

# **ELECTROMAGNETIC COMPATIBILITY CONSULTING & TESTING, CALIBRATIONS, CERTIFICATIONS, COMPONENTS, SEMINARS**

## Lightning Electromagnetic Effects on Aircraft

### Public LEMP Seminar in English Language

2021-11-18 to 2021-11-19



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## SEMINAR PROGRAM

11.02.02E1

### Lightning Electromagnetic Effects on Aircraft

Two Days Seminar

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#### Seminar venue

The seminar takes place in the EMCC Seminar Center in Unterleinleiter. It is located at the EMCC Test Labs site, which among others provide aircraft EMC services. The broad area of activities can be viewed on [www.EMCC.de](http://www.EMCC.de).

The EMCC aircraft group with the associated labs are an ideal environment for the seminar. The vast experience in aircraft measurements, system and equipment testing is combined with the latest high end test infrastructure. This site is also location of design and manufacture of HIRF generators, NEMP generators and direct as well as indirect lightning generators. These meet and exceed maximum levels of current standards and specifications.

The combination of experience and infrastructure enables an experimental portion which includes demonstrations and seeing test setups. Visits and experiments are conducted in small groups. Various kind of sites are part of the course, among them are anechoic chamber, open area test site (OATS), GTEM cell, TEM cell, reverberation chamber as well as lightning test setups. Examples are provided. Discussion and questions will be part of the seminar. Seminar notes in English language are included in the fee as well as lunch and coffee breaks.

#### Contents

- Physical Phenomena
- Certification regulation and standards
- Associated Test Methods and procedures
- Aircraft, system and avionics design to reach compliance
- Visiting the EMCC test laboratories

#### Who should attend

- EMC engineers
- EMC project managers
- Certification staff
- EMC test staff
- System designers and integrators
- Equipment designers

## SEMINAR PROGRAM

11.02.02E2

### Lightning Electromagnetic Effects on Aircraft

Two Days Seminar

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#### Day1: Lightning Protection of Aircraft and Avionics

Welcome

Basics of Electromagnetic Compatibility  
Thundercloud Electrification and Lightning  
Lightning Interaction with Aircraft

Direct Effects of Lightning  
Indirect Effects of Lightning  
Standardised Lightning Environment, Airworthiness Regulations  
Basic Steps in Lightning Protection, Design and Certification

EMCC Labs Visit – Unterleinleiter Site  
Basic Steps in Aircraft Lightning Protection Certification

Direct Effects of Lightning  
Fuel Systems  
Indirect Effects of Lightning  
Equipment Transient Design Levels and Transient Control Levels  
Real world situations

Basic Steps in Lightning Protection Design  
Shielding, Filtering, Grounding

#### Day2: Approach to Compliance and Test

Test Methods for Indirect Effects of Lightning  
Test Methods for Direct Effects on Structures  
Test Methods for Fuel Systems  
Test Plan/Test Procedures

Real world issues  
Discussion, questions and answers

Transfer to the EMCC Labs, Moggast Site  
Lab Visit

Practical Demonstrations  
Test Methods for Verification of Protection, Lightning Indirect Effects  
Test Methods for Verification of Protection, Lightning Direct Effects

99.00.02E

To  
EMCC DR. RAŠEK  
Seminar Center  
Stoernhofer Berg 15  
91364 Unterleinleiter  
Germany

Proj. # .....

(prepared for window envelope)

F: +49 9194 7262-199

Purchase order #

Reference #

Date

## REGISTRATION FORM

for the **Two Days Seminar # 11.02.02E** from 2021-11-18 to 2021-11-19  
Topic: **LEMP –Lightning Electromagnetic Effects on Aircraft** in English language

Seminar venue: **EMCC DR. RAŠEK Seminar Center, in 91364 Unterleinleiter, Stoernhofer Berg 15, Door #1, Germany, T: +49 9194 7263-0 F: +49 9194 7262-199 E: emc.sem@emcc.de.**

Company: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Postcode/Town/City \_\_\_\_\_  
Telephone: \_\_\_\_\_      Telefax: \_\_\_\_\_      Mail: \_\_\_\_\_

Name of participants (for more participants please use separate sheet):      Position:

1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_

**Seminar fees: EUR 1,450.00 per participant, VAT additionally if applicable.**

The EMCC general conditions will be accepted with the booking. Seminar fees are due to receipt of invoice or 14 days before seminar start, latest.

\_\_\_\_\_  
(Place, date)

\_\_\_\_\_  
(Authorized Signature)

**Invoicing Address and VAT number:**

\_\_\_\_\_  
\_\_\_\_\_  
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## EMCC SEMINARS - TERMS AND CONDITIONS OF PARTICIPATION

### REGISTRATION

by MAIL	by FAX	by PHONE	by E-MAIL
EMCC DR. RAŠEK Störnhofer Berg 15 91364 Unterleinleiter Germany	+49 9194 7262-199	+49 9194 7263-0	emc.sem@emcc.de

### FEES

The seminar fee must be paid after receipt of the invoice and the confirmation of booking. All invoices must be paid in advance, 14 days prior to the seminar start at the latest.

The costs for all documentation and seminar papers are included in the seminar fee.

The seminar fee is subject to VAT if venue is in Europe.

### HOWTOFINDUS

You will receive a confirmation of booking including location details, also please see [www.emcc.de](http://www.emcc.de).

### CANCELLATIONS

No charges will be considered for cancellations received not later than 14 days prior to the event. Cancellations within 14 to 3 working days before the start of the seminar will be liable for 50 % of the seminar fee. After this date cancellations are liable for the full seminar fee. The same applies to non-appearance or interruption. However, we are happy to accept substitute delegates at any time.

### CHANGE OF TERMS

In case of cancellation caused by EMCC DR. RAŠEK (e.g. for sick leave or insufficient number of participants), the entire fee will be refunded.

A change of speakers does not legitimate a reduction of the seminar fee or withdrawal of the booking.

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## EMCC Seminar Center & Laboratory

in Unterleinleiter, Germany

