

Elma Electronic AG Hofstrasse 93 Postfach CH-8620 Wetzikon

To our customers and partners

Wetzikon, August 05<sup>th</sup> 2005/HPW

## **Changeover of chromating to a RoHS-conformal surface treatment**

Dear customers and partners

The directive 2002/95/EC from January 27<sup>th</sup> 2003 for restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) to lead, cadmium, chromium (VI), and brominated flame retardant means that from July 01<sup>st</sup> 2006 new electrical and electronic equipment put on the market must not contain these substances. A goal of the directive is to be carry out a contribution to the health protection and for the environmental-friendly utilisation and removal from electrical and electronics old devices.

We are fully aware of our responsibility towards the customers and the environment and contribute to the fulfilment of this objective by the optimisation and certifying of our processes according to ISO 9001 (management system), ISO 14001 (environment) and OHSAS 18001 (safety and health protection).

For the optimisation of the corrosion and wear protection as well as the improvement of the electrical conductivity as basis of an optimal EMC protection of your electronics the metal surfaces of our products are electro-plated. To do this, we used the yellow and white (clear) chromating finishing. Both procedures contain chromium VI, which will be no longer permissible in the future.

In co-operation with proven specialised experts we have analysed different RoHS conformal procedures for substitution of the white (clear) chromating, which fulfils our high requirements concerning quality, EMC, corrosion protection and optics.

We are pleased to announce to you that the procedure for the RoHS conformal surface treatment, selected by us, obtained outstanding results with all tests and examinations. It is particularly worth mentioning that with the climatic test in accordance with IEC 61587-1 the highest requirement (Performance level C3 and A3) were successfully fulfilled by our products.

Substantial results of the new surface treatment:

- Optically identical surfaces to the past procedure (colourless)
- Invariably high EMC protection
- Optimal adhesion for coloured surface coatings
- fulfils the highest performance level (C3, A3) of climatic tests in accordance to IEC 61587-1

Due to these very good results we will changeover the production starting from August 29<sup>th</sup> 2005 of all clear cromated parts to a RoHS conformal, chromium-free and clear passivation.

By our stock management we guarantee that you are supplied as soon as possible exclusively with RoHS conformal parts. For most products we expect the conclusion of the conversion at the end of 2005. you can query the progress of the conversion of our products at any time under <http://www.elma.de/eu/services/rohs>.

We are convinced that with this step a substantial milestone is reached toward "RoHS conformity" of your purchased parts.

The yellow chromated parts does not comply with legal requirements in accordance with the RoHS-directive. Also here it exists an action need. If you purchased yellow chromated products so far, we will inform you about the further procedure at the beginning of October 2005.

We hope with this information to have answered the substantial questions and give you security, to develop also in the future with Elma - Your Solution partner applications practical and at optimal costs. Also in the future it is our goal of communicating openly and honestly and stands in the meantime for special inquiries under [RoHS@elma.ch](mailto:RoHS@elma.ch) gladly for your attention.

Yours sincerely,  
**Elma Electronic AG**



Olivier Reinl  
Marketing and Sales Director



Hanspeter Würzler  
Product Management

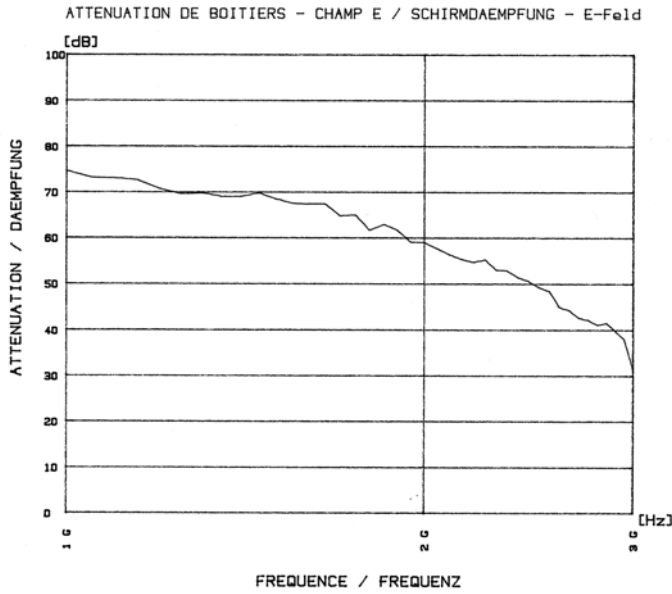
Annex:

- EMC-Chart "old vs. new"
- Additional information to environmental and climatic tests
- Summary "report climatic test"

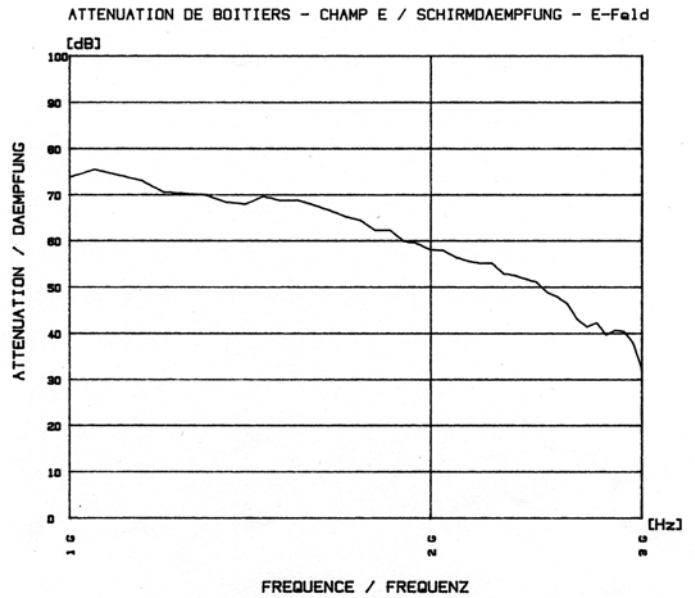
**Comparison EMC-Chart "old vs. new"**

Particularly with regard to high frequencies (1GHz to 3GHz) the effectiveness of the surface treatment is important regarding the EMC behavior. As evident in the diagrams, within these ranges the same values were reached.

"Old"



"New"



**Additional information to environmental and climatic tests**

(\*) acc. to IEC 61587-1:

Performance Level: C3 (Cold, dry heat and damp heat, cyclic)

- Example of use: Extreme climatic impact (eg. outdoor, tropical environment) with temperature between -40°C and +85°C, relative humidity of 20% to 95%, no condensation

Performance Level: A3 (Industrial atmosphere)

- Example of use: strong concentration of toxic substances and exposure through maritime climate at the same time (eg. off-shore chemical engineering , oil platform) with concentration of acc. to IEC 60654-4:
  - SO<sub>2</sub> at average: 5 cm<sup>3</sup>/m<sup>3</sup>, max. 15 cm<sup>3</sup>/m<sup>3</sup>
  - H<sub>2</sub>S at average: 10 cm<sup>3</sup>/m<sup>3</sup>, max. 50cm<sup>3</sup>/m<sup>3</sup>

**Summary "report climatic test"**

Abstract of the test report:

**Device under test:** ELMA 12K Systemkit – 19" Sub Rack  
Metallic surface: clear passivated

**Tests according to:**

Cold:	EN 60068-2-1
High Temperature	EN 60068-2-2
Damp heat, cyclic	EN 60068-2-30
Corrosive atmosphere SO <sub>2</sub>	IEC 60068-2-49
Corrosive atmosphere H <sub>2</sub> S	IEC 60068-2-43
Salt mist:	IEC 60068-2-11

**Results:** All Tests of IEC 61587-1, class C3 and A3, were passed  
The functionality of the sub rack was ensured during all tests