling Inspection, Handling, & Storage |
| 5.10 Internal Audits | 5.20 Corrective Action |

Each section provides a status report related to each question. The question may not be applicable, no activity has started as yet, or the company may have developed an approach to the issues raised by the questions. An (X) is indicated in the appropriate column. If deployment/implementation has started, the status is reported as percent deployment; this is indicated in column 4. The percentage number closely approximates the status of deployment. If deployment exists, the percentage results that have been achieved is indicated in column 5. Results are based on expected goals. Not providing percent information in either the deployment or results column implies a lack of activity in the particular area.

The quality descriptions requested are completed on the following pages by checking (X) the appropriate column to reflect the status of the manufacturing facility TQM program. Additional information may be provided as comments shown below, or on individual sections, or additional sheets as necessary.

COMMENTS

5.1 GENERAL QUALITY PROGRAMS		STATUS				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
DESCRIPTION OF PROGRAM						
1.	Are quality objectives and responsibilities clearly stated, widely distributed and understood through the company?				100	
2.	Is there a quality function or well defined organization which provides customer advocate guidance to the total organization and is this position fully supported by management?				100	
3.	Does a quality measurement system exist with clearly defined metrics and is it utilized as a management tool?				100	
4.	Are work instructions approved and controlled; and are they under revision control?				100	
5.	Are the quality procedures and policies current and available at the point of application; and are they under revision control?				100	
6.	Are benchmark and customer satisfaction studies done to determine best in class for all products, services, and administrative functions; and are quality goals set?				100	
7.	Are Statistical Process Control (SPC) principles understood by all levels of management?				100	
8.	Are there programs with sufficient resources assigned to support corrective actions and prevention?				100	
9.	Does management solicit and accept feedback from the work force?				100	
10.	Is there management support of ongoing training (including quality training), and is it documented by an organizational training plan?				100	
11.	Are there regular management reviews of elements of the quality improvement process, including feedback for corrective action, and are the results acted upon?				100	
12.	Are the quality and reliability goals aggressive relative to customer expectations and targeted at continuous improvement?				100	
13.	Are the people who are responsible for administering the quality assurance function technically informed?				100	
14.	Does Management have a "defect prevention" attitude to achieve continuous improvement?				100	

5.2 NEW PRODUCTS/TECHNICAL SERVICES		STATUS				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
DESCRIPTION OF PROGRAM						
1.	Do new product/technology/service development policies and procedures exist, and do they result in clearly defined project plans with appropriate measureables and approvals?				100	
2.	Is quantitative benchmarking used to evaluate all new products/technologies/services in comparison to best-in-class offerings?			X	100	
3.	Does a roadmap exist to ensure continued development of leading edge, best-in-class products/technology/services?			X	80	
4.	Is the capability of each operation which controls critical-to-function characteristics for new products, fully certified?			X	100	
5.	Are statistical tools used in the development of robust (high yield) new processes, products, and services?			X	85	
6.	When new product/technology/service requires a new process, is it developed jointly and concurrently with the customer and/or suppliers?			X	100	
7.	Are design reviews conducted on a scheduled basis which properly address the process capability indices of critical-to-function and product/service characteristics?			X	95	
8.	Is the new product/technology/service, as produced by the process, verified to meet all customer satisfaction requirements?			X	100	

COMMENTS

5.3 CUSTOMER SATISFACTION		STATUS				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
DESCRIPTION OF PROGRAM						
1.	Is there a measurement system in place to assess the customer's perception of complete performance?				100	
2.	Is an independent (unbiased) customer survey routinely conducted?				100	
3.	Is there an internal measurement system within the organization which correlates to the level of customer satisfaction?				100	
4.	Are there specific goals for achieving Total Customer Satisfaction, both internal and external?			X	90	
5.	To what extent are customer satisfaction goals disseminated and understood by everyone in the organization?				100	
6.	Does management regularly review and assess all operating systems to determine if barriers to customer satisfaction exist and are appropriate action plans then implemented?				100	
7.	Is there a method in place to obtain future customer requirements?				100	
8.	Are all findings of customer dissatisfaction reported back to the proper organization for analysis and corrective action?				100	
9.	Are customer satisfaction requirements formally defined and documented, and are they based on customer input?				100	
10.	Do all support organizations understand their role in achieving total customer satisfaction?				100	

5.4 COMPUTER INTEGRATED MANUFACTURING		STATUS				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
DESCRIPTION OF PROGRAM						
1.	Are systems integrated to allow electronic transfer of information between multiple systems to eliminate redundant data entry?				100	
2.	Can customers electronically transfer CAD/CAM directly into manufacturing?				100	
3.	Can customers electronically transfer order information directly into the business system?				100 (email)	
4.	Is data electronically shared between shop floor control and process control systems (i.e., CNC, SPC, Electrical Test, AOI, etc.)?				100	
5.	Are planning systems (MRP, forecasting, capacity planning, financial planning, etc.) electronically integrated with operation systems (order processing, purchasing, inventory management, shop floor control, financial/cost control, etc.)?				100	
6.	Is information available from system processes in real time (vs. batch processing)?				100	
7.	Are processes and procedures documented and available on-line?				100	
8.	Do all functional departments have system access to key financial, manufacturing, sales, and operational data, as it relates to their functional objectives?				100	
9.	Are computer simulation and design tools used to the maximum extent practicable in the design of new products/technologies/services				100	

COMMENTS	

5.5 PROCESS DOCUMENTATION		STATUS				
---------------------------	--	--------	--	--	--	--

DESCRIPTION OF PROGRAM		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
1.	Are manufacturing product, process, and configuration documents under issue control?				100	
2.	Are "preliminary" and "special product" specifications controlled?				100	
3.	Does the system ensure that the most current customer specifications are available to the manufacturing personnel?				100	
4.	Does the system ensure that the most current material specifications are available to the procurement function?				100	
5.	Are incoming orders reviewed for revisions and issue changes?				100	
6.	Is conformance to customer specifications assured before an order is accepted?				100	
7.	Is customer feedback provided when designs do not meet manufacturability requirements?				100	
8.	Are critical characteristics classified, relative to impact on product performance?				100	
9.	Are customers informed of changes made to products controlled by customer drawings or specifications?				100	
10.	Is there an effective internal deviation control procedure and, are customer requested deviations documented and followed?				100	
11.	Do new product development procedures exist, and are they followed in the design development process?				100	

5.6 QUALITY RECORDS		STATUS				
DESCRIPTION OF PROGRAM		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
1.	Are records of inspection and process control maintained and available for review?				100	
2.	Are records of equipment and equipment maintenance kept?				100	
3.	Is the record and sample retention program defined?				100	
4.	Are quality data used as a basis for corrective action?				100	
5.	Are quality data used in reporting performance and trends to management?				100	
6.	Are quality data used in supporting certifications of quality furnished to customers?				100	
7.	Is field information used for corrective action?				100	
8.	Does a cost of quality measurement system exist?				100	
9.	Are customer reported quality problems responded to, and resolved in the time period requested?				100	
10.	Is quality information on production material rejects provided to sub-suppliers with required corrective action?				100	
11.	Are computers used to collect and analyze quality data?				100	

COMMENTS

5.7 SKILLS, TRAINING, & CERTIFICATION		STATUS				
DESCRIPTION OF PROGRAM		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results

1.	Does management ensure that all personnel are trained in their role for achieving Total Customer Satisfaction?				100	
2.	Do all personnel understand how their performance impacts internal and external customer satisfaction?				100	
3.	Do all personnel who contact external customers reflect quality improvement programs?				100	
4.	Do personnel participate in professional societies and growth programs?				100	
5.	Are all personnel trained in sufficient detail to support key initiatives?				100	
6.	Are the results of training evaluated and indicated program changes made?				100	
7.	Does a policy exist which encourages the cross training and rotation of personnel, and is this policy used as the basis of job progression?				100	
8.	Are performance standards participatively developed, and regularly applied for all personnel?				100	
9.	Are Total Customer Satisfaction programs and resulting successes publicized to all personnel?				100	
10.	Do goal setting and reward/incentive programs support the quality improvement process?				100	

5.8 SUBCONTRACTOR CONTROL		STATUS				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
DESCRIPTION OF PROGRAM						
1.	Are requirements defined, communicated, and updated to ensure that the supplier understands expectations?				100	
2.	Does a system exist which measures the performance of the supplier and communicates such information to the supplier? (i.e., supplier rating system)				100	
3.	Have the organization's processes been characterized to identify the critical requirements for the suppliers products?				100	
4.	Have the capabilities of the supplier's processes been assessed and considered in the establishment of the requirements?				100	
5.	Have partnerships been established with suppliers, and is assistance provided to ensure that each supplier has the capability to consistently supply conforming products?				100	
6.	Have quality and cycle time metrics and improvement goals been established participatively with the supplier?			X	90	
7.	Has a system been established with the supplier for identification and verification of corrective action?				100	
8.	Have the requirements for supplier materials been properly characterized and specified to ensure conformance of the product/service to the customer satisfaction requirements?				100	
9.	Is there a supplier certification program or equivalent procured material/service continuous quality improvement program?				100	
10.	Can all personnel who contract suppliers properly reflect appropriate quality improvement programs and status to them?				100	

COMMENTS	

5.9 CALIBRATION CONTROL		STATUS				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
DESCRIPTION OF PROGRAM						
1.	Are calibration and preventative maintenance programs in place and documented?				100	

2.	Are calibration and maintenance personnel trained?				100	
3.	Is traceability to NIST maintained?				100	
4.	Is quality measurement and control equipment current, effective, and sufficiently integrated with production equipment?				100	
5.	Is the history of quality measurement and control equipment documented?				100	
6.	Has repeatability of measuring devices and inspection or testing processes been established and monitored; are gauge capability studies conducted and GR&R ratios acceptable(<10%)?			X	100	
7.	Are calibration and preventative maintenance cycles on schedule?				100	
8.	Is the use of non-calibrated equipment for design and production purposes prohibited?				100	
9.	Are tools and fixtures used as criteria or acceptability of product/work fully qualified and identified?				100	
10.	Are calibration intervals defined in accordance with industry standards or manufacturer's recommendations and the calibration history of the equipment?				100	

5.10 INTERNAL AUDITS		STATUS				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
DESCRIPTION OF PROGRAM		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
1.	Are regular reviews of the product/process conducted and are goals/plans established to continually improve?				100	
2.	Are the processes/products properly documented and controlled? Do they include appropriate customer requirements and are they executed in conformance to the documentation?				100	
3.	Are the required quality checks built into the operations within the manufacturing, field installation, and service process, and is the resulting data maintained and promptly acted upon?				100	
4.	Are all pertinent methods of statistical quality control properly, effectively and efficiently used?				100	
5.	Does a process change control system exist, and are customers informed of changes made to products and processes with customer approval prior to the change, when required?				100	
6.	Are the operators within the process provided with written work instructions and are they trained?				100	
7.	Is the receipt, handling, storage, packaging and release of all material, including customer provided items, at all stages, specified and controlled to prevent damage or deterioration, and to address obsolete material?				100	
8.	Is there a first in/first out (FIFO) system in place, and is it followed?				100	

COMMENTS

5.11 STATISTICAL PROCESS CONTROL		STATUS				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
DESCRIPTION OF PROGRAM						
1.	Have the personnel who will be responsible for guiding the implementation of SPC been designated?			X	100	
2.	Are statistical techniques used to reduce variation in the engineering process before the start of production?				100	
3.	Is the quality system dependent upon process rather than product controls?			X	100	
4.	Is the capability of critical processes and machines measured and monitored with CPK's >1.5, and targeted with CP of 2.0?			X	90	
5.	Are incapable processes or machines targeted for improvement or replacement?				100	
6.	Is SPC implemented for all critical processes?			X	100	
7.	Are procedures that control the reaction to out-of-control situations adequate and effective?			X	100	
8.	Are operators trained in the use of appropriate statistical techniques, and are they properly applying them?			X	90	
9.	Are advanced problem solving techniques used by engineers to solve problems? (Design of Experiments, planned experimentation, advanced diagnostic tools, etc.)				100	
10.	Are control charts and other process controls properly implemented?				100	
11.	Is statistical process control being practiced in work centers and are yields being recorded and plotted on a scheduled basis, with respect to upper and lower control limits?			X	100	

5.12 PROBLEM SOLVING		STATUS				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
DESCRIPTION OF PROGRAM						
1.	Are employees trained in problem solving techniques, in comparison to the needs of the organization?				100	
2.	Does the organization utilize participative problem solving techniques to identify, measure and resolve internal and external problems?				100	
3.	Are problem solving efforts timely and effective?				100	
4.	Are applied resources sufficient to remove problem solving constraints?				100	
5.	Are statistical techniques used for problem solving?			x	95	
6.	Are quality data used to identify barriers, and to determine the priority of problems?				100	
7.	Is there a policy/procedure that includes the use of problem solving techniques to systematically drive reduction in variability?				100	

COMMENTS	

5.13 IN-PROCESS CONTROL		STATUS				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
DESCRIPTION OF PROGRAM						
1.	Are process capabilities established and maintained on all major processes? (critical parameters)				100	
2.	Are in-process inspections, test operations, and processes properly specified and performed?				100	
3.	Are in-process inspection facilities and equipment adequate?				100	
4.	Are the results of in-process inspections used in the promotion of effective preventative action and corrective action?				100	
5.	Is preventative maintenance performed on the equipment and facilities?				100	
6.	Are housekeeping procedures adequate and how well are they followed?				100	
7.	Are process management plans established, and are critical parameters followed?				100	
8.	Are work areas uncluttered and free of excess work-in-process, supplies, debris, etc? Is the environment conducive to producing quality work? Is proprietary information adequately protected?				100	
9.	Are certifications and in-process inspection results used in making final acceptance decisions?				100	
10.	Are methods and procedures for the control of metallurgical, chemical, and other special processes established and followed?				100	

5.14 RECEIVING INSPECTION		STATUS				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
DESCRIPTION OF PROGRAM						
1.	Are receiving inspection facilities and equipment adequately and properly maintained?				100	
2.	Are receiving inspection procedures documented and followed?				100	
3.	Are receiving inspection results used for corrective and preventive action?				100	
4.	Are the procedures for storage and timely disposition of discrepant material in place and followed?				100	

COMMENTS	

5.15 MATERIAL HANDLING		STATUS				
		DESCRIPTION OF PROGRAM				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
1.	Are procured material releases from receiving inspection clearly identified, as to acceptance status?				100	
2.	Are procedures to facilitate limited life materials, such as prepreg, in place, properly controlled, and monitored?				100	
3.	Are procured items identified with some means of traceability (serial number, lot number, date code, etc.)?				100	
4.	Are procedures and facilities adequate for storage, release and control of materials?				100	
5.	Are in-store and in-process materials properly identified and controlled?				100	
6.	Is in-process material protected from corrosion, deterioration, and damage?				100	

5.16 NON-CONFORMING MATERIAL CONTROL		STATUS				
		DESCRIPTION OF PROGRAM				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
1.	Is non-conforming material identified, segregated from regular production material, and properly dispositioned?				100	
2.	Are non-conforming materials properly identified and controlled to prevent inadvertent use?				100	
3.	Is the review and disposition of non-conforming materials defined, and are provisions made for inclusion of the customer in disposition decision?				100	
4.	Are procedures for controlling non-conforming materials, and for ensuing corrective action, in place and followed?				100	
5.	Do procedures provide for material review by a committee consisting of Quality and Engineering (as a minimum), to determine the disposition of non-conforming materials? (deviating from drawings or specification)				100	
6.	Do supplier's procedures and controls for corrective action prevent recurrence of non-conformances?				100	
7.	Is there a system for coordinating necessary corrective action with purchasing personnel?				100	
8.	Does the corrective action extend to all applicable causes of non-conformance (e.g., design, workmanship, procedures, equipment, etc.)?				100	

COMMENTS

5.17 INSPECTION AND TEST PLAN	STATUS
-------------------------------	--------

DESCRIPTION OF PROGRAM		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
1.	Are statistical techniques used in determining the acceptability of finished goods to customer requirements?				100	
2.	Are periodic tests conducted to audit reliability and environmental performance of the final product?				100	
3.	Is CPK tracking performed for critical characteristics, with plans to achieve CPK = 1.5 with a target of CP of 2.0?			X	80	
4.	Is root cause failure analysis performed for internal and external failures, and is appropriate corrective action implemented?				100	
5.	Are test and inspection personnel trained in the procedures of their operations, and are those procedures being followed?				100	
6.	Is the new product/technology/service, as produced by the processes, verified to meet all customer satisfaction requirements?				100	

5.18 PRODUCT INSPECTION/FINAL AUDIT		STATUS				
DESCRIPTION OF PROGRAM		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
1.	Are final product acceptance procedures documented and followed?				100	
2.	Are all specific customer product audits conducted, as required?				100	
3.	Are inspectors trained for the tasks performed?				100	
4.	Are flow charts or milestones developed with checkpoints readily available?				100	
5.	Is a system in place which denotes inspection performed; e.g., use of initials, stamps, labels, bar codes, etc., affixed to production documentation?				100	
6.	Is a quality system established and maintained for control of product/production documentation?				100	
7.	Is "accept/reject" criteria defined and available for use?				100	
8.	Is a final audit performed to ensure that all required verifications and tests, from receipt of materials through point of product completion, have been accomplished?				100	
9.	Are packing and order checking procedures documented and followed?				100	
COMMENTS						

5.19 TOOLING INSPECTION, HANDLING, & STORAGE		STATUS				
DESCRIPTION OF PROGRAM		Not	Not	Approach	Percent	Percent

		Applicable	Started	Developed	Deployed	Results
1.	Are temperature, humidity, laminar flow controls in place to prevent contamination, and to assure dimensional stability?				100	
2.	Do operators use hairnets, gloves & lab coats in all photolab and photoexposure areas?				100	
3.	Are work instructions and related forms in place to control all applicable tooling requirements, as stated in the customer's purchase order?				100	
4.	Are customer provided artworks controlled with regard to handling, storage, revision control and relationship to converted production phototools (working films)?				100	
5.	Are production phototools (working films) controlled with regard to handling, storage, use life, and relationship to customer purchase order?				100	
6.	Are customer provided artworks and production phototools (working films) inspected, including dimensional checks?				100	
7.	Are all tools, fixtures, and other devices, used for tooling inspection and control, maintained under the calibration control procedure?				100	
8.	Are records showing initial acceptance, periodic checks, and any needs for rework and/or modification available?				100	

5.20 CORRECTIVE ACTION		STATUS				
		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
DESCRIPTION OF PROGRAM		Not Applicable	Not Started	Approach Developed	Percent Deployed	Percent Results
1.	Are final acceptance inspection results used for corrective and preventative action?				100	
2.	Is root-cause analysis performed for non-conformances? This includes, but is not limited to, non-conformances (problems) caused by suppliers, found/caused "in-house" during processing, or those reported by the customer.				100	
3.	Is positive action taken to prevent recurrence of problems, and are there documented reports/records of each occasion?				100	
4.	Do procedures and systems provide for ensuring that replies are made to customer requests for correction action within the time limit specified?				100	
5.	Is corrective action controlled and documented for all applicable work centers?				100	
6.	When corrections are made, is their effectiveness subsequently reviewed and monitored?				100	

COMMENTS

DATE COMPLETED 10/26/2023

SECTION 6 (CHECK ONE IN EACH LINE THAT APPLIES)

MANUFACTURING HISTORY (See Section 2 Site Capability)

Please complete as many history profiles so that the total descriptions of products you manufacture account for production orders that reflect 70% of your business. History profiles are for board or board family (board types may be grounded together if they are similar).

BOARD TYPE	DATE OF ORDER	MATERIAL	HISTORY #
VIA TYPE	PRODUCTION QUANTITY	TOTAL YEARLY PRODUCTION %	

Dimensions in millimeters (inches in brackets)

BOARD			HOLES		
BOARD SIZE DIAGONAL	TOTAL BOARD THICKNESS	NUMBER CONDUCTIVE LAYERS	DIA DRILLED HOLES	TOTAL PTH TOL (MAX-MIN)	LOCATION TOL DTP
<input type="checkbox"/> <250 [<10.00]	<input type="checkbox"/> <1,0 [$<.040$]	<input type="checkbox"/> 1-4 [1-4]	<input type="checkbox"/> >0,5 [$>.020$]	<input type="checkbox"/> >0,250 [$>.010$]	<input type="checkbox"/> >0,50 [$>.020$]
<input type="checkbox"/> 250 [10.00]	<input type="checkbox"/> 1,0 [.040]	<input type="checkbox"/> 5-6 [5-6]	<input type="checkbox"/> 0,5 [.020]	<input type="checkbox"/> 0,250 [.010]	<input type="checkbox"/> 0,50 [.020]
<input type="checkbox"/> 350 [14.00]	<input type="checkbox"/> 1,6 [.060]	<input type="checkbox"/> 7-8 [7-8]	<input type="checkbox"/> 0,4 [.016]	<input type="checkbox"/> 0,200 [.008]	<input type="checkbox"/> 0,40 [.016]
<input type="checkbox"/> 450 [17.50]	<input type="checkbox"/> 2,0 [.080]	<input type="checkbox"/> 9-12 [9-12]	<input type="checkbox"/> 0,35 [.014]	<input type="checkbox"/> 0,150 [.006]	<input type="checkbox"/> 0,30 [.012]
<input checked="" type="checkbox"/> 550 [21.50]	<input type="checkbox"/> 2,5 [.100]	<input checked="" type="checkbox"/> 13-16 [13-16]	<input type="checkbox"/> 0,30 [.012]	<input type="checkbox"/> 0,125 [.005]	<input type="checkbox"/> 0,25 [.010]
<input checked="" type="checkbox"/> 650 [25.50]	<input checked="" type="checkbox"/> 3,5 [.135]	<input checked="" type="checkbox"/> 17-20 [17-20]	<input checked="" type="checkbox"/> 0,25 [.010]	<input type="checkbox"/> 0,100 [.004]	<input type="checkbox"/> 0,20 [.008]
<input type="checkbox"/> 750 [29.50]	<input type="checkbox"/> 5,0 [.200]	<input type="checkbox"/> 21-24 [21-24]	<input type="checkbox"/> 0,20 [.008]	<input checked="" type="checkbox"/> 0,075 [.003]	<input type="checkbox"/> 0,15 [.006]
850 [33.50]	<input type="checkbox"/> 6,5 [.250]	<input type="checkbox"/> 25-28 [25-28]	0,15 [.006]	<input type="checkbox"/> 0,050 [.002]	<input type="checkbox"/> 0,10 [.004]
<input type="checkbox"/> >850 [>33.50]	>6,5 [$>.250$]	>28 [>28]	<input type="checkbox"/> <0,15 [.006]	<input type="checkbox"/> <0,050 [$<.002$]	<input checked="" type="checkbox"/> <0,10 [$<.004$]
<input type="checkbox"/> Other:	<input type="checkbox"/> Other: .270" MAX	<input type="checkbox"/> Other: 52	<input type="checkbox"/> Other:	Other: +/- .002"	<input type="checkbox"/> Other:

CONDUCTORS

INTERNAL ELEC CLEARANCE (MIN)	INTERNAL COND WIDTH (MIN)	INTERNAL PROCESS ALLOWANCE	EXTERNAL ELEC CLEARANCE (MIN)	EXTERNAL COND WIDTH (MIN)	EXTERNAL PROCESS ALLOWANCE	FEATURE LOCATION DTP
<input type="checkbox"/> >0,350 [$>.014$]	<input type="checkbox"/> >0,250 [$>.010$]	<input type="checkbox"/> >0,100 [$>.004$]	<input type="checkbox"/> >0,350 [$>.014$]	<input type="checkbox"/> >0,250 [$>.010$]	<input type="checkbox"/> >0,100 [$>.004$]	<input type="checkbox"/> >0,50 [$>.020$]
<input type="checkbox"/> 0,350 [.014]	<input type="checkbox"/> 0,250 [.010]	<input type="checkbox"/> 0,100 [.004]	<input type="checkbox"/> 0,350 [.014]	<input type="checkbox"/> 0,250 [.010]	<input type="checkbox"/> 0,100 [.004]	<input type="checkbox"/> 0,50 [.020]
<input type="checkbox"/> 0,250 [.010]	<input type="checkbox"/> 0,200 [.008]	<input type="checkbox"/> 0,075 [.003]	<input type="checkbox"/> 0,250 [.010]	<input type="checkbox"/> 0,200 [.008]	<input type="checkbox"/> 0,075 [.003]	<input type="checkbox"/> 0,40 [.016]
<input type="checkbox"/> 0,200 [.008]	<input type="checkbox"/> 0,150 [.006]	<input type="checkbox"/> 0,050 [.002]	<input type="checkbox"/> 0,200 [.008]	<input type="checkbox"/> 0,150 [.006]	<input type="checkbox"/> 0,050 [.002]	<input type="checkbox"/> 0,30 [.012]
<input checked="" type="checkbox"/> 0,150 [.005]	<input type="checkbox"/> 0,125 [.005]	<input type="checkbox"/> 0,040 [.0015]	<input type="checkbox"/> 0,150 [.006]	<input checked="" type="checkbox"/> 0,125 [.005]	<input type="checkbox"/> 0,040 [.0015]	<input type="checkbox"/> 0,25 [.010]
<input type="checkbox"/> 0,125 [.005]	<input checked="" type="checkbox"/> 0,100 [.004]	<input type="checkbox"/> 0,030 [.0012]	<input checked="" type="checkbox"/> 0,125 [.005]	<input type="checkbox"/> 0,100 [.004]	<input type="checkbox"/> 0,030 [.0012]	<input type="checkbox"/> 0,20 [.008]
<input type="checkbox"/> 0,100 [.004]	0,075 [.003]	<input type="checkbox"/> 0,025 [.001]	<input type="checkbox"/> 0,100 [.004]	0,075 [.003]	<input type="checkbox"/> 0,025 [.001]	<input type="checkbox"/> 0,15 [.006]
0,075 [.003]	<input type="checkbox"/> 0,050 [.002]	<input type="checkbox"/> 0,020 [.0008]	0,075 [.003]	<input type="checkbox"/> 0,050 [.002]	<input type="checkbox"/> 0,020 [.0008]	<input type="checkbox"/> 0,10 [.004]
<input type="checkbox"/> <0,075 [$<.003$]	<input type="checkbox"/> <0,050 [$<.002$]	<input checked="" type="checkbox"/> <0,020 [$<.0008$]	<input type="checkbox"/> <0,075 [$<.003$]	<input type="checkbox"/> <0,050 [$<.002$]	<input checked="" type="checkbox"/> <0,020 [$<.008$]	<input checked="" type="checkbox"/> <0,10 [$<.004$]
<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:	<input type="checkbox"/> Other:

SECTION 7

DATE COMPLETED N/A

IDENTIFICATION OF PREVIOUS AUDITS (Optional)

Please complete as many forms as you feel reflect the intensity of your customer visits.

COMPANY AUDITORS	DATE OF AUDIT
AUDIT TEAM MEMBERS	AUDITOR REMARKS
	SPECIFICATIONS USED IN AUDIT
LENGHT OF AUDIT	
TEAM MEMBERS MAY BE CONTACTED AT	
COMPANY AUDITORS	DATE OF AUDIT
AUDIT TEAM MEMBERS	AUDITOR REMARKS
	SPECIFICATIONS USED IN AUDIT
LENGHT OF AUDIT	
TEAM MEMBERS MAY BE CONTACTED AT	
COMPANY AUDITORS	DATE OF AUDIT
AUDIT TEAM MEMBERS	AUDITOR REMARKS
	SPECIFICATIONS USED IN AUDIT
LENGHT OF AUDIT	
TEAM MEMBERS MAY BE CONTACT AT	

*REPEAT THIS FORM AS NECESSARY

SECTION 8

DATE COMPLETED

N/A

FINANCIAL REVIEW (OPTIONAL)

Please complete the following financial information that coincides with the company description and site information provided in section 1.

COMPANY FINANCIAL DESCRIPTION

LEGAL NAME		
TAXPAYER ID NUMBER	DUNS NUMBER	TRADING SYMBOL
ANNUAL SALES	PRIOR YEAR	YEAR-TO-DATE
FISCAL YEAR		
BANK	ACCOUNT NUMBER	
BANK ADDRESS	STATE	ZIP
PROVINCE	COUNTRY	
BANK TELEPHONE NUMBER	FAX NUMBER	
COMMENTS		

SITE FINANCIAL DESCRIPTION

SITE NAME		
TAXPAYER ID NUMBER	DUNS NUMBER	TRADING SYMBOL
ANNUAL SALES	PRIOR YEAR	YEAR-TO-DATE
FISCAL YEAR		
BANK	ACCOUNT NUMBER	
BANK ADDRESS	STATE	ZIP
PROVINCE	COUNTRY	
BANK TELEPHONE NUMBER	FAX NUMBER	
COMMENTS		

SECTION 9

MQP ELECTRONIC EDITING

This MS Word template comes with editable fields. IPC has made this electronic document available for ease of completing, updating, and filing the MQP, as well as to give the laminate manufacturer and customer a common interface. Using the template enables laminate manufacturers to maintain several customer specific files without the endless stream of paperwork.

Editable fields are highlighted in gray. To complete the fields in the template, use the TAB key to toggle from field to field, entering the information as instructed in the introductory text for each section.

The developers of this MQP strongly suggest the person at the laminate manufacturing facility responsible for creating and maintaining the MQP write protect the file to be sent.