

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

Test on shielding fleece to following MIL-STD-188-125-2

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0 REVISION HISTORY

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

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1 IDENTIFICATION SUMMARY

1.1 Limits and reservations

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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 Boelwiese 8 91320 Ebermannstadt Germany
Address of Labs IV and V:	EMCCons DR. RAŠEK GmbH & Co. KG Stoernhofer Berg 15 91364 Unterleinleiter 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

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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.

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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

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2.2 Photos of EUT



EUT mounted in the frame



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

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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.

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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 <i>REMARK:</i> <i>The standard does not contain any information with regard to the application of measurement uncertainty.</i>

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

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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 (20 frequencies)	10 kHz to 100 kHz	H-Field
	100 kHz to 1 MHz (20 frequencies)	100 kHz to 1 MHz	H-Field
	1 MHz to 10 MHz (40 frequencies)	1 MHz to 5 MHz	H-Field
		5 MHz to 20 MHz	H-Field
	10 MHz to 100 MHz (150 frequencies)	20 MHz to 200 MHz	E-Field
	100 MHz to 1000 MHz (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	

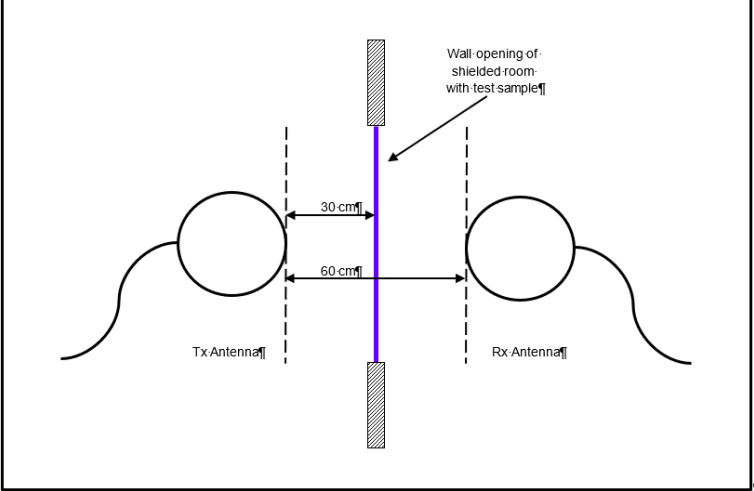
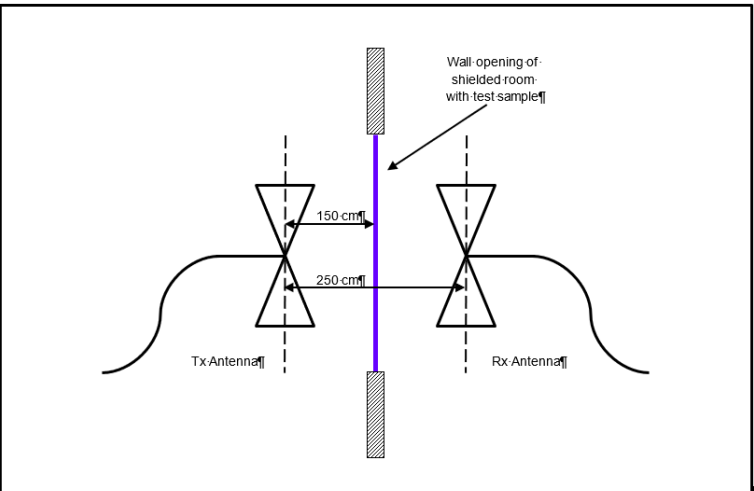
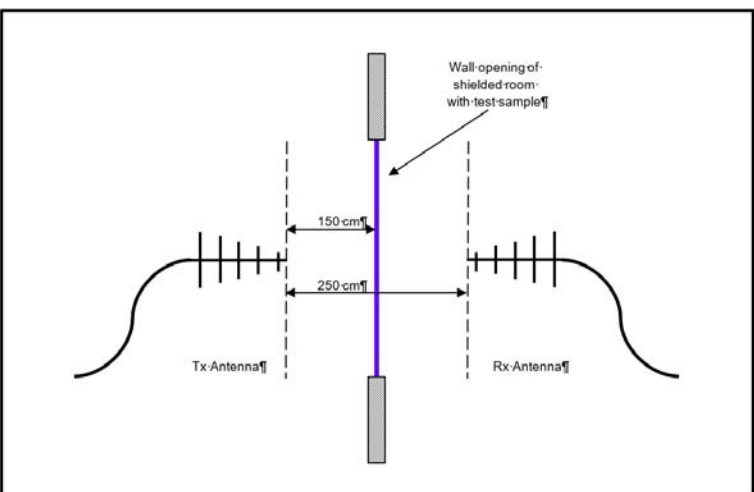
TEST RESULT

STATEMENT OF
CONFORMITY:

☒ PASSED ☐ FAILED

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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	

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4.1.3 Photographs of reference setup



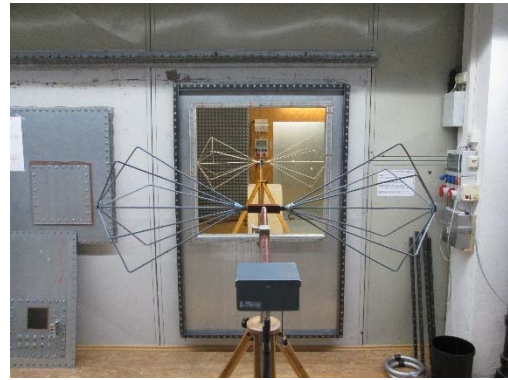
Setup 10 kHz to 20 MHz



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

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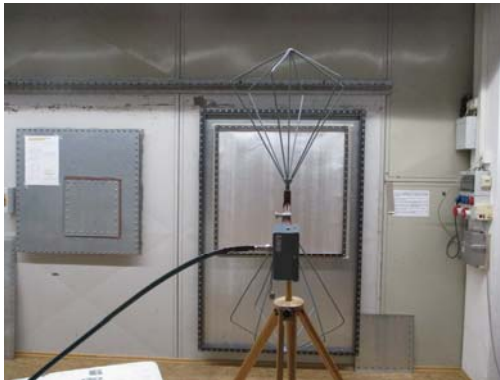
4.1.4 Photographs of EUT setup



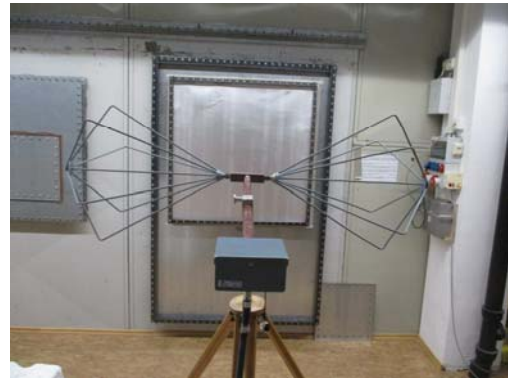
Setup 10 kHz to 20 MHz



Setup 10 kHz to 20 MHz



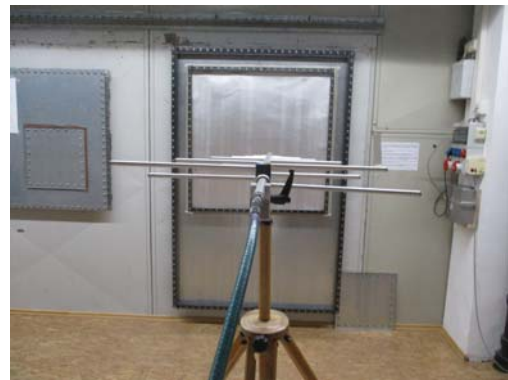
Setup 20 MHz to 200 MHz



Setup 20 MHz to 200 MHz



Setup 200 MHz to 1000 MHz



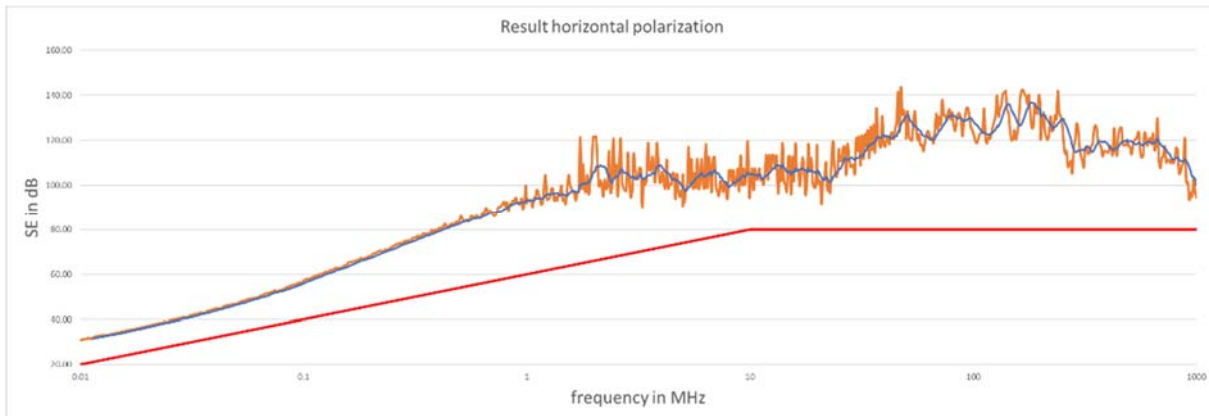
Setup 200 MHz to 1000 MHz

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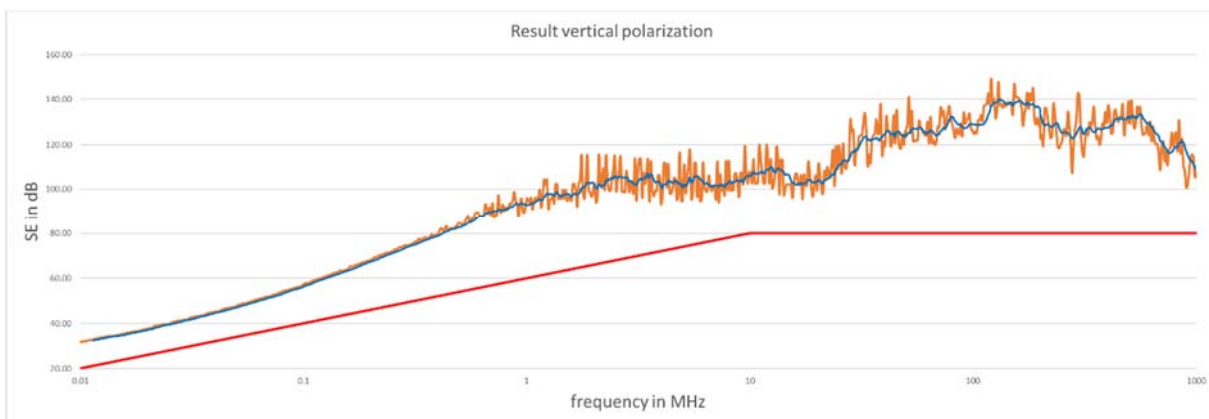
4.1.5 Test result

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



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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:

- Manufacturer and model
- Serial Number
- Software version, if applicable
- Calibration history, if applicable