EMCC ™
DR. RAŠEK
SINCE 1977
ELECTROMAGNETIC COMPATIBILITY CERTIFICATION
EMCCert DR. RAŠEK · Boelwiese 5 · 91320 Ebermannstadt · Germany

Zertifizierungsinstitut · Certification Institute
Sachverständigenbüro · Technical Experts

Von der Industrie- und Handelskammer für Oberfranken Bayreuth 1977 öffentlich bestellter und vereidigter Sachverständiger für elektrische Störungen und elektromagnetische Verträglichkeit

BENANNTE STELLE / NOTIFIED BODY
89/336, 91/263, 93/97, 98/13, 99/5/EC
BRD/RegTP EU # 0678

ZUSTÄNDIGE STELLE / COMPETENT BODY
89/336/EEC
DAR # BPT-ZE-009/94

Federal Communications Commission
Authorizations and Evaluation Division
7435 Oakland Mills Road
Columbia
Maryland 21046
USA

Ihr Zeichen Your Reference	Unser Zeichen Our Reference	Datum Date
	Kn/-980162EB/nb	2002-03-25

Telefon: 0 91 94 - 93 31
International: + 49 - 91 94 - 93 31
Telefax: 0 91 94 - 79 64 - 84
International: + 49 - 91 94 - 79 64 - 84
Mail: emc.cert@emcc.de
Web: http://www.emcc.de

Dear Mr Dichoso

This is to answer the questions concerning the message and the project

FCC ID: OAYARS100-3
Applicant: Automotive Distance Control Systems GmbH
Correspondence Reference Number: 22084
731 Confirmation Number: EA543322

1) What is the pulse width of the signal?
Provide a bandwidth plot of the signal set the RBW to 1% of the span which just captures the modulated signal.

Answer: Please find a description of the pulse modulation scheme attached (annex 1).
Please find the spectrum analyzer plots attached (annex 2 and 3).
Annex 2 shows the spectrum with the carrier in pulsed mode and the emission of the local oscillator. Annex 3 shows the pulsed carrier, only.

2) What is the Pulse Repetition Factor of the signal(PRF)?

Answer: Please find a description of the pulse modulation scheme attached (annex 1).

3) What mode(e.g. CW, pulsed...) was the device in when the data of the fundamental listed in test report was taken?
What was the level of the fundamental in the pulsed mode?
What was the level of the fundamental in the CW mode?

V.A.T. Id. Nr.: DE132638900

Bank: HypoVereinsbank Forchheim, Germany # 1040293139 (BLZ 760 202 14), S.W.I.F.T.-Code HYVEDEMM222
Sparkasse Forchheim, Germany # 74468 (BLZ 763 510 40), S.W.I.F.T.-Code BYLADEMM
Bank Austria, Austria # 501 901 443/00 (BLZ 20 151), S.W.I.F.T.-Code BKAUATWWXXX
SBG/UBS Zuerich, Switzerland, # 804 693 01 L, S.W.I.F.T.-Code UBSWCHZH83A
CitiBank New York, USA # 50273189, S.W.I.F.T.-Code CITIUS 33

BriefCert/GW/2001-04-09

Answer: On page 22 of the test report #EMCC-980162EB, 2001-OCT-23 the NOTES explain the mode. The carrier at 76,509 MHz is measured in CW mode (worst case).
The level of the fundamental in the CW mode: -16.8 dBm/cm² (= 20.9 mW/cm²)
The level of the fundamental in the pulsed mode: -23.9 dBm/cm² (= 4.1 mW/cm²)
Please refer to annex 4 showing the difference between CW mode and pulsed mode.

4) Provide the radiated field strength level of the fundamental in the "line spectrum mode" (set the RBW to 0.3*PRF). This is the average level.
Add the appropriate pulse desensitization factor 20 log (pulse width* PRF) to obtain the peak level.
List the average and peak levels in the line spectrum mode.

Answer: Please refer to annex 5 with different RBWs. These three plots were taken due to the variation of the PRF.

PRF (kHz)	0.3 x PRF (kHz)	RBW in plot (kHz)
236	70.8	80
352	105.7	106.1
469	140.7	138.3

Add to the reading the conversion factor 26.1 dB to get the power density in dBm/cm².

Plot No	Reading (dBm)	Corr. Factor (dB)	Result Average (dBm/cm²)	Pulse desensitization factor (dB)	Result Peak (dBm/cm²)	Result Peak (mW/cm²)
1	-65.0	26.1	-38.9	-20.5	-18.4	14.5
2	-62.5	26.1	-36.4	-17.0	-19.3	11.7
3	-61.3	26.1	-35.2	-14.5	-20.7	8.5

NOTE: The plots in annex 4 are from the measurements on the unit described in the test report. The plots in annexes 2, 3 and 5 are from retests to show the pulse spectrum and modulation behavior. Appropriate correction factors were calculated and taken.

Yours sincerely,
EMCCert DR. RAŠEK

Klaus Knoerig
Agent for Automotive Distance Control Systems GmbH
EMCC Dr. Rasek
Boelwiese 5
Ebermannstadt, Germany 91320

Enclosures:
- Annex 1: Pulse modulation scheme (Attention: CONFIDENTIAL !)
- Annex 2: Spectrum analyzer plot (carrier in pulsed mode and emissions of LO)
- Annex 3: Spectrum analyzer plot (pulsed carrier, only)
- Annex 4: Spectrum analyzer plots (level of fundamental in CW mode and pulsed mode)
- Annex 5. Spectrum analyzer plots (different RBW and PRF)