

EMC ADMINISTRATIVE
CO-OPERATION WORKING GROUP
5th EMC Market Surveillance Campaign 2012/2013

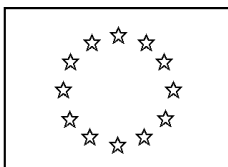


REPORT
ON THE 5TH JOINT CROSS-BORDER
EMC MARKET SURVEILLANCE CAMPAIGN
(2012/2013)

SWITCHING POWER SUPPLIES

(Intended for use by laptop computers or similar devices)

Final version



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A. EXECUTIVE SUMMARY

As a result of discussions at the 31st EMC Administrative Cooperation Working Group (EMC ADCO) held on the 11th December 2011 in Brussels, and following a risk assessment procedure it was agreed that the fifth joint cross-border EMC market surveillance campaign should assess the compliance of switching power supplies intended for use by laptop computers or similar devices.

This report provides an overview of the findings and makes recommendations on next steps and future actions.

The primary purpose of the campaign was to determine

- Compliance with the harmonised standards on emissions;
- Compliance with pre-selected administrative requirements of the EMC Directive;
- Improve information exchange between market surveillance authorities;
- Raise the profile of EMC to consumers and stakeholders.

Nineteen national Market Surveillance Authorities ('MSA') EMC ADCO members participated in the campaign, 136 products were assessed between the 1st September 2012 and the 30th March 2013. In general, the level of compliance with the administrative and technical requirements was considered low. Overall, only 32 (24%) of the Equipment Under Test ('EUT') were assessed as compliant.

Based on this campaign EMC ADCO has formulated conclusions and recommendations which can be found in Chapter D of this report.

Administrative compliance

The results of the administrative assessment of EUT showed:

- Approximately one third (31%) were considered to be administratively compliant.
- All had the CE marking, 119 (88%) were assessed as meeting the correct formatting requirements.
- Declarations of Conformity (DoC) were available for 92 EUT. 32 of the supplied DoC had non-compliances. Overall, 50% of assessed DoC was acceptable.
- Approximately half of the requested 47 Technical Documentation ('TD') were supplied (51%). Of those, 19 were found to be compliant (40%).

Technical compliance with harmonised standards

For the purposes of this campaign, technical compliance is to be understood as compliance with an applicable harmonised standard¹.

The results of the technical assessment of switching power supplies intended for use by laptop computers or similar devices showed that approximately half (56%) were compliant.

¹ 'harmonised standard' means a European standard adopted on the basis of a request made by the Commission for the application of Union harmonisation legislation (Regulation (EU) No 1025/2012).



B. ELEMENTS OF THE CAMPAIGN

1. Reasons for the campaign

Switching power supplies used for laptop computers and similar portable consumer electronic products have been identified as the source of interference to radio communications across Europe. Recent market trends indicated a proliferation in the sales of laptop and tablet computers and similar portable products.

The nature and use of this type of product resulted in concerns being raised as to the level of compliance in this sector.

As a result of discussions at the 31st EMC ADCO held on the 11th December 2011 in Brussels, and following an impact assessment procedure it was agreed that the fifth joint cross-border EMC market surveillance campaign should assess the compliance of switching power supplies intended for use by laptop computers or similar devices.

2. Scope of the campaign

The primary purpose of the campaign was to assess the compliance of samples taken from the market with the provisions of the EMC Directive. Administrative compliance was checked against the CE marking and Declaration of Conformity. General marking requirements, user information and Technical documentation were assessed on an optional basis. For the purposes of this campaign it was decided to assess compliance with the EMC essential requirements (emissions) by testing against a relevant harmonised standard². Immunity aspects were not assessed.

The campaign was also intended to provide MSA with the opportunity to participate in EMC market surveillance, to improve the exchange of information and to raise economic operator and consumer's awareness of the need for conformity with the requirements of the EMC Directive particularly for the EUT.

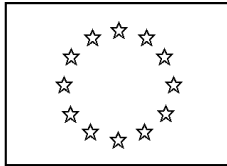
It was agreed that following the analysis of the results of the campaign, a report would be prepared and presented to the EMC Working Party for subsequent publication by the Commission. The present document constitutes the report of the campaign.

3. Participation in the campaign

Participation in the campaign was voluntary, and was open to all members of EMC ADCO. Each MSA was responsible for the costs of obtaining the EUT and tests.

Nineteen European countries participated in the campaign: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Finland, Germany, Hungary, Ireland, Lithuania, Luxembourg, Malta, The Netherlands, Poland, Romania, Spain, Sweden, Switzerland and the United Kingdom.

² EUT were assessed against harmonised Standards displayed in the DoC (if available). If no DoC was available assessment was carried out against EN 61204-3:2000



4. Timing

The campaign commenced on the 1st September 2012. The information gathering, testing and data reporting phases of the campaign were of seven months, ending on the 30th March 2013. Within that period, MSA carried out their actions to their own timescales.

5. Sampling

The aim was to obtain the broadest possible view of the EUT on the European market. Therefore, a quasi-random sampling process was applied to include a wide range of prices, sources and manufacturers (national, EEA, and imported from third countries). Double sampling was avoided by sharing information between participating MSA. Participants were asked to test between 5 and 10 EUT.

6. Documents

A Code of Practice was drawn up to provide guidance and a common understanding of the purpose of the campaign and to ensure, as far as possible, the adoption of harmonised practices during the carrying out of the campaign. The results of the assessment of each EUT were recorded on a common electronic data input form for EMC (EMC DIF).

7. Tests performed

The measurement of the emissions on the selected switching power supplies used the appropriate tests from EN 61204-3 harmonised standard or EN 55022 and EN 61000-3-2 harmonised standards according to the DoC of manufacturer. For the measurement of the immunity aspects of products, EN 55024 was applied. If the harmonised standard EN 61204-3 was used in the conformity assessment procedure a separate display of the EN 55024 is not necessary, as the harmonised standard EN 61204-3 covers also the aspects of immunity³.

Current harmonised standard for emissions: EN 61204-3:2000 *Low voltage power supplies, d.c. output - Part 3: Electromagnetic compatibility (EMC)*, or EN 55022:2010 *Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement*

Until 2013-12-01 could be used also EN 55022:2006 with amendment EN 55022:2006/A1:2007.

EN 55022:1998+A1:200+A2:2003 could appear in DoC for products placed on the market before 2011-10-01.

Both harmonised standards have as a specific feature a definition of two different classes (classes A and B). Class B is intended primary for use in the domestic environment. Apparatus - for which compliance with the essential requirements is not ensured in domestic/residential areas (like for class A products) - shall be accompanied by a clear indication of this restriction of use in a recognisable form prior to purchase.

³ Measurement uncertainty of the harmonised standard was taken into account



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Current harmonised standard for harmonics: EN 61000-3-2:2006 *Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)* with amendments: EN 61000-3-2:2006/A1:2009 and EN 61000-3-2:2006/A2:2009.

EN 61000-3-2:2006 could be used until 2012-07-01.

If the harmonised standard EN 61204-3 was used in the conformity assessment procedure a separate display of the EN 61000-3-2 is not necessary, as the harmonised standards EN 61204-3 covers also the aspects of harmonics (with the same limits).

The harmonized standard requires that EUT fulfill the class D limits where the rated power is at least 75 Watts. In the case of power consumption is below 75 Watts there are no limit.

Current harmonised standard for immunity (optional): EN 55024:2010 *Information technology equipment - Immunity characteristics - Limits and methods of measurement*.

EN 55024:1998+A1:2001+A2:2003 could be used until 2013-12-01

If the harmonised standard EN 61204-3 was used in the conformity assessment procedure a separate display of the EN 55024 is not necessary, as the harmonised standards EN 61204-3 covers also the aspects of immunity.



C. RESULTS

1. Number and origin of products

MSA had to report on the country where EUT has been manufactured; the information “Made in” present either on the EUT itself, on its packaging or on the accompanying documents and finally from the DoC (where available). The “country of origin” therefore refers not generally to the economic operator who is responsible for placing the product on the EU market.

The vast majority of EUT indicated that they were manufactured in China. Many were imported into Europe and marketed under the importers brand name. It was clear that some importers were not aware of or ignore their responsibilities under the EMC regime.

A total of a hundred and thirty-six (136) products were selected and evaluated, as follows

| Table 1: Number and origin of products | | | |
|--|--|--|-----------|
| Country of origin | Number of evaluated switching power supplies | Level of fulfilling the standards and administrative requirements: number % | |
| China/ Taiwan * | 124 | 31 | 25 |
| EU | 2 | 1 | 50 |
| Other countries** | 1 | 0 | 0 |
| Unknown | 9 | 0 | 0 |
| All origins | 136 | 32 | 24 |

* Three products from Taiwan

** One product from Thailand

Conclusion: switching power supplies was mainly of Chinese (91%) and unknown origin. Due to the small number of European products, no statistically valid conclusions can be extracted on this group.

2. Administrative compliance

The EUT were assessed for the presence and format of CE marking, the availability and compliance of the DoC and traceability aspects (technical Documentation was checked on a voluntary basis).

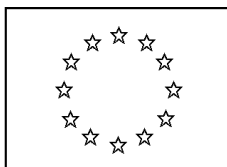
About a third of the EUT fulfilled the assessed administrative requirements.

| Table 2: Compliance with administrative requirements | | |
|--|------------------|---------------|
| Number checked | Number compliant | Compliant (%) |
| 136 | 42 | 31 |

2.1 CE marking

All 136 EUT were CE marked, 17 did not fulfil the formatting requirements (13 layout and/or 5 height), 119 EUT (88%) were assessed as compliant.

| Table 3: Compliance with CE marking requirements | | | | |
|--|---------------------------|---------------------------|-------------------------------|-----------------------------------|
| Number assessed | Not fulfil CE mark layout | Not fulfil CE mark height | Overall CE marking compliance | Overall CE marking compliance (%) |
| 136 | 13 | 5 | 119 | 88 |



2.2 EC Declarations of Conformity

MSA assessed 121 EUT against the DoC requirements (15 were not checked). From 121 requested DoC 92 were made available. From those 60 were found compliant, this represents 50% overall compliance.

| Table 4: Compliance with DoC requirements | | | | |
|--|----------------------|--------------------------|----------------------|-----------------------------------|
| Number assessed | DoC available | DoC available (%) | DoC compliant | Overall DoC compliance (%) |
| 121 | 92 | 76 | 60 | 50 |

| Table 5: Compliance rate of the DoC requirements | |
|--|----------------------------|
| Requirements for DoC | Compliance rate (%) |
| Reference to EMCD 2004/108/EC | 98 |
| Identification of the apparatus | 94 |
| Name and address of the manufacturer | 93 |
| Name and address of authorised representatives (a r.) in the Community | 72 |
| Dated reference to the specifications | 94 |
| Date of declaration | 99 |
| Identity of the person empowered to bind the manufacturer or his a r. | 83 |
| Signature of the person empowered to bind the manufacturer or his a.r. | 88 |

Analyses of the name and address of the manufacturer and (if not located within EC/EEA/EFTA) name and address of the importer were made. 124 out of 136 EUT were manufactured in a third country. From those 92 DoC were made available.

| Table 6: Origin of the DoC | | | | |
|-----------------------------------|---|---|-------------------|------------------------|
| Number DoC available | DoC available for EUT from China | Country of DoC was issued in (responsible person): | | |
| | | China | EU country | Other country * |
| 92 | 84 | 23 | 54 | 7 |

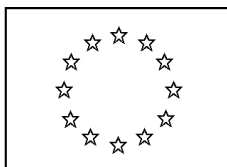
* 4 of these were not reported the Country where DoC was issued

2.3 Technical documentation (TD)

MSA requested TD for 47 of the 136 EUT, however 24 were supplied.

Of those 19 were found to be compliant. This represents 40% of the total EUT assessed against the TD requirements.

| Table 7: Compliance with TD requirements | | | | |
|---|---------------------|-------------------------|---------------------|-----------------------------------|
| Number assessed | TD available | TD available (%) | TD compliant | Overall DoC compliance (%) |
| 47 | 24 | 51 | 19 | 40 |



3. Compliance with harmonised standards

3.1 Emissions requirements

The measured result was compared directly with the limit in the harmonised standard without taking into account the measurement uncertainty. A failure was recorded if any emission exceeded a certain limit when measured with the appropriate detector.

134 EUT were assessed for emissions, 75 met the emission requirements (56%). The technical compliance rate of the products tested for emissions was as follows:

| Table 8: Compliance with the emissions requirements | | |
|---|------------------|-------------|
| Number tested | Number compliant | % compliant |
| 134* | 75 | 56 |

* One product was unable to test, and one was only pre-compliance tested

4. Other evaluations

4.1 DoC compliance vs. compliance with emissions requirements

EUT with a correct DoC had a higher rate of technical compliance than those with no or incorrect DoC.

| Table 9: DoC compliance vs. compliance with emissions requirements | | | |
|--|----------------|--|----------------------------------|
| DoC | Number of DoC* | Number of emissions compliant products | Emissions compliant products (%) |
| Not available | 29 | 13 | 45 |
| Available- Not correct | 32 | 13** | 41 |
| Available- correct | 60 | 40 | 67 |

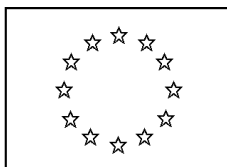
* 15 were not checked

** One was only pre-compliance tested (not included)

4.2 CE marking compliance vs. compliance with emissions requirements

EUT with correct CE marking had a higher rate of technical compliance (59%) than those which did not have a compliant CE marking.

| Table 10: CE marking compliance vs. compliance with emissions requirements | | | |
|--|--------------------|--|----------------------------------|
| CE marking | Number of products | Number of emissions compliant products | Emissions compliant products (%) |
| Not compliant | 17 | 5 | 29 |
| Compliant | 119 | 70 | 59 |



4.3 Technical documentation vs. compliance with emission requirements

EUT with a correct TD had a higher compliance rate (74%) than those with no or incorrect TD.

| Table 11: TD compliance vs. compliance with emissions requirements | | | |
|--|----------------|--|----------------------------------|
| TD | Number of EUT* | Number of emissions compliant products | Emissions compliant products (%) |
| Not available | 23 | 14 | 61 |
| Available-Not correct | 5 | 2 | 40 |
| Available-correct | 19 | 14 | 74 |

* 89 not checked

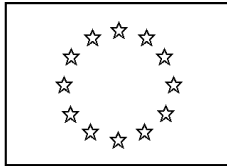
5. Overview of compliance

Table 12 summarises the overall compliance of EUT in terms of emissions against harmonised standards, overall administrative, CE marking and Declaration of Conformity requirements.

| Table 12: Overview of compliance | | | | | |
|----------------------------------|-------------|----------------|-------------------|----------------|---------|
| Number assessed | Overall (%) | Emissions (%)* | Administrative ** | | |
| | | | Overall adm. (%) | CE marking (%) | DoC (%) |
| 136 | 24 | 56 | 31 | 88 | 50 |

*Note: 134 technical assessment

** Note: 136 administrative assessment



D. CONCLUSIONS AND RECOMMENDATIONS

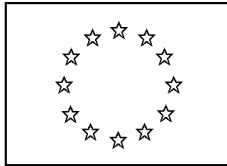
1. Conclusions

- The majority of EUT (91%) were purported to be of Chinese origin
- Approximately half (56%) of the EUT met the technical emissions compliance tests.
- Approximately a third (31%) of the EUT met the administrative requirements (as assessed).
- All assessed EUT (136) were CE marked (17 were incorrectly formatted). For the first time during five EMC Market surveillance campaigns all EUT were CE marked.
- Approximately a quarter (24%) of DoC were not provided, two thirds of the DoC provided (65%) were correct.
- There is a direct correlation between a compliant CE marking and technical compliance (+30%)
- There is a direct correlation between the availability of a correct DoC and technical compliance (+20%) and also the availability of a correct TD and technical compliance (+10%).
- Approximately three quarters (77%) of the EUT were assessed as non-compliant. This is very high.
- Much remains to be done by manufacturers in terms of the technical compliance of EUT.
- The campaign showed a good level of support between MSA and it should be noted that the number of participating MSA in this campaign has increased.
- Some MSA had difficulties to fill out the EMC DIF.
- The resource in conducting this type of campaign is significant. Activities including preparation (eg. drafting its Code of practice), coordination, tests and analysis of the results and the drafting of the report are carried out by EMC ADCO members supplemental to their national activities.

2. Recommendations

It is recommended that:

- The results of the campaign should be publicised widely throughout Europe and the other countries where the products originate. Publicity should target all economic operators in the area of consumer electronic equipment;
- MSA should take the results of this campaign into consideration when making their multi annual plan as stated in the Regulation (EC) 765/2008;
- An impact assessment procedure should be adopted for future campaigns, for the selection of suitable products;
- MSA who did not participate should be encouraged to join in future campaigns. Regulation (EC) 765/2008 promotes in article 25 this type of cooperation and actions between MSA.
- A similar campaign should be considered on the same basis after a certain period to assess the effect on the market;
- Trainings should be organised for Market surveillance staff that have to work with the EMC DIF in order to harmonise its use (also for information exchange). Referring to article 32 of the Regulation (EC) 765/2008 this may be financed by the Community.



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- The EMC DIF needs to be amended (already started). An appendix for future Market surveillance campaigns might be useful.
- For future campaigns, EMC ADCO should seek support from the Commission in accordance with article 32 of the Regulation (EC) 765/2008. This could include technical and administrative support.