



## PBA30F EMI/EMS Test result

November 8, 2005  
Design engineering dep.

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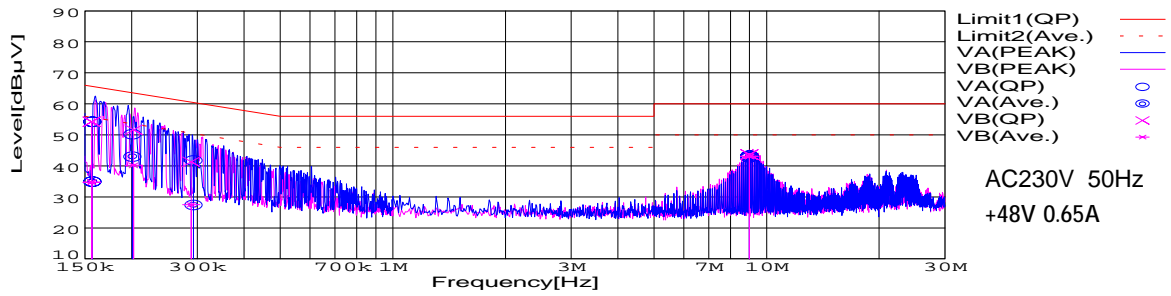
| No. | Test item   | Conditions   | Conditions of Acceptability   | Result |
|-----|---|--|---|--------|
| 1   | Line conduction   | (1) Rated input(AC100V,120V,230V)<br>(2) Rated load<br>(3) Ambient temp. $25 \pm 10^{\circ}\text{C}$   | (1)Meets the undermentioned standard.<br>FCC Part15 classB , VCCI classB<br>CISPR22 classB , EN55022-B<br>EN55011-B                                     | OK     |
| 2   | Radiated emission   | (1) Rated input(AC100V,120V,230V)<br>(2) Rated load<br>(3) Ambient temp. $25 \pm 10^{\circ}\text{C}$   | (1)Meets the undermentioned standard.<br>FCC Part15 classB , VCCI classB<br>CISPR22 classB , EN55022-B<br>EN55011-B                                     | OK     |
| 3   | Harmonic current<br>(EN61000-3-2)   | (1) Rated input (AC100V,230V)<br>(2) Load 0 - Rated load<br>(3) Ambient temp. $25 \pm 10^{\circ}\text{C}$  | (1)Meets the undermentioned standard.<br>EN61000-3-2 classA   | OK     |
| 4   | Static electricity immunity test<br>(EN61000-4-2)   | (1) Rated input (AC230V)<br>(2) Rated load<br>(3) Ambient temp. $25 \pm 10^{\circ}\text{C}$<br>(4) Contact discharge voltage 8[kV]<br>(Level 4)  | (1)No protection circuit failure.<br>(2)No output voltage drop with control circuit failure.<br>(3)No any other function failure                        | OK     |
| 5   | Radiated, radio-frequency,<br>electromagnetic field immunity test<br>(EN61000-4-3)          | (1) Rated input (AC230V)<br>(2) Rated load<br>(3) Ambient temp. $25 \pm 10^{\circ}\text{C}$<br>(4)Testing field strength 10[V/m]<br>(Level 3)  | (1)No protection circuit failure.<br>(2)No output voltage drop with control circuit failure.<br>(3)No any other function failure                        | OK     |
| 6   | Electrical fast transient/<br>burst immunity test<br>(EN61000-4-4)                          | (1) Rated input (AC230V)<br>(2) Rated load<br>(3) Ambient temp. $25 \pm 10^{\circ}\text{C}$<br>(4) Test peak voltage 4[kV]<br>(Level 4)  | (1)No protection circuit failure.<br>(2)No output voltage drop with control circuit failure.<br>(3)No any other function failure                        | OK     |
| 7   | Surge immunity test<br>(EN61000-4-5)  | (1) Rated input (AC230V)<br>(2) Rated load<br>(3) Ambient temp. $25 \pm 10^{\circ}\text{C}$<br>(4) Test voltage<br>Line to line 2[kV] (Level 3)<br>Line to earth 4[kV] (Level 4)   | (1)The power supply is not stop<br>(2)Circuit does not malfunction.<br>(3)No abnormality of the insulation destruction etc.<br>(4)Parts are no damaged. | OK     |
| 8   | Immunity to conducted disturbances,<br>induced by radio-frequency fields<br>(EN61000-4-6)   | (1) Rated input (AC230V)<br>(2) Rated load<br>(3) Ambient temp. $25 \pm 10^{\circ}\text{C}$<br>(4) Voltage level (e.m.f.) 10[V]<br>(Level 3)   | (1)No protection circuit failure.<br>(2)No output voltage drop with control circuit failure.<br>(3)No any other function failure                        | OK     |
| 9   | Power frequency magnetic field<br>immunity test<br>(EN61000-4-8)                            | (1) Rated input (AC230V)<br>(2) Rated load<br>(3) Ambient temp. $25 \pm 10^{\circ}\text{C}$<br>(4) Magnetic field strength 30[A/m]<br>(Level 4)  | (1)No protection circuit failure.<br>(2)No output voltage drop with control circuit failure.<br>(3)No any other function failure                        | OK     |
| 10  | Voltage dips, short interruptions<br>and voltage variations immunity test<br>(EN61000-4-11) | (1) Rated input (AC230V)<br>-30% reduction at 10mS min.<br>-60% reduction at 100mS min<br>-95% reduction at 5S min.<br>- $\pm 10\%$ variation at 15 minutes<br>(2) Rated load<br>(3) Ambient temp. $25 \pm 10^{\circ}\text{C}$ | (1)No protection circuit failure.<br>(2)No output voltage drop with control circuit failure.<br>(3)No any other function failure                        | OK     |

| DATA SHEET |  | Date      | 27-Aug-05  |
|------------|--|-----------|------------|
| Model      | PBA30F-48                                  | Temp.     | 25 degreeC |
| Test       | EMI<br>Line conduction & Radiated emission | Humid.    | 45 %RH     |
|            |  | Tested by | K.Kosugi   |

#### LINE CONDUCTION

Model Name : PBA30F-48  
 Model No. :  
 Serial No. :  
 Points : 4  
 Detector : PEAK/QP/Ave.  
 Line Mode : VA/VB  
 Power Supply : AC 230V 50Hz  
 Limit1: [EN 55022] Class B(QP)  
 Limit2: [EN 55022] Class B(Ave.)

Temp. : 25 degreeC  
 Humi. : 45 %  
 Date : 2005/8/27 10:36  
 Test Equip. : R3132,ESPC  
 Load Line : 100 mm  
 Comment :

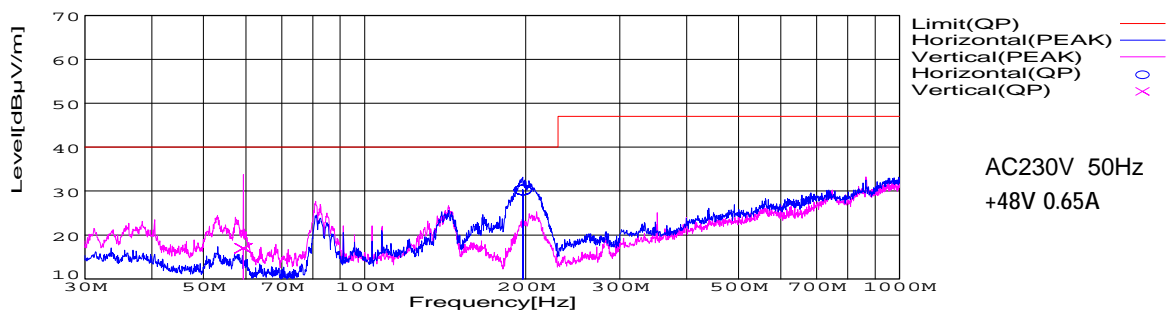


| Frequency [MHz] | Meter Reading (Ave.)[dBuV] | Meter Reading (QP)[dBuV] | Factor [dB] | Level(Ave.) [dBuV] | Level(QP) [dBuV] | Line | Limit(Ave.) [dBuV] | Limit(QP) [dBuV] | Margin(Ave.) [dB] | Margin(QP) [dB] |
|-----------------|----------------------------|--------------------------|-------------|--------------------|------------------|------|--------------------|------------------|-------------------|-----------------|
| 0.2929          | 17.4                       | 31.7                     | 10          | 27.4               | 41.7             | VA   | 50.5               | 60.5             | 23.1              | 18.8            |
| 0.1564          | 24.7                       | 44.2                     | 10          | 34.7               | 54.2             | VB   | 55.7               | 65.7             | 21                | 11.5            |
| 0.2025          | 30.2                       | 41.6                     | 10          | 40.2               | 51.6             | VB   | 53.5               | 63.5             | 13.3              | 11.9            |
| 8.9995          | 32.6                       | 33.1                     | 10.5        | 43.1               | 43.6             | VB   | 50                 | 60               | 6.9               | 16.4            |

#### RADIATED EMISSION

Model Name : PBA30F-48  
 Model No. :  
 Serial No. :  
 Points : 2  
 Detector : PEAK/QP  
 Polarization : Hori. & Vert.  
 Power Supply : AC 230V 50Hz  
 Limit: [EN 55022] Class B<3m>

Temp. : 25 degreeC  
 Humi. : 45 %  
 Date : 2005/8/27 11:57  
 Test Equip. : R3132,ESPC  
 Load Line : 100 mm  
 Comment :



| 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] |
|-----------------|-------------------------|-----------|----------------------|--------------------|--------------------|-----------|------------|--------|----------------|-------------|
| 197.728         | 45.4                    | BL        | 8.3                  | -23.5              | 30.2               | 92        | 135        | Hori.  | 40             | 9.8         |
| 59.324          | 35.3                    | BL        | 4.5                  | -22.8              | 17                 | 138       | 107        | Vert.  | 40             | 23          |