



PBA1500F EMI/EMS Test result

September 16, 2004
Design engineering dep.

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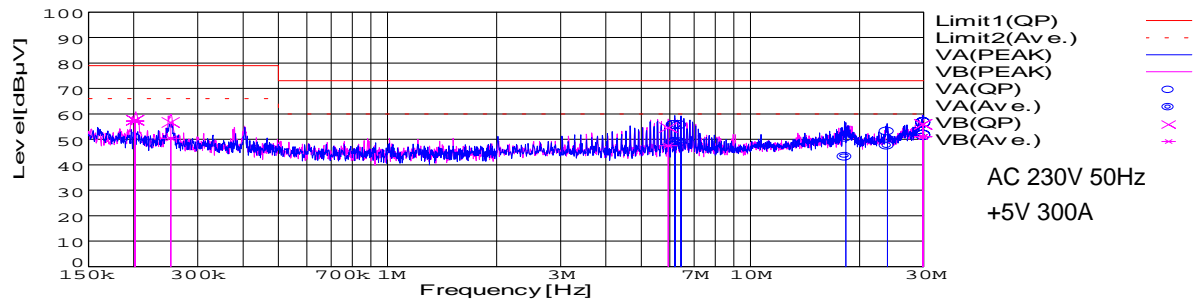
No.	Test item	Conditions	Conditions of Acceptability	Result
1	Line conduction	(1) Rated input(AC100V,230V) (2) Rated load (3) Ambient temp. $25\pm 10^{\circ}\text{C}$	(1)Meets the undermentioned standard. FCC Part15 classA , VCCI classA CISPR22 classA , EN55011-A	OK
2	Radiated emission	(1) Rated input(AC100V,230V) (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	11-Mar-03
Model	PBA1500F-5		Temp.	25 degreeC
Test	EMI Line conduction & Radiated emission		Humid.	45 %RH
			Tested by	T.Kubota

LINE CONDUCTION

Model Name : PBA1500F-5
 Model No. :
 Serial No. :
 Points : 9
 Detector : PEAK/QP/Ave.
 Line Mode : VA/VB
 Power Supply : AC 230V 50Hz
 Limit1: [EN 55011] Class A Gr.1(QP)
 Limit2: [EN 55011] Class A Gr.1(Ave.)

Temp. : 25
 Humi. : 45
 Date : 2003/3/11 15:57
 Test Equip. : R3132,ESPC
 Comment : T.Kubota
 +5V 300A

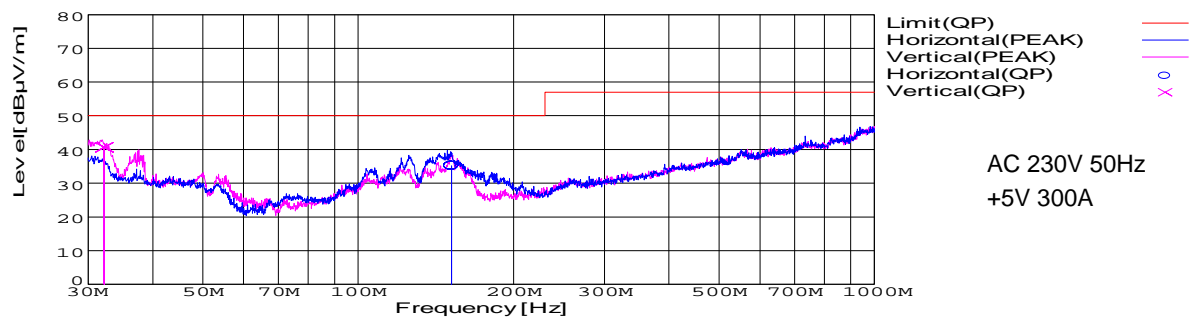


Frequency [MHz]	Meter Reading (Ave.) [dBuV]	Meter Reading (QP) [dBuV]	Factor [dB]	Level(Ave.) [dBuV]	Level(QP) [dBuV]	Line	Limit(Ave.) [dBuV]	Limit(QP) [dBuV]	Margin(Ave.) [dB]	Margin(QP) [dB]
0.2016	47.4	47.7	9.8	57.2	57.5	VB	66	79	8.8	21.5
0.2528	40.6	46.8	9.8	50.4	56.6	VB	66	79	15.6	22.4
5.9396	37.5	44.6	10	47.5	54.6	VB	60	73	12.5	18.4
6.1889	38.5	45.6	10	48.5	55.6	VA	60	73	11.5	17.4
6.4434	38.8	45.5	10	48.8	55.5	VA	60	73	11.2	17.5
18.3309	32.9	40.1	10.2	43.1	50.3	VA	60	73	16.9	22.7
23.8591	37.1	42.6	10.3	47.4	52.9	VA	60	73	12.6	20.1
29.9229	40.5	45.4	10.5	51	55.9	VB	60	73	9	17.1

RADIATED EMISSION

Model Name : PBA1500F-5
 Model No. :
 Serial No. :
 Points : 2
 Detector : PEAK/QP
 Polarization : Hori. & Vert.
 Power Supply : AC 230V 50Hz
 Limit: [EN 55011] Class A Group 1<3m>

Temp. : 25
 Humi. : 45
 Date : 2003/3/11 15:40
 Test Equip. : R3132,ESPC
 Comment : T.Kubota
 +5V 300A



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]
32.226	55.7	BL	17.1	-32.2	40.6	202	104	Vert.	50	9.4
151.664	56	BL	10.5	-31.5	35	42	157	Hori.	50	15