



Another EMC resource
from EMC Standards

Recent EMC Directives - 2016-17

Helping you solve your EMC problems

New in 2016, update July 2018 CCC

EU Directives into force in 2016/17 – *Update July 2018*



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CLOUGH**
CONSULTANTS LTD



emc STANDARDS



Keith Armstrong
C.Eng, FIEE/IET, Senior MIEEE, ACGI, Eurlng (Gp1)
phone/fax: +44 (0)1785 660 247
keith.armstrong@cherryclough.com
www.cherryclough.com www.emcstandards.com

RED material approved by:
Michael Derby
TCB, CB, Notified Body,
Regulatory Reviewer at ACB
(American Certification Body, Inc.),
Southampton, U.K.

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- **The brand new RED (Radio Equipment Directive), 2014/53/EU**
- **The brand new MDR (Medical Device Regulations), 2017/745**
- **The brand new IVDR (In-Vitro Diagnostics Regulations), 2017/746**

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The New Legislative Framework (NLF)

The problems it addresses and its changes to the Single EU Market

The NLF has effectively created Version 2 of the EU's Single Market!

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The kinds of problems that gave rise to the NLF

- It has proven to be very difficult to ensure that only CE-compliant products are sold on the EU market...
 - it seems that the various EC Directives were not worded in a way that made it easy to enforce them, especially...
 - when Distributors sell products they bought in the EU but which carry no identification of manufacturer or importer...
 - and when major on-line companies refuse to take any legal responsibility for compliance of products they “supply”... (arguing that they simply put suppliers in contact with customers, and it is up to them to sort it all out, i.e. the on-line customer is the legal EU Importer)

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(original 2016 title: "Complying with the new EU Directives that came into force in 2016")
By Keith Armstrong

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I see a lot of cheap battery-chargers and other mains-power converters with no creepage and clearance rules applied between input and output

These are both filter chokes

Creepage /clearance rules not applied to the isolating transformer

Creepage /clearance rules applied here

This lighting controller is labelled:
"SUITABLE FOR CLASS I AND CLASS II APPLICATIONS"

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Examples of counterfeit circuit breakers

Counterfeit and genuine circuit breakers – the difference is potentially fatal

The most obvious difference between the real and the fake was its weight, but these days they add small pieces of metal or concrete so they weigh the same

Source: Beama Counterfeit Working Group

This distributor in China displays row upon row of Miniature Circuit Breakers (MCBs). All of them are counterfeit, illegal and highly dangerous.

"This distributor in China displays row upon row of Miniature Circuit Breakers (MCBs). All of them are counterfeit, illegal and highly dangerous."

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The Telegraph CCC

Australia has similar problems

Remember this news story from June 2014?

Woman in Australia killed by cheap phone charger
Australian authorities investigate after woman in her 20s found electrocuted



USB chargers seized by NSW Fair Trading from a Campsie store Photo: NSW Fair Trading

By AFP
6:25AM BST 27 Jun 2014

Australian authorities issued a warning about cheap, non-compliant USB-style chargers after a young woman died from apparent electrocution while using a laptop and possibly a smart phone.

New in 2014, update July 2018

Can you tell which i-Phone charger is the counterfeit? CCC

(From Ken Shirriff, 27 Oct 2012)



Apple's price \$29

Sold on eBay for \$2 as: 'Original Genuine Apple charger'

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(original 2016 title: "Complying with the new EU Directives that came into force in 2016")
By Keith Armstrong

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The counterfeit i-Phone charger doesn't work as well...

(From Ken Shirriff, 27 Oct 2012)

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The figure consists of six oscilloscope screenshots arranged in a 2x3 grid. Each screenshot shows a different electrical characteristic of the counterfeit charger. The top row shows DC noise for 4ms, DC noise for 100ms, and a V/I load curve. The bottom row shows a high-frequency waveform, a spectrum plot, and another V/I load curve. Each screenshot includes a 'Math1 Position' and 'Math1 Scale' panel on the right side.

DC noise for 4ms

DC noise for 100ms

V/I load curve

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And it could catch on fire, like this one did...

(from Anool Mahidharia, 8 Aug 2011)

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The figure is a collage of six photographs showing the physical damage to a counterfeit iPhone charger. The top row shows the charger's white plastic casing, which is severely melted and deformed. The bottom row shows the internal electronic components, including a circuit board, capacitors, and a USB connector, which are also damaged and partially melted. The photographs are arranged in a 2x3 grid.

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And of course the hoverboard fires, Christmas 2015 (still occurring in October 2017)



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New in 2016, update July 2016



Example of a CE-marked power supply module, supplied by the "grey market" to manufacturers in the UK *without* its mains filter components. Not a very unusual event. (Courtesy of Richard Marshall, 2008)

31-Dec-08 12:23