



Inter**Lab**[®]

FCC Measurement/Technical Report on

Simultaneous Transmission of GSM and
WLAN transceivers in EUT
7545MBW

Report Reference: MDE_PSION_1103_FCCh

Test Laboratory:

Borsigstr. 11
Germany
7Layers AG
40880 Ratingen



Note:

The following test results relate only to the devices specified in this document. This report shall not be reproduced in parts without the written approval of the test laboratory.

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0 Summary

0.1 Technical Report Summary

Type of Authorization

Certification for a GSM cellular radiotelephone device collocated to an Intentional Radiator (Frequency Hopping Spread Spectrum and Digital Device / Spread Spectrum).

Applicable FCC Rules

Prepared in accordance with the requirements of FCC Rules and Regulations as listed in 47 CFR Ch.1 (10-1-11 Edition).

The following parts and subparts are applicable to the results in this test report.

Part 2

Subpart J - Equipment Authorization Procedures, Certification

§ 2.1053 Measurement required: Field strength of spurious radiation

Part 22

Subpart H – Cellular Radiotelephone Service

§ 22.917 Emission limitations for cellular equipment

Part 24

Subpart E - Broadband PCS

§ 24.238 Emission limitations for Broadband PCS equipment

Part 15

Subpart C

§ 15.205 Restricted bands of operation

§ 15.209 Radiated emission limits; general requirements

§ 15.247 Operation within the bands 902-928 MHz, 2400-2483.5 MHz and 5725-5850 MHz

Note: None

Instead of applying ANSI C63.4–1992 which is referenced in the FCC Public Note, the newer ANSI C63.4–2009 is applied for test according to Part 15.

Summary Test Results:

The EUT complied with all performed tests as listed in chapter 0.2 Measurement Summary.

0.2 Measurement Summary

FCC Part 15, Subpart C § 15.247 (d), § 15.35 (b), § 15.209
FCC Part 22, Subpart H § 22.917
FCC Part 24, Subpart E § 24.238

Spurious radiated emissions

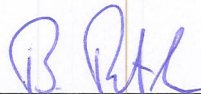
The measurements were performed according to FCC §2.1053 10-1-11 Edition
/ ANSI C63.4 / 2009

OP-Mode	Setup	Port	Final Result
op-mode 1	Setup_01	Enclosure	passed
op-mode 2	Setup_01	Enclosure	passed

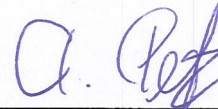
The test cases and operating modes are selected to demonstrate effects of simultaneous transmission.

This test report replaces the 7Layers test report referenced by: MDE_PSION_1103_FCCg.

Responsible for
Accreditation Scope:



Responsible
for Test Report:





1 Administrative Data

1.1 Testing Laboratory

Company Name: 7Layers AG
Address Borsigstr. 11
40880 Ratingen
Germany

This facility has been fully described in a report submitted to the FCC and accepted under the registration number 96716.

The test facility is also accredited by the following accreditation organisation:
Laboratory accreditation no.: DAkkS D-PL-12140-01-01

Responsible for Accreditation Scope: Dipl.-Ing. Bernhard Retka
Dipl.-Ing. Robert Machulec
Dipl.-Ing. Andreas Petz
Dipl.-Ing. Thomas Hoell

Report Template Version: 2012-03-02

1.2 Project Data

Responsible for testing and report: Dipl.-Ing. Andreas Petz
Date of Test(s): 2012-01-06 to 2012-01-20
Date of Report: 2012-04-16

1.3 Applicant Data

Company Name: Psion INC
Address: 2100 Meadowvale Boulevard
Mississauga, Ontario
Canada L5N7J9
Contact Person: Mr. Steve Lucas

1.4 Manufacturer Data

Company Name: please see applicant data
Address:
Contact Person:

2 Test object Data

2.1 General EUT Description

Equipment under Test	Handheld computer
Type Designation:	7545MBW
Kind of Device: (optional)	GSM and WLAN transceivers
Voltage Type:	DC
Voltage level:	3.7 V

General product description:

The WLAN (Wireless Local Area Network) Transceiver is operating in the range 2400-2483.5 MHz (802.11b/g/n) and 5150-5350 MHz, 5480-5720 MHz, 5725-5845 MHz (802.11a/n).

Specific product description for the EUT:

The PSION model 7545MBW (FCC ID: GM37545MBW), containing the 7545MBWP (FCC ID: GM37545MBWP) radio module, is a new portable device from PSION operating in the 850 MHz, 900 MHz, 1800 MHz, 1900 MHz, 2100 MHz, 2.4 GHz and 5 GHz frequency range. The 7545MBW is an (E)GPRS class 10 terminal supporting circuit switched (CS) and packet switched (PS) data. It acts as a client by Wi-Fi function.

The EUT provides the following ports:

Ports

Enclosure
DC power / System port

The main components of the EUT are listed and described in Chapter 3.2.



2.2 EUT Main components

Type, S/N, Short Descriptions etc. used in this Test Report

Short Description	Equipment under Test	Type Designation	Serial No.	HW Status	SW Status	Date of Receipt
EUT A (Code: 23060g01)	Hand-held computer	7545MBW	STC02B46266 2C1	1	1.2 (SVN 06)	-

Remark: EUT A is equipped with integral antennas.

NOTE: The short description is used to simplify the identification of the EUT in this test report.

2.3 Ancillary Equipment

For the purposes of this test report, ancillary equipment is defined as equipment which is used in conjunction with the EUT to provide operational and control features to the EUT. It is necessary to configure the system in a typical fashion, as a customer would normally use it. But nevertheless Ancillary Equipment can influence the test results.

Short Description	Equipment under Test	Type Designation	HW Status	SW Status	Serial no.	FCC ID
-	-	-	-	-	-	-

2.4 Auxiliary Equipment

For the purposes of this test report, auxiliary equipment is defined as equipment which is used temporarily to enable operational and control features especially used for the tests of the EUT which is not used during normal operation or equipment that is used during the tests in combination with the EUT but is not subject of this test report. It is necessary to configure the system in a typical fashion, as a customer would normally use it. But nevertheless Auxiliary Equipment can influence the test results.

Short Description	Equipment under Test	Type Designation	Serial no.	HW Status	SW Status	FCC ID
-	-	-	-	-	-	-

2.5 EUT Setups

This chapter describes the combination of EUTs and equipment used for testing. The rationale for selecting the EUTs, ancillary and auxiliary equipment and interconnecting cables, is to test a representative configuration meeting the requirements of the referenced standards.

Setup No.	Combination of EUTs	Description and Rationale
Setup_01	EUT A	setup for radiated measurements

2.6 Operating Modes

This chapter describes the operating modes of the EUTs used for testing.

Op. Mode	Description of Operating Modes	Remarks
op-mode 1	GSM: Call established on Traffic Channel (TCH) 190, Carrier Frequency 836.6 MHz WLAN: TX-mode, the EUT transmits on channel 157 (5785 MHz)	simultaneous transmission (GSM 850 / 5 GHz WLAN)
op-mode 2	GSM: Call established on Traffic Channel (TCH) 661, Carrier Frequency 1880.0 MHz WLAN: TX-mode, the EUT transmits on channel 6 (2437 MHz)	simultaneous transmission (GSM 1900 / 2.4 GHz WLAN)

The operating modes are chosen in this way because the GSM 1900 and the WLAN 2.4 GHz transmitters are expected to be the worst-case combination for possible unwanted effects. The combination GSM 850 and WLAN 5 GHz transmitters is chosen to check also the remaining bands.

Tests are performed in the frequency range of the licensed transmitters (30 MHz to 10 resp. 20 GHz) and emissions are compared to the limits of the licensed transmitter acc. to Part 22 resp. 24 in order to show effects in comparison to the tests without simultaneous transmission.

In the range above the highest frequency checked in the licensed band (10 resp. 20 GHz) up to 25 GHz the emissions are checked against the limits for the unlicensed transmitters acc. to Part 15 i.e. §§ 15.247, 15.207 and 15.205.

Because the test can only be performed as radiated emission test, the measurements are performed in the restricted bands, as done for the unlicensed transmitter without simultaneous transmission.

2.7 Special software used for testing

The EUT is running in a mode set by the applicant's prepared scripts in a WLAN test mode. For GSM links, no special software is used.

2.8 Product labelling

2.8.1 FCC ID label

Please refer to the documentation of the applicant.

2.8.2 Location of the label on the EUT

Please refer to the documentation of the applicant.

3 Test Results

3.1 Spurious radiated emissions

3.1.1 Test Description

The test was performed according to: FCC §2.1053.

1) The EUT was placed inside an anechoic chamber. Refer to chapter "Setup Drawings". The EUT was coupled to a Digital Communication Tester which was located outside the chamber via a small signalling antenna.

2) A call was established on a Traffic Channel between the EUT and the Digital Communication Tester.

Important Settings:

- Output Power: Maximum
- Channel: please refer to the detailed results

3) A pre-calibration procedure is used so that the readings from the spectrum analyser are corrected and represent directly the equivalent radiated power (related to a $\lambda/2$ dipole).

4) All spurious radiation measurements were made with spectrum analyser and the appropriate calibrated antennas for the frequency range of 30 MHz to 10 resp. 20 GHz (up to the 10th harmonic of the transmit frequency).

5) Important Analyser Settings

- [Resolution Bandwidth / Video Bandwidth]:

- a) [3 kHz / 10 kHz] in the Span of 1 MHz directly below and above the Band,
- b) [10 kHz / 30 kHz] in case the curve of the analyser IF-Filter leads to an exceeding of the limit, in this case a worst case correction factor of 20 dB (1 MHz \rightarrow 10 kHz) was used
- c) [1 MHz / 3 MHz] otherwise

- Sweep Time: depending on the transmitting signal, the span and the resolution bandwidth

6) The spurious emissions peaks were measured in both vertical and horizontal antenna polarization during the call is established. To find the worst case peaks all orientations (X, Y, Z) of the EUT have been measured.

The test was performed according to: §§ 15.209, 15.247 / ANSI C63.4
(above 10 resp. 20 GHz)

The test set-up was made in accordance to the general provisions of ANSI C63.4 in a typical installation configuration.

The Equipment Under Test (EUT) was set up on a non-conductive support at 1.4 m height in the fully-anechoic chamber. The measurement distance was reduced to 1 m. The results were extrapolated by the extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements, inverse linear-distance squared for the power reference level measurements). Due to the fact that in this frequency range a double ridged wave guided horn antenna (up to 18 GHz) and a horn antenna (18–25 GHz) are used, the steps 2-4 are omitted.

EMI receiver settings:

- Detector: Peak, Average
- IF Bandwidth = 1 MHz

3.1.2 Test Requirements / Limits

§ 2.1053 Measurements required: Field strength of spurious radiation

Measurements shall be made to detect spurious emissions that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal conditions of installation and operation. Curves or equivalent data shall be supplied showing the magnitude of each harmonic and other spurious emission. For this test, single sideband, independent sideband, and controlled carrier transmitters shall be modulated under the conditions specified in paragraph (c) of Sec. 2.1049, as appropriate. For equipment operating on frequencies below 890 MHz, an open field test is normally required, with the measuring instrument antenna located in the far-field at all test frequencies. In the event it is either impractical or impossible to make open field measurements (e.g. a broadcast transmitter installed in a building) measurements will be accepted of the equipment as installed. Such measurements must be accompanied by a description of the site where the measurements were made showing the location of any possible source of reflections which might distort the field strength measurements. Information submitted shall include the relative radiated power of each spurious emission with reference to the rated power output of the transmitter, assuming all emissions are radiated from halfwave dipole antennas.

(b) The measurements specified in paragraph (a) of this section shall be made for the following equipment:

(2) All equipment operating on frequencies higher than 25 MHz.

§ 2.1057 Frequency spectrum to be investigated

(a) In all of the measurements set forth in Secs. 2.1051 and 2.1053, the spectrum shall be investigated from the lowest radio frequency signal generated in the equipment, without going below 9 kHz, up to at least the frequency shown below:

(1) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(b) Particular attention should be paid to harmonics and subharmonics of the carrier frequency as well as to those frequencies removed from the carrier by multiples of the oscillator frequency. Radiation at the frequencies of multiplier stages should also be checked.

(c) The amplitude of spurious emissions which are attenuated more than 20 dB below the permissible value need not be reported.

(d) Unless otherwise specified, measurements above 40 GHz shall be performed using a minimum resolution bandwidth of 1 MHz.

§ 22.917 Emission limitations for cellular equipment

(a) The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. This is calculated to be -13 dBm (effective radiated power) which corresponds to 84.6 dB μ V/m (field strength) in a distance of 3 m.

(b) Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. In the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required

measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(c) Licensees in this service may establish an alternative out of band emission limit to be used at specified band edge(s) in specified geographical areas [...].

(d) If any emission from a transmitter operating in this service results in interference to users of another radio service, the FCC may require a greater attenuation of that emission than specified in this section.

§ 24.238 Emission limitations for Broadband PCS equipment

(a) The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. This is calculated to be -13 dBm.

(b) Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 MHz or 1 percent of emission bandwidth, as specified). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

(c) Licensees in this service may establish an alternative out of band emission limit to be used at specified band edge(s) in specified geographical areas [...].

(d) If any emission from a transmitter operating in this service results in interference to users of another radio service, the FCC may require a greater attenuation of that emission than specified in this section.

FCC Part 15, Subpart C, §15.247 (d)

... In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

FCC Part 15, Subpart C, §15.209, Radiated Emission Limits

Frequency in MHz	Limit (µV/m)	Measurement distance (m)	Limit (dBµV/m)
above 960	500	3	54.0

§15.35(b)

..., there is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit....

Used conversion factor: $\text{Limit (dBµV/m)} = 20 \log (\text{Limit (µV/m)}/1\mu\text{V/m})$

For reporting only spurious emission levels reaching to the 20 dB margin to limit were noted.

3.1.3 Test Protocol

Temperature: 23 °C
 Air Pressure: 1014 hPa
 Humidity: 36 %

Op. Mode	Setup	Port
op-mode 1	Setup_01	Enclosure

1.a) Part 22, Frequency Range 30 MHz to 10 GHz

Frequency MHz	Antenna Polarisation	Bandwidth kHz	Measured Level dBm	Limit dBm
2510	vertical	1000	-24.6	-13.0
5764	horizontal	1000	-16.6	-13.0
5806	horizontal	1000	-16.8	-13.0

1.b) Part 15, Subpart C, Frequency Range 10 GHz to 25 GHz

Frequency MHz	Antenna Polarisation	Corrected value dBµV/m		Limit dBµV/m		Margin dB	
		PK	AV	PK	AV	PK	AV
–	Hor. + Vert.	–	–	74.0	54.0	–	–

Remark: No (further) spurious emissions in the range 20 dB below the limit found.

Op. Mode	Setup	Port
op-mode 2	Setup_01	Enclosure

2.a) Part 24, Frequency Range 30 MHz to 20 GHz

Frequency MHz	Antenna Polarisation	Bandwidth kHz	Measured Level dBm	Limit dBm
2437	horizontal	1000	11.8	– (WLAN carrier)

2.b) Part 15, Subpart C, Frequency Range 20 GHz to 25 GHz

Frequency MHz	Antenna Polarisation	Corrected value dBµV/m		Limit dBµV/m		Margin dB	
		PK	AV	PK	AV	PK	AV
–	Hor. + Vert.	–	–	74.0	54.0	–	–

Remark: No (further) spurious emissions in the range 20 dB below the limit found. The found emission is the intentional emission of the WLAN transmitter.

3.1.4 Test result: Spurious radiated emissions

Op. Mode	Result
op-mode 1	passed
op-mode 2	passed

4 Test Equipment

List of Used Test Equipment

The calibration, hardware and software states are shown for the testing period.

Test Equipment Anechoic Chamber

Lab ID:	Lab 1
Manufacturer:	Frankonia
Description:	Anechoic Chamber for radiated testing
Type:	10.58x6.38x6.00 m ³

Single Devices for Anechoic Chamber

Single Device Name	Type	Serial Number	Manufacturer
Air compressor	none	-	Atlas Copco
Anechoic Chamber	10.58 x 6.38 x 6.00 m ³ FCC listing 96716 3m Part15/18 IC listing 3699A-1 3m	none	Frankonia 2011/01/11 2014/01/10 2011/02/07 2014/02/06
Controller Maturo	MCU	961208	Maturo GmbH
EMC camera	CE-CAM/1	-	CE-SYS
EMC camera Nr.2	CCD-400E	0005033	Mitsubishi
Filter ISDN	B84312-C110-E1	-	Siemens&Matsushita
Filter Universal 1A	BB4312-C30-H3	-	Siemens&Matsushita

Test Equipment Auxiliary Equipment for Radiated emissions

Lab ID:	Lab 1
Description:	Equipment for emission measurements
Serial Number:	see single devices

Single Devices for Auxiliary Equipment for Radiated emissions

Single Device Name	Type	Serial Number	Manufacturer
Antenna mast	AS 620 P	620/37	HD GmbH
Biconical dipole	VUBA 9117 <i>Calibration Details</i> Standard Calibration	9117-108	Schwarzbeck <i>Last Execution</i> <i>Next Exec.</i> 2012/01/18 2015/01/17
Broadband Amplifier 18MHz-26GHz	JS4-18002600-32-5P	849785	Miteq
Broadband Amplifier 1GHz-4GHz	AFS4-01000400-1Q-10P-4	-	Miteq
Broadband Amplifier 30MHz-18GHz	JS4-00101800-35-5P	896037	Miteq
Cable "ESI to EMI Antenna"	EcoFlex10	W18.01-2+W38.01- 2	Kabel Kusch
Cable "ESI to Horn Antenna"	UFB311A+UFB293C	W18.02-2+W38.02- 2	Rosenberger Micro-Coax
Double-ridged horn	HF 906 <i>Calibration Details</i> Standard Calibration	357357/001	Rohde & Schwarz GmbH & Co. KG <i>Last Execution</i> <i>Next Exec.</i> 2009/04/16 2012/04/15
Double-ridged horn	HF 906 <i>Calibration Details</i>	357357/002	Rohde & Schwarz GmbH & Co. KG <i>Last Execution</i> <i>Next Exec.</i>

Single Devices for Auxiliary Equipment for Radiated emissions (continued)

Single Device Name	Type	Serial Number	Manufacturer
	Standard Calibration		2009/04/28 2012/04/27
High Pass Filter	4HC1600/12750-1.5-KK	9942011	Trilithic
High Pass Filter	5HC2700/12750-1.5-KK	9942012	Trilithic
High Pass Filter	5HC3500/12750-1.2-KK	200035008	Trilithic
High Pass Filter	WHKX 7.0/18G-8SS	09	Wainwright
Log.-per. Antenna	HL 562 Ultralog	830547/003	Rohde & Schwarz GmbH & Co. KG
	<i>Calibration Details</i>		<i>Last Execution Next Exec.</i>
	Standard Calibration		2009/05/27 2012/05/26
Loop Antenna	HFH2-Z2	829324/006	Rohde & Schwarz GmbH & Co. KG
	Standard calibration		2011/10/27 2014/10/26
Pyramidal Horn Antenna 26,5 GHz	3160-09	00083069	EMCO Elektronik GmbH
Pyramidal Horn Antenna 40 GHz	3160-10	00086675	EMCO Elektronik GmbH
Tilt device Maturo (Rohacell)	Antrieb TD1.5-10kg	TD1.5-10kg/024/3790709	Maturo GmbH

Test Equipment Auxiliary Test Equipment

Lab ID:	Lab 1
Manufacturer:	see single devices
Description:	Single Devices for various Test Equipment
Type:	various
Serial Number:	none

Single Devices for Auxiliary Test Equipment

Single Device Name	Type	Serial Number	Manufacturer
AC Power Source	Chroma 6404	64040001304	Chroma ATE INC.
Broadband Power Divider N (Aux)	1506A / 93459	LM390	Weinschel Associates
Broadband Power Divider SMA	WA1515	A855	Weinschel Associates
Digital Multimeter 03 (Multimeter)	Fluke 177	86670383	Fluke Europe B.V.
	Customized calibration		2011/10/19 2013/10/18
Fibre optic link Satellite (Aux)	FO RS232 Link	181-018	Pontis
Fibre optic link Transceiver (Aux)	FO RS232 Link	182-018	Pontis
Isolating Transformer	LTS 604	1888	Thalheimer Transformatorwerke GmbH
Notch Filter Ultra Stable (Aux)	WRCA800/960-6EEK	24	Wainwright
Vector Signal Generator	SMIQ 03B	832492/061	Rohde & Schwarz GmbH & Co. KG



Test Equipment Digital Signalling Devices

Lab ID: Lab 1
Description: Signalling equipment for various wireless technologies.

Single Devices for Digital Signalling Devices

<i>Single Device Name</i>	<i>Type</i>	<i>Serial Number</i>	<i>Manufacturer</i>	
Bluetooth Signalling Unit CBT CBT		100589	Rohde & Schwarz GmbH & Co. KG	
	Standard calibration		2011/11/24	2014/11/23
Universal Radio Communication Tester	CMU 200	102366	Rohde & Schwarz GmbH & Co. KG	
	Standard calibration <i>HW/SW Status</i>		2011/05/26	2013/05/25
	Hardware: B11, B21V14, B21-2, B41, B52V14, B52-2, B53-2, B56V14, B68 3v04, PCMCIA, U65V04 Software: K21 4v21, K22 4v21, K23 4v21, K24 4v21, K42 4v21, K43 4v21, K53 4v21, K56 4v22, K57 4v22, K58 4v22, K59 4v22, K61 4v22, K62 4v22, K63 4v22, K64 4v22, K65 4v22, K66 4v22, K67 4v22, K68 4v22, K69 4v22 Firmware: µP1 8v50 02.05.06 ---		2007/07/16	
Universal Radio Communication Tester	CMU 200	837983/052	Rohde & Schwarz GmbH & Co. KG	
	Standard calibration <i>HW/SW Status</i>		2011/12/07	2014/12/06
	HW options: B11, B21V14, B21-2, B41, B52V14, B52-2, B53-2, B54V14, B56V14, B68 3v04, B95, PCMCIA, U65V02 SW options: K21 4v11, K22 4v11, K23 4v11, K24 4v11, K27 4v10, K28 4v10, K42 4v11, K43 4v11, K53 4v10, K65 4v10, K66 4v10, K68 4v10, Firmware: µP1 8v40 01.12.05 ---		2007/01/02	
	SW: K62, K69		2008/11/03	



Test Equipment Emission measurement devices

Lab ID: Lab 1
Description: Equipment for emission measurements
Serial Number: see single devices

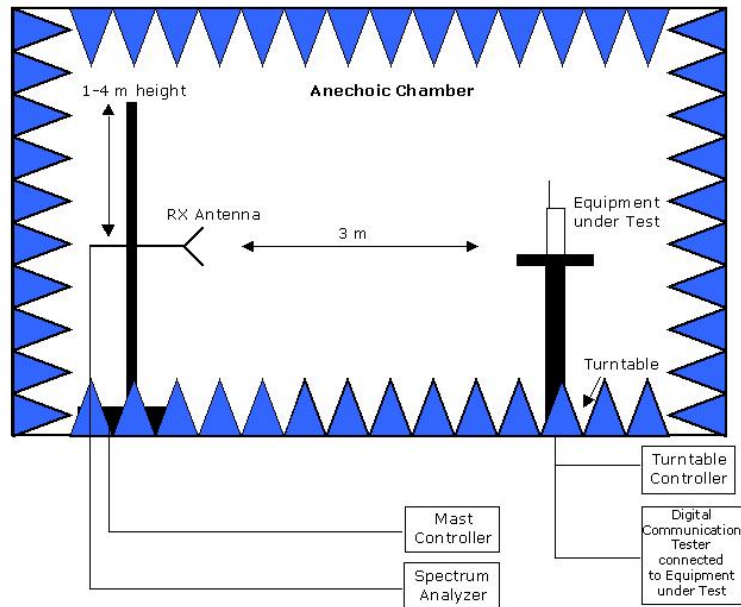
Single Devices for Emission measurement devices

<i>Single Device Name</i>	<i>Type</i>	<i>Serial Number</i>	<i>Manufacturer</i>	
Personal Computer	Dell	30304832059	Dell	
Power Sensor	NRV-Z1	836219/005	Rohde & Schwarz GmbH & Co. KG	
Powermeter	NRVS	836333/064	Rohde & Schwarz GmbH & Co. KG	
Signal Generator	SMR 20	846834/008	Rohde & Schwarz GmbH & Co. KG	
			<i>Calibration Details</i>	
standard calibration			<i>Last Execution</i>	<i>Next Exec.</i>
			2011/05/12	2014/05/11
Spectrum Analyzer	ESIB 26	830482/004	Rohde & Schwarz GmbH & Co. KG	
Standard Calibration			2011/12/05	2013/12/04
<i>HW/SW Status</i>			<i>Date of Start</i>	<i>Date of End</i>
Firmware-Update 4.34.4 from 3.45 during calibration			2009/12/03	

5 Photo Report

Photos are included in an external report.

6 Setup Drawings



Remark: Depending on the frequency range suitable antenna types, attenuators or preamplifiers are used.

Drawing 1: Setup in the fully-anechoic chamber.

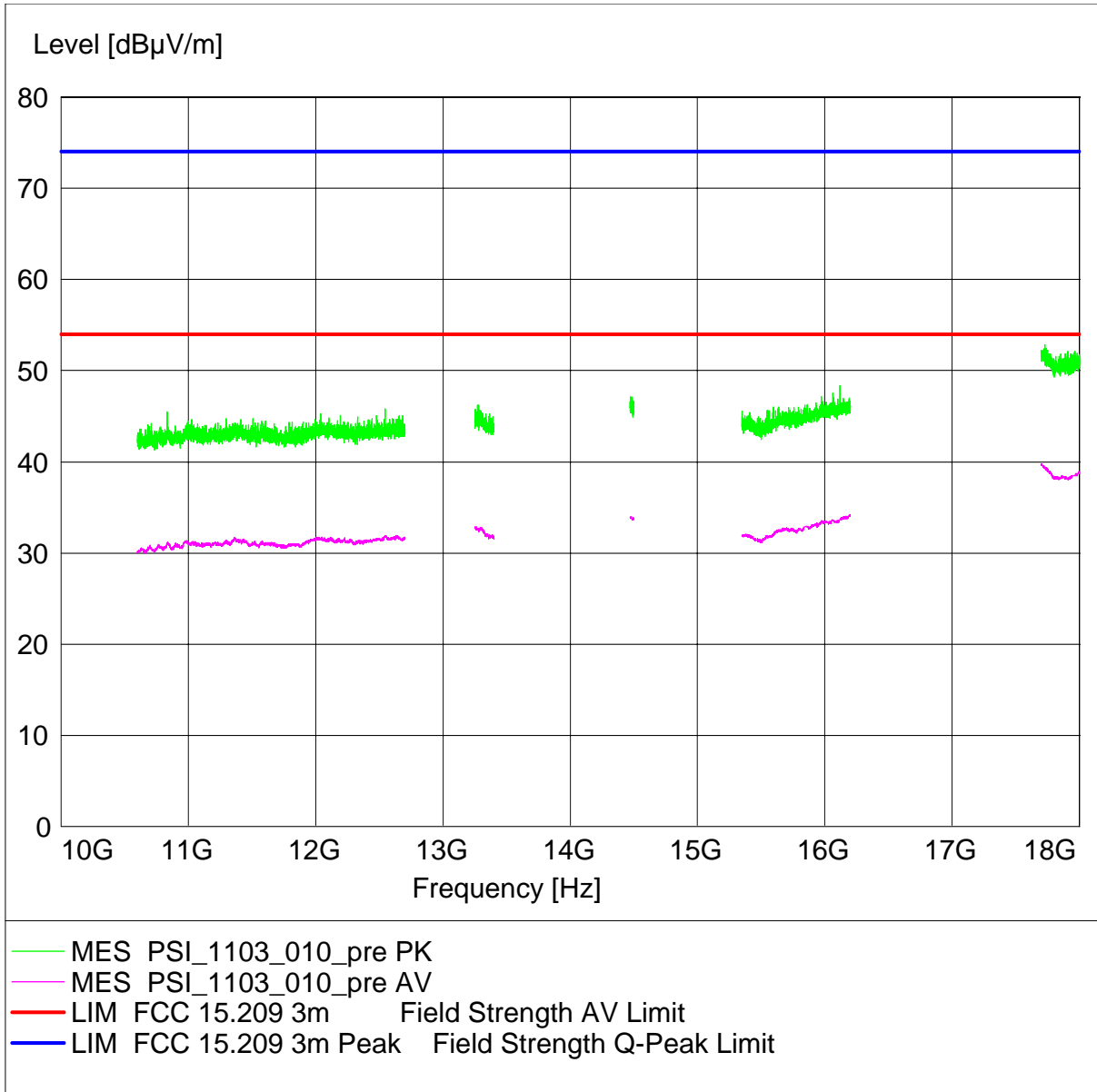
7 Annex measurement plots

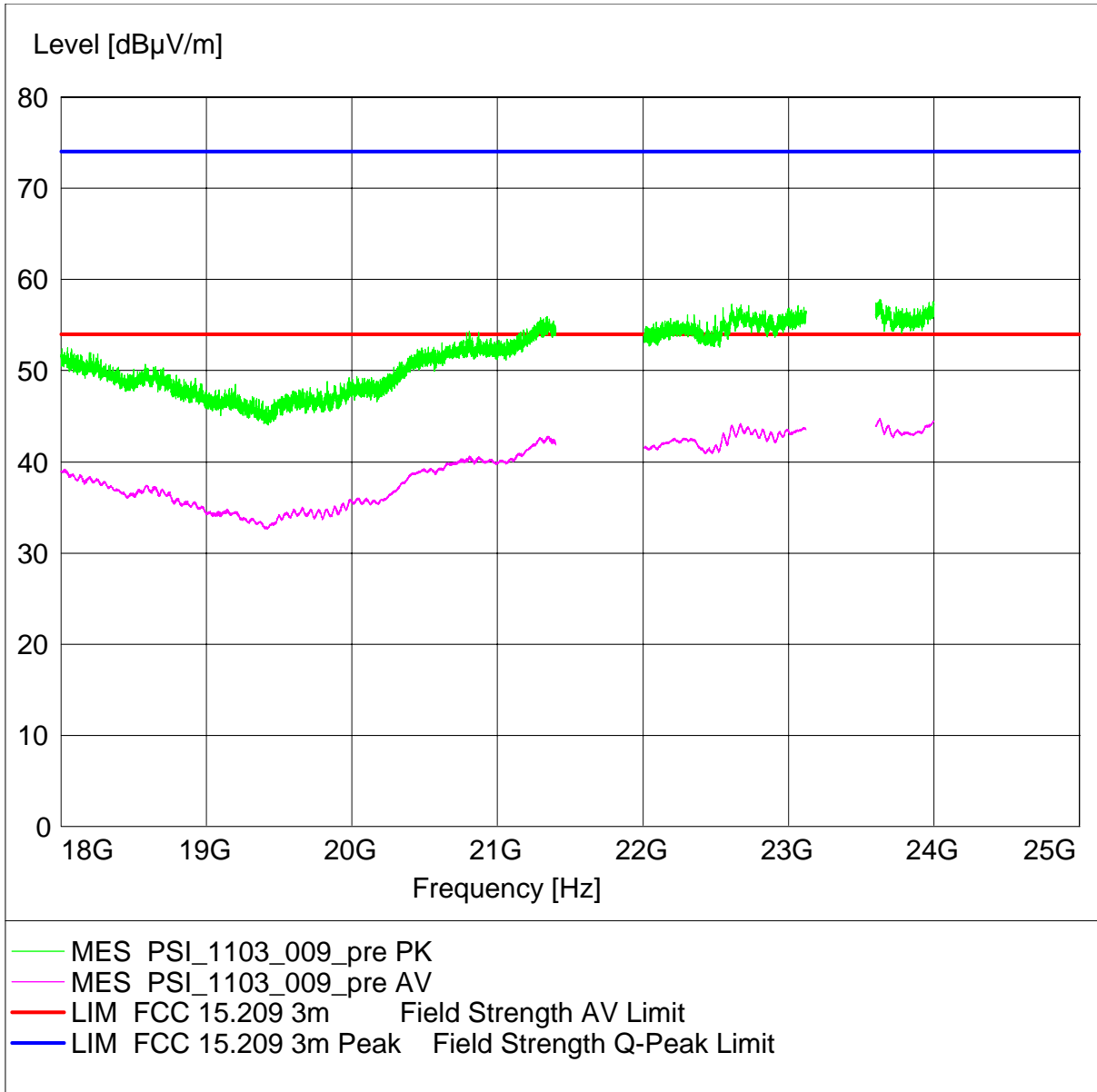
7.1 Spurious radiated emissions

Op. Mode

op-mode 1







Op. Mode

op-mode 2

