TÜV AUSTRIA SERVICES GMBH

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Business Area
Industry & Energy
Austria

Technik

TEST REPORT

of the accredited test laboratory

TÜV Nr.:INE-AT/FG-17/142

Applicant:	KEBA AG Gewerbepark Urfahr A-4041 Linz		
Tested Product:	RFID reader module		
FCC-ID:	U870008		
IC-ID:	20800-RFIDUNI		
Manufacturer:	See Applicant		
Output power / field strength:	65,1 dBµV/m @ 3m distance	**power supply:**	5V DC
Frequency range:	13,56 MHz	**Channel separation:**	N/A
Standard:	FCC: 47 CFR Part 15 (October 1, 2016 edition) RSS-210 Issue 9, August 2016		

Testing Laboratory,
Inspection Body,
Certification Body,
Calibration Laboratory
Verifizierungsstelle

Notified Body 0408
IC 2932K-1

Non-executive Board of Directors:
KR DI Johann Marihart

Management:
DI Dr. Stefan Haas
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Registered Office:
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TUV Austria Services GmbH
Test laboratory for EMC

Supervisor of EMC-laboratory:

Ing. Wilhelm Seier

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TÜV AUSTRIA
Rundsiegel

12.01.2018

checked by:

Ing. Michael Emminger

Copy Nbr.: 01

Contents

1. Applicant

Company:	KEBA AG
Department:	Development Center
Address:	4041 Linz/Austria; Gewerbepark Urfahr
Contact person:	Mr. Christian Leitner

EUT received on:	26.07.2017
Tests were performed on:	26.07.2017

2. Description of EUT

EUT:	RFID module "RFID UNI MODUL"
Serial Number:	Prototype
Manufacturer:	KEBA AG 4041 Linz/Austria; Gewerbepark Urfahr
Description:	KEBA AG provided the following configuration for the measurements: Prototype
Operating mode:	The measurements were carried out at the following running states: Continuous transmission – module folded / unfolded
Technical data EUT:	Rated voltage: 5VDC Rated current: <1A Rated frequency: DC Mains voltage during the tests: 5V DC via USB connector
Climatic conditions in the emc laboratory:	Relative humidity: 43% Temperature: 26°C

3. Standards / Final result

Name	Title	Deviation	Result
Title 47 CFR Part 15 October 1, 2016 edition	RADIO FREQUENCY DEVICES	none	OK
RSS-210 Issue 9 August 2016	Licence-Exempt Radio Apparatus: Category I Equipment	none	OK

Result: Opinions and interpretation of testing laboratory
OK: EUT passed
NOK: EUT failed

4. Test results

4.1 TEST OBJECT DATA

General EUT Description

This RFID module device is intended to read data from NFC tags. It therefore uses 13,56 MHz at a very low transmitter signal level.

2.1033 (c) Technical description

2.1033 (4) Type of emission: continuous transmission

2.1033 (5) Frequency range: only one operating frequency 13,56 MHz.

2.1033 (6) Power range and Controls: Fixed output power resulting in 65,1 dBµV/m field strength in 3m distance.

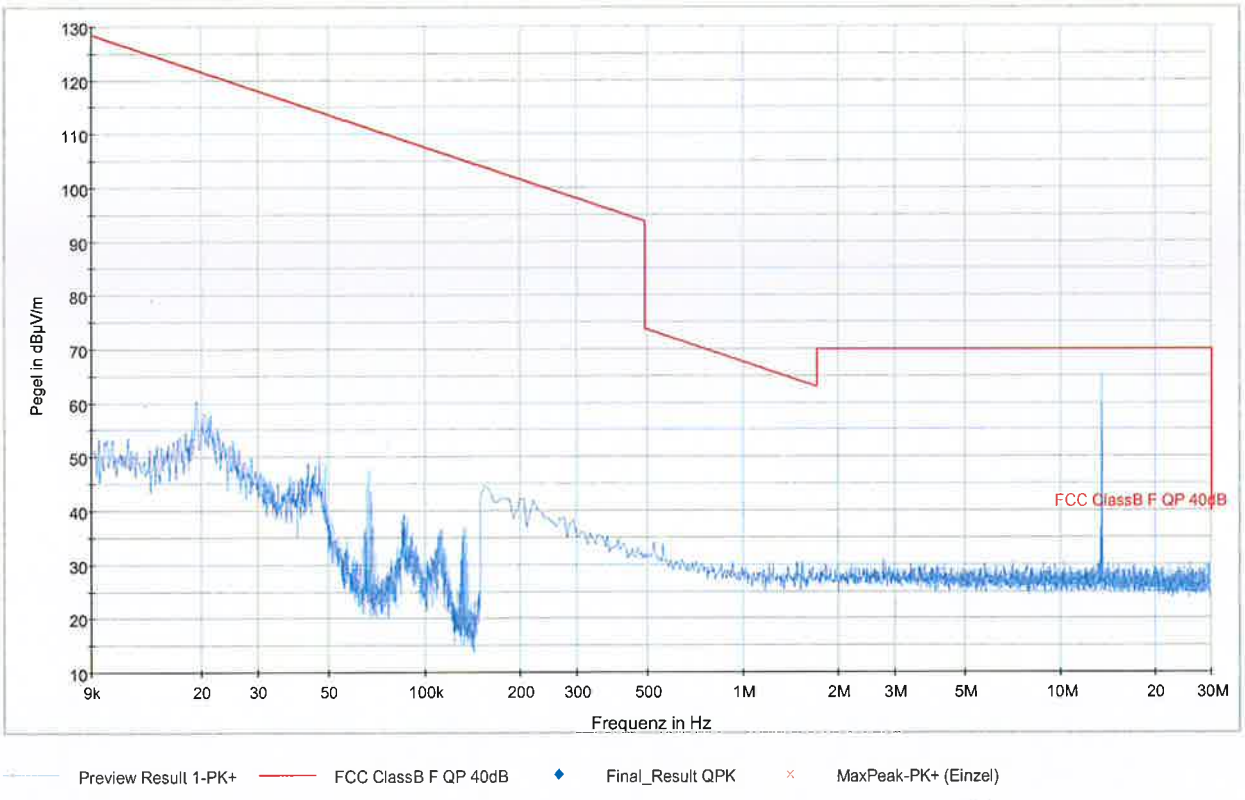
2.1033 (7) Maximum output power rating: 65,1 dBµV/m @ 3m distance.

2.1033 (8) DC Voltage and Current: 5 V DC powered
maximum current consumption: 50 mA

4.2 Field strength of emissions at 13,110 – 14,010 MHz

§ 15.225 (a) (b) (c)
B.6

Module unfolded



Field strength at 13,56 MHz: 65,1 dBµV/m = 1799 µV/m at 3 m distance. Converted with 40dB per decade for the 30m Limit this would be a Level of 25,1 dBµV/m or 17,99 µV/m.

LIMIT **SUBCLAUSE 15.225(a) (b) (c) (B.6)**

(a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

(b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

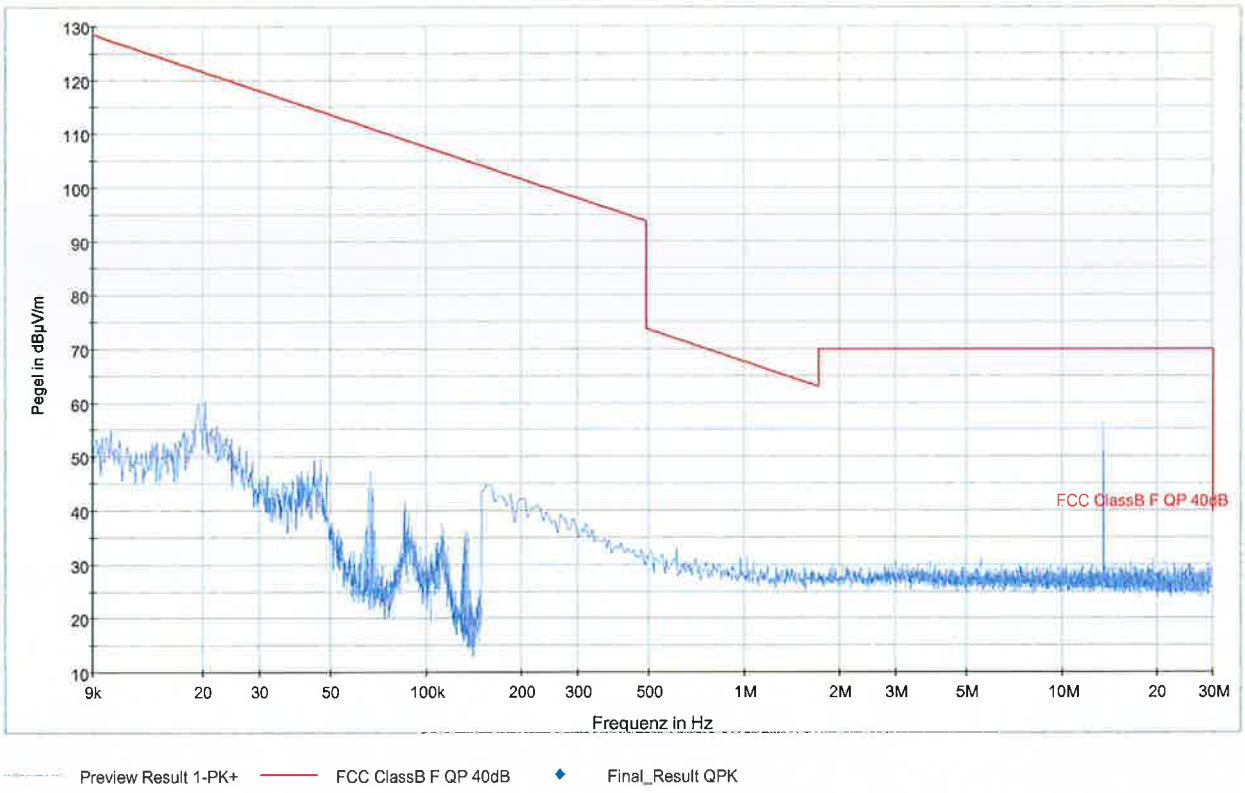
(c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

Test Equipment used: EMV-100; EMV-101; EMV-103; EMV-105; NT-122; NT-151; EMV-200

Ambient temperature: 26°C Relative humidity: 43%

Field strength of emissions at 13,110 – 14,010 MHz **§ 15.225 (a) (b) (c) B.6**

Module folded



Field strength at 13,56 MHz: 56,4 dBµV/m = 661 µV/m at 3 m distance. Converted with 40dB per decade for the 30m Limit this would be a Level of 16,4 dBµV/m or 6,61 µV/m.

LIMIT **SUBCLAUSE 15.225(a) (b) (c) (B.6)**

(a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

(b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

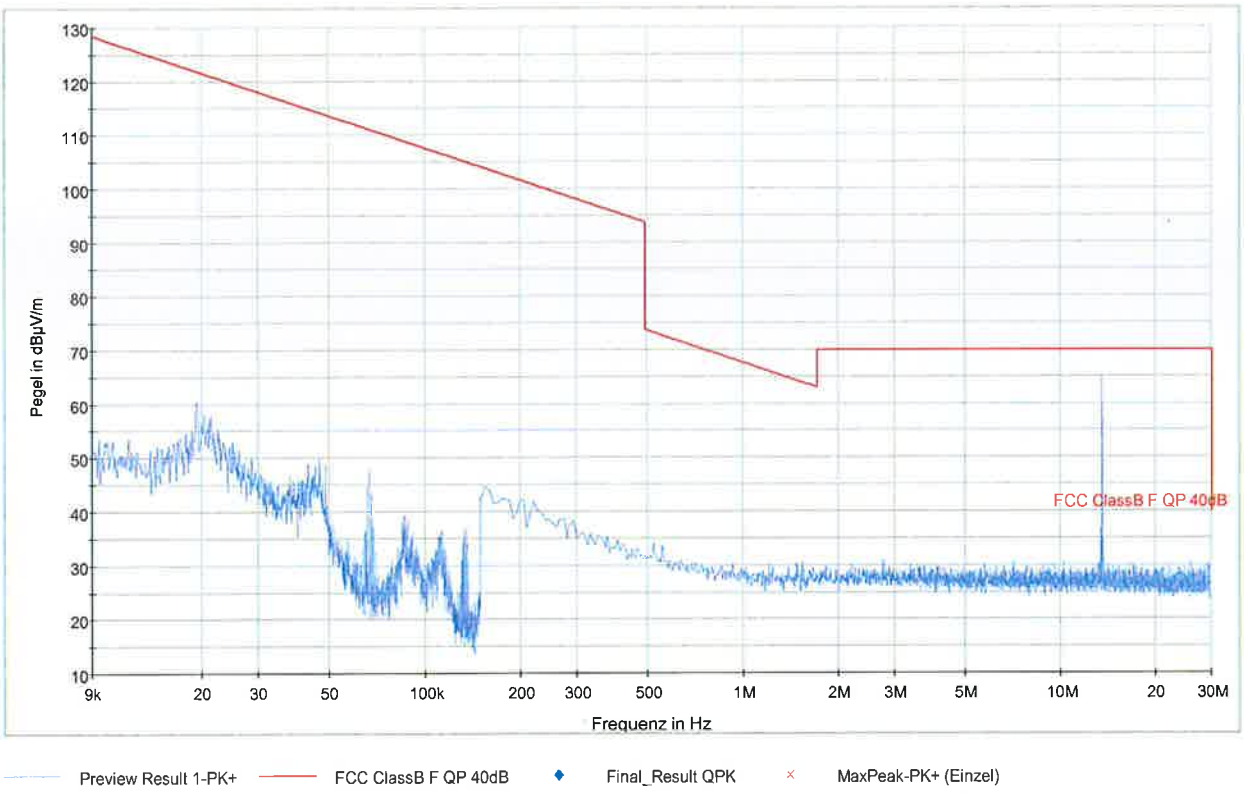
(c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

Test Equipment used: EMV-100; EMV-101; EMV-103; EMV-105; NT-122; NT-151; EMV-200

4.3 Emissions outside 13,110 – 14,010 MHz

§ 15.225 (d)
B.6

Module unfolded



LIMIT **SUBCLAUSE 15.225(d) (15.209) (B.6 / RSS-Gen)**

(d) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

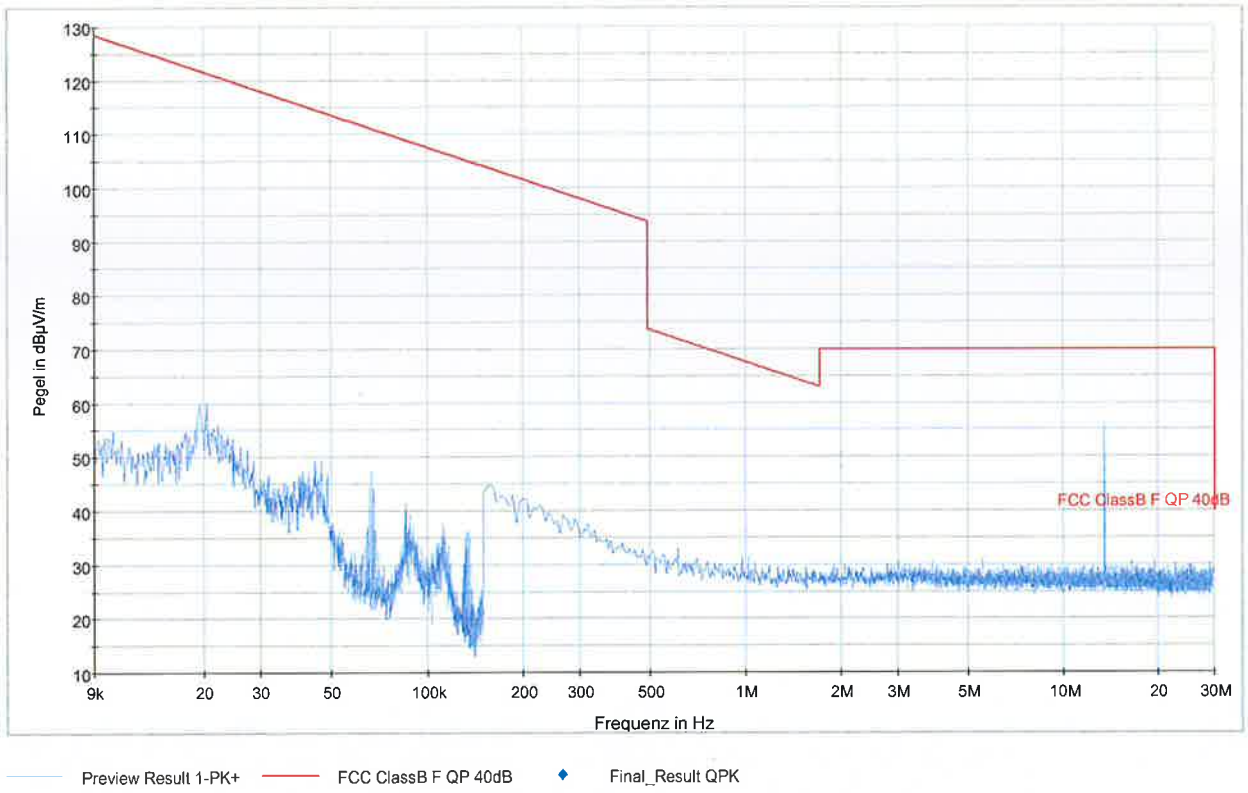
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100**	3
88–216	150**	3
216–960	200**	3
Above 960	500	3

Test Equipment used: EMV-100; EMV-101; EMV-103; EMV-105; NT-122; NT-151; EMV-200

Ambient temperature: 26°C Relative humidity: 43%

Emissions outside 13,110 – 14,010 MHz **§ 15.225 (d)**
B.6

Module folded



LIMIT **SUBCLAUSE 15.225(d) (15.209) (B.6 / RSS-Gen)**

(d) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

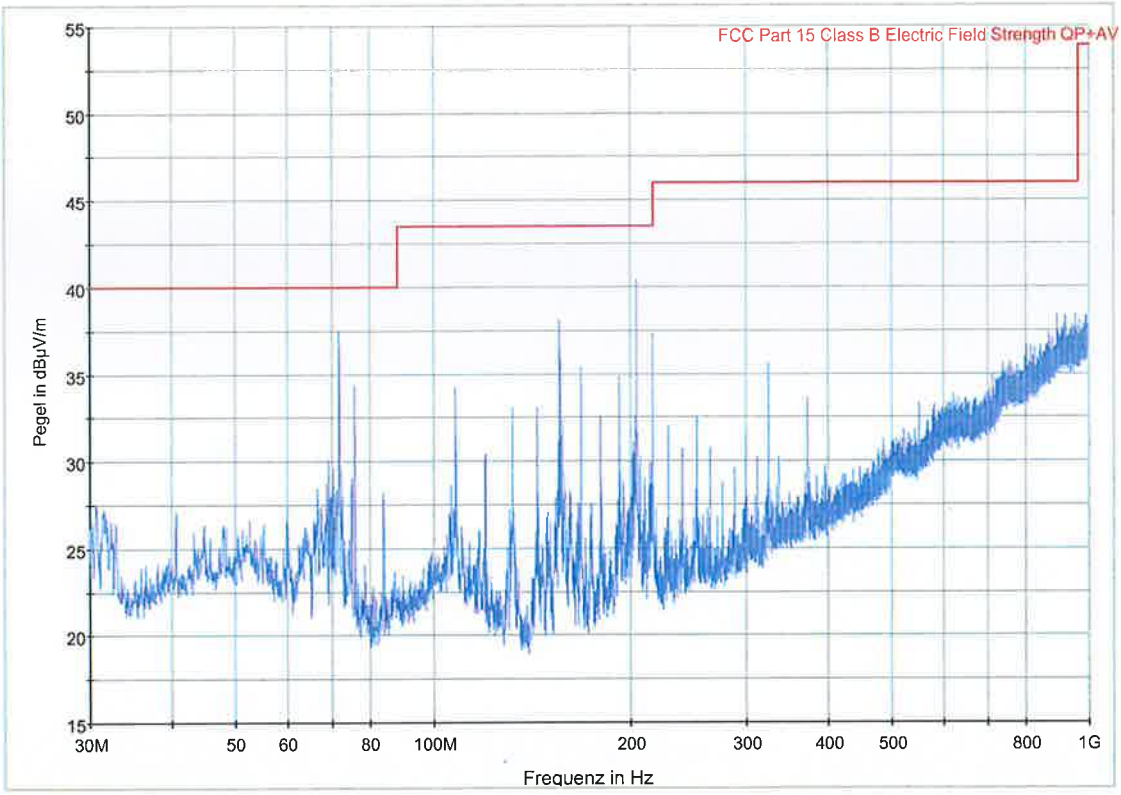
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100**	3
88–216	150**	3
216–960	200**	3
Above 960	500	3

Test Equipment used: EMV-100; EMV-101; EMV-103; EMV-105; NT-122; NT-151; EMV-200

Ambient temperature: 26°C Relative humidity: 43%

Emissions outside 13,110 – 14,010 MHz **§ 15.225 (d) B.6**

Module unfolded



Preview Result 1-PK+ FCC Part 15 Class B Electric Field Strength QP+AV

Quasipeak Level at 204,05 MHz: 31,99 dBµV/m @ 3m.

LIMIT **SUBCLAUSE 15.225(d) (15.209) (B.6 / RSS-Gen)**

(d) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

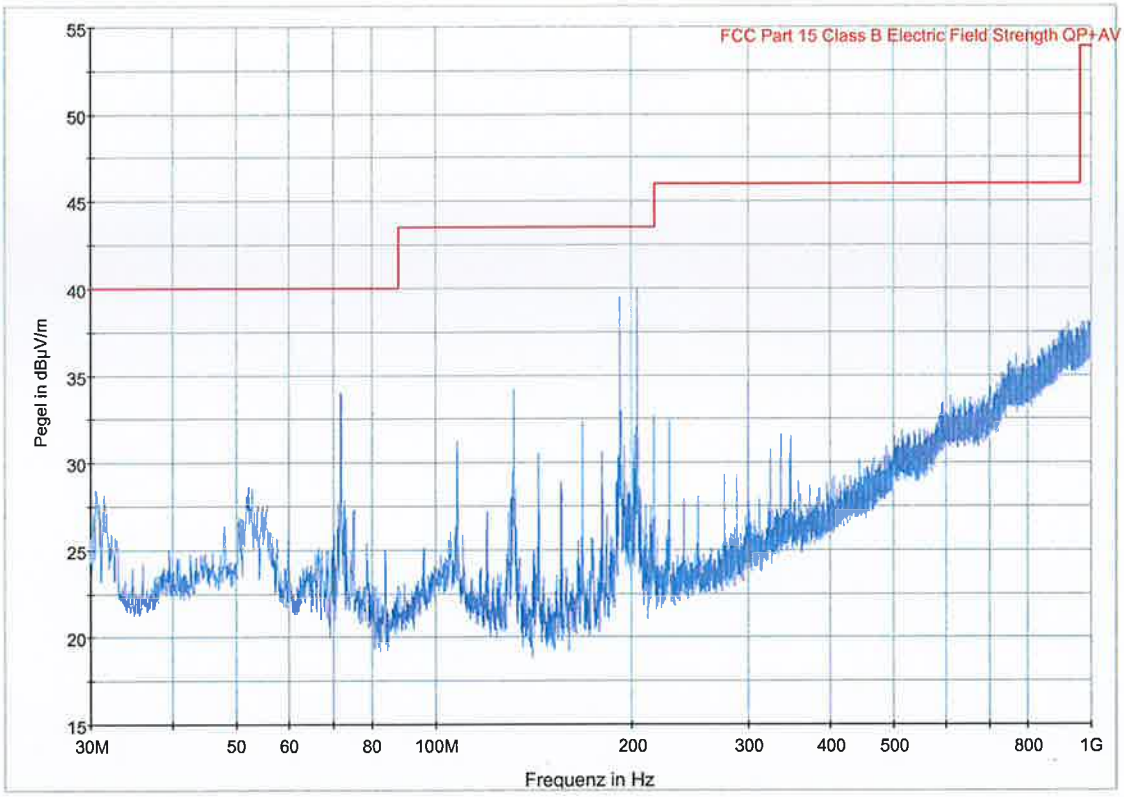
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100**	3
88–216	150**	3
216–960	200**	3
Above 960	500	3

Test Equipment used: EMV-100; EMV-101; EMV-102; EMV-103; EMV-105; EMV-112; EMV-200

Ambient temperature: 26°C Relative humidity: 43%

Emissions outside 13,110 – 14,010 MHz **§ 15.225 (d)**
B.6

Module folded



Preview Result 1-PK+ FCC Part 15 Class B Electric Field Strength QP+AV

Quasipeak Level at 204,00 MHz: 32,10 dBµV/m @ 3m.

LIMIT **SUBCLAUSE 15.225(d) (15.209) (B.6 / RSS-Gen)**

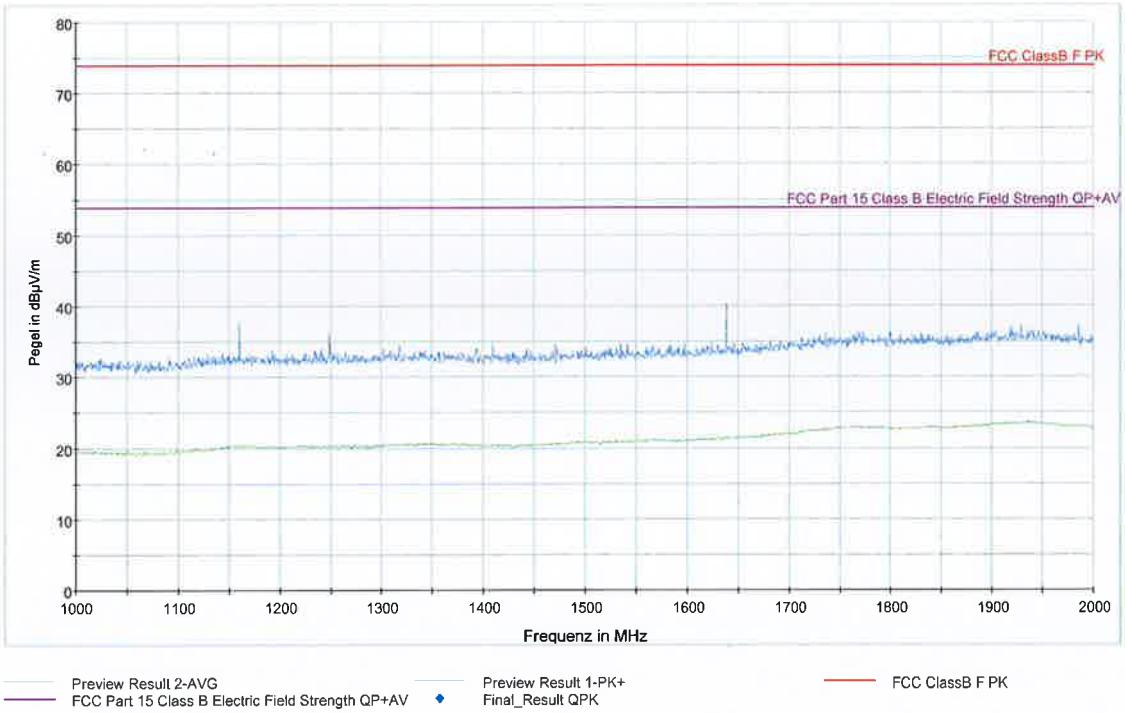
(d) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100**	3
88–216	150**	3
216–960	200**	3
Above 960	500	3

Test Equipment used: EMV-100; EMV-101; EMV-102; EMV-103; EMV-105; EMV-112; EMV-200

Emissions outside 13,110 – 14,010 MHz **§ 15.225 (d)**
B.6

Green line: Peak measurement; Magenta line: Average measurement



As the highest internal frequency of the digital control device is 320 MHz, measurements were performed up to 2 GHz. As the emissions below 1 GHz were quite the same if folded or unfolded, only unfolded module was measured above 1 GHz.

LIMIT **SUBCLAUSE 15.225(d) (15.209) (B.6 / RSS-Gen)**

(d) The field strength of any emissions appearing outside of the 13.110–14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24000/F(kHz)	30
1.705–30.0	30	30
30–88	100**	3
88–216	150**	3
216–960	200**	3
Above 960	500	3

Test Equipment used: EMV-100; EMV-101; EMV-102; EMV-103; EMV-105; EMV-110; EMV-111; EMV-200

4.4 Frequency tolerance

§ 15.225 (e)
B.6

Frequency error vs. Supply voltage

DC-Voltage	Frequency Error Hz	Frequency Error %
4,25 V	+9	0,0000664
5 V	+9	0,0000664
5,75 V	+9	0,0000664

Frequency error vs. Temperature

Temperature °C	Frequency Error Hz	Frequency Error %
-20	+398	0,0029351
+20	+9	0,0000664
+50	-112	-0,0008260

LIMIT **SUBCLAUSE 15.225(e) (B.6)**

(e) The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of −20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

Test Equipment used: EMV-100; EMV-101; EMV-103; NT-122; NT-151; EMV-205

Appendix 1
Test equipment used

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☐	Anechoic Chamber with 3m measurement distance	NT-100	☐	Power quality analyzer Fluke 1760 (complete set)	NT-160 - NT-173
☐	Stripline according to ISO 11452-5	NT-108	☐	Spectrumanalyzer – FSP7 9 kHz – 7 GHz	NT-200
☐	MA4000 - Antenna mast 1 - 4 m height	NT-110/1	☐	ESCI - Test receiver 9 kHz - 7 GHz	NT-203/1
☐	DS - Turntable 0 - 400 ° Azimuth	NT-111/1	☐	ESI26 – Test receiver 20 Hz – 26,5 GHz	NT-207
☐	CO3000 Controller Mast+Turntable	NT-112/1	☐	Digital Radio Tester CTS55	NT-208
☐	HUF-Z3 - Log. Per. Antenna 200 - 1000 MHz	NT-121	☐	Noise-gen., ITU-R 559-2 20 Hz – 20 kHz	NT-209
☐	HFH-Z2 - Loop Antenna 9 kHz - 30 MHz	NT-122	☐	CMTA - Radiocommunication analyzer ; 0,1 - 1000 MHz	NT-210
☐	HFH-Z6 - Rod Antenna 9 kHz - 30 MHz	NT-123	☐	3271 - Spectrum analyzer 100 Hz - 26,5 GHz	NT-211
☐	3121C - Dipole Antenna 28 - 1000 MHz	NT-124	☐	Digital Radio Tester Aeroflex 3920	NT-212/1
☐	3115 - Horn Antenna 1 - 18 GHz (immunity)	NT-125	☐	Mixer M28HW 26,5 GHz - 40 GHz	NT-214
☐	3116 - Horn Antenna 18 - 40 GHz	NT-126	☐	RubiSource T&M Timing reference	NT-216
☐	SAS-200/543 - Bicon. Antenna 20 MHz - 300 MHz	NT-127	☐	Radiocommunicationanalyzer SWR 1180 MD	NT-217
☐	AT-1080 - Log. Per. Antenna 80 - 1000 MHz	NT-128	☐	Mixer M19HWD 40 GHz – 60 GHz	NT-218
☐	HK-116 - bicon. Antenna 20 MHz - 300 MHz	NT-129	☐	Mixer M12HWD 60 GHz – 90 GHz	NT-219
☐	HK-116 - bicon. Antenna 20 MHz - 300 MHz	NT-130	☐	DSO9104 Digital scope	NT-220/1
☐	3146 - Log. Per. Antenna 200 – 1000 MHz	NT-131	☐	TPS 2014 Digital scope	NT-222
☐	VULB 9163 Trilog Antenna 30 – 3000 MHz	NT-131/1	☐	Artificial Ear according to IEC 60318	NT-224
☐	Loop Antenna H-Field	NT-132	☐	1 kHz Sound calibrator	NT-225
☐	Horn Antenna 500 MHz - 2900 MHz	NT-133	☐	B10 - Harmonics and flicker analyzer	NT-232
☐	Horn Antenna 500 MHz - 6000 MHz	NT-133/1	☐	SRM-3006 Spectrumanalyzer	NT-233/1a
☐	Log. per. Antenna 800 MHz - 2500 MHz	NT-134	☐	E-field probe SRM 75 MHz – 3 GHz	NT-234
☐	Log. per. Antenna 800 MHz - 2500 MHz	NT-135	☐	Field Meter NBM-500 incl. E- and H-Field probes	NT-240a-e
☐	BiConiLog Antenna 26 MHz – 2000 MHz	NT-137	☐	Hall-Teslameter ETM-1	NT-241
☐	Conical Dipol Antenna PCD8250	NT-138	☐	EFA-3 H-field- / E-field probe	NT-243
☐	HF 906 - Horn Antenna 1 - 18 GHz (emission)	NT-139	☐	EHP-50F H-field- / E-field probe	NT-243/1
☐	HZ-1 Antenna tripod	NT-150	☐	Field Meter EMR-200 100 kHz – 3 GHz	NT-244
☐	BN 1500 Antenna tripod	NT-151	☐	E-field probe 100 kHz – 3 GHz	NT-245
☐	Ant. tripod for EN61000-4-3 Model TP1000A	NT-156	☐	H-field probe 300 kHz – 30 MHz	NT-246

Division:
Industry & Energy

Department: FG

Test report number:
INE-AT/FG-17/142

Date: 12.01.2018

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Appendix 1 (continued)
Test equipment used

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☐	E-field probe 3 MHz – 18 GHz	NT-247	☐	BTA-250 - RF-Amplifier 9 kHz - 220 MHz / 250 W	NT-330
☐	H-field probe 27 MHz – 1 GHz	NT-248	☐	T82-50 RF-Amplifier 2 GHz – 8 GHz	NT-331
☐	ELT-400 1 Hz – 400 kHz	NT-249	☐	500W1000M7 - RF-Amplifier 80 - 1000 MHz / 500 W	NT-332
☐	MDS 21 - Absorbing clamp 30 - 1000 MHz	NT-250	☐	AS0102-65R - RF-Amplifier 1 GHz - 2 GHz	NT-333
☐	FCC-203I EM Injection clamp	NT-251	☐	APA01 – RF-Amplifier 0,5 GHz – 2,5 GHz	NT-334
☐	FCC-203I-DCN Ferrite decoupling network	NT-252	☐	Preamplifier 1 GHz - 4 GHz	NT-335
☐	PR50 Current Probe	NT-253	☐	Preamplifier for GPS MKU 152 A	NT-336
☐	i310s Current Probe	NT-254/1	☐	Preamplifier 100 MHz – 23 GHz	NT-337
☐	Fluke 87 V True RMS Multimeter	NT-260	☐	DC Block 10 MHz – 18 GHz Model 8048	NT-338
☐	Model 2000 Digital Multimeter	NT-261	☐	2-97201 Electronic load	NT-341
☐	Fluke 87 V Digital Multimeter	NT-262/1	☐	TSX3510P - Power supply 0-30 V / 0 - 10 A	NT-344
☐	ESH2-Z5-U1 Artificial mains network 4x25A	NT-300	☐	TSX3510P - Power supply 0-30 V / 0 - 10 A	NT-345
☐	ESH3-Z5-U1 Artificial mains network 2x10A	NT-301	☐	VDS 200 Mobil-impuls-generator	NT-350
☐	ESH3-Z6-U1 Artificial mains network 1x100A	NT-302	☐	LD 200 Mobil-impuls-generator	NT-351
☐	ESH3-Z6-U1 Artificial mains network 1x100A	NT-302a	☐	MPG 200 Mobil-Impuls-Generators	NT-352
☐	PHE 4500/B Power amplifier	NT-304	☐	EFT 200 Mobil-impuls-generator	NT-353
☐	EZ10 T-Artificial Network	NT-305	☐	AN 200 S1 Artificial Network	NT-354
☐	SMG - Signal generator 0,1 - 1000 MHz	NT-310	☐	FP-EFT 32M 3 ph. Coupling filter (Burst)	NT-400/1
☐	SMA100A - Signal generator 9 kHz - 6 GHz	NT-310/1	☐	PHE 4500 - Mains impedance network	NT-401
☐	RefRad Reference generator	NT-312	☐	IP 6.2 Coupling filter for data lines (Surge)	NT-403
☐	SMP 02 Signal generator 10 MHz - 20 GHz	NT-313	☐	TK 9421 High Power Volt. Probe 150 kHz - 30 MHz	NT-409
☐	40 MHz Arbitrary Generator TGA1241	NT-315	☐	ESH2-Z3 - Probe 9 kHz - 30 MHz	NT-410
☐	Artificial mains network NSLK 8127-PLC	NT-316	☐	IP 4 - Capacitive clamp (Burst)	NT-411
☐	ESD 30 System up to 25 kV	NT-321	☐	Highpass-Filter 100 MHz – 3 GHz	NT-412
☐	PSURGE 4.1 Surge generator	NT-324	☐	Highpass-Filter 600 MHz – 4 GHz	NT-413
☐	IMU4000 Immunity test system	NT-325/1	☐	Highpass-Filter 1250 MHz – 4 GHz	NT-414
☐	VCS 500-M6 Surge-Generator	NT-326	☐	Highpass-Filter 1800 MHz – 16 GHz	NT-415
☐	Oscillatory Wave Simulator incl. Coupling networks	NT-328a+b+c			

Appendix 1 (continued)
Test equipment used

TÜV AUSTRIA

☐	Highpass-Filter 3500 MHz – 18 GHz	NT-416
☐	RF-Attenuator 10 dB DC – 18 GHz / 50 W	NT-417
☐	RF-Attenuator 6 dB DC – 18 GHz / 50 W	NT-418
☐	RF-Attenuator 3 dB DC – 18 GHz / 50 W	NT-419
☐	RF-Attenuator 20 dB DC - 1000 MHz / 25 W	NT-421
☐	RF-Attenuator 30 dB DC - 1000 MHz / 1 W	NT-423
☐	RF-Attenuator 30 dB	NT-424
☐	RF-Attenuator 6 dB DC - 1000 MHz / 1 W	NT-425
☐	RF-Attenuator 6 dB DC - 1000 MHz / 1 W	NT-426
☐	RF-Attenuator 6 dB	NT-428
☐	RF-Attenuator 0 dB - 81 dB	NT-429
☐	WRU 27 - Band blocking 27 MHz	NT-430
☐	WHJ450C9 AA - High pass 450 MHz	NT-431
☐	WHJ250C9 AA - High pass 250 MHz	NT-432
☐	RF-Load 150 W	NT-433
☐	Impedance transducer 1:4 ; 1:9 ; 1:16	NT-435
☐	RF-Attenuator DC – 18 GHz 6 dB	NT-436
☐	RF-Attenuator DC – 18 GHz 6 dB	NT-437
☐	RF-Attenuator DC – 18 GHz 10 dB	NT-438
☐	RF-Attenuator DC – 18 GHz 20 dB	NT-439
☐	I+P 7780 Directional coupler 100 - 2000 MHz	NT-440
☐	ESH3-Z2 - Pulse limiter 9 kHz - 30 MHz	NT-441
☐	Power Divider 6 dB/1 W/50 Ohm	NT-443
☐	Directional coupler 0,1 MHz – 70 MHz	NT-444
☐	Directional coupler 0,1 MHz – 70 MHz	NT-445
☐	Tube imitations according to EN 55015	NT-450
☐	FCC-801-M3-16A Coupling decoupling network	NT-458
☐	FCC-801-M2-50A Coupling decoupling network	NT-459
☐	FCC-801-M5-25 Coupling decoupling network	NT-460
☐	FCC-801-AF10 Coupling decoupling network	NT-461
☐	FCC-801-S25 Coupling decoupling network	NT-462
☐	FCC-801-T4 Coupling decoupling network	NT-463
☐	FCC-801-C1 Coupling decoupling network	NT-464
☐	SW 9605 - Current probe 150 kHz – 30 MHz	NT-465/1
☐	95242-1 – Current probe 1 MHz – 400 MHz	NT-468
☐	94106-1L-1 – Current probe 100 kHz – 450 MHz	NT-471
☐	GA 1240 Power amplifier according to EN 61000-4-16	NT-480
☐	Coupling networks according to EN 61000-4-16	NT-481 - NT-483
☐	Van der Hoofden Test Head	NT-484
☐	PC P4 3 GHz Test computer	NT-500
☐	PC P4 1700 MHz Notebook	NT-505
☐	Monitoring camera with Monitor	NT-511
☐	ES-K1 Version 1.71 SP2 Test software	NT-520
☐	EMC32 Version 10.30.00 Test software	NT-520/1
☐	SRM-TS Version 1.3 software for SRM-3000	NT-522
☐	SRM-TS Version 1.3.1 software for SRM-3006	NT-522/1
☐	Spitzenberger und Spies Test software V4.1	NT-525
☐	Noise power test apparatus according to EN 55014	NT-530
☐	Vertical coupling plane (ESD)	NT-531
☐	Test cable #4 for EN 61000-4-6	NT-553
☐	Test cable #3 for conducted emission	NT-554
☐	Test cable #5+#6 ESD-cable (2x470k)	NT-555 + NT-556
☐	Test cable #8 Sucoflex 104EA	NT-559
☐	Test cable #9 (for outdoor measurements)	NT-580
☐	Test cable #10 (for outdoor measurements)	NT-581
☐	Test cable #13 Sucoflex 104PE	NT-584
☐	Test cable #21 for SRM-3000	NT-592
☐	Shield chamber	NT-600
☐	Climatic chamber	M-1200

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Appendix 1 (continued)
Test equipment used

TÜV AUSTRIA

☐	Anechoic Chamber 3 m / 5 m measuring distance	EMV-100
☐	Turntabel 6 m diameter	EMV-101
☐	Antenna mast 1 – 4 m	EMV-102
☐	Mast and Turntable controller FC-06	EMV-103
☐	EMC Video/Audiosystem	EMV-104
☐	EMC Software EMC32 Version 10.30.00	EMV-105
☐	Hornantenna 1 – 18 GHz HF 907	EMV-110
☐	Antennapre.amp. 1 – 18 GHz ERZ-LNA0200-1800-30-2	EMV-111
☐	Trilog Antenna 30-3000 MHz VULB9163	EMV-112
☐	Monopol 9 kHz – 30 MHz VAMP 9243	EMV-113
☐	Antennapre.amp 18 – 40 GHz BBV 9721	EMV-114
☐	DC Artificial Network PVDC 8300	EMV-150
☐	AC Artificial Network NNLK 8121 RC	EMV-151
☐	EMI Receiver ESR26	EMV-200
☐	Signalgenerator 9 kHz – 40 GHz N5173B	EMV-201
☐	GPS Frequency normal B-88	EMV-202
☐	DC Power supply N5745A	EMV-203
☐	Spektrum Analyzator FSV40	EMV-205
☐	Thd Multimeter Model 2015	EMV-206
☐	Poweramplifier PAS15000	EMV-207/abc
☐	Inrush Current Source	EMV-208/abc
☐	Arb.-generator Sycore	EMV-209
☐	Harmonics/Flicker analyzer ARS 16/3	EMV-210
☐	HF- Ampflifier 9 kHz-250 MHz BBA150	EMV-300
☐	HF- Amplifier 80 -1000 MHz BBA150	EMV-301
☐	HF- Amplifier 0,8 - 6 GHz BBA150	EMV-302
☐	High Power Ant. 20-200 MHz VHBD 9134	EMV-303
☐	Log.per Antenna 80-2700 MHz STLP 9128 E special	EMV-304
☐	Log.per Antenna 0,7 – 9 GHz STLP9149	EMV-305
☐	HF- Ampflifier 9 kHz-250 MHz BBA150 (low noise)	EMV-306
☐	Load Dump Generator LD 200N	EMV-350
☐	Ultra Compact Symulator UCS 200N100	EMV-351
☐	Automotive Power fail module PFM 200N100.1	EMV-352
☐	Voltage Drop Symulator VDS 200Q100	EMV-353
☐	Arb. Generator AutoWave	EMV-354
☐	Ultra Compact Symulator UCS 500N7	EMV-355
☐	Coupling decoupling network CNI 503B7 / 32 A	EMV-356
☐	Coupling decoupling network CNI 503B7 / 63 A	EMV-357
☐	Telecom Surge Generator TSurge 7	EMV-358
☐	Coupling decoupling network CNI 508N2	EMV-359
☐	Coupling decoupling network CNV 504N2.2	EMV-360
☐	Immunity generator NSG4060/NSG4060-1	EMV-361
☐	Coupling network CDND M316-2	EMV-362
☐	Coupling network CT419-5	EMV-363
☐	ESD Generator NSG 437	EMV-364
☐	Pulse Limiter VTSD 9561-F BNC	EMV-405
☐	Transient emission BSM200N40+BS200N100	EMV-450+451
☐	Cap. Coupling Clamp HFK	EMV-455
☐	Mag. Field System MS100N+MC26100+MC2630	EMV-456-458
☐	Coupling network CDN M2-100A	EMV-459
☐	Coupling network CDN M3-32A	EMV-460
☐	Coupling network CDN M5-100A	EMV-461
☐	Current Clamp CIP 9136A	EMV-462
☐	DC Artificial Network HV-AN 150	EMV-464+465
☐	Coupling Clamp EM 101	EMV-466
☐	Decoupling Clamp FTC 101	EMV-467
☐	Power attenuator 10 dB / 250 Watt	EMV-469/2

Division:
Industry & Energy

Department: FG

Test report number:
INE-AT/FG-17/142

Date: 12.01.2018

Checked by:

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Appendix 2
Photodocumentation

Description: Module unfolded - view #1

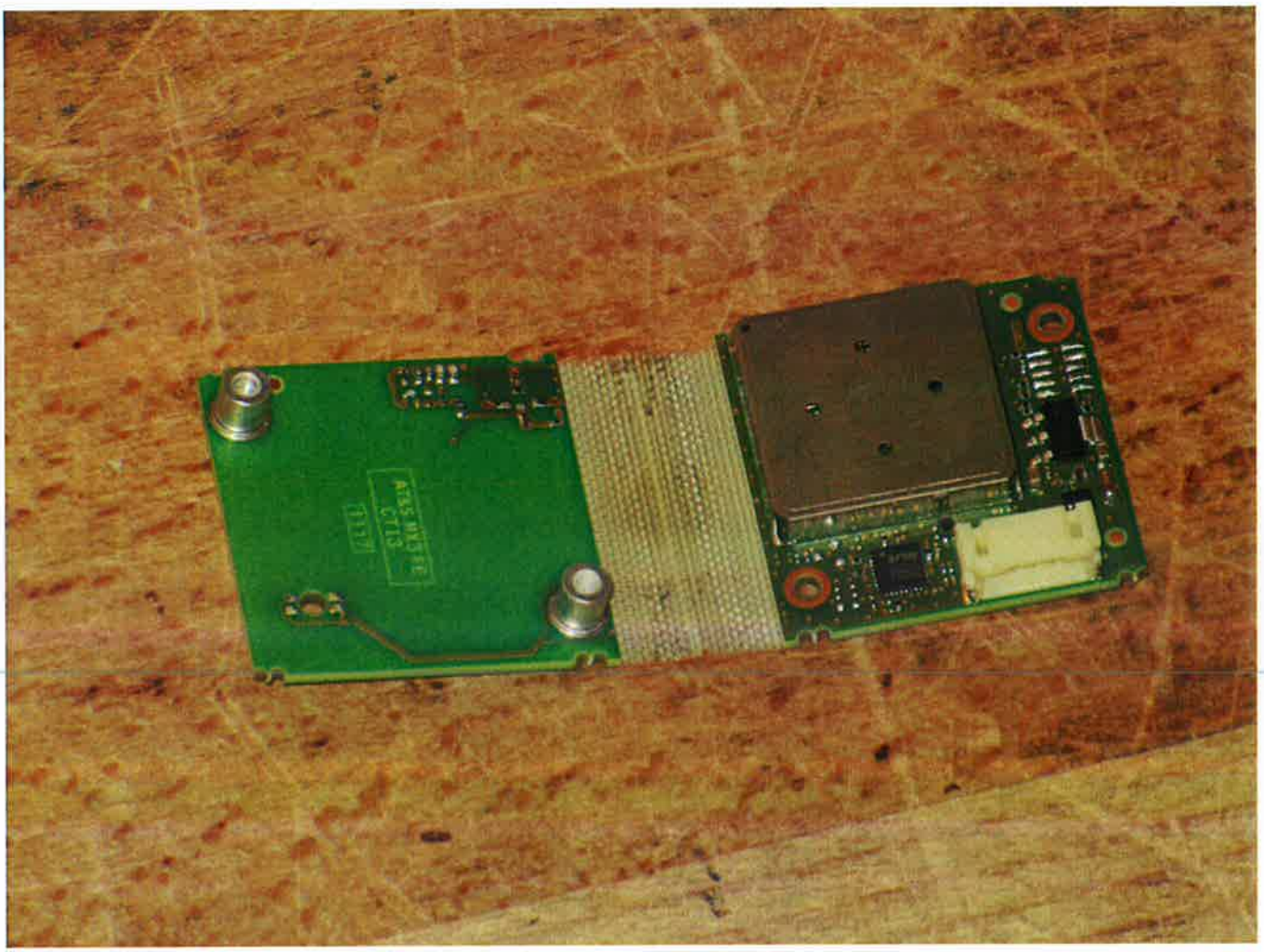
Division:
Industry & Energy

Department: FG

Test report reference:
INE-AT/FG-17/142

Date: 12.01.2018

checked by:



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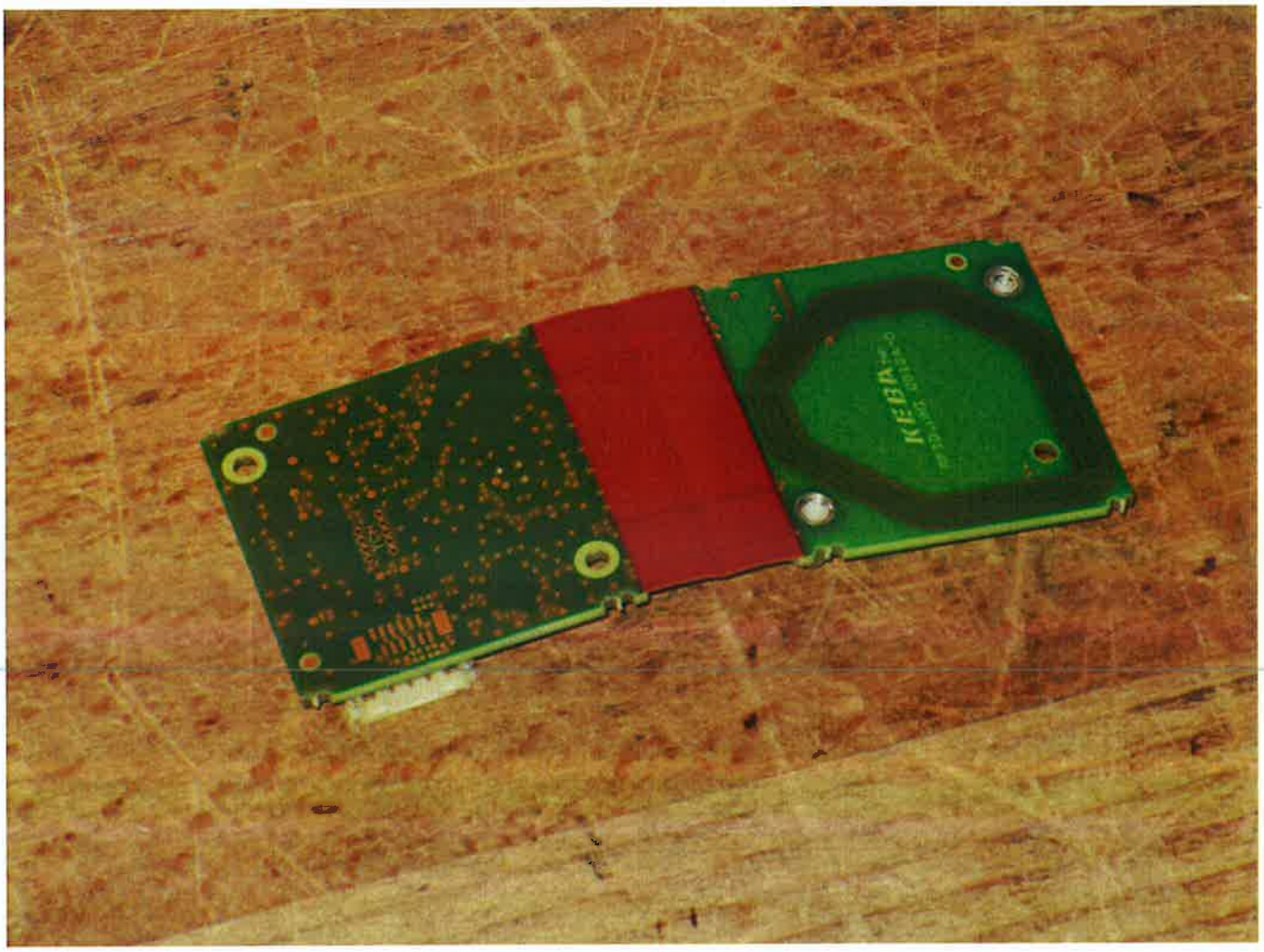
Appendix 2
Photodocumentation

Description: Module unfolded - view #2



Appendix 2
Photodocumentation

Description: Module folded - view #1

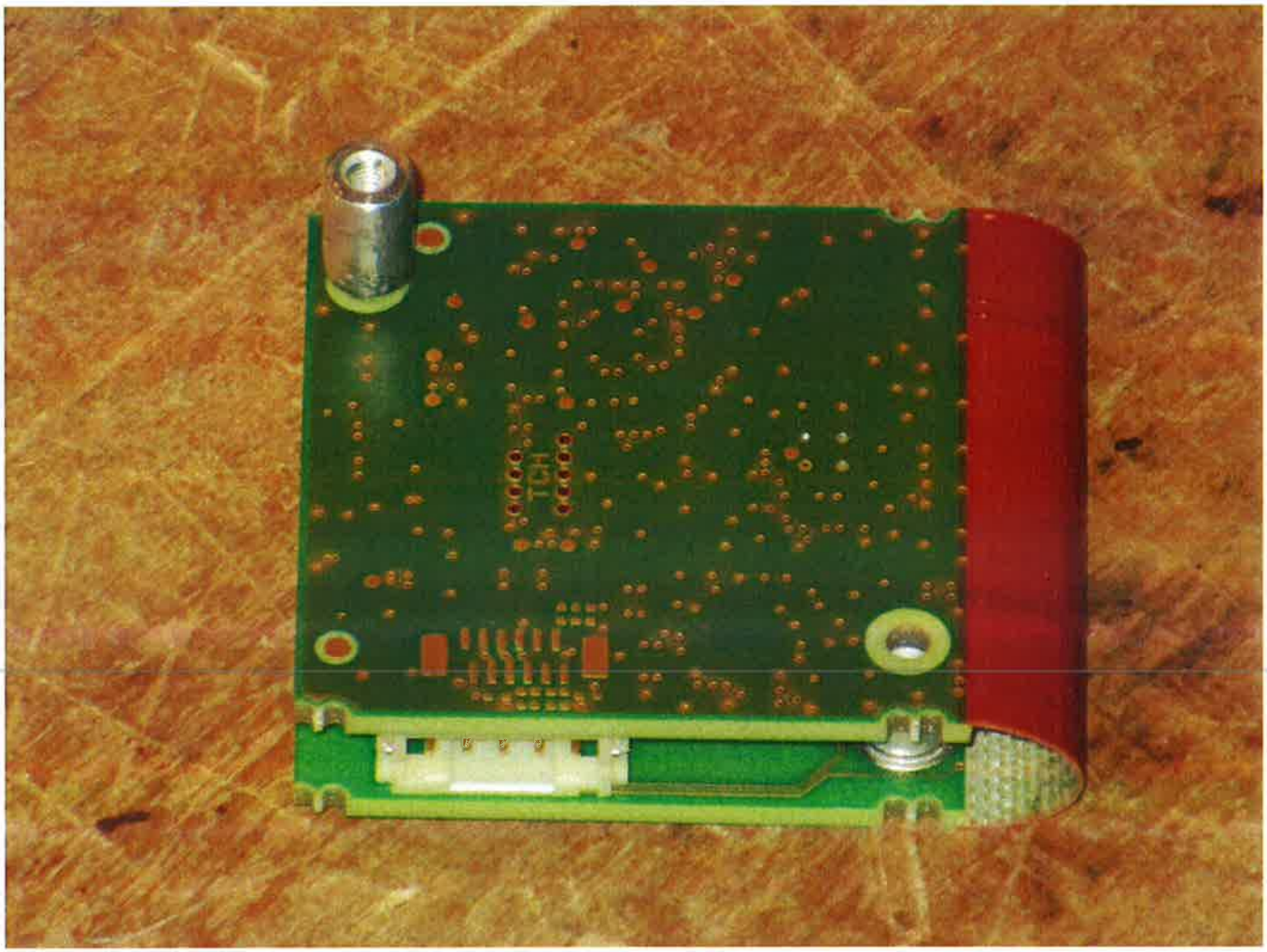
Division:
Industry & Energy

Department: FG

Test report reference:
INE-AT/FG-17/142

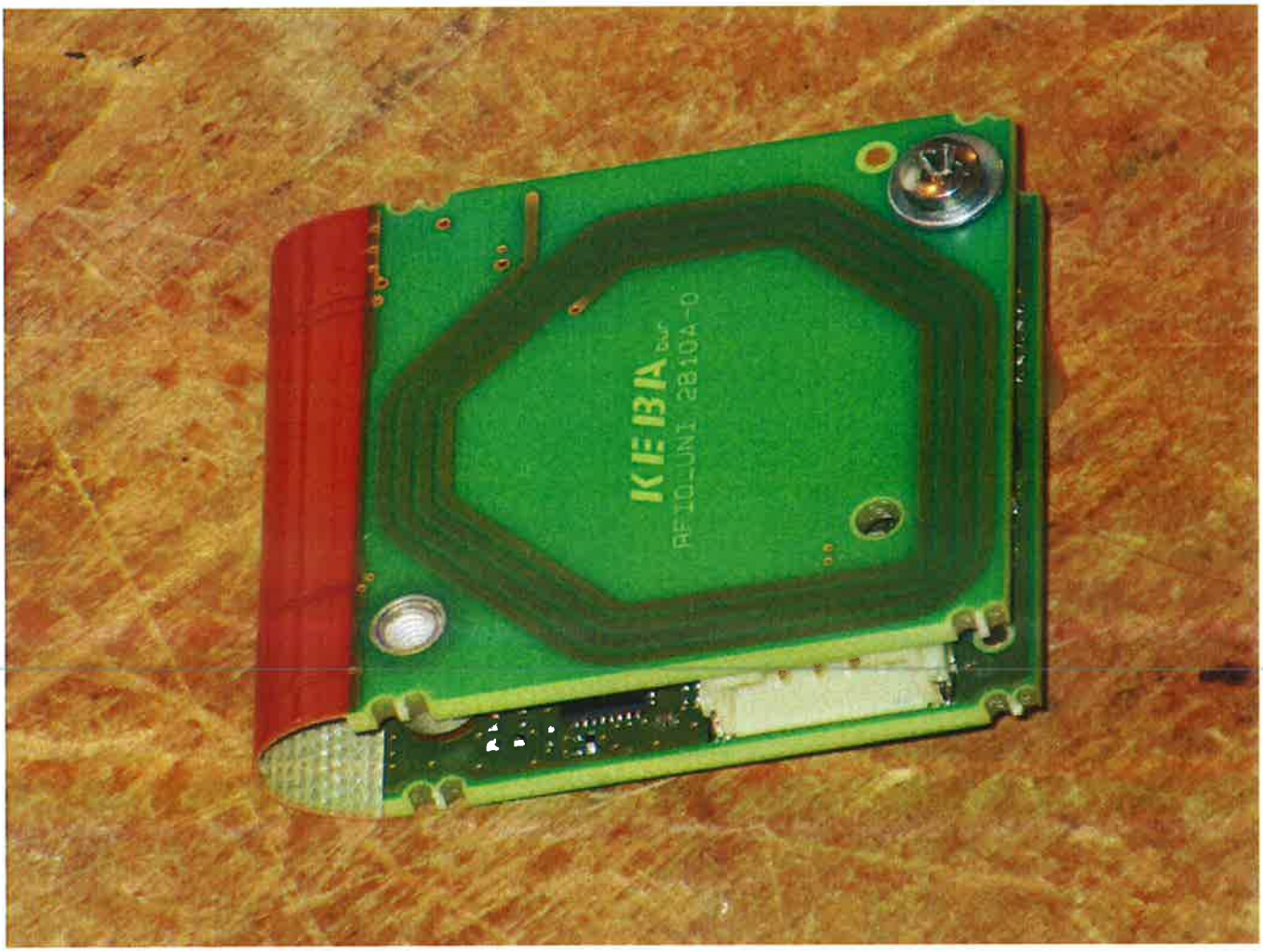
Date: 12.01.2018

checked by:



Appendix 2
Photodocumentation

Description: Module folded - view #2



Appendix 2
Photodocumentation

Description: RF shielding detached

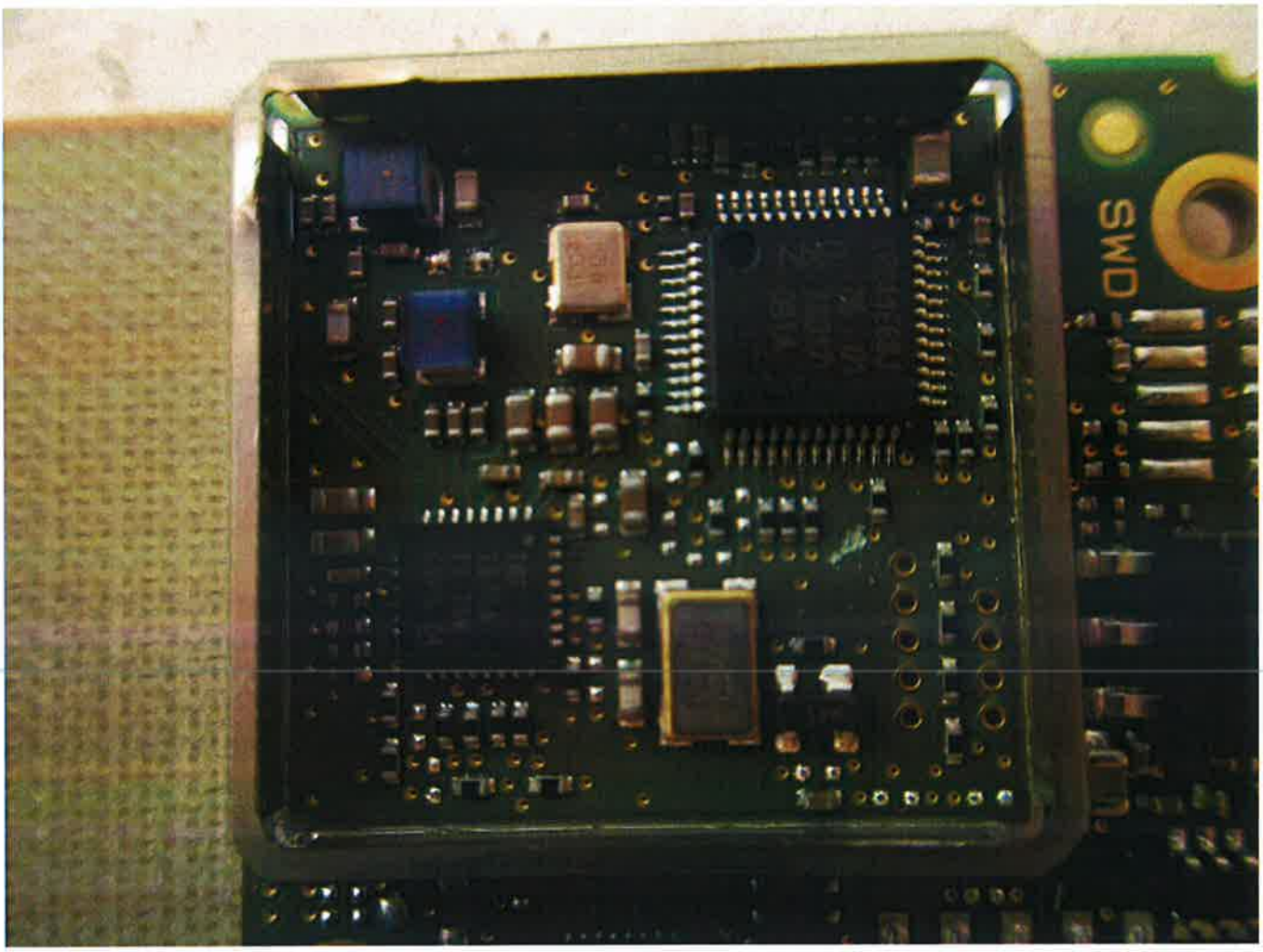
Division:
Industry & Energy

Department: FG

Test report reference:
INE-AT/FG-17/142

Date: 12.01.2018

checked by:



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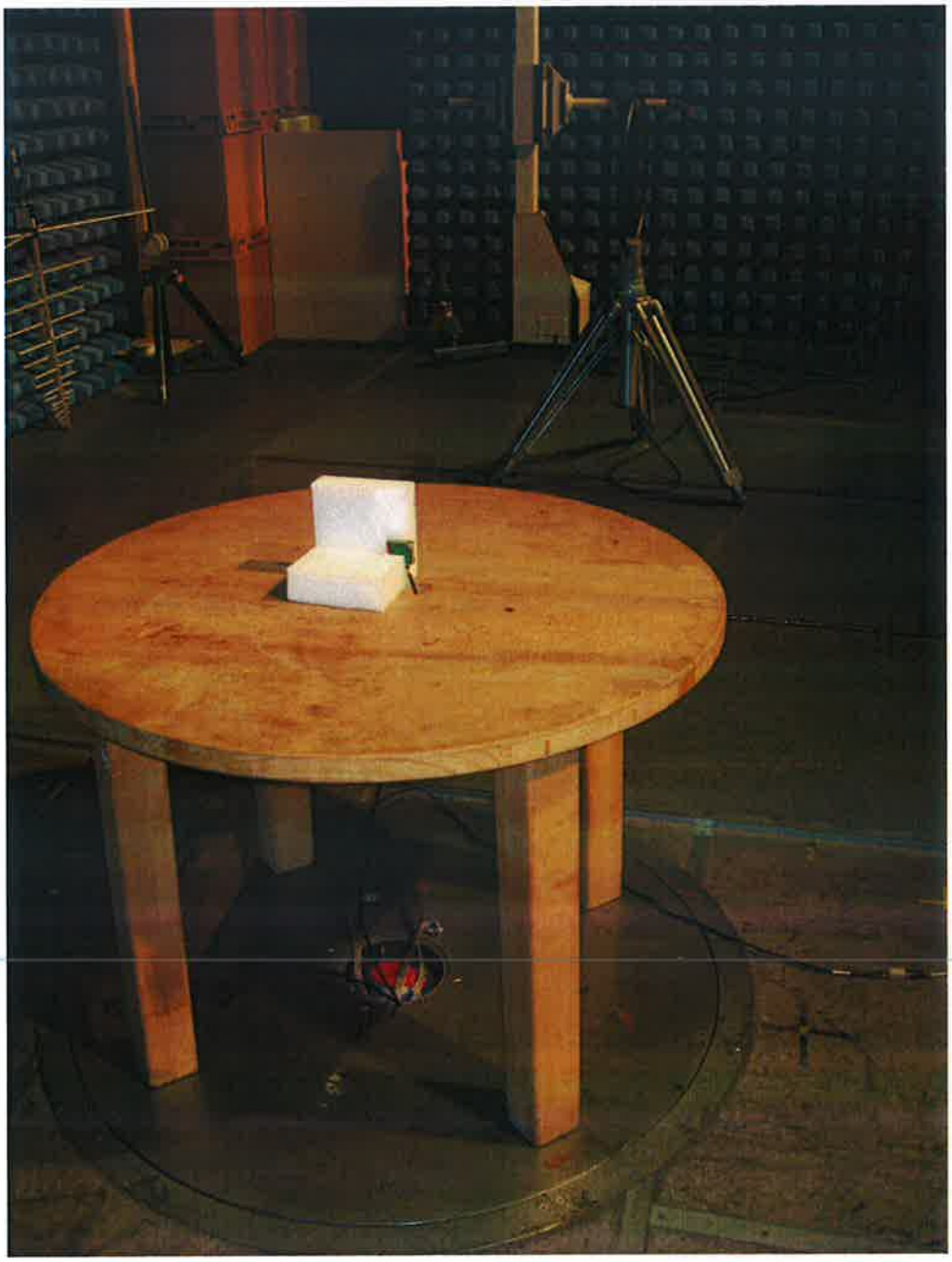
Appendix 2
Photodocumentation

Description: Test setup emissions below 30 MHz



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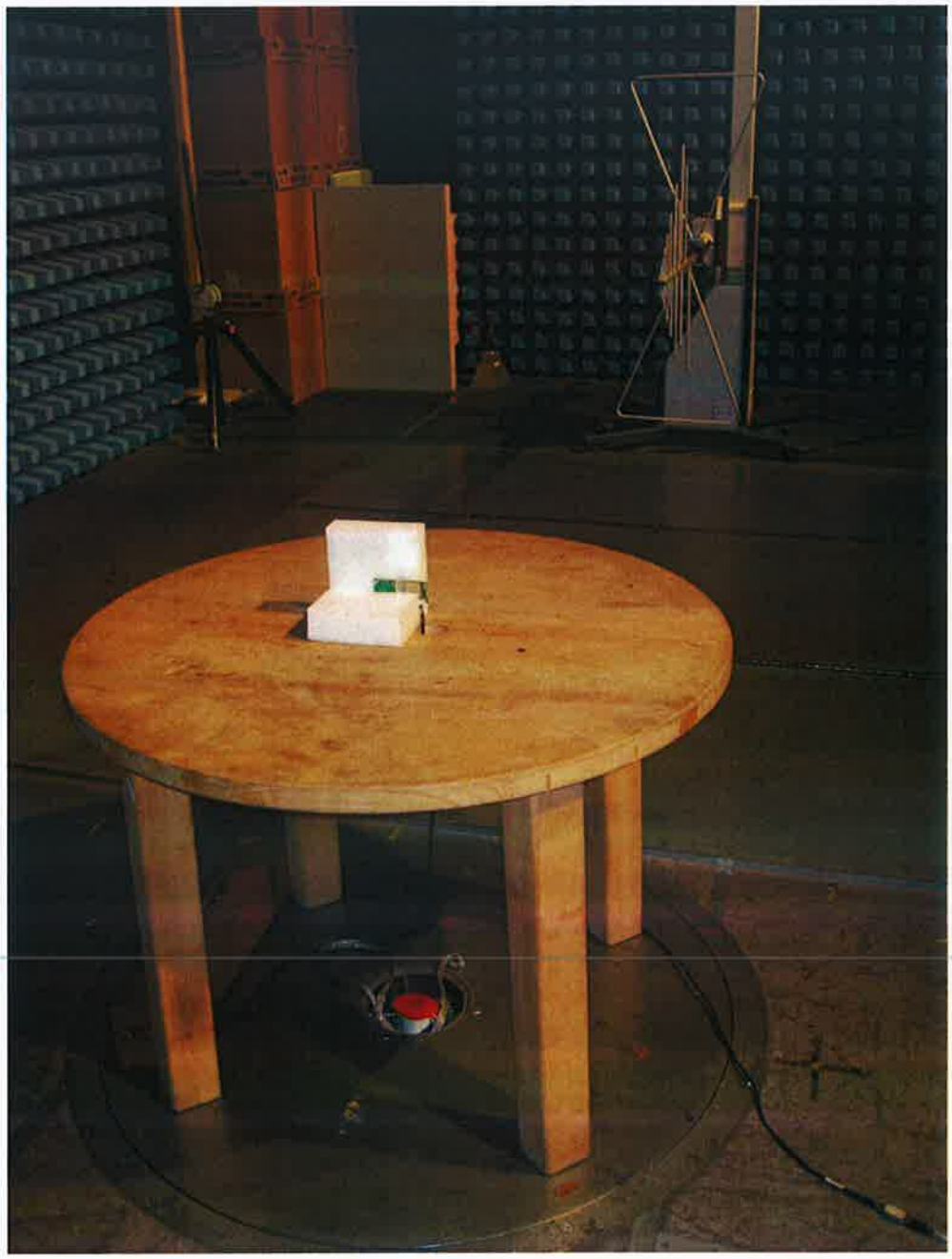
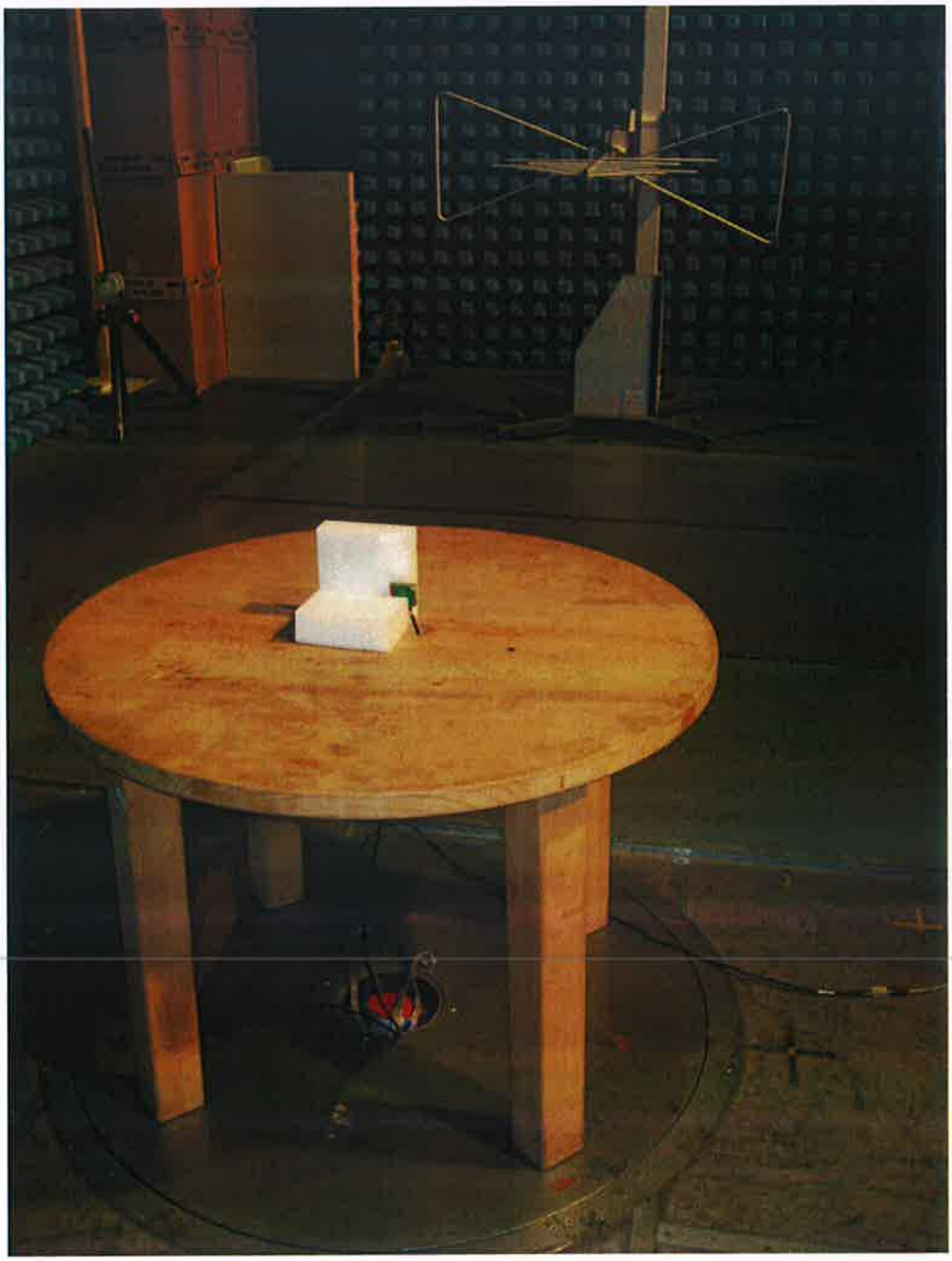
Appendix 2
Photodocumentation

Description: Test setup emissions 30 - 1000 MHz - module unfolded



Appendix 2
Photodocumentation

Description: Test setup emissions 30 - 1000 MHz - module folded



Appendix 2
Photodocumentation

Description: Test setup emissions above 1000 MHz - module unfolded

Appendix 2
Photodocumentation

Description: Test setup emissions above 1000 MHz - module folded

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Appendix 2
Photodocumentation

Description: Test setup - module unfolded

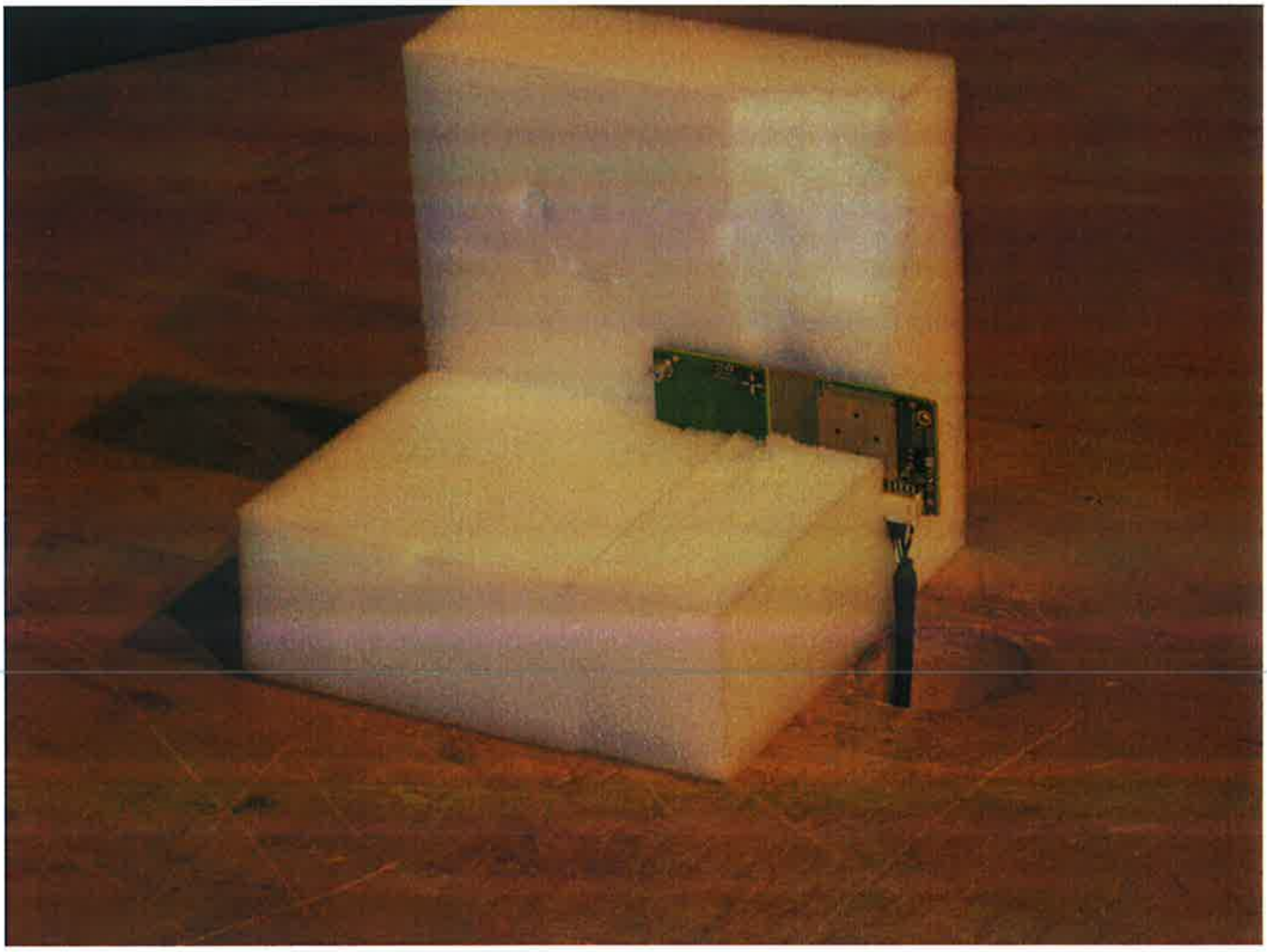
Division:
Industry & Energy

Department: FG

Test report reference:
INE-AT/FG-17/142

Date: 12.01.2018

checked by:



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Appendix 2
Photodocumentation

Description: Test setup - module folded