YSHIELD®

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Gutachten Schirmdämpfung — Expert report screening attenuation

Messobjekt

Abschirmstoff SILVER-SILK

Datum der Messung

16.12.2019

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:

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

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 SILVER-SILK

Date of measurement

2019/12/16

Preliminary Note

The test samples are irradiated with a defined power flux density S1, the pervasive power flux density is measured. The shielding attenuation is a non-dimensional measured variable in decibels (dB) and calculated as follows:

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

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**.

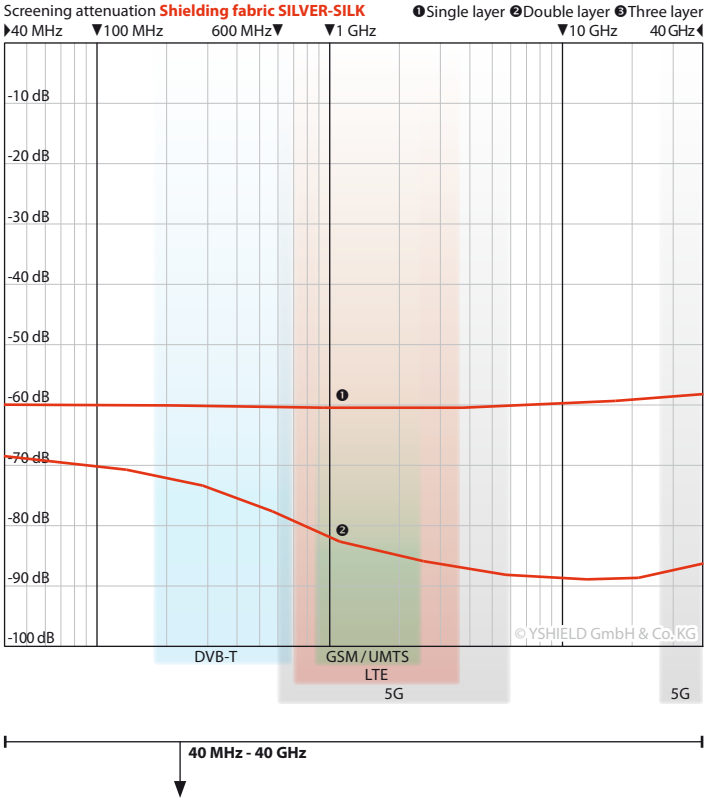
Place of measurement

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

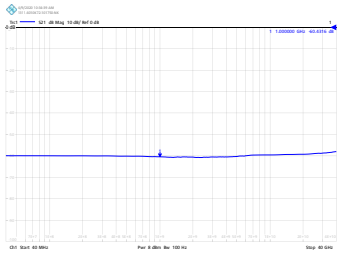
Measurement setup

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

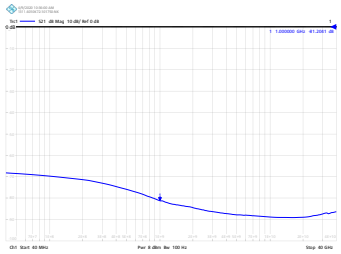
The antennas we use for IEEE Std 299™-2006 are broadband **horn antennas**. The antennas we use for ASTM D4935-10 are broadband **TEM cells** with radial polarisation.



Einlagig / Single layer



Zweilagig / Two layer



Dreilagig / Three layer

YSHIELD® SILVER-SILK | Shielding fabric | Width 130 cm | 1 m

Opaque fully silvered nylon mesh for handy bags and technical applications. Very high attenu
cm.

Properties

SILVER-SILK is a silvered parachute silk / nylon fabric for protection against high frequency (HF) and low-frequency radiation (LF). Typical applications: shielded cables, handy bags, room divider, etc.. Due to the good washa even sewable inside of articles of clothing.

- Very high screening attenuation
- Antiseptic due to the full silver plating
- Contactable (groundable) to shield LF electric fields
- Textile similar characteristics: Washable, easy to process. Excep
- Quality grade: High

Attenuation | Grounding

- This product shields high frequency electromagnetic fields (HF). The indicated dB-v apply to 1 GHz, view chart for other frequencies. Expert reports 40 GHz according to standards ASTM D4935-10 or IEEE Std 299-
- This product with an electrically conductive surface shields low-frequency electric fields (LF). For this purpose grounding is necessary. For an integration int functional-equipotential bonding (FEB), please find suitable grou "Grounding".

Silver products

- Silver products discolor with time and often already have discolorations If you don't want to accept discolorations, please choose Swiss-
- Silver fabrics have a durability depending on the frequency of movem
- Our silver fabrics do not contain any nano, but a thick metallic silver coat

Technical data

- Width: 130 cm, +/- 2 cm
- Length: Available by the meter
- Attenuation: 60 dB 2-layer 76 dB
- Color: Silver
- Raw materials: 80 % nylon, 20 % silver
- Weight: 45 g/m²
- Surface conductivity: 0.2 ohm / inch (2.54 cm)

Care instructions

- Washing up to 60°C
- No ironing
- Drying at low temperature
- No bleaching
- No chemical dry-cleaning