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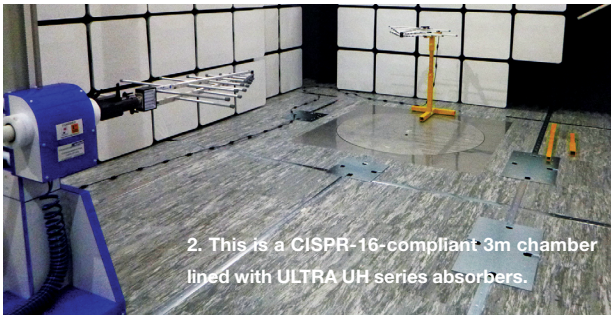
New Wideband EMC Absorbers Offer Solutions to 40 GHz

These polypropylene-based absorbers can be used in various test applications, covering frequencies ranging from 30 MHz to 40 GHz.

High-quality absorbers are crucial when it comes to electromagnetic-compatibility (EMC) test applications. The Microwave Vision Group (MVG) is one company that is providing solutions to such applications, as demonstrated by its recent introduction of the ULTRA UH series of hybrid electromagnetic (EM) absorbers *(Fig. 1)*. The polypropylene-based absorbers can perform for up to 35 years without degradation, according to MVG. They are designed to meet the requirements of pre- and full-compliance EMC testing. The ULTRA UH absorbers can be used in EMC chambers as a hybrid combined with ferrite tiles, as well as mixed-use test facilities *(Fig. 2)*.

1. These wideband absorbers cover a frequency range of 30 MHz to 40 GHz.

Polypropylene material offers several major benefits over previously used polystyrene and thin-film absorbers. For one, the material has a highly uniform carbon density, which can allow for more predictable results with no discontinuities. Carbon is never shed due to the closed cell material.



2. This is a CISPR-16-compliant 3m chamber lined with ULTRA UH series absorbers.

The absorbers are created by precise molding techniques, thereby ensuring that all products are identically shaped and sized. This feature allows for fast installation, as well as providing the chamber interior with a high-quality finish. MVG says the absorbers are very tough and resistant to wear. And because they do not absorb moisture, air conditioning is not essential.

The absorbers cover a wide frequency range from 30 MHz to 40 GHz. The standard base size is 1.97 × 1.97 in. (60 × 60 cm). Moreover, RF power-handling capability is as high as 600 V/m. Furthermore, the ULTRA UH series of absorbers meets the GER-DIN 4102 Class B2 fire-retardancy standard.

MVG offers several design variations of the ULTRA UH series. Customers can choose between the UH30, UH50, and UH 75 absorbers, which have heights of 30, 50, and 75 cm, respectively. The company is also offering the UHC30, which is a high-carbon absorber that has a specifically enhanced reflectivity to meet emission testing (1 to 18 GHz) site-voltage-standing-wave-ratio (sVSWR) requirements when used as a floor absorber.

In terms of weight, the UH30, UH50, and UH75 weigh 1.9, 4.1, and 5.3 kg, respectively. The UH30 is designed with 36 pyramid points, while the UH50 and UH75 are designed with 16 and nine, respectively. In regard to absorption characteristics, the UH30's absorption at normal incidence is 37.2 dB at 18 GHz. Meanwhile, absorption at normal incidence of the UH50 and UH75 are 49.3 dB and 51.2 dB, respectively, at 18 GHz.

THE MICROWAVE VISION GROUP; www.mvg-world.com