



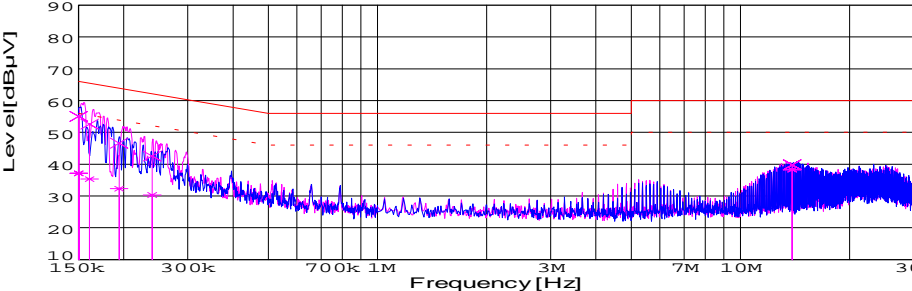
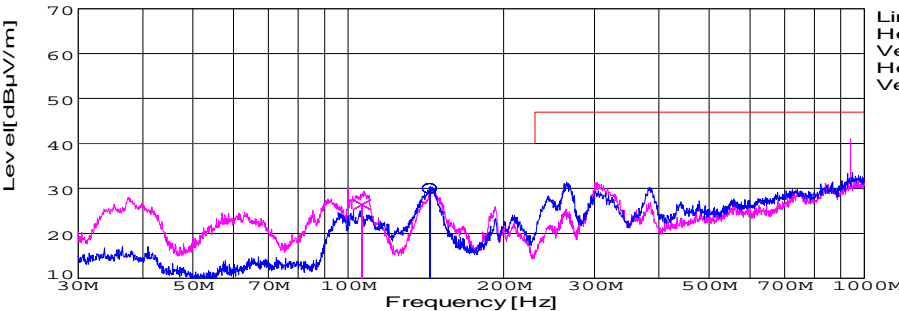
PBA50F EMI/EMS Test result

October 8, 2004
Design engineering dep.

Approved : *Takahiro Yamada*

Prepared : *Azumi Yoshiyama*

No.	Test item	Conditions	Conditions of Acceptability	Result
1	Line conduction	(1) Rated input(AC100V,120V,230V) (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$	(1)Meets the undermentioned standard. FCC Part15 classB , VCCI classB CISPR22 classB , EN55022-B, EN55011-B	OK
2	Radiated emission	(1) Rated input(AC100V,120V,230V) (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$	(1)Meets the undermentioned standard. FCC Part15 classB , VCCI classB CISPR22 classB , EN55022-B, EN55011-B	OK
3	Harmonic current (EN61000-3-2)	(1) Rated input (AC100V,230V) (2) Load 0 - Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$	(1)Meets the undermentioned standard. EN61000-3-2 classA	OK
4	Static electricity immunity test (EN61000-4-2)	(1) Rated input (AC230V) (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4) Contact discharge voltage 8[kV] (Level 4)	(1)No protection circuit failure. (2)No output voltage drop with control circuit failure. (3)No any other function failure	OK
5	Radiated, radio-frequency, electromagnetic field immunity test (EN61000-4-3)	(1) Rated input (AC230V) (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4)Testing field strength 10[V/m] (Level 3)	(1)No protection circuit failure. (2)No output voltage drop with control circuit failure. (3)No any other function failure	OK
6	Electrical fast transient/ burst immunity test (EN61000-4-4)	(1) Rated input (AC230V) (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4) Test peak voltage 4[kV] (Level 4)	(1)No protection circuit failure. (2)No output voltage drop with control circuit failure. (3)No any other function failure	OK
7	Surge immunity test (EN61000-4-5)	(1) Rated input (AC230V) (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4) Test voltage Line to line 2[kV] (Level 3) Line to earth 4[kV] (Level 4)	(1)The power supply is not stop (2)Circuit does not malfunction. (3)No abnormality of the insulation destruction etc. (4)Parts are no damaged.	OK
8	Immunity to conducted disturbances, induced by radio-frequency fields (EN61000-4-6)	(1) Rated input (AC230V) (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4) Voltage level (e.m.f.) 10[V] (Level 3)	(1)No protection circuit failure. (2)No output voltage drop with control circuit failure. (3)No any other function failure	OK
9	Power frequency magnetic field immunity test (EN61000-4-8)	(1) Rated input (AC230V) (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ (4) Magnetic field 30A/m (Level 4)	(1)No protection circuit failure. (2)No output voltage drop with control circuit failure. (3)No any other function failure	OK
10	Voltage dips, short interruptions and voltage variations immunity test (EN61000-4-11)	(1) Rated input (AC230V) -30% reduction at 10mS min. -60% reduction at 100mS min -95% reduction at 5S min. - $\pm 10\%$ variation at 15 minutes (2) Rated load (3) Ambient temp. $25 \pm 10^{\circ}\text{C}$	(1)No protection circuit failure. (2)No output voltage drop with control circuit failure. (3)No any other function failure	OK

DATA SHEET							Date	03-Feb-04																																			
Model	PBA50F-12						Temp.	25 degreeC																																			
Test	EMI Line conduction & Radiated emission						Humid.	44 %RH																																			
							Tested by	A.Yoshiyama																																			
LINE CONDUCTION																																											
Model Name : PBA50F-12			Temp. : 25 degreeC																																								
Model No. :			Humi. : 44 %																																								
Serial No. :			Date : 2004/2/3 20:45																																								
Points : 5			Test Equip. : R3132,ESPC																																								
Detector : PEAK/QP/Ave.			Load Line : 150 mm																																								
Line Mode : VB			Comment :																																								
Power Supply : AC230V 50Hz																																											
Limit1: [EN 55022] Class B(Ave.)																																											
Limit2: [EN 55022] Class B(QP)																																											
							AC230V 50Hz +12V 4.3A																																				
<table><tr><th>Frequency [MHz]</th><th>Meter Reading (Ave.)[dBuV]</th><th>Meter Reading (QP)[dBuV]</th><th>Factor [dB]</th><th>Level(Ave.) [dBuV]</th><th>Level(QP) [dBuV]</th><th>Line</th><th>Limit(Ave.) [dBuV]</th><th>Limit(QP) [dBuV]</th><th>Margin(Ave.) [dB]</th><th>Margin(QP) [dB]</th></tr><tr><td>0.1503</td><td>45</td><td>27.1</td><td>10</td><td>55</td><td>37.1</td><td>VB</td><td>66</td><td>56</td><td>11</td><td>18.9</td></tr><tr><td>13.8942</td><td>29.1</td><td>27.6</td><td>10.7</td><td>39.8</td><td>38.3</td><td>VB</td><td>60</td><td>50</td><td>20.2</td><td>11.7</td></tr></table>											Frequency [MHz]	Meter Reading (Ave.)[dBuV]	Meter Reading (QP)[dBuV]	Factor [dB]	Level(Ave.) [dBuV]	Level(QP) [dBuV]	Line	Limit(Ave.) [dBuV]	Limit(QP) [dBuV]	Margin(Ave.) [dB]	Margin(QP) [dB]	0.1503	45	27.1	10	55	37.1	VB	66	56	11	18.9	13.8942	29.1	27.6	10.7	39.8	38.3	VB	60	50	20.2	11.7
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RADIATED EMISSION																																											
Model Name : PBA50F-12			Temp. : 25 degreeC																																								
Model No. :			Humi. : 44 %																																								
Serial No. :			Date : 2004/2/3 17:44																																								
Points : 2			Test Equip. : R3132,ESPC																																								
Detector : PEAK/QP			Load Line : 150 mm																																								
Polarization : Hori. & Vert.			Comment :																																								
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Limit: [EN 55022] Class B<3m>																																											
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<table><tr><th>Frequency [MHz]</th><th>MeterReading (QP)[dBuV]</th><th>Ant. Type</th><th>Antenna Factor[dB/m]</th><th>Cable & Preamp[dB]</th><th>Level(QP) [dBuV/m]</th><th>Angle [°]</th><th>Height[cm]</th><th>Polar.</th><th>Limit [dBuV/m]</th><th>Margin [dB]</th></tr><tr><td>144.027</td><td>43.8</td><td>BL</td><td>10.7</td><td>-24.6</td><td>29.9</td><td>177</td><td>154</td><td>Hori.</td><td>40</td><td>10.1</td></tr><tr><td>106.333</td><td>42.2</td><td>BL</td><td>10.1</td><td>-25.9</td><td>26.4</td><td>129</td><td>141</td><td>Vert.</td><td>40</td><td>13.6</td></tr></table>											Frequency [MHz]	MeterReading (QP)[dBuV]	Ant. Type	Antenna Factor[dB/m]	Cable & Preamp[dB]	Level(QP) [dBuV/m]	Angle [°]	Height[cm]	Polar.	Limit [dBuV/m]	Margin [dB]	144.027	43.8	BL	10.7	-24.6	29.9	177	154	Hori.	40	10.1	106.333	42.2	BL	10.1	-25.9	26.4	129	141	Vert.	40	13.6
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