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ISO-14000 Certified
ISO-17025 Certified
ADVANTECH CO., LTD.

QA Test Report

PCA-6751Z2-F1B2

at

-40 degree C

(Reliability Prediction)

Report No :03R024A1

Report Date : March,28, 2003

Chi-Horng Liao

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Approval

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Reliability Prediction

I. Date: 2003/3/28

II. Model Name: PCA-6751Z2-F1B2

III. Revision: N/A

IV. Description: ASS'Y PCA-6751 B202

**V. Equipment: Bellcore Calculation Method:
Limited Stress-Method 1,Case 3.**

VI: Simulated Environment:

.Environment:Ground Fix

.Temperature:-40°C

.Quality:Level 1

.Follow Standard:Bellcore Calculation Method:

Limited Stress-Method 1, Case 3.

.Stress:50%

Reliability Prediction

VII. Prediction Result:

A. Failure Rate : 2,822.4325 FITs.
B. MTBF : 354,304 hours.

VIII. Index: **A. Failure Rate & Assembly MTBF**
 B. Part Failure List

Short List Report

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SortBy: PartType/PN/RefDes

Date: 3/28/2003 11:39 AM

RelCalc for Windows, Version 5.0-BELL6 (Release 1999.1)

Company: Your Company Name Here

DOC: PCA-6751Z2-F1B2 AT -40 DEGREE C.CIR RECORDS: 147

DESCRIPTION: PCA-6751Z2-F1B2

ENV: GF TEMP: -40.00 C CF: 1.00000 MODEL: Serial

FR= 2822.4325 FITs MTBF= 354304.3063 hrs. Parts= 753

BELLCORE CALCULATION METHOD: LimitedStress - Method I, Case 3 PIFY=9.8

PartNumber	PartType	Qty	RefDes	TotalFR	%FR
1428274125	IC,Logic	1	IC 74LS125	1.70418	0.06
14S4021300	IC,Logic	2	IC SMT 213	1.10206	0.04
14S4382300	IC,Logic	1	IC TPS3823-33	0.378473	0.01
14S4397731	IC,Logic	1	IC W83977EF	1.11867	0.04
14S4813940	IC,Logic	1	IC RTL8139C-B	0.687315	0.02
14S4914820	IC,Logic	1	IC 9148BF-04	0.467546	0.02
14S5307400	IC,Logic	1	IC 74ALS74	0.551029	0.02
14S5801400	IC,Logic	1	IC 74HCT14	0.457634	0.02
14S5A00800	IC,Logic	2	IC 74V1G08	1.19654	0.04
14S5A01400	IC,Logic	1	IC 744VIG14	0.499083	0.02
14S5A13210	IC,Logic	1	IC 74AHCT1G32	0.546636	0.02
14S5A24560	IC,Logic	1	IC 74VHC2445FT	0.346546	0.01
14S9007500	IC,Logic	1	IC LM75 TEMPER.SENSOR	1.67662	0.06
14S8253600	IC,GateArray/PAL	1	IC CPLD XC9536	0.918790	0.03
14S8953600	IC,GateArray/PAL	1	IC XC9536	0.702410	0.02
14S4000080	IC,Micro	1	IC 69000 BGA	8.60325	0.30
14S4026600	IC,Micro	1	PENTIUM 266	18.0706	0.64
14S4237140	IC,Micro	1	INTEL 82371EB	2.11572	0.07
14S4243910	IC,Micro	1	INTEL FW82439TX	2.11572	0.07
14S6032810	IC,RAM	1	IC SOJ 32K*8	3.00794	0.11
14S6164500	IC,RAM	1	IC LP61G6464BF	5.82480	0.21
14S62020C0	IC,ROM/PROM	1	IC PLASH	0.141430	0.01
14S6334600	IC,ROM/PROM	1	IC AT93C46-10SC	0.377454	0.01
14S3110100	IC,Linear	1	IC SC1101	0.046897	0.00
14S4000600	IC,Linear	1	IC PCDN006	0.130015	0.00
14S4048500	IC,Linear	2	IC LTC485	0.118205	0.00
2233018111	IC,Linear	1	RC PAC1284	0.155408	0.01
1310390410	Transistor	5	NPN 2N3904 3P	12.5854	0.45
1312441010	Transistor	1	MOSFET SI4410	9.18849	0.33
1312993410	Transistor	1	MOSFET SI9934DY	8.39028	0.30
1314101010	Transistor	2	REG US1010	29.1988	1.03
1314108410	Transistor	1	REG EZ1084CM	34.7049	1.23
1300005440	Diode	5	DIODE BAT54C	31.2181	1.11
1300103541	Diode	1	DIODE MBRD1035CTL	6.24362	0.22
1300283540	Diode	1	DIODE MMBD2835LT1	2.75655	0.10
1300414800	Diode	2	DIODE 1N4148	5.51309	0.20
1301003440	Diode	1	DIODE SK34B	4.55864	0.16
1304100040	Optoelectronic	1	LED GREEN	0.002435	0.00
1019556107	Resistor	1	560 1/10W 1% 0805 CR	0.444749	0.02
1059700301	Resistor	1	3 1/10W 5% 0805 CR	0.444749	0.02
105A507503	Resistor	3	75 1/16W 1% 0603 CR	1.33425	0.05
105A511513	Resistor	1	1.15K 1/16W 1% 0603 CR	0.069791	0.00
105A512103	Resistor	1	121 1/16W 1% 0603 CR	0.444749	0.02
105A515003	Resistor	1	150 1/16W 1% 0603 CR	0.444749	0.02
105A515403	Resistor	3	154 1/16W 1% 0603 CR	1.33425	0.05

Short List Report

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SortBy: PartType/PN/RefDes

Date: 3/28/2003 11:39 AM

RelCalc for Windows, Version 5.0-BELL6 (Release 1999.1)

Company: Your Company Name Here

DOC: PCA-6751Z2-F1B2 AT -40 DEGREE C.CIR RECORDS: 147

DESCRIPTION: PCA-6751Z2-F1B2

ENV: GF TEMP: -40.00 C CF: 1.00000 MODEL: Serial

FR= 2822.4325 FITs MTBF= 354304.3063 hrs. Parts= 753

BELLCORE CALCULATION METHOD: LimitedStress - Method I, Case 3 PIFY=9.8

PartNumber	PartType	Qty	RefDes	TotalFR	%FR
105A516913	Resistor	1	1.69K 1/16W 1% 0603 CR	0.444749	0.02
105A524903	Resistor	1	249 1/16W 1% 0603 CR	0.444749	0.02
105A527003	Resistor	3	270 1/16W 1% 0603 CR	1.33425	0.05
105A527403	Resistor	1	274 1/16W 1% 0603 CR	0.444749	0.02
105A549969	Resistor	4	49.9 1/16W 1% 0603 CR	1.77899	0.06
105A551013	Resistor	2	5.1K 1/16W 1% 0603 CR	0.889497	0.03
105A700009	Resistor	18	0 1/16W 0603 CR	8.00547	0.28
105A701009	Resistor	2	10 1/16W 5% 0603 CR	0.889497	0.03
105A702209	Resistor	1	22 1/16W 5% 0603 CR	0.444749	0.02
105A702703	Resistor	4	27 1/16W 5% 0603 CR	1.77899	0.06
105A703309	Resistor	21	33 1/16W 5% 0603 CR	9.33972	0.33
105A704709	Resistor	2	47 1/16W 5% 0603 CR	0.889497	0.03
105A707509	Resistor	4	75 1/16W 5% 0603 CR	1.77899	0.06
105A710019	Resistor	20	1K 1/16W 5% 0603 CR	8.89497	0.32
105A710029	Resistor	33	10K 1/16W 0603 CR	14.6767	0.52
105A710039	Resistor	1	100K 1/16W 5% 0603 CR	0.444749	0.02
105A715029	Resistor	4	15K 1/16W 5% 0603 CR	1.77899	0.06
105A720049	Resistor	1	2M 1/16W 5% 0603 CR	2.66849	0.09
105A722009	Resistor	5	220 1/16W 5% 0603 CR	2.22374	0.08
105A722019	Resistor	1	2.2K 1/16W 5% 0603 CR	0.444749	0.02
105A722029	Resistor	1	22K 1/16W 5% 0603 CR	0.444749	0.02
105A727009	Resistor	1	270 1/16W 5% 0603 CR	0.444749	0.02
105A727019	Resistor	1	2.7K 1/16W 5% 0603 CR	0.444749	0.02
105A730009	Resistor	4	300 1/16W 5% 0603 CR	1.77899	0.06
105A733009	Resistor	1	330 1/16W 5% 0603 CR	0.444749	0.02
105A733019	Resistor	1	3.3K 1/16W 5% 0603 CR	0.444749	0.02
105A747009	Resistor	3	470 1/16W 5% 0603 CR	1.33425	0.05
105A747019	Resistor	33	4.7K 1/16W 5% 0603 CR	14.6767	0.52
105A747029	Resistor	1	47K 1/16W 5% 0603 CR	0.444749	0.02
105A747039	Resistor	2	470K 1/16W 5% 0603 CR	0.889497	0.03
105A756019	Resistor	3	5.6K 1/16W 5% 0603 CR	1.33425	0.05
105A756039	Resistor	2	560K 1/16W 5% 0603 CR	0.889497	0.03
105A782019	Resistor	2	8.2K 1/16W 5% 0603 CR	0.889497	0.03
1540710008	Resistor	9	NETR 10 1/16W 8P4R	1.56776	0.06
1540710208	Resistor	1	NETR 1K 8P4R	0.139583	0.00
1540710308	Resistor	7	NETR 10K 1/16W 8P4R	0.977081	0.03
1540727208	Resistor	3	NETR 2.7K 8P4R	0.418749	0.01
1540756208	Resistor	2	NETR 5.6K 8P4R	0.279166	0.01
1540782208	Resistor	17	NETR 8.2K 8P4R	2.37291	0.08
1541700008	Resistor	14	NETR 33 8P4R	1.95416	0.07
1541700208	Resistor	4	NETR 4.7K 8P4R	0.558332	0.02
1809A50290	Resistor	2	VR 0.1W 25% 12T	0.139583	0.00
1111610050	Capacitor	6	10UF 16V 20% EC	3.32437	0.12
1111622091	Capacitor	3	22UF 16V 20% EC	1.66218	0.06
1119647082	Capacitor	5	47UF 10V 20% EC	2.77031	0.10

Short List Report

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SortBy: PartType/PN/RefDes

Date: 3/28/2003 11:39 AM

RelCalc for Windows, Version 5.0-BELL6 (Release 1999.1)

Company: Your Company Name Here

DOC: PCA-6751Z2-F1B2 AT -40 DEGREE C.CIR RECORDS: 147

DESCRIPTION: PCA-6751Z2-F1B2

ENV: GF TEMP: -40.00 C CF: 1.00000 MODEL: Serial

FR= 2822.4325 FITs MTBF= 354304.3063 hrs. Parts= 753

BELLCORE CALCULATION METHOD: LimitedStress - Method I, Case 3 PIFY=9.8

PartNumber	PartType	Qty	RefDes	TotalFR	%FR
1119647180	Capacitor	5	470UF 6.3V 20% EC	10.4789	0.37
1122701050	Capacitor	4	1UF 25V 0805 MCC	12.7021	0.45
1122710490	Capacitor	215	0.1UF 25V 0603 MCC	682.7381	24.19
1124410090	Capacitor	16	10PF 50V 5% 0603 MCC	50.8084	1.80
1124420080	Capacitor	7	20PF 50V 5% 0603 MCC	22.2287	0.79
1124422090	Capacitor	2	22PF 50V 5% 0603 MCC	6.35105	0.23
1124422190	Capacitor	2	220PF 50V 5% 0603 MCC	6.35105	0.23
1124433090	Capacitor	2	33PF 50V 5% 0603 MCC	6.35105	0.23
1124447090	Capacitor	8	47PF 50V 5% 0603 MCC	25.4042	0.90
1124510190	Capacitor	2	100PF 50V 0603 MCC	7.03620	0.25
1124510290	Capacitor	2	1000PF 50V 0603 MCC	6.35105	0.23
1124510390	Capacitor	13	0.01UF 50V 0603 MCC	41.2818	1.46
1124518190	Capacitor	20	180PF 50V 0603 MCC	63.5105	2.25
1124547180	Capacitor	2	470PF 50V 0603 MCC	6.35105	0.23
1129510390	Capacitor	1	0.01UF 1KV 10%1808 MCC	3.17553	0.11
1129701090	Capacitor	3	1UF 10V 0603 MCC	9.73057	0.34
1129710060	Capacitor	7	10UF 10V 1206 MCC	22.2287	0.79
1129747550	Capacitor	1	4.7UF 10V 0805 MCC	3.24352	0.11
1169622190	Capacitor	1	220UF 4V 4TPB220M	2.48707	0.09
1211115072	Inductive	1	1.5UH 10A	0.473935	0.02
1211127071	Inductive	1	2.7UH	0.489041	0.02
1212301000	Inductive	13	BEAD BLM11B102S	6.16115	0.22
1212301020	Inductive	36	BEAD BLM11B141S	17.6055	0.62
1212301040	Inductive	4	BEAD BLM11P300S	1.89574	0.07
1212301050	Inductive	5	BEAD BLM11P600S	2.44521	0.09
1212302000	Inductive	16	BEAD BLM21P300S	7.82466	0.28
1252900160	Inductive	1	XFMR LF8505	18.5836	0.66
1651203291	Connector	1	IC SKT PLCC 32P	0.236400	0.01
1651500001	Connector	2	S.O.DIMM SKT 144P	2.12760	0.08
1652508207	Connector	1	TERMINAL PHONEJACK	0.059100	0.00
1653002100	Connector	4	PIN 2*1P	0.059100	0.00
1653003100	Connector	3	PIN 3*1P	0.066487	0.00
1653003200	Connector	1	PIN 3*2P	0.044325	0.00
1653004100	Connector	1	PIN 4*1P	0.029550	0.00
1653004200	Connector	1	PIN 4*2P	0.059100	0.00
1653005100	Connector	2	PIN 5*1P	0.073875	0.00
1653005202	Connector	1	PIN 5*2P	0.073875	0.00
1653006100	Connector	1	PIN 6*1P	0.044325	0.00
1653025211	Connector	1	HEADER 50P	0.369374	0.01
165312022A	Connector	2	PCB SKT 20*2P	0.590999	0.02
165313222A	Connector	1	PCB SKT 32*2P	0.472799	0.02
1653205200	Connector	2	BOX HEADER 5*2	0.147750	0.01
1653220203	Connector	1	BOX HEADER 20*2	0.295500	0.01
1653413200	Connector	1	BOX HEADER 13*2	0.192075	0.01
1653417200	Connector	1	BOX HEADER 17*2	0.251175	0.01

Short List Report

RelCalc for Windows, Version 5.0-BELL6 (Release 1999.1)

Company: Your Company Name Here

DOC: PCA-6751Z2-F1B2 AT -40 DEGREE C.CIR RECORDS: 147

DESCRIPTION: PCA-6751Z2-F1B2

ENV: GF TEMP: -40.00 C CF: 1.00000 MODEL: Serial

FR= 2822.4325 FITs MTBF= 354304.3063 hrs. Parts= 753

BELLCORE CALCULATION METHOD: LimitedStress - Method I, Case 3 PIFY=9.8

PartNumber	PartType	Qty	RefDes	TotalFR	%FR
1653910261	Connector	1	CONN. 10*2P	0.147750	0.01
1653920200	Connector	1	CONN.DF13-40DP	0.295500	0.01
1654409108	Connector	1	D-SUB CONN 9P	0.066487	0.00
1654515304	Connector	1	D-SUB CONN 15P	0.110812	0.00
1654606301	Connector	1	MINI DIN 6P	0.044325	0.00
1655003010	Connector	1	WAFER 3P	0.022162	0.00
1655204030	Connector	1	HOUSING 4P	0.029550	0.00
1655305020	Connector	1	WAFER 5P	0.036937	0.00
1659254005	Connector	1	WAFER BOX 5P	0.036937	0.00
1231*****	QuartzCrystal	3	X'TAL	450.0000	15.94
1305000040	Fuse	4	POLYSWITCH 1.1A	120.0000	4.25
1750199011	Battery	1	BATTERY	900.0000	31.89