

Gutachten Schirmdämpfung

Expert report screening attenuation

Messobjekt

Abschirmstoff
VOILE

Datum der Messung

15.12.2019

Vorbemerkung

Die Prüflinge werden mit einer definierten Leistungsflussdichte S_1 bestrahlt, die durchdringende Leistungsflussdichte S_2 wird gemessen. Die Schirmdämpfung ist eine dimensionslose Messgröße in Dezibel (dB) und wird wie folgt berechnet:

$$dB = 10 \cdot \log_{10} \frac{S_1}{S_2}$$

dB	Dämpfung
10	90 %
20	99 %
30	99,9 %
40	99,99 %
50	99,999 %
60	99,9999 %
...	...

Konformität

Die Messung der Dämpfung elektromagnetischer Wellen von **40/600 MHz bis 40 GHz** wurde (wahlweise je nach Materialeigenschaften) in Übereinstimmung mit dem Standard **IEEE Std 299™-2006** oder in Anlehnung an den Standard **ASTM D4935-10** durchgeführt.

Ort der Messung

Eigenes EMV-Labor nach gängigen etablierten Standards, zur täglichen Qualitätssicherung und Produktentwicklung.

Messaufbau

Als Messgeräte verwenden wir zwei vektorielle Netzwerkanalysatoren Rohde & Schwarz **ZNB20** und **ZNB40** mit einer Messdynamik bis 140 dB.

Als Antennen für IEEE Std 299™-2006 verwenden wir breitbandige **Hornantennen**. Als Antennen für ASTM D4935-10 verwenden wir breitbandige **TEM-Zellen** mit radialer Polarisation.

Measuring object

Shielding fabric
VOILE

Date of measurement

2019/12/15

Preliminary Note

The test samples are irradiated with a defined power flux density S_1 , the pervasive power flux density is measured. The shielding attenuation is a non-dimensional measured variable in decibels (dB) and calculated as follows:

$$dB = 10 \cdot \log_{10} \frac{S_1}{S_2}$$

dB	Attenuation
10	90 %
20	99 %
30	99,9 %
40	99,99 %
50	99,999 %
60	99,9999 %
...	...

Conformity

The measurement of the attenuation of electromagnetic waves between **40/600 MHz – 40 GHz** (selectively depending on the material properties) has been conducted in accordance with standard **IEEE Std 299™-2006** or following to standard **ASTM D4935-10**.

Place of measurement

In our own EMV laboratory according to prevalent established standards, for daily quality control and product development.

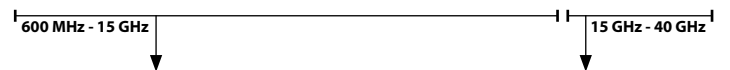
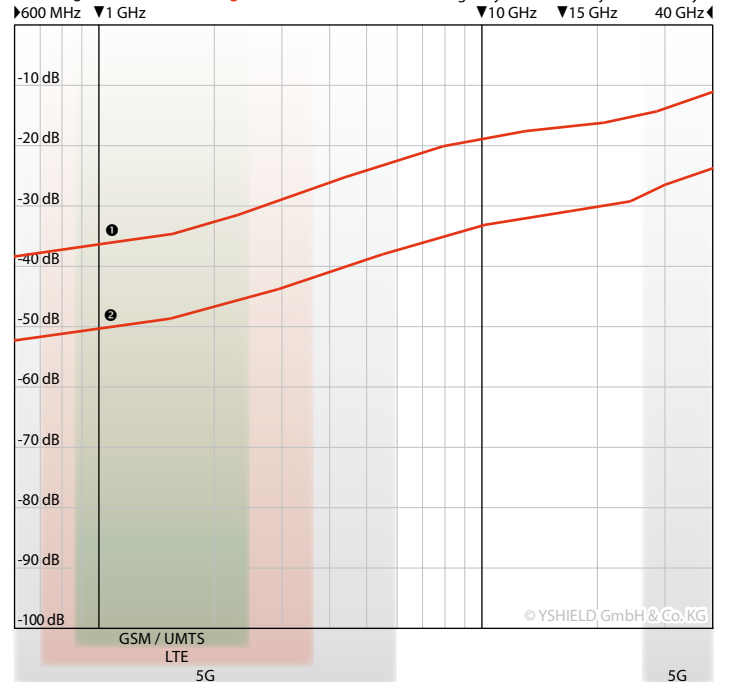
Measurement setup

The measuring devices we use are two Vector Network Analysers Rohde & Schwarz **ZNB20** and **ZNB40**, with a measuring dynamics up to 140 dB.

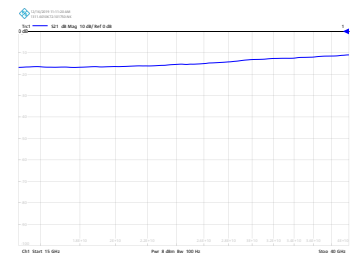
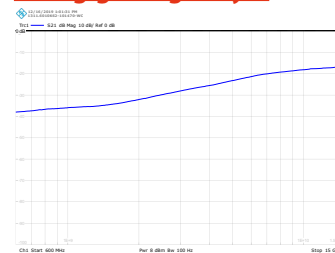
The antennas we use for IEEE Std 299™-2006 are broadband **horn antennas**. The antennas we use for ASTM D4935-10 are broadband **TEM cells** with radial polarisation.

Screening attenuation **Shielding fabric VOILE**

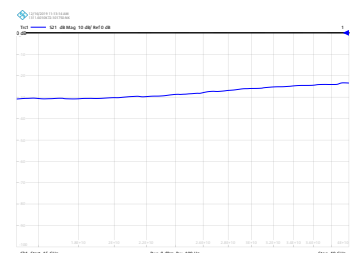
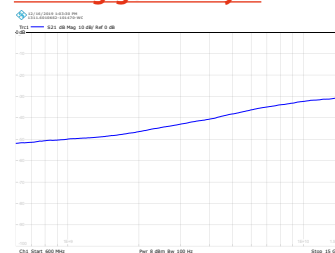
● Single layer ● Double layer ● Three layer



Einlagig / Single layer



Zweilagig / Two layer



Swiss-Shield® VOILE | Shielding fabric | Width 250 cm | 1 meter

From Swiss Shield® exclusively for us. Transparent polyester voile as curtain or for canopies. Durable and crease-resistant. White. 36 dB. Width 250 cm.



Properties

VOILE from Swiss-Shield® is a **transparent voile-fabric** for the shielding of high-frequency electromagnetic fields (HF). **Typical application as elegant net curtain or to sew a bed canopy.** Not electrically conductive.

- High transparency at high screening attenuation
- Very elegant and slightly glossy
- Crease resistant polyester
- Textile characteristics: Washable, easy to iron and process
- Quality grade: Very high

Attenuation | Grounding

- This product shields **high frequency electromagnetic fields** (HF). The indicated dB-values apply to 1 GHz, view chart for other frequencies. Expert reports ranging from 40/600 MHz to 40 GHz according to standards ASTM D4935-10 or IEEE Std 299-2006, view report above.
- This product without an electrically conductive surface does not shield low-frequency alternating electric fields (LF).

Swiss Shield® Shielding fabrics

This fabric is manufactured by Swiss Shield® in Switzerland with a patented, **invisible high-tech yarn**. At YSHIELD we value the constantly high quality of the fabrics - it's not for nothing that we are the world's largest Swiss Shield® distributor.

Technical data

- **Width: 250 cm, +/- 2 cm**
- Length: Available by the meter
- **Attenuation: 36 dB**, two-layer 51 dB
- Color: White
- Raw materials: 83 % polyester, 16 % copper, 1 % silver
- Weight: 65 g/m²
- Dimension stability: +/- 1 %

Care instructions

- **Gentle cycle at 30°C**
- **Iron without steam at degree 1**
- **Drying at low temperature**
- No bleaching
- No chemical dry-cleaning

