

***Case No COMP/M.5255
– TDK/ EPCOS***

Only the English text is available and authentic.

**REGULATION (EC) No 139/2004
MERGER PROCEDURE**

Article 6(1)(b) NON-OPPOSITION
Date: 15/09/2008

***In electronic form on the EUR-Lex website under
document number 32008M5255***



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 15/09/2008

SG-Greffe(2008) D/205447

C(2008) 5205

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PUBLIC VERSION

MERGER PROCEDURE
ARTICLE 6(1)(b) DECISION

To the notifying party:

Dear Sir/Madam,

**Subject: Case No COMP/M.5255 – TDK/ EPCOS
Notification of 8 August 2008 pursuant to Article 4 of Council Regulation
No 139/2004¹**

1. On 8 August 2008, the Commission received a notification of a proposed concentration pursuant to Article 4 of Council Regulation (EC) No 139/2004 ("**Merger Regulation**") by which the undertaking TDK Corporation ("**TDK**", Japan) acquires within the meaning of Article 3(1)(b) of the Council Regulation control of the whole of the undertaking EPCOS AG ("**EPCOS**", Germany) by way of public bid announced on 31 July 2008.

I. THE PARTIES

2. **TDK** is a large industrial multi-business conglomerate. It is active in the development, production and sale of (i) electronic materials and components, including passive and electromechanical components and (ii) recording media including audiotapes, videotapes, CD-Rs, Minidiscs, DVDs and tape-based data storage media for computers.

¹ OJ L 24, 29.1.2004, p. 1.

3. **EPCOS** is active in the development, production and sale of electronic components, in particular passive electromechanical components. Within this field, EPCOS focuses mainly on the production of radio frequency ("*RF*") filters, piezo-actuators (for fuel injection) and circuit protection devices².

II. THE OPERATION/CONCENTRATION

4. The acquisition of sole control by TDK over EPCOS will take place through a voluntary takeover bid issued by TDK Germany³, a wholly-owned subsidiary of TDK, for all outstanding shares in EPCOS. For an interim period, shares in EPCOS will be held by TDK Germany (and thus indirectly by TDK). Following the public bid, TDK will carve out its electronic components business into Newco, another wholly-owned subsidiary of TDK, which will also hold, directly or indirectly, the shares in EPCOS. Finally, TDK, through Newco, will control the EPCOS electronic components business.
5. The transaction therefore constitutes a concentration within the meaning of Article 3(1)(b) of the Merger Regulation.

IV. COMMUNITY DIMENSION

6. The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 5 billion (TDK: EUR 5,362 million, EPCOS: EUR 1,445 million)⁴. Each of them has a Community-wide turnover in excess of EUR 250 million (TDK: EUR [...] million, EPCOS: EUR [...] million), but they do not achieve more than two-thirds of their aggregate Community-wide turnover within one and the same Member State. The notified operation therefore has a Community dimension.

V. COMPETITIVE ASSESSMENT

A. Market definition

1. Relevant product markets

7. The proposed transaction concerns the electronic components sector.
8. According to the parties and in line with Commission precedents⁵, electronic components can be broadly divided into three main categories that could constitute separate product markets: (i) semiconductors, (ii) interconnect components, and (iii) passive and electromechanical components.

² EPCOS is a publicly listed company in the legal form of a stock corporation. It is listed on the Frankfurt Stock Exchange.

³ TDK Germany was newly set up by TDK for the sole purpose of launching a public takeover offer for all outstanding shares in EPCOS.

⁴ Turnover calculated in accordance with Article 5(1) of the Merger Regulation and the Commission's Consolidated Jurisdictional Notice.

⁵ See Commission decisions in Cases COMP/M.3820 *AVNET/MEMEC*, paragraph 6; COMP/M.2134 *AVNET/VEBA Electronics*, paragraph 9; COMP/M.1871 *Arrow Electronics/Tekelec*, paragraph 8.

9. The parties produce almost exclusively passive and electromechanical components. In this field, TDK focuses on multi-layer ceramic capacitors ("**MLCCs**"), magnetics and soft ferrites, whereas EPCOS mainly produces RF-filters, piezo-actuators (for fuel injection) and circuit protection devices. In addition, TDK is active in the development, production and sale of semiconductors. EPCOS is not active in the market for semiconductors except for minor activities in the manufacturing of semiconductor pressure sensors, which TDK does not manufacture.
10. Passive and electromechanical components are devices or combinations of devices that offer resistance to an electric current and transform or store electric energy. They are "passive" in the sense that they do not increase or process electrical signals. The resistance they offer may depend on voltage or temperature and may also vary with frequency of alternating current applied to the devices. Passive and electromechanical components are present in virtually all electric and electronic equipment.
11. According to the parties, the relevant product market comprises all the different types of passive and electromechanical components. The parties claim that no further subdivision is necessary since most manufacturers produce more than just one type of passive and electromechanical components. According to the parties, manufacturers have considerable supply-side flexibility enabling them to develop, manufacture and distribute a certain range of passive and electromechanical components. Therefore, the parties submit that manufacturers compete against each other not only in relation to specific products, but also by offering large ranges of products.
12. In case a further subdivision of the product market should be necessary, the parties propose the following segmentation for passive components, which is the only area where the parties overlap:
 - (i) Capacitors, which serve to store, filter and regulate electrical energy and current flow, and which are used in almost every type of electronic equipment. Capacitors including the sub-segments MLCCs, aluminium electrolytic capacitors and film capacitors, depending on the material from which capacitors are made.
 - (ii) Resistors, which is a device used in electric circuit for protection, operation or current control. There are two types of resistors, fixed (linear) resistors and non-linear resistors. The parties are only active in the production of non-linear resistors, which are mainly used as circuit protection devices and temperature sensors.
 - i. Circuit protection devices, which protect electronic circuitry against overvoltage or overcurrent. Circuit protection devices include the sub-segments electro-static discharge ("**ESD**") suppression devices, line protection devices and PTC thermistors.
 - ii. Temperature sensors, which are use to measure temperature or a change in temperature, including NTC thermistors.
 - (iii) Magnetics, which store energy in the form of a magnetic field and represent a frequency-depending resistance for an alternating current signal.
 - (iv) Piezoelectric devices and crystals, including notably the sub-segments of RF-filters (including in turn surface acoustic wave (SAW), bulk acoustic wave ("BAW) and dielectric filters), of piezo actuators (for fuel injection); and

- (v) Combined products, namely products combining several types of passive and electromechanical components, such as electromagnetic compatibility (EMC) power line filters which combine mainly capacitors and magnetics.
13. The parties are also both active in the production of soft ferrites and accessories. Soft ferrites are a basic material for magnetics.
14. The market investigation did not support the parties' view that there is an overall market for passive and electromechanical components for a number of reasons. There is no demand-side substitutability as the different types of passive and electromechanical have different uses. There is also no supply-side substitutability because although the largest manufacturers of passive and electromechanical components cover all or most of the sub-segments identified above, many smaller companies are specialized in one or more product categories. The great majority of respondents confirmed that the different sub-segments of passive and electromechanical components require different technology and know-how and are produced in different production lines.
15. However, respondents to the market investigation agreed almost unanimously with the different subcategories proposed by the parties.
16. For the purpose of the current decision, the exact product market definition can however be left open as, under all alternative product market definitions considered, the proposed transaction will not raise any competition concerns.

(vi) **Relevant geographic markets**

17. The parties submit that all the alternative product markets described above have a worldwide geographic scope. The parties point to the fact that transportation costs are very low and there are no significant trade barriers. Furthermore, customers tend to source their demand on a global basis and most manufacturers selling electronic components in Europe are based outside Europe, particularly in Asia.
18. In previous decisions dealing with electronic components, the Commission has considered the market to be at least EEA-wide, if not worldwide⁶.
19. In this case, the market investigation broadly confirmed the parties' claim that the geographic market for passive and electromechanical components as well as for any possible sub-segment is worldwide. The reasons would be that most producers and customers are globally active and most customers have a central purchasing strategy. Moreover, transport is not a material part of the components' cost.
20. For the purpose of the current decision, the exact geographic market definition can however be left open as, under all alternative geographic market definitions considered, the proposed transaction will not raise any competition concerns.

⁶ See Commission decisions in Cases COMP/M.4892 *Infineon/Siemens/JV*, COMP/M.3316 *Celestica/MSL* paragraphs 11 and 12, COMP/M.2968 *Jabil/Phillips Contract Manufacturing Services*, paragraphs 10 and 11.

B. Assessment

21. The transaction gives rise to horizontal overlaps between the activities of TDK and EPCOS. Under the product market definition proposed by the parties, i.e. an overall market for passive and electromechanical components, the transaction would not give rise to an affected market as the parties' combined market share will be below 15% both at the global level⁷ (combined market share: [5-10]%, TDK: [0-5]%, EPCOS: [0-5]%) and at the EEA level⁸ (combined market share: [5-10]%, TDK: [0-5]%, EPCOS: [5-10]%).
22. According to a narrower market definition based on certain segments or even sub-segments of passive components, the transaction would only give rise to horizontally affected markets with an overlap exceeding 1% in the following areas:
 - As regards capacitors: all capacitors, at the EEA level only ([10-20]%), and the capacitor sub-segment MLCCs, at the EEA level only ([20-30]%)
 - As regards resistors, only within the circuit protection sub-segment: (i) the sub-segment ESD suppression devices, at the EEA level only ([10-20]%), and the specific type of ESD suppression devices, multilayer varistors ("MLV"), both at the worldwide level ([20-30]%) and EEA wide level ([40-50]%) and (ii) the specific type of line protection devices, disc varistors, both at the worldwide level ([20-30]%) and EEA wide level ([50-60]%)
 - As regards magnetics, for all magnetics, both at the worldwide level ([10-20]%) and EEA wide level ([20-30]%)
 - soft ferrites and accessories, both at the worldwide level ([10-20]%) and EEA wide level ([30-40]%) and
 - As regards combined products, for EMC filters, only at the worldwide level ([10-20]%).
23. In addition to this, there are a number of product markets in which the parties' combined share is in excess of 15% but the overlap is *de minimis* ([0-5]% or less). These include, line protection devices (at the worldwide level ([10-20]%) and at the EEA level ([20-30]%), RF filters (at the worldwide level ([30-40]%) and at the EEA level ([40-50]%)⁹, EMC power filters (at the EEA level, [20-30]% -- for the worldwide level, see paragraph 37), MLCCs (at the worldwide level, [10-20]% -- for the EEA level, see paragraph 26), and PTC thermistors (at the worldwide level, [10-20]% -- there is no overlap in the EEA).

⁷ The parties estimate that passive and electromechanical components represented at least EUR [35-45] billion globally in 2007.

⁸ The parties estimate that passive and electromechanical components represented approximately [5-15] billion in the EEA in 2007.

⁹ A number of respondents have expressed that RF filters based on Surface Acoustic Wave ("SAW") technology could be regarded as a separate segment. However, the proposed transaction will not give rise to any horizontal overlap in this sector in the EEA and the overlap at the global level is *de minimis* (less than [0-5]%).

24. The parties' and their competitors' market shares are set out below as regards each of these affected markets, followed by a description of the results of the market investigation.

Capacitors

25. At the EEA level, post-merger, the new entity will have a market share of approximately [10-20]% as regards all capacitors and would become the new market leader (TDK: [5-10]%, EPCOS: [10-20]%). The new entity will however continue to face strong competitors, such as Murata ([10-20]%), AVX/Kyocera ([5-10]%), Taiyo Yuden ([5-10]%), NCC ([5-10]%), Nichicon ([0-5]%) and PED ([0-5]%).

26. Considering certain types of capacitors separately, post-merger, the parties would overlap only in the sub-segment of MLCCs at the EEA level with a combined market share of [20-30]% (TDK: [10-20]%, EPCOS: [5-10]%) and would share the leading position with Murata ([20-30]%). The new entity will continue to face competition from other players such as Taiyo Yuden ([10-20]%), AVX/Kyocera ([5-10]%), Samsung ([5-10]%), Yageo ([0-5]%) and Walsin ([0-5]%). In particular, Murata is perceived by respondents as a strong competitor that will constraint to a large degree the merged entity's behaviour after the merger.

Resistors -- Circuit protection devices

– ESD suppression devices

27. The proposed transaction would reinforce the leading position of EPCOS in this area with a combined share of [10-20]% (EPCOS [10-20]%, TDK [0-5]%¹⁰). Other competitors include STMicroelectronics ([10-20]%), AVX ([10-20]%), Microsemi, Fairchild and ON Semi (shares of [5-10]% each) and NXP ([0-5]%).

28. There are two types of ESD devices, (i) multilayer varistors ("MLVs") and (ii) TVS diodes. The parties' activities only overlap as regards MLVs.

29. The parties submit that there is massive competition between MLVs and TVS diodes and that both product should be considered as part of the larger ESD suppression devices sector because TVS diodes can substitute MLVs in all applications¹¹.

30. As regards MLVs only, the merged entity will have a combined market share at the global level of [20-30]% (EPCOS [10-20]%, TDK [10-20]%). Post-merger, there would remain a number of large competitors at the worldwide level for MLVs, such as Amotech ([10-20]%), Innchips ([10-20]%), AVX ([5-10]%) or Littelfuse ([0-5]%).

31. At the EEA level, the merged entity will have a combined market share of [40-50]% (EPCOS [40-50]%, TDK [5-10]%) and will continue to face competitors such as AVX ([10-20]%), Amotech ([5-10]%), Innchips ([5-10]%) and Littelfuse ([0-5]%).

¹⁰ The parties have provided rounded up market share figures without decimals.

¹¹ Cell phones, digital cameras, PDA, MP3, notebooks, telecommunications equipment, automotive systems, power supplies etc.

32. Furthermore, no respondent to the market investigation identified an specific issue in relation to MLVs. On the contrary, the vast majority of respondents (including customers) noted that the parties do not have a particular edge in relation to ESD suppression devices, that there are a number of credible competitors and that the impact of the transaction would be minimal.

– Disc varistors

33. Disc varistors are a type of line protection devices. The parties' combined market shares for line protection devices is [20-30]% at the EEA level (EPCOS: [20-30]%, TDK: <[0-5]%) and [10-20]% at the worldwide level (EPCOS: [10-20]%, TDK: [0-5]%).

34. As regards disc varistors only, the merged entity would achieve a global market share of [20-30]% (EPCOS [20-30]%, TDK [0-5]%) but will continue to face a number of large players such as Matsushita/Panasonic ([10-20]%), Littelfuse ([5-10]%), Cooper ([5-10]%), Thinking ([5-10]%), and Fuji Denki ([0-5]%). At the EEA level, although the merged entity will have a market share of [50-60]%, the proposed transaction will lead to only a *de minimis* increment (EPCOS: [50-60]%; TDK: [0-5]%).

Magnetics

35. In this area, the new entity would become the market leader with a market share of [20-30]% at the EEA level (TDK: [10-20]%, EPCOS: [10-20]%) and [10-20]% at the worldwide level (TDK: [10-20]%, EPCOS [0-5]%). The main competitors for magnetics active on a global basis would be Murata ([10-20]%), PED ([10-20]%), Sumida ([5-10]%), Tayio Yuden ([5-10]%) and Toko ([0-5]%). According to the parties, their main competitors in the EEA correspond to the parties' main global competitors as the major suppliers are active at a worldwide level.

Soft ferrites and accessories

36. As regards soft ferrites and accessories, the parties' combined market share would be [10-20]% at the worldwide level (TDK: [10-20]%, EPCOS: [0-5]%) and [30-40]% at the EEA level (TDK: [0-5]%, EPCOS: [30-40]%). The parties' global competitors are TDG ([10-20]%), DMEGC ([10-20]%), Ferroxcube/Yageo ([5-10]%), Samwha ([5-10]%), ACME ([0-5]%) and Nicera ([0-5]%). At the EEA level, other remaining competitors include Ferroxcube/Yageo ([30-40]%), Tridelta and Iskra ([5-10]% each).

Combined products - EMC filters

37. The parties would have a combined share of [10-20]% at the worldwide level (EPCOS [10-20]%, TDK [0-5]%), which would trail the market leader Schaffner ([10-20]%). There would remain other players such as Corcom, Delta and Spectrum Control with a market share of [5-10]% each. EMC filters are components placed between an electronic equipment and an external power line in order to prevent unwanted signals (noise) either from entering an electronic device or from beings sent out by an electronic device.

Results of the market investigation

38. The market investigation has not revealed any significant objections against the proposed transaction by the competitors and the customers of the parties.

39. In addition to the parties' generally low market shares or the limited increments in market share arising from the proposed transaction, the market investigation confirmed that the merged entity would continue to face a number of credible competitors in each segment post-merger. The market investigation also revealed a number of other factors supporting the view that the proposed transaction does not give rise to any competition concerns.
40. First, a majority of respondents to the market investigation did not regard the parties to be the closest competitors in almost all given product segments. Additionally, the market investigation also showed that at least for standardized passive and electromechanical components customers have the possibility to switch suppliers. The products offered by the parties' competitors are from a technological point of view nearly the same and customers are not bound by long-term contracts. Contracts are usually concluded on a yearly basis or following calls for tender. For customers active in the automotive industry or requiring customized products switching is more difficult, but still not impossible. Some of them indicated that despite the difficulties they have switched suppliers several times in the past. A number of respondents pointed out that they can switch suppliers easily at least every time they launch a new product.
41. Moreover, the market investigation showed that the great majority of customers of the passive and electromechanical components in all sectors generally have a policy of multi-sourcing in order to establish supply and quality protection and to create a competitive environment. Multi-sourcing protects them against price increases. The majority of respondents indicated that their multi-sourcing strategy will not be affected by the proposed transaction since for all product segments there are numerous other manufacturers besides the parties. Therefore the parties will continue to face strong competitive constraints post-merger.
42. Barriers to entry seem to be relatively low. According to the parties, the technology needed for the manufacturing of most of these products is (relatively) simple, well-established and generally available. In particular, a large number of Chinese manufacturers have entered the market in the last years.
43. Moreover, the market investigation revealed that the parties will also be constrained by the significant buyer power of Original Equipment Manufacturers ("*OEMs*"). Even smaller customers enjoy some buyer power given that many products sold in the passive and electromechanical components sector are customized products.
44. Most respondents took the view that the parties would not have any competitive advantage due to their enlarged product range post-merger. According to the investigation, the parties will still face numerous competitors in every sub-segment, and there will be a number of competitors such as Murata and Panasonic offering a large range of components.
45. Under these circumstances, and irrespective of the exact market definition proposed, the proposed transaction will not lead to any significant impediment to effective competition in the common market or in a substantial part of it.

VI. CONCLUSION

46. For the above reasons, the Commission has decided not to oppose the notified operation and to declare it compatible with the common market and with the EEA Agreement. This decision is adopted in application of Article 6(1)(b) of Council Regulation (EC) No 139/2004.

For the Commission
(Signed)
Neelie KROES
Member of the Commission