



# HMJ QUALIFICATION REPORT

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## I. INTRODUCTION

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The HMJ mixer is a high performance frequency conversion mixer that offers high dynamic range in a surface mount package. The HMJ is a GaAs FET based mixer implemented with discrete surface mount components on a FR-4 printed circuit board. The Circuit Card Assembly and cover comprise a non-hermetic package designed for flow through rinsing following solder re-flow processing.

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## II. SCOPE

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This report summarizes the reliability qualification tests for the HMJ family of mixers designed and developed by WJ Communications. The reliability data was obtained through the execution of specified accelerated stress tests described in this document.

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## III. APPLICABLE DOCUMENTS

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All the test procedures and test methods are consistent with industry standards. The standards referenced in this document are JEDEC standard 22 and MIL STD 202.

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## IV. QUALIFICATION TEST PLAN

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All HMJ mixers are produced using the same process flow therefore qualification testing done on one part qualifies the entire family of parts.

	<b>Stress or Test</b>	<b>Device Hours/ Cycles</b>	<b>Sample Size</b>	<b>Failed Units</b>	<b>Date</b>	<b>Reference Document</b>	<b>Part Tested</b>
	Temperature Cycle	8112	78	0	2000	JESD22 A104	HMJ1
	Unbiased Autoclave	7488	78	0	2000	JESD22-A102	HMJ1
	Solderability		5	0	2000	JESD22 A108	HMJ1
	Resistance to Soldering heat		5	0	2000	MS202 M210	HMJ1
	Lead Integrity Tension		5	0	2000	JESD22 B105	HMJ1
	Lead Integrity Bending Stress		5	0	2000	JESD22 B105	HMJ1
	Lead Integrity Lead Fatigue		5	0	2000	JESD22 B105	HMJ1

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## **V. DISCUSSION OF RESULTS**

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There were no HMJ failures after completing Temperature Cycle, Unbiased Autoclave, Solderability, Resistance to Soldering Heat, and Lead Integrity.

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## **VI. CONCLUSIONS**

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The Reliability Qualification Data demonstrates that the HMJ family of mixers designed and developed by WJ Communications demonstrates high reliability and quality levels.