



REV	REVISIONS DESCRIPTION	DATE	APPROVED

ENVIRONMENTAL/RELIABILITY ENGINEERING
TEST PLAN

2100 PAL I, PAL B, SECAM, JAPAN NTSC

		DRAWN BY	DATE	 <p>Atari, Inc. 30 E. Plumaria Drive San Jose, CA 95134</p> <p> A Warner Communications Company</p>	
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NEXT ASSY	USED ON	ENGINEER	TITLE		
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		APPROVED	SIZE	DRAWING NO.	REV
		<i>E. C. Kuczyński</i> Nov 8, 1983	A	C024673-109	1
		APPROVED	SCALE	SHEET 1 OF 5	
		<i>K. Ash</i> 11/8/83			

ENVIRONMENTAL TEST PLAN NO. TP 2100 PAL

2100 PAL I, PAL B, SECAM

1.0 PRODUCT SPECIFICATIONS

1.1 TEMPERATURE RANGE (OPERATIONAL)

10 to 45 degrees C.

1.2 TEMPERATURE RANGE (STORAGE)

-30 to 60 degrees C.

1.3 HUMIDITY RANGE (OPERATIONAL)

AMBIENT TO 95% RH.

1.4 SINE VIBRATION

Cycle from 5-100-5 Hz. at 0.015" DA for a period of 15 minutes in each axis. Ten minute dwell at all major resonances; if no resonance is noted, dwell at 30 Hz.

1.5 SHOCK (IMPACT)

Half sine wave form at a level of 30g's, and a duration of 11 msec. 3 shocks in each direction of each axis (total of 18).

1.6 TRANSPORTATION VIBRATION

The product will be vibrated in each direction that it could normally be shipped. The frequency of the vibration will depend on the size and weight of the shipping container.

1.7 PACKAGE DROP

The drop height will be determined by the size and weight of the shipping container.

1.8 ELECTROSTATIC DISCHARGE

External surfaces are probed at levels up to 25KV with a probe constructed with a 100pf capacitor and a 1500 ohm resistor.



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2.0 TEST PROCEDURES

2.1 INTRODUCTION

The test procedures outlined in this test plan are of a general nature and are intended to verify the basic design requirements. The actual tests performed will include, but not be limited to these procedures.

2.2 ENGINEERING ANALYSIS

The product design will be physically and electrically analyzed to pinpoint any problems that could effect reliability or safety. The information gained from this analysis may be the basis for requiring the product to be subjected to additional tests not covered in this test plan.

2.3 DYNAMIC TESTS

2.3.1 VIBRATION

The product will be subjected to the vibration test specified in the Atari "Environmental Engineering Manual" C061616, paragraph 3.3.2.5.1, Parts A, B and C. The purpose of the vibration test is to isolate poor quality components and workmanship and to determine the ability of the product to withstand the stresses encountered in normal operation, shipment and handling.

2.3.2 SHOCK (IMPACT)

The product will be subjected to the shock test specified in the Atari "Environmental Engineering Manual" C061616, paragraph 3.3.3. The shock test is performed to determine if the structural integrity of the product is such that it will operate normally after being subjected to the type of shock that might be expected from rough handling and transportation.

2.4 CLIMATIC

2.4.1 THERMAL MAPPING

The product case will be opened, and the interior will be probed with a temperature indicating device to determine if there are any unusually high temperatures that may degrade the components or otherwise generate a safety hazard. If it is determined that a possible problem exists, the product will be subjected to the thermal mapping test specified in the Atari "Environmental Engineering Manual" paragraph 3.2.1.



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2.4.2 HIGH AND LOW TEMPERATURE

The product will be subjected to the high temperature test and the low temperature test specified in the Atari "Environmental Engineering Manual", paragraphs 3.2.3.4.1 and 3.2.3.4.2. The storage portions of these tests are performed to simulate the thermal conditions a product may encounter in transportation or storage. The operating portions of these tests are performed to simulate the conditions that may occur in a poorly heated or cooled office or home.

2.4.3 TEMPERATURE SHOCK

The product will be subjected to the temperature shock test specified in the Atari "Environmental Engineering Manual", paragraph 3.2.3.4.3. The temperature shock test will be performed to determine the effects on the product of sudden changes in temperature such as those that might be encountered during transportation and storage. This test is also a very effective tool to screen products for defects in workmanship and design.

2.4.4 TEMPERATURE/HUMIDITY

The operating product will be subjected to the temperature and humidity test specified in the Atari "Environmental Engineering Manual", paragraph 3.2.4.

3.0 SPECIAL TESTS

3.1 ELECTROSTATIC DISCHARGE

The operating product will be subjected to a modified version of the electrostatic discharge test specified in the Atari "Environmental Engineering Manual", paragraph 3.4.1. This test is performed to simulate a person walking across a carpeted floor and touching the product.

3.2 TRANSPORTATION

The product, packaged for shipment, will be subjected to the transportation vibration test and the package drop test specified in the Atari "Environmental Engineering Manual", paragraphs 3.3.4 and 3.3.5. These tests are performed to simulate the abuse a product may receive in shipment.



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4.0 PERFORMANCE

4.1 PURPOSE

The intent of this procedure is to assure that the 2100 units will be satisfactory for game play with the commonly available television sets and power adaptors for the geographical area under consideration.

4.2 SCOPE

Four separate and distinct game units are to be covered by this test plan. They are: PAL I for the United Kingdom, PAL B for Germany and associated countries, SECAM for France, and the Japanese version of NTSC.

4.3 SOFTWARE REGRESSION

A minimum of the top twenty PAL version 2600 cartridges will be tested for proper play. The appropriate TV set and power adaptor for the countries involved will be used. Any discrepancies in game play will be noted for a design review committee action.



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