# Test Report # EMCC-240185AB, 2025-02-21

## Equipment Under Test

| | |
|---|---|
| Designation: | YSHIELD® A300-HEMP |
| Type: | shielding fleece |
| Part No: | A300-HEMP |
| Sample No: | Series product |
| **Customer:** | YSHIELD GmbH & Co.KG |
| **Manufacturer:** | YSHIELD GmbH & Co.KG |
| **Test Plan:** | No Testplan provided by customer |
| **Relevant Standards:** | following MIL-STD-188-125-2 |

Tested:

René Dannewitz

Approved:

Christian Kreller

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# 0 REVISION HISTORY

| Project number | Issue date | Chapter | Description |
|---|---|---|---|
| 240185AB | 2025-02-21 | n.a. | Initial issue |

# 1 IDENTIFICATION SUMMARY

## 1.1 Limits and reservations


Test results apply to the samples received and relate only to the items tested in the configuration as recorded. This test report shall not be reproduced except in full without the written permission of EMCCons DR. RAŠEK GmbH & Co. KG.
Document(s) and/or information, which were provided by the customer, can affect the validity of results.

## 1.2 Test laboratory

| | |
|---|---|
| Test Laboratory: | EMCCons DR. RAŠEK GmbH & Co. KG |
| Address of Labs I, II, III and Head Office: | EMCCons DR. RAŠEK GmbH & Co. KG<br>Boelwiese 8<br>91320 Ebermannstadt<br>Germany |
| Address of Labs IV and V: | EMCCons DR. RAŠEK GmbH & Co. KG<br>Stoernhofer Berg 15<br>91364 Unterleinleiter<br>Germany |
| Name for contact purposes: | Mr René Dannewitz |
| Phone: | +49 9194 7263-336 |
| Fax: | +49 9194 7262-199 |
| E-mail: | r.dannewitz@emcc.de |

## 1.3 Customer

| | |
|---|---|
| Company Name: | YSHIELD GmbH & Co.KG |
| Street: | Rotthofer Strasse 1 |
| City: | 94099 Ruhstorf |
| Country: | Germany |
| Name for contact purposes: | Mr Christian Danner |
| Phone: | +49 8531 410790 |
| Fax: | --- |
| E-mail: | info@yshield.de |

## 1.4 Manufacturer

| | |
|---|---|
| Company Name: | YSHIELD GmbH & Co.KG |
| Street: | Rotthofer Strasse 1 |
| City: | 94099 Ruhstorf |
| Country: | Germany |

## 1.5 Dates and test location

The EUT was tested at EMCCons DR. RAŠEK GmbH & Co. KG test laboratory IV in CW 07/2025.
Date of receipt of the EUT was 2025-02-10.

## 1.6 Attending person(s) and their responsibilities

Mr Christian Danner and Mr Moritz Danner, representatives of YSHIELD GmbH & Co.KG, attended the tests and installed the EUT.

## 1.7 Ordering information

Purchase Order: E-mail dated 2025-02-03

## 1.8 Climatic conditions

| Date | Temperature [°C] | Relative Humidity [%] | Air Pressure [hPa] | Lab | Attending person(s) |
|---|---|---|---|---|---|
| 2025-02-10 | 20 ±3 | 27 ±10 | 984 ±10 | IV | Mr Christian Danner, Mr Moritz Danner |

Climatic values taken at 12:00 p.m. Tolerances are usual daily climatic deviations.

# 2 PRODUCT DESCRIPTION

## 2.1 Equipment under test (EUT)

EUT details given by the customer unless indicated on EUT.

| | |
|---|---|
| Manufacturer: | YSHIELD GmbH & Co.KG |
| Designation: | YSHIELD® A300-HEMP |
| Type: | shielding fleece |
| Part No: | A300-HEMP |
| Sample No(s): | Series product |
| Dimension (W x H): | 1.2 m x 1.2 m |
| Remarks: | None |

## 2.2 Photos of EUT

EUT mounted in the frame

The connection between the layers was ensured with electrically conductive adhesive tape

## 2.3 Test specification(s), standard(s) and relevant document(s)

Document(s) and/or information, which were provided by the customer, can affect the validity of results.

| Reference | Doc. Number | Issue | Description | Remark |
|---|---|---|---|---|
| [1] | MIL-STD-188-125-2 | 1999 | HIGH-ALTITUDE ELECTROMAGNETIC PULSE (HEMP) PROTECTION FOR GROUND-BASED C4I FACILITIES PERFORMING CRITICAL, TIME-URGENT MISSIONS | chapter 5.3.4 and Appendix A |

## 2.4 Intended use

The following information was delivered by the customer:

| |
|---|
| Shielding laminated highly stable fleece for a wide range of applications. |

# 3 TABULAR SUMMARY OF TEST RESULTS

The following listed tests were ordered by the customer. Further tests may apply.

## 3.1 SHIELD ATTENTION MEASUREMENT

| EUT | Measurement | Test Standard | Frequency range | Remark | Statement of conformity |
|---|---|---|---|---|---|
| YSHIELD® A300-HEMP | Shield attention measurement | MIL-STD-188-125-2 chapter 5.3.4 and Appendix A | 10 kHz to 20 MHz | H-Field | pass |
| | | | 20 MHz to 1 GHz | E-Field | pass |

## 3.2 Decision rule statements

EN ISO/IEC 17025:2017, chapter 7.1.3 requires that when laboratories are making statements of conformity to a specification or standard (e.g. pass/fail, in-tolerance/out of-tolerance), they shall document the decision rule employed.

### 3.2.1 Definition

Decision rule according to EN ISO/IEC 17025:2017, chapter 3.7: is a “rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement.”

| **Source of decision rule:** | |
|---|---|
| ☐ | Decision rule of standard used was applied |
| ☒ | Decision rule of customer was applied<br>*REMARK:*<br>*The standard does not contain any information with regard to the application of measurement uncertainty.* |

| **Applied decision rule** | |
|---|---|
| ☒ | Measurement uncertainty was not taken into account (without MU) |
| ☐ | Measurement uncertainty was taken into account (with MU) |

# 4 SHIELD ATTENUATION MEASUREMENT

### 4.1.1 Test parameter

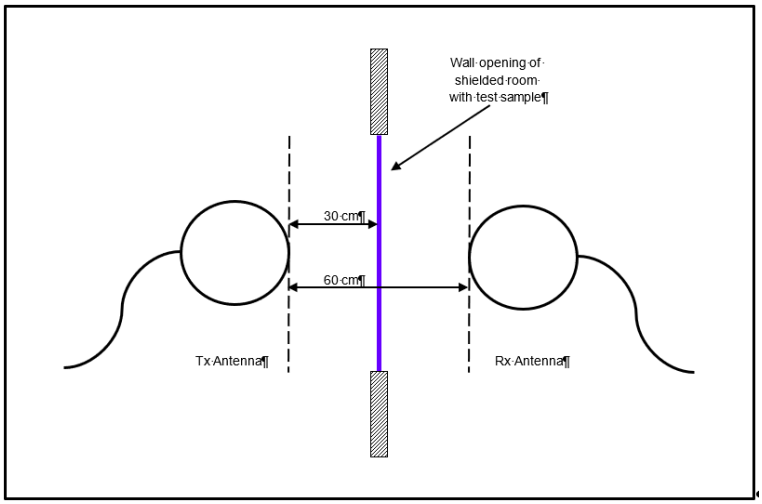
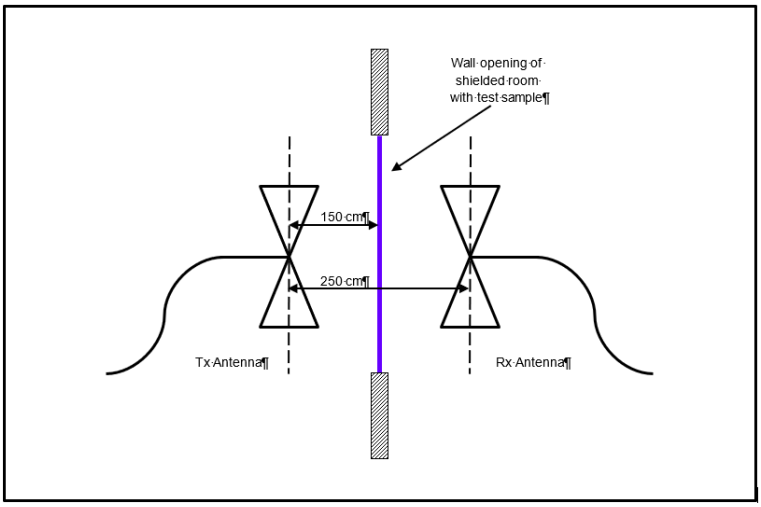
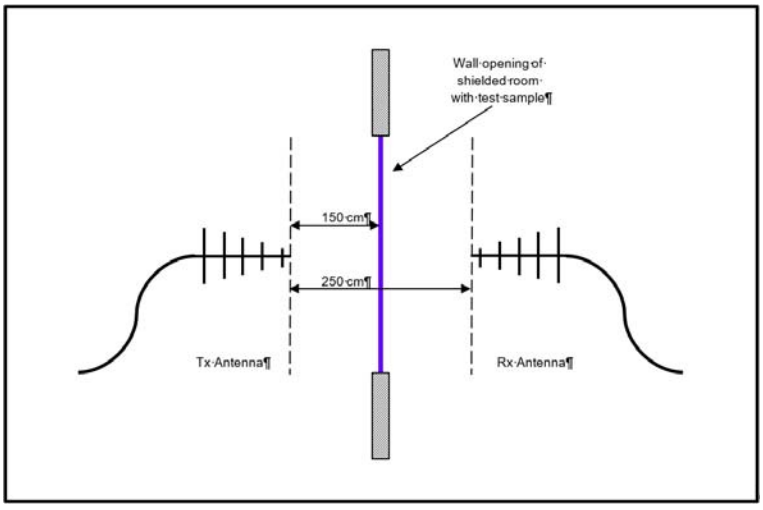
| | |
|---|---|
| TYPE OF TEST | Shield attenuation measurement with antennas |
| BASIC STANDARD | following MIL-STD-188-125-2 |
| TEST REQUIREMENT | Minimum shielding effectiveness Figure A-5 MIL-STD-188-125-2 |
| REFERENCE MEASUREMENT | through the opening (1m*1m) of the shielding room without EUT |
| SHIELDING EFFECTIVENESS | SE (dB) = level reference measurement (dBµV) – level EUT measurement (dBµV) |
| OPERATOR | René Dannewitz |
| DATE OF TEST | 2025-02-10 |

| PARAMETER | REQUIREMENT | TESTED | REMARKS |
|---|---|---|---|
| FREQUENCY RANGE | 10 kHz to 100 kHz<br>(20 frequencies) | 10 kHz to 100 kHz | H-Field |
| | 100 kHz to 1 MHz<br>(20 frequencies) | 100 kHz to 1 MHz | H-Field |
| | 1 MHz to 10 MHz<br>(40 frequencies) | 1 MHz to 5 MHz | H-Field |
| | | 5 MHz to 20 MHz | H-Field |
| | 10 MHz to 100 MHz<br>(150 frequencies) | 20 MHz to 200 MHz | E-Field |
| | 100 MHz to 1000 MHz<br>(150 frequencies) | 200 MHz to 1000 MHz | E-Field |
| ANTENNA POLARISATIONS | horizontal + vertical | horizontal + vertical | |
| ANTENNA DISTANCE | 2.5 m | See chapter 4.1.2 | |
| STEP INCREMENTS | --- | 1.5 % | |
| MEASUREMENT POINT | --- | centre of EUT | |

**TEST RESULT**

STATEMENT OF CONFORMITY: ☒ **PASSED** ☐ **FAILED**

### 4.1.2 Test setup

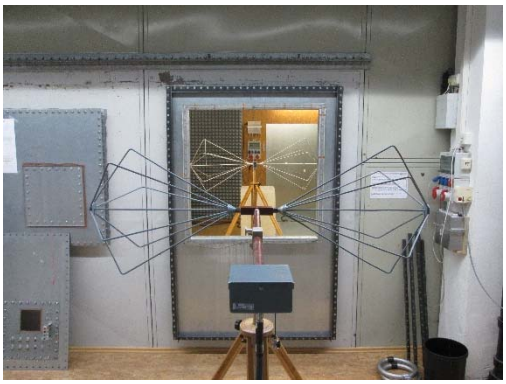
| | |
|---|---|
| Test setup 10 kHz to 20 MHz |  |
| Test setup 20 MHz to 200 MHz |  |
| Test setup 200 MHz to 1000 MHz |  |

### 4.1.3 Photographs of reference setup

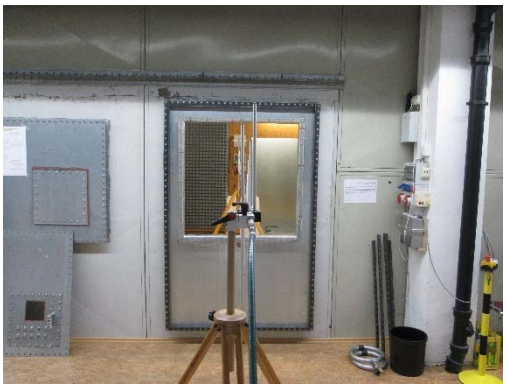
Setup 10 kHz to 20 MHz

Setup 10 kHz to 20 MHz

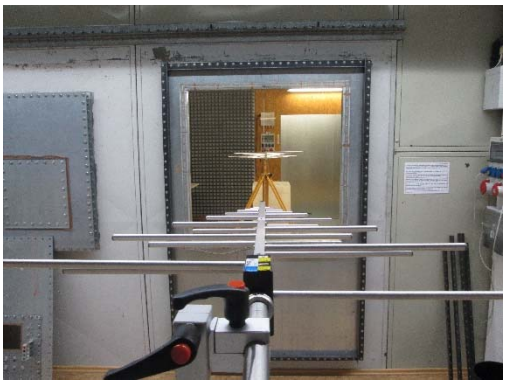
Setup 20 MHz to 200 MHz



Setup 20 MHz to 200 MHz



Setup 200 MHz to 1000 MHz

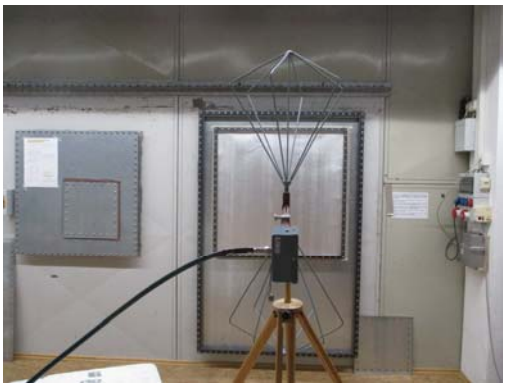


Setup 200 MHz to 1000 MHz

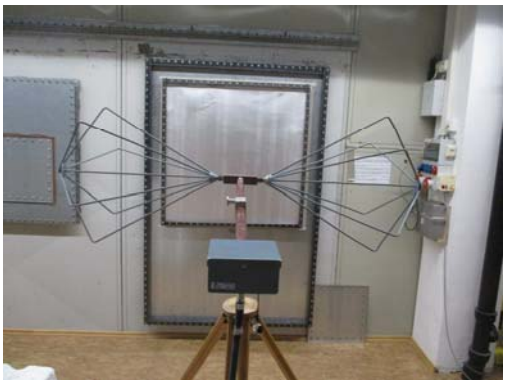
### 4.1.4 Photographs of EUT setup

Setup 10 kHz to 20 MHz

Setup 10 kHz to 20 MHz

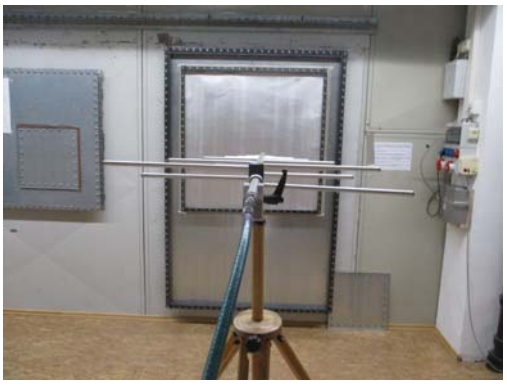


Setup 20 MHz to 200 MHz



Setup 20 MHz to 200 MHz

Setup 200 MHz to 1000 MHz

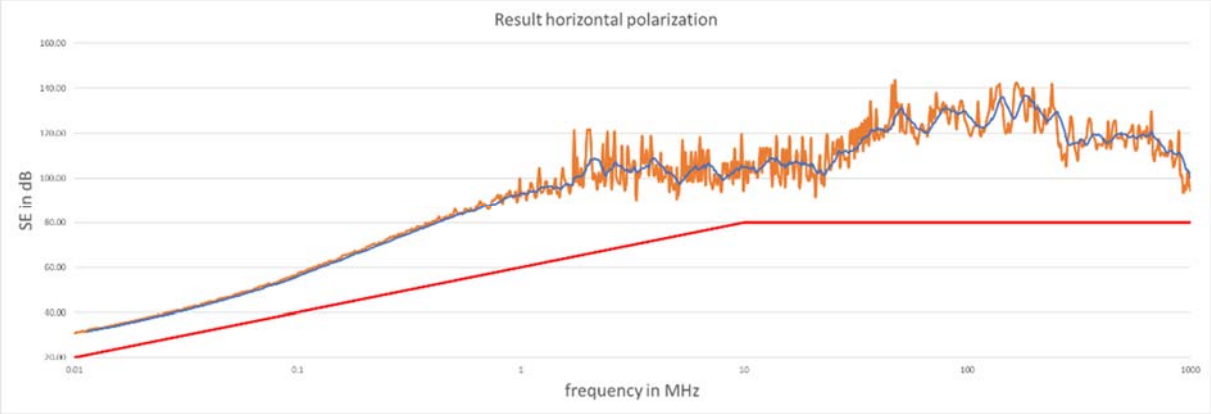


Setup 200 MHz to 1000 MHz

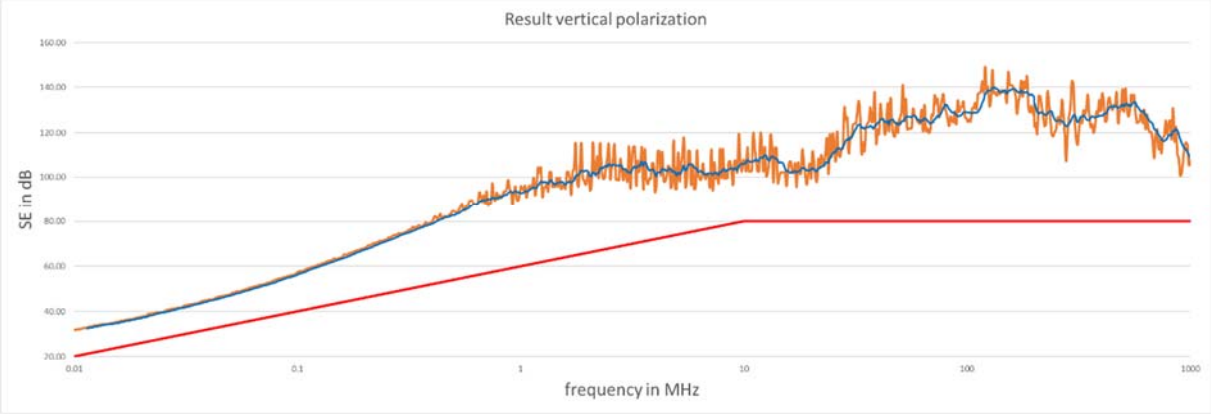
### 4.1.5 Test result

Red: limit line
Orange: measured values
Blue: trend line, moving average over 10 values

#### 4.1.5.1 horizontal polarization




#### 4.1.5.2 vertical polarization



# 5 TEST INSTRUMENTS

| Ident# | Instrument | Calibration valid until end of |
|---|---|---|
| 55 | Cable N | 2025-12 |
| 212 | Loop Antenna | n/a |
| 213 | Loop Antenna | n/a |
| 214 | Loop Antenna | n/a |
| 215 | Loop Antenna | n/a |
| 267 | VHF Double-Cone Antenna | n/a |
| 538 | 10-V-Insertion Probe | 2026-01 |
| 555 | GPIB-140A | n/a |
| 899 | VHF Test Dipole RX | 2026-03 |
| 1337 | Shielded Video Monitoring System | n/a |
| 1416 | Isolation Transformer | n/a |
| 1421 | Termination 1 W | 2026-07 |
| 1473 | Attenuator 3 dB / 500 W / N | 2025-04 |
| 1503 | Cable N | 2025-12 |
| 1509 | Power Amplifier 50 W | n/a |
| 1514 | RF-DC-Millivoltmeter | 2025-03 |
| 1515 | Attenuator 6 dB / 100 W / N | 2025-05 |
| 1584 | GPIB-140A | n/a |
| 2430 | Attenuator 10 dB / 10 W | 2026-01 |
| 2646 | Cable N | 2025-12 |
| 3048 | Signal Generator | 2026-07 |
| 3102 | Monitor Rack | n/a |
| 3203 | Logarithmic periodic antenna | 2025-06 |
| 3846 | EMI Test Receiver | 2025-06 |
| 4597 | USB to GPIB adapter | n/a |
| 5533 | Logarithmic periodic antenna | 2025-06 |
| 5770 | Fibre Optic Link P2P | n/a |
| 5988 | RF cable assembly | 2025-03 |
| 6525 | Cable N | 2025-12 |
| 6916 | Directional Coupler Dual | 2027-01 |
| 7565 | Notebook | n/a |

**REMARK:** Each piece of measurement and test equipment is identified by its ID number within EMCCons DR. RAŠEK equipment inventory. The ID number allows an unambiguous assignment of each piece of equipment.

The equipment inventory database includes following information for each piece of equipment:

a) Manufacturer and model
b) Serial Number
c) Software version, if applicable
d) Calibration history, if applicable