ASCENT CIRCUITS PVT LTD.,

CERTIFICATE OF QUALITY CONFORMANCE

ROHS COMPLAINT YES / NO

CUSTOMER: VELANKANI ELECTRONICS **TR. NO : 30591** **INVOICE NO:** **ECN** YES/NO

PART NO: DA0S5RMBEF0-GEN-4 **LOT QTY: 05** **DATE: 14.02.2024**

REV: F **SAMPLE QTY: 04** **BATCH CODE: 07-24**

	PARAMETER	REQUIREMENT / SPEC.	INSTRUMENT / DOCUMENT USED	OBSERVATION ON SAMPLE	RESULT
I	**MATERIALS (VERIFICATION AGNIST DRAWING)**				
a	Laminate Grade and Tg	As per Drawing	Process Traveller card	FR-4	OK
b	PCB Thickness (± 10%)	1.90 mm	Micrometer	2.08 TO 2.12 mm	OK
c	Number of Layers	14- Layers	Process Traveller card	14- Layers	OK
d	Base copper thickness (± 10%)	IL : 35/35 microns (IL: 7,8 -70 microns) OL : 12/12 microns	Process Traveller card	IL: 35/35 microns (IL: 7,8-70 microns) OL: 12/12 microns	OK
e	Laminate Make	TU883SP	Process Traveller card	TU883SP	OK
f	Solder Mask Type Colour: Finish: Make :	PISM Green Glossy Sun chemical	Process Traveller card	PISM Green Glossy Sun chemical	OK
g	Legend Colour	CS: White SS: White	Process Traveller card	CS: White SS: White	OK
II	**APPEARANCE TEST (AS PER IPC A 600 ACCEPTABILITY STANDARDS)**				
a	Pattern Imperfections	No Nicks, No Pits, Fiducial shape	Visual Inspection	No defects observed	OK
b	Solder Mask Imperfections	No exposed copper	Visual Inspection	No defects observed	OK
c	Legend Imperfections	Legible and aligned to pattern	Visual Inspection	Legible	OK
d	Through Hole Quality	No voids, burrs, SM residues, No Hole Block	Visual Inspection	No defects observed	OK
e	Outer Profile Imperfections	Free from burrs, Damages, Scratches, Improper profiles	Visual Inspection	No defects observed	OK
f	Finish	ENIG	Process Traveller card	ENIG	OK
g	Logos	Customer : Not Required Ascent : Not Required	Process Traveller card	Customer: NA Ascent: NA	NA
h	UL Marking CTI Marking	Not Required Not Required	Process Traveller card	NA	NA
i	Peelable solder mask	Coverage of peelable solder mask	Visual Inspection	NA	NA
j	Via Plugging	Coverage of ink inside via holes	Back light Inspection	observed	OK
III	**GENERAL TESTS (AS PER IPC TM 650 TEST METHODS)**				
a	Solder mask adhesion (Tape Test)	Solder mask peeling not allowed	Adhesive tape	No peeling observed	OK
b	Solder mask Hardness (pencil test)	No scratches with Min.6H pencil	Hardness test Pencil box	No SM scratches found	OK
c	Legend adhesion (Tape Test)	Legend peeling not allowed	Adhesive tape	No peeling observed	OK
d	Hard Gold plating adhesion (Tape Test)	Gold peeling not allowed	Adhesive tape	NA	NA
e	ENIG plating adhesion (Tape Test)	Gold peeling not allowed	Adhesive tape	No peeling observed	OK
f	Carbon adhesion (Tape Test)	Carbon peeling not allowed	Adhesive tape	NA	NA

	PARAMETER	REQUIREMENT / SPEC.	INSTRUMENT / DOCUMENT USED	OBSERVATION ON SAMPLE	RESULT
IV	**DIMENSIONS**				
a	PTH and NPTH size	Drill Table	Pin Gauge	Report enclosed Y / N	Pass
b	PCB profile and dimensions	Profile Table	Vernier Calliper / CMM	Report enclosed Y / N	Pass
c	Surface copper thickness	As per Drawing / IPC 6012	CMI Machine	12 +25 to 34 microns	OK
d	PTH copper thickness	As per Drawing / IPC 6012	CMI Machine	25 to 38 microns	OK
e	Hard Gold plating thickness	Au : microns Ni : microns	CMI Machine	NA	NA
f	ENIG Thickness	Au : 0.05-0.10 microns Ni : 3-5 microns	CMI Machine	Au : 0.07 microns Ni : 4.22 microns	OK
g	Immersion Tin	Min. 1 micron / Customer Spec.	CMI Machine	NA	NA
h	SM thickness	As per Drawing / IPC 6012	Microsection	15 TO 22 microns	OK
i	Min. Track width	As per Gerber ± 20% 0.08 mm	Microsection	0.07 mm	OK
j	Min. Spacing between tracks	As per Gerber ± 20% 0.10 mm	Maginifier	0.11 mm	OK
k	Min. Annular ring (External)	Min. 0.05 mm on component hole	Maginifier	0.12 mm	OK
l	Carbon resistance per square	Ohms	Multimeter	NA	NA
m	V - Scoring Dimension	Depth Tol.:	Depth Gauge	NA	NA
n	Bow and twist / Warpage	< 0.75 % for SMD	Pin Gauge & Surface Plate	0.45%	OK
V	**FUNCTIONAL AND RELIABILITY (AS PER IPC 9252 & IPC TM 650 STANDARDS)**				
a	Bare board electrical testing	BBT / Copper Inspection (100%)	BBT Machine	Passed	OK
b	Insulation resistance test	500Meg.Ohms, at 500 Volts	Million megh ohm meter	Passed	OK
c	Impedence test (if applicable)	Single ended : Differential :	Impedance Tester	Report enclosed Y / N	--
d	Solderability test	245°± 5° C for 3 ± 1 second Complete wetting	Solder Pot	Passed	OK
e	Thermal stress and Microsection Analysis	288° C for 10Sec., 3 cycles	Solder Pot / Microscope	Report enclosed Y / N	--
VI	**CUSTOMER SPECIFIC REQUIREMENT**				
a	ECN details				
b					

ENCLOSURES:

Mech. Dimensional Report (Holes & Slots / Outer Profile)	☑	ROHS Compliance Report	☐
Microsection Analysis Report	☐	Impedence Test Report	☐
COC	☐	Solderability Test Report	☐

This is to certify that the PCBs are manufactured as per the drawings and specifications provided to ACPL for the above mentioned part number. These PCBs have been checked as per IPC6012 & IPC-A-600 (class 1 / 2 / 3) specification and have been found acceptable. The Solderablity of these PCBs are 6 months (in case Immersion Tin finish) and 1 year (in case of HAL/ LFHAL/GOLD/NICKEL / ENIG / OSP) from the date of this report.

Storage Conditions :

1. Temperature 25° ± 5°C
2. Relative Humidity Lessthan 60%
3. Stack packets horizontally in racks
4. Keep the PCBs in packed condition only
5. Do Not expose to direct sunlight / excessive temperature
6. Cure the boards at 120°C 4hours before assembly, applicable for only HAL / LFHAL Finish PCB
7. PCBS can be disposed under Electronic Waste Disposal Policy adopted by the Local governing Authority

REMARKS (if any):

PREPARED BY: VERIFIED BY : APPROVED BY:

DATE:

ASCENT CIRCUITS PVT LTD.,
PCB DIVISION

CUSTOMER : VELANKANI ELECTRONICS **BATCHNO : 07-24**

PART NUMBER : DA0S5RMBEF0-GEN-4 **REV: F** **DATE : 14.02.2024**

HOLES & SLOTS

SL. NO	NOMINAL SIZE	TOL		PTH / NPTH	Instrument used	OBSERVATIONS ON SAMPLES					RESULT
		+	-			1	2	3	4	5	OK / NOT OK
					Pin gauge / Vernier						
1	0.20	0.10	0.10	PTH	CMM	0.22	0.18	0.20	0.19		OK
2	0.25	0.10	0.10	PTH	CMM	0.25	0.24	0.23	0.22		OK
3	0.66	0.10	0.10	PTH	Pin gauge	0.68	0.69	0.67	0.68		OK
4	0.71	0.10	0.10	PTH	Pin gauge	0.75	0.74	0.73	0.72		OK
5	0.81	0.15	0.15	PTH	Pin gauge	0.83	0.82	0.81	0.80		OK
6	1.00	0.15	0.15	PTH	Pin gauge	1.05	1.03	1.04	1.02		OK
7	1.04	0.15	0.15	PTH	Pin gauge	1.10	1.08	1.09	1.07		OK
8	1.06	0.15	0.15	PTH	Pin gauge	1.09	1.08	1.06	1.07		OK
9	1.11	0.15	0.15	PTH	Pin gauge	1.15	1.14	1.16	1.13		OK
10	1.16	0.15	0.15	PTH	Pin gauge	1.20	1.19	1.17	1.21		OK
11	1.27	0.15	0.15	PTH	Pin gauge	1.33	1.32	1.30	1.31		OK
12	2.31	0.15	0.15	PTH	Pin gauge	2.35	2.34	2.33	2.32		OK
13	3.73	0.15	0.15	PTH	Pin gauge	3.75	3.80	3.75	3.75		OK
14	4.21	0.20	0.20	PTH	Pin gauge	4.25	4.25	4.25	4.25		OK
15	4.24	0.20	0.20	PTH	Pin gauge	4.30	4.30	4.30	4.30		OK
16	6.41	0.30	0.30	PTH	Pin gauge	6.45	6.40	6.45	6.45		OK
17	1.04	0.10	0.10	NPTH	Pin gauge	1.10	1.08	1.09	1.08		OK
18	1.06	0.10	0.10	NPTH	Pin gauge	1.10	1.08	1.09	1.11		OK
19	1.32	0.10	0.10	NPTH	Pin gauge	1.34	1.35	1.33	1.32		OK
20	1.42	0.10	0.10	NPTH	Pin gauge	1.45	1.44	1.43	1.42		OK

NOTE:ALL DIMENSIONS ARE IN MM

PREPARED BY: VERIFIED BY: APPROVED BY:

ASCENT CIRCUITS PVT LTD.,
PCB DIVISION

CUSTOMER : VELANKANI ELECTRONICS **BATCHNO : 07-24**

PART NUMBER : DA0S5RMBEF0-GEN-4 **REV: F** **DATE : 14.02.2024**

HOLES & SLOTS

SL. NO	NOMINAL SIZE	TOL		PTH / NPTH	Instrument used	OBSERVATIONS ON SAMPLES					RESULT
		+	-			1	2	3	4	5	OK / NOT OK
					Pin gauge / Vernier						
21	1.65	0.10	0.10	NPTH	Pin gauge	1.71	1.69	1.70	1.68		OK
22	2.18	0.10	0.10	NPTH	Pin gauge	2.22	2.20	2.21	2.19		OK
23	2.46	0.10	0.10	NPTH	Pin gauge	2.51	2.49	2.50	2.48		OK
24	3.17	0.10	0.10	NPTH	Pin gauge	3.20	3.20	3.20	3.20		OK
25	4.01	0.10	0.10	NPTH	Pin gauge	4.00	4.00	4.00	4.00		OK
26	3.00	0.10	0.10	NPTH	Pin gauge	3.00	3.00	3.00	3.00		OK
27	3.20	0.10	0.10	NPTH	Pin gauge	3.20	3.20	3.25	3.20		OK
28	1.11	0.10	0.10	NPTH	Pin gauge	1.08	1.09	1.07	1.08		OK
29	1.16	0.10	0.10	NPTH	Pin gauge	1.13	1.14	1.13	1.12		OK
30	0.35	0.10	0.10	PTH	Pin gauge	0.34	0.35	0.33	0.36		OK
31	0.40	0.10	0.10	PTH	Pin gauge	0.38	0.37	0.39	0.40		OK
32	0.45	0.10	0.10	PTH	Pin gauge	0.44	0.42	0.43	0.46		OK
33	1.10X2.46	0.10	0.10	PTH	Vernier	1.18X2.52	1.13X2.46	1.15X2.54	1.14X2.49		OK
34	1.20X2.44	0.10	0.10	PTH	Vernier	1.28X2.52	1.27X2.49	1.26X2.51	1.25X2.54		OK
35	0.75X2.26	0.10	0.10	PTH	Vernier	0.78X2.30	0.79X2.29	0.76X2.31	0.82X2.32		OK
36	0.80X2.30	0.10	0.10	PTH	Vernier	0.88X2.38	0.85X2.34	0.86X2.35	0.87X2.36		OK

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CUSTOMER : VELANKANI ELECTRONICS **BATCHNO: 07-24**

PART NUMBER : DA0S5RMBEF0-GEN-4 **REV.: F** **DATE : 14.02.2024**

OUTER PROFILES AND CUT OUTS

SL. NO	NOMINAL SIZE	TOL		Instrument used	OBSERVATIONS ON SAMPLES					RESULT
		+	-		1	2	3	4	5	OK / NOT OK
				Vernier Calliper / CMM						
1	429.40	0.40	0.40	CMM	429.38	429.45	429.36	429.41		OK
2	16.79	0.20	0.20	Vernier Calliper	16.84	16.83	16.81	16.88		OK
3	40.44	0.20	0.20	Vernier Calliper	40.48	40.43	40.46	40.42		OK
4	289.90	0.30	0.30	Vernier Calliper	289.89	289.94	289.95	289.91		OK
5	76.70	0.20	0.20	Vernier Calliper	76.68	76.65	76.70	76.62		OK
6	72.78	0.20	0.20	Vernier Calliper	72.75	72.78	72.71	72.74		OK
7	2.25	0.10	0.10	Vernier Calliper	2.28	2.26	2.27	2.25		OK
8	5.00	0.10	0.10	Vernier Calliper	4.93	4.96	4.95	4.91		OK
9	1.85	0.10	0.10	Vernier Calliper	1.89	1.88	1.87	1.85		OK
10	5.00	0.10	0.10	Vernier Calliper	4.96	4.97	4.93	4.91		OK
11	2.75	0.10	0.10	Vernier Calliper	2.78	2.79	2.75	2.77		OK
12	5.00	0.10	0.10	Vernier Calliper	4.94	4.96	4.93	4.94		OK
13	2.25	0.10	0.10	Vernier Calliper	2.29	2.27	2.28	2.30		OK
14	5.00	0.10	0.10	Vernier Calliper	4.94	4.95	4.93	4.91		OK
15	1.85	0.10	0.10	Vernier Calliper	1.88	1.89	1.90	1.84		OK
16	5.00	0.10	0.10	Vernier Calliper	4.92	4.96	4.93	4.91		OK
17	2.75	0.10	0.10	Vernier Calliper	2.78	2.79	2.75	2.77		OK
18	5.00	0.10	0.10	Vernier Calliper	4.93	4.96	4.92	4.91		OK
19	8.58	0.10	0.10	Vernier Calliper	8.62	8.59	8.63	8.59		OK
20	84.18	0.20	0.20	Vernier Calliper	84.18	84.16	84.15	84.15		OK

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CUSTOMER : VELANKANI ELECTRONICS **BATCHNO: 07-24**

PART NUMBER : DA0S5RMBEF0-GEN-4 **REV.: F** **DATE : 14.02.2024**

OUTER PROFILES AND CUT OUTS										
SL. NO	NOMINAL SIZE	TOL		Instrument used	OBSERVATIONS ON SAMPLES					RESULT
		+	-		1	2	3	4	5	OK / NOT OK
				Vernier Calliper / CMM						
21	116.20	0.30	0.30	Vernier Calliper	116.28	116.29	116.30	116.26		OK
22	198.98	0.30	0.30	Vernier Calliper	199.10	199.06	199.02	199.07		OK
23	13.39	0.20	0.20	Vernier Calliper	13.42	13.46	13.40	13.45		OK
24	15.78	0.20	0.20	Vernier Calliper	15.82	15.86	15.81	15.79		OK
25	11.00	0.20	0.20	Vernier Calliper	11.08	11.03	11.06	11.10		OK
26	105.20	0.30	0.30	Vernier Calliper	105.28	105.31	105.36	105.33		OK
27	18.00	0.20	0.20	Vernier Calliper	18.06	18.03	18.12	18.07		OK
28	72.78	0.20	0.20	Vernier Calliper	72.96	72.90	72.86	72.89		OK
29	76.70	0.20	0.20	Vernier Calliper	76.82	76.78	76.76	76.74		OK
30	6.10	0.10	0.10	Vernier Calliper	6.15	6.11	6.18	6.13		OK
31	6.10	0.10	0.10	Vernier Calliper	6.15	6.13	6.18	6.20		OK
32	4.50	0.10	0.10	Vernier Calliper	4.54	4.56	4.52	4.58		OK
33	7.00	0.10	0.10	Vernier Calliper	7.05	7.03	7.06	7.08		OK
34	478.88	0.40	0.40	CMM	478.88	478.82	478.85	478.80		OK
35	2.80	0.10	0.10	Vernier Calliper	2.84	2.86	2.88	2.90		OK
36	15.50	0.20	0.20	Vernier Calliper	15.58	15.54	15.59	15.53		OK
37	11.56	0.20	0.20	Vernier Calliper	11.53	11.58	11.59	11.52		OK
38	4.99	0.10	0.10	Vernier Calliper	5.09	5.07	5.09	5.08		OK
39	3.12	0.10	0.10	Vernier Calliper	3.18	3.15	3.14	3.19		OK

NOTE:ALL DIMENSIONS ARE IN MM

PREPARED BY: VERIFIED BY: APPROVED BY:

ASCENT CIRCUITS

ASCENT CIRCUITS PVT. LTD.,

DATE: 13-02-2024

BBT TEST REPORT

NAME OF THE CUSTOMER	:	M/S VELANKANNI
PART NO	:	DA0S5RMBEF0-REV-F(GEN-4)
DATE OF TESTING	:	13-02-2024
WEEK CODE	:	05-24
NAME OF THE MACHINE	:	MICRO CRAFT FLYING PROBE TESTER

TEST PARAMETERS

CONTINUITY	:	10 Ohms
ISOLATION	:	12.7 Mega ohms
VOLTAGE	:	250 Voltages
CURRENT	:	20 mA

NO. OF PCB'S TESTED	:	2 PCB`S
NO. OF PCB'S OK AT FIRST PASS	:	2 PCB`S
TOTAL NO. OF PCB'S PASSED	:	2 PCB`S

TESTED BY

G.MURUGAN

APPROVED BY

L.SIVANANTHAN