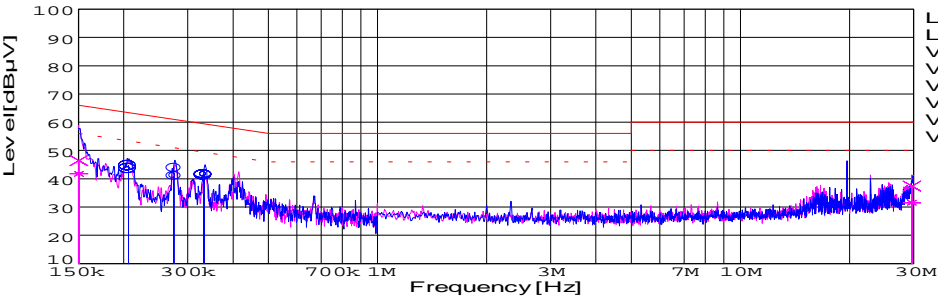


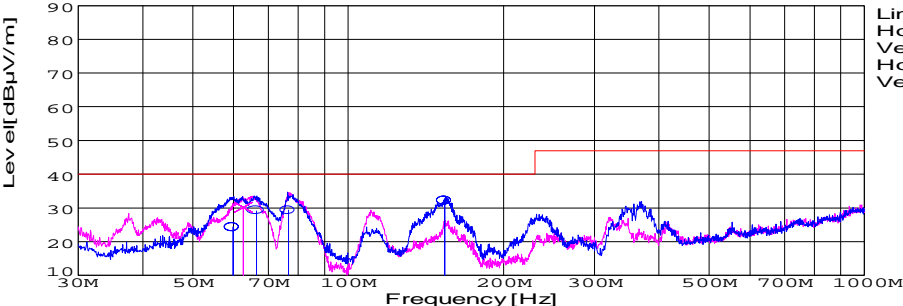


PBA600F EMI/EMS Test result

 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	19-Aug-03		
Model	PBA600F-3R3						Temp.	25 degreeC		
Test	EMI Line conduction & Radiated emission						Humid.	45 %RH		
							Tested by	H.Morita		
LINE CONDUCTION										
Model Name : PBA600F-3R3			Temp. : 25							
Model No. :			Hum. : 45							
Serial No. :			Date : 2003/8/19 23:03							
Points : 5			Test Equip. : R3132,ESPC							
Detector : PEAK/QP/Ave.			Comment : H.Morita							
Line Mode : VA/VB			+3.3V 120A							
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)		VB(QP)	
							VA(Ave.)		VB(Ave.)	
							+ X o o			
							AC 230V 50Hz			
							+3.3V 120A			
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]
0.1504	31.9	36.6	9.8	41.7	46.4	VB	56	66	14.3	19.6
0.206	33.6	34.8	9.8	43.4	44.6	VA	53.4	63.4	10	18.8
0.2747	31.1	34	9.8	40.9	43.8	VA	51	61	10.1	17.2
0.3325	31.7	31.4	9.8	41.5	41.2	VA	49.4	59.4	7.9	18.2
29.6903	21	26.9	10.5	31.5	37.4	VB	50	60	18.5	22.6

RADIATED EMISSION												
Model Name : PBA600F-3R3			Temp. : 25									
Model No. :			Hum. : 45									
Serial No. :			Date : 2003/8/19 23:25									
Points : 5			Test Equip. : R3132,ESPC									
Detector : PEAK/QP			Comment : H.Morita									
Polarization : Hori. & Vert.			+3.3V 120A									
Power Supply : AC 230V 50Hz												
Limit: [EN 55022] Class B<3m>												
							Limit(QP)		Horizontal(PEAK)		Vertical(PEAK)	
							Horizontal(QP)		Vertical(QP)			
							+ o					
							AC 230V 50Hz					
							+3.3V 120A					
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]		
59.888	51.6	BL	4.7	-32	24.3	80	121	Hori.	40	15.7		
62.658	57.3	BL	4.8	-32	30.1	345	116	Vert.	40	9.9		
66.48	56.1	BL	5	-32	29.1	28	129	Hori.	40	10.9		
76.617	54.7	BL	6.6	-31.9	29.4	288	148	Hori.	40	10.6		
153.895	53.3	BL	10.3	-31.5	32.1	110	155	Hori.	40	7.9		