



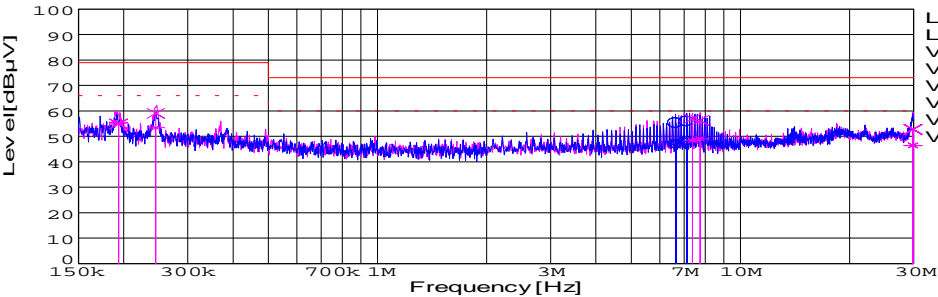
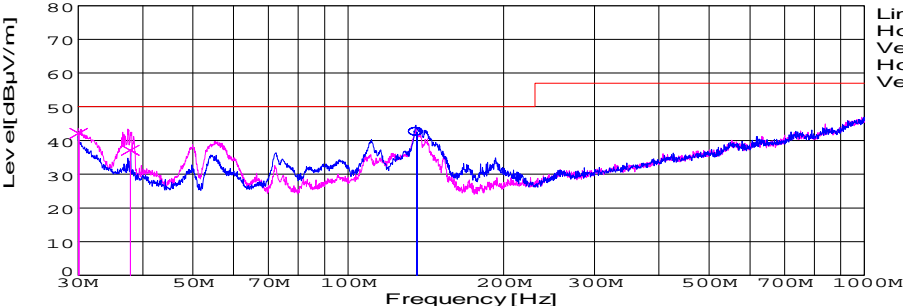
# PBA1500F EMI/EMS Test result

September 16, 2004  
Design engineering dep.

Approved : Takafuro Yamada

Prepared : Tsunasa Sugimoto

No.	Test item	Conditions	Conditions of Acceptability	Result
1	Line conduction	(1) Rated input(AC100V,230V) (2) Rated load (3) Ambient temp. $25\pm 10^{\circ}\text{C}$	(1)Meets the undermentioned standard. FCC Part15 classA , VCCI classA CISPR22 classA , EN55011-A	OK
2	Radiated emission	(1) Rated input(AC100V,230V) (2) Rated load (3) Ambient temp. $25\pm 10^{\circ}\text{C}$	(1)Meets the undermentioned standard. FCC Part15 classA , VCCI classA CISPR22 classA , EN55011-A	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	10-Mar-03			
Model	PBA1500F-7R5						Temp.	25 degreeC			
Test	EMI Line conduction & Radiated emission						Humid.	45 %RH			
							Tested by	T.Kubota			
LINE CONDUCTION											
Model Name			PBA1500F-7R5			Temp.			25		
Model No.						Humi.			45		
Serial No.						Date			2003/3/10 19:13		
Points			7			Test Equip.			R3132,ESPC		
Detector			PEAK/QP/Ave.			Comment			T.Kubota		
Line Mode			VA/VB			+7.5V 200A					
Power Supply			AC 230V 50Hz								
Limit1: [EN 55011] Class A Gr.1(QP)											
Limit2: [EN 55011] Class A Gr.1(Ave.)											
							Limit1(QP) Limit2(Ave.) VA(PEAK) VB(PEAK) VA(QP) VA(Ave.) VB(QP) VB(Ave.) AC 230V 50Hz +7.5V 200A				
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]	
0.1935	45.5	45.1	9.8	55.3	54.9	VB	66	79	10.7	24.1	
0.245	43.6	49.3	9.8	53.4	59.1	VB	66	79	12.6	19.9	
6.6364	37	45.1	10	47	55.1	VA	60	73	13	17.9	
7.1249	38.1	45.6	10.1	48.2	55.7	VA	60	73	11.8	17.3	
7.3715	38.2	46.8	10.1	48.3	56.9	VB	60	73	11.7	16.1	
7.74	39	46.2	10.1	49.1	56.3	VB	60	73	10.9	16.7	
29.8909	35.9	42.3	10.5	46.4	52.8	VB	60	73	13.6	20.2	
RADIATED EMISSION											
Model Name			PBA1500F-7R5			Temp.			25		
Model No.						Humi.			45		
Serial No.						Date			2003/3/10 18:47		
Points			3			Test Equip.			R3132,ESPC		
Detector			PEAK/QP			Comment			T.Kubota		
Polarization			Hori. & Vert.			+7.5V 200A					
Power Supply			AC 230V 50Hz								
Limit: [EN 55011] Class A Group 1<3m>											
							Limit(QP) Horizontal(PEAK) Vertical(PEAK) Horizontal(QP) Vertical(QP) AC 230V 50Hz +7.5V 200A				
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]	
30.077	56.2	BL	18.2	-32.3	42.1	159	102	Vert.	50	7.9	
37.831	55.1	BL	14.2	-32.2	37.1	124	110	Vert.	50	12.9	
135.863	63.1	BL	11	-31.6	42.5	51	158	Hori.	50	7.5	