

Test report

IFA10_01.DOC

Addendum to test report IF343_02.DOC

EUT: Short range device family
Trade name: P60/W01, P60/W02
Tested type: P60/W01, P60/W02
Equipment Class: DXX
FCC Identifier: RPCxxP60W0x

Production level: Prototype
S/N: xx

Responsible party: Interflex Datensysteme GmbH
Großwiesenstr. 24
D-78591 Durchhausen
Germany

Measurement procedure: FCC Rules CFR 47 Part 15 – Subpart C – Conducted emissions
Limit class 15.207(b)(2)
The regulations were ☒ kept
☐ not kept

Applicant: Interflex Datensysteme GmbH
Großwiesenstr. 24
D-78591 Durchhausen
Germany

Contact person: Mr. Kiemele

Arrival of EUT: 03/04/04

ID of EUT: PRA10_03, PRA10_04

Date(s) of test of EUT: 03/04/04

Remarks:

The test results effects only to the relate items tested. The test report shall not be reproduced except in full without the written approval of the testing laboratory



Test laboratory:	EMCE GmbH Ingenieurbüro für EMV-Prüfungen und Schaltungsentwicklung Laupheimer Str. 25d 88483 Burgrieden / Germany <u>FCC Registration Nr. 90568</u> <u>DAR-Registration Nr: TTI-P-G164/98</u>		
Test engineer:	Mr. Hauser EMCE GmbH Ingenieurbüro für EMV-Prüfungen und Schaltungsentwicklung		
EUT description:	Reader for an access control system. The product offers following features: - Wiegand interface: Data 1, Data 0 signal return - Beeper - External power supply with 5VDC±5% Antenna P60W01: - Type: Loop - Size: 58,5x35,5mm Antenna P60W02: - Type: Loop - Size: 71x67mm		
Operating frequency:	125kHz ± 1kHz / Fundamental frequency of the magnetic field 8MHz / Ceramic resonator / Clock for the controller		
EUT size:	P60/W01	80x41x15 (LxWxH)	
	P60/W02	120x761x25 (LxWxH)	

EUT configuration:

The reader was supplied via an external power supply. A door manager monitored the reader information. Usually the reader is separate mounted and the door manager is not necessarily in the neighborhood. Therefore the reader was tested without peripheral components.

Harness	Type	Length	Remarks
Connecting attachment	Common cable 8 wires	> 3m	No special accessories
Power cord	L+N+PE	1.5m	No special accessories

Used accessories:

Designation	S/N	FCC-ID	Manufacturer
Door manager IF0610	167019		Interflex Datensysteme GmbH
ID-Card with transponder	0030	xx	Interflex Datensysteme GmbH
Power supply ETC70-24 – 24VDC/3.0A	880009174	xx	Deutronic elektronik GmbH

Additional information: xx

List of valid equipment

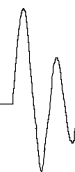
☒	Inv-Nr.	Designation	Type	Manufacturer	S/N
☒	001	Test receiver	ESS 5Hz - 1000 MHz	Rohde & Schwarz	833776/008
	002	Probe	ESH2-Z3	Rohde & Schwarz	-
☒	003	LISN 1	ESH3-Z5	Rohde & Schwarz	835268/007
	004	LISN 2	ESH3-Z5	Rohde & Schwarz	835268/003
	005	LISN 3	NNB 4/32T	Rolf Heine HF-Technik	4/32T-96015
	006	LISN	NNBM 8125	Schwarzbeck	8125371
	007	Absorbing clamp	MDS 21	Schwarzbeck	942436
	008	Antenna 9kHz - 30MHz	HFH2-Z2	Rohde & Schwarz	835776/0002
	009	Antenna 30 - 300MHz	VHBA9123 / BBA9106	Schwarzbeck	435
	010	Antenna 250 -1200MHz	UHALP 9108A	Schwarzbeck	108
	011	Antenna 30 - 300MHz	VHBA9123 / BBA9106	Schwarzbeck	0408/94
	012	Antenna 250 -1200MHz	UHALP 9108A	Schwarzbeck	166
	013	Antenna 9kHz - 30MHz	Loop antenna 1.5m	EMCE GmbH	-
	014	Open area test site	3m	EMCE GmbH	-
	015	Open area test site	10m	EMCE GmbH	-
	019	Burst generator	PEFT / PHV 41.2	Haefely	082948-50
	020	Coupling clamp	IP4A	Haefely	082672-13
	022	ESD-Gun	NSG 435	Schaffner	577
	024	HF-Generator	SMY01	Rohde & Schwarz	844146/046
	025	Current clamp BCI	F-120-2	FCC	47
	026	Coupling device network	CDN 801-M3-25	FCC	92
	027	Surge Generator	Transient 1000	EMC-Partner AG	TRA1000-85
	029	HF Amplifier	10W1000	Amplifier Research	10576
	030	Coupling device network	CDN 801- S1/9pol.DSUB	EMCE GmbH	-
	031	Coupling device network	CDN 801- S1/9pol.DSUB	EMCE GmbH	-

☒	Inv-Nr.	Designation	Type	Manufacturer	S/N
	032	HF Amplifier	75A250	Amplifier Research	22789
	033	Coupling device network	CDN AF2	EMCE GmbH	
	034	Coupling device network	CDN AF2	EMCE GmbH	
	035	3-Phase Coupling network	CDN-1000	EMC-Partner AG	CDN-1000-45
	036	Coupling device network	CDN 801-M5-25	EMCE GmbH	
	037	Coupling device network	CDN 801-T1	EMCE GmbH	
	038	Helmholtz coil	1x1m	EMCE GmbH	
	039	Helmholtz coil	1x1m	EMCE GmbH	
	040	Current transformer		EMCE GmbH	
	041	HZ-10	Shielded coil	Rohde & Schwarz	849788/020
☒	042	AC-Source / Analyser / Normimpedance	EMV D5000/PAS	Spitzenberger + Spies	A274700/0 0501
	xx	Susceptibility test equipment according DIN EN 61000-4-3	Full anechoic chamber 3m test site	Siemens	xx



Scope:

1	EMC - Test(s).....	7
1.1	EMI Report FCC Rules CFR 47 Part 15 – Subpart C	7
1.1.1	Terminal voltage	7
1.1.1.1	Test set up.....	7
1.1.1.2	Test	10
2	Summary.....	20



1 EMC - Test(s)

1.1 EMI Report FCC Rules CFR 47 Part 15 – Subpart C

1.1.1 Terminal voltage

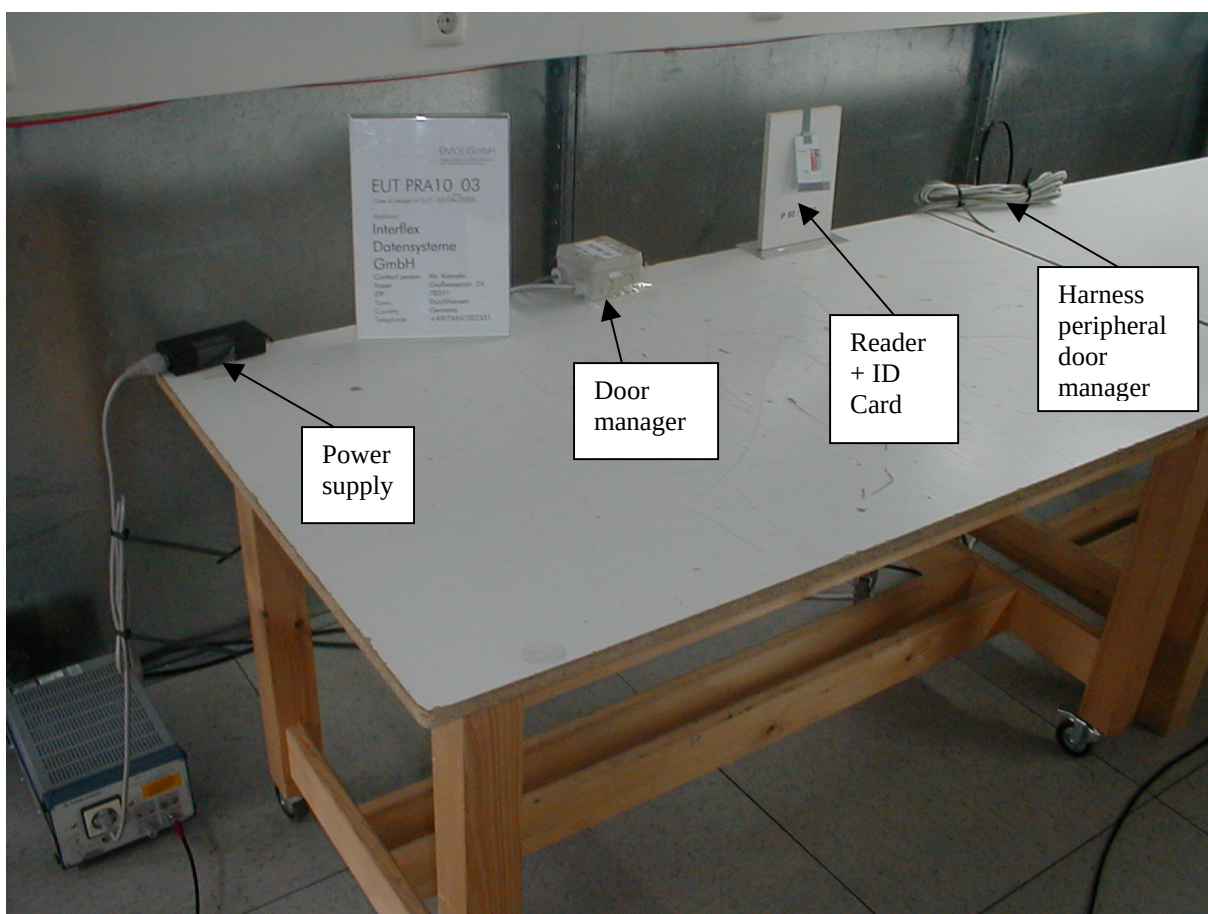
1.1.1.1 Test set up

According ANSI C63.4-1992

Test location: ☒ Shielded room ☐ Laboratory
☐ Other(s):

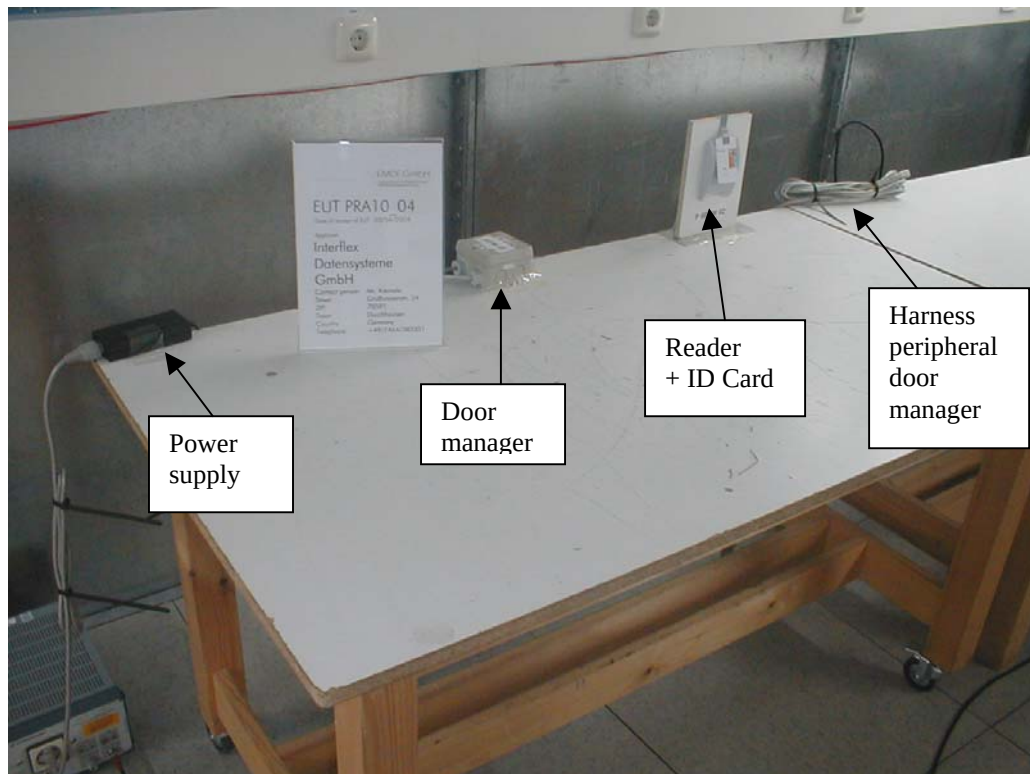
The test equipment was checked and met the requirements. ☒

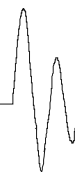
Test setup photos P60/W01





Test setup photos P60/W02





1.1.1.2 Test

Regulation:

FCC Rules CFR 47 Part 15 – Subpart C

Range: ☒ 150kHz - 30MHz

Limits: ☐ 15.207(a) ☒ 15.207(b)(2)

Operation mode:

EUT arrangement: ☒ Tabletop ☐ Floor standing

Port EUT#	Lead	Type	Remarks
#1	Mains power supply	L+N+PE	115V/60Hz
#2			
#3			

Continuous operation with ID-Card outside of the reading range. This application shows the worst case.

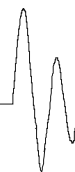
Environmental conditions:

Temperature: 15 - 35°C

Humidity: 30 - 60%

Air pressure: 860 – 1060hPa

The environmental conditions during the test: ☒ were kept
☐ were not kept



Test results:

Measurements are made with a CISPR receiver. If the emanation is closer than 6dB to the limits or more, the receiver will stop and measure the exact value with quasipeak or average detector. The frequency, the measured value and the limit will be printed out.

Summary:

Limits for continuous disturbances: ☒ kept
☐ not kept

Remarks: All measured (QP detector) emanations in the frequency range of 535 – 1705kHz were below the limit of 60dB μ V. The margin was more than 20dB.
Additional scan with the limits according 15.207(a).

Protocol scope:

☒ Readings
☒ Diagram continuous emanations – Limit lines according 15.207(a)

EMCE GmbH Ing_buero fuer EMV_Pruefungen

04. Mar 04 15:57

Terminal voltage

EUT: P60/W01
Manuf: Interflex Datensysteme GmbH & Co. KG
Op Cond: Continuous operation
Operator: Mr. Hauser
Test Spec: 47 CFR Part 15 Subpart C - 15.207(a)
Comment: Test_ID PRA10_03
IFA10_01, Phase L1

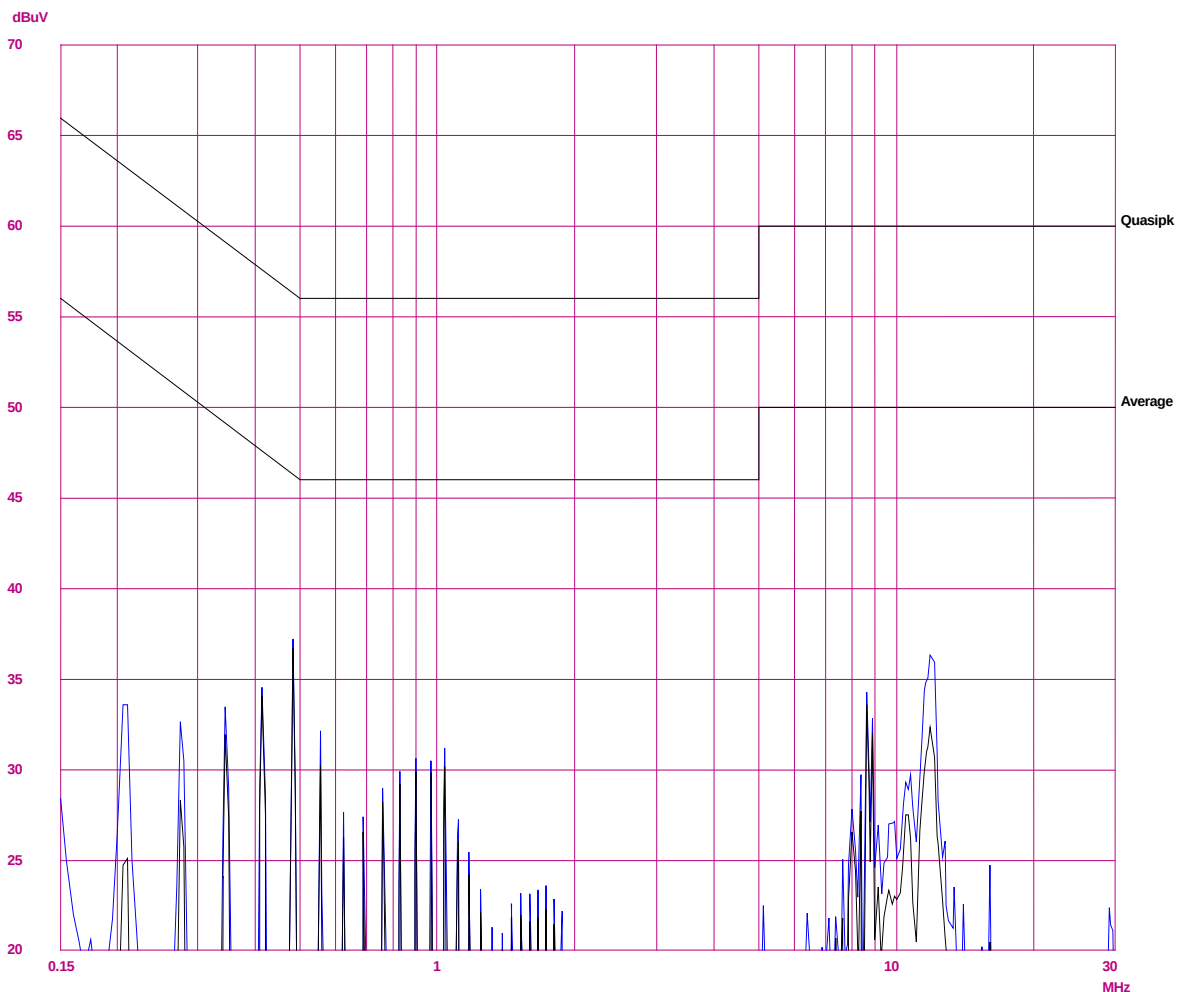
Scan Settings (1 Range)

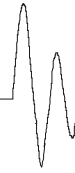
Frequencies				Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN OFF 60dB

Final Measurement: x QP / + AV

Meas Time: 1 s
Subranges: 50
Acc Margin: 6dB

Transducer No.	Start	Stop	Name
2	1Hz	1000M	Kabel_6m





EMCE GmbH Ing_buero fuer EMV_Pruefungen Terminal voltage

04. Mar 04 15:57

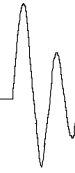
EUT: P60/W01
Manuf: Interflex Datensysteme GmbH & Co. KG
Op Cond: Continuous operation
Operator: Mr. Hauser
Test Spec: 47 CFR Part 15 Subpart C - 15.207(a)
Comment: Test_ID PRA10_03
IFA10_01, Phase L1

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN OFF	60dB

Final Measurement Results:

no Results



EMCE GmbH Ing_buero fuer EMV_Pruefungen

04. Mar 04 16:09

Terminal voltage

EUT: P60/W01
Manuf: Interflex Datensysteme GmbH & Co. KG
Op Cond: Continuous operation
Operator: Mr. Hauser
Test Spec: 47 CFR Part 15 Subpart C - 15.207(a)
Comment: Test_ID PRA10_03
IFA10_02, Phase N

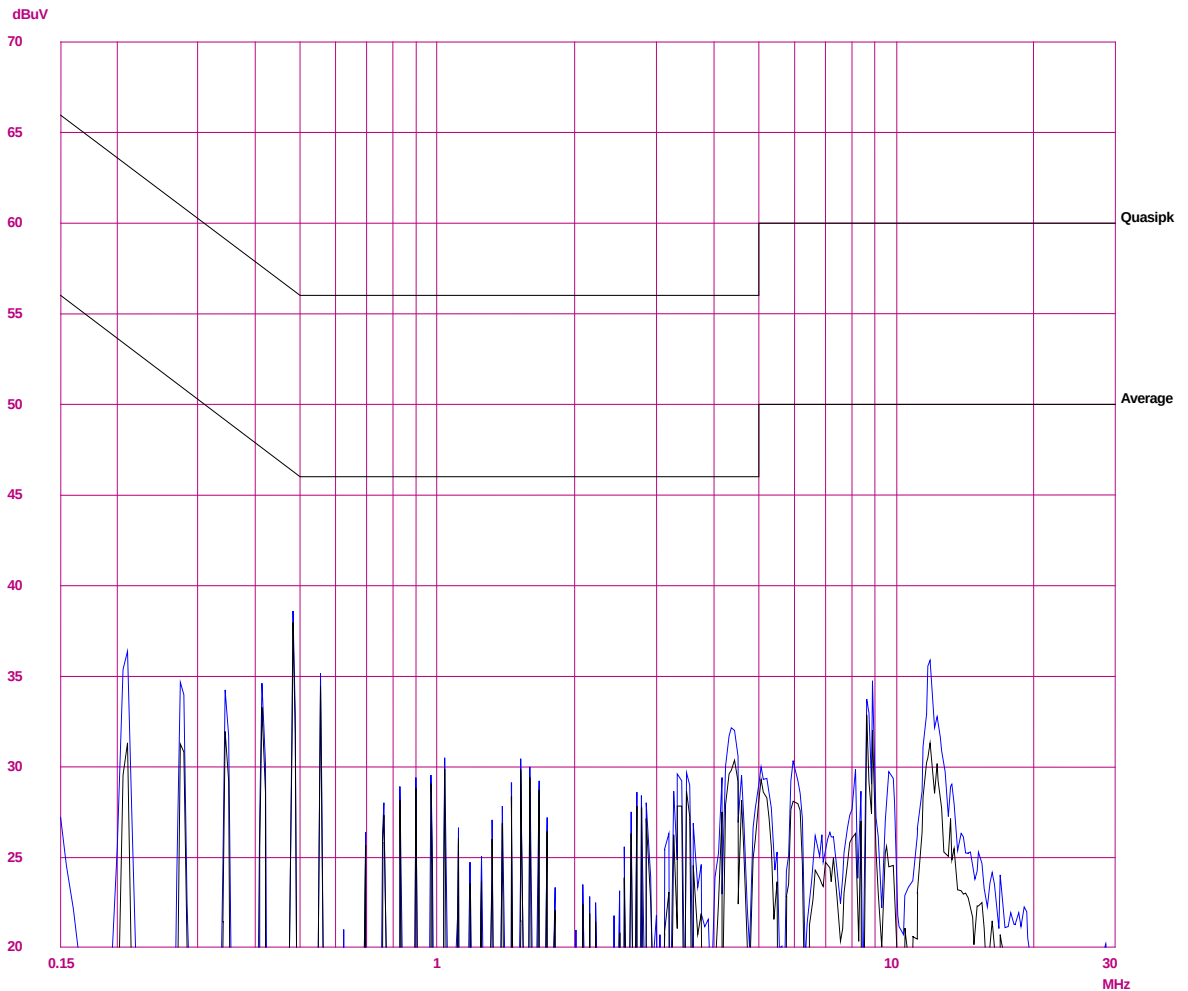
Scan Settings (1 Range)

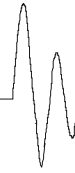
Frequencies				Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN OFF 60dB

Final Measurement: x QP / + AV

Meas Time: 1 s
Subranges: 50
Acc Margin: 6dB

Transducer No.	Start	Stop	Name
2	1Hz	1000M	Kabel_6m





EMCE GmbH Ing_buero fuer EMV_Pruefungen Terminal voltage

04. Mar 04 16:09

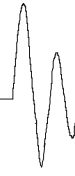
EUT: P60/W01
Manuf: Interflex Datensysteme GmbH & Co. KG
Op Cond: Continuous operation
Operator: Mr. Hauser
Test Spec: 47 CFR Part 15 Subpart C -- 15.207(a)
Comment: Test_ID PRA10_03
IFA10_02, Phase N

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN OFF	60dB

Final Measurement Results:

no Results



EMCE GmbH Ing_buero fuer EMV_Pruefungen

04. Mar 04 16:24

Terminal voltage

EUT: P60/W02
Manuf: Interflex Datensysteme GmbH & Co. KG
Op Cond: Continuous operation
Operator: Mr. Hauser
Test Spec: 47 CFR Part 15 Subpart C - 15.207(a)
Comment: Test_ID PRA10_04
IFA10_11, Phase L1

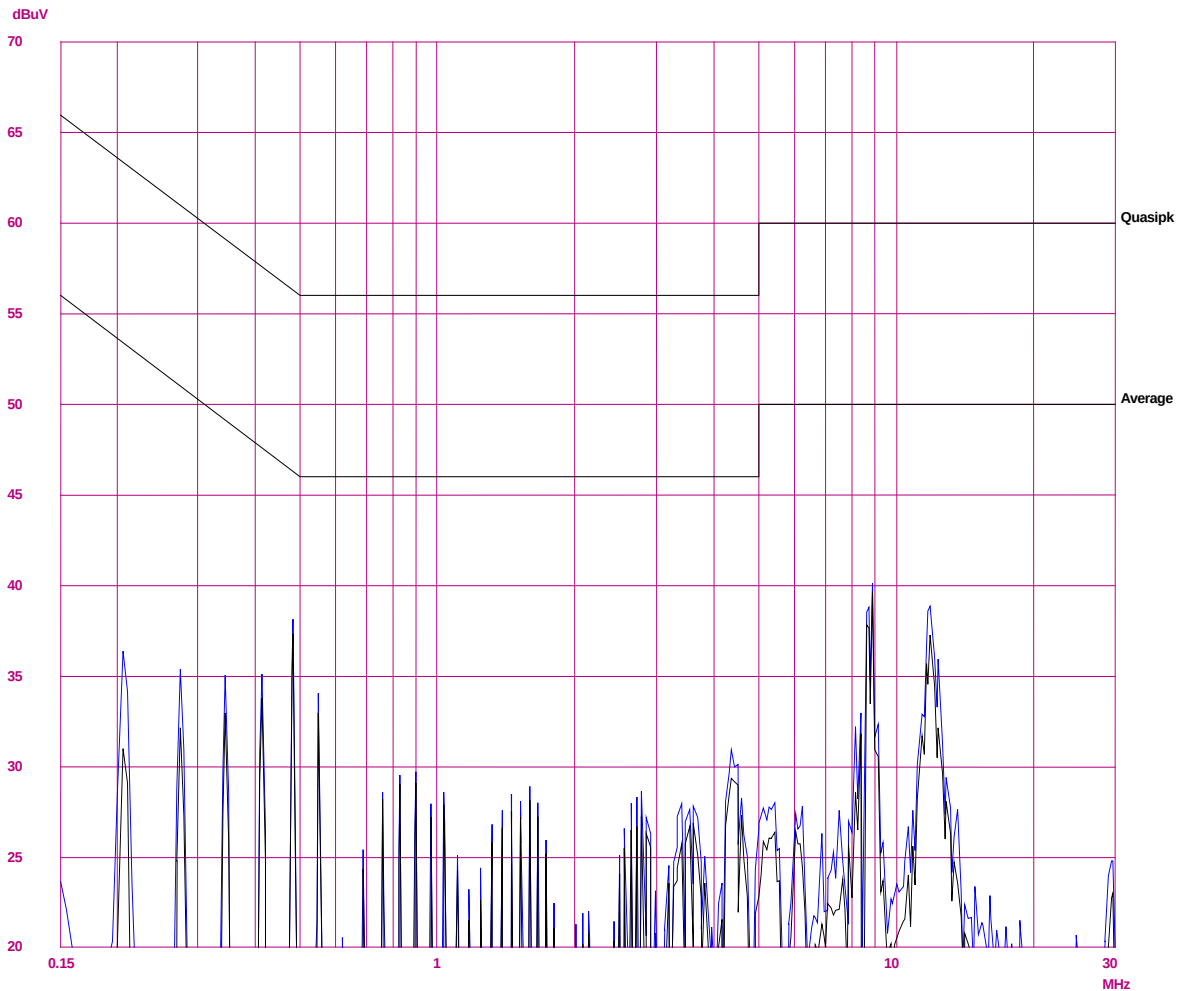
Scan Settings (1 Range)

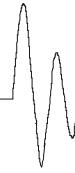
Frequencies				Receiver Settings			
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN OFF 60dB

Final Measurement: x QP / + AV

Meas Time: 1 s
Subranges: 50
Acc Margin: 6dB

Transducer No.	Start	Stop	Name
2	1Hz	1000M	Kabel_6m





EMCE GmbH Ing_buero fuer EMV_Pruefungen Terminal voltage

04. Mar 04 16:24

EUT: P60/W02
Manuf: Interflex Datensysteme GmbH & Co. KG
Op Cond: Continuous operation
Operator: Mr. Hauser
Test Spec: 47 CFR Part 15 Subpart C -- 15.207(a)
Comment: Test_ID PRA10_04
IFA10_11, Phase L1

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN OFF	60dB

Final Measurement Results:

no Results

EMCE GmbH Ing_buero fuer EMV_Pruefungen

Terminal voltage

04. Mar 04 16:47

EUT: P60/W02
Manuf: Interflex Datensysteme GmbH & Co. KG
Op Cond: Continuous operation
Operator: Mr. Hauser
Test Spec: 47 CFR Part 15 Subpart C - 15.207(a)
Comment: Test_ID PRA10_04
IFA10_12, Phase N

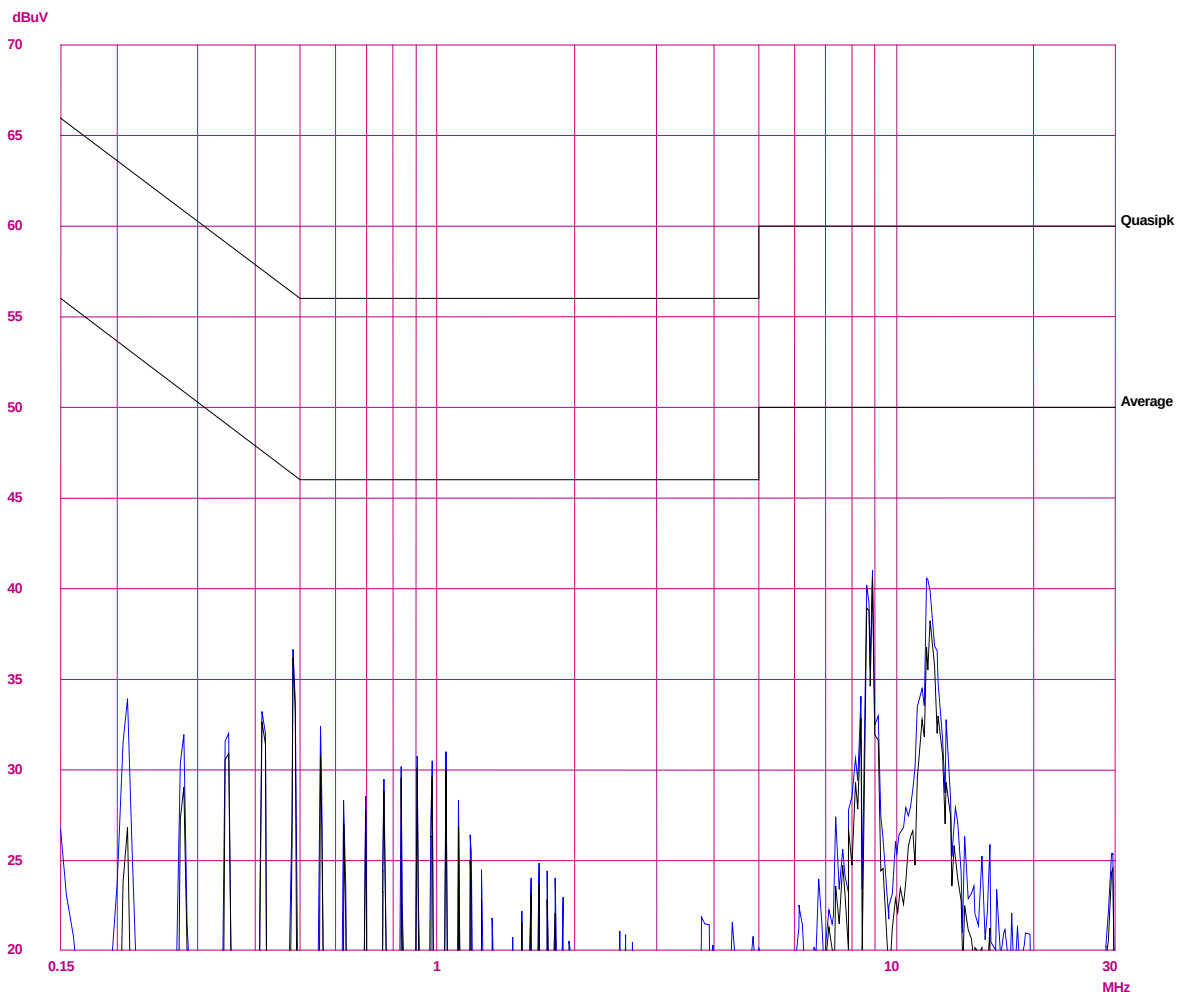
Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN OFF	60dB

Final Measurement: x QP / + AV

Meas Time: 1 s
Subranges: 50
Acc Margin: 6dB

Transducer No.	Start	Stop	Name
2	1Hz	1000M	Kabel_6m





EMCE GmbH Ing_buero fuer EMV_Pruefungen Terminal voltage

04. Mar 04 16:47

EUT: P60/W02
Manuf: Interflex Datensysteme GmbH & Co. KG
Op Cond: Continuous operation
Operator: Mr. Hauser
Test Spec: 47 CFR Part 15 Subpart C -- 15.207(a)
Comment: Test_ID PRA10_04
IFA10_12, Phase N

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	30M	5k	10k	PK+AV	20ms	AUTO	LN	OFF 60dB

Final Measurement Results:

no Results



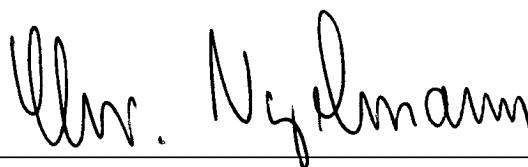
2 Summary

Regulation	Class / Test level	Result	Remark(s)
FCC Rules CFR 47 Part 15 Subpart C			
Terminal voltage 0.15-30MHz	15.207(a) 15.207(b)(2)	Limits kept	

Burgrieden, 03/05/2004



Responsible Tester – Peter Hauser



Principal engineer - Christian Vogelmann