



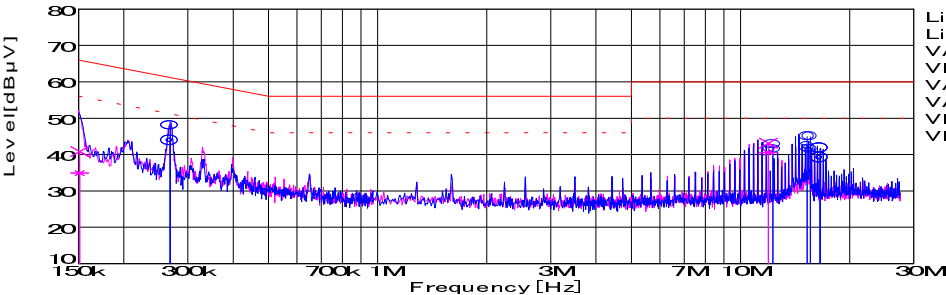
## PBA600F EMI/EMS Test result

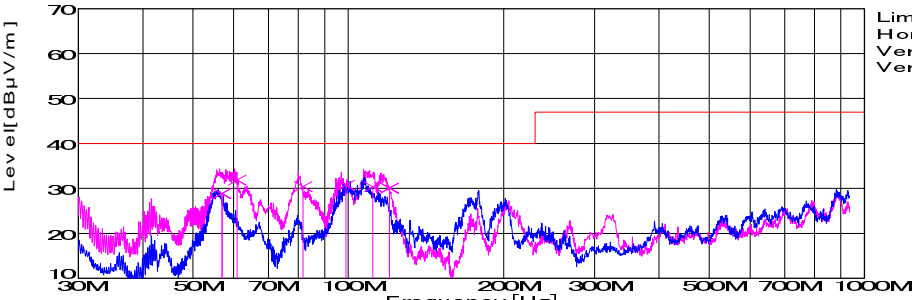
September 16, 2004  
Design engineering dep.

Approved : Takahiro Umeda

Prepared : 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	12-Sep-08		
Model	PBA600F-24						Temp.	25 degreeC		
Test	EMI Line conduction & Radiated emission						Humid.	40 %RH		
							Tested by	N.Hashimoto		
LINE CONDUCTION										
Model Name : PBA600F-24			Temp. : 25			Humi. : 40				
Model No. :			Date : 2008/9/12 14:10			Test Equip. : R3132,ESPC				
Serial No. :			Load Line : mm			Comment :				
Points : 7										
Detector : PEAK/QP/Ave.										
Line Mode : VA/VB										
Power Supply : 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.)			
							AC230V 50Hz +24V 27A			
Frequency [MHz]	Meter Reading (Ave.) [dBµV]	Meter Reading (QP) [dBµV]	Factor [dB]	Level (Ave.) [dBµV]	Level (QP) [dBµV]	Line	Limit (Ave.) [dBµV]	Limit (QP) [dBµV]	Margin (Ave.) [dB]	Margin (QP) [dB]
0.1511	24.9	30.8	10	34.9	40.8	VB	56	66	21.1	25.2
0.2681	33.8	37.9	10	43.8	47.9	VA	51.2	61.2	7.4	13.3
11.9367	29.9	32.5	10.6	40.5	43.1	VB	50	60	9.5	16.9
12.2713	30.9	32.1	10.6	41.5	42.7	VA	50	60	8.5	17.3
15.2571	31.4	34.3	10.7	42.1	45	VA	50	60	7.9	15
15.5889	30.7	34.2	10.7	41.4	44.9	VA	50	60	8.6	15.1
16.5808	28.3	30.9	10.7	39	41.6	VA	50	60	11	18.4

RADIATED EMISSION										
Model Name : PBA600F-24			Temp. : 25			Humi. : 40				
Model No. :			Date : 2008/9/12 13:47			Test Equip. : R3132,ESPC				
Serial No. :			Load Line : mm			Comment :				
Points : 6										
Detector : PEAK/QP										
Polarization : Vertical										
Power Supply : 230V 50Hz										
Limit: [EN 55022] Class B<3m>										
							Limit (QP) Horizontal (PEAK) Vertical (PEAK) Vertical (QP)			
							AC230V 50Hz +24V 27A			
Frequency [MHz]	Meter Reading (QP) [dBµV]	Ant. Type	Antenna Factor [dB/m]	Cable & Preamp [dB]	Level (QP) [dBµV/m]	Angle [°]	Height [cm]	Polar.	Limit [dBµV/m]	Margin [dB]
56.958	49.4	BL	5.2	-25.7	28.9	283	143	Vert.	40	11.1
60.911	52.3	BL	4.7	-25.2	31.8	7	125	Vert.	40	8.2
81.754	50.2	BL	7.4	-27.2	30.4	355	120	Vert.	40	9.6
98.966	49.5	BL	9.6	-28.4	30.7	13	119	Vert.	40	9.3
111.563	49.9	BL	10.7	-30.3	30.3	22	148	Vert.	40	9.7
120.181	50.1	BL	11	-31	30.1	2	158	Vert.	40	9.9