



AAEON Technology INC.  
ISO-9001/ISO-14001 Certified  
Industrial Automation PCs

PCM-5600  
Reliability Prediction Report  
(MTBF)

Release Date: NOV. 16, 2001

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Issue Stamp

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QA Manager

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QE Manager

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Test Engineer

# Reliability Prediction (MTBF)

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**I . Model Name:** PCM-5600

**II . Description:** PC-104 56K Fax / Modem Module

**III . Prediction Date:** NOV. 16, 2001

**IV . Prediction Site:** AAEON QE Dept.

**V . Predicted by :** WenYuan Yang

**VI . Equipment:** Relex Ver.7.2 Visual Reliability Software

## **VII. Simulation Environment:**

- Temperature: 25 degrees C(No temperature rise condition )
- Standard: Telcordia (Bellcore) Standard

## **VIII. Term and Definition:**

- Unit            An assembly of device.
- Duty Cycle    Used to specify the percentage of time that the element is in an on state, and it is equal to the percentage of total time the item is in the active environment.
- Quantity       The quantity of the selected item.
- Failure Rate   Used to specify that the failure rate is to be calculated based the selected Calculation models. The multiplier is 1,000,000.
- MTBF           MTBF is always specified in hours.

## **IX. Prediction Result:**

- Failure Rate: 5.602661 ppm
- MTBF: 178,487Hours

## **X. Prediction Table:**

### AAEON Reliability Prediction Report

**Part Number** System  
**Reference Des**  
**Date** 11. 16, 2001  
**Environment** GF, GU - Ground Fixed, Uncontrolled  
**Temperature** 25.00



**Description** Top-level assembly  
**File Name** PCM5600.RPJ  
**Time** 2:41 PM  
**Failure Rate** 5.602661  
**MTBF** 178,487

Assembly Name	Part Number	Model	Method	Environment	Duty Cycle	Qty	Failure Rate	MTBF
PCM-5600	System	Bellcore	Method I Case 3	GF, GU - Ground Fixed,	100.00	1.00	5.602661	178,487

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**Description** Top-level assembly  
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**Time** 2:41 PM  
**Failure Rate** 5.602661  
**MTBF** 178,487

Part Number	Category	Location	Calculation Model	Quality	Tem. Rise	Failure Rate, Unit	Quantity	Failure Rate, %	Failure Rate	MTBF, Unit
102P	Capacitor		Bellcore Issue 6	Level I		0.004535	1.00	.0810	0.004535	220487045.01
103P	Capacitor		Bellcore Issue 6	Level I	2.00	0.000876	1.00	.0156	0.000876	1141855212.63
220P	Capacitor		Bellcore Issue 6		62.50	0.004161	1.00	.0743	0.004161	240344604.45
223P	Capacitor		Bellcore Issue 6		.60	0.001530	3.00	.0819	0.004589	653745203.49
680P	Capacitor		Bellcore Issue 6		62.00	0.004133	4.00	.2951	0.016532	241961333.40
TRANSFORMER	Inductor		Bellcore Issue 6	Level I		0.018142	1.00	.3238	0.018142	55121761.25
BUZZER	Miscellaneous		Bellcore Issue 6	Level I		0.150000	1.00	2.6773	0.150000	6666666.67
PHONE CONNECTOR	Connection		Bellcore Issue 6	Level I		0.002276	1.00	.0406	0.002276	439390135.35
1X3 PIN HEADER	Connection		Bellcore Issue 6	Level I		0.002276	3.00	.1219	0.006828	439390135.35
MINI JUMPER	Connection		Bellcore Issue 6	Level I		0.001138	3.00	.0609	0.003414	878780270.71
2X20 PIN HEADER	Connection		Bellcore Issue 6	Level I		0.022759	1.00	.4062	0.022759	43939013.54
2X32 PIN HEADER	Connection		Bellcore Issue 6	Level I		0.036414	1.00	.6499	0.036414	27461883.46
RELAY	Relay		Bellcore Issue 6	Level I		0.317479	3.00	16.9997	0.952437	3149814.93
GR7D271K	Semiconductor		Bellcore Issue 6	Level I	100.00	0.205399	4.00	14.6644	0.821594	4868581.86
TRANSISTOR	Semiconductor		Bellcore Issue 6	Level I		0.023881	1.00	.4262	0.023881	41874327.58
L2800-38	Integrated Circuit		Bellcore Issue 6	Level I	1.00	0.041667	1.00	.7437	0.041667	23999884.99
R6764	Integrated Circuit		Bellcore Issue 6	Level I		0.039296	1.00	.7014	0.039296	25448028.36
61C1024	Integrated Circuit		Bellcore Issue 6			0.022683	1.00	.4049	0.022683	44086680.49
74HCT04	Integrated Circuit		Bellcore Issue 6	Level I	.03	0.037951	1.00	.6774	0.037951	26349466.50
74HCT30	Integrated Circuit		Bellcore Issue 6	Level I	.03	0.037759	1.00	.6740	0.037759	26483488.91
LM386	Integrated Circuit		Bellcore Issue 6	Level I	12.02	0.073801	1.00	1.3172	0.073801	13550020.49
24C02	Integrated Circuit		Bellcore Issue 6	Level I		0.031425	1.00	.5609	0.031425	31822187.30
PC817	Capacitor		Bellcore Issue 6			0.003559	1.00	.0635	0.003559	281004210.61
AT49F020	Integrated Circuit		Bellcore Issue 6			0.022683	1.00	.4049	0.022683	44086680.49
2SA1162	Semiconductor		Bellcore Issue 6			0.007960	3.00	.4262	0.023881	125622982.73
2SC2712	Semiconductor		Bellcore Issue 6			2.086225	1.00	37.2363	2.086225	479334.69
2SD640	Semiconductor		Bellcore Issue 6		87.50	0.092688	1.00	1.6544	0.092688	10788920.76
1N4148	Semiconductor		Bellcore Issue 6			0.007960	4.00	.5683	0.031841	125622982.73
Z3.9V	Semiconductor		Bellcore Issue 6	Level I		0.027212	2.00	.9714	0.054425	36747840.84
Z24V	Semiconductor		Bellcore Issue 6	Level I		0.027212	2.00	.9714	0.054425	36747840.84

