



MPE
Quality, Reliability, Performance

Company Bulletin

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High-voltage DC filters for vast chamber application

Back in 2015 MPE was asked to participate in the design stages of a new in-house test chamber for clients in the Midlands area of the UK. They were constructing a very large volume EMC chamber to facilitate the testing of their own specialist equipment systems.

After meetings with the clients, the major challenges faced by MPE proved to be electrical and involved high current and high voltage requirements, but in particular the need for the EMC filters to tolerate very high levels of ripple, harmonics and transients that would be encountered. The filters were also expected to maintain electrical integrity and performance across the full frequency range from 1KHz to 18 GHz.

Accordingly MPE utilised PSpice modelling and laboratory testing to provide levels of assurance that the design of critical components such as capacitors and inductors would meet the demanding electrical requirements prior to the commencement of any build.

Following the sign-off of electrical and mechanical design by the clients and an 18-month design and manufacturing process, MPE provided a suite of EMC filters for installation by the Microwave Vision Group. With headquarters in Paris, MVG is a global provider of EMC and antenna test solutions whose 34,000 ft² UK site is Rainford EMC Systems Ltd at Haydock, St Helens, Merseyside.

The suite of MPE filters comprised both AC and DC filters of various current ratings and included custom 2500V DC 2000A units complete with end enclosures, as pictured. These very high current (VHC) DC filter units are 3m high and 2m wide, weigh two tonnes and are a further extension of MPE's well established high-current DC filter ranges.

The MPE EMC filters have been integrated by MVG into their major chamber installation which is now nearing completion. Physically, this is one of the largest UK test chamber installations in which MPE has been involved, and the requirement for high-voltage DC filters is certainly a growing trend being witnessed by MPE.

Download the catalogue [here](#) to check out the technical specifications of MPE's standard range of high-voltage DC powerline filters.

