



## PBA600F EMI/EMS Test result

 September 16, 2004  
 Design engineering dep.
Approved : Takahiro UmedaPrepared : Haruki Morita

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	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	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	07-Aug-03		
Model	PBA600F-36						Temp.	25 degreeC		
Test	EMI Line conduction & Radiated emission						Humid.	45 %RH		
							Tested by	H.Morita		
LINE CONDUCTION										
Model Name : PBA600F-36			Temp. : 25							
Model No. :			Humi. : 45							
Serial No. :			Date : 2003/8/7 23:44							
Points : 7			Test Equip. : R3132,ESPC							
Detector : PEAK/QP/Ave.			Comment : H.Morita							
Line Mode : VA/VB			+36V 18A							
Power Supply : AC 230V 50Hz										
Limit1: [EN 55022] Class B(QP)										
Limit2: [EN 55022] Class B(Ave.)										
							Limit1(QP) Limit2(Ave.) VA(PEAK) VB(PEAK) VA(QP) VA(Ave.) VB(QP) VB(Ave.) AC 230V 50Hz +36V 18A			
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]
0.1535	29.2	33.7	9.8	39	43.5	VB	55.8	65.8	16.8	22.3
0.2083	36.2	36.7	9.8	46	46.5	VB	53.3	63.3	7.3	16.8
0.2787	32.1	35.3	9.8	41.9	45.1	VB	50.9	60.9	9	15.8
0.3392	30.8	30.4	9.8	40.6	40.2	VB	49.2	59.2	8.6	19
25.0055	22.2	30.4	10.4	32.6	40.8	VB	50	60	17.4	19.2
25.6775	25.2	32.2	10.4	35.6	42.6	VA	50	60	14.4	17.4
29.9887	23.9	30.4	10.5	34.4	40.9	VB	50	60	15.6	19.1
RADIATED EMISSION										
Model Name : PBA600F-36			Temp. : 25							
Model No. :			Humi. : 45							
Serial No. :			Date : 2003/8/7 23:38							
Points : 3			Test Equip. : R3132,ESPC							
Detector : PEAK/QP			Comment : H.Morita							
Polarization : Hori. & Vert.			+36V 18A							
Power Supply : AC 230V 50Hz										
Limit: [EN 55022] Class B<3m>										
							Limit(QP) Horizontal(PEAK) Vertical(PEAK) Horizontal(QP) Vertical(QP) AC 230V 50Hz +36V 18A			
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]
37.443	48.1	BL	14.4	-32.2	30.3	150	104	Vert.	40	9.7
76.56	58.3	BL	6.6	-31.9	33	32	137	Vert.	40	7
158.858	54.5	BL	10	-31.5	33	165	157	Hori.	40	7