



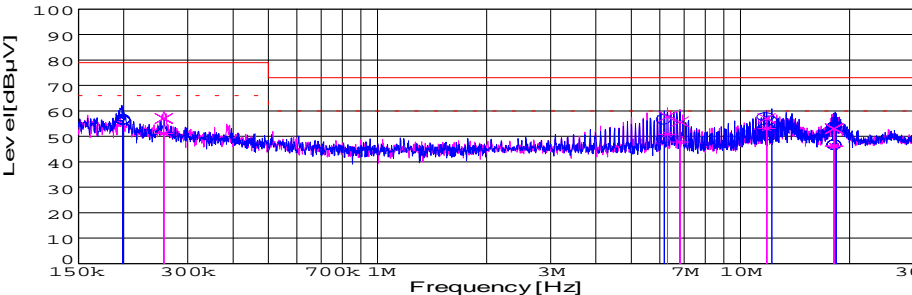
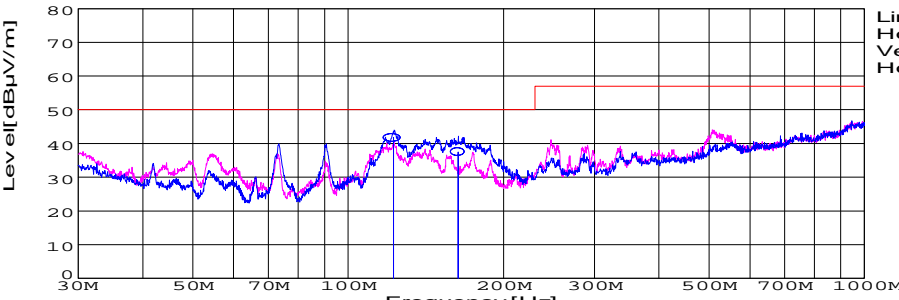
PBA1500F EMI/EMS Test result

September 16, 2004
Design engineering dep.

Approved : Takafuro Yamada

Prepared : Tsunehisa 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-48						Temp.	25 degreeC				
Test	EMI Line conduction & Radiated emission						Humid.	45 %RH				
							Tested by	T.Kubota				
LINE CONDUCTION												
Model Name		PBA1500F-48				Temp.	: 25					
Model No.						Humi.	: 45					
Serial No.						Date	: 2003/3/10 15:40					
Points		10				Test Equip.	: R3132,ESPC					
Detector		PEAK/QP/Ave.				Comment	: T.Kubota					
Line Mode		VA/VB				+48V 35A						
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 +48V 35A					
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]		
0.1992	46.6	46.1	9.8	56.4	55.9	VA	66	79	9.6	23.1		
0.2578	41.4	47.2	9.8	51.2	57	VB	66	79	14.8	22		
6.1667	38.6	46.5	10	48.6	56.5	VA	60	73	11.4	16.5		
6.2976	40.8	47.8	10	50.8	57.8	VB	60	73	9.2	15.2		
6.8089	37.8	45.7	10	47.8	55.7	VB	60	73	12.2	17.3		
11.8167	42.6	47	10.1	52.7	57.1	VA	60	73	7.3	15.9		
11.8153	43	46.9	10.1	53.1	57	VB	60	73	6.9	16		
12.2042	40.2	46.1	10.1	50.3	56.2	VA	60	73	9.7	16.8		
RADIATED EMISSION												
Model Name		PBA1500F-48				Temp.	: 25					
Model No.						Humi.	: 45					
Serial No.						Date	: 2003/3/10 14:47					
Points		2				Test Equip.	: R3132,ESPC					
Detector		PEAK/QP				Comment	: T.Kubota					
Polarization		Horizontal				+48V 35A						
Power Supply		AC 230V 50Hz										
Limit: [EN 55011] Class A Group 1<3m>												
							Limit(QP) Horizontal(PEAK) Vertical(PEAK) Horizontal(QP)					
							AC 230V 50Hz +48V 35A					
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]		
122.4	62.4	BL	11	-31.7	41.7	88	157	Hori.	50	8.3		
163.336	59.5	BL	9.5	-31.5	37.5	26	152	Hori.	50	12.5		