



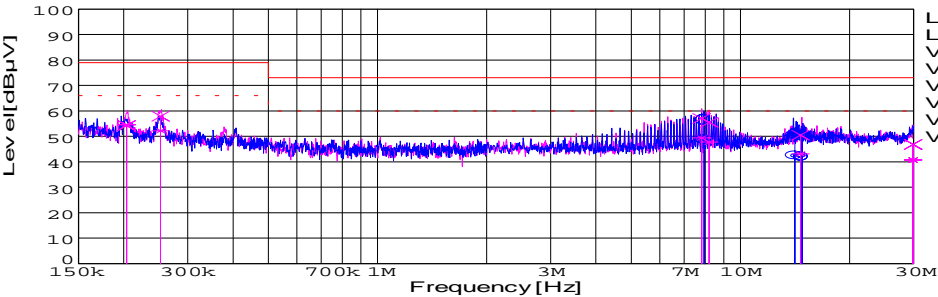
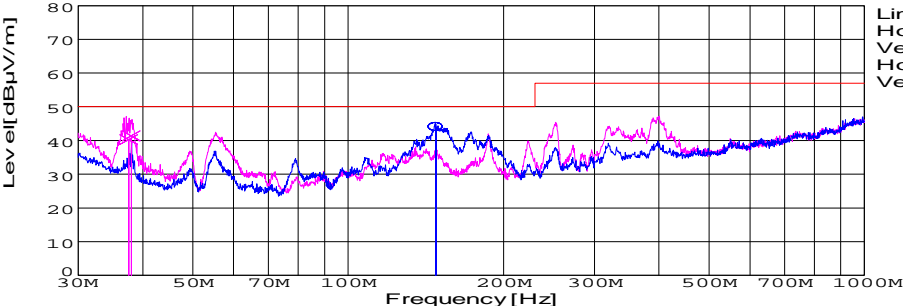
# PBA1500F EMI/EMS Test result

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±10°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±10°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±10°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±10°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±10°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±10°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±10°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±10°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±10°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. -±10% variation at 15 minutes (2) Rated load (3) Ambient temp. 25±10°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-15						Temp.	25 degreeC		
Test	EMI Line conduction & Radiated emission						Humid.	45 %RH		
							Tested by	T.Kubota		
LINE CONDUCTION										
Model Name : PBA1500F-15			Temp. : 25							
Model No. :			Humi. : 45							
Serial No. :			Date : 2003/3/10 22:37							
Points : 9			Test Equip. : R3132,ESPC							
Detector : PEAK/QP/Ave.			Comment : T.Kubota							
Line Mode : VA/VB			+15V 100A							
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 +15V 100A			
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]
0.2037	44.7	44.5	9.8	54.5	54.3	VB	66	79	11.5	24.7
0.2527	42.4	48	9.8	52.2	57.8	VB	66	79	13.8	21.2
7.8258	39.2	46.9	10.1	49.3	57	VB	60	73	10.7	16
7.9505	38.5	46.3	10.1	48.6	56.4	VA	60	73	11.4	16.6
8.2072	37.6	45.4	10.1	47.7	55.5	VB	60	73	12.3	17.5
14.1314	32.1	40.5	10.2	42.3	50.7	VA	60	73	17.7	22.3
14.6425	32.9	40.3	10.2	43.1	50.5	VB	60	73	16.9	22.5
14.7635	31.8	40	10.2	42	50.2	VA	60	73	18	22.8
RADIATED EMISSION										
Model Name : PBA1500F-15			Temp. : 25							
Model No. :			Humi. : 45							
Serial No. :			Date : 2003/3/10 22:22							
Points : 3			Test Equip. : R3132,ESPC							
Detector : PEAK/QP			Comment : T.Kubota							
Polarization : Hori. & Vert.			+15V 100A							
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 +15V 100A			
Frequency [MHz]	Meter Reading (QP) [dBuV]	Ant. Type	Antenna Factor [dB/m]	Cable & Preamp [dB]	Level(QP) [dBuV/m]	Angle [°]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
37.586	58.2	BL	14.3	-32.2	40.3	124	110	Vert.	50	9.7
38.013	59.5	BL	14.1	-32.2	41.4	340	101	Vert.	50	8.6
147.737	64.9	BL	10.7	-31.6	44	216	157	Hori.	50	6